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ORIGINAL RESEARCH

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EFFECT OF HYPNO-PRESSURE ON ANXIETY IN PATIENTS WITH CARDIOVASCULAR DISORDER

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Abstract

Objective: This study aimed to determine the effectiveness of the combination of hypnotherapy and acupressure (hypno-pressure) on anxiety levels in patients with cardiovascular disorders.

Methods: A quasi-experimental research with pretest-posttest with control group design was used. Fifty-six respondents were selected using purposive sampling in this study, which 28 respondents were randomly assigned in the experiment and control group. The Spielberger State-Trait Anxiety Inventory (STAI) Form Y was used to measure anxiety. Paired t-test and Independent t-test were used for data analysis.

Results: There was a significant effect of hypno-pressure on the decrease of anxiety levels in patients with cardiovascular disorder with p-value 0.000 (<0.05), $t = 7.217$, and effect size of 1.96.

Conclusion: Hypno-pressure could reduce anxiety levels in patients with cardiovascular disorder.

Keywords: anxiety; cardiovascular disorders; hypnosis; acupressure

INTRODUCTION

Based on the Basic Health Research of the Department of Health of the Republic of Indonesia in 2013 stated that the percentage of patients with cardiovascular disorders always increase every year, from 7.1% in 2010 increased to 9.0% in 2011, 9.3% in 2012, and 9.8% in 2013 ([MOH, 2013](#)).

Cardiovascular disorders and anxiety are the two variables that have a causality relationship, which become a serious problem to the patient's prognosis. Anxiety disorders adversely affect cardiovascular disorders, 35% of 492 patients have an increased risk of hospitalization ([Chamberlain et al., 2011](#); [Tully & Baune, 2014](#); [Tully, Cosh, & Baune, 2013](#)). Anxiety affects the biological process

of cardiovascular function in patients with heart failure by altering neurohormonal function through the activation of the hypothalamic-pituitary-adrenal (HPA-axis) ([Bahall, 2015](#); [Kreitzer & Snyder, 2002](#)).

Anxiety is a risk factor for cardiovascular disorders and otherwise cardiovascular disorders will cause anxiety. This condition will be a serious problem to the patient's prognosis ([DeJong, 2005](#)). Thus, an effort to reduce anxiety in patients with cardiovascular disorder is needed.

Hypnosis is an independent nursing intervention, used to achieve relaxation, reduce anxiety, fear and discomfort by

manipulating the mindset ([Dufresne et al., 2010](#); [Hammond, 2010](#); [La Kahija, 2007](#)). Besides, acupressure is a technique of emphasis, massage and or sequencing along the body's meridian lines which allows a congested flow of energy to rise to a healthier state, resulting in physiological changes of the body ([Pilkington, Kirkwood, Rampes, Cummings, & Richardson, 2007](#); [Stux & Pomeranz, 2012](#); [Sukanta, 2008](#)). Research conducted by previous research proves that hypnosis and acupressure interventions can reduce anxiety in various cases, but the intervention was done separately. However, previous studies mentioned that there was no strong relationship between hypnosis and anxiety ([Vorizal, 2010](#)), and between acupressure and anxiety ([Beikmoradi et al., 2015](#)).

Hypnosis and acupressure are independent nursing interventions that can be done by trained and certified nurses. Hypnosis and acupressure can be used to treat various signs and symptoms raised by a disease or health problem, including anxiety that arises in patients with cardiovascular disorders ([Butcher, Bulechek, Dochterman, & Wagner, 2018](#)). Furthermore, hypnosis and acupressure can be performed simultaneously called hypno-pressure. This study aimed to determine the effect of hypno-pressure on anxiety levels in patients with cardiovascular disorders scientifically.

METHODS

Study design

This was a quasi-experimental study with pretest-posttest control group design. This study was conducted from 5 December 2016 to 15 January 2017.

Sample

Fifty-six respondents were selected using purposive sampling in this study, which 28 respondents were randomly assigned in the experiment and control group.

Instrument

The Spielberger State-Trait Anxiety Inventory (STAI) Form Y was used to measure anxiety in this study. This instrument has been adapted into 48 languages for a wide range of studies in health research. This instrument has also been translated in Indonesian language by previous research ([Itsna, 2016](#)).

Intervention

Hypno-pressure interventions conducted by trained nurses who have been certified to perform hypno-pressure, and trained in the management of patients with cardiovascular disorders. The certificates and courses that the authors have for the purpose of conducting this research were certified hypnotist (CH) and certified hypnotherapist (CHt) published by The Indonesian Board of Hypnotherapy, International Short Course Training on Clinical Practice in Critical Care Program Unit at Faculty of Nursing Prince of Songkla University Thailand, Critical Care Nursing and Academic Activity Experience Exchanging at Boromarajonani College of Nursing Yala Thailand. Elderly patients were one of the challenges of the researcher during therapy, so researchers needed to find a very quiet room, done the therapy with a clear voice, slowly, with the help of soft instrumental music. The implementation of this study began with a pretest of intervention and control groups by measuring the anxiety levels of both groups when patients entered the ICCU using the STAI form Y instrument, the results were documented. The following day at 08.00-09.00 for the experiment group was given the first treatment with hypno-pressure for 30 minutes. The second treatment was done at 10:30 to 11:30 with 30 minutes. The control group was given health education and motivation by nurses at ICCU. Posttest was performed in both groups in the end of intervention at 13.30. Results were documented as an intervention group and control group's anxiety score.

Data analysis

Paired t-test and Independent t-test were used for data analysis.

RESULTS

Table 1 Characteristics of respondents based on gender and age (N=56)

Variables	Group				Total		<i>p-value</i>
	Experiment n=28		Control n=28				
	f	%	f	%	n	%	
Gender							
Male	10	17.9	14	25.0	24	42.9	0.28
Female	18	32.1	14	25.0	32	57.1	
Age							
Mean ± SD	65.54 ±11.989		66.68±10.449				0.749
Middle Age (45-59)	3	10.70	1	3.60	4	7.14	
Elderly (60-74)	15	53.60	15	53.60	30	53.57	
Old (75-90)	10	35.70	12	42.90	22	39.29	
Medical diagnosis							
Non-STEMI	5	21	10	31	15	27	
Heart rhythm disturbance	11	46	7	22	18	32	
Heart failure	6	25	13	41	19	34	
Vascular disorder	2	8	2	6	4	7	

Table 1 shows that the respondents in the experiment group consisted of female (32.1%) and male (17.9%), while respondents in the control group had equal number of male and female (25%), with *p*-value 0.28 (>0.05), which indicated that there was no difference of gender between the experiment and control

group. The majority of respondents in the experiment and control group was in elderly group (60 – 74) of 53.57%, with *p*-value 0.749, which indicated that there was no difference of age between the experiment and control group. And the majority of respondents had heart failure (34%).

Table 2 Anxiety level in the experiment and control group (N= 56)

Anxiety level	Experiment				Control			
	Pre		Post		Pre		Post	
	n	%	n	%	n	%	n	%
Mean±SD	44.29±2.76				46.64±3.39			
20-39 (Mild)	0	0	8	28.60	0	0	1	3.60
40-59 (Moderate)	28	100	20	71.40	28	100	27	96.40
60-80 (Severe)	0	0	0	0	0	0	0	0
Total	28	100	28	100	28	28	28	100

Table 2 shows that the mean of anxiety level in the experiment group was 44.29 and in the control group was 46.64. All respondents before intervention in the experiment group experienced moderate level of anxiety, and after intervention 20 respondents (71.40%) experienced moderate level and 8 respondents (28.60%) in mild level of anxiety. In control

group, all respondents also had moderate level of anxiety, and after intervention 27 respondents (96.4%) still had moderate level of anxiety and 1 respondent (3.60%) experienced mild anxiety. There was not much difference in anxiety level before and after intervention in the control group.

Table 3 Effect of hypno-pressure on anxiety levels (N=56)

Anxiety level	Mean \pm SD	t	p-value
Experiment group			
Pretest	44.29 \pm 2.76	9.346	0.000
Posttest	39.71 \pm 3.18		
Control group			
Pretest	46.64 \pm 3.39	0.420	0.691
Posttest	46.57 \pm 3.89		

Paired t-test results in the table 3 shows p-value 0.000 (<0.05) in the experiment group, which indicated that there was a significant effect of hypno-pressure on anxiety levels in

patients with cardiovascular. While in the control group obtained p-value 0.691 (>0.05), indicated that there was no significant effect of intervention in the anxiety level.

Table 4 Analysis of difference in anxiety levels between the experiment and control group (N=56)

	n	Anxiety level Mean \pm SD	t	p-value
Pretest				
Experiment	28	44.29 \pm 2.76	2.853	0.006
Control	28	46.64 \pm 3.39		
Posttest				
Experiment	28	39.71 \pm 3.184	7.217	0.000
Control	28	46.57 \pm 3.891		

Table 4 shows that there was a significant difference in anxiety levels between the experiment and control group with p-value 0.006 (<0.05), but it was not much difference. However, after given intervention, there was a big difference of anxiety levels between both groups, which the mean level of anxiety in the experiment group was 39.71 and control group was 46.57, with p-value 0.000 (<0.05) and effect size 1.96.

DISCUSSION

Characteristic of respondents

Findings show that female respondents (57.1%) experienced more anxiety than male (42.9%). Literature stated that, at the time of change in working status of some organs of the body, women are less able to be active and explorative. Women tend to withdraw and be silent. The fight-or-flight response in women is lower when compared to men resulting in a lack of energy reserves in the body. Reduced energy reserves in the body and the brain will make a weak preparation to accept the

stressor. Women will become more sensitive to stressors. However, men can receive stress well and more able to accept anxiety ([Nasution, 2007](#)).

On the other hand, the age of respondents in this study explains that the elderly age group (60-74 years) was the largest group of respondents who experienced moderate anxiety with 30 respondents (53.57%). This research was in line with the theory explained that physiologically if the human body becomes older, the organ function of the existing system in the body decreases ([Nasution, 2007](#)).

Effect of hypno-pressure on anxiety levels in patients with cardiovascular disorder

The statistical results showed the mean \pm SD 44.29 \pm 2.70 for pretest and 39.71 \pm 3.18 for the posttest, with the t-value of 9.346 and p-value= 0.000, which can be used as the justification basis that there was a significant effect of hypno-pressure performed for 30 minutes with 2 sessions of administration on the decrease of anxiety levels. It is interesting

to note that this study used the combination of hypnotherapy and acupressure in reducing anxiety levels. This result was in line with previous study reported that 6 of 9 studies showed positive and significant effects of hypnosis to reduce stress ([Fisch, Brinkhaus, & Teut, 2017](#)). Another study revealed that there was a significant effect of hypnotherapy on anxiety in patients with lichen simplex chronicus ([Vorizal, 2010](#)).

According to previous study, respondents in the experiment group given hypnopressure will get support system through the mindset and nerve pathway. The system support is given by using positive affirmations in hypnotherapy sequences, with the aim of activating the subconscious while acupressure becomes the stimulus carried by the peripheral nerve pathway to the central nervous system ([Mittleman, Taylor, Smetana, & Burns, 2015](#)). The subconscious mind and conscious human mind communicate and work simultaneously in parallel. In the work system, between the conscious mind and the subconscious mind has a space where suggestions / affirmations work effectively. However, this will only happen if the Reticular Activating System (RAS) is open. RAS can be open when a person is experiencing strong emotions, when shocked, approaching and shortly after waking. This is when suggestions can be incorporated and can work actively. When the respondent is guided to enter the hypnotic atmosphere, and then the patient actually enters the hypnotic atmosphere, then that is when an affirmation that aims to improve self-defense against stressors can be given. The condition of relax and comfortable, the activation of the subconscious mind, as well as the provision of true affirmations, will be able to optimize one's ability to hold the stressor either from within or from outside ([Fengge, 2012](#)).

On the other hand, acupressure is recommended as an alternative non-invasive intervention to reduce anxiety and stress levels. The results of this study were in line with previous study revealed that acupressure

had a significant effect on anxiety score with p-value <0.05. Respondents who received acupressure at some meridian points (Yintang, Tay Yang, Shenmen, Neguan and Shaofu) make a response to acupressure as a stimulus to the nervous system. Stimulus will continue from the peripheral nervous system to the central nervous system (brain). Upon stimulus in the brain, the brain will activate the pineal gland to produce the hormone melatonin and increased production of endorphin hormone. This hormone will affect the suprachiasmatic nucleus (SCN). During the induction phase, SCN helps decrease sleep latency and nocturnal awaking, increasing total sleep time and sleep quality ([Fengge, 2012](#)).

This study has several advantages compared to previous studies, which the intervention in this study was performed on 4 medical diagnoses (non-STEMI, heart rhythm disturbances, heart failure and vascular disorders) thereby further generalizing the functioning of intervention. In addition, this study was explicitly linked to the strength of the relationship of the intervention (hypnopressure) in lowering the anxiety level (relationship value= 1.96).

CONCLUSION

In conclusion, there was a significant effect of hypno-pressure in reducing anxiety levels in patients with cardiovascular disorder. It is recommended for nurses who have been certified can apply the hypno-pressure intervention in four medical diagnoses of cardiovascular disorders (non -STEMI, heart rhythm disturbances, heart failure and vascular disorders) in collaboration with other health teams.

This research is expected to contribute thoughts and insights and basic development of nursing actions as an alternative and independent care. The implementation of new intervention applications for hospital is strongly influenced by the policy of hospital, thus for nursing managers, the results of this study can be used as a pilot project.

Replication study is needed to examine the effect of hypno-pressure in clinical outcome.

Declaration of Conflicting Interest

None declared.

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Author Contribution

All authors contributed equally in this study.

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