ORIGINAL ARTICLES

THE EFFECT OF PROGRESSIVE MUSCLE RELAXATION INTERVENTION ON DECREASING ANXIETY LEVEL AMONG HEMODIALYSIS PATIENTS IN SIDOARJO HOSPITAL

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Abstract

Anxiety among hemodialysis patients is often overlooked, although the psychological burden experienced can affect health and care. Progressive muscle relaxation is an effective intervention to reduce the anxiety level. This study aimed to examine the effect of continuous muscle relaxation intervention on decreasing anxiety among hemodialysis patients. A quasi-experimental, pre-test, and post-test with a non-equivalent control group was applied in this study. Seventy samples were recruited using Purposive Sampling and divided into two intervention groups and control groups. Data analysis was performed and presented in descriptive statistics, and significant findings were calculated using the paired t-test. The results of the study showed that the intervention group's anxiety level decreased from 28.76 + 4.603 to 16.61 + 2.487 after the intervention. Meanwhile, in the control group, the average anxiety level decreased slightly from 28.18 + 4.066 to 23.82 + 4.362. The paired t-test obtained a p-value of 0,000, indicating that there was a significant difference in the decrease in anxiety levels between the intervention and the control group. An intervention in progressive muscle relaxation can reduce anxiety levels in hemodialysis patients. The nurse need to consider this intervention as an alternative to reduce problem related psychological problems.

Keywords: Hemodialysis, anxiety, progressive muscle relaxation.

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Introduction

Chronic Kidney Diseases (CKD) is a common problem in the community. On the way, when stage 5 occurs, it will require kidney replacement therapy in the form of kidney transplantation or dialysis (1). Among these two types of replacement therapy, dialysis is a common treatment for hemodialysis (HD), a procedure that results in the resting metabolism, and excess fluid is removed from the blood through artificial kidneys (2).

Hemodialysis cannot restore or heal and is unable to compensate for the loss of metabolic or endocrine activity performed by the kidneys, so patients continue to experience complications. These complications cause new and more complex problems, including

anxiety (3,4). Anxiety in patients doing hemodialysis (HD) often gets less attention from all walks of life, even though the psychological burden experienced by HD patients can affect health and treatment (5). Even said, anxiety is a significant factor that can reduce the health of HD patients. In the Sidoarjo Regional Hospital, the intervention given to patients to overcome fear is only the health center, and there has been no additional intervention. So that other efforts are needed to reduce anxiety, which is experienced by HD patients, one of these efforts is Progressive Muscle Relaxation (PMR).

The proportion of the global population with anxiety disorders in 2015 is estimated at 3.6%. Like depression, anxiety disorders are more common in women than men (4.6% compared to 2.6% at the global level) (6), 2013 Riskesdas data show the prevalence of mental-emotional disorders indicated by symptoms of depression and anxiety for the age of 15 years and overreaches around 14 million people or 6% of the total population of Indonesia (7).

One significant intradialytic complication to evaluate is cardiovascular problems because it causes an increase in morbidity and mortality in CKD patients undergoing routine hemodialysis (8). All complications caused will increase anxiety felt by patients. anxiety in sedentary HD patients can contribute to disease progression and worse prognosis (9). Handlers to minimize complications are usually pharmacological and non-pharmacological therapies, but due to interference with kidney function, the alternative that can be used is non-pharmacological therapy.

Progressive Muscle Relaxation (PMR) is a relaxation technique through two processes, namely tensing and relaxing the body muscles, which is a combination of breathing and motion exercises (10). Based on this, research is needed to analyze the effect of Progressive Muscle Relaxation on anxiety in HD patients.

Objectives

This study aimed to examine the effect of progressive muscle relaxation intervention on decreasing anxiety among hemodialysis patients.

Methods

This study used a quasi-experimental pre-test and post-test design with a nonequivalent control group. Seventy samples were recruited by using purposive sampling and allocated into two groups comprised of 35 samples for the intervention group and 35 samples of the control group. The study was conducted in the hemodialysis room, Sidoarjo Hospital. The inclusion criteria of this study as follows: 1) aged between 18 to 65 years old, 2) patients with undergoing hemodialysis between 2 to 3 times per week, 3) be able to communicate in the Indonesia language. Patients with fracture complications, severe heart disease, and psychiatric disorders were excluded from this study.

In his study, the intervention group received the progressive muscle relaxation intervention for two times per week before hemodialysis for 15-20 minutes. While the control group received routine care, both the experimental and control group were measured for anxiety level before and after program implementation. Descriptive analysis was used to describe the percentage of the characteristic respondent. A paired t-test was used to examine the mean different before and after program implementation within the experimental group and control group.

This study has been approved by the research ethics committee of the Sidoarjo Hospital Health Research Ethics Commission (No: 893.3/1873/438.6.7/2019). All respondents were informed about the purpose of the study and agreed to their participation in this study.

Results

Characteristic of respondents

Table 1 showed the respondents' characteristics, 45.71% of patients were 56-65 years old, and more than 60 percent were a man. Regarding working experience, most of them were a housewife (25.71%) and followed by the entrepreneur (22.86%). Nearly half of the patients have graduated from high school (44.29%). Mos of patients has been receiving hemodialysis within 1 to 3 years (55.71%), while 44.29% of patients have been receiving hemodialysis for less than one year.

Table 1 Characteristics of respondents (n=70)

Distribution respondent		Total	Percentage (%)
Age	18-25	2	2,86
	26-35	4	5,71
	36-45	11	15,71
	46-55	21	30
	56-65	32	45,71
Gender	Man	46	65,71
	Women	24	34,29
Work	Does not work	13	18,57
	Enterpreneur	16	22,86
	Government employees	5	7,14
	Private	15	21,43
	Housewife	18	25,71
	Pension	4	5,71
Education	Elementary school	17	24,29
	Junior high school	12	17,14
	High school	31	44,29
	College	10	4,29
Hemodialysis	< 1 year	31	44,29
	1 – 3 year	39	55,71

Comparison of mean score among patients before and after receiving progressive muscle relaxation within the experimental and the control group

Table 2 showed a correlation of mean score among patients before and after receiving progressive muscle relaxation within the experimental and the control group. The results showed a mean score of anxiety among patients in the experimental group after receiving the program (8,829+2,121) was lower than before receiving the program (10,057+2,085).

That is the intervention group before being given progressive muscle relaxation intervention based on the anxiety model, the average was 10.057 (moderate anxiety) with a standard deviation of 2.085, after being given an intervention there was a decrease in the average anxiety of 8.829 (moderate). Anxiety with standard 2.121 and control group before intervention was 9.914 times (mild anxiety) with standard deviation 2.119, after intervention there was a decrease in average shocks of 9.571 (moderate anxiety) with

standard 2.146, which means that progressive muscle relaxation interventions decrease anxiety average the mean is 1.28 higher than the control group with a decrease in anxiety averaging 0.343. After testing the data analysis using paired test (α 0,05) in the progressive muscle relaxation intervention group obtained p 0,000 which means that there is a progressive muscle relaxation effect on the decrease in anxiety in hemodialysis patients in Sidoarjo Hospital

Table 2 Effect of progressive muscle relaxation on anxiety in hemodialysis patients in Sidoarjo Hospital (n = 70)

Variable	Intervention		Delta Δ	*p-value*	Control		Delta Δ	*P Value*
	Pre	Post			Pre	Post		
	Mean ± SD	Mean ± SD			Mean ± SD	Mean ± SD		
Anxiety	10,057±2,085	8,829±2,121	1,228	0,000	9,914±2,119	9,571±2,146	0,343	0,000

*paired t-test for differences groups (p<0.05)

Discussion

The results of this study confirmed that the mean difference from the experimental group more decrease than the control group. The finding was consistent with the previous study confirmed that progressive muscle relaxation was sufficient to reduce anxiety and depression levels among patients with leprosy (10).

A study conducted by Zhang (2014) mentioned that long term period of hemodialysis process would impact on the high prevalence of anxiety and daily physical activity (2). The handling required must be non-pharmacological treatment due to interference with kidney function in hemodialysis patients (11,12).

Progressive muscle relaxation is a relaxation technique through two processes, namely tense and relaxes muscles, which is a combination of breathing and motion exercises (13). This is in line with the research of Amini et al., Which measures anxiety in chronic kidney patients undergoing hemodialysis, showing the results that anxiety in patients with chronic renal failure undergoing hemodialysis is still high, so it needs to be given care because this anxiety has a high risk of death and robust primary morbidity(5). Another study applied the progressive muscle relaxation intervention to decrease the level of anxiety and blood pressure level among the experimental group after program implementation (14).

Conclusion

The intervention of progressive muscle relaxation was effective to reduce anxiety levels among hemodialysis patients. The progressive muscle relaxation intervention could be alternative strategy to solve the problem related psychological aspects.

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