

Decreasing Family Anxiety Level of Acute Coroner Syndrome with Slow Deep Breathing Relaxation

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KEYWORDS Anxiety Slow Deep Breathing Acute Coronary Syndrome	Abstract Acute Coronary Syndrome Patients can cause anxiety for the family. Anxiety of ACS family in Aloei Saboe hospital was found to be a family of moderate anxiety of 18 people (81.8%) and a severe anxiety of 4 people (18.2%). This study used the research design of One Group Pretest Posttest Design with 22 respondents. Respondents were given slow deep breathing exercises, given for 15 minutes. The bivariate analysis used is the Marginal Homogeneity Test. The results of the study were obtained before being given treatment, the family with moderate anxiety amounted to 18 people (81.8%) and a heavy anxiety of 4 people (18.2). After being given treatment there was a decrease in the level of anxiety, the family with moderate anxiety numbered 9 people (40.9) and mild anxiety about 13 people (59.1%). The results of the statistical test for marginal homogeneity obtained p values of 0.000 (p<0.05). There is a slow deep breathing effect on decreasing family anxiety level of acute coronary syndrome patients. Further research, slow deep breathing actions can be combined with health education in overcoming the anxiety of families who care for patients in heavitale.

Introduction

Emergency conditions can cause anxiety for patients and families who are in the Emergency Room (ER) or in the Intensive Room. Emergency is also one part that is often experienced in everyday life. One of the life threatening conditions is Acute Coronary Syndrome (ACS) (Musliha, 2010).

Acute Coronary Syndrome is the most common cause of death. In developed countries, ischemic heart disease that experienced death in 2007 amounted to 220,000 people. The prevalence of coronary heart disease in Indonesia in 2013 amounted to 0.5%, estimated at around 883,447 people, based on the diagnosis of doctors found symptoms of 1.5%, estimated at around 2,650,340 people (Santoso *et al.*, 2013). In Gorontalo Province, based on a doctor's diagnosis, the prevalence of Acute Coronary Syndrome was 0.4%, estimated at around 3,019 people. Based on the symptoms that arose diagnosed by a doctor for 1.8 or an estimated 13,584 people (KEMENKES-RI, 2013).

Patients with Acute Coronary Syndrome who are treated in intensive care cause anxiety for families, because families face unknown situations and uncertainties regarding the patient's condition. The anxiety of the ACS family in Aloeei Saboe hospital was found to be a family of moderate anxiety of 18 people (81.8%) and a severe anxiety of 4 people (18.2%). Anxiety is felt when the family is in the waiting room, waiting for information about the intervention given to the patient, coupled

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with environmental contact with monitoring equipment, adding to doubts and anxiety to family members. However, it can be intensified if family members are not given information about the situation and are not given interventions to control the anxiety felt by families (Hamester *et al.*, 2016).

In general, the initial impact of anxiety is on the function of the heart, usually a change in heart rate will occur and is followed by changes in blood pressure. Anxiety can stimulate the autonomic sympathetic nervous system to increase vasoconstriction, which can mediate increased blood pressure, increased blood lipids, blood clotting disorders, changes in blood vessels and atherogenesis. Research has shown that anxiety is a psychological problem that can cause alpha-adrenergic stimulation and consequently increase heart rate and oxygen demand (Yaribeygi *et al.*, 2017).

Increased oxygen demand due to anxiety can also affect breathing. On the other hand, breathing can affect feelings of anxiety. Changes in breathing can be a consequence of increasing levels of anxiety (Leivseth *et al.*, 2012). Thus, assessing breathing may be a useful physiological marker of anxiety levels but can also function as an experimental tool to influence anxiety levels. An explanation of the physiological mechanisms and neural pathways that regulate breathing can help better illustrate how emotional states arise from interactions between the body and the brain (Paulus, 2013).

Slow Deep Breathing is a good way to reduce symptoms of anxiety. Deep and slow breathing can help focus the mind and create a better state of mind even in anxious situations (Khng, 2017). The symptoms of anxiety are slightly different for each person, but most with physiological symptoms in the form of increased heart rate and breathing become shallow and fast. Other anxiety symptoms include dizziness, anxiety, trembling, sweating, experiencing muscle tension, inability to concentrate, and sleep disorders (Cologne, 2017).

Type of breathing consists of chest breathing and slow deep breathing. Chest breathing usually breathes with the upper part of the lungs or chest, this type of breathing is usually shorter and faster, and makes the body tense. Meanwhile, Slow Deep Breathing is breathing that comes from the diaphragm or in the abdominal area. This will cause the body to relax and reduce anxiety. Taking a long, slow breath from the abdominal area will also help increase the amount of oxygen to parts of the brain, lower blood pressure, relax the muscles, reduce heart rate and control the mind from things that make someone anxious (Wells, 2017).

Research results obtained, to overcome the anxiety of ACS patient families, begins with the provision of slow deep breathing with the aim of providing a positive relaxation effect so as to make the family have an open mindset and encourage the exploration of perceived negative emotions. After that, combined with the provision of health education with the aim of providing knowledge to families, so that they have good perceptions and can form open behavior (Pomalango *et al.*, 2019).

Materials and Methods

This study used a quasi-experimental design with One Group Pretest Posttest Design. Respondents in the study were 22 families of Acute Coronary Syndrome patients. Respondents in this study were one group that would be given Slow Deep Breathing exercise treatment. The sampling technique used in this study was purposive sampling technique, with the inclusion criteria in this study namely the nuclear family as a child, father, mother, husband, wife, brother and sister, families with Pomalango et al. Decreasing Family Anxiety Level of

ages above 18 years, families living in the same house as patients at least the last 6 months, families that have moderate anxiety levels (15-27) and severe (>27) are still controlled based on the results of anxiety screening using the HRS-A (Hamilton Rating Scale for Anxiety) questionnaire. Exclusion criteria are families who do not want to be respondents and families who have disabilities or health problems.

Relaxation Slow Deep Breathing is carried out for 15 minutes, monitored by researchers using an observation sheet, written down the time when implementing Slow Deep Breathing (Tarwoto, 2011). This research was conducted from October to December 2019. This study received recommendations for ethical approval from the ethics committee of the Faculty of Medicine, University of Hasanuddin Makassar with a number: 1051/H4.8.4.5.31/PP36-KOMETIK/2018. Bivariate analysis was tested using Marginal Homogeneity.

Results and Discussion

During the study period, a total of 22 respondents from the family of ACS patients were found in the hospital in Aloei Saboe, Gorontalo.

	Ν	Mean	Median	Min-Max	SD
Age (Years)	22	26.72	24	23-50	5.96
Length of stay (Days)	22	1.86	2	1-3	0.83

Table 1. Characteristics of Respondents Based on Age and Length of Patient

Table 1 showed the average age of respondents 26.72 years with the youngest age 23 years and the oldest age 50 years. The length of day of care for patients treated by families is 1.86 days with a span of 1 to 3 days.

Variable	Category	Frequency (f)	Percentage (%)
Gender	Males	11	50
	Females	11	50
Education	Senior High School	11	50
	Academic	11	50
Experience	Ever been	10	45.5
	Never	12	54.5
Economic status	Own cost	6	27.3
	Insurance	16	72.7

Table 2. Characteristics of Respondents Based on Gender, Education, Experience and Economic Status

Table 2 showed for gender, obtained between men and women has the same number, namely 11 people (50%). In the education level of respondents with Senior High School with a total of 11 (50%) and Academic education 11 people (50%). The most family experience was 12 families (54.5%) who had never treated patients with ACS cases. The most dominant economic status is insurance costs totaling 16 people (72.7%).





Figure 1 showed that the average anxiety score of respondents before being given treatment was 24.50 with a standard deviation of 3.11 and after being given treatment there was a change in the average anxiety score of 17.31 with a standard deviation of 5.34. Data frequency of respondents' anxiety level categories before being given treatment, respondents with moderate anxiety amounted to 18 people (81.8%) and anxious weight amounted to 4 people (18.2). After being given treatment there was a decrease in the level of anxiety, respondents with moderate anxiety amounted to 9 people (40.9) and mild anxiety about 13 people (59.1%).

 Table 3. Decreasing Anxiety Levels in Families of Acute Coronary Syndrome Patients Through Slow Deep

 Breathing Relaxation

	Mean±SD	Median	Min	Max	P Value	
Before treatment	24.50±3.11	25	19	29	— 0.000*	
After treatment	17.31±5.34	15	9	27		

* Marginal homogeneity statistical test

Table 3 showed that respondents' anxiety before being given treatment, having anxiety scores ranged from 19-29 and after being given treatment, had anxiety scores ranging from 9-27. The results of further analysis obtained P value 0.000 (p<0.05). This can be concluded that there is the effect of slow deep breathing to decrease the level of family anxiety that treats Acute Coronary Syndrome patients in Aloei Saboe Hospital, Gorontalo City.

Anxiety is a disorder in the form of problems in cognitive, somatic and a person's behavior. Some development of treatment actions that can be done to overcome them are cognitive behavioral therapy, systematic desensitization and rational emotional therapy. This treatment is given to reduce irrational thoughts and control behavior. However, if only this method only fails to overcome physiological problems as a result of perceived anxiety. Physiological problems in the form of increased pulse, palpitations, sweating, dizziness, hyperventilation, and muscle tension (Muris *et al.*, 2010). A treatment action develops, namely slow deep breathing to be able to overcome the physiological problems caused by anxiety, to maintain the normal functioning of organs (Larson *et al.*, 2011).

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The results of this study found that family anxiety before being given Slow Deep Breathing had moderate to severe anxiety levels, with anxiety scores ranging between 19-29 with a median score of 25. This was due to the education of respondents in the majority of 50% having high school education. In addition to the level of education, which affects family anxiety, which is the length of stay of patient's and the experience of families who have never treated their families with cases of Acute Coronary Syndrome, 54.5%.

Identification of family anxiety through the HARS (Hamilton Anxiety Rating Scale) instrument, it is known that the impact of anxiety most felt by respondents is cardiovascular symptoms in the form of pulses that feel strong and fast, the chest feels pounding, and the body feels weak. In addition, symptoms in the frequency urination system urinate frequently and sometimes cannot hold urine. And other symptoms due to anxiety that is felt, namely sleep disturbances, often waking up at night and resting the night was not sound. The majority of family members who care for patients in fatigue of moderate to severe sleep (Day et al., 2013).

After being given Slow Deep Breathing, family anxiety levels declined in the mild to moderate anxiety category, with anxiety scores ranging from 9-27. According to the researchers' assumption that the non-clinical method of slow deep breathing can provide a relaxing effect, so that it can reduce the anxiety felt by the patient's family, especially in handling physiologically from the impact of perceived anxiety. When someone is in anxious state, there will be an increase in physiological functions, in the form of blood pressure, increased pulse and respiration. Slow deep breathing is one of the actions that can control breathing, provide

oxygen intake to the brain, so it can control the physiological functions of the body. In addition, this action is very easy to do and has no side effects.

The results of further analysis obtained P value 0.000 (p<0.05), it can be interpreted that there is a significant effect of giving Slow Deep Breathing to decrease the anxiety level of ACS patient families. Slow Deep Breathing is very efficient because it reduces ventilation in the lung space. Shallow breathing fills the air only at the base of the lungs in contrast to the Slow Deep Breathing technique that fills air in all parts of the lungs (Bijlani & Manjunatha, 2010).

Research on 60 medical male students who were randomly selected, then divided into two groups. Groups that are given Slow Deep Breathing and rapid breathing groups. Respiratory exercises carried out for three months. Autonomic function tests are carried out before and after breathing exercises. From the results of the study, it was found that an increase in parasympathetic activity and a decrease in sympathetic activity were observed in the group that did Slow Deep Breathing, whereas in the rapid breathing group there were no significant changes in autonomic function (Pal et al., 2004).

Physiologically, an increase in venous return during inspiration is similar to an increase in cardiac output and an increase in heart rate, which also affects arterial blood pressure (Feihl & Broccard, 2009). It has long been known that heart rate increases during inspiration while arterial blood pressure decreases, and vice versa during expiration the heart rate decreases while arterial blood pressure increases (Billman, 2011).

Respiration and the cardiovascular system influence each other, but the influence respiration stronger of is on the cardiovascular system (Dick et al., 2014; Dick et al., 2014). Research on healthy humans, it was found that controlled slow deep breathing techniques, mainly carried out 6 breaths per minute, were associated with controlling blood pressure and heart rate, compared to what the body normally experiences when breathing faster and shallow (Chang *et al.*, 2013; Radaelli *et al.*, 2004). Some hypothesize that this reflects buffer-related hemodynamic fluctuations due to synchronization of pulsed blood flow with heartbeat rhythms (Hsieh *et al.*, 2003). Some studies also report a

al., 2003). Some studies also report a significant reduction in average blood pressure during slow deep breathing performed in a controlled manner (Joseph *et al.*, 2005; Zhang et al., 2017).

Respiratory at a resonant frequency (about 6 breaths/minute) carried out for 15 minutes is important in increasing Heart Rate Variability (HRV) (Steffen et al., 2017). Research studies on breathing respondents with 6 breaths per minute have also reported group heart rate improvement and control in the inspiration phase (Mortola et al., 2016). The relationship between heart rate, blood pressure and respiration is known as cardiorespiratory coupling (Russo et al., 2017). So, through this slow deep breathing action can reduce the effects of anxiety and tension in the body by making the balance of the autonomic especially system towards the parasympathetic system and improve physical and mental health (Naik et al., 2018).

Conclusions and Suggestion

The results of this study, it was concluded that the therapy of Slow Deep Breathing exercises can reduce family anxiety levels in treating Acute Coronary Syndrome patients. There was a difference in mean changes in anxiety scores before and after being given slow deep breathing. Based on this study, it can be suggested for further research slow deep breathing actions can be combined with the provision of health in overcoming the anxiety of families who care for patients in hospitals.

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