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Original Article

The Relationship of Functional Status with Self-Efficacy and Resilience in Stroke Patients

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ABSTRACT

Objective: Stroke is a health problem which significantly affects the quality of life of patients experiencing cognitive and functional disability. The aim of this study is to examine the relationship of functional independence with self-efficacy and resilience in stroke patients.

Methods: The research was carried out in the Neurology Service of Kütahya Health Sciences University Evliya Çelebi Training and Research Hospital between February 2021 and August 2021. In this context, the patient information form, functional independence, stroke self-efficacy, and adult resilience scales were applied face-to-face to 110 patients who had a stroke.

Results: According to the results, a positive and advanced correlation was determined between functional independence and stroke self-efficacy levels ($P < .05$). Accordingly, as the level of functional independence increased, the level of self-efficacy also increased. Besides, when functional independence and resilience scale were evaluated, a moderately positive relationship was determined with resilience ($P < .05$). According to these data, as the level of functional independence increased, resilience level also increased.

Conclusion: The results demonstrate that as the patients' functional independence levels increase, their self-efficacy and resilience levels also increase.

Keywords: Functional status, resilience, self-efficacy, stroke

Introduction

Cerebrovascular disease, or stroke, is a blockage of the blood vessels leading to the brain.[1] The World Stroke Organization published a report showing more than 80 million stroke patients globally in 2019, and there are over 13.7 million new stroke patients diagnosed each year.[2] Cardiovascular diseases account for 31% of deaths in 2016, that is, about 17.9 million deaths. About 85% of these deaths were due to stroke and heart attack.[3] When the death rates are analyzed according to their causes in Turkey, the circulatory system diseases are in the first place with 36.8% in 2019. When deaths from circulatory system diseases are examined according to underlying causes of death, 22.2% of the causes of death are due to cerebrovascular diseases.[4]

The consequences of stroke are often complex and variable. Stroke not only affects neurological and physical functions but also causes dependence in daily living activities in survivors, and also causes cognitive and mental disorders.[5] More than half of stroke patients have a disability. This situation causes dependence of functional status in individuals.[6] The concept of functional status is used to evaluate the patient. Functional status refers to the ability of people to self-care and perform certain roles and tasks. Functional status is an indicator of the individual's physical, mental, social well-being, and general health status. Health professionals often get information about the functional status when making decisions about the care of patients with disabilities.[6]

As life expectancy increases around the world, more patients will face the sequelae of cerebrovascular disease. Patients will struggle with stroke longer and have to cope with the physical, mental, and social aspects of life for a longer period.[7] This situation will bring more burden

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on the biopsychosocial aspect of the patients. Studies reported that depression and emotional problems such as emotional lability, anxiety, anger, and apathy are also commonly exhibited in stroke survivors.[8,9] These psychological problems negatively affect stroke patients' responses to rehabilitation and long-term functional outcomes.[9] Resilience is a person's ability to successfully overcome and adapt to adverse conditions. Being psychologically resilient can be defined as an ability and a psychological feature. Resilience is a protective factor for individual health and may be helpful in predicting the dynamic response of cognitive activities of stroke patients.[10] Therefore, healthcare staff should pay attention to the negative feelings of the patients in order to improve the physical and mental health of the patients while taking care of the patient and take appropriate measures to reduce the psychological burden of the patient. Nurses can include training and practices that will increase functional independence and reduce the psychological burden in the face of the problems experienced by stroke patients.

When individuals are faced with negative life events or experiences, self-efficacy plays an important role in determining their psychological state. Self-efficacy has been defined as "the beliefs in ones capabilities to organize and execute the courses of action required to manage prospective situations.[11] In other words, if people believe in their ability to handle difficult conditions, they can plan their actions accordingly. Self-efficacy is a key factor in the way stroke patients face traumatic events and negative outcomes. Self-efficacy plays an important role in the self-regulation process, which can increase the patient's ability to cope, and resilience.[12] The study by Bai et al[12] shows that there is a positive relationship between self-efficacy and resilience in stroke patients during the recovery period.[12] In another study by Bo et al[10], it was found that stroke patients experienced a significant decrease in their resilience levels within 1 month after they left the hospital, and this continued afterward. Factors contributing to resilience vary during the processes after stroke; however, it was found that self-efficacy and coping methods contribute to resilience in the long run.[10] Therefore, determining the functional independence, self-efficacy, and resilience levels of stroke patients and the relationship between them are important for planning and directing the education and nursing interventions to be applied to these patients.

As a result of literature review, even though there are researches on the evaluation of functional status in individuals with stroke, no study has been found on the effect of functional status with self-efficacy and resilience. The aim of our study is to determine the factors affecting the level of functional status, self-efficacy, and resilience, and to examine the relationship of functional status with self-efficacy and resilience in stroke individuals.

The questions of the research:

1. Is there a relationship of functional status with self-efficacy, resilience, and sociodemographic and disease-related data in stroke patients?
2. Is there a relationship between functional status and self-efficacy in stroke patients?
3. Is there a relationship between functional status and resilience in stroke patients?

Methods

Design and Participants

This is a descriptive and cross-sectional study conducted to examine the relationship of functional status with self-efficacy and resilience in stroke patients.

The research was carried out in the Neurology Service of Kutahya Health Sciences University Evliya Çelebi Training and Research Hospital between February 2021 and August 2021. The population of the study consists of 137 patients diagnosed with stroke in the Neurology Service of Kütahya Health Sciences University Evliya Çelebi Training and Research Hospital. No sample selection was made in the study, and all stroke patients who met the inclusion criteria and accepted to participate in the research were included and applied face-to-face. About 80% of the population (110 stroke patients) has been reached. *Inclusion criteria in the research* consist of individuals who are (1) diagnosed with stroke, (2) 18 years of age and older, (3) conscious, (4) able to communicate and speak Turkish, (5) and agreed to participate in the research. *Exclusion criteria* include (1) those who were diagnosed with a psychiatric illness and had severe cognitive problems.

Instruments

Patient Information Form

It was created by the researcher by scanning the literature on the subject of the study.[13-15] It includes sociodemographic characteristics of patients and stroke-specific questions.

Functional Independence Measures (FIM)

Functional independence measure (FIM) scale was created in the United States in 1986 by Carl Granger and others to evaluate and monitor patients' cognitive and physical disabilities. The validity and reliability of the scale was tested in a thesis study by Yavuzer[16] conducted for the first time in our country, and the Cronbach's alpha value of the scale was calculated as >0.70 and considered to be significant. Cronbach's alpha value was found to be 0.989 in the study. Functional independence measure is comprised of 18 items, basically grouped in 2 subscales: Physical/motor function (13 items) and cognitive/cognition function (5 items). Each item is scored at 7 levels (1-7), with "level 1" representing full assistance and "level 7" being complete independence. The total FIM score can vary between 18 and 126.[16] A high total score from the scale indicates high functional independence.

Stroke Self-Efficacy Questionnaire

The scale was developed by Jones et al[13] in 2008 in order to determine the self-efficacy status of post-stroke patients regarding functional activities such as walking, dressing, and in-bed comfort. The Turkish validity and reliability of the scale was conducted by S. Oğuz as a thesis study in 2017, and the Cronbach's alpha reliability coefficient was found to be 0.93 for the whole scale.[14] In our research, the Cronbach's alpha value was found to be 0.953. The scale items consisting of 13 questions in total are graded between 0 and 10 (0—not at all confident, 10—very confident), and the total score that can be obtained from the scale varies between 0 and 130. A high total score from the scale indicates high self-efficacy. In the Rasch analysis conducted by Riazi et al. in 2014, it was stated that grading the scale items between 0 and 3 (0—not at all confident, 3—very confident) gives the same result, and the desired rating system can be preferred.[17]

Resilience Scale for Adults

Resilience Scale for Adults was developed by Friborg et al. in 2003.[18] The Turkish validity and reliability of the scale was determined by Basım and Çetin[19] in 2011, and the Cronbach's alpha value of the scale was found to be 0.81. In our research, the Cronbach's alpha value was found to be 0.887. There are 6 sub-dimensions in the scale: "structured style," "perception of the future," "family cohesion," "perception of self," "social competence," and "social resources." It consists of 33 items in total. A minimum of 33 points and a maximum of 165 points are taken on the scale. A high total score from the scale indicates high resilience.

Statistical Analysis

In the analysis of the research, SPSS v23 statistical program (IBM Corp.; Armonk, NY, USA) was used. Descriptive statistics for continuous variables were presented as mean ± SD, while numbers and percentages were used to show categorical variables. The reliability of the scales used was evaluated with Cronbach's alpha coefficient. Whether the functional independence, stroke self-efficacy, and resilience scales differ according to demographic data was analyzed with significance tests. Before deciding which analysis to use, the general distribution of the data was evaluated by Kolmogorov-Smirnov and Shapiro–Wilk testing to see if it was suitable for the normal distribution. The Mann Whitney U test was used for pairwise comparisons for the analysis of data that did not fit the normal distribution, and the Kruskal-Wallis H test for the comparison of 2 or more variables. Pairwise comparisons were made with the Mann Whitney U test to determine which groups were different in the analyzes that were significant. The relationship between the scales was evaluated with the Spearman correlation test.

Ethical Considerations

This study was conducted in accordance with the principles of the Declaration of Helsinki (2013). Ethics committee approval for the research from the Ethics Committee of the Rectorate of Kütahya Health Sciences University Non-Interventional Clinical Research (Decision No:2021/02-10, Decision date: 09.02.2021), and institutional permission was obtained from Kütahya Health Sciences University Evliya Çelebi Training and Research Hospital and Kütahya Provincial Health Directorate. Verbal and written information about the research was given to the patients who met the research criteria, and written consent was obtained from the individuals who accepted. It has been informed verbally and in writing that the information obtained at the end of the research will not be used anywhere other than the research report and that they can leave the research at any time.

Results

When the distribution of demographic data of the participants in the research was evaluated, it was determined that 33.6% of them are 61-70 years old, 58.2% are male, 66.4% are married, 56.4% are primary school graduates, 36.4% live within the province, 30.9% have 2 children, 43.6% were retired, 83.6% were unemployed, 59.1% had income equal to their expenses, and 78.2% received support from their families. When the distribution of the data related to the disease of the participants in the study was evaluated, it was determined that 87.3% had ischemic stroke, 26.4% did not have any chronic disease, 22.7% had hypertension, 20% had diabetes and hypertension, and 66.4% less than a week passed since their stroke (Table 1).

In research, the total scores of functional independence, stroke self-efficacy, and resilience scale were found as 83.63 ± 31.53, 23.87 ± 11.36, and 110.10 ± 18.31, respectively (Table 2). When functional independence was compared according to sociodemographic and disease-related data, no statistically significant difference was found according to gender, marital status, place of residence, number of children, support status, income status, employment status, and stroke type ($P > .05$). However, according to the research, functional independence appeared to differ according to age ($X^2 = 21.517$; $P = .000$), educational status ($X^2 = 15.576$; $P = .004$), occupation ($X^2 = 11.273$; $P = .046$), and duration of stroke ($Z = -2.725$; $P = .006$). It was determined that individuals aged 50 and under are more advanced in terms of functional independence compared to all groups of higher age. It was determined that 51-60 and 61-70 age groups were at a more advanced level in terms of functional independence compared to 71-80 and over 81 age groups. It was determined that high school and university graduates were more advanced in terms of functional independence than literate and illiterate ones. In

Table 1. Sociodemographic and Disease-Related Characteristics of the Participants

		n	%
Age	50 years and under	7	6.4
	51-60 years	13	11.8
	61-70 years	37	33.6
	71-80 years	33	30.0
	81 years and over	20	18.2
Gender	Woman	46	41.8
	Male	64	58.2
Marital status	Married	73	66.4
	Single	37	33.6
Education status	Illiterate	25	22.7
	Literate	15	13.6
	Primary school	62	56.4
	High school	5	4.5
	University	3	2.7
Residence place	Province	40	36.4
	District	31	28.2
	Village	39	35.5
Number of children	None	3	2.7
	1	10	9.1
	2	34	30.9
	3	35	31.8
	4 and more	28	25.5
Occupation	Unemployed	41	37.3
	Retired	48	43.6
	Civil servant	8	7.3
	Employee	10	9.1
	Driver	2	1.8
	Self-employment	1	0.9
Employment status	Full time	12	10.9
	Part time	6	5.5
	Unemployed	92	83.6
Income status	Income less than expense	33	30.0
	Income equals expense	65	59.1
	Income more than expense	12	10.9
Support status	Alone	18	16.4
	Family	86	78.2
	Other—with children	6	5.5
Stroke type	Ischemic	96	87.3
	Hemorrhagic	11	10.0
	Hemorrhagic and ischemic	3	2.7
Chronic disease	None	29	26.4
	HT	25	22.7
	Diabetes and HT	22	20.0
	Diabetes	9	8.2
	HT, diabetes and HF	7	6.4
	Cardiovascular disease	5	4.5
	HT and HF	5	4.5
	COPD	1	0.9
	HT, diabetes, HF, COPD	3	2.7
	Cancer	1	0.9
	HT, diabetes, COPD	1	0.9
	CRF, diabetes, and HT	1	0.9
	CRF and HT	1	0.9
Time since stroke	1 week or less	73	66.4
	Over 1 week	37	33.6

COPD, chronic obstructive pulmonary disease; CRF, chronic renal failure; HF, heart failure; HT, hypertension.

Table 2. Mean Score and SD of the Scale and Its Sub-Dimensions

	Mean ± SD
FIM motor	59.76 ± 24.133
FIM cognitive	23.86 ± 8.240
FIM Total	**83.63 ± 31.532**
Structured style	12.86 ± 2.514
Future anxiety	12.60 ± 3.154
Family cohesion	21.12 ± 4.668
Perception of self	19.61 ± 4.402
Social competence	19.86 ± 4.235
Social resources	24.05 ± 4.491
Resilience total	**110.10 ± 18.318**
Stroke self-efficacy total	**23.87 ± 11.369**

FIM, functional independence measure.

addition, it was determined that workers have higher FIM general scores than the unemployed individuals. It was determined that those with a stroke duration of 1 week or less had higher functional independence levels than those with a stroke duration of 1 week or more ($P < .05$).

When stroke self-efficacy was compared according to sociodemographic and disease-related data, no statistically significant difference was found according to gender, marital status, place of residence, number of children, support status, income status, type of stroke, and duration of stroke ($P > .05$). However, according to the study, stroke self-efficacy levels seem to differ according to age ($X^2 = 9.859$; $P = .043$), educational status ($X^2 = 14.396$; $P = .006$), employment status ($X^2 = 6.183$; $P = .045$), and occupation ($X^2 = 11.352$; $P = .045$). It was determined that individuals aged 50 and under had higher stroke self-efficacy levels than all older groups. It was determined that university graduates had higher stroke self-efficacy levels than groups with lower education levels. Stroke self-efficacy levels of drivers and self-employed individuals were found to be more advanced than those of other occupations. In addition, stroke self-efficacy levels of full-time workers were found to be higher than those of other occupations ($P < .05$).

When resilience was compared according to sociodemographic and disease-related data, no statistically significant difference was found according to age, gender, marital status, place of residence, number of children, support status, occupation, income status, employment status, type of stroke, and duration of stroke ($P > .05$). However, according to the research, it was seen that educational status ($X^2 = 15.582$; $P = .004$) affects resilience. It was determined that the resilience of university graduates was more advanced than those who are illiterate. (Table 3)

When the relationship of functional independence with stroke self-efficacy and resilience was evaluated, a positive advanced relationship was determined between functional independence and stroke self-efficacy ($r = 0.708$; $P = .000$). Accordingly, as the level of functional independence increased, the level of stroke self-efficacy also increased. When functional independence and resilience scale and its sub-dimensions are evaluated, a midlevel positively a relationship has been identified for future anxiety ($r = 0.337$; $P = .000$), perception of self ($r = 0.418$; $P = .000$), social competence ($r = 0.379$; $P = .000$), and sub-dimensions with resilience ($r = 0.342$; $P = .000$). Accordingly, as the level of functional independence increased, the level of future anxiety, perception of self, social competence, and resilience also increased. (Table 4)

Discussion

In this research, the relationship of functional independence with stroke self-efficacy and resilience in patients diagnosed with stroke was studied. In the research, it was observed that the functional independence of the participants was affected by age, educational status, occupation, and duration of stroke, but when other variables were examined, no significant difference was found. These results are compatible with the literature. When literature and a study on the subject were examined, it was seen that there were similar results to our study.[20-21] According to research, it was observed that stroke self-efficacy levels differed according to age, educational status, employment status, and occupation. These results are in line with the literature. When studies on the subject are examined, similar to our research, it was reported that the level of stroke self-efficacy was affected by various sociodemographic characteristics (age, gender, and educational status).[14,22-24] According to research, it was seen that the resilience levels of the patients were affected by the educational status; however, when other variables were examined, no significant difference was found. These results are compatible with the literature. When the studies on the subject were examined, it was seen that there were similar results to our research.[25,26] It is thought that the worsening of functional independence and self-efficacy with increasing age, in addition to being a disadvantaged group in this regard, may be caused by factors such as self-care and having difficulty coping with the disease. It is thought that the functional independence, self-efficacy, and resilience of high school and university graduates may be due to their higher sociocultural level and the fact that they have more arguments on issues such as knowledge, skills, and ability to manage a chronic cope with the disease. Likewise, it can be attributed that patients and those who care for them with a short duration of stroke may cope with the disease better than those with a longer duration of stroke, and that individuals with a longer duration of disease/treatment may experience more exhaustion of cope with disease. The results of the studies carried out are in this direction.[27,28]

In the research, when the relationship of functional independence with self-efficacy and resilience was evaluated, a positive and advanced correlation was determined between functional independence and stroke self-efficacy. Accordingly, as the level of functional independence increased, the level of stroke self-efficacy also increased. It causes physical sequelae in stroke patients; therefore, the functional independence of the patients decreases. It is observed that the functional independence levels of stroke patients with a high perception of self-efficacy are positively affected by the effect of positive health behaviors.[29-31]

When functional independence and resilience scale and its sub-dimensions are evaluated, a moderately positive relationship was determined for future anxiety, perception of self, and social competence sub-dimensions with resilience. Similarly, when the level of functional independence increases, it is seen that resilience is positively affected, and the perception of self of individuals with high resilience also increases.[19,32,33] It is thought that when patients become functionally independent, their self-confidence will increase, and they will exhibit positive health behaviors. In the studies of Zhang et al[34] and Bai et al[12], they stated that self-efficacy levels affect resilience positively, that is, patients with high self-efficacy have high levels of resilience. Grant and Kinman[35] studied individuals who are psychologically resilient; self-esteem, self-efficacy, and functional independence were also found to be high.[33] The findings obtained in the study are consistent with the studies in the literature. In addition, different studies have similarly found positive effects of functional independence on resilience and self-efficacy.[36,37] According to the results obtained from the study of Zhang et al[15], supporting self-efficacy may increase resilience. For this reason, nurses should evaluate patients' self-efficacy and work to increase thereof. Determining the functional independence, self-efficacy, and resilience levels of stroke patients and the relationship

Table 3. Comparison of the Scales According to the Sociodemographic and Disease-Related Characteristics of the Patients

	FIM Total		Stroke Self-Efficacy Total		Resilience Total	
	Mean Rank	**Test**	**Mean Rank**	**Test**	**Mean Rank**	**Test**
Age[a]						
50 years and under	91.07	$X^2 = 21.517$	81.50	$X^2 = 9.859$	66.21	$X^2 = 2.513$
51-60 years	63.77	$P^{***} = .000$	62.12	$P^{*} = .043$	56.15	$P = .642$
61-70 years	64.55		60.41		58.81	
71-80 years	43.30		46.68		49.20	
81 years and over	41.05		47.58		55.60	
Gender[b]						
Female	52.95	$Z = -0.713$	51.54	$Z = -1.104$	57.22	$Z = -0.482$
Male	57.34	$P = .476$	58.34	$P = .270$	54.27	$P = .630$
Marital status[b]						
Married	56.64	$Z = -0.529$	56.85	$Z = -0.624$	52.87	$Z = -1.222$
Single	53.24	$P = .597$	52.84	$P = .533$	60.69	$P = .222$
Education status[a]						
Illiterate	35.84	$X^2 = 15.576$	36.56	$X^2 = 14.396$	36.28	$X^2 = 15.582$
Literate	53.13	$P^{**} = .004$	61.57	$P^{**} = .006$	66.83	$P^{**} = .004$
Primary school	61.07		58.93		57.86	
High school	76.50		69.20		68.30	
University	81.00		89.33		88.83	
Residence place[a]						
Province	57.78	$X^2 = 1.124$	53.44	$X^2 = 1.722$	61.53	$Z = 2.295$
District	58.03	$P = .570$	61.84	$P = .423$	52.73	$P = .317$
Village	51.15		52.58		51.53	
Number of children[a]						
None	86.00	$X^2 = 5.725$	91.33	$X^2 = 5.264$	74.33	$X^2 = 2.050$
1	51.85	$P = .221$	49.30	$P = .261$	59.75	$P = .727$
2	61.51		56.60		50.82	
3	54.13		57.67		56.89	
4 and more	47.95		49.82		55.91	
Support status[a]						
Alone	62.11	$X^2 = 3.634$	55.67	$X^2 = 0.103$	56.42	$X^2 = 0.038$
Family	55.65	$P = .163$	55.19	$P = .950$	55.20	$P = .981$
Other—with children	33.50		59.50		57.08	
Occupation[a]						
Unemployed	47.22	$X^2 = 11.273$	49.60	$X^2 = 11.352$	50.61	$X^2 = 2.984$
Retired	59.76	$P^{*} = .046$	56.18	$P^{*} = .045$	56.82	$P = .702$
Civil servant	44.13		45.13		64.13	
Employee	64.90		70.20		61.90	
Driver	96.75		104.00		69.25	
Self-employment	105.00		104.00		32.00	
Employment status[a]						
Full time	73.96	$X^2 = 4.521$	77.08	$X^2 = 6.183$	56.71	$X^2 = 0.114$
Part time	54.08	$P = .104$	53.75	$P^{*} = .045$	51.50	$P = .945$
Unemployed	53.18		52.80		55.60	
Income status[a]						
Income less than expense	45.12	$X^2 = 4.896$	45.94	$X^2 = 4.614$	49.80	$X^2 = 2.261$
Income equals expense	60.03	$P = .086$	58.65	$P = .100$	56.61	$P = .323$
Income more than expense	59.50		64.75		65.17	
Stroke type[a]						
Ischemic	48.27	$X^2 = 0.628$	53.55	$X^2 = 0.773$	70.73	$X^2 = 5.200$
Hemorrhagic	56.31	$P = .730$	55.23	$P = .679$	54.68	$P = .074$
Hemorrhagic and ischemic	56.17		71.17		26.00	
Time since stroke[b]						
1 week or less	61.40	$Z = -2.725$	58.73	$Z = -1.491$	58.27	$Z = -1.286$
Over 1 week	43.86	$P^{**} = .006$	49.14	$P = .136$	50.04	$P = .198$

[a]Kruskal–Wallis H test, [b]Mann–Whitney *U*-test.
$^{*}P < .05$; $^{**}P < .01$; $^{***}P < .001$.
FIM, functional independence measure.

Table 4. Evaluation of the Relationship Between Functional Independence and Stroke Self-Efficacy and Resilience

	FIM Motor	FIM Cognitive	FIM Total	Stroke Self-Efficacy Total	Structured Style	Future Anxiety	Family Cohesion	Perception of Self	Social Competence	Social Resources	Resilience Total
FIM motor	1.000	0.872**	0.986**	0.695**	−0.021	0.294**	0.109	0.305**	0.322**	0.061	0.280**
FIM cognitive	0.872**	1.000	0.934**	0.682**	0.018	0.320**	0.093	0.362**	0.315**	0.086	0.289**
FIM total	0.986**	0.934**	1.000	0.708**	−0.015	0.307**	0.105	0.323**	0.327**	0.070	0.287**
Stroke self-efficacy total	0.695**	0.682**	0.708**	1.000	0.158	0.337**	0.162	0.418**	0.379**	0.045	0.342**
Structured style	−0.021	0.018	−0.015	0.158	1.000	0.354**	0.383**	0.481**	0.319**	0.356**	0.546**
Future anxiety	0.294**	0.320**	0.307**	0.337**	0.354**	1.000	0.328**	0.644**	0.490**	0.325**	0.662**
Family cohesion	0.109	0.093	0.105	0.162	0.383**	0.328**	1.000	0.456**	0.515**	0.602**	0.737**
Perception of self	0.305**	0.362**	0.323**	0.418**	0.481**	0.644**	0.456**	1.000	0.569**	0.426**	0.804**
Social competence	0.322**	0.315**	0.327**	0.379**	0.319**	0.490**	0.515**	0.569**	1.000	0.552**	0.817**
Social resources	0.061	0.086	0.070	0.045	0.356**	0.325**	0.602**	0.426**	0.552**	1.000	0.697**
Resilience total	0.280**	0.289**	0.287**	0.342**	0.546**	0.662**	0.737**	0.804**	0.817**	0.697**	1.000

[a]Spearman correlation test. **P< .05; **P< .01.*
FIM, functional independence measure.

between them is important for planning and directing the education and nursing interventions to be applied to these patients.

In the light of all these research data, it is observed that increasing the functional independence of the patients increases the self-efficacy levels of them and reduces their psychological problems. In this context, patients should be given holistic and individualized care. Nurses should consider that the functional well-being of the patients will affect the patients' self-efficacy levels and psychological states. Nurses should support patients and direct them to relevant institutions in order for them to gain functional independence.

Limitations

Since the research was conducted in a single center and the data were obtained from a smaller number of patients due to the pandemic process, its generalizability may be limited. In addition, the pandemic process has made data collection difficult.

Conclusion

As a result, it was found that the functional independence, self-efficacy, and resilience of the patients were affected by variables such as age, educational status, occupation, employment status, and time period since stroke was experienced. In addition, functional independence was found to be associated with self-efficacy and resilience. In order to increase the generalizability of the research, it can be recommended to conduct it with a larger sample. In addition, if it is taken into account that the health professional that patients mostly express their problems and receive counseling about the problems are nurses, it can be suggested that they include training and practices that will increase functional independence, self-efficacy, and resilience more in their healthcare procedure.

Ethics Committee Approval: This study was conducted in accordance with the principles of the Declaration of Helsinki (2013). Ethics committee approval for the research from the Ethics Committee of the Rectorate of Kütahya Health Sciences University Non-Interventional Clinical Research (Decision No:2021/02-10, Decision date: 09.02.2021) and institutional permission was obtained from Kutahya Health Sciences University Evliya Çelebi Training and Research Hospital and Kutahya Provincial Health Directorate. Verbal and written information about the research was given to the patients who met the research criteria, and written consent was obtained from the individuals who accepted. It has been informed verbally and in writing that the information obtained at the end of the research will not be used anywhere other than the research report and that they can leave the research at any time.

Informed Consent: Written informed consent was obtained from patients/patients' parents/the parents of the patients/patient who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Çiğdem Ökten and Melek Takıl contributed substantially to the conception and design of this study. Melek Takıl collected the data and reviewed the drafting of the manuscript. All authors have approved the final version of the paper for submission.

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