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**EFFECT OF MUSIC THERAPY TOWARD PSYCHOSOCIAL STRESS
PATIENTS WILL BE UNDERGOING PERCUTANEUS CORONARY
INTERVENTION PROCEDUR IN SPACE ANGIOGRAPHY
RSUP Dr. HASAN SADIKIN BANDUNG**

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ABSTRACT

Coronary heart disease is a term that refers to heart disease caused by decreased blood supply to the heart muscle due to clogged coronary arteries. Decreased blood supply to the heart muscle can cause an imbalance between supply and oxygen demand. Percutaneous Coronary Intervention is the term used to describe various procedures that mechanically works to improve perfusion (flow) infarction without doing surgery. Before the implementation of measures percutaneous coronary intervention patients must be prepared both physically and mental.

One of the nursing intervention that can be given to reduce anxiety, stress and depression that is supportive so as to improve the coping of patients before the procedure is the action of music therapy. The aim of this study in order to identify the influence of music therapy towards psychosocial stress of patients undergoing percutaneous coronary intervention procedure. A quasy experimental post test design was used in this study. The total samples of 40 respondents. The subjects was divided into the intervention group consists of 20 respondents and the control group consists of 20 respondents were selected by a non probability of consecutive sampling method, and used questionnaires DASS 21.

Base on spesifik data analysis, there were effects of music therapy on the psychosocial stress of patients undergoing percutaneous coronary intervention procedures.

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INTRODUCTION

Heart is an important vital organ for body. The trouble of heart can cause trouble at all systems such as troubles at blood vascularisation, oxygen fulfillment, and metabolism. Those conditions will be fatal if it isn't solved immediately. (Black & Hawk, 2005). As one of degenerative disease, coronary heart is a serious threat for anyone because it can cause death. (Black & Hawk, 2005).

Percutaneous Coronary intervention is terminology used to explain any procedures, which is mechanically, functioned to increase myocardial perfusion (flow) without doing surgery. The procedure mostly done is *Percutaneous Transluminal Coronary Angioplasty* (PTCA-Balonisasi). Balonisasi usually followed with stent implantation (channels) at the coronary blood vessel to prevent rest-ensis (re-embolism). (Isselbacher *et al.*, 2000). The expert of cardiology can do percutaneous coronary intervention safely if the patients' preparation is well prepared. However, this procedure can threat the patients' soul if the patients get psychological problems such as anxiousness, stress, an depression.

The nurses' task before the process of percutaneous coronary intervention is preparing the patients' mental and physical. The purpose of caring the patients before the procedure is to maximize the patients' safety and pleasure during the procedure to get maximal result (O'grady, 2007). Though they had gotten the pharmacologist therapy (sedative, local anesthesia) and non-pharmacologist therapy (health education), but generally, the patients still feel worried during the procedure of heart catheterization intervention. The patient said that his anxiousness during the heart catheterization caused by his perception about the action room as an isolate and threaten environment, the sound of machine, separated with family and friends, language technique which was strange for the patient, and the possibility of bad prognosis and it can influence the patient's life in the future (O'grady, 2007). One of nursing intervention that can be used to decrease the patient's anxiousness, stress, and depression to increase patient's coping before the treatment procedure was music therapy.

According to the research result, it known that music therapy was many used on the patients with physiological response and it showed positive result. The music which appropriate with the patients' desire, influenced limbic system and autonomy nerve that made the atmosphere became relax, save, and please so that it

stimulated the release of *gamma amino butyric acid*, *encephalin* and *beta endorphin* which would eliminate agonies neurotransmitter and anxiousness so that made equanimity and improved patients' mood. The patients who got music therapy would be more relax and calmer. The relaxation effect of music therapy would influence the decrease of blood pressure, artery, and breathing (Argstatter *et al.*, 2009; Mucci & Mucci, 2002). According to Juliette Alvin, the influence of music toward patients' physical cannot be ignored. Thereby, it is important to understand the physiology response and how music can influence human body. Any relaxation music are able to decrease heartbeat and blood pressure, stimulating degree, and generally it made the patients put at his ease.

Some research already proved the effect of music toward the invasive treatment procedure. The research was done by Arslan *et al.*, 2007 at patient of urogenital pre-operation in order to observe the effect of music therapy toward the patient's anxiousness level. At the group of patients who got the music during 30 minutes before doing the operation, showed the decrease of their anxious level (Arslan, Ozer, & Ozyurt, 2007). Other research done by Gillen (2009) at the patients who would do sistoskopi procedure, breast biopsy, kolonoskopi, gynecology, larascopi and orthopedic, showed that music therapy during 30 minutes before the treatment, could decrease the patients' anxiousness significantly.

Psychosocial stress of patients who would do coronary intervention had different characteristic with treatment procedure at other patients. The psychosocial stress of this patients would be higher because the death threat was also high. This treatment procedure was done in the most vital organ, heart. This had inspired the researcher to develop research about music therapy. The purpose of the research is to know the effect of music therapy toward the psychosocial stress of patients who would get perkutan coronary intervention procedure in Angiografi Room of RSUP Dr. Hasan Sadikin Bandung.

METHODS

This is qualitative research of *quasiexperiment design with pre - post test control group* (Notoatmodjo, 2007). The technique of sampling was by non probability sampling of consecutive sampling, that was a sampling by determining the subject qualifying the research criteria, entered into the research for certain period until the number of patients fulfilled (Sastroasmoro & Ismael, 2006). The samples are 40

respondents, consisted of 20 respondents for intervention group and 20 respondents for control group.

The research done in Angiografi room of RSUP Dr. Sadikin Bandung. Data collection done at 2 May to 17 June 2010.

The measurement tool used in this research was by using *Depression Anxiety Stres Scale 21 (DASS 21)* by Lovibond & Lovibond (1995). Data processing technique using univariat analysis to describe each variable researched. Bivariat analysis done to find out the relationship of both independent and dependent

variables. Test used was wilcoxon test for independent variable of coupled category.

RESULTS

The data presentation started with univariat analysis result toward respondent's characteristic including age, gender, education background, experience of getting heart cateteration procedure, and kinds of music.

Table 1. Respondent Distribution based on Demography Data Patients who Will Get Coronary Intervention Procedure

Variable	Group Intervention		Group Control		Total	%
	F	%	F	%		
Age (year)						
• 40-59	14	70	12	60	26	65
• > 59	6	30	8	40	14	3
Gender						
• Man	15	75	14	70	29	72,5
• Woman	5	25	6	30	11	27,5
Education						
• SD	3	15	1	5	4	10
• SMP	4	20	7	35	11	27,5
• SMA	7	35	7	35	14	35
• PT	6	30	5	25	11	27,5
Experience						
• 1 kali	17	85	17	17	34	85
• > 1 kali	3	15	3	3	6	15
Coming						
• House	16	80	16	80	32	80
• Hospital	4	20	4	20	8	20
Music Type						
• Classic	9	45	-	-	9	45
• Pop	3	15	-	-	3	15
• Traditional	8	40	-	-	8	40

Based on the table above, the age of 40-59 were the most in this sample, that was 65 % and the most gender was men that was 29 respondents (72,5%). The most education background was SMA of 14 respondents (35%), one time experience with perkutan coronary intervention procedure was the most respondent of 85%, the coming from house was the most respondents of 32 respondents (80%), whereas the most music type chosen by the patients was classic, that was 45%.

To find out the result analysis of music therapy effect toward patient's psychosocial stress before perkutan coronary intervention procedure done with statistic z test with $p = 0,05$.

Table 2. Analysis Result of Music Therapy toward Depression Level of Patients Who Will Get Perkutan Coronary Intervention Procedure

No	Result	Level	n	%	z	Asymp.sig (2-tailed)
1	Posttest-pretest	Negative Rank	18	90		
	Depression level of patient who will get perkutan coronary intervention procedure of intervention group	Positive Rank	0	0	-4,146	0,000
		Fixed	2	10		
		Total	20	100		
2	Posttest-pretest	Negative Rank	0	0		
	Depression level of patient who will get perkutan coronary intervention procedure of control group	Positive Rank	0	0	0,000	1,000
		Fixed	20	20		
		Total	20	100		

At the table 2, the result of rank test signed Wilcoxon by using statistic z was stated z value for intervention group of -4,146 with error 0,05 and trust 95%, so $p=0,000 < 0,05$. Whereas, at the control group, z was 0,000 with error 0,05 and trust 95%, so that $p=1,000 > 0,05$. By comparing the test capacity value of both side (2 tailed), shown that at intervention group, $p = 0,000$ and at the control group $p = 1,000$, it means that p for intervention group $< p$ value at control group. Based on the comparison, it can be stated that intervention group's opportunity to reject $H_0 >$ control group. This showed that music therapy given to intervention group gave meaningful result. There was effect of music therapy toward the depression level of patient who will get perkutan coronary intervention procedure.

Depression is mood problem describing someone's emotion, range of feelings describing emotion pleasure or un-pleasure. According to Atkinson (1991) in Lubis (2010), depression is mood problem characterized with there is no hope and broken heart, over a barrel, unable to take decision to start an activity, unable to concentrate, does not have spirit of life, and always stressed. Music was alternative of balancing to get ordered calm music oscillation in solving the depression. The indication of depression caused by environment chaos such as insomnia, difficult to concentrate, continues sadness, and sensitive. In order to decrease those indications, it needs listening music as neutralization media.

A professor from Australia, Lazarus, applied vocal voice vibration therapy, which was effectively able to give positive effect toward the decreasing of depression. An appropriate music influence the limbic

and autonomy nerve to create relax, safe, and joyful atmosphere so that stimulated the release of *gamma amino butyric acid*, *enkefalin* and *beta endorphin* which will eliminate neurotransmitter of agonies and anxiousness so that made relax and improve patient's mood. The patient who got music therapy would more relax and calm. (Argstatter *et al.*, 2009; Mucci & Mucci, 2002).

The giving of music therapy to the patient who will get perkutan coronary intervention procedure with instrumental music during 30 minutes had been able to give meaningful influence toward the decrease of depression. This result conclude that music therapy was best used at the patient who will get perkutan coronary intervention procedure.

Table 3. Result Analysis of Music Therapy Effect Toward Anxiousness of Patient who will get Perkutan Coronary Intervention Procedure

No	Result	Level	n	%	z	Asymp.sig (2-tailed)
1	Posttest-pretest	Negative Rank	20	100		

No	Result	Level	n	%	z	Asymp.sig (2-tailed)
	Depression level of patient who will get perkutan coronary intervention procedure of intervention group	Positive Rank	0	0	-4,379	0,000
		Fixed	0	0		
		Total	20	100		
2	Posttest-pretest Depression level of patient who will get perkutan coronary intervention procedure of control group	Negative Rank	0	0	-1,414	0,157
		Positive Rank	2	10		
		Fixed	18	90		
		Total	20	100		

At the table 3, the result of rank test signed Wilcoxon by using statistic z was stated z value for intervention group of -4,379 with error 0,05 and trust 95%, so $p=0,000 < 0,05$. Whereas, at the control group, z was -1,414 with error 0,05 and trust 95%, so that $p=0,157 > 0,05$. By comparing the test capacity value of both side (2 tailed), shown that at intervention group, $p = 0,000$ and at the control group $p = 0,157$, it means that p for intervention group $< p$ value at control group. Based on the comparison, it can be stated that intervention group's opportunity to reject $H_0 >$ control group. This showed that music therapy given to intervention group gave meaningful result. There was effect of music therapy toward the depression level of patient who will get perkutan coronary intervention procedure.

The anxiousness felt by the patient around the treatment was reality anxiousness caused by anxiety to face perkutan coronary intervention procedure (Notosoedirdjo & Latipun, 2007). Music was seen as medium to form dynamic and re-creative soul. Music could make responsive attitude toward an object. Universally, music had proven able to change someone's mood. The process of music effect toward someone's psychology started with the music vibration that having order rhythm. Then it was absorbed by hearing sense, then infiltrated to the nerve of whole body, so that it was able to rise the feeling or psychology effect and to be more convergent, influencing the brain nerve that made our mind became fresh, and built better spirit of live (Dofi, 2010).

The perkutan coronary intervention procedure would raise anxiety at the patient. Anxiety was emotional reaction toward perception of the real or unreal dangerous indicated with subjective feeling such as anxiety, stress, afraid, nervous, and unsteadiness (Enc *et al.*, 2007). Anxiety expressed differently, such as asking similar question many times although the answer has already given, or by cringing and avoiding doing communication with others (Black & Hawk, 2005).

There were many factors influencing anxiety, stress of patient who will get the treatment, such as: worried of agonies, death, worried because he didn't know the procedure and worried of other threat. The long waiting time before the procedure started also could increase anxiety at the patient (Smeltzer & Brenda G, 2002; Underhill *et al.*, 2005).

Music therapy could be done to decrease anxiety at the patient who would get the intervention and other operation (Dofi, 2010). This proved with research done by Gillen (2009) by seeing the anxiety effect of patient who listened the music before the procedure of sistoscopy, breast biopsy, colonoscopy, gynecology, laparoscopy and orthopedic. The result was, music significantly able to decrease the anxiety (Gillen, 2009). Other research done in Turkey at patient who would get urogenital operation, before the treatment, music therapy given to him (Arslan *et al.*, 2007). Thereby, it meant that the giving of music therapy at patient who would get intervention by using instrumental music during 30 minutes had been able to give meaningful effect toward the decrease of anxiety. The research showed that music therapy was best used at the patient who would get intervention procedure.

Table 4. Result Analysis of Music Therapy Effect Toward Anxiousness of Patient who will get Perkutan Coronary Intervention Procedure

No	Result	Level	n	%	z	Asymp.sig (2-tailed)
1	Posttest-pretest	Negative Rank	17	85		
	Depression level of patient who will get perkutan coronary intervention procedure of intervention group	Positive Rank	0	0	-3,787	0,000
		Fixed	3	15		
		Total	20	100		
2	Posttest-pretest	Negative Rank	1	5		
	Depression level of patient who will get perkutan coronary intervention procedure of control group	Positive Rank	2	10	-0,577	0,564
		Fixed	17	85		
		Total	20	100		

At the table 4, the rank test result signed Wilcoxon by using statistic z, got z value for intervention group of -3,787 with error of 0,05 and trust 95%, so $p = 0,000 < 0,05$. Whereas, at the control group, z value was -0,577 with error 0,05 and trust 95 %, so that $p = 0,564 > 0,05$. By comparing the test capacity value of both side (2 tailed), seen that at intervention group, the value of $p = 0,000$ and at control group $p = 0,564$, meant that p for intervention group $< p$ for control group. It could be stated that the opportunity of intervention group to refused $H_0 >$ control group. This showed that music therapy given to intervention group gave meaningful result. There was effect of music therapy toward the depression level of patient who will get perkutan coronary intervention procedure.

DISCUSSION

Some research showed that the method of using music to decrease stress had long time developed in America and Germany with method that is more modern. A group of researcher intensively observed music that had power to cure and calm down the patient. This was as same as what's Djohan (2006) said that in the developed countries especially, United State America, music therapy already became the part of health profession where the music therapy used music power to help client got solution to decrease their agonies. According to Kemper and Denhauer (2005), music also could give effect for health increasing, decrease stress and agonies. Music has influence toward work mechanism of autonomy nerve system and hormonal so that could influence the decrease of anxiousness and stress. The patients who got music therapy would seem relax and calm.

Those relaxation effects would influence the stability, decrease blood pressure, artery, and breathing. This could be explained that factor which modulated stress was by doing relaxation technique through music therapy, that made the muscles became relax so that decrease the stress. Music therapy could be safe

intervention and possibly had positive effect in repairing the indications related with perkutan coronary intervention procedure.

CONCLUSION

The result showed that there was effect of music therapy toward the psychosocial stress of patient who will get perkutan coronary intervention procedure in Angiografi room of RSUP Dr. Hasan Sadikin Bandung. Considering the result of research, that there was meaningful effect of music therapy toward psychosocial stress of patient who will do the treatment, so the hospital could consider music therapy as nursing procedure at the patients who will do the treatment. It also hoped that the hospital facilitate this activity, mainly related with infrastructures providing.

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