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Combination method imagination guidance listening to music through audio with art therapy in reduce adolescent anxiety with thalasemia major

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Abstract---Introduction: Thalasemia mayor is a congenital disorder characterized by a lock of production of hemoglobin chain, thus requiring blood transfusion for the rest of his life, where side effect will be changes in the state of the body with facial cooley, enlargement of the liver so that the abdomen looks distended, growth that does not match its age. These changes occur in adolescent who will experience fear of death and anxiety about the future. The research objective was to determine the effect of a combination of listening to audio music therapy with art therapy on adolescent anxiety. The method is the pre test and post test control group design approach. The number of respondents was 28 in the control group and in the intervention group. The results of statistical tests in the pre and post control groups had no effect ($p=0.13$) and in the intervention group there was a significant effect with a value of $p=0.00$. it can be concluded that there is an effect of giving a combination method of listening to music through audio with art therapy on the anxiety of adolescent with thalasemia mayor. Nurse can apply a combination of therapeutic methods of listening to audio with art therapy in child care services with thalasemia.

Keywords---Anxiety, combined therapy method listening to audio music, art therapy, Thalasemia mayor, teenagers.

Introduction

Thalassemia mayor is a congenital disorder characterized by a lack of hemoglobin chain production, which is caused by an autosomal recessive gene disorder on the 16th chromosome gene in alpha thalassemia and the 11th chromosome in beta thalassemia (11).

In Indonesia, it is estimated that there are 20 million people who carry this gene disorder. In 2015 in Indonesia there were around 5,000 patients with thalassemia mayor and increase in 2017 to 9,121 patients spread throughout Indonesia. The highest number is in West Java, around 3,300, DKI Jakarta 2,200. If this not prevented, it is estimated that the number of thalassemia patients can reach 25 thousand in 2022 (14).

Based on data from the Indonesian Thalassemia Foundation, the number of cases of thalassemia disease was 8,011 in May 2017, an increase from 2015 which totaled 7,029 cases. This number has also increased dramatically when compared to 2011 which only had 4,431 cases.

Children with thalassemia mayor have difficulties because children need blood transfusions for life accompanied by iron chelation therapy, which has an impact on decreasing body functions, appearance and quality of life, with these conditions causing physical problems and limiting these functions, where children must receive education or school and activities. Patient with thalassemia mayor also have psychological problems such as anxiety, depression and helplessness and experience difficulties in social relationships. (1).

Adolescents with thalassemia are very at risk of experiencing behavioral and psychosocial problems, children are very passive, anxious, phobic and depressed so that it will have an impact on the child's lack of self-confidence, emotional and quality of life decrease (8). Meanwhile, according to that adolescent with thalassemia experience a decrease in social relations, are less accepted in their group, experience negative stigma, are at risk of depression and stress. (13).

Children who suffer from chronic diseases such as thalassemia have the potential to experience anxiety and depression caused by social problems such as limited social activities and changes in facial shape, fear of death and limited school activities. (20).

Research Adib, Ahmad and Poormansouri (2015) found that thalassemia adolescents experienced anxiety with an average of 4.8 ± 3.9 and depression 6.4 ± 3.9 . (1). While the result of research Mahargyantari (2009) from 389 respondents obtained an average anxiety score 23,7% and depression 19.8 %. (10). According to research Suvi and Jako (2007) where anxiety was

based on categories, it was found that thalassemia youth experienced mild of 19,3%, moderate anxiety of 14,8% and severe anxiety of 4,4 %. (20).

Currently there are many nursing intervention to deal with anxiety in the form of non-pharmacological given to children such as cognitive therapy, relaxation, Imagination Guidance listening to music and art therapy. These nursing interventions aims to provide a feeling of comfort an relax to the patient and can reduce the patient;s fear and anxiety. (5).

Guidance Techniques Imagination Listening to music can be combination with other modality thearpies, one of which is Art Therapy, where the Art Therapy most often used in the medical area is drawing and is suitable for children, through artistic creativity children can release emotions, express tkemselves through non-verbal ways and establish communication. (17).

Materials and Methods

In this study using a quasi-experimental method using a pre test – post test control group design approach. The respondents was 28 children in the intervention group and the control group. The measuring tool used *Revised Children's Manifest Anxiety Scale (RCMAS)*. In the intervention group, listening to music through audio recordings using using earphone or other device out 1 time/day for one week with 10-30 minute session each. Meanwhile, the control group was given leaflets on relaxation techniques.

Result

Table 1

Distribution of the average anxiety of thalassemia adolescents after imagination guidance listening to audio music with art therapy between the control group and intervention group (n=56)

Anxiety	Mean	SD	SE	P value	n
Kontrol	10.5	4.58	0.86	0.00	56
Intervensi	3.69	1.92	0.48		

The average anxiety in the control group is 10.5 and the intervention is 3.69, the test result are P=0.00, indicating that there is a difference between the control and intervention groups.

Table 2

The influence of imagination guidance listening to audio music with art therapy between the control group and intervention group (n=56)

Variable	Group		Rerata	SD	SE	P value	n
Anxiety	control	Before	11.3	4.97	0.94	0.13	56
		After	10.5	4.58	0.86		
	Intervention	Before	7.21	5.62	1.06	0.00	56
		After	3.54	3.66	0.69		

It shows that there are differences in the control and intervention groups. In the control group there was no significant effect ($p=0.13$) while in the intervention group there was a significant effect ($p=0.00$) before and after the combination of providing imagination guidance listening to music through audio with art therapy on anxiety adolescent with thalassemia.

Discussion

Listening to music is one of the non-pharmacological measures to deal with pain and anxiety both in adult and in children, because music has an impact on one's health, music is used as an action and becomes more useful in the medical area and health services now (4), while Art Therapy is a psychotherapy that is used by using art media to express feeling and calm the mind (12).

Based on the result of the study, it was found that there was a mean difference in the control group 10.7 and the intervention 4.56, indicating that there was a difference with the results of the statistical test $p=0.00$. Based on the findings above, it shows that there are differences in the control and intervention groups. In the control group there was no significant ($p=0.13$) while in the intervention group there was a significant effect ($p=0.00$) before and after the combination of providing imagination guidance listening to music through audio with art therapy on anxiety adolescent with thalassemia.

The results of this study are in line with research (3) in thalassemia children, it was found that the difference in pre and post anxiety in the control group was significantly different, which was before the intervention ($p=0,8$) and after the intervention ($p=0.00$), whereas research (18) in children with cancer who were given music therapy interventions in the form of listening to music found an average anxiety in the control and intervention groups, in the pre test (5.33 ± 2.06) and

post test (5.04 ± 1.47), there was a decrease in anxiety and differences significant (<0.05).

In line with the results of the study (5) in children who were hospitalized and given audio recording imagination guidance by listening to music, the result in intervention group before being given treatment showed a significant difference before and after receiving audio recording imagination guidance ($P=0.00$), whereas in the control group it showed that there was no significant difference before and after the intervention in the control group ($p=0.11$).

Children who are being hospitalized show that there is a decrease in the average physiological response and anxiety after being given music therapy in the intervention group ($p=0.00$) compared to the control group ($p=0.3$). (6)

Listening to music is one of the non-pharmacological measures to deal with pain and anxiety in both adults and children, because music has an impact on one's health, music is used as an action and is becoming more useful in the area of medical and health services today (4).

The physiological response to anxiety is to activate nervous system by activating the hypothalamus-pituitary-adrenal axis and the sympathetic nervous system, which will be marked by an increase in pulse frequency and blood pressure.

Anxiety will stimulate the hypothalamus-pituitary-adrenal axis by increasing cortisol which is a glucocorticoid hormone which play a role in triggering anxiety. Where the hypothalamus-pituitary-adrenal axis play a role in regulating anxiety reactions. Elevated cortisol level indicate dysfunction in the hypothalamus-pituitary-adrenal. (5).

According to (9) explained that music can balance brain waves, where brain waves can be modified by music or by sound through listening to music or sound it generates itself. The slower the brain waves, the more relaxed, satisfied and more peaceful a person feels. Furthermore, he explained that listening to music can effect breathing, heart rate, pulse and blood pressure, reduce muscle tension and can regulate hormones related to stress or anxiety.

In line with (19) revealed that listening to music according to the patient's preferences will affect the limbic and autonomic nervous systems, creating a relaxed, comfortable and pleasant atmosphere so as to stimulate the release of the chemical gamma amino butyric acid (GABA), enkephalin and beta endorphines which will eliminate neurotransmitters. Pain and anxiety so as to create calm and improve the mood of patient.

While Art Therapy is psychotherapy that is used by using art media to express feelings and calm the mind. (12) In children who experience anxiety, it will increase levels of the hormone cortisol, behavioral interventions can reduce levels of hormone cortisol (2). One of them is art therapy which help relieve anxiety and be able to express feelings (15), further research (92) state that decreased cortisol levels after being given behavioral actions, one of which is art therapy by drawing, obtained an average result of 14.77, SD 5.06 and $p<0.01$.

In line with the result of study (7) in children with cancer, the average result before intervention was given (SD: 15.75 ± 2.97) and after (SD: 10.60 ± 2.92), $p < 0,00$, this shows that there is a significant effect of art therapy in the form of drawing on anxiety in school-age children with cancer

Art therapy by drawing can provide a relaxing effect (17). In relaxed condition, the body will release endorphin hormones which are calming, affecting emotional stimulation in the limbic system so that feelings of pleasure and calm arise. (16).

Art therapy with drawing is a process of creativity using various materials to enhance and improve one's physical, mental and emotional well-being. Art therapy is also effective for someone who has difficulty expressing feelings verbally. This is one of the reasons that it is beneficial for children to have limited verbal communication (12). Art therapy by drawing can help children express their anxiety. Drawing activities are liked by almost all children where at the beginning of a child's development they will start with scribbling activities until their abilities develop according to age stages (17).

Art therapy through drawing on children with chronic illnesses, as a whole can improve health and well-being through a process of distraction or calming the mind, improving self-identity and providing social networks. Providing a combination of imagination guidance by listening to music with art therapy can reduce anxiety in children with chronic diseases, one of which is a child with thalassemia.

Conclusion

Imagination Guidance listening to music via audio combined with art therapy in the form of drawing has an effect on the anxiety of adolescent who experience thalassemia mayor in the intervention group but there is no effect on the control group.

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