Nurse-Led Health Promotion Interventions Improve Quality of Life in Frail Older Home Care Clients: Lessons Learned from Three Randomized Trials in Ontario

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Research Program on Nurse-Led Health Promotion Interventions for Frail Older Home Care Clients

Why is this program of research needed now?

- Canadians $> 65$ years represent the fastest growing segment of the total population
- Corresponding increase in the number of frail older adults
- Increasing trend toward aging in place
- Increasing demand for home care services
- Increasing focus on acute care vs. health promotion and chronic disease management
- Older home care clients have higher levels of disability and lower levels of support compared with general senior population
Community-living older adults can benefit significantly from individualized, nurse-led health promotion programs.

Paucity of research to guide interventions to reduce frailty among older home care clients.

Multiple barriers to the delivery of health promotion interventions to frail older home care clients.

Urgent need for effective health promotion interventions to mitigate frailty and improve the quality of life of older home care clients and their family caregivers.

1. **Nursing Health Promotion for Frail Older Home Care Clients (2000-2004)**

2. **Falls Prevention for Older Home Care Clients at Risk of Falling (2006-2008)**

1. Does a nurse-led health promotion strategy improve health-related quality of life and functioning, compared with usual home care services?

2. Does a nurse-led health promotion strategy have a favourable effect on the components of frailty, compared with usual home care services?

3. What are the comparative expenditures for health service utilization with a nurse-led health promotion strategy, compared with usual home care services, from a societal perspective?

4. Which subgroups of older adults benefit most from the nurse-led intervention?
ENVIRONMENTAL SUPPORTS:
- Social isolation
- Lack of participation in life roles
- Low income
- Low levels of education
- Living alone
- Limited access to formal or informal support
- Geographical locale

PERSONAL RESOURCES:
- Unstable health conditions
- Comorbid health conditions
- Depression & anxiety
- Impaired cognition
- ADL impairments
- Nutritional risk
- Falls
- Decreased mobility
- Advanced age
- Gender

VULNERABILITY

HEALTH-RELATED QUALITY OF LIFE

COSTS OF USE OF HEALTH SERVICES, FROM A SOCIETAL PERSPECTIVE (Markle-Reid et al., 2006)
University - Community Research Partnership

Researchers at McMaster University

+ Decision-Makers, Managers and Clinicians in:

Four Home Care Programs

+ Nine Direct Care Provider Agencies in

Southern Ontario
Randomized Controlled Trial

Population

Eligible Sample
Baseline Measures

Ineligible

Randomized
n=

Intervention (Nurse-Led Health Promotion)

Follow-up Measures

Control (Usual Home Care)

Follow-up Measures
Target Population (n=499)

Inclusion Criteria:

- ≥ 65 years
- Eligible for home care services
- Living in the community (not in an inpatient facility or long-term care)
- Mentally competent to give informed consent (or with a substitute decision-maker available)
- Competent in English (or with an interpreter available)
Goal:

Promote health, prevent disability, and support independence by proactively identifying and addressing unrecognized problems and people at increased risk and to link those people to appropriate health and support services.
Nurse-Led Health Promotion Interventions

Common Features:

- Nurse (RN) case management
- Monthly home visits by designated home care team
- Risk factor assessment and screening
- Multi-component, evidence-based strategies for prevention, detection and management of modifiable risk factors
- Formalized mechanisms for interprofessional collaboration
- Behavioural change strategies to enhance adherence
- Referral and linkage to health and social services
- Feedback of results
Data Collection

Quantitative Methods:
- Multiple sources of data:
  - In-home interviews
  - CCAC data
  - Service provider agencies
- Measurement of clinical outcomes:
  - Baseline and 6 or 12 months

Qualitative Methods:
- Focus groups with study intervention personnel
- Semi-structured interviews with older home care client participants
Approach to Measuring the Effect and Cost of Nurse-Led Health Promotion Interventions

- **Health-Related Quality of Life:**
  - SF-36 Health Survey (SF-36) Version 2 (Ware et al., 2000)

- **Costs of Use of Health Services, from a societal perspective:**
  - Health and Social Services Utilization Inventory (Browne et al., 2006)
Trial 1: Nursing Health Promotion for Frail Older Home Care Clients

Research Objective:

➢ To determine the effects and costs of a 6-month proactive nursing health promotion intervention compared with usual home care for frail older adults using home care services.

Sampling

- **Setting:** CCAC of Halton

- **Study Population (n=242):**
  - ≥ 75 years
  - Eligible for personal support services through the CCAC
  - Not eligible for nursing services through the CCAC
  - Competent in English (or with an interpreter available)
  - Living at home in the community (not in an in-patient facility or long-term care)
  - Mentally competent to give informed consent (or with a substitute decision-maker available)
Intervention: 6-Month Nursing Health Promotion Intervention

- Structured and planned home visits over 6 months by an RN
- Comprehensive in-home assessment of known risk factors for frailty using standardized screening tools
- Multifactorial and evidence-based strategies to prevent and manage chronic conditions and risk factors for functional decline
- Collaborative care planning with clients, their families and interprofessional team members
- Empowerment strategies to develop goals and the strategies to achieve them
- Referral to community health and support services
- Education and support.
Research Outcomes

**Effects:**

**Primary:** Functional Health Status and Quality of Life (SF-36 Health Survey)

**Secondary:** Depression (CES-D)

Perceived Social Support (PRQ85 – Part Two)

Coping Style (Coping Questionnaire)

**Costs:** Health Services Utilization, from a Societal Perspective (HSSU & CCAC Utilization Data)
Results

Compared with the usual care group, frail older home care clients receiving nursing health promotion showed:

- Greater improvement in mean SF-36 mental health component summary score
- Greater clinically important (although not statistically significant) improvement in mean SF-36 physical functioning score
- Greater reduction in CES-D depressive symptom score
- Greater increase in mean PRQ-85 social support score

No statistically significant difference between groups in the total per-person costs of use of health services at 6-months.
Trial 2: Multifactorial and Interprofessional Team Approach to Fall Prevention for Older Home Care Clients ‘At Risk’ for Falling

Research Objective:

➢ To determine the effects and costs of a 6-month multifactorial and interprofessional team approach to fall prevention compared with usual home care for older home care clients “at risk” of falling.

Sampling

- **Setting:** Hamilton Niagara Haldimand Brant CCAC
  Mississauga Halton CCAC

- **Study Population (n=109):**
  - ≥ 75 years
  - Eligible for personal support services through the CCAC
  - Competent in English (or with an interpreter available)
  - Living at home in the community (not in an in-patient facility or long-term care)
  - Mentally competent to give informed consent (or with a substitute decision-maker available)
  - Identified as being at-risk for falls (Fall in the last 12 months; has a fear of falling; and/or is unsteady on their feet)
Intervention:
6-Month Multifactorial and Interprofessional Team Approach to Falls Prevention

- Specialized interprofessional team
- Structured and planned home visits over 6 months
- Comprehensive in-home assessment of known risk factors for falls using standardized screening tools
- Multifactorial and evidence-based strategies for fall prevention
- Motivational strategies to promote behavioral change
- Interprofessional team conferencing
- Single, evidence-based interprofessional falls prevention plan
- Referral to community health and support services
- Education and support.
Research Outcomes

**Effects:**

Primary: Number of Falls during 6-months (Falls Surveillance Report)

Secondary: Functional Health Status and Quality of Life (SF-36 Health Survey)
  - Cognitive Status (SMMSE)
  - Depression (CES-D)
  - Gait and Balance (POMA)
  - Nutritional Status (SCREEN II)
  - Environmental Safety (HOME FAST)
  - Perceived Self-Efficacy (MFES)

**Costs:** Health Services Utilization, from a Societal Perspective (HSSU and CCAC Utilization Data)
Results

Compared with the usual care group, multifactorial and interprofessional fall prevention resulted in:

- A greater reduction in the number of falls among men (75-84 years old) with a fear of falling or negative fall history
- A greater reduction in the number of slips and trips
- Greater improvement in mean SF-36 role-emotional score

- No statistically significant difference between groups in the total per-person costs of use of health services at 6-months.
Research Objective:

To determine the effects and costs of a 12-month specialized, interprofessional team approach to community-based stroke rehabilitation compared with usual home care for stroke survivors using home care services.

Sampling

- **Setting:** Toronto Central CCAC

- **Study Population (n=101):**
  - Confirmed diagnosis of stroke (first-ever or recurrent) or TIA within the previous 18 months
  - Eligible for home care services through the CCAC
  - Competent in English (or with an interpreter available)
  - Living at home in the community (not in an in-patient facility or long-term care)
  - Mentally competent to give informed consent (or with a substitute decision-maker available)
Intervention: 12-Month Specialized Interprofessional Team Approach to Stroke Rehabilitation

- Specialized interprofessional team
- Structured and planned home visits over 12 months
- Comprehensive in-home assessment of factors that influence community reintegration and stroke risk factors using standardized screening tools
- Stroke education
- Strengths-based practice
- Caregiver support
- Referral to community health and support services
- Interprofessional team conferencing
- Single, evidence-based interprofessional community reintegration plan
**RESEARCH OUTCOMES**

**Effects:**

**Primary:** Health-Related Quality of Life and Functioning (SF-36 Health Survey and SIS-16)

**Secondary:** Number of Strokes during 12-month follow-up

- Anxiety and Depressive Symptoms (CES-D and Kessler 10)
  - Perceived Social Support (PRQ85)
  - Community Reintegration (RNLI)

**Costs:**

Health Services Utilization, from a Societal perspective (HSSU and CCAC Utilization Data)
Results

Compared with the usual care group, interprofessional stroke rehabilitation resulted in:

- Greater clinically important (although not statistically significant) improvement in mean SF-36 physical functioning and social functioning score

- No statistically significant difference between groups in the total per-person costs of use of health services during the 12-month intervention period
Lessons Learned

For frail older adults with varying characteristics using home care services:

✓ Nothing is more expensive than on-demand fragmented services

✓ Proactive, comprehensive, and integrated nurse-led health promotion is more effective and no more expensive than usual home care in the same year

✓ Such an approach is acceptable and feasible from the perspective of end users (clients/families, practitioners).
Outcomes of Economic Evaluation
(Birch & Gafni, 2003)

“Win / Win”
Unambiguous improvements in economic efficiency
Producing more/same benefit at the same or lower expenditure

“Cost / Effective”
Reduced benefit which releases resources for other purposes

Economic efficiency unaffected by introduction of this program

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Nursing Health Promotion
Interprofessional Fall Prevention
Interprofessional Stroke Rehab
Lessons Learned

✓ Most effective nurse-led health promotion programs include:

- Specialized and coordinated interprofessional team approach
- Comprehensive in-home assessment of known dimensions of frailty using standardized screening tools
- Regular follow-up care with flexible delivery across settings
- Intensive case management
- Multi-component evidence-based strategies that target the dimensions of frailty and are tailored to individual needs
- Application of behavioral change strategies to enhance adherence
- Early access to appropriate services
- Referral to and coordination of community services
- Recognize and address the needs of family caregivers
Lessons Learned

✓ Comprehensive and coordinated services aimed at all of the broad determinants of health are superior when compared to individual, fragmented, and disease-oriented approaches.
Lessons Learned

✓ Successful health promotion interventions need to be tailored to individual needs:

- No single intervention or mix of community services will meet the needs of all seniors
- The greatest costs savings in health care tend to accrue among those people who are high users of the health-care system
Lessons Learned

✅ The implementation of effective health promotion interventions requires changes in attitudes and behaviours of:

- Older adults and their families (awareness of risk, readiness to change)
- Health care providers (changes in practice behaviour)
- Organizations (fostering interprofessional collaboration)
- Health care system (financing, managing and delivery of health services)

➢ Implementing health promotion interventions is as much about changing the system as it is about changing individual providers’ practice.
Discussion/Implications

- Home care has the potential to play a key role in mitigating frailty and its adverse outcomes.

- Interventions that are provided on-demand and address single problems or single risk or protective factors are less effective in reducing problems or enhancing health than proactive, health-oriented, and comprehensive interventions.

- Results underscore the need to reinvest in nurse-led health promotion interventions in home care to optimize health-related quality of life and promote aging in place in frail older adults.
Discussion/Implications

- Need for a paradigm shift away from a “find-it and fix it” episodic approach to a “find-it, manage-it, and prevent-it” approach

- Making strategic investments now in health promotion will mitigate the risk factors for frailty and loss of independence, so that living at home, even with significant challenges, can become a true reality for older adults.
Access to Studies


Challenges in Implementing Health Care Interventions

What are the issues?

1. Participant selection and recruitment
2. Assignment to treatment options
3. Delivery of the intervention
4. Evaluating the intervention
Recruitment

What are the issues?

Client-related:
- Recruiting older adults over the phone
- Inability to contact participants to determine eligibility
- Frailty: cognitive limitations and chronic conditions
- Overwhelmed with transition from hospital to home
- Reluctant to self-report a fall
- Non-response bias
- Limited understanding of research process
- Safety and trust

Organizational:
- Economic and organizational obstacles
- Time and timing
Recruitment

What can be done?

- Dedicated and trained CCAC Case Manager recruiters
- In-kind and cash resources to support recruitment activities
- Clearly defined recruitment process
- Two-step screening and recruitment process to identify eligible participants
- Standardized recruitment script and key messages
- Regular face-to-face interaction with CCAC recruiters
- Repeated contact with potential participants
- Flexible scheduling
- Establish trust among older adults – endorsement from the CCAC
Assignment to Treatment Options

What are the issues?

- Randomization is not reflective of what occurs in everyday clinical practice
- Potential study participants declined enrolment in the trial because they favoured one of the two options but only had a 50% chance of receiving it
- Time and timing of randomization often led to disruptions in service providers and service delivery
Assignment to Treatment Options

What can be done?

- Develop internal processes for assigning potential participants to designated study provider agencies
- Incorporate patient preferences for treatment options into design, e.g., partial RCT design (Bradley, 1993)
- Determine the extent to which attending to patient preference influences intervention effectiveness (Sidani et al., 2003)
Delivery of the Intervention

What are the issues?
- Facilitating changes in practice
- Changing attitudes and perceptions
- Time constraints & competing demands
- Non-adherence to the research protocol
- Implementing standardized screening tools
- Adapting the intervention to work within the existing system
- Building effective interprofessional team work
- Reorganizations and leadership changes within the home care program
- Implementing a multi-provider collaboration among multiple agencies
Facilitators to the Delivery of the Intervention

- Executive-level support from community partner agencies
- Developing relationships and building trust and respect
- Implementation team developed intervention, adapted intervention to local context, and facilitated changes in clinical practice
- Ongoing training, monitoring and support
- Provider-specific incentives for fall risk assessment and management activities
- Articulation of expected provider-specific activities
What are the issues?

- Difficulty scheduling interviews
- Respondent and interviewer burden due to lengthy interviews
- Inability to use existing clinical data (RAI-HC)
- Missing data
- Use of proxy informants for non-English speaking older adults and older adults with cognitive limitations
- Short (2 year) funding cycle resulted in: (1) short-term program and short-term evaluation, (2) inability to examine sustainability, and (3) limited time and resources
Evaluating outcomes

What are the issues?

- Reluctance to report falls and/or recall bias resulting in under-reporting of falls
- Calendar and monthly telephone contacts may have diluted the intervention effect and decreased differences between groups
- Study not powered to detect cost differences between groups
- Evaluation of complex interventions – assessing the effects of various components of the intervention