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Research Article

The Relationship Between Family Involvement in Physiotherapy Home Programs and Activity Daily Living in Post-stroke Patients

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Abstract.
The inability to carry out daily activities is one of the challenges that stroke patients face due to weakness in their extremities. It leads to a decrease in mobility function, which prevents the fulfillment of activity. To improve their functional ability, patients undergo physiotherapy treatment. However, there is limited time for patients to exercise at the hospital. Yet, doing exercise is vital for post-stroke patients. Therefore, home programs are crucial for stroke patient rehabilitation. Family support is necessary to ensure that patients do their home program. It could increase enthusiasm and motivate patients to be consistent in their treatment, especially in their homes. An analytic observational study with a cross-sectional design was used to see the relationship between family involvement in physiotherapy home programs and activity daily living (ADL) in post-stroke patients. The sampling technique used was purposive sampling with inclusion and exclusion criteria. Questionnaires were used to assess family involvement in the Physiotherapy home program, and the Index Barthel was used to measure the ADL of stroke patients. Spearman Test was used to examine the relationship between both variables. All statistical analyses were performed using SPSS. Normality tests showed the failure of the number of rearing data ($p < 0.05$). Spearman test revealed that both groups had a significant relationship ($p < 0.000$). There is a relationship between family involvement in the Physiotherapy home program and ADL in post-stroke patients.

Keywords: stroke, physiotherapy, relationship, activity daily living, home program

1. INTRODUCTION

Stroke is the major cause of disability in the world (1). Based on GBD Disease and Collaborators 2019, from 2009 to 2019 it was noted that stroke is the leading cause of death and disability in Indonesia (2). In developing countries, mortality rates have begun to lower the number of deaths, but this has led to an increase in the number of stroke patients who survive and need rehabilitation. If the prevalence and severity of

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How to cite this article: Kurnia Putri Utami, Alif Rizky Rinanda Nur Fauziyah, and Anita Faradilla Rahim, (2023), "The Relationship Between Family Involvement in Physiotherapy Home Programs and Activity Daily Living in Post-stroke Patients" in 2nd International Conference on Medical Health Science, IoE Medicine, pages 129-135. DOI: 10.30522/turnitin.v2i2.12949


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Published: 8 March 2023
Publishing services provided by Knowledge E
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Naskah Publikasi

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Research Article

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Published 8 March 2023

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disability in stroke patients remain constant, it is predicted that by 2030 the demand for rehabilitation and long-term care will increase by 24% (3).

Inability to perform daily activities is the problems of stroke patients that affects their participations in their community. Activity daily living are the daily tasks that include dressing, bathing, eating, toileting and transferring (4). Due to weakness in extremity and decreased of mobility function, stroke patients are limited to fulfil their activity daily living. Dependence in activities daily living and deterioration of their participation could influence their quality of live (5). Therefore, the rehabilitation such as physiotherapy is essential to improving activity daily living of stroke patients (6). Physiotherapy has been shown to be effective at all stages of stroke to enhance and maintain the functional abilities of patients that focus on repetition of tasks and tasks orientation as a major component in stroke rehabilitation (7).

Beside the physiotherapy intervention session with physiotherapist, stroke patients are given specific exercise to do unsupervised at home as home program physiotherapy to aid their recovery. Considering that stroke need long term rehabilitation, ensure the patient to remain consistent in carrying out their rehabilitation program is necessary especially at home. Therefore, the involvement of family is needed. In home program, the role of family is imperative to assist the patient in their exercise, help the patients to enhance their physical ability and managing patient's mental health (8). Hence, the family will increasing the patient's ability to be independent, increasing the patient's confidence, fulfilling the needs in Activity Daily Living (ADL), minimizing disability and preventing recurrent strokes (9).

2. METHOD

2.1. Study Design

This study used an analytical observational research method with a *cross sectional* approach to find the relationship between dependent variable and he independent variable. This design was used to investigate the relationship between family involvement in physiotherapy home program and activity daily living in post stroke patients.

2.2. Subjects

The samples in this study were stroke patients with a total of 15 respondents. Sampling technique using purposive sampling with inclusion criteria and exclusion criteria. The

1 inclusion criteria are as follow: 1) Post stroke patient with deterioration of ADL; 2) The stroke patients are willing to be the subject of research and have signed informed consent; 3) The patient who are given a home program by physiotherapist. The exclusion criteria is stroke patients with cognitive problems.

2.3. Family involvement measurement

The questionnaire of family support was adopted and modified from Maulidia (2014) which consists of 20 statements in the form of a likert scale (10). This questionnaire consists of 4 categories, namely informative support, assessment support, emotional support, and instrumental or additional support. Each category consists of 5 statements. The statement consists of 20 questions with the maximum score is 80 and the minimum score is 20. The Likert scale model used consists of 4 answers. They are Very often (Score 4), Often (Score 3), Sometimes (Score 2), and Never (Score 1). For the categorization of the results, high family support if the score is 60- 80, moderate family support if the score is 40-59, and low family support if the score is 20-39.

2.4. Activity Daily Living Measurement

Index Barthel was used to measure the activity daily living. There are 10 item which asses including toileting, self-care, eating, dressing, and transferring.

2.5. Statistical Analysis

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Spearman test was used to assessed relationship between two variable due to the failure of the number of rearing data in normality test. Cross-tabulation test was used to strengthen the data. All statistical analyses were performed using IBM SPSS for windows version 20.0

3. RESULT

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TABLE 1: The relationship between family involvement in physiotherapy home program and activity daily living in post stroke patients.

	<i>n</i>	<i>p</i>	<i>R</i>
Peran Keluarga	15	0,000	0,833
<i>Activity Daily Living</i>	15	0,000	0,833

Spearman Test: n = number of samples; p = p-value; R = correlation coefficient value

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Data of the relationship between family involvement in physiotherapy home program and activity daily living in post stroke patients are presented in Table 1. Due to the failure of the number of rearing data in normality test using Shapiro Wilk test ($p < 0,05$), the Spearman test was used. The Spearman test revealed that there is a significant correlation between family involvement in physiotherapy home program and activity daily living in post stroke patients with p-value 0,000. The analysis data also showed the strong correlation between both variable with correlation coefficients 0,8333.

According to the cross-tabulation results, four respondents with independent ADL levels had high family roles, while two respondents with mild ADL levels had high family roles. High family roles (up to 6 people), with 66.7% having independent ADL levels. 100% of the total respondents with independent ADL levels (4 people) have a high family role. 26.7% of the total respondents (up to 15 people) have high family roles with independent ADL levels.

4. DISCUSSION

A high family role can have an impact on stroke patients' ADL levels. The family is the person who is most involved in a person's ability to live independently at home. Functional training is emphasized in stroke rehabilitation programs to help patients achieve and maintain as much independence as possible. Family members of stroke patients provide critical social support, such as instrumental assistance, task appreciation emotional motivation, and adherence to therapeutic instructions (11). Family could be engaged in activities daily living of patients and also in assistance with physically therapeutic activities (12). Meeting personal needs, such as personal hygiene, dressing and undressing, and elimination, is critical in the treatment of stroke patients. Study about the family involvement in stroke patients care, can help health care providers educate and prepare stroke patients and their family members during hospitalization and after discharge to ensure better ADL treatment and more family-focused care post-discharge (13).

During hospital care, the physiotherapist is responsible for fostering meaningful communication with the patient. This can assist the physiotherapist in understanding each patient's unique concerns, such as fear of falling and satisfaction with specific walkers. Communication between the physiotherapist, the patient, and the patient's family can boost the patient's confidence in his own recovery and help optimize the home program. Given exercise programs such as joint exercises, balance exercises

while standing, standing, bending, or picking up something, raising straight legs, and climbing stairs to strengthen the muscle groups of the lower limbs. The exercise is designed to reduce lower extremity flexibility and improve mobility following a stroke (14). Physiotherapist could monitor the patient during the intervention. However, after discharged from hospital, it is difficult to ensure the patient perform the home program regularly. Therefore, the family involvement is essential. Social support from family could stimulate long-term encouragement to keep continue their program progression through emotional support, listening support and physical assistance in home-based exercise (15). The support from family is most effective when the patient appreciates it and can helps in reducing depression (16).

Post-stroke patients with strong family support are more likely to engage in independent activities. Because family support is interpersonal support, it includes other family members' attitudes, behaviors, and acceptance so that the family member feels that someone is paying attention to and supporting his life. Previous study showed that family support correlated with independent level of activity daily living (17). Family support can help the patient recover during the recovery process, allowing the patient to resume normal activities as soon as possible. Another type of family support that can increase independence is providing the items that the individual requires following a stroke. The family here serves as an intermediary between stroke patients and medical services, such as transporting patients to therapy, provide their time to assist patient in home program during the absent of physiotherapist in home and influence the patient's compliance in rehabilitation program The objects are intended to meet their basic needs and can be modified as needed (17).

Family support is a significant external source that can significantly alleviate the patient's life pressures and make the patient feel cared for, valued, and still a part of the family they require. Efforts to improve the quality of life of post-stroke patients can be made through a family-centered approach, with the hope that families will provide full support to post-stroke patients. As a result, the family's critical role in improving the quality of life of post-stroke patients becomes clear (18).

5. CONCLUSION

There is a relationship between the family involvement in Physiotherapy home program and ADL in post stroke patient. The family has a significant role especially assisting the stroke patients to perform their physiotherapy home program and ensure the patients compliance to follow the rehabilitation program in home. In addition, emotional support

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from family could maintain high motivation of stroke patients during the long-term rehabilitation program, especially in home.

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