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Structure- and Process-Related Fall Risks for Older Adults Living with Dementia in Nursing Homes

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Aim

The aim of this pilot was to demonstrate the feasibility of assessing perceptions of Directors of Nursing (DON) and to investigate the relationships between fall rates per 1000 resident days (fall rates) and structure-and process-related fall risk factors such as staffing, clinical and administrative policies in nursing homes (NH) with older living with dementia and to determine the psychometric values of the revised Donabedian model-driven Fall and Fall-

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Related Injuries Questionnaire (FFIQ) and the newly developed Environmental Fall Risk Assessment (EFRA) taxonomy.

Background

Falls are the most frequently reported adverse events occurring among older adults living in N The incidence of falls among older adults living with dementia is two to three times higher than among those who are cognitively intact (Harlein, Dassen, Halfens, & Heinze, 2009). Falls in older adults with cognitive impairment result in disability, reduced quality of life, functional decline, fear of falling, and enormous economic costs (Sterling, O'Connor, & Bonadies, 2001; Stevens, Corso, Finkelstein, & Miller, 2006). Besides these consequences, the ever-growing number of older adults with dementia suggests that adequate measures to prevent falls among this population are imperative. Although factors such as motor impairment, behavioral disturbances, and the inability to recognize, discern, and avoid hazards are well-known risk factors for falls (Harlein et al., 2009), the impact of organizational structure- and process-related factors such as staffing and NH policies on falls has not been examined. Issues such as staffing, administrative and clinical policies, and other institutional fall risk factors may have a significant impact on fall rates among older adults living with dementia in NH. The perceptions of DON could provide a better insight to the relationship among staffing, administrative, and clinical policies; and fall rates among this population. This pilot study examined the perceptions of DON regarding staffing, administrative and clinical policies, and includes environmental observation to provide a better understanding of the impact of institutional and environmental factors on falls in NH

Methods

A correlational study design was used for this pilot study. The study was conducted in three stages. The *first stage* involved the use of a survey method (questionnaire) to assess perceptions of the DON about staffing, clinical policies, and administrative policies. The perceptions of the DON were measured by the revised FFIQ, which was hand delivered to the DON in the study area who met the inclusion criteria. In the *second stage*, through observation, the EFRA taxonomy was used to assess the institutional environmental fall risk of the eight randomly selected NH. The *third stage* involved the use of post-survey key informant interviews to obtain feedback from three among the DON (n=12) who participated in the study. Included in this study were NH which: a) were certified for Medicare or Medicaid with at least 60% ambulatory older adults living with dementia and Alzheimer's disease, b) had more than 50 beds, c) had been in operation for at least 3 years, as DON of newer NH are likely to be experiencing a learning curve. These criteria are similar to those used by Temkin-Greener et al. (2009) in a previous NH study.

SPSS 18.0 was used for Descriptive statistics (percentage, mean, standard deviations, and 95% CI) to summarize the demographic data of the DON and NH. Correlation analysis between fall rates and the DON perceptions of staffing and NH policies was also performed. The study protocol was approved by the institutional review board (IRB) of the Medical University of South Carolina.

Results

The majority of respondents was between the ages of 41 and 50 years of age, (50%) and 36.7% were between 31 and 40 years old. About 70% of respondents had served as a DON for at least 6 years. Of the 15 DONs, 80% (n=12) returned the self-report instrument (FFIQ). Also, 10 of the 15 NH that met inclusion criteria were randomly selected to participate in NH EFRA; however, only 80% (n=8) participated in the NH observation. A response rate of 80% for both self-report FFIQ and NH EFRA observation indicates that the perceptions of DONs and NH environmental fall risks can be assessed using the FFIQ and the EFRA taxonomy respectively.

The FFIQ demonstrated a moderate-to-high reliability with a Cronbach alpha of 9 items of the FFIQ and the 3 subscales of *clinical policies* (3 items), *administrative policies* (2 items), and *staffing* (4 items) ranging from 0.72 to 0.90 (Waltz, Strickland, & Lenz, 2005). EFRA also showed a strong criterion-related validity with NH fall rates ($r=0.71$, $p=0.05$). A positive correlation of EFRA with fall rate indicates that higher fall rates are related to higher EFRA scores. EFRA interrater reliability during the pre-testing stage was 81.8%.

In Table 1, correlations between fall rates and the DON's perceptions are reported. Statistically significantly negative correlations were found between fall rates and the perception of the DONs about both clinical policies (-0.60 , $p=0.042$) and administrative policies (-0.68 , $p=0.02$), that is, the perceptions of the DONs about administrative and clinical policies were high in NHs with low fall rates, and a strong positive correlation between fall rate per 1000 resident days and EFRA scores ($r=0.71$, $p=0.03$).

Conclusion

Based on our findings, we conclude that it is feasible to enroll DONs in a study investigating fall risks and environmental observation would be well supported by NHs. Our findings also revealed a moderate-to-strong statistically significant relationship among fall rates, clinical policies, and administration policies. The revised FFIQ and the EFRA taxonomy showed moderate-to-high reliability and validity scores in this small sample, however, further research is needed to validate these psychometric properties.

Relevance to Clinical Practice

Our findings suggest that DON may be able to reduce the rate of falls by targeting NH policies and environmental issues. Also, with further testing the theory-driven FFIQ and EFRA would provide a valid measure of the impact of organizational and environmental issues on NH falls for targeted interventions.

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Table 1

Correlation among Independent Variables and Fall Rates Per 1000 Resident Day

	EFRA SCORE	ADMINISTRATIVE POLICY TOTAL	CLINICAL POLICY TOTAL	STAFFING TOTAL
Correlation (r)	0.706	−0.68	−0.60	−0.29
Significance ^a	0.05	0.015	0.042	0.355
N	8 ^b	12 ^c	12 ^c	12 ^c

Note:^a significance 2-tailed,^b number of NH observed, and^c number of DON who participated in the survey.