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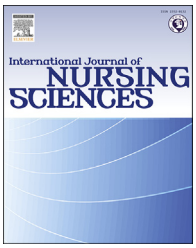

Original Article

Predictors of Falls Efficacy Scale responses among nursing home residents in China

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ABSTRACT

Objectives: The objective of this study was to examine the falls efficacy of older adults in nursing homes and the related predictors of falling.
Methods: A sample of 317 older adults was recruited from 18 nursing homes in the Fujian province of China. The Modified Falls Efficacy Scale (MFES) and Kessler Psychological Distress Scale (K10) were employed to collect data.
Results: The falls efficacy of older adults was moderate (7.80 ± 1.17). The falls efficacy questionnaire item "Get dressed and undressed" scored the highest (9.12 ± 1.440), while "Crossing roads" scored the lowest (5.77 ± 3.371). Multiple regression analysis demonstrated that mental health status, degree of self-care, age and gender were each predictors of the falls efficacy of older adults.
Conclusions: Falls efficacy enhancing programs for nursing home residents should take mental health status, degree of self-care, age and gender into account.

1. Introduction

Falls are the leading cause of both fatal and nonfatal injuries among older adults [1]. Falling is a major public health concern because a fall can result in serious injuries, including fracture, brain injury and death. Fear of falling is common among the elderly and can reduce the self-efficacy and confidence of individuals in this population [3]. Fear of falling during daily activities contributes to a number of harmful outcomes, including an increased risk of actually falling, activity restriction or avoidance, lack of independence, loss of confidence, poorer mental health, depression, and reduced quality of life [4]. Because fear of falling can have a significant impact on patient health, a measure of patient "confidence in carrying out daily activities without falling" has been created to track this important health factor and given the name "falls efficacy." [2] Activity reduction resulting from low falls efficacy has been reported to negatively impact both balance and body function, and these health outcomes, in turn, further lower the level of falls efficacy [5]. Fall efficacy is an effective

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predictor of patient falls and is associated with a significantly longer hospital stays. However, little research to date has been conducted that has focused on the falls efficacy of elderly people in nursing homes in China. Therefore, the aim of this study was to investigate the falls efficacy and related health factors of older adults in nursing homes in China.

2. Methods

2.1. Subject recruitment

Consent was obtained from the managers of 18 nursing homes in Fujian, China. Older adults who met the inclusion criteria were invited to participate in the study and received information about its objectives. If subjects agreed to participate, they were asked to complete a 20–30 minute questionnaire. For those physically unable to fill out the survey, questions and possible answers were read and explained aloud, and the investigator recorded each oral response.

2.2. Subject inclusion criteria

From March 2015 to July 2015, a convenience sample of older adults was recruited from the Fujian province of China to participate in this cross-sectional survey. Inclusion criteria were: (1) $\geq$ 60 years old, (2) admitted to the nursing home $\geq$ 3 months before the survey and (3) able to walk independently (including subjects able to walk independently with the use of walking aids). The exclusion criteria were: (1) inability to verbally communicate due to unconsciousness, mental disturbance, cognitive impairment or other cause, (2) the presence of a severe acute or chronic disease (e.g. severe heart failure or tumors) and (3) unwillingness to participate in this study.

Three-hundred and thirty questionnaires were distributed. After uncompleted questionnaires were excluded, 317 questionnaires were included in the study.

2.3. Measures

2.3.1. Demographics

Social demographic items in the survey included gender, age, marital status, degree of self-care, the presence of any chronic disease and mental health status (see Table 1).

2.3.2. Modified Falls Efficacy Scale (MFES)

The 14-item MFES scale was developed by Hill et al. [6] as a tool to allow elderly subjects to measure their self-perceived fear of falling during daily activities. These activities include dressing, bathing, crossing the road and others (see Table 2). Subject confidence in completing each activity without falling was rated from 0 to 10 (0 = no confidence, 5 = fairly confident, 10 = completely confident). The Chinese version of the MFES scale was translated and reported by Hao et al. [7]

The coefficient of internal consistency (Cronbach's α) was 0.9774 and the split-half reliability coefficient was 0.955 ($p < 0.05$).

Table 1 – Participant characteristics (n = 317).

Item	Score	Statistical value	p-value
Age		6.303	<0.001
60–69	123.10 ± 27.373		
70–79	113.97 ± 23.898		
80–89	104.80 ± 26.958		
>90	105.64 ± 25.115		
Gender		0.373	0.009
Male	113.17 ± 27.063		
Female	105.30 ± 25.911		
Marital status		3.265	0.012
Unmarried	131.82 ± 14.428		
Married	112.12 ± 26.038		
Divorced	104.86 ± 31.671		
Widowed	107.18 ± 26.587		
Separated	81.00 ± 31.113		
Self-care degree		31.353	<0.001
Performs independently	114.31 ± 23.988		
Performs with assistance	87.34 ± 23.666		
Unable to perform	77.71 ± 44.593		
Chronic disease		6.888	0.009
Yes	107.28 ± 26.806		
No	117.02 ± 25.234		
Mental health status		27.236	<0.001
Healthy	121.23 ± 22.727		
Sub-optimal health	106.15 ± 24.820		
Unhealthy	94.29 ± 25.028		
Poor health	88.96 ± 24.955		

n = number of questionnaires; $p < 0.05$.

Table 2 – Modified Falls Efficacy of older adults in nursing homes (n = 317).

Item	Mean ± SD
Get dressed and undressed	9.12 ± 1.440
Prepare a simple meal	9.00 ± 1.752
Answer the door or telephone	8.69 ± 1.865
Walk around the inside of your house	8.62 ± 1.917
Get in/out of bed	8.57 ± 1.912
Get in/out of a chair	8.49 ± 1.940
Take a bath or a shower	8.36 ± 2.069
Light housekeeping	8.09 ± 2.338
Light gardening or hanging out the washing	7.85 ± 2.286
Reach into cabinets or closet	7.74 ± 2.391
Using front or rear steps at home	7.16 ± 2.797
Simple shopping	5.98 ± 3.351
Using public transport	5.82 ± 3.393
Crossing roads	5.77 ± 3.371

2.3.3. Kessler Psychological Distress Scale (K10)

The K10 scale is a screening tool that measures mental distress. Higher mental distress scores indicate an increased probability of having depression or anxiety disorder. The K10 is a Likert scale instrument composed of 10 items, each coded one to five [8]. Previous studies have reported that the scale exhibits excellent internal consistency, with a Cronbach's α of 0.90 [9]. Ma et al. reported a split-half reliability coefficient of 0.7076 and the coefficient of internal consistency (Cronbach's α) of 0.8011 [10].