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**Psychoeducation Strategy:
Acceptance and Commitment
Therapy (ACT) to Improve Self-
Efficacy of Stroke Patients**

Abstract

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Background: Stroke is the most common cerebrovascular event. Stroke patients often have biological, spiritual, and psychosocial changes. Psychosocial problems experienced in stroke patients include problems with self-efficacy. Acceptance and Commitment Therapy (ACT) is commonly used to solve psychosocial problems.

Objective: This study aims to determine the effect of ACT on the self-efficacy of stroke patients.

Methods: This study utilized quantitative and quasi-experimental designs without a control group. The study was conducted in a selected hospital rehabilitation unit in Yogyakarta. The respondents were selected via the purposive sampling technique. The self-efficacy was assessed using The Strategies Used by Patients to Promote Health (SUPPH) questionnaires and statistically tested with the Wilcoxon test. The total number of respondents of this study was 33 stroke patients. The characteristic of respondents was mostly 45 – 64 years old (72.73%), male (57.6%) and, had a history of stroke for 1 – 6 months (39%).

Result: Wilcoxon test results showed a computed *p*-value of 0.000 on the effect of ACT on stroke patients' self-efficacy; thus, the null hypothesis was rejected. In other words, ACT proves its effectiveness in improving stroke patients' self-efficacy.

Conclusion: Based on the data, this research can be concluded that ACT effectively improved the self-efficacy of stroke patients. The researchers recommend utilizing ACT as a nursing intervention for stroke patients in the hospital rehabilitation unit.

Keywords: ACT; Psychoeducation; Rehabilitation; Stroke; Self-efficacy

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INTRODUCTION

Stroke is the most common cerebrovascular event. Worldwide, stroke is the second most common cause of death and disability (Krishnamurthi et al., 20). World Health Organization (2019) stated that one in four people are in danger of stroke in their lifetime. Furthermore, there are 87% of stroke-related deaths and disability-adjusted life years. 70% of strokes occur in low- and middle-income

countries. The incidence has increased twice in the last four decades, including in Indonesia.

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The data from the Ministry of Health of the Republic of Indonesia (2018) shows that the prevalence of people with stroke aged above 15 years old in Indonesia increased to 10.9 percent in 2018. Furthermore, most stroke patients are over 60 years old. Stroke also causes disability among them.

Stroke is a disease that requires a long treatment and could even cause disabilities that affect a person's physical and psychological condition. In the early stages of a stroke, a patient may experience a difficult situation in adapting to the changes in his life. These changes may affect the level of self-efficacy of these patients.

A person's behavior to maintain their health condition can be affected by their self-efficacy. According to Buckworth (2017), self-efficacy is defined as someone's belief in their capability to organize and take actions that lead to a specific expected outcome. It is an essential aspect that could influence the adoption and maintenance of health behavior, especially for people enduring illness, including stroke patients. For example, stroke patients with low self-efficacy might have difficulties believing they can maintain their daily self-care. In this case, nurses play an important role in stroke patients' rehabilitation and need to provide self-efficacy enhancing programs during their recovery program (Korpershoek et al., 2011). One of the psychological therapies that the nurses could do is Acceptance and Commitment Therapy (ACT).

ACT is an empirically supported psychotherapy that can provide solutions for patients suffering from various mental and physical conditions. ACT can overcome pain, sadness, disappointment, illness, and anxiety (Dindo et al., 2017). In addition, the purpose of ACT is to help patients accept their health condition and experience and make them commit to changing bad behavior to prevent further health problems (Widuri, 2012). The ACT consists of six principles: acceptance, defusion of cognition, being fully present, value, self as a context, and committed action (Ismoyowati, 2018). ACT already proves its effectiveness and great impact on stroke patients' social and mental problems, but few studies have discussed its relationship with self-efficacy. Many other studies describe self-efficacy and ACT in the health care area, but the research on analyzing the effect of ACT on the self-efficacy of stroke patients has been rarely conducted. Thus, this study aims to determine the effect of ACT on stroke patients' self-efficacy.

METHODS

Research design and samples

A pre-post experimental study without a control group was conducted in this research. It was conducted in Bethesda Hospital of Yogyakarta. The population of this study included 33 stroke patients, and purposive sampling technique was utilized following the inclusion criteria: 1) Willing to be respondent in the study, 2) Being registered as stroke patients at Bethesda Hospital of Yogyakarta, 3) Level of consciousness: Compos Mentis; and 4) Aged 20 – 80 years old. Meanwhile, the exclusion criteria of this study were: 1) Patients with aphasia, 2) Increased intracranial pressure, 3) Low hemoglobin, 4) Had spinal cord injury, 5) Had a hearing problem.

Research instrument and data collection

Data collection in this study used two types of questionnaires as a research instrument. The first one was a questionnaire to identify respondents' characteristics. The second one was The Strategies Used by Patients to Promote Health (SUPPH) questionnaire created by Prof. Dr. Ralf Schwarzer to measure the stroke patients' self-efficacy with reliability of 0.908 and validity of 0.6. This questionnaire consisted of twenty questions: reduction of stress (10 items), decisions making (3 items), and positive behaviors (7 items). The data gathering procedure started when the researcher received a permission letter from the person in charge of the research area where this study was conducted. Prospective respondents who met the criteria were given informed consent. The researcher described the purpose of the study, the respondents' role, and the other ethical considerations. The ethical considerations included the respondent's voluntary participation, explanation about the risk and benefit of the study, the right to refuse or withdraw, the guarantee of confidentiality of the information provided, and the respondent's consent. The respondents gave their consent right after agreeing to be included in this study. The next step was giving the self-efficacy questionnaire to the respondents to be answered by them. The researcher also helped the respondent who had difficulty writing down their answer. The researcher ensured that the self-efficacy questionnaire had been fully answered before implementing ACT.

The term of ACT was three treatment sessions of about 15-20 minutes. The first session consisted of fostering mutual relationships, explaining the research procedure, demographic data collection, and identifying conditions the patient currently conformed to the 6 ACT principles. The second one consisted of training the respondents to focus on therapy and carry out acceptance therapy. The third session included practicing ways to cope with bad behavior, assigning personal value using the "Wheel of Live" diagram, encouraging the respondents to commit, and being responsible for that value. There is no limited time for the patient to practice for the third session. It depended on their condition and the problem that they experienced. After ACT had finished, the self-efficacy questionnaire was given to the respondents again on their next therapy schedule. All data were collected in two weeks.

(see figure 1)

Data analysis

The univariate analysis was utilized to show the distribution of frequency of respondents based on their age, gender, and history of stroke. Prior to the further analysis with the Wilcoxon test, the data were tested for normality, and the result showed that the self-efficacy score before and after the therapy was not normally distributed. Furthermore, the data were analyzed using the Wilcoxon test to determine the different self-efficacy scores before and after ACT intervention.

Ethical consideration

This study was registered to the research ethics board of the Health Research Ethics Commission Bethesda Hospital, No. 71/KEPK-RSB/V/20, published on May 2, 2020.

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RESULTS

Characteristics of respondents

Table 1 shows the characteristics of the respondents involved in this study. The majority of respondents were 45 – 64 years old (72,73 %). Most of them were male (57.6 %) and had a history of stroke 1-6 months (39 %).

(see table 1)

Self-efficacy distribution

Figure 2 shows the self-efficacy distribution before and after receiving ACT. Before receiving ACT, the

majority of respondents had low self-efficacy (21 respondents). In contrast, after receiving ACT, the majority of respondents had high self-efficacy.

(see figure 2)

Self-efficacy differences

Table 2 shows the effect of ACT on the self-efficacy of stroke patients using the Wilcoxon test. There was a significant difference in the self-efficacy of stroke patients before and after receiving ACT (p=0.000), indicating that ACT increased the self-efficacy of stroke patients.

(see table 2)

DISCUSSION

This study showed that the majority of respondents were 45 – 64 years old (72.73 %). They were mostly male (57.6 %) and had a history of stroke 1-6 months (39 %). According to the Ministry of Health of the Republic of Indonesia (2018) data, the prevalence of stroke sufferers increases at the age of 45 years and above. Based on the pathophysiology associated with the deterioration of the vascular system, it increases along with age and leads to a higher chance of having a stroke. This factor is two times higher at the age of ≥ 55 years in statistics. Based on research by Amoako et al. (2014), the prevalence of stroke increases in the economically active or working age group. This study explained that more than a third of patients diagnosed with stroke must stop working. It has somewhat worrying implications for the socio-economic welfare of individuals and families.

Furthermore, this study also showed that the majority of the respondents were male (57.6 %). The result of this study is in line with the research conducted by Sianturi et al. (2018), revealing that, out of 33 respondents with stroke, 57.6% were male and 42.4% were female. According to the American Heart Association (2015), the number of males with stroke increased annually. It indicated that men are considered more at risk of stroke than women. Other factors include lifestyles such as smoking, high blood pressure, high cholesterol, and diabetes.

The majority of the respondents in this study had a stroke history of 1-6 months (39%). Safruddin et al. (2018) stated a significant relationship between stroke duration and someone's cognitive function.

The duration of suffering from a stroke also affects a person accepting his physical condition, feeling hopeless and useless. A history of recurrent stroke is a risk factor for stroke. Approximately 15% of strokes are caused by a previous stroke and only 3% from the first stroke. Stroke cases occurred in men with active smokers and hypertension around 14.2%, a history of the first stroke was 6.9%, and a history of recurrent stroke in smokers was 3.3% (Rambe, 2006).

According to Bourin (2018), stroke patients might experience several changes in terms of personality or behavior. These changes are frequent, relatively unknown and unrecognized. These disorders include attention or concentration disorders; motivation and initiative reduction; emotional lability, hypermobility; depression; anxiety, cognitive deterioration, or dementia. Besides, a study conducted by Stone et al. (2004) reported that some post-stroke patients had several negative personalities, such as easily feeling bored, unhappy, anxious, depressed, dissatisfied, irritable, unrealistic, angry, withdrawn, useless, and worthless. Furthermore, a study conducted by West et al. (2010) concluded that the assessment of psychological distress is concentrated in the first week after stroke. The study also found that result of psychological distress assessment influences functional outcomes. One of the personality features, self-efficacy plays an important role in eliminating bad health-related behavior in post-stroke patients (Torrise et al., 2018). Patients with low self-efficacy experience severe depression, starting from the first month until six months after the stroke (Korpershoek et al., 2011).

A previous study related to self-efficacy has been conducted by Lee and Young (2018), showing that high physical activity indirectly helps Korean young adults be more physically active. It happened by fostering advancement on behavioral change in physical activity. In addition, Williams et al. (2008) conducted research to identify the relationship between practice change, motivation and self-efficacy. Their research concluded that the sense of efficacy produced a high motivation and contributed to someone's willingness to change practice patterns to achieve expected goals.

The main result of this study showed that ACT significantly increased stroke patients' self-efficacy. Furthermore, the researchers assumed ACT has successfully helped respondents accept their health condition, explore positive things in themselves and the respondent's life, and try to rebuild patient confidence to return to optimal health levels. ACT emphasizes the aspects of acceptance and the values believed by stroke patients, not on rejection or denial of experiences. The purpose of ACT intervention is as a problem solution to change bad health behaviors and replace them with good behaviors. The patients should do with full awareness and not under the intimidation of nurses (Hayes et al., 2013).

According to Davis & Maujean (2013), self-efficacy is the key factor that influences the well-being of stroke patients. Those who have high self-efficacy reported a higher level of confidence and ability to undertake daily living activities, such as getting in or out of bed, dressing, taking a shower, toileting, and walking around and doing household. High self-efficacy of stroke patients are better prepared to adapt to their changing circumstances and the body's functioning. A similar study was conducted by Khashouei et al. (2016) on type II diabetes patients using a control group. The study results indicated that ACT provides a significant change in self-efficacy in the intervention group. ACT has also been shown to increase self-efficacy 4 times in the intervention group compared to the control group of Chronic Renal Failure (CRF) patients in the Hemodialysis Unit (Ismoyowati, 2018).

Moreover, according to Zhang et al. (2018), ACT is most researched intervention model targeting psychological flexibility. It promotes behavior that aligns with someone's values rather than allowing the thought of events to dominate regardless of their usefulness. Psychological flexibility in ACT consists of six big components: cognitive defusion, acceptance, self as a context, being fully present, values, and committed action. In the defusion process, the patients would be guided to develop an accurate awareness of their thought and emotions (Larmar et al., 2014). In addition, Snyder et al. (2011) explained that exercise defusion is addressed to reduce unpleasant personal events. Defusion would also work together to accept the impact of

nonfunctional rule-governed behavior to allow the patients to reach their desires. Acceptance is defined as someone's willingness to experience automatic and bad emotion without trying to control it either in the frequency, form or situational experienced (Zhang et al., 2018). Defusion and experiencing self as a context also work together to enhance patients' ability to choose to take action according to their values, discomfort experience, or other events (Ruiz, 2010). Moreover, Hoffmann et al. (2019) identified that self-as-context is opposite to self-as-content. Self-as-context is the experience that the patients are not the content of their thoughts but the ones experiencing it. In the ACT, the patients also should be guided to contact the present moment. The present moment could be defined as full awareness of psychological experience and environmental events in the present (Fung, 2015). These first four aspects discussed above are a kind of operational mindfulness definition (Chin & Hayes, 2017).

Furthermore, Chin and Hayes (2017) explained two other primary components of ACT, which were values and committed action. Values in the ACT are the quality chosen by the patients about what to be and what to do. It would direct the therapist to train the patient to choose their value rather than upon values. The last, committed action, is defined as the patient's ability to develop consistent behaviors patterns. These behaviors are filled with values, not actions driven by unworkable internalized rules and schemas (Fung, 2015). Moreover, from an ACT perspective, commitment is defined as moment-to-moment decisions to build patterns of meaningful action. It is not a promise of several actions to be made in the future. Furthermore, the success of ACT is also influenced by the process and the therapist's role as a person who helps patients develop positive values in themselves; thus, they do not only focus on reducing symptoms due to a disease (Khashouei et al., 2016). Moreover, Elita et al. (2017) explained that a patient was not recommended to control and avoid their traumatic personal experiences because these experiences would come and go in thoughts or feelings when ACT was carried out. The patient would be guided to identify their values and life goals based on their personal experience and making decision to take action consistently. The patient would not be viewed as an unhelpful person, instead, a meaningful, loveable, valuable person

who could give their impact to family and society (Mohabbat-Bahar et al., 2015).

Apart from being proven to increase self-efficacy, ACT has also shown several positive effects on health. The study conducted by Juhardin et al. (2016) concluded that ACT affects the quality of life of cancer patients. Their study found that the respondents improved optimistic feelings and increased the cancer patient functional scale. The functional scale consisted of physical, role, emotional, cognitive, and social functions. In addition, the cancer patients reported reducing several symptoms after the implementation of ACT, such as fatigue, loss of appetite, pain, insomnia, nausea, and vomiting. ACT also proved its effectiveness in reducing anxiety in the previous studies. In a study conducted by Hasheminasab et al. (2015), the respondents showed a clinically significant change in the severity of their anxiety disorders after experiencing 10 sessions of ACT. ACT is effective in helping patients diagnosed with anxiety disorder and shows its benefits to reduce extreme struggle with anxiety. Moreover, through ACT, the patients would have better control of the unwanted private events. Unlike the current research conducted with 3 sessions of ACT, this study was conducted with 10 sessions to indicate the effect of this therapy on generalized anxiety disorders.

The result of a study conducted by Saedy et al. (2015) is that ACT is also effective in lowering anxiety in participants treated with both medication and ACT, instead of those treated only with medication. ACT helps patients have better attitudes towards their thoughts and feelings related to their anxiety states. Through daily practice on mindfulness, the patients would develop their ability to use control solution strategies for anxiety. Reducing negative thoughts would automatically be done when the patients begin to accept the feelings and emotions. Better behavior such as an effective action would be more dominant than anxious reactions (Heydari et al., 2018).

A study conducted by Maria et al. (2020) used TB-HIV patients as their respondents and found that ACT significantly reduces depression in the experimental group rather than in the control group where ACT was not implemented. They also explained that when the depressive person is willing

to face and undergo the consequences obtained through ACT, there is a change in the cognition process where appraisal of situations that cause depression is no longer seen as negative. When the appraisal changes, the depression will also decrease. In a literature review study, including 19 intervention studies in the systematic review process, Salari et al. (2020) indicated that ACT significantly affects insomnia problems and person sleep quality. Moreover, ACT also shows its effectiveness to promote health-related lifestyle and behavior changes (LBCs), such as weight management, physical activity, lower emotional distress, and reduction in smoking addictive problems (Lillis & Kendra, 2014)(Maghsoudi et al., 2019)(Yıldız, 2020).

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CONCLUSION

Based on the result of this study, it can be concluded that ACT significantly increased the self-efficacy of stroke patients. The researchers recommend utilizing ACT as a complementary therapy for stroke patients in a hospital rehabilitation unit in clinical practice. For further research, a large number of respondents should be involved, and the effect of ACT on other psychosocial problems of stroke patients should be identified.

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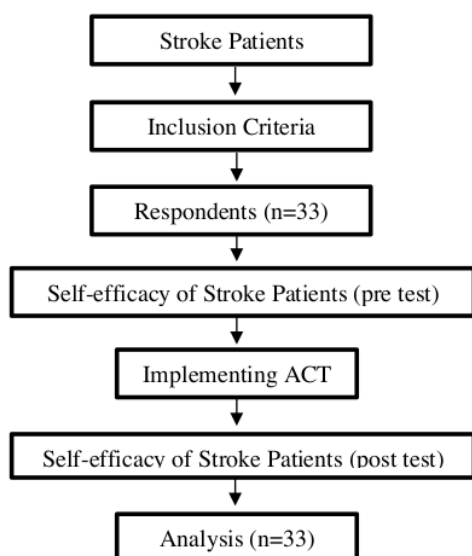


Figure 1. Patients' flow chart

Table 1. Characteristics of respondents based on age, gender and history of stroke (n=33)

Characteristic	Frequency	Percentage (%)
Age		
25 – 44 years old	4	12,12
45 – 64 years old	24	72,73
≥ 65 years old	5	15,15
Gender		
Male	19	57.6
Female	14	42.4
History of Stroke		
1-6 months	13	39
7-12 months	9	27
>1 year	11	33

Primary Data Source (2020)

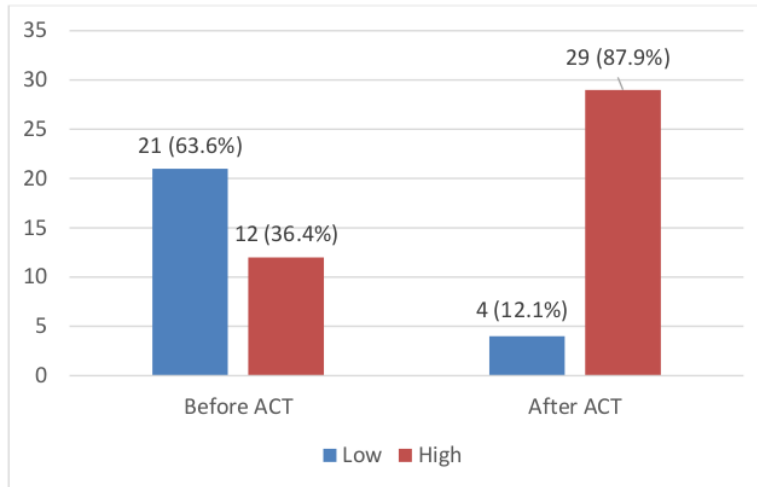


Figure 2. Self-efficacy distribution

5
Table 2. The effect of ACT on Self-Efficacy of Stroke Patients (n = 33)

Variable	Frequency	Percentage (%)	P-value
Self-efficacy at Pre Intervention			
Low	21	63,6	0,000
High	12	36,4	
Self-efficacy at Post Intervention			
Low	4	12,1	
High	29	87,9	

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