

## Influence of personality traits on falls of patients with Parkinson's disease

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### Abstract

We examined 41 individuals who had been hospitalized for Parkinson's disease to determine whether or not individual personality had an influence on their falls. For the 12 items of YG examination, the median without falls and the median number of patients with falls were tested and  $P > 0.05$  in both cases, and no significant difference was found. Three of the four patients with falls had higher scores than the upper limit of the reference value are C: a category of recurrence tendency (remarkable mood change, surprising property) and S: social outward (interpersonal outgoing, tendency to prefer social, social contact). Three out of four patients with falls were the items whose score was lower than the lower limit of the reference value were items of Co: not cooperative (many people complained, never trusting person).

**Key words:** Parkinson's disease, personality traits, falling factors

### Introduction

Patients with Parkinson's disease are characterized by tremor, muscle contraction, immobility, and postural reflex disorder with a high risk of falls. In A ward, the number of falls in Heisei 20 years was 77. Among them, Parkinson's disease patients had 67 falls, accounting for 87% of the total. To prevent falls, nurses take measures such as explaining that they should push the nurse call button before the action, adjusting the environment of the hospital room, and moving to a room closer to the staff station as a measure against falling. However, patients often act without pushing nurse call buttons. Even if we explain how to take care when moving, the patient will not take notice of this. We thought that the personality character of the patient might be related to falling factors. We focused on the personality traits of patients factors with Parkinson's disease, and considered whether these were related to falls, and worked on

this research to clarify the relationship of personality traits to falls.

### Subjects and methods

The subjects were 41 patients with Parkinson's disease (Hoehn & Yahr severity II to IV)

The survey items covered the following five points. (1) Number of falls during hospitalization period (2) Gender (3) Age (4) Hoehn & Yahr severity (5) Consciousness survey at falling hospitalization at hospitalization (6) Yatabe-Gilford personality test (YG test). In the YG test, D: depressive property (nausea, pessimistic mood, strong guilt feeling), C: regression tendency (remarkable mood change, surprising property), I: strong inferiority feeling (lack of confidence O: It is not objective (fancy, hypersensitive, subjectivity), Co: it is not cooperative (Ag nature: bad affection (aggressive, social activity; however, if this property is too strong, it tends to become a social malady), G: general activity (active T:

thinking outward (non-deliberate, meditative and reflective opposite tendency), rhetoric (casual, active, impulsive nature) A: Dominance (social leadership, nature with leadership), S: Socially outward (interpersonal outgoing, social, social Tend to prefer the touch), there are 12 items.

Analysis method: Analyze (1) - (5) on the presence or absence of falling by using a nonparametric test. The significance probability was less than 5%. Next, 95% confidence interval [(Confidence interval) and 95% Ci after each] YG examination 12 items of a patient without fall was determined respectively.

### Ethical considerations

The research was approved by the ethics committee of A hospital. We explained that we do not have disadvantages to free participation in research and refusal to participate. In addition, it was explained that the obtained data would not be used for research other than research on academic presentations and the like. We obtained consent using a consent form.

### Results

Of 41 patients, 37 had no falls and four had falls during the hospital stay. The breakdown of patients without fall was 22 males and 15 females. The median age was 72 years. In the consciousness survey at the time of hospitalization, 36 responded that "I want myself for myself" and five said "I would like a nurse to help me." The breakdown patients were two males and two females. The median age was 81 years. One answered, "I want myself", and three answered "I want a nurse to help me." Moreover, from the median of 12 items of the YG examination, the score of T and S was high in patients without falls, and the score of C and S was high in patients who had falls.

The Man-Whitney U test was carried

out on the 12 items of the YG examination with or without falls, and it was  $P > 0.05$  in both cases, and there was no significant difference. (Table 1). We obtained 95% Ci for each of the twelve items of the Y-G examination of patients without falls, and set the value as a reference value. Then, the reference value was compared with 12 items of the YG examination of four patients with falls. As a result, four patients who had falls had more than eight items out of the 12 items of the YG examination out of the range of reference values. For the patients with falls, Patient A had high scores for D, C, G, T, and S, and the scores for I, N, O, Co, R were low. Patient B had high scores of seven items C, I, N, O, Co, Ag, S, and the scores for three items G, R, T were low. Patient C had high scores for four items C, I, O, R, and the scores of Co, T, A, S of four items were low. Patient D had high scores for six items D, C, I, N, O, Co, and the score of six items Ag, G, R, T, A, S were low. Three out of four patients who had falls had high scores for C items and S items, and the scores for the Co items were low. (Table 2).

### Discussion

Compared to the median age from four patients with falls, patients who had falls were nine years older than those who did not fall. There was a possibility that function deterioration due to the age was one of the causes. From the median result of 12 items of the YG examination, there was a strong tendency not to mind that patients without fall were sociable and small. Patients who had falls were sociable and had a strong tendency of emotional ups and downs. There was a tendency for a patient who was sociable but whose emotional ups and downs were intense toppled. In addition, cooperativeness was low in three out of four falling patients. When the patients take collective action, their pace may be disturbed, so they may fall. It is

necessary for nurses to constantly communicate with the patient and to act calmly. A limit of this research is that accurate values were not obtained because there were only four people with falls. We plan to continue studying the relevance between personality traits and falls by increasing the number of subjects in the future.

Table 1 Comparison of 12 items of YG test results between two groups with or without falling. Man-Whitney's U test.

YG test	D	C	I	N	O	Co	Ag	G	R	T	A	S
P	0.71	0.19	0.58	0.63	0.91	0.39	0.24	0.42	0.66	0.9	0.83	0.26

Table 2. Results of YG test of patients with fall (95% Ci) and YG test value of patients (A-D) with falls

	Patients with fall				Patients without fall	
	Patient A	Patient B	Patient C	Patient D	Y-G test 95%Ci (Upper/lower limit value)	
D: Depression	10	7	7	0	9.86	6.19
C: Recurrence tendency	13	12	13	2	9.4	6.64
I: Sense of inferiority	4	10	13	0	9.9	6.74
N: Nervousness	2	12	8	4	9.48	6.4
O: : Not objective	6	12	10	4	9.31	6.68
Co: Not cooperative	3	12	5	2	8.3	5.8
Ag: Bad affection	8	12	8	14	9.44	7.3
G: General activity	14	7	8	18	10.8	7.99
R: Carefree	8	7	12	13	10.7	8.14
T: Thinking outwardly	13	9	8	13	12.3	9.6
A: Dominance	8	9	0	20	9.52	6.53
S: Socially outgoing	16	16	8	12	11.9	9.1