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ABSTRACT BOOK

Central Java International Nursing Conference

“Nurse as a leader to enhance the societies in continuum of health outcomes;
A voice to lead - health is human right”

Semarang, 12 May 2018

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ABSTRACT BOOK CENTRAL JAVA INTERNATIONAL NURSING
CONFERENCE 2018

“NURSE AS A LEADER TO ENHANCE THE SOCIETIES IN CONTINUUM OF
HEALTH OUTCOMES; A VOICE TO LEAD - HEALTH IS A HUMAN RIGHT“

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**CENTRAL JAVA INTERNATIONAL NURSING
CONFERENCE 2018**

*“Nurse As A Leader To Enhance The Societies In
Continuum Of Health Outcomes; A Voice To Lead - Health
Is A Human Right”*

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PREFACE

In accordance to globalization era, all countries around the world will be integrated and linked each others. Much emphasis has been placed on the prospective growth of nation in economic development, peaceful, or security, and also quality of life for their society cannot be separated from universal standart and global strategy. However, it should be noted that scientific advances and innovations in all area are important drivers for the achievements of this goal. It has been proven that the ability to create, distribute, and exploit knowledge has become a major source of competitive advantage, wealth creation, and improvements in the quality of life. Some of the main features of this transformation are the growing impact of information on society; the rapid application of recent scientific advances in new products and processes; a high rate of innovation across many countries; a shift to more knowledge-intensive and services; and rising skill requirements.

These changes imply that science and innovation are now being a key to improving social well-being in the world. In this part, high quality of health services which is conduct by evidence based practice becomes main field to bridging of all community to increase their quality of life. According to increase the quality of health services, we need to apply the innovation of all area on health sciences.

Health problems in society are more complex, and comprehensive approach is required to address them. Complexity is influenced by many variables from the community that contribute to the occurrence of health problems. Looking at the whole person of the physical, emotional, social, and spiritual aspects is the approach needed to address the complexity of the problem. This phenomenon is prove that need to empower the society in health care.

Health providers who have a major role in addressing public health problems, of course, need to be equipped with innovative understanding and empowerment skills. So that, their services become more comprehensive and give positive impact for society. Especially in nursing, evidence based nursing application in community empowerment becomes an important to do.

Nursing is such a dynamic field of study and practice. Nursing is one of interest science and their practice has given a positive impact to society. Nursing and research work together, and optimal nursing care is dependent on implementing the latest research findings. Practices that have been proven effective through research allow nurses to provide the best possible care. Although the majority of nurses who provide care are consumers of nursing research, implementing evidence-based nursing practice is crucial to delivering optimal nursing care. However, exchange opinions about science and experience in the nursing field directly in a scientific forum is a very effective medium to share science and knowledge because it allows direct confirmation with the concerned researchers, practitioners, and other information resources. This can minimize the possibility of misinterpretation of one individual to another individual.

Answering the need of information as mentioned above, the Central Java International Nursing Conference 2018 (CJINC 2018) is conceived as a form of a scientific forum that aims to bridge the exchange of science, knowledge, and ideas related to the topic "Nurse as A Leader to Enhance the Societies in Continuum of Health Outcomes; A Voice To Lead - Health is a Human Right". This conference is held by Indonesian National Nurses Association, Regional Executive Board, Central Java Province. The conference is celebrating the 44th anniversary of Indonesian National Nurse Association and International Nurses Day 2018. It can be developed together for the progress of nursing science which will certainly result in high quality nursing service to the community. The conference is opened to all participants from Indonesian and foreign countries that concern with the development of nursing and health care services.

Semarang, 12 May 2018

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Effects of Benson's Relaxation Response on Physiological Responses in Patients with Acute Ischemic Stroke in Several Regional Hospitals in Semarang

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ABSTRACT

Introduction: Increased physiological responses in patients with acute ischemic stroke describe an adaptation of body to stress due to illness. Increased physiological responses may have a long term ischemic effect which can promote the risk of recurrent complications and strokes. These physiological responses include the motoric, sensory, and visual domains as well as the level of consciousness. Benson's relaxation response is one of the nursing interventions which can decrease the physiologic response in patients with acute ischemic stroke. Benson's relaxation response is an intervention which is practiced through a stable body and mind approach to manage stress; it has proven to be useful in various populations. This study aimed to analyze the effects of Benson's relaxation response on the physiologic responses in patients with acute ischemic stroke.

Method: This study was an experimental study with a pre-posttest control group design. The subjects were 42 acute ischemic stroke patients, consisting of 21 patients in the control group and 21 patients in the intervention group.

Results: The results showed differences in the physiologic responses in acute ischemic stroke patients between the intervention and the control groups. The physiological responses in the intervention group showed better values than the control group with $p=0.001$.

Conclusion: The study concluded that Benson's relaxation response was effective in increasing the physiologic responses in patients with acute ischemic stroke. Based on the results of this study, it is suggested that Benson's relaxation response could be used as a standard operating procedure in nursing care. Further studies could examine the effects of Benson's relaxation response which is performed as early as possible in acute ischemic stroke patients by involving other interventions.

Keywords: Benson's Relaxation Response, Physiological Response, Acute Ischemic Stroke

Effect of Benson's Relaxation Response on Physiological Responses in Patients with Acute Ischemic Stroke in Several Regional Hospitals in Semarang

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ABSTRACT

Introduction: Increased physiological responses in patients with Acute Ischemic Stroke (AIS) describe an adaptation of body to stress due to illness. It may have a long term ischemic effect which can promote the risk of recurrent complications and strokes. These physiological responses include the motoric, sensory, visual domains, and the level of consciousness. Relaxation response is one of the nursing interventions which can decrease the physiologic response in patients with AIS. It is an intervention which is practiced through a stable body and mind approach to manage stress, it has proven to be useful in various populations.

Method: This study aimed to analyze the effects of relaxation response on the physiologic responses with AIS. This study was an experimental study with a pre-posttest control group design. The subjects were 42 acute ischemic stroke patients, consisting of 21 patients in the control group and 21 patients in the intervention group.

Results: The results showed any significant differences of physiological responses between intervention dan control groups. The intervention group showed better values than the control group with $p=0.001$.

Conclusion: The study concluded that Benson's relaxation response was effective in decreasing the physiologic responses for example the motoric in patients with AIS. Based on the results of this study, it is suggested that Benson's relaxation response with word or prayer repeated could be used as a standard operating procedure in nursing care. Further studies could examine the effects of Benson's relaxation response which is performed as early as possible in AIS patients by involving other interventions.

Keywords: Benson's Relaxation Response, Physiological Response, Acute Ischemic Stroke

INTRODUCTION

It is projected that in every 40 seconds, there is someone who experiences a stroke. It is also predicted that there will be four millions of people in the United States suffering from strokes in 2030 (Mozaffarian et al, 2013). Stroke is the leading cause of death in Indonesia with a prevalence of 15.4%. The prevalence of stroke increased to 12.1 per 1,000 population in 2013 (RIKESDA, 2013). The stroke syndrome consists of two categories, namely ischemic and hemorrhagic stroke. The ischemic stroke occurs in 80% of total cases while the remaining 20% is of the hemorrhagic stroke (Glen, 2010). It is reported that the ischemic stroke cases in January to October 2017 in K.R.M.T Wongsonegoro Hospital and Tugurejo Hospital in Semarang were 156 patients and 284 patients, respectively.

Patients with acute ischemic stroke usually experience stress as a process of self-defense mechanism to the body changes due to the illness. This is congruent with the Selye's General Adaptation Syndrome (GAS) theory, which states that stress is an integrated syndrome which is closely related to adaptive reactions to non-specific stress (Selye, 1950). The stress response that occurs in patients with acute ischemic stroke is indicated by systemic adaptation of involuntary physiological changes that may include increased heart rate, blood pressure, respiratory rate, and liberating metabolism shift. Increased physiological responses due to stress occur as there is an activation of neuroendocrine response, and epinephrine and norepinephrine release stimuli (Dusek & Benson, 2009). When persistently occurs, the increased physiological responses can lengthen the worsening of stroke outcomes.

The prevention of increased physiologic responses in acute ischemic stroke patients needs to be carried out through restorative therapies. These therapies include neurologic repair and improvement in the sensory, motoric, and visual domains, as well as the level of consciousness (Hayes et al, 2016). Relaxation is one of the nursing interventions which can improve the physiological responses of stroke patients. It has been introduced and used as a complementary therapy, and alternative therapy in many studies (Elali et al, 2012). Benson's relaxation response is a practice of therapy with an approach of balanced mind and body to manage stress and has been found beneficial in various populations. This therapy is useful since it can make the body and mind relaxed, and increase the faith and possibility of transcendent experience with low cost, requiring no special equipment and is easy to be implemented (Heyes et al, 2016; Heshmatifar et al, 2015).

Benson's relaxation response indicates that there are many physiological changes associated with the changes in the biochemical control center which can be controlled by reducing the autonomic nervous system activity. These physiological changes may include some changes in the hypothalamus-pituitary-adrenal (HPA) and sympatho-adrenomedullary (SAM) pathways. Both major pathways are activated by the hypothalamus which secretes corticotrophin-releasing hormone (CRH) causing the pituitary glands to release adrenocorticotrophic hormone (ACTH). The rapid action of the SAM pathway causes decreased ACTH and decreased sympathetic nervous system activity which causes the medullary adrenal to lower catecholamines, epinephrine and norepinephrine resulting in decreased blood pressure, heart rhythm, respiration, and oxygen consumption. The slow action of the HPA causes ACTH to stimulate the adrenal cortex to lower cortisol. The level of cortisol will be significantly lowering in accordance with the period of meditation (Dusek & Benson, 2009). This suggests that Benson's relaxation response can improve physical and emotional changes in patients with congestive heart failure (Chang et al, 2004). It can also improve spiritual well-being and increased psychological outcomes in patients with cardiac rehabilitation (Chang et al,

2010).Furthermore, Benson's relaxation response also decreases pain in patients with Acute Myocardial Infarct (Sunaryo & Lestari, 2014).

Benson's relaxation response can counteract the stress response in various patients with heart diseases. However, to date, there has been no study which investigates the effects of Benson's relaxation response on cerebrovascular patients. Changes in physiological responses that occur in cardiovascular patients can be due to the effects of Benson's relaxation response. Thus, it is assumed that Benson's relaxation response may affect the physiological responses in cerebrovascular patients, resulting in the physiologic response changes in patients with acute ischemic stroke.

The phenomenon exists in the Tugurejo Hospital Semarang and K.M.R.T. Wongsonegoro Hospital Semarang related physiological response is not yet the existence of physiological response stroke assessment data in particular in the form of the instruments for the study of the time of entry or exit of the hospital. Assessment of the physiological response is done at the moment is based on the clinical condition of the patient. Nursing interventions conducted in the form of standard hospital care such as monitoring of TTV, head to toe physical examination, changes position every 2 hours, active and passive ROM exercises, as well as a collaborative intervention. While the nursing interventions to meet the needs of biopsikososiospiritual that occurs in acute ischemic stroke patients when subjected to a stress response as an adaptation to the ailment has not been fulfilled.Nursing intervention as Benson's relaxation of complementary it superior to support existing treatments because of the safe with a low cost and may cause changes in the body's physiological response to decline but this intervention has not been applied in the Tugurejo Hospital Semarang and K.M.R.T. Wongsonegoro Hospital Semarang.Therefore, the researchers are interested in analyzing the effects of Benson's relaxation response on the physiologic response in patients with acute ischemic stroke in hospitals in Semarang.

METHODS

This study used an experimental method with pre-post test control group design. The subjects were 42 patients with acute ischemic stroke consisting of 21 patients in the control group and 21 patients in the intervention group. This research yield effect size equal to 0,917. The value of effect size shows the high power size (90%) in the Cohen table.

The research instrument used was the National Institute of Health Stroke Scale (NIHSS) to measure the outcomes of the patients regarding physiological responses which include the motoric, sensory, and visual domains and the level of consciousness. In addition, the Mini-Mental State Examination (MMSE) instrument was also used to measure the cognitive function in selecting the subjects.

In this study, the inclusion criteria were (1)new patients diagnosed with acute ischemic stroke undergoing treatment at the inpatients wards of Alamanda, Dahlia 2, Dahlia 3, and Dahlia 4 in Tugurejo Hospital, and at the inpatient wards of Yudistira, Nakula 2 and Nakula 3 in K.R.M.T Wongsonegoro Hospital, (2) having compos mentis level of consciousness and able to communicate well enough, (3) having good level of cognitive function as indicated by the MMSE score of 27-30, and (4) being consistent with the stages of interventions.

The exclusion criteria were (1) patientsreceiving thrombolytic therapy, (2) patients receiving psychotropic therapy, (3) patients with comorbid malignancies, (4) patients with very heavy stroke level as indicated by the NIHSS score >25, (5) patients with limb amputationso that motoric assessment through arms and limbs using NIHSS is not

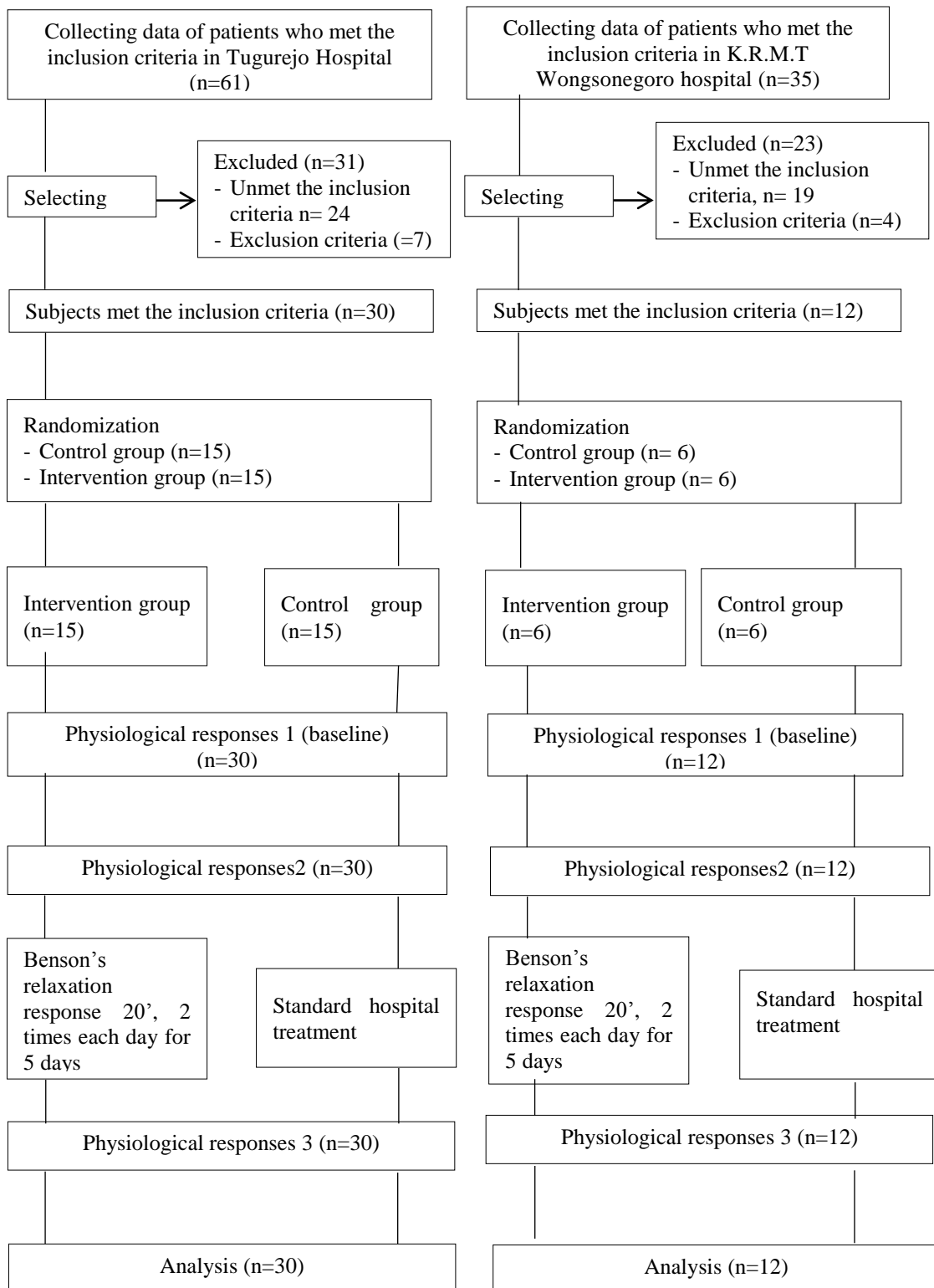
possible, and (6) patients with intubation or other physical barriers so that the NIHSS score dysarthria cannot be performed.

The study was conducted at the inpatient wards of Alamanda, Dahlia 2, Dahlia 3, and Dahlia 4 in Tugurejo Hospital, and Yudistira, Nakula 2 and Nakula 3 in K.M.R.T Wongsonegoro Hospital, Semarang. The study took place from August 4 to November 6, 2017.

The characteristics of the subjects were analyzed using a univariate analysis in the form of frequency and percentage. Nonparametric analysis was performed using the Wilcoxon and Mann Whitney tests since the data were abnormally distributed.

This study was approved by the research ethics committee of the Faculty of Medicine, Diponegoro University and Dr. Kariadi Hospital with number 468/EC/FK-RSDK/VII/2017. The research ethics were concerned with the four main principles namely, respecting human dignity and prestige, respecting the privacy and confidentiality of the subject, respecting the fairness of inclusivity, and taking into account the occurred benefits and losses.

The pathway of research and subject selection



RESULTS

The characteristics of subjects in the two groups are presented in Table 1. The results indicated that the age of subjects both in the intervention groups and control groups was not statistically and significantly different. On the other hand, the gender of subjects in the intervention group and control group showed statistically significant differences.

Table 1. Frequency Distribution of Demographic Characteristics (Age and Sex) in Intervention Group and Control Group

Variable	Intervention	Control	Total	P*
	Frequency (%) (n)=21	Frequency (%) (n)=21	Frequency (%) (n = 42)	
Age				
30-44	1 (4.8)	2 (9.5)	3 (7.1)	0.514
45-59	10 (47.6)	7 (33.3)	17 (40.5)	
60-74	9 (42.9)	12 (57.1)	21 (50)	
75-90	1 (4.8)	0 (0)	1 (2.4)	
Sex				
Male	13 (61.9)	5 (23.8)	18 (42.9)	0.013
Female	8 (38.1)	16 (76.2)	24 (57.1)	
Total	21 (100)	21 (100)	42 (100)	

Note: *= Chi-Square test (CI=95%)

Table 2. Description of Physiological Responses in Intervention Group (N=21) and Control Group (N=21)

Variable	Group	Mean ± SD	P*
Physiological responses1	Control	8.10 ± 4.471	0.504
	Intervention	6.71 ± 4.014	
Physiological responses2	Control	7.90 ± 4.538	0.620
	Intervention	6.86 ± 4.090	
Physiological responses3	Control	6.10 ± 4.493	0.597
	Intervention	3.57 ± 3.696	

Note: *= Chi-Square test (CI=95%)

The physiological responses in the intervention and control group are presented in Table 2. Physiological response 1 was the baseline, physiological response 2 was the pretest, and physiological response 3 was the posttest. The physiological response value of Mean±SD in the control group at the baseline, pre-test, and post-test was 8.10±4.471, 7.90±4.538, and 6.10±4.493, respectively. These scores were in the range of 6-8 with moderate stroke interpretation. Meanwhile, the mean value of physiological responses in the intervention group at the baseline and pre-test was respectively 6.71±4.014 and 6.86 ± 4.090. The score was 6 with an interpretation of moderate stroke. Furthermore, the mean value of physiological responses at the post-test was 3.57±3.696 with score 3 and was interpreted as a mild stroke. These data showed that there were differences in the mean values between physiological response 1 (baseline), physiological response 2 (pretest), and physiological responses 3 (posttest).

Table 3. Results of Wilcoxon Test on Physiological Response in Pretest and Posttest in Intervention Groups (N=21) and Control Groups (N=21)

Physiological Response Group		Mean ±SD	Z	P*
Control group	Pretest	7.90±4.538	- 3.631	0.0001
	Posttest	6.10±4.493		
Intervention group	Pretest	6.86±4.090	- 4.083	0.0001
	Posttest	3.57±3.696		

Note: *= Wilcoxon test (CI=95%)

The effect of Benson's relaxation response on the physiological responses in pretest and posttest is presented in Table 3. The physiological response in the intervention group was $Z = -4.083$ and in the control group was $Z = -3.631$, meaning that the physiological response of patients with acute ischemic stroke after the implementation of Benson's relaxation response in the intervention group was better than that of the control group with $p = 0.0001$.

Table 4. Results of Mann Whitney Delta Test of Physiological Response in Intervention Group (N=21) and Control Group (N=21)

Delta of physiological response	U	P*	CI (95 %)
Intervention			
Control	94.500	0.001	0.000-0.069

Note: *= Mann-Whitney test

Differences in Benson's relaxation response on physiological responses in pretest and posttest are presented in Table 4. The results showed $p = 0.001$, indicating a significant value, which meant that there were differences in the physiological response of acute ischemic stroke patients before and after the implementation of Benson's relaxation response. The intervention group indicated a better score than the control group. The value of confidence interval either lower or upper did not pass a zero score, i.e., 0.000-0.069, and thus this value was statistically significant. There were differences in the value of physiological response between the control group and intervention group.

DISCUSSION

Benson's relaxation response causes the changes of physiologic response that occurs due to changes in the pathways of HPA and SAM. Both major pathways are activated by hypothalamus secreting CRH which causes the pituitary gland to release ACTH. The rapid action of the SAM axis causes decreased ACTH and decreased sympathetic nervous system activity which causes the medullary adrenal to lower catecholamines, epinephrine and norepinephrine resulting in decreased blood pressure, heart rhythm, respiration, and oxygen consumption. The slow action of HPA causes ACTH to stimulate the adrenal cortex to lower cortisol. The level of cortisol will be significantly lowering in accordance with the period of meditation (Dusek & Benson, 2009).

When further analyzed, the higher decrease in physiological responses occurring in the intervention group is in the motoric physiological response, especially the speech-function muscles. Subjects who experienced dysarthria also had a clearer articulation after given the standard hospital intervention and Benson's relaxation response. According to previous studies, Benson's relaxation response, as long as it is performed with a focused mind through repetition of words, phrases, sounds, prayers, or muscle activity as well as being in a passive state, accompanied with temporary actions of disregarding other passively distracting thoughts that break the chain of everyday thinking, will create a calming sense

of mind and body. The body's response will decreased drastically at heart rate, respiratory rate, and blood pressure (Elyse et al, 2013; Benson & Klipper, 2009)

In addition, according to the theory, the repetition of the Islamic sentences "Laa Illaha Illallah" and "Astaghfirullah" can foster a sense of calm and nerve stability for the patient since in both sentences, there are *Jahr* letters that can remove CO₂ from the brain. In the sentence of "Laa Illaha Illallah," there are seven letters of *Jahr*, i.e., "Lam." Meanwhile, "Astaghfirullah" has four letters, "Ghayn," "Ra," and two "Lam" which cause more air to come out of the lungs through the mouth. Thus, based on the science of *tajwid*, repeating these two sentences will emit more carbon dioxide when the air is released out of the mouth, compared with the phrases having minimal *Jahr*. As a result, when one is repeating this sentence intently and solemnly while understanding the meaning, the blood vessels in the brain produce more carbon dioxide out of the body. The level of carbon dioxide in the brain will also decrease regularly, and the body will immediately show the ability of reflex compensation (Yurisaldi, 2010).

The decrease of carbon dioxide levels in the brain leads to reduced ischemic areas so that the cerebral tissue perfusion becomes adequate. The solved perfusion of cerebral tissue will repair and improve the neurological function in the sensory, motoric, and visual domains, as well as the consciousness level. The repair of physiologic responses in acute ischemic stroke patients after the implementation of Benson's relaxation response provides good effects on the stroke outcomes, i.e., shortened ischemic duration and prevention from re-stroke and more severe complications.

CONCLUSION

This study concluded that Benson's relaxation response was effective for decreasing the physiologic responses in patients with acute ischemic stroke. Based on the results of the study, it is recommended that Benson's relaxation response could be used as a standard operational procedure in nursing care and implemented as early as possible. Further studies could examine the effects of Benson's relaxation response which is early implemented in acute ischemic stroke patients by involving other kinds of interventions.

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