Nursing Home Staff Perception of a Falls Management Intervention

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ABSTRACT

Background: Many nursing home fall injuries are believed to be preventable. Little is known about the fall prevention activities nursing homes are using.

Methods: We conducted a census of all nursing homes in 6 Wisconsin counties by mailing a needs assessment to administrators and directors of nursing. Later we mailed a report of the results, an information intervention (an annotated list of falls management resources), and a follow-up questionnaire.

Results: Respondents believed that the most important barriers to better falls management in typical Wisconsin nursing homes were the fall-prone character of the population (80%), followed by the need for staff to communicate changes in a resident's condition better and more quickly (58%). Most felt that the components they needed to improve in their own nursing home were training for new staff (71%) and communicating any immediate care plan changes (65%). Respondents reported getting useful fall prevention information in the last year from in-house physical and occupational therapists (87%) and conferences, workshops, or meetings (82%). They were most interested in receiving new information about how to train their staff to analyze resident fall data and develop prevention plans (76%) and where to find training videos (68%). Forty-four percent reported becoming personally more aware of falls management resources and 31% reported that their nursing home had adopted changes in falls management activities in the last 7 months at least in part as a result of our intervention.

Conclusion: Information dissemination interventions can increase awareness and changes in nursing home falls management activities.

INTRODUCTION

Many nursing home falls and serious fall injuries are believed to be preventable. Research on nursing facility falls has yielded best practice recommendations and other tools and resources.[1-5] Some nursing homes appear to be gradually adopting and improving falls management programs while others lag behind. When successful, falls management efforts can result in older adults experiencing a higher quality of life, contribute to a greater ease of delivery of care by nursing home staff, and lower the overall cost of care.[6,7]

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As part of a larger effort funded by the US Department of Agriculture, we were interested in learning more about how nursing home staff, especially those in more rural compared to urban counties, viewed fall prevention efforts, what they were currently doing to prevent falls, and how they wanted to improve. Our efforts resulted in an information dissemination intervention to nursing home staff.

METHODS

Needs Assessment Questionnaire Development and Administration

We developed a 4-page needs assessment questionnaire that focused on falls management and efforts to reduce fall risks in nursing facilities. We designed the questionnaire as a needs assessment so respondents would be less likely to feel their facility's programming was being evaluated against others. The questions were designed to be easy to complete, with a dozen or more possible responses so that respondents could check them off. Each question included an open-ended response marked "other." A copy of the questionnaire is available online for modification and use by others with the provision that a note identifying the funding source and grant number be included.[8]

We used the methods of the widely recognized Dillman mail survey method to administer the needs assessment questionnaire.[9,10] Our initial mailing to subjects included a stamped, pre-addressed return envelope and a cover letter describing the survey's purpose, funding source, and privacy protections. Cover letter wording encouraged respondents to participate by describing how completing the survey could benefit nursing facility residents and staff. After 10 days, we sent nonrespondents a reminder postcard. After 14 more days, we sent any remaining nonrespondents a complete second mailing. The University of Wisconsin's social and behavioral science human subjects internal review board approved our procedures and our questionnaire.

Information Intervention Development and Administration

Three months after the needs assessment was mailed out, we developed and mailed a 4-page report of the results to the same list of administrators and directors of nursing we originally mailed to at all the nursing homes. This mailing went to respondents and nonrespondents. In the same mailing, we included a 4-page annotated list of resources we had developed that provided internet links and surface mail addresses for a variety of types of fall prevention training resources and other information that respondents had requested on the needs assessment questionnaire. We ordered the list according to which information the respondents had requested most often on Question 4 (ie, "Are you interested in obtaining any of the following information about falls management programs?"). The resource list we developed emphasized training materials and information that were consistent with evidence-based best practices, peer-reviewed or used in articles published in peer review journals, and were in the public domain. A copy is available online for modification and use by others with the provision that a note identifying the funding source and grant number be included.[11]

Follow-up Questionnaire Administration

We also developed a short, single-page follow-up questionnaire with 3 questions and yes or no check box responses. We asked whether individuals had personally become more aware about falls management resources at least in part as a result of our mailings, whether their nursing facility had adopted changes in falls management activities in the last 7 months at least in part as a result of our mailings, and whether their nursing facility had begun the process to adopt changes in falls management activities in the next 6 months at least in part as a result of our mailings. Six months after the needs assessment was mailed and 3 months after the report and list of resources were mailed, we administered the follow-up questionnaire to the same group (respondents and nonrespondents), with the same reminder postcard and remailing.

Subjects

We were interested in getting responses to our questions from individuals working in nursing facilities who could best reflect the totality of their organization's activities and perceptions. Nursing home administrators were chosen because they could provide an overall picture that included their knowledge from the business and regulatory perspective of their nursing facility. Directors of nursing were chosen because they could provide a perspective that was more oriented toward daily experience with actual clinical care aspects. In practice, there was some overlap in perspectives and experience between the 2 groups. We were also interested in comparing nursing homes in largely rural counties with those in more urban counties. We selected 5 largely rural counties in Wisconsin, based on the US Department of Agriculture definitions.[12] We mailed our questionnaire to the nursing home administrator and director of nursing at every nursing facility in the 5 counties using a list provided by the Wisconsin Division of Quality Assurance. This comprised a census of 22 nursing facilities in the rural counties.[13] We also mailed surveys to a comparison group made up of a census of all 21 nursing facilities located in a largely urban county in Wisconsin.

Table 1. Study Subjects and Return Rates

Questionnaires	Mailed	Needs assessments returned (rate)	Follow-up returned (rate)
Type of Respondent			
Nursing home administrators	43	16 (37%)	19 (44%)
Directors of nursing	42[a]	23 (55%)	25 (60%)
Type of County			
More urban	42	12 (29%)	12 (29%)
More rural	43	27 (63%)[b]	30 (70%)[c]
Total	85	39 (46%)	45 (53%)

[a] Two nursing homes shared a single director of nursing
[b] Significant difference for type of county with $P<0.048$ rural vs urban on 2-sided Pearson chi-square.
[c] Significant difference for type of county with $P<0.021$ rural vs urban on 2-sided Pearson chi-square.

Data Analysis and Statistics

Reasonably complete returned questionnaires (those with more than two-thirds of the questions answered) were coded and entered into a database. All questionnaires were manually checked to verify the accuracy of data entry. IBM SPSS Statistics version 20 (IBM Corporation, Armonk, New York) was used to make comparisons between administrators and directors of nursing and between rural counties and the urban county. The Pearson's chi-square test (2-sided) was used to compare percentages and Student's t test (2-tailed) was used to compare numerical values after Levene's test for equality of variances. No adjustments were made for multiple statistical comparisons.

RESULTS

Questionnaire Subjects and Return Rates

Return rates were 46% overall for the needs assessment questionnaire (Table 1). Respondents from nursing homes in the 5 more rural counties were more likely to return their questionnaires than respondents from nursing homes in the more urban county (63% vs 29%; $P<0.048$).

Return rates were 53% overall for the follow-up questionnaire administered 7 months after the needs assessment questionnaire. Again, personnel from the more rural county nursing homes were more likely to return the questionaires than those from the more urban county (70% vs 29%; $P<0.021$).

Barriers to Better Fall Prevention in Typical Nursing Homes

Respondents were asked what barriers they saw as "extremely important" to improve fall prevention in typical Wisconsin nursing homes that serve older adults. Respondents most often

Table 2. Respondent Reports of "Extremely Important"[a] Barriers to Better Fall Prevention in Typical Wisconsin Nursing Facilities (n=38-39)

Barrier	Extremely Important
Nursing facility residents are a fall-prone population.	80%
Need for better and quicker communication of changes in a resident's condition.	58%
Nursing assistants need better training in falls management.	44%
Nursing leadership needs to prioritize falls management.	44%
Nursing leadership needs to listen to and learn more from nursing assistants.	42%
Staff ratio too low to afford better falls management.	42%[b]
Direct patient care takes up nearly all time.	37%
Nursing leadership needs to provide better support to nursing assistants.	33%
Need to identify more affordable materials & training to implement best practices.	31%
Nursing assistants need incentives to become more conscientious about falls.	23%[c]
Too difficult to identify best practices for improving falls management.	24%
Staff turnover rate among nursing assistants is too high.	16%
Other.	13%

[a] Survey question: "How important do you believe the following potential barriers are to improving falls management at typical nursing facilities in Wisconsin serving older adults?" (Results reportd indicate percent responding "Extremely Important" on a scale of Extremely Important, Somewhat Important, Not Important.)
[b] Significant difference for type of county ($P<0.014$; urban 1.909 vs rural 2.518 for continuous variable, where Not Important=1, Somewhat Important=2 and Extremely Important=3).
[c] Significant difference for type of respondent ($P<0.05$; administrator 1.533 vs director of nursing 2.043).

checked the response "nursing facility residents are a fall-prone population" (80%) (Table 2). More than half cited the "need for better and quicker communication of changes in a resident's condition" as an extremely important barrier (58%). The third most cited extremely important barrier was that "nursing assistants need better training in falls management" (47%). Significantly more rural than urban respondents rated "staff ratio too low to afford better falls management" as extremely important ($P<0.014$). Significantly more administrators than directors of nursing rated "nursing assistants need incentives to become more conscientious about falls" as extremely important ($P<0.05$).

Fall Prevention Activities in Need of Improvement

When asked about 17 components of a comprehensive multifactorial fall prevention effort in their own facility, respondents most often cited "training new staff in how falls management fits in" as "needs to improve" (71%) (Table 3). Next most cited as needing improvement was "communicating any immediate care plan changes to nursing assistants and other staff" (65%) after team meetings, followed by "getting nursing assistants and other staff to enact changes quickly and carefully" after investigating a resident's fall (63%), and "getting nursing assistants and other staff to enact changes quickly and carefully" after team meetings to evaluate the response to a resident's fall (63%). Significantly more rural than urban respondents rated "getting the team to quickly decide on any additional changes in each resident's plan" as an area that needs to improve ($P<0.003$) (Table 3).

Nearly all nursing homes were using a multifactorial approach that included evaluating the fall risk of new residents, investigating resident falls, conducting team meetings to evaluate the response to a resident's fall, and taking steps to change their nursing home's organization to manage falls better. On the other hand, 21% reported that they don't "provide support to nursing assistants so they have incentives to achieve fall prevention goals" and 13% reported they "don't use" team meetings to "discuss and evaluate each resident's fall from the day before and any immediate care plan changes in daily team meetings" (Table 3).

Sources of Useful Fall Prevention Information

When asked where they got useful fall prevention information in the last year, most respondents identified as sources their facility's occupational or physical therapist (87%); conferences, workshops, or meetings (82%); in-house nurses (79%); in-house nursing assistants (76%), and professional journals in their field (66%). Many also reported obtaining information on fall prevention from newsletters of their professional organizations (55%) and during in-house training sessions (58%) (Table 4).

Significantly more administrators than directors of nursing (73% vs 30%) reported getting fall prevention information from professional organization staff ($P<0.019$), while more rural than urban respondents obtained information from occupational or physical therapists outside their own nursing home, journals in their field or other publications and online from the Wisconsin Association of Homes and Services for the Aging ($P\leq0.038$) (Table 4).

Information of Interest to Respondents

Most respondents were interested in obtaining information about how to improve their staff's ability to analyze resident fall data and develop prevention plans (76%), and where to find video presentations to train staff and educate residents about falls management (68%). Nearly as many were interested in how to better assess and care for new residents in ways that reduce fall risks during their first weeks (65%) and how to get all staff to more quickly and more consistently adopt changes in individual resident care plans (62%). The same percentage wanted to know how to better communicate falls management information between staff (62%) and how to make better detailed assessments and investigations after a resident has fallen (62%) (Table 5).

Significantly more rural than urban respondents were interested in getting information about "how to make better detailed assessments and investigations after a resident has fallen," "where to find protocols, forms or other tools to guide immediate evalu-

Table 3. Respondent Reports of Fall Prevention Activities That Need to Improve, Are Working Well or Don't Use in Their Own Nursing Homes (n=37-39)[a]

Falls Management Component Activity	Needs to Improve	Working Well	Don't Use
Preventing Falls By New Residents			
Communicating the plan to nursing assistants quickly and executing it carefully	49%	51%	0%
Developing an individualized falls management plan for each new resident's initial weeks	36%	62%	3%
Assessing each new resident for their fall risks guided by a protocol, form or other tool	13%	87%	0%
Investigating a Resident's Fall			
Communicating any immediate care plan changes to nursing assistants and other staff	67%	33%	0%
Getting nursing assistants and other staff to enact immediate changes quickly and carefully	63%	37%	0%
Getting the resident and the resident's nursing assistants to contribute to the investigation and problem solving immediately following the fall	54%	46%	0%
Getting nursing staff to immediately evaluate and investigate all falls guided by a protocol, form or tool	46%	54%	0%
Making any immediate changes in the resident's care plan that are warranted	42%	58%	0%
Team Meetings to Evaluate the Response to a Resident's Fall			
Getting nursing assistants and other staff to enact care plan changes quickly and carefully	65%	35%	0%
Communicating any care plan changes quickly and clearly to nursing assistants	51%	49%	0%
Discussing and evaluating each resident's falls from the day before and any immediate care plan changes in daily team meetings	32%	55%	13%
Getting team to quickly decide on any additional changes in each resident's plan	21%[b]	76%	3%
Changing Your Organization			
Training of new staff in how falls management fits in with other policies in our facility	71%	26%	3%
Provide better support to nursing assistants so they have incentives to achieve fall prevention goals	55%	24%	21%
Semiannual reviews of policies, procedures and documentation standards	34%	53%	13%
Periodic, collective review, identification and analysis of trends in resident falls throughout the facility	24%	76%	0%
Designating falls management as a Quality Improvement measure for your facility	13%	87%	0%
Other (please fill in) _____	5%	0%	0%

[a] Survey question: "Which of the following falls management activities don't you use, which are working well at your facility, and which need to improve?" (Percent responding Needs to Improve.)
[b] Significant difference for type of county ($P<0.003$; urban 3.000 vs rural 2.518) for continuous variable where Don't Use=1, Needs to Improve=2 and Working Well=3 (ie, lower is doing worse at having all components in place and working).

ation of falls that residents experience," and "where to find slide presentations with scripts that you can use to train staff and educate residents about falls management." (Table 5).

Follow-up Questionnaire

Forty-four percent of the staff who responded to the follow-up questionnaire indicated that in the last 7 months they had personally become more aware of falls management resources; 31% reported that in the last 7 months their nursing facility had adopted changes in falls management activities, "at least in part because of ideas inspired by the needs assessment questionnaire and the materials" sent to them, and 31% reported that their nursing facility had begun a process that likely will lead them to adopt changes in falls management activities within the next 6 months. Significantly more rural than urban respondents (42% vs 8%) reported their facility had adopted changes in falls management activities in the last 7 months ($P<0.012$).

DISCUSSION

Our study's return rates for questionnaires of 46% and 53% nearly matched the average rate obtained from nursing home administrators and directors of nursing (47%) in a recent study of 224 US nursing homes where respondents were offered monetary incentives of $10 to $30.[14]

We found only 1 other study that identified barriers to better falls management in nursing homes. That survey asked a differently worded question and response set and rated the need for "buy-in" from residents, staff, and families as the most important barrier, followed by time constraints, the health of residents, a lack of resources (including staff, space and equipment), and communication problems.[15]

In a North Carolina nursing home study,[16] 86% of facilities assessed fall risks among new residents and 81% conducted an investigation after a resident had fallen. In comparison, 100% of the Wisconsin nursing homes that responded to our study were assessing each new resident for their fall risks and conducting an investigation after a resident had fallen.

Response to Intervention

The high proportions of administrators and directors of nursing in our study who reported improving their personal awareness and who reported making changes in their nursing homes sug-

Table 4. Where Respondents Reported Getting Useful Fall Prevention Information in the Last Year (n=38)[a]

Source	Percent Yes
People in Your Nursing Facility	
Occupational therapy (OT), physical therapy (PT) or Speech therapy staff	87%
Nursing staff	79%
Nursing assistants	76%
Nursing home residents or family members	50%
Nursing home administrator	42%
Pharmacy staff	32%
Other	21%
People Outside Your Nursing Facility	
Professional organization staff	47%[b]
Dealers or suppliers of commercial products	40%
State of Wisconsin staff	34%
Nursing staff	26%
OT, PT or Speech therapy staff	24%[c]
Pharmacy staff	18%
Commercial consultant	11%
Nursing home administrator	8%
University of Wisconsin or UW Extension staff	8%
Other	18%
Information, Media or Events	
Conferences, workshops or meetings you attended	82%
Professional journals in your field or other publications	66%[d]
Training sessions held by your nursing home	58%
On-line webinars or other computer-based education	53%
Training sessions held by other nursing homes	13%
Online Information	
Professional organization newsletters or online information	55%
Wisconsin Association of Homes and Services for the Aging online information	47%[e]
Pharmacy Newscapsule or online information	42%
CHSRA's Wisconsin Clinical Resource Center online information	40%
State of Wisconsin newsletters or online information	37%
National AHCA or Leading Edge (AAHSA) online information	13%
US Center for Medicare and Medicaid Services online information	13%
Wisconsin Health Care Association's online information	11%
Nursing home resident and family care giver newsletters or online information	5%
University of Wisconsin or UW Extension online information	3%
Other	8%

[a] Survey question: "Where did you get useful information about ways to improve falls management in the last year?" (Percent responding "Yes" to list of resources)
[b] Significant difference for type of respondent ($P<0.019$; administrators 73% vs directors of nursing 30%).
[c] Significant difference for type of county ($P<0.038$; rural 33% vs urban 18%).
[d] Significant difference for type of county ($P<0.024$; rural 78% vs urban 36%).
[e] Significant difference for type of county ($P<0.033$; rural 59% vs urban 18%).

gested that relatively simple and low cost information dissemination efforts may be useful in efforts to improve nursing home falls management activities. We found 1 existing study that demonstrated lower rates of serious fall-related injuries across a region in Connecticut after an information dissemination intervention.[17] The researchers mailed out a list of resources as we did, but their project also had a staff of outreach workers, enlisted a working group of local clinicians, conducted face-to-face outreach contacts, and used outreach among older adults. In comparison, our intervention approach relied entirely on mail contact and did not include objective measures such as fall rates. In comparison, our very modest intervention did yield self-reported improvements in falls management understanding and reports of changes in falls management activities by about one-third of the nursing home leaders who responded.

Rural vs Urban County Nursing Homes

In our study, significantly more respondents from rural vs urban county nursing homes felt that: (1) low staff to patient ratios were a barrier to better falls management in typical Wisconsin nursing homes, and that (2) getting teams to quickly decide on a care plan were situations that needed to improve in their facility. Rural respondents also tended to get more information from professional journals and from nursing staff outside their own facility, as well as from certain online information sources. Respondents from rural counties were significantly more interested in 3 types of falls management information: (1) how to improve investigations after a resident has fallen, (2) where to find resources to guide investigations after a resident has fallen, and (3) where to find slide presentations with scripts to train staff and educate residents. Respondents from rural counties were also significantly more likely to report that their own nursing home had adopted changes in falls management activities after our intervention than urban residents. These results suggest that a simple information dissemination intervention maybe be of greater benefit to rural than urban nursing homes.

The rationale for promoting health and preventing injury to keep older adults healthy and active as they age is especially relevant for those living in more rural areas. In 2004, 16% of all US nursing facilities (2600) were in highly rural areas located outside both metropolitan and micropolitan (suburban) areas.[18] Rural nursing homes may be able to benefit more than urban nursing homes from falls management activities because rural populations have disproportionately higher rates of unintentional fall injuries and related mortality.[19] A study of older adults living in a community in Texas showed that, compared to urban participants, rural participants entered and exited a community fall prevention program with lower falls efficacy scores, higher health interference scores, and higher days limited from usual activity. Nonetheless, the rural partici-

Table 5. Information Respondents Said They Were Interested In (n=37)[a]

Information	Percent Yes
How to get your facility's staff better at analyzing resident fall data and developing prevention plans	76%
Where to find video presentations you can use to train staff and educate residents about falls management	68%
How to better assess and care for new residents in ways that reduce fall risks during their first weeks	65%
How to make better detailed assessments and investigations after a resident has fallen	62%[b]
How to get all staff to more quickly and consistently adopt changes in individual resident care plans	62%
How to get all staff to more quickly and consistently adopt changes in individual resident care plans	62%
Where to find best practice guidelines for nursing home falls management	60%
Where to find protocols, forms or other tools to guide evaluation of new resident fall risks	54%
Where to find video presentations and other tools you can use to conduct successful nontraditional strength, balance and mobility improvement programs likely to interest residents (eg, yoga, tai chi, etc.)	52%
Where to find protocols, forms or other tools to guide immediate evaluation of falls that residents experience	51%[c]
How to provide support for front line care staff so they have incentives to achieve fall prevention goals	49%
Where to find video presentations and other tools you can use to conduct successful traditional strength, balance and mobility improvement programs likely to interest residents (eg, walking, exercises, etc.)	41%
Where to find slide presentations with scripts you can use to train staff and educate residents about falls management	41%[d]
How to draw on shared values and other motivational sources in ways that motivate front line staff	38%
How to get more accurate information about a new resident from your referral agencies	35%
Where to find electronic medical records systems and clinical decision support systems that include falls management	19%
Where to find other information (please fill in)	8%

[a] Survey question: "Are you interested in obtaining any of the following information about falls management programs?" (Percent responding Yes.)
[b] Significant difference for type of county ($P<0.008$; rural 77% vs urban 27%).
[c] Significant difference for type of county ($P<0.001$; rural 69% vs urban 9%).
[d] Significant difference for type of county ($P<0.014$; rural 54% vs urban 9%).

pants actually benefited more than urban participants from the program because their rates of positive health-related changes achieved after the program were significantly greater than urban participants.[20]

Limitations

The most obvious limitation of our survey was its small size, just 43 nursing homes in 6 counties. There were a total of 399 nursing homes in all of Wisconsin's 72 counties in 2011.[13] Future research could benefit by undertaking a census of all Wisconsin nursing homes. The associated increase in statistical power could allow a clearer characterization of any differences between more rural and more urban counties, between administrators and directors of nursing, and along other dimensions such as facility size or fall injury rates.

Some new research suggests that even adoption of all of the best practice falls management components may not always produce improvements in fall or fall injury rates when conducted by in-house nursing home staff rather than research teams.[16,21-24] A possible explanation for this difference could be that having evidence-based, best practice content for a nursing home falls management program may be of little value unless that nursing home also has open, inclusive, process features. Another consideration may be that improved staff knowledge alone does not necessarily translate into improved care outcomes, as has been demonstrated during training for staff serving older people with dementia.[25] While knowledge may be important, there are other critical components for successful interventions including problem solving, teamwork, and communication skills.[26-28] Future research should consider a study of what happens after nursing homes receive relevant information about best practice falls management.

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