

Factors Affecting Stress in Chronic Stroke Patients who Receive Rehabilitation

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Introduction

In spite of advances in acute treatment, many stroke patients had debilitating sequelae. Therefore, they might be stressed including impaired motor function. However, previous studies focused on depressive mood in chronic stroke patients. In this study, we aim to evaluate the level of stress in patients with chronic stroke and identify which factor influence on their stress.

Method

We conducted this prospective study with patients who are over 18 years of age and whose symptoms developed for more than 6 months. The patients who visited outpatient clinic of rehabilitation department from 2016 to 2018 were included. They confirmed diagnosis of stroke with radiological evidence by either CT scan or MRI. Adult Self Report (ASR) were used to check the stress in the patients. ASR is a reliable and valid self-report tool and was designed to assess the extent of a variety of emotional/behavioral problems in individuals. ASR consists of three broad-spectrum scales (Internalizing Problems, Externalizing Problems and Total Problem). Questionnaires were distributed to the patients, in which questions include education level, period after the disease outbreak, and annual income. Information about the neuropathic pain, spasticity, sleep disorder, bladder problems, and bowel problems was also collected.

Results

Thirty patients were included (Table 1). The mean age was 56.5 years and patients with college graduate were most common (13 patients, 43.3%). The annual income of most patients (17 patients, 56.7%) was less than 10 million won. There were 8 patients complaining of neuropathic pain, 9 patients complaining of spasticity, 7 patients complaining of sleep disorder. Also, 8 and 6 patients complained of bladder and bowel problems, respectively. When the relationship between the stress in patients and the factors were investigated (Table 2), total problems of patients were related with the annual income ($\rho=-0.391$, $p=0.033$), neuropathic pain ($\rho=-0.457$, $p=0.011$) and sleep disorder ($\rho=-0.188$, $p=0.041$). Internalizing problems of patients were also related with the annual income and neuropathic pain, but they were not related to other factors, such as spasticity, sleep disorder, period after the disease outbreak, bladder and bowel problems.

Conclusion

We identified that factors affecting stress in chronic stroke patients. Neuropathic pain, annual income, and sleep disorder affected the stress in chronic stroke patients.

However, considering the limitations of our study, such as small number of patients, future studies are needed.

Table1. Baseline Characteristics of Chronic Stroke Patients

Characteristics		
Total number (n)		30
Age (years)		56.5±18.0
Male : Female (n)		15:15
Education level (n)	Under high school graduate	4
	High school graduate	12
	Collage graduate	13
	Graduate school graduate	1
Diagnosis (n)	Cerebral infarction	17
	Cerebral hemorrhage	13
Period after the disease outbreak (years)		5.3±5.6
Annual income (n)	<10 million (won)	17
	10 million≤, <30 million (won)	2
	30 million≤ , <50 million (won)	5
	50 million≤ (won)	6
Neuropathic pain	Absent	8
	Present	22
Spasticity	Absent	9
	Present	21
Sleep disorder	Absent	7
	Present	23
Bladder problems	Absent	8
	Present	22
Bowel problems	Absent	6
	Present	24

Values are presented as number (%), years, or mean ± SD.

Table2. Relationship between the Stress in Patients and the Factors Associated with Them

		Spearman correlation coefficient (rho)	p-value
Total problems of patients	Annual income	-0.391	0.033*
	Education level	-0.257	0.170
	Spasticity	-0.261	0.163
	Neuropathic pain	-0.457	0.011*
	Sleep disorder	-0.188	0.041*
	Bladder disorder	-0.188	0.320
	Bowel disorder	-0.130	0.492
	Period after the disease outbreak	0.106	0.578
Internalizing problems of patients	Annual income	-0.434	0.017*
	Spasticity	-0.1841	0.338
	Neuropathic pain	-0.406	0.026*
	Sleep disorder	-0.342	0.064
	Bladder disorder	-0.157	0.407
	Bowel disorder	-0.063	0.742
	Period after the disease outbreak	0.271	0.147
Externalizing problems of caregivers	Annual income	-0.215	0.254
	Neuropathic pain	-0.329	0.076
	Sleep disorder	-0.288	0.123

*p<0.05 by Spearman correlation analysis.

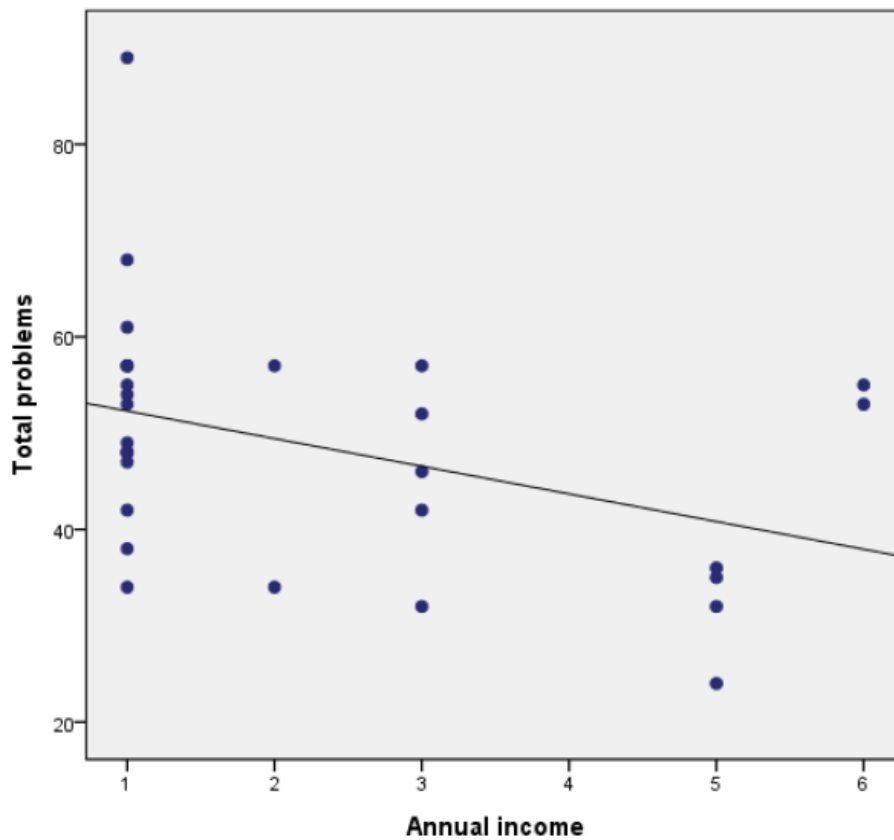


fig 1. Relationship between the stress in patients and annua income