

Reducing Anxiety in Patients Undergoing Hemodialysis with Spiritual Mindfulness Based on Breathing Exercise

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ABSTRACT

Background: Patients with chronic kidney failure say that they are anxious because they see the tubes flowing blood, costs that must be incurred each time undergoing therapy, anxiety because invasive procedures will be carried out, and uncertainty about recovery.

Purpose: The purpose of this study was to analyze the Spiritual Mindfulness Based on Breathing Exercise on the anxiety of patients on Hemodialysis.

Method: The research design uses a quasi-experiment with a pre and posts group design control. The population of all chronic kidney failure patients at A. Yani Surabaya Islamic Hospital is 70 people. The sample size is 32 respondents. The sampling technique is purposive sampling. The intervention group was given Spiritual Mindfulness Based on Breathing Exercises and the control group was given intervention according to hospital standards. Analysis used the Wilcoxon with a significant value of $\alpha < 0.05$.

Results: the anxiety level p-value of 0.000 in the intervention group and the control group p-value of 0.109 which means there is an effect of Spiritual Mindfulness Based on Breathing Exercises on patient anxiety on Hemodialysis.

Conclusion: Spiritual Mindfulness Based on Breathing Exercise is effective in reducing anxiety in chronic kidney failure patients undergoing hemodialysis and the technique is easy to perform.

Keywords: anxiety, breathing exercise, hemodialysis, mindfulness, spiritual

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BACKGROUND

Someone who suffers from a chronic disease is prone to experiencing anxiety, one of which is a patient with chronic kidney failure who is undergoing Hemodialysis therapy. Patients with chronic kidney failure experience many changes in their lives, starting from managing their diet, exercise, controlling blood sugar, urea, creatinine, and renal function replacement therapy (Nursalam et al., 2020). Patients with chronic kidney failure look anxious when they are about to undergo hemodialysis, both new patients and most old patients, they also say that their heart is pounding, nausea, tremors, nervousness, unable to concentrate, and feeling uncomfortable (Tanoto & Zaenal B., 2022). From these signs, it can be seen that the patient is experiencing anxiety. The patient said that he was worried because he saw the blood flowing through the tubes, the costs that had to be incurred every time he underwent therapy, the anxiety that an invasive procedure would take, and the uncertainty of recovery (Mahyuvi, 2021).

The incidence of chronic kidney failure in the world is 661,648 people which is a threat to global health. Study Results (Anisah & Maliya, 2021) As many as 48.6% of Hemodialysis patients experience anxiety disorders. Data from Basic Health Research (2018) states that in Indonesia there are 9.8% who experience anxiety in patients with chronic kidney failure (Kemenkes RI, 2019). The results of the study (Larasati, 2018) in the Central Java region stated that there was a level of severe anxiety of 35.50% in patients undergoing Hemodialysis. Based on medical record data of patients with chronic kidney failure undergoing Hemodialysis therapy at the A.yani Surabaya Islamic Hospital from July to September 2021 totaling 2288 visits. Based on the results of interviews with chronic kidney failure patients using the Zung-Self Rating Anxiety Scale at the Hemodialysis Unit of the Islamic Hospital Surabaya A.Yani in October 2021, out of 10 chronic kidney failure patients undergoing new and old Hemodialysis therapy, 4 of them experienced severe anxiety and 3 experiencing moderate anxiety because of the disease experienced and because of the Hemodialysis procedure performed on the patient.

The psychological changes that are felt can be seen from the physical condition and changes in behavior including patients always feeling confused, feel insecure, dependent, and become passive individuals (Suwardianto, 2018). Some of the patients undergoing dialysis therapy never return to activities or work as before they underwent hemodialysis. Patients often experience problems such as loss of job, income, freedom, decreased life expectancy, and sexual function which can lead to anger and lead to a state of anxiety as a result of the systemic disease that precedes (Espahbodi et al., 2015).

Anxiety experienced by individuals can be caused by threats to physical integrity and threats to the integrity of body systems. Threats to physical integrity are related to decreased ability to carry out activities of daily living. Meanwhile, threats to the integrity of the body's systems involve damage to one's identity, self-esteem, and integrated social functions (Mahyuvi & Hasina, 2021). Anxiety that is not handled can lead to irrational behavior, conflict, disobedience, fear, inability to carry out daily activities, and fear of (Dewanti & Supratman, 2020).

Treatment of anxiety can be done by administering pharmacological therapy/drugs or non-pharmacological interventions. Considering the complications and side effects caused by the use of drugs in anxiety therapy, non-pharmacological intervention methods were chosen to reduce anxiety in chronic kidney failure patients undergoing hemodialysis therapy (Sitoresmi et al., 2020).

Spirituality is one way to minimize anxiety which acts as a positive psychological factor (free from stress and anxiety) through the functional limbic system which can lead to

positive coping mechanisms. Spirituality can significantly assist patients in adapting to changes caused by chronic kidney disease. Spiritual intervention is believed to reduce anxiety optimally because it can be carried out independently, anytime and anywhere, is not expensive, and is non-toxic. The relationship between humans and the Creator is the first element of spirituality. Getting closer to God is the coping strategy most often used by patients to deal with anxiety in patients with chronic kidney failure. One of the spiritual interventions to reduce anxiety is breathing relaxation (Hofmann et al., 2010).

This is supported by research (Alfikrie et al., 2020) which states that deep breathing can reduce anxiety in chronic kidney failure patients. It is also supported (Wiyono & Prayogae, 2021) which states that deep breathing can reduce anxiety in chronic kidney failure patients. Nurses can use it as a stimulus to reduce anxiety, through breathing relaxation by surrendering to God (mindfulness). Mindfulness can be interpreted as an individual's ability to be fully aware of where one is, where one is, and what one is doing, and not overreact to what is happening around him by surrendering to God. As an effort to maximize surrender to God or Spiritual Mindfulness in chronic kidney failure patients media breathing relaxation (Hoge et al., 2015).

METHODS

Quantitative research using a quasi-experimental with a pre-and post-test control group design. The Independent Variable is Spiritual Mindfulness Based On Breathing Exercises and the dependent variable is anxiety. The sampling technique used in this research is purposive sampling. The number of respondents in this study intervention group was 16 respondents and the control group was 16 respondents. Prior to the research, a protocol ethics had been carried out with number 12.EC.KEP.RSIAY.04.22. Spiritual Mindfulness based on breathing relaxation which is done 2 interventions in 1 week before the patient undergoes Hemodialysis therapy . The research was conducted Islamic Hospital Surabaya A.Yani. The study was conducted in April-May 2022. The statistical test of the research results used the Wilcoxon test.

RESULTS

The research results obtained by the researchers are as follows:

Table 1. Distribution of respondents' age, gender, education, and occupation

Data on Characteristics of	Interventions		Control	
	N	%	n	%
Gender				
Male	9	56.3 %	10	62.5 %
Female	7	47.8 %	6	37.5 %
Total	16	100 %	16	100 %
Early				
adulthood (18-40 years)	4	2.5 %	-	-
Middle adulthood (41-60 years)	9	56.3 %	15	98.3 %
Advanced adult (>60 years)	3	18.8 %	1	6.8 %
Total	16	100 %	16	100 %
education				
Elementary school	-	-	-	-
High school	1	6.3 %	4	25 %
	8	50.0 %	8	50 %

Data on Characteristics of	Interventions		Control	
	N	%	n	%
College	7	43.8 %	4	25 %
Total	16	100 %	16	100 %
Employment				
Working	6	37.5 %	3	18.8 %
Not working	10	62.5 %	13	81.3 %
Total	16	100 %	16	100 %

Based on table 1. the ages of the respondents in the intervention group and the control group fit the inclusion criteria, namely between 18 years and > 60 years. Most of the respondents in the intervention group (56.3%) were male and in the control group most (56.3%) 62.5%) are also male. Half of the education-level respondents in the intervention group (50.0%) were in high school and in the control group half of the education level of respondents (50.0%) were also in high school. In the intervention group, most (62.5%) of the respondents did not work and in the control group, almost all (81.3%) of the respondents did not work.

Table 2. Distribution of special data analysis of anxiety in chronic kidney failure patients undergoing hemodialysis at Islamic Hospital Surabaya A.Yani before and after being given Spiritual Mindfulness Based On Breathing Exercise in the intervention and control groups

	Pre		Post	
	Frequency (f)	%	Frequency (f)	%
Intervention				
Not Worried	-	-	15	93.8 %
Mild	1	6.3 %	1	6.3 %
Moderate	9	56.3 %	-	-
Severe	6	37.5 %	-	-
Total	16	100%	16	100%
Control				
Not Anxious	-	-	1	6.3 %
Mild	2	12.5 %	3	18.8 %
Moderate	8	50 %	9	56.3 %
Severe	6	%	3	18.8 %
Total	16	100%	16	100%

Analysis Wilcoxon Signed Ranks Test related to the anxiety of chronic kidney failure patients undergoing hemodialysis obtained ρ value = 0.000 in the intervention group and ρ value = 0.109 in the control group.

Based on table 2. shows that before being given Spiritual Mindfulness Based On 55.3 %) in the intervention group experienced moderate anxiety and after being given the intervention almost all (93.8%) were not anxious. In the control group, before being given the intervention, half of the respondents (50%) experienced moderate anxiety and after being given the intervention, moderate anxiety increased to the majority (56.3%).

Based on the results of statistical tests using the Wilcoxon Signed Ranks Test ρ value = 0.000 in the intervention group and the control group ρ value = 0.109, the hypothesis is accepted, meaning that there is an effect of Spiritual Mindfulness Based on Breathing Exercise on patient anxiety on Hemodialysis.

DISCUSSION**Anxiety before being given Spiritual Mindfulness Based On Breathing Exercise**

Based on the results of research, the respondents in the intervention group and the control group fit the inclusion criteria, namely between 18 years and > 60 years. Most of the respondents in the intervention group (56.3%) were male and in the control group most (56.3%) 62.5% are also male. Half of the education-level respondents in the intervention group (50.0%) were in high school and in the control group half of the education level of respondents (50.0%) were also in high school. In the intervention group, most (62.5%) of the respondents did not work and in the control group, almost all (81.3%) of the respondents did not work.

Based on the results of research conducted at the Islamic Hospital Surabaya A.Yani Hemodialysis Unit from 10 to 30 May 2022 before being given the Spiritual Mindfulness Based On Breathing Exercise found that the majority of patients with chronic kidney failure (55.3%) in the intervention group experienced moderate anxiety and in the control group before being given intervention half of the respondents (50%) also experienced moderate anxiety. This is because the patient has only performed hemodialysis several times. Based on research from 38 respondents, 20 people (52.6%) have a high level of anxiety, 4 people (10.5%) have a moderate level of anxiety, and 10 people (26.3%) have a high level of anxiety. mild and 4 people (10.5%) had no anxiety.

The results of the above study are also following research (Damanik, 2020) which states that most chronic kidney failure patients undergoing hemodialysis experience moderate levels of anxiety. so anxious to see the tubes flowing blood, the costs that must be spent each time undergoing therapy, anxious because invasive procedures will be carried out, the patient still has not accepted the fact that hemodialysis therapy will be lived for the rest of his life, and the uncertainty of recovery. This is in line with research (Listiana, 2020) which states that from the results of the study it is known that the anxiety level of chronic kidney failure patients undergoing hemodialysis includes. Patients with chronic kidney disease who must undergo long-term dialysis, patients will feel worried about their illness and long-term treatment and also because many patients still do not accept the fact that hemodialysis therapy will be carried out for the rest of their lives, patients are still afraid of the hemodialysis process, and patients are worried about their disease which cannot be cured. A person suffers from an anxiety disorder when the person is unable to cope with the stressor they are facing. Conditions like this clinically can be generalized and persistent and last for at least 1 month.

Anxiety is something that often occurs in human life, especially in people with chronic diseases. Clients who are treated for life-threatening illnesses will more often experience anxiety, depression, or anger (Palta et al., 2012). This situation causes the individual's life to always be under the shadow of prolonged anxiety and considers anxiety as mental tension. Anxiety is related to physiological and psychological stress, meaning that anxiety occurs when a person is threatened both physically and psychologically. Physically the client looks restless, nervous, and unable to sit or rest quietly (Supriani et al., 2017). Anxiety is a pathological condition characterized by feelings of fear followed by and accompanied by somatic signs, anxiety is also a response to a threat whose source is unknown, internal, or conflictual, one of the causes of patient anxiety is Hemodialysis. The patient's experience of undergoing treatment can also cause anxiety in the patient, it is possible that from this experience there is something that makes him feel worried and anxious.

Suggests that patients undergoing hemodialysis usually have a different response to the hemodialysis they are undergoing, for example, the patient will feel anxious caused of a situational crisis, the threat of death, and not knowing the outcome of the therapy being carried out. Patients are faced with uncertainty about how long hemodialysis is needed throughout their lives and requires large costs (Mahyuvi, 2021).

According to (Arifah et al., 2018) patients undergoing hemodialysis therapy experience anxiety, they are worried about the therapy they are undergoing, worried about the machine, the blood flowing through the tubes, worried about being stabbed, and also worried about the costs that will be incurred during the hemodialysis process, worried about not will work, as usual, looks hopeless on the patient's face, the patient says he is confused and worried about how long he will undergo hemodialysis therapy.

In the opinion of the researchers, based on research conducted in the Hemodialysis Room at the Islamic Hospital Surabaya A.Yani in 2022, it can be seen that the majority of respondents have a moderate level of anxiety because some patients no longer have confidence in complete recovery, and hemodialysis which has been going on for a long time and patients undergoing hemodialysis think they are not giving a big influence in achieving recovery, but some of them have great hopes for recovery from the disease they face and undergo the Hemodialysis process without complaining and also have a family who is always there to accompany the client during the hemodialysis process.

Anxiety after being given Spiritual Mindfulness Based On Breathing Exercise

Based on the results of research conducted at the Islamic Hospital Surabaya A.Yani Hemodialysis Unit from 10 to 30 May 2022 after being given the Spiritual Mindfulness Based On Breathing Exercise found that almost all patients with chronic kidney failure (93.8%) were not anxious/normal in the intervention group and in the control group moderate anxiety increased to the majority (56.3%). Based on the research results above, proves that Spiritual Mindfulness Based On Breathing Exercises can reduce the anxiety of chronic kidney failure patients who will undergo Hemodialysis therapy. This is supported by a literature review (Rokhyati et al., 2019) of non-pharmacological therapy Islamic Spiritual Mindfulness can reduce anxiety, stress, and depression in patients with chronic kidney failure. Also supported by research (Alfikrie et al., 2020) which states that deep breathing relaxation can reduce anxiety in patients with chronic kidney failure.

Spirituality is a way to minimize anxiety which acts as a positive psychological factor (free from stress and anxiety) through the functional limbic system which can cause positive coping mechanisms (Wisnusakti, 2018). Spirituality can significantly assist patients in adapting to changes caused by chronic kidney disease. Spiritual intervention is believed to reduce anxiety optimally because it can be carried out independently, anytime and anywhere, and is inexpensive and non-toxic (Nisa et al., 2021). The relationship between humans and the Creator is the first element of spirituality. Getting closer to God is the coping strategy most often used by patients to deal with anxiety in patients with chronic kidney failure. The nurses in this study used it as a stimulus to reduce anxiety, through the Breathing Exercise by surrendering to God (mindfulness). Mindfulness can be interpreted as an individual's ability to be fully aware of where one is, where one is, and what one is doing, and not overreact to what is happening around him by surrendering to God (Dwidiyanti et al., 2021). Spiritual Mindfulness Based On Breathing Exercise is a relaxation exercise with breathing exercises using slow and deep breathing techniques and using the diaphragm muscles, allowing the abdomen to be lifted slowly and the chest fully expanded while saying motivational sentences, gratitude, and self-surrender (prayers). -Islamic prayer) as well as creating a

strategy of focusing attention to deal with cognitive problems and reactivating the power of thought to reduce emotional distress.

Something that happens during mindfulness has a great influence on reducing a person's anxiety level. When a person feels anxious, the body's system will work extra by increasing the work of the sympathetic nerves in response to stress. The sympathetic nervous system activates through the activation of the adrenal medulla to increase the release of the hormones epinephrine, norepinephrine, and cortisol and reduce nitric oxide. This situation can be the cause of changes in the body's response including increased heart rate, respiration, blood pressure, increased blood flow to various organs, and increased body metabolic processes (Dhamayanti & Yudianto, 2019). Spiritual mindfulness that is carried out will stimulate the brain area, namely the prefrontal cortex which is the center of emotion regulation and judgment to instruct emotional reactions which then the body will respond by feeling accepting and not judging, while the hippocampus and amygdala in addition to areas for regulating emotions as well as areas openness, blackout, and reinforcement which will provide instructions to be more open so that individuals can release themselves in awareness, refrain from internal reactivity and can increase self-acceptance to reduce anxiety (Alimuddin, 2018).

In the opinion of the researchers, after being able to practice and focus on mindful breathing, individuals will find it easier to focus on the breath which is an important skill to assist in dealing with stress, anxiety, and negative emotions as well as cool off in when angry, and improve skills in concentration. Breathing activities in particular will be very helpful because they provide an opportunity for individuals to be able to refocus on their breathing (inspiration and expiration) when they feel that their thoughts and feelings are being carried away by stressful thoughts. Mindful breathing also helps the individual stay "present or there" at the moment, instead of being distracted so that he regrets the past or worries about the future. During Spiritual mindfulness, patients with chronic kidney failure will feel calm, have increased levels and compassion for themselves, there is an attachment to spirituality, and increased awareness of health and self-care so that the patient's anxiety decreases and even becomes not anxious.

Spiritual Influence Analysis Mindfulness Based On Breathing Exercise on the anxiety of patients with chronic kidney failure

Based on the results, the hypothesis is accepted, meaning that there is an effect of Spiritual Mindfulness based on breathing exercises on patient anxiety on Hemodialysis. Spiritual Intervention based on breathing exercises is given to raise awareness of the patient's current condition without any attempt to blame the environment and other people, carried out with a spiritual approach to foster self-awareness, increase concentration, and peace of mind, to form the belief that healing will come from God Almighty through providing spiritual motivation by praying while focusing the mind on breathing when thoughts and feelings start to get distracted by sounds and other thoughts, the patient just listens and feels them and then returns the focus to breathing and motivational sentences of gratitude, surrender patience, and sincerity (Alimuddin, 2018). Spiritual Mindfulness is based on breathing exercise which is carried out 2 times in 1 week before chronic kidney failure patients undergo Hemodialysis therapy.

The sentences in the Spiritual Mindfulness based on breathing exercise aim to regulate emotions by reducing amygdala activation, then the stimulus is sent to the prefrontal cortex in the form of a learning process (a careful learning process through a process of selection, organization, and interpretation of the stressor it receives) which will then produce changes in self-perspective in the form of awareness to take lessons and self-acceptance of

the conditions experienced at this time. Awareness in taking lessons and self-acceptance will increase tolerance to stress and reduce muscle tension which will then change the individual's cognitive and emotional spiritual response, as a result, can reduce Corticotropin Releasing Factor (CRF). Then CRF stimulates the pituitary gland (pituitary) to secrete or release the hormone endorphins as neurotransmitters which affect the mood to relax and maintain positive emotions, namely self-acceptance, increased confidence, and motivation to stay healthy (Astuti et al., 2022). This will cause positive effects, including increased concentration, and awareness of body and mind. This situation will also increase the patient's self-awareness of the current situation so that the patient can accept his condition without criticizing or blaming himself and his environment. Furthermore, it will increase motivation to be healthy and feel well in chronic kidney failure patients undergoing Hemodialysis therapy. Patients who have been able to accept their situation feel more comfortable and relaxed, so they can reduce anxiety and stabilize the body's hemodynamics.

CONCLUSION

Patients with chronic kidney failure before being given Spiritual Mindfulness Based On Breathing Exercises in the intervention group experienced moderate anxiety and in the control group, half of the respondents also experienced moderate anxiety. Patients with chronic kidney failure after being given Spiritual Mindfulness Based On Breathing Exercises in the intervention group were not anxious and in the control group, most were moderate anxiety. There is a Spiritual Mindfulness Based On Breathing Exercise on Patient's Anxiety in Hemodialysis.

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CONFLICTS OF INTEREST

All research teams agree with the final results of this study and there is no conflict of interest in this study.

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