

Research on the Influence Factors of the Fall Efficiency of the Hospitalized

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ABSTRACT

Keywords: Cerebrovascular disorders, geriatric patients, accidental falls, influence factors.

Author's Contribution

All the authors contributed significantly to the research that resulted in the submitted manuscript.

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Objective: To investigate the fall efficiency and the influence factors of the hospitalized geriatric patients with cerebrovascular diseases.

Method: The Modified Fall Efficacy Scale (MFES), Morse Fall Risk Assessment Scales (MFS), Berg Balance Scale (BBS) and Tinetti Gait Analysis (TGA) were adopted and the combined ways of questionnaires and observation were utilized to investigate the 113 cases hospitalized geriatric patients with cerebrovascular diseases.

Results: The fall efficiency of the geriatric patients with cerebrovascular diseases were 7.85 ± 2.57 scores. The two projects walking up and down stairs and taking public transport means got the lowest scores; The two projects stretching out the hand to the box or the drawer for taking something and sitting up and down to the chair got the highest scores. It was found that three factors had significant influences on the fall efficiency; they were myodynamia of the right upper extremity, Berg balance functions, and gait.

Conclusion: For the sake of helping the geriatric patients with cerebrovascular diseases establish the self-confidence of preventing the falls, the medical workers need take further psychological counselling for the patients and befittingly and specifically improve the fall efficiency of patients and then effectively prevent the occurring of the fall on the basis of improving the balance ability and gait of patients.

INTRODUCTION

The cerebrovascular diseases are common diseases and frequently-occurring diseases in geriatric patients and may cause dysfunctions of movement, sense, and balance, which obviously increase the risks to fall of the patients with cerebrovascular diseases [1]. The geriatric patients with cerebrovascular diseases often fall no matter in the acute stage or the convalescence [1]. Falls not only give rise to physical injuries to patients but also cause the decline of the confidence for self-caring and further recession of functions, which will make patients easier to fall and form the vicious circle [2]. Fall efficiency is one of the most important indexes to reflect the confidence of patients

to prevent the falls and refers to the confidence and ability to avoid occurring falls during the process of proceeding activities in people's daily life [2]. The survey indicates that the fall efficiency of the patients with high risks to fall is obviously lower than the patients with middle and low risks to fall [3]. The patients with low fall efficiency are lack of confidence to not occur fall during daily activities, therefore, the possibility of fall is bigger [4]. One of the reasons that cause falls to the hospitalized geriatric patients with cerebrovascular diseases is that patients do not realize the shortcomings of their capacities, in other words, they often make too high or too low judgements about their own capacities so that they are blindly confident or excessively lack of

confidence, thus the falls occur [5]. At present, the practices on the prevention for the falls of the patients with cerebrovascular diseases during the hospitalization mainly focus on the aspects of the diseases, body functions and environment. But there are not enough attentions to be paid towards the confidence and capacities or the problems in mental aspects that can prevent falls. This survey aims to investigate the fall efficiency and influence factors of the hospitalized geriatric patients with cerebrovascular diseases and is expected to early identify the abnormalities of the fall efficiency of the geriatric patients with cerebrovascular diseases and take specific mental intervening measures to prevent the occurring of falls.

Objects of Study

The selection for the objects of study. From August 2010 to June 2011, the methods of convenience sampling were adopted to select 113 cases geriatric patients with cerebrovascular diseases who hospitalized in neurological department of XX top three hospitals of Beijing. The standards for selecting patients: with clear consciousness; age \geq 60; conformed to the diagnosis standards approved by the Fourth National Cerebrovascular Disease Conference; the stable state of disease during the first 1 to 2 weeks after the hospitalization; patients who were informed to the research and agreed with cooperating. The exclusion criteria: patients who had to stay in bed and could not ambulate out of the bed completely; patients with limitation of motion caused by other combined severe diseases. The self-designed general materials were adopted to collect the general materials of the hospitalized patients. The general materials mainly contained the age, sex, degrees of education, histories of diseases, histories of falls and times of falls, and all the patients were interviewed face to face by the researchers and all the materials were recorded on the basis of the medical histories of patients.

General Materials of the Objects of Study

The objects of study were 113 cases in total. The ages of them were from 60 to 84 years old with average values of 70.88 ± 6.25 years old. Male patients were 80 cases which accounted for 70.8%; Female patients were 33 cases which accounted for 29.2%. For the sake of degrees of education, 61 cases were equal to or above the junior high school (54%), and 23 cases were senior high school

(20.3%), and 29 cases were equal to or above the junior college (25.7%). The medical diagnosis of the objects of study contained intracranial and extracranial arteriosclerosis, arterial aneurysm, cerebrovascular disorder and vascular malformation of the spinal cord. The intracranial and extracranial arteriostenosis contained carotid artery stenosis, vertebral artery stenosis, subclavian artery stenosis, basilar artery stenosis and middle cerebral artery stenosis, and the degrees of artery stenosis were from 25% to 90%. The myodynamia of upper limbs of patients varied from 0 to 5 grades, and the myodynamia of lower limbs varied from 2 to 5 grades. The arms and legs of patients had normal sense or feeling of numbness. 74 cases had courses of diseases under six months, which accounted for 65.5%; 39 cases had courses of diseases above six months, which accounted for 34.5%. 39 cases had histories of falls in total, which accounted for 34.5%. Among the 39 cases, 17 cases had more than one history of falls, which accounted 43.6% for the 39 cases; 35 cases had pre-operative histories of falls, which accounted 89.7% for the 39 cases. The histories and times of falls referred to those that happened during the process of the diagnosis of the cerebrovascular diseases.

METHODOLOGY

Methods of collecting data

There were three data collectors including researchers, and the measuring methods for questionnaire scales were uniformly trained by the researchers. The questionnaire survey was adopted to record the fall efficiency of patients and were filled in by patients themselves or the investigators on the basis of the realities. The measurements for the balance ability, gait, myodynamia and sense of limbs were uniformly and objectively evaluated by the researchers. The researchers acquired the patients' anamnesis and diagnosis and therapy methods for the patients by means of looking up the illness records. 113 data were collected in total and all of them were effective questionnaires.

The research tools

Modified Falls Efficiency Scale(MFES): The MFES in Chinese version modified by Yanping Hao *et al.* was adopted to measure the confident degrees that the geriatric patients did not fall when proceeded dressing, having a bath, walking and other daily

activities [2]. The MFES in Chinese version had 14 items, and each item was set up with 0 to 10 scores. 0 score meant patients were not confident at all; 5 scores meant patients were generally confident; 10 scores meant patients were completely confident; The final scores were the average scores of the total scores of all items. The lower scores represented the lack of confidence. 0 to 4 scores represented that the level of fall efficiency was low; 5 to 9 scores represented that the level of fall efficiency was middle; 10 scores represented that patients had enough confidence. The coefficient Cronbach's α of this scale in Chinese version was 0.977 and the content and validity coefficient were from 0.637 to 0.926. The measuring time for this scale only needed 5 to 10min, which could provide a valuable reference to the evaluation for fall efficiency of the geriatric patients with lower balance ability and move functions [2].

The assessment scale for the risks factors of falls

Morse Fall Scale(MFS) was recognized as the standard quoted tool to especially evaluate the risks of falls of the hospitalized patients [6]. MFS(CMFS) in Chinese version was a kind of evaluation scale with multistage estimations and was used to test the risks of falls. The core contents of MFS were made of six items: histories of falls, another diagnosis, walking aid, intravenous injection treatment/ immobilization for heparin, gait and mental states. Each item was set up 0 to 25 scores. The scoring methods of the scale: six core clause were given corresponding scores on the basis of the certified classification standards by the experiments, the total scores referred to the aggregate scores of all the clauses. The aggregate scores of 0 to 24 scores meant that patients were with 0 risks of falls; 25 to 44 scores meant that patients were with low risks of falls; the aggregate scores above 45 scores meant that the patients were with high risks of falls [7].

The measurements for the balance functions and gait

The Berg Balance Scale(BBS) and Tinetti Gait Analysis(TGA) were adopted to measure the balance functions and gait of the objects of study. There were 14 items in Berg Balance Scale in total. Each item was set up with 0 to 4 scores and the aggregate scores were from 0 to 56 scores. Patients with aggregate scores of less than 20 scores meant the balance functions of them were poor; the higher

scores patients got, the stronger balance functions they got. There were 8 items in TGA scale in total. Each item was set up with 0 to 2 scores and the aggregate scores were from 0 to 12 scores. The higher scores patients got, the more normal gait they had.

Statistical methods

The statistical analysis software SPSS 13.0 was used to count and manage the descriptive statistics, analysis of variance, coefficient analysis correlated to Pearson and Logistic multivariate regression analysis of all collected data.

RESULTS

Overall fall efficiency and indexes of geriatric patient's cerebrovascular diseases

The results of this research showed that the fall efficiency of geriatric patients with cerebrovascular diseases reached 1.79 to 10.00 scores and the average values were 7.85 ± 2.57 scores which belonged to the middle level. Among the objects of study, 36 cases got full mark of 10 scores, which accounted for 31.6%. The items that most patients got the lowest scores were walking up and down stairs and taking public transport means, and the scores patients got from those two items were respectively 6.91 ± 3.44 scores and 6.99 ± 3.88 scores; The items that patients got the highest scores were stretching out the hand to the box or the drawer for taking something and sitting up and down to the chair, and the scores patients got from those two items were respectively 9.12 ± 1.68 scores and 9.10 ± 1.62 scores. The results of research showed that the average scores of the risks of falls of patients were 35.18 ± 22.42 scores. The overall level of patients was in low risks of falls.

34 cases (30.1%) were with 0 risks of falls; 42 cases (37.2%) were with low risks of falls; 37 cases (32.7%) were with high risks of falls. The average scores of Berg balance functions of patients were 47.86 ± 11.67 scores, and the average scores of TGA of patients were 9.50 ± 2.92 scores.

Comparison between fall efficiency of geriatric patients with cerebrovascular diseases

The results of t-test of the independent samples and the one-way analysis of variance revealed that compared with the female patients, the scores of fall efficiency of male patients were higher; compared

with the patients with courses of diseases of less than 6 months, patients with courses of diseases of more than 6 months got higher scores of fall efficiency; compared with the patients with histories of falls, patients without histories of falls got higher scores of fall efficiency; compared with patients with low and high risks of falls, patients with zero risks of falls got higher scores of fall efficiency; all the differences had statistical significance ($P < 0.05$) (Table 1).

Relative factors analysis fall efficiency geratic patients cerebrovascular diseases

The results of relative coefficient tests showed that the myodynamia of right upper limb, myodynamia of left lower limb, sense of left extremities, balance functions and gait were obviously correlated to the fall efficiency ($P < 0.05$) (Table 2).

Multi-factor regression analysis on the fall efficiency of geriatric patients with cerebrovascular diseases

The scores of fall efficiency were regarded as the dependent variables, and the sexes, courses of disease, histories of falls, degrees of risks of falls, the myodynamia of right upper limb, myodynamia of left lower limb, sense of left upper extremity, sense of right lower extremity, Berg balance functions and grades of gait and other factors were regarded as the independent variables to proceed the regression analysis of Logistic. The P value of the introduced variables was set as 0.05, the P value of eliminated variables was set as 0.10, and the three variables, the myodynamia of right upper limb, Berg balance functions and gait concluded by the regression analysis of Logistic were put into the regression equation. The overall explanation ratio was 79.7% (Table 3).

Table 1. Comparison of the fall efficiency between the research objects.

Projects		n	$\bar{x} \pm s$	t or F value	P value
Sex	M	80	118.48±31.28	4.240	<0.001
	F	33	89.00±38.71		
Age (years old)	60~69	56	105.93±40.50	0.702	0.498
	70~79	43	114.53±31.06		
	≥80	14	111.29±31.60		
Degrees of education	Equal to or above the junior high school	61	103.79±39.96	2.757	0.068
	Senior high school	23	124.04±17.76		
	Equal to or above the junior college	29	111.41±35.77		
Course of disease (months)	<6	74	121.46±23.21	5.234	<0.001
	≥6	39	87.87±45.13		
Presence of operation	Yes	49	108.35±37.31	-0.391	0.697
	No	64	111.03±35.31		
Presence of fall	Yes	39	86.95±36.51	-5.513	<0.001
	No	74	121.95±29.52		
Fall times	1 time	22	91.91±40.24	0.964	0.341
	≥2 times	17	80.53±31.04		
Fall risks	Zero risk	34	127.18±22.07	7.498	0.001
	Low risk	42	108.10±40.97		
	High risk	37	95.97±34.63		

Table 2. Analysis on the relative factors of the fall efficiency of the research objects.

Projects	Pearson's r value	P value
Myodynamia of left upper extremity	0.141	0.136
Myodynamia of right upper extremity	0.326	<0.001
Myodynamia of left lower extremity	0.234	0.013
Myodynamia of right lower extremity	0.129	0.175
Sense of left upper extremities	0.269	0.004
Sense of right upper extremities	0.141	0.137
Sense of left lower extremities	0.210	0.025
Sense of right lower extremities	0.169	0.173
Equilibrium functions of Berg	0.844	<0.001
Gait of TGA	0.809	<0.001

Table 3. Regression analysis of Logistic on the fall efficiency of research objects.

Factors	Parameter estimation	Wald value	P value	OR value	95%CI
Constant terms	8.165	2.361	0.001	0.773	5.594~10.824
Myodynamia of right upper extremity	0.585	0.170	0.001	0.228	0.248~0.922
Berg balance scale	0.162	0.021	0.000	0.732	0.121~0.202
TGA	0.345	0.079	0.000	0.392	0.189~0.502

DISCUSSION

Fall efficiency hospitalized geriatric patient's cerebrovascular diseases-the middle level

The results of this research revealed that the hospitalized geriatric patients with cerebrovascular diseases who had low and high risks of falls accounted for 69.6%, which was similar to the research results of Junhong Zhang that the hospitalized geriatric patients of 65.7% were with middle risks of falls and patients of 16.2% were with high risks of falls [3]. And the results also indicated that most of the hospitalized geriatric patients, especially the patients with cerebrovascular diseases had risks of falls. The research results also revealed that the fall efficiency of geriatric patients with cerebrovascular diseases was in middle level and only patients of 31.6% got 10 scores for the sake of fall efficiency, which indicated that the geriatric patients with cerebrovascular diseases who had risks of falls were lack of confidence in preventing falls.

The research results showed that the fall efficiency of female was lower than male, which was similar to the research results of Wenjuan Zhu [8]. Although the above-mentioned feature of demography was the

unchangeable factor for the sake of preventing falls, it still could be regarded as a warning to alert nurses not only to help female patients establish confidence of preventing falls but also to prevent the occurring of incidental falls of male patients because of the blind self-confidence during the process of caring for the geriatric patients. At the same time, histories of falls may cause long-term influence on mental aspect to geriatric patients and make them give way to dismal, impatience, anxiety and declining of self-confidence and other negative emotions [9,10]. This research also revealed that the fall efficiency of patients with histories of falls was lower. Those patients always dreaded doing activities due to the fear of falling once again. Therefore, their physical capacities for actions declined, which caused further declining of physical balance abilities and self-confidence and increased more risks of falls on the contrary.

Multiple factors jointly influenced on the fall efficiency of geriatric patients with cerebrovascular diseases. The results of regression analysis of multiple factors revealed that the fall efficiency of patients with weak myodynamia of right upper limb, poor balance function, and reeling gait was low. There were three factors that influenced on the fall efficiency of

patients with cerebrovascular diseases, and they were myodynamia of right upper limb, Berg balance functions and gait. The research results of Ashburn indicated that among the prediction results of multivariate regression analysis for risk factors of falls of stroke patients within 6 months after discharging from hospital, two high-risk factors, namely fall tendency in hospital and dysfunction of upper limbs were the mainly relative factors that influenced on the falls after discharging from hospital. In other words, the fall tendency in hospital and dysfunction of upper limbs may cause the occurrence of falls after patients discharging from hospital [11]. Similar results occurred in this research that the myodynamia of right upper limb had influence on the fall efficiency of patients. The reason may be that patients of 78.2% were right-handers, thus their first response usually was to use their right upper limb to prevent the risks when encountered the sudden dangers [2]. The right upper limb placed supporting and protective role in preventing the occurrence of lean and falls of body. Therefore, it was easy to understand that the myodynamia of right upper limb had influence on the self-confidence of patients to prevent falls, namely the fall efficiency.

Poor balance abilities and reeling gait were the main reasons that caused falls, and the balance abilities and gait directly influenced on the fall efficiency of patients [13]. 130 risk factors that caused falls occurred among 38 pieces of research on the falls of the community elderly, for instance, ages, eyesight, balance abilities, strength of lower limbs, gait, daily living abilities, cognitive defects and environmental factors and so on [13]. And the declining of dynamic balance abilities and histories of falls were the two key factors to cause repeatedly falls to the elderly, those above-mentioned factors directly foreboded the occurrence of falls of patients [14]. Some researchers indicated that the declining of self-confidence of body balance during doing activities was the determinant factor to predict the falls of patients [15]. Therefore, the factors which influenced on the fall efficiency could predict the occurrence of falls to a great extent. Among these research results, some conclusions were inconsistent with above-mentioned results. For instance, among the chronic stroke patients, whether the falls occurred or not, and the occurrence of one time fall or repeatedly falls were irrelevant with the balance abilities and capacities for actions of patients and may be correlative to the reactiveness to balance or the interactions with the environment during the

movement process [16]. Otherwise, some researchers indicated that those patients who stood up from the chair and could not independently stood still were with the highest falls risk, those patients who could not stood up from chair by themselves and could not independently stood still at all were with the lowest ratio of falls [17]. Therefore, the above-mentioned issues warned the medical workers that except for those patients with poor static balance abilities and gait, more attentions should be paid to those patients who easily lost their balance when did activities.

Enlightenment prevention falls elderly patients cerebrovascular diseases

Enhancing the psychological counselling for the elderly patients with low fall efficiency: In practical work, more work should be paid to enhance the psychological counselling for the elderly patients with cerebrovascular diseases for the sake of preventing falls, especially for those patients with low fall efficiency, for instance, female patients, patients with long-term courses of disease, patients with histories of falls and patients with high risks of falls. Early identification and diagnose, early propaganda and education, and some intervening measures were very useful to help patients overcome the fears for falls on a psychological level. Widespread propaganda in the hospitals and communities would give full play to the functions of families and society systems, thus relieve patients' psychological burdens [18]. The main work was to enhance the consciousness of preventing falls of patients and caregivers. Generally, the knowledge levels of the caregivers of inpatients with cerebrovascular diseases were poor. Therefore, the medical workers should attach importance to the education and training of preventing falls for the caregivers of inpatients with cerebrovascular diseases, and targeted propaganda and education were necessary [19]. At the same time, more work should be done to accelerate the formation of positive attitude to prevent falls for patients and caregivers, correct misconducts and promote the formation of fine conduct to prevent falls [19].

Enhancing skill training preventing falls patient's low efficiency

These research results showed that patients with weak myodynamia of right upper limb, poor balance abilities and reeling gait got lower fall efficiency. Medical workers should not only enhance patients to

recognize the caution functions but also pay attention to the training of balance functions and capacities for action with regard to those patients. Medical workers should train those patients who had poor functions of right upper limb how to neatly use the limb which was with better functions to take remedial measures for the sake of preventing the occurrence of falls in case of emergency, enhance the training of balance functions and gait with regard to those patients who had poor balance abilities and reeling gait and improve their abilities and self-confidence of preventing falls. What need reminds is that in the clinical nursing work, the medical workers should pay attentions to those patients with low fall efficiency, and meanwhile should not relax vigilance to those patients with high fall efficiency in case the falls occurred. Most falls happened by accident or because of the carelessness of patients during their hospitalization. In other words, those falls were irrelevant with the body states, static balance and gait of patients, on the contrary, those falls were correlated to emotions, barriers, and adjustment for the balance during movement [16]. Therefore, with regard to the high-risk groups, namely the elderly patients with cerebrovascular diseases, it was not worthy to decrease the patients' self-confidence of preventing falls due to inordinate cautions, at the same time, it was not worthy to decrease the vigilance of falls due to the blind self-confidence of patients.

CONCLUSION

For the sake of helping patients with cerebrovascular diseases establish self-confidence of preventing falls and effectively preventing the occurrence of falls, the medical workers need to take further psychological counseling for the patients and improve the self-confidence of patients to prevent falls on the basis of improving the balance abilities and gait of patients. But what calls for special attention is that blindly improving patients' fall efficiency and taking that as the ultimate aim are impracticable. From one perspective, blindly improving patients' fall efficiency may increase the risks of falls. Therefore, only appropriate and targeted measures should be taken to improve the fall efficiency of patients, which can indeed effectively prevent the occurrence of falls. Further discussion and researches are necessary with regard to how to take effective measures to

improve the fall efficiency of patients and decrease the risks of falls.

REFERENCES

1. Chen J, Shi F, Li Z. The fall factors of brain stroke patients. *Chinese Journal of Clinical Rehabilitation*. 2004; 8(7): 132.
2. Hao Y, Liu X. Research of application of the Modified Fall Efficacy Scale of Chinese version in the aged in China[J]. *Chinese Journal of Nursing*. 2007; 42(1): 19-21.
3. Zhang JH, Su TJ, Wang HJ, Yang XH. Correlation between Fall Risk and Psychological Efficiency in Elderly Inpatients. *Journal of Nursing*. 2011; 18(5A): 30-32.
4. Zhou J, Li Y. Research on assessment methods and measuring scale of fall risks of the elderly patients[J]. *Journal of Nursing*. 2008; 15(12): 11-13.
5. Lai Q, Zhang M, Chen D. The fall risk factors and nursing of the elderly inpatients with cerebrovascular diseases. *Cardio Cerebral-Vascular Disease*. 2009; 9(1): 77-8.
6. Chow SK, Lai CK, Wong TK, Suen LK, Kong SK, Chan CK, Wong IY. Evaluation of the Morse Fall Scale: applicability in Chinese hospital populations. *Int J Nurs Stud*. 2007; 44(4): 556-65.
7. Tang W, Gan X, Liu Z, Huang Y. Feasibility of the Chinesized Morse Fall Scale in Clinical Nursing. *Journal of China Medical University*. 2010; 39(11): 943-6.
8. Zhu W, Hao Y. Analysis on the states of fall efficiency and influence factors of the community elderly. *Modern Preventive Medicine*. 2010; 37(16): 3065-8.
9. Yu P, Tan Z, Wu D. Incidence of falls in a community-dwelling elder population in Beijing. *Chinese Journal of Geriatrics*. 2006; 25(4): 305-8.
10. Yang J, Yang Y. Analysis and investigation on the incidence of falls in university-community dwelling older population in Yichuan. *Modern Preventive Medicine*. 2008; 35(18): 3536-7.
11. Ashburn A, Hyndman D, Pickering R. Predicting people with stroke at risk of falls. *Age Aging*. 2008; 37:270-6.
12. Kong Y, Liu W. Analysis on the left and right handedness of children of 3 to 5 years old. *China Modern Medicine*. 2009; 16 (14):157.
13. Zhou D, Li Y. Risk factors of falls in community-dwelling elder persons-A systematic review. *Journal of Environmental & Occupational Medicine*. 2007; 24(1): 87-91.
14. Li L, Wang S, Jin C. Investigation on risk factors of multiple falls in elderly people. *Chinese Journal of Disease Control & Prevention*. 2007; 11(3): 281.
15. Pang MY, Eng JJ. Fall-related self-efficacy, not balance and mobility Performance, is related to accidental falls in chronic stroke survivors with low bone mineral density. *Osteoporos Int*. 2008, 19: 919-27.
16. Harris JE, Eng JJ, Marigold DS, Tokuno CD, Louis CL. Relationship of balance and mobility to fall incidence in people with chronic stroke. *Physical Therapy*. 2005; 85(2): 150-8.

17. Lord SR, March LM, Cameron ID, Cumming RG, Schwarz J, Zochling J, Chen JS, Makaroff J, Sitoh YY, Lau TC, Brnabic A. Differing risk factors for falls in nursing home and intermediate-care residents who can and cannot stand unaided. *JAGS*. 2003; 51(11): 1645-50.
18. Wang Z. Analysis of causes on falls of the elderly patients and nursing strategies. *Journal of Nursing*, 2006, 13(8):46-7.
19. Guo H, Tian J, Wan Q. Fall prevention knowledge, attitude and practice among attendants of hospitalized elderly patients with cerebrovascular diseases. *Chinese Journal of Nursing*. 2011; 46(3): 270-2.