Effect of interventions on mental functioning during hospitalization on recovery from post-discharge depression and development of social support systems

Yaoko Iwasaki (Faculty of Health Sciences, Kyorin University, iwasaki@ks.kyorin-u.ac.jp)
Takaji Suzuki (Faculty of Health Sciences, Aino University, t-suzuki@ot-u.aino.ac.jp)

入院中の精神機能への介入が退院後のうつ状態と社会的支援システムに及ぼす影響

岩崎 也生子（杏林大学 保健学部）
鈴木 孝治（藍野大学 医療保健学部）

要約

脳卒中後うつ病（Post-Stroke Depression：以下 PSD）は、脳卒中患者の 33 % と高頻度で発生する合併症である。PSD の罹患は、ADL や認知機能に影響しリハビリテーションの妨げになるため、早期の介入が求められている。しかしながら、リハビリテーションスタッフを対象とした研究では、介入の必要性は理解しているものの、具体的な介入は行われていなかった。本研究の目的は，入院中の精神機能への介入の現状と退院後の心理社会的機能への支援体制を調査し、入院中のリハビリテーションで行うべき介入を明らかにすることである。対象は、脳卒中後遺症患者 23 名。入院中のリハビリテーション介入、退院後の精神機能、退院後の社会的支援体制、退院後の生活満足度に関する質問紙調査を行った。結果、入院中の精神機能への介入は十分ではなく、精神的な支援は、リハビリテーション専門家ではなく、家族から受けていた。入院中のリハビリテーションとして、身体機能や日常生活動作への介入、患者同士のピアサポート、カウンセリング、家族への介入、精神機能への介入などを求めていた。精神機能への介入を受けた群は、受けなかった群に比べて、退院後の抑うつ度が低く、社会的支援体制が充実しており、家族支援に対する満足度も高かった。PSD に対するリハビリテーションでは、リハビリテーション専門職が精神機能への介入、カウンセリングや身体機能への介入に加えて家族への支援、退院後の継続的な支援体制の構築などの視点を持つことが必要であることが示唆された。

Key words
post-stroke depression, rehabilitation, intervention, social support system, mental function

1. Introduction

Post-stroke depression (PSD) is a disease concept proposed by Robinson in 1983 (Robinson & Price, 2018), and it develops within 5 years after a stroke in 39 % to 52 % of patients (Ayerbe, Ayis, Wolfe, & Rudd, 2013). The presence of PSD negatively affects active participation in rehabilitation and recovery of physical and cognitive functions (Chollet, Acket, Raposo, Albucher, Loubinoux, & Pariente, 2012; Hama, Yoshimura, Yanagawa, Shimonaga, Furui, Soh, Nishino, Hirano, & Yamawaki, 2020), and furthermore increases mortality. It is necessary to diagnose and intervene early in the course of the disease (Robinson, Arndt, & Starkstein, 2003). However, stroke survivors are complicated by various sequelae such as cognitive dysfunction and impairment in activities of daily living as well as physical dysfunction (Hama, Yamashita, Shigenobu, Watanabe, Hiramoto, Kurisu, Yamawaki, & Kitaoka, 2007). Therefore, loss of motivation and mood disturbance are considered to be common symptoms that may occur naturally, and it is reported that 50 % to 80 % of patients with PSD go undetected and untreated (Robinson & Spalletta, 2009). Appropriate pharmacotherapy for PSD is known to increase the recovery of physical and cognitive functions and the survival rate compared to an untreated group (Robinson & Jorge, 2016). Non-pharmacological treatments include exercise therapy and psychotherapy (Kiecolt-Glaser & Glaser, 2002). However, while positive effects have been reported for these interventions, consistent intervention effects have not been obtained (Cooney, Dwan, Greig, Lawlor, Rimer, Waugh, McMurdo, & Mead, 2013; Eng & Reime, 2014). Furthermore, because psychological problems are complex and culturally sensitive, it is important to consider the cultural and individual context of assessment and intervention (Winstein, Stein, Arena, Bates, Cherney, Cramer, Deruyter, Eng, Fisher, Harvey, Lang, MacKay-Lyons, Ottenbacher, Reeves, Richards, Stiers, & Zorowitz, 2016).

In the survey of rehabilitation professionals regarding intervention in mental functioning, they were aware of the need for intervention in mental functioning, but did not intervene in actual rehabilitation (Iwasaki,2015; Kurosawa, Muraki, Suzuki, & Sashima, 2012).

The purpose of this study was to investigate the interventions for mental functioning during hospitalization and the support system for psycho-social functioning after discharge for patients who experienced PSD during hospitalization, and to identify the interventions that should be provided in rehabilitation.

2. Methods

2.1 Preparation of items for questionnaire

A preliminary survey was conducted for 11 rehabilitation professionals (5 Occupational Therapists, 5 Physical Therapists, and 1 Speech-Language-Hearing Therapist) having more than 3 years of experience and who are engaged in the rehabilitation of stroke patients. The survey items were determined based on the items obtained from the preliminary survey and previous studies.

2.2 Participants

People selected for participation of this study were twenty-three patients who developed PSD during hospitalization. They were diagnosed with PSD using DSM-IV by their attending physician. Seventeen were male and 6 were female.

2.3 Procedures

Twenty-three patients were asked to fill out a questionnaire with the following items (Table 1). The survey included the following items: (1) Basic information (gender, age of onset, name of disability, rehabilitation during hospitalization), (2) Current status of interventions for mental functioning during hospitalization, (3) Interventions for PSD during hospitalization, (4) Presence of depressed mood after discharge from hospital, (5) Social support system after discharge from hospital (a. Human support such as caregivers, b. Environmental support such as day care facilities, etc.), (6) Degree of life satisfaction after discharge from hospital. (2) and (6) were evaluated using a 7-point Likert scale ranging from satisfied to dissatisfied. (4) was investigated using a 5-point Likert scale from 1 (never) to 5 (always). For items (3) and (5), multiple responses were requested.

The number of people and the percentage (%) of responses to the questions were indicated. (2) was classified into two groups based on their respective mean values. To examine differences in mental functioning with and without intervention during hospitalization, Mann-Whitney's *U* test and Fisher's exact test were calculated for (3) to (6). The relationships between (2) to (6) were examined using Pearson's correlation coefficient. Statistical processing was performed using SPSS Statistics 20 (IBM). Significant differences were determined at a risk rate of less than 5 %. This study was performed in accordance to the Ethics Committee of Tsukuba University and Ibaraki Prefectural University of Health Sciences.

3. Results

3.1 Basic information

The subjects were 23 (17 males and 6 females) patients with PSD diagnosed by DSM-IV. The mean age of the subjects was 66.9 ± 6.2 years and the mean age of onset was 59.0 ± 7.4 years. The disabilities of the patients were upper and lower limb paralysis 21 (91 %), trunk dysfunction 2 (9 %), and cognitive dysfunction 3 (13 %). Their rehabilitation status was as follows: all patients received physical therapy and occupational therapy (daily), all patients received clinical psychology (at least once during the hospital stay), and 14 patients received ST (at least once during the hospital stay).

3.2 The current status of interventions for mental functioning during hospitalization

The status of implementation of interventions for mental functioning during hospitalization were 43.4 % for 10 patients who received interventions and 56.6 % for 13 patients who did not receive interventions, with a mean of 2.91 ± 2.04.

The psychological supporters during the hospitalization were 8 (54 %) family members, 4 (47 %) attending physicians, 3 (18 %) fellow patients, and 3 (18 %) friends.

3.3 The interventions for PSD during hospitalization

The interventions required for PSD during hospitalization were peer support (62 % for 13 patients), counseling (57 % for

Table 1: Survey items on interventions for mental functioning during hospitalization and mental functioning after discharge

		Items	Number of items
(1)	Basic information	Gender, age of onset, name of disability, rehabilitation during hospitalization	4
(2)	Current status of interventions for mental functioning during hospitalization	Status of implementation of interventions for mental functioning during hospitalization	2
		Psychological supporters during hospitalization	
(3)	Interventions for PSD during hospitalization		1
(4)	Presence of depressed mood after discharge from the hospital		1
(5)	Presence of depressed mood after discharge from the hospital, (5) The social support system after discharge from the hospital	Human support such as caregivers	2
		Environmental support such as day-care facilities	
(6)	Degree of life satisfaction after discharge from hospital.	Satisfaction with support for physical and mental functioning from family, government, and medical care after discharge	6

12 patients), physical functioning practice (43 % for 9 patients), activities of daily living practice (33 % for 7 patients), intervention for their family (14 % for 3 patients), medication management (17 % for 4 patients). Those who wanted support were attending physician (53 % for 9 patients), spouse (47 % for 8 patients), and patient-to- patient (12 % for 2 patients).

3.4 The presence of depressed mood after discharge from the hospital

The post-discharge depressive mood was "never depressed" in 4 patients (19.05 %), "almost never depressed" in 5 patients (23.81 %), "sometimes depressed" in 6 patients (28.57 %), "frequently depressed" in 2 patients (9.52 %), and "always depressed" in 4 patients (19.05 %).

Post-discharge depression was correlated with the status of mental functioning intervention during hospitalization ($r = 0.743$, $p < 0.01$). In addition, the group that had received mental functioning interventions during hospitalization had fewer depressed patients after discharge ($p = 0.08$).

3.5 The social support system after discharge from the hospital

3.5.1 The human support such as caregivers

Post-discharge support systems were investigated separately for the human support such as caregivers, and the environmental support such as day care facilities.

In the human support systems, the following people supported the patients: 12 (52.1 %) were spouses or family members, 8 (34.8 %) were medical professionals (attending physicians, nurses, rehabilitation staff), 7 (30.4 %) were fellow patients, 5 (21.7 %) were friends, and 3 (13.0 %) were care-managers or government officials. The most common responses were that was no effect of different interventions on mental functioning during hospitalization on human support. However, those who received support from medical professionals were less likely to become depressed after discharge ($p = 0.043$), understood the need for psychological care ($p = 0.02$), and received environmental support ($p = 0.047$).

3.5.2 The environmental support such as day care facilities, etc.

In the environmental support, the status of environmental support from medical facilities after discharge was as follows: 7 (30.4 %) did not use any medical facilities, 6 (26.0 %) medical institutions, 5 (21.7 %) welfare facilities, and 5 (21.7 %) administrative institutions. The more the group received interventions for mental functioning during hospitalization, the more they received environmental support from medical institutions and day-care institutions ($p = 0.01$).

Table 2: General characteristics of the subjects

		Numbers and averages (± standard error)	Percentage (%)
Gender	Males	17	(74)
	Females	6	(26)
Age		66.9 (±6.2)	
Mean age of onset		59.0 (±7.4)	
Disability	Upper and lower limb paralysis	21	(91)
	Body trunk dysfunction	2	(9)
	Cognitive dysfunction	3	(13)
Rehabilitation status	Physical therapy	22	(96)
	Occupational therapy	22	(96)
	Speech therapy	14	(61)
	Clinical psychology	3	(13)

Note: Data are expressed as means ± *SD*.

Table 3: Degree of intervention for mental function during hospitalization (Spearman's rank correlation coefficient, $n = 22$)

		Depressive mood after discharge	Social support system after discharge		Degree of satisfaction with the support		
			Environmental support	Human support	Family	Administration	Medical care
Degree of intervention for mental function	Pearson's r	0.743**	0.472*	0.117	0.665	0.599	0.845**
	Significance probability	0.001	0.027	0.605	0.051	0.155	0.008

Note: ** $p < 0.01$, * $p < 0.05$.

3.6 The degree of life satisfaction after discharge from hospital

The degree of satisfaction with the support from family, administration, and medical care after discharge was as follows. The mean satisfaction with psychological support from family was 5.22 ± 1.99, satisfaction with physical support was 5.50 ± 1.20, satisfaction with psychological support from administration was 2.71 ± 1.60, and satisfaction with physical support was 2.57 ± 1.51. Satisfaction with psychological support from medical professionals at day-care facilities was 4.63 ± 1.06 and satisfaction with physical support was 4.38 ± 1.41. Satisfaction with psychological support from family members ($p = 0.033$) was higher in the group that received interventions for mental functioning during hospitalization. In correlation, satisfaction with physical functioning from medical care ($r = 0.845$, $p < 0.01$) and the satisfaction with mental functioning ($r = 0.851$, $p < 0.01$) were higher for those who had received interventions for mental functioning during hospitalization.

4. Discussion

More than half of the patients felt that they did not receive any intervention for mental functioning in the rehabilitation during hospitalization. The reason for this was that rehabilitation professionals lacked perspectives on intervention for mental functioning. This result is consistent with previous studies of rehabilitation professionals, and it is possible that the development of depression after a stroke is not recognized among rehabilitation professionals (Iwasaki, 2015; Kurosawa et al., 2012). It has been suggested that experience with PSD patients and pre-graduate education may increase the perception of PSD intervention among rehabilitation professionals (Iwasaki, 2015). It is necessary to promote the perception of depression after a stroke among rehabilitation professionals through pre-graduate education at professional training schools and post-graduate education at hospitals.

In the psychological support system for patients during hospitalization, many patients received support only from their families, not from rehabilitation professionals. In addition, patients who had received mental functioning interventions during their hospitalization were more likely to receive support from health care professionals and were more satisfied with their family's care after discharge. It was reported that in untreated PSD patients, the quality of life of not only the patient but also the family decreases, and the burden on the family increases (Oupra et al., 2010). In this study, patients needed support from rehabilitation professionals for their families in interventions for mental functions during hospitalization. It was suggested that interventions for psycho-social functioning in inpatient rehabilitation need to address not only the patient but also the patient's family. In the psycho-social functioning after discharge, patients who had received interventions for mental functioning during hospitalization complained less of a "depressed mood" after discharge than those who had not received interventions for mental functioning. In addition, they were able to attend medical institutions and welfare facilities after discharge and receive continuous support from medical professionals. As an intervention for PSD, the effect of care-management intervention in combination with pharmacotherapy has been shown (Mitchell et al., 2009; Williams et al., 2007). It has been reported that the lack of time for oneself increases the burden on caregivers after discharge from the hospital (Choi-Kwon et al., 2009). Attending a medical institution or welfare facility may serve as a social function for patients to have contact with people in society, and also provide an environment where caregivers can have time for themselves. Continuous support by medical professionals may have the effect of not only providing medical care to patients and caregivers, but also psychological support.

In this study, we investigated the current status of interventions for mental functioning during hospitalization and psychosocial functioning after discharge in patients with PSD, and we explored rehabilitation interventions for PSD. It was suggested that rehabilitation for PSD requires rehabilitation professionals to develop a perspective on interventions for mental functions, support for family members in addition to counselling and interventions for physical functions, and the establishment of a continuous support system after discharge.

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