



Barriers to senior centre implementation of falls prevention programmes

Ciara Zachary,¹ Carri Casteel,² Maryalice Nocera,³ Carol W Runyan⁴

¹Department of Health Behavior and Society, Johns Hopkins University, Baltimore, Maryland, USA

²Department of Epidemiology, UNC Chapel Hill, Chapel Hill, North Carolina, USA

³Injury Prevention Research Center, UNC Chapel Hill, Chapel Hill, North Carolina, USA

⁴Department of Epidemiology, University of Colorado Anschutz Medical Campus, Aurora, Colorado, USA

Correspondence to

Dr Carri Casteel, Department of Epidemiology, UNC Chapel Hill, 137 East Franklin Street, Suite 500, Chapel Hill, North Carolina 27599-7505, USA; ccasteel@email.unc.edu

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ABSTRACT

This study examined the prevalence of senior centres providing multi-component falls prevention education and the perceived barriers in implementing this education. A telephone interview was conducted in 2006 with 500 senior centres nationwide. Centre directors were asked about the types of multi-component falls prevention education offered (ie, balance exercise classes, medication management, home safety information) and barriers to offering this education. Seventy percent of senior centres offered balance exercise classes, 68% offered medication management and 53% provided home safety information. Thirty-two percent offered all three components. Lack of staff, time and staff not feeling they had sufficient knowledge to deliver falls prevention education were the leading barriers to providing multi-component education. Senior centres provide components of effective falls prevention education and, while some may not address all components of a multifaceted programme, many have existing resources that may be adapted for translation of evidence-based programmes.

INTRODUCTION

More than a third of older adults fall each year, and an estimated 30% sustain an injury severe enough to require emergency department care.¹ Multi-component falls prevention programmes that include medication management, balance-based physical activity and home safety recommendations have been successful in reducing the incidence of falls among community-dwelling older adults.^{2–3} Though evidence-based programmes exist, there have been few studies identifying how best to disseminate and integrate them into community-based organisations that serve older adults.

Given their locations in the community and the roles they play in delivering a variety of health services to older adults, senior centres could play an important role in delivering evidence-based falls prevention education.^{4–5} However, little is known about the types of falls prevention education already offered in senior centres and what factors may facilitate or impede dissemination of such programmes.^{6–7}

Using a national sample of senior centres, this study examined the prevalence of senior centres providing multi-component falls prevention education and the perceived barriers in implementing this education. The study also examined centre and programme delivery characteristics associated with offering multi-component education.

METHODS

The study was approved by the Institutional Review Board at the University of North Carolina, Chapel Hill, North Carolina, USA.

Sampling

A national electronic telephone directory obtained through InfoUSA⁸ was queried using combinations of 'senior', with 'program' or 'community' or 'activities', and abbreviations of these terms. This identified 5085 senior centres in the USA, which were categorised into four strata based on the percentage of older adults living in the urban and rural areas of the centre's zip code.⁹ Within each stratum, centres were randomly sampled, proportionate to size of the stratum, until 500 centres enrolled.

Data collection

The Theory of Organizational Change and Roger's Theory of Diffusion of Innovations^{10–12} informed instrument development on: (1) organisational-level factors that may act as barriers to a centre's ability to adopt multi-component falls prevention education and (2) programme-specific factors that may influence a senior centre's choice to adopt falls prevention education.

The instrument was pretested by telephone with 12 senior centres randomly sampled from the eligible centres (four from each stratum). The pretest included a de-brief enquiring about the comprehensiveness and length of the survey and the understandability of the questions and response options. Pilot testing with 20 senior centres (five from each stratum) followed the pretest to assess the duration of the instrument and to make final wording changes.

The final instrument was administered to 500 senior centre directors or activities directors once verbal informed consent was obtained by telephone. Centres with a multipurpose designation, defined by the Older Americans Act as providing a broad spectrum of health, educational, social and recreational activities, were eligible to participate (ie, centres with meal programmes only were excluded). Trained research assistants administered interviews using a semistructured telephone interview protocol during May–December 2006 and averaged 40 min in length. The enrollment response was 55% and did not vary by urban/rural strata.

Measures

Falls prevention education

Senior centres were considered to offer multi-component falls prevention education if they provided a balance exercise class (ie, Tai Chi, yoga,

Pilates and/or other balance exercise programme), medication management (ie, offered information about the appropriate use of medications related to falls prevention) and home safety information (ie, offered information and/or inhome assessments specific to falls prevention).

Barriers to offering multi-component falls prevention education

Drawing from the Theory of Organizational Change, we measured three constructs hypothesised as barriers to implementing multi-component falls prevention education in senior centres. These included: (1) resources, including staffing (ie, lack of staff, lack of staff time, staff inexperience in delivering falls prevention information) and facility resources (ie, insufficient meeting space, limited time in the activities schedule for more programmes); (2) perceived need of senior centre directors about the importance of falls prevention education for the older adult clientele (ie, how falls prevention ranked as a priority relative to other health promotion programmes offered at the centre); and (3) management commitment (ie, leadership support and dedication of management-level staff and/or administrators to provide resources to deliver comprehensive falls prevention education).

Drawing on Rogers' Theory of Diffusion of Innovations, three programme-specific barriers to implementing multi-component falls prevention education were hypothesised: (1) availability of balance exercise classes in the centre or community, (2) access to community pharmacists to discuss medication use and (3) availability of home improvement stores to purchase home safety materials and provide education for installation and/or maintenance. All barriers were measured on a 10-point Likert scale with 1='strongly disagree' to 10='strongly agree'.

Statistical analysis

Frequency distributions were used to describe characteristics of the senior centres, centre clientele, types of falls prevention education offered and barriers to implementing multi-component falls prevention education. Means and SD were calculated for the barrier measures. χ^2 Tests were used to examine the association between selected centre and programme delivery characteristics and offering multi-component falls prevention education, defined as offering all three components of education

Table 1 Falls prevention education offered in senior centres (n=500), USA, 2006

Falls prevention education components	N (%)
Individual components	
Balance exercise classes or programmes	
Yes	350 (70.0)
No	150 (30.0)
Unknown	0
Medication management education	
Yes	329 (65.8)
No	169 (33.8)
Unknown	2 (0.4)
Home safety information	
Yes	273 (54.6)
No	224 (44.7)
Unknown	3 (0.6)
Comprehensiveness of education	
Number of components	
3	164 (32.8)
2	175 (35.0)
1	110 (22.0)
0	51 (10.2)

(ie, balance exercise, medication management and home safety), compared with offering 0–2 components.

RESULTS

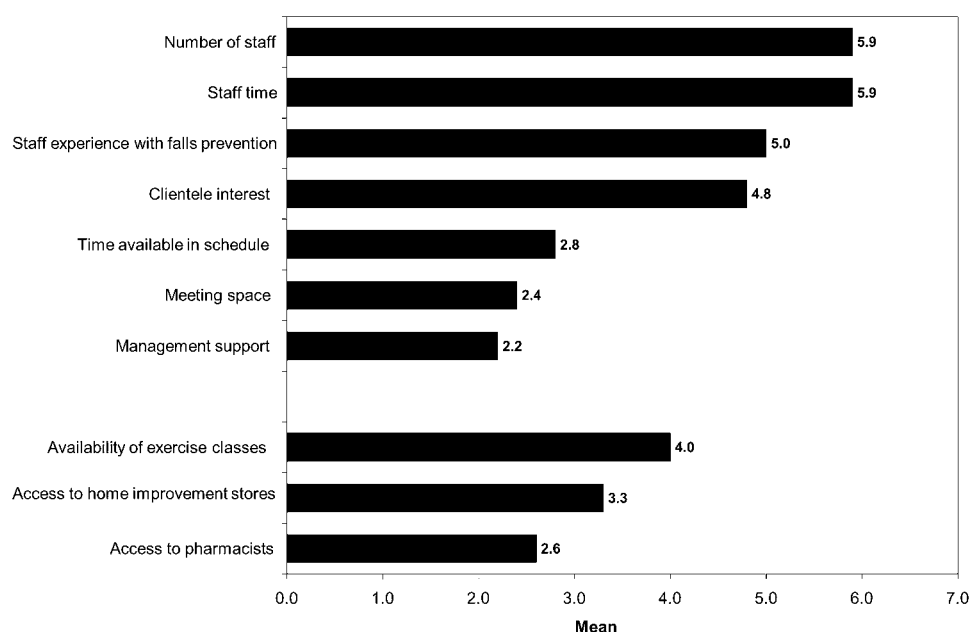
Falls prevention education

Seventy percent of the senior centres offered balance exercise classes, 66% offered medication management education and 55% provided home safety information (table 1). Thirty-three percent offered all three components and could be classified as offering multi-component falls prevention education. Among the remaining centres, 35% offered two components, 22% offered one and 10% offered none.

Barriers to offering multi-component falls prevention education

Lack of staff (mean=5.9, SD=3.46), lack of staff time (mean=5.9, SD=3.39) and staff feeling they had insufficient knowledge to deliver falls prevention education (mean=5.0,

Figure 1 Barriers to implementing multi-component falls prevention education, USA, 2006.



SD=3.55) were the leading organisational-level barriers to offering multi-component falls prevention education (figure 1). Lack of management support for falls prevention programming (mean=2.2, SD=2.36) and not having sufficient space for programme delivery (mean=2.4, SD=2.63) were identified least as organisational-level barriers to programme delivery.

Access to exercise classes at the centre or in the community (mean=4.0, SD=3.67), home improvement stores (mean=3.3, SD=3.45) and community pharmacists (mean=2.6, SD=2.87) were not perceived as programme-specific barriers to offering multi-component education (figure 1).

Senior centre and programme delivery characteristics associated with multi-component falls prevention education

Seventy-one percent of the 500 centres were affiliated with a government agency, and 60% were in urban areas (table 2). More than 80% of the senior centre activities directors indicated they partnered with local ageing and/or healthcare agencies when planning programmes. Staff in charge of programme

delivery primarily included the centre director (49%), activities director (24%) or site manager (21%) (data not shown). Though most staff in charge of programmes worked full-time and were paid by the centre, nearly 75% of the centres relied heavily on volunteers (table 2).

A larger proportion of senior centres in urban areas ($p=0.02$) and those partnering with religious organisations when planning programmes ($p=0.01$) offered multi-component falls prevention education (table 2). Centres where the individual responsible for programme delivery was full-time ($p=0.01$) and at least a college graduate ($p<0.01$) were more likely to offer multi-component education, as were centres with paid staff available for programme delivery support ($p=0.01$).

DISCUSSION

Multi-component falls prevention programmes including balance-based exercise, medication management and home safety have been successful in reducing the incidence of falls among community-dwelling older adults.^{2 3} However, this study

Table 2 Frequency and association between senior centre and programme delivery characteristics and offering multi-component falls prevention education (n=500), USA, 2006

Senior centre and programme delivery characteristics	N (%)	Falls prevention education		p Value*
		Offers 3 components N (%)	Offers <3 components N (%)	
Organisational structure				
Government†	355 (71.0)	125 (76.2)	230 (68.5)	0.18§
Non-profit	141 (28.2)	38 (23.2)	103 (30.6)	
For-profit, private	4 (0.8)	1 (0.6)	3 (0.9)	
Senior centre location				
Urban	302 (60.4)	111 (67.7)	191 (56.9)	0.02
Rural	198 (39.6)	53 (32.3)	145 (43.1)	
Partner with Area Agency on Ageing				
Yes	403 (80.6)	136 (82.9)	267 (79.5)	0.46
No	94 (18.8)	28 (17.1)	66 (19.6)	
Unknown	3 (0.6)	0	3 (0.9)	
Partner with healthcare organisations				
Yes	438 (87.6)	151 (92.1)	287 (85.4)	0.05
No	60 (12.0)	13 (7.9)	47 (14.0)	
Unknown	2 (0.4)	0	2 (0.6)	
Partner with religious organisations				
Yes	196 (39.2)	78 (47.6)	118 (35.1)	0.01
No	301 (60.2)	86 (52.4)	215 (64.0)	
Unknown	3 (0.6)	0	3 (0.9)	
Employment status of person responsible for programme delivery‡				
Full-time	353 (72.3)	130 (80.3)	223 (68.4)	0.01
Part-time	132 (27.1)	32 (19.7)	100 (30.7)	
Unknown	3 (0.6)	0	3 (0.9)	
Pay of person responsible for programme delivery‡				
Paid	456 (93.4)	154 (95.1)	302 (92.6)	0.13
Volunteer	26 (5.3)	5 (3.1)	21 (6.4)	
Unknown	6 (1.2)	3 (1.8)	3 (0.9)	
Education level of person responsible for programme delivery‡				
College graduate/postgraduate education	188 (38.5)	79 (48.8)	109 (33.4)	<0.01
High school graduate/some college	289 (59.2)	82 (50.6)	207 (63.5)	
Unknown	11 (2.3)	1 (0.6)	10 (3.1)	
Support for programme delivery				
Volunteers only	156 (31.2)	44 (26.8)	112 (33.3)	0.01§
Paid staff only	102 (20.4)	46 (28.1)	56 (16.7)	
Combination of volunteers and paid staff	216 (43.2)	69 (42.1)	147 (43.7)	
None	22 (4.4)	3 (1.8)	19 (5.6)	
Unknown	4 (0.8)	2 (1.2)	2 (0.6)	

* χ^2 And Fishers' exact tests do not include 'Unknown' category responses.

†Includes state, county and local government agencies.

‡Denominator is the indicator of whether the senior centre has a person responsible for programme delivery (n=488).

§Uses Fishers' exact test.

shows that only 33% of the participating senior centres offered multi-component falls prevention education, and 10% offer none.

Lack of staff and staff time were identified as the greatest barriers to providing multi-component falls prevention education. As approximately 75% of senior centres relied on volunteers, centres may consider using these resources more strategically to reduce barriers associated with staffing. For example, volunteers may include physical therapy students from nearby colleges to lead balance and strength classes. Since senior centre directors and activities directors did not identify access to pharmacists as a significant barrier to offering multi-component falls prevention education, community pharmacists could provide medication management consulting. Nurses from local public health agencies could also be valuable community resources.

Fire departments were the primary resource used by senior centres to lead lectures on home fire safety, and some offered inhome inspections. These lectures could be an opportunity to include a home safety component as it relates to falls prevention. Just over 50% of the participating centres offered home safety information specific to falls. Utilising fire departments in a larger capacity would increase the prevalence of senior centres offering multi-component falls prevention education.

We found that centres located in urban areas, and those with full-time and/or paid staff, were more likely to offer multi-component falls prevention education than centres located in rural areas. This is consistent with the literature, which has identified that urban centres have more human and financial resources than rural centres to provide a greater number of services.^{13 14}

This study has limitations. It is possible that the sample was not representative of senior centres nationwide. First, the pool of eligible senior centres obtained from InfoUSA⁸ may have been incomplete due to search criteria that relied on selected key words appearing in the senior centre's name. Since a national inventory of senior centres did not exist, using an electronic telephone directory was the best available alternative. Second, the response rate was low. This may have resulted in centres with fewer staff and resources (eg, those having only one phone line) being less likely to participate, and therefore findings potentially overestimating the prevalence of falls prevention education. The study is also limited by responses relying on self-report and by not measuring the quality of the falls prevention components reported by centre directors and activities directors.

This study was the first to examine the prevalence of falls prevention education and organisational-level and programme-specific barriers to implementing multi-component falls prevention education in senior centres on a national scale.

What is already known on the subject

- More than a third of older adults fall each year, and these falls significantly contribute to a loss of functioning and independence.
- Multi-component falls prevention programmes have been successful in reducing falls among older adults but have been slow to diffuse to community organisations.
- Senior centres could play an important role in delivering falls prevention education, but the type of education they already offer is largely unknown.

What this study adds

- About a third of a national sample of senior centres in the USA offer multi-component falls prevention education, and 10% offer none.
- Seventy percent of the senior centres offered balance exercise classes, 68% offered medication management education and 53% provided home safety information.
- Lack of staff and staff time were the leading barriers to offering multi-component falls prevention education.

Findings from this study suggest that many senior centres offer programmes and services that address the reduction of falls risks. These programmes may not address all components of a multi-faceted programme. However, senior centres have existing resources that can be potentially adapted for translation of evidence-based programmes. This can be especially true for centres already providing balance-based exercise, which can reduce the risk of falls independent of other programme components.^{2 15}

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Contributors Each author participated sufficiently in the development of this manuscript and all agree to take public responsibility for the appropriate portions of the content. All authors contributed substantially to the conception and design, acquisition of data, analysis and interpretation of data and in writing the final version of the manuscript for publication.

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Competing interests None.

Patient consent The research did not involve patients or any identifiable medical information.

Ethics approval Approval provided by UNC Chapel Hill Public Health-Nursing Institutional Review Board.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement The data collection instrument and electronic data with corresponding codebooks can be made available to the broader community after all project personnel have completed their dissemination activities. De-identified data can be provided at the senior centre level in SAS format or in a Microsoft Access database. Codebooks can be made available in Microsoft Word. Data sharing contact: Carri Casteel, PhD (ccasteel@email.unc.edu).

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Nappy sacks drive to prevent baby deaths

A campaign alerting parents to the risks of babies being suffocated by nappy sacks (diaper bags) is underway in the UK after the issue was highlighted by a coroner. At least 11 babies have died so far from suffocation after pulling nappy sacks stored in their cots, or near to where they sleep, to their faces. The thinness of the plastic makes it 'cling' to the face when breathed in and young babies are unable to pull it away. Katrina Phillips, chief executive at CAPT, said: 'Nappy sacks are seen as an essential piece of parenting kit, so parents don't realise that they are as dangerous to babies as plastic bags are to small children.'

New NHTSA crash test dummy

The National Highway Traffic and Safety Administration has begun using a new crash test dummy built to approximate the size of an average 10-year-old. The agency developed the unit to aid researchers in understanding how crashes affect children over 65 pounds—the in-between stage of development when children are too big for booster seats and too small for seat belts.