



## Validity Test of The Acupressure Model Integrated Spiritual Coping Skill as an Effort to Reduce Anxiety Level in Chronic Kidney Disease

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### ABSTRACT

**Objective:** Collecting information and testing validation for the design of an acupressure model integrated with spiritual coping skills as an effort to reduce anxiety levels in patients with chronic kidney disease proves that acupressure intervention integrated with spiritual coping skills has an effect on anxiety levels in CKD patients with hemodialysis through improving serotonin levels, and IgG

**Method:** This study uses Research and Development (R&D), the stages carried out in this study were stages one, two and three, namely: information gathering, product/model design, expert validation and revision. Samples were taken by purposive sampling technique, grouped into two, the first group was a sample of the information gathering stage, totaling 10, the second group was a sample of the expert validation stage, totaling 9 people consisting of specialist doctors, psychologists and religious leaders. Information collection data was tested using qualitative discriminatory and expert validation data was tested with intraclass correlation coefficient

**Results:** The results of gathering information concluded that the impact of hemodialysis treatment is the emergence of stress and anxiety in patients, anxiety, data can be overcome by acupressure treatment supported by activities that can meet psychological and religious/spiritual needs, thus providing a sense of comfort and increasing faith. Acupressure action with religious coping can reduce anxiety. Expert validation showed that the eligibility score was 90.9% with  $p=0.001$  meaning that acupressure integrated spiritual coping skills was feasible as a model for reducing anxiety levels in patients with chronic kidney disease in the very feasible category.

**Conclusion:** The application of acupressure model integrated spiritual coping skills is feasible as a model to reduce anxiety levels in patients with chronic kidney disease on hemodialysis

**Keywords:** acupressure, anxiety, chronic kidney disease, spiritual coping skill

### Introduction

Chronic Kidney Disease (CKD) is a clinical condition characterized by a decrease in kidney function that is irreversible to the balance of fluid, electrolyte, and metabolism in the body (Gilbert & Weiner 2013). CKD was the 27<sup>th</sup> leading cause of death in 2010 and increased its rank to 12<sup>th</sup> in 2017 (Hatef et al., 2018).

Based on the report of The Global Burden of Chronic Kidney Diseases, the prevalence of CKD reached 29.3% and continued to increase to 41.5% in 2017 (Salehoddin et al., 2018). The results showed that CKD patients experienced problems such as spending less time on activities, difficulty in doing work and doing fewer activities than they want (physical aspects) (Shafipour, 2015) and mental problems in the form of feeling lack of rest, unhappy or displeased, tired and irritable, including anxiety (Khalil, 2021). The prevalence of anxiety in CKD patients with hemodialysis shows a number that varies from country to country (Macaron 2014). Based on the results of the study, it showed that Pakistan had a high figure of 71.2%, followed by Iran (63.9%), Greece (47%), Italy (43%), Turkey (30%), and Morocco (25.2%) (Shafipour, Alhani, & Kazemnejad 2015; El Filali et al. 2017; Vasilopoulou et al. 2016; Mollahadi et al. 2010). The prevalence of anxiety in CKD patients in Indonesia also shows a fairly high rate of 78 % in 2019 (Wakhid, 2019).

Long-lasting anxiety can also trigger changes in immunological status (Mollahadi, 2010). This arises during a decrease in the regulation of  $\beta$ -adrenergic receptors that can reduce the immune response, especially in conditions of chronic psychological problems. It arises during the occurrence of decreased regulation of  $\beta$ -adrenergic receptors that can decrease the immune response, especially in chronic psychological problem conditions (Rothstein, 2016). The immunoglobulin G (Ig G), immunoglobulin reaction has been used as an indicator related to various diseases, but some current studies Ig G can undergo changes due to exposure to anxiety in long term (Rothstein 2016). Anxiety management in CKD patients with hemodialysis requires comprehensive intervention to increase strong self-confidence. In addition to pharmacological therapy, anxiety management in CKD patients undergoing hemodialysis requires non-pharmacological therapy such as social support. Social support has been proven to have a real influence on patients' self-confidence to live a better life.

Actions to overcome anxiety in CKD patients are not only through physical touch, but also requires an intervention that can strengthen spiritual status. Good spirituality can prevent and protect against feelings of hopelessness that can worsen physical health. In addition, spirituality can also increase self-acceptance of the patient's illness through encouragement or spirit (Sagala, 2019). Spiritual intervention can be done through spiritual coping.

The combination of acupressure interventions and spiritual coping skills can have a more optimal effect on reducing anxiety levels in CKD patients. Acupressure therapy by emphasizing certain points can reduce anxiety, while spiritual coping skill interventions accommodate CKD patients to be calmer in dealing with CKD undergoing hemodialysis. In addition, acupressure integrated spiritual coping skills is expected to cause changes in brain wave activity (prefrontal cortex, limbic system and hypothalamus) which increase emotional regulation, increase neurotransmitters that affect positive emotional states such as melatonin, serotonin,  $\beta$ -endorphins, and acetylcholine, decrease neurotransmitters which increase distress such as nor-epinephrine and cortisol through touch and pressure on certain points on the body and by providing spiritual stimulation will increase the patient's sense of calm and self-acceptance so as to reduce anxiety.

## **Objective**

Collecting information and testing validation for the design of an acupressure model integrated with spiritual coping skills as an effort to reduce anxiety levels in patients with chronic kidney disease proves that acupressure intervention integrated with spiritual coping skills has an effect on anxiety levels in CKD patients with hemodialysis through improving serotonin levels, and IgG.

## **Method**

This study uses Research and Development (R&D), the stages carried out in this study were stages one, two and three, namely: information gathering, product/model design, expert validation and revision. Samples were taken by purposive sampling technique, grouped into two, the first group was a sample of the information gathering stage, totaling 10 people, the second group was a sample of the

expert validation stage, totaling 9 people consisting of specialist doctors, psychologists and religious leaders. Information collection data was tested using qualitative discriminatory and expert validation data was tested with intraclass correlation coefficient.

## Results

The results of gathering information concluded that the impact of hemodialysis treatment is the emergence of stress and anxiety in patients, anxiety, data can be overcome by acupressure treatment supported by activities that can meet psychological and religious/spiritual needs, thus providing a sense of comfort and increasing faith. Acupressure action with religious coping can reduce anxiety. Expert validation showed that the eligibility score was 90.9% with  $p=0.001$  meaning that acupressure integrated spiritual coping skills was feasible as a model for reducing anxiety levels in patients with chronic kidney disease in the very feasible category.

### Collection of Information

The stage of collecting information in this study was obtained by interviewing doctors, psychologists, and experts from each religion and reviewing journals/literature reviews.

Table 1. Description of the conclusions to respondent's answer

No	Question	Answer
1	What is chronic kidney disease with hemodialysis and what are its characteristics?	Chronic kidney disease is a disease that attacks the kidneys which is commonly known as kidney failure. Characteristics of patients with kidney failure usually have a high level of stress, high levels of anxiety because of the treatment that must be undertaken, namely the dialysis process.
2	What do you think about the need for treatment for chronic kidney disease patients with hemodialysis?	Patients with chronic kidney failure need treatment or actions that can provide a sense of security and reduce anxiety levels.
3	Is there a method that can be given to chronic kidney disease patients with hemodialysis to help reduce the impact/effect of the treatment?	The impact of hemodialysis treatment is the emergence of stress and anxiety in patients. To overcome anxiety, in medical science, acupressure treatment can be carried out supported by activities that can meet psychological needs. In addition, religious or spiritual activities can help provide a sense of comfort and increase faith.
4	What treatment model is suitable for chronic kidney disease patients with hemodialysis?	A suitable model that can be given to patients is the acupressure method as a support for medical actions that are supported by involving spiritual activities.

From the interview results, it can be concluded that the impact of hemodialysis treatment is the emergence of stress and anxiety in patients. To overcome anxiety, in medical science, acupressure treatment can be carried out supported by activities that can meet psychological needs. In addition, religious or spiritual activities can help provide a sense of comfort and increase faith so that a suitable model that can be given to CKD patients is the acupressure method as a support for medical actions that are supported by involving spiritual activities.

Table 2. Data Collection through Literature Review

Author	Title	Findings
Paul S. Bay, et al.	The Effect of Pastoral Care Service on Anxiety, Depression, Hope, Religious Coping, and Religious Problem Solving Styles: A Randomized Controlled Study	Comparative scores for anxiety, depression, hope, positive and negative coping religious, and coping religious style were analyzed. Significant differences were found between groups in positive religious (PRC) ( $p = 0.023$ ) and negative religious (NRC) coping scores ( $p = 0.046$ ) over time. PRC increased in the intervention group, decreased in the control group while NRC decreased in the intervention group and increased in the control group.
Ariane Moysés, et al.	Benefits of spirituality and/or religiosity in patients with Chronic Kidney Disease: An integrative review	Benefits associated with situational coping modalities, such as Strengthening expectations, social support and coping with pain; those related to mental health, such as a lower risk of suicide and fewer symptoms of depression; Improved perception of quality of life and kidney function after transplantation.
Yi-Ching Cho & Shiow Luas Tsay	The Effect of Acupressure with Massage on Fatigue and Depression in Patient With End- Stage Kidney Disease	Acupressure therapy can effectively increase ESRD, fatigue and depression that patients feel. The study provides a research-based intervention model for healthcare providers caring for ESRD patients with fatigue and depressive mood. Application of these findings may have important implications for ESRD patients on dialysis. Assessment of fatigue in ESRD and depressed patients should be an important part of nursing practice, and clinicians may consider providing acupressure therapy as a method of improving fatigue in dialysis and depressed patients. Nurses, patients and their families can easily be trained to administer acupressure to those with fatigue and depression.
Nant TTH, et al.	The effects of acupressure on depression, anxiety and stress in patients with hemodialysis: A randomized control trial	The findings from this study indicate that birth acupressure therapy three times a week for four weeks can significantly reduce depression, anxiety, stress, and general psychological distress in patients on hemodialysis. The findings suggest that acupressure may have a role in improving the psychological well-being of patients. Promoting psychological health will improve the patient's quality of life.
Mansoorzadeh KH, et al.	The effect of acupressure on anxiety and dysrhythmia in patients undergoing cardiac catheterization	Acupressure has a positive effect on reducing anxiety and tachycardia. Therefore, acupressure can be used before carrying out critical procedures.

Brendan T, McMahon & Herbert C. Biggs	Examining spirituality and intrinsic religious orientation as a means of coping with exam anxiety	The results of this study support previous evidence that spirituality is an effective way to deal with stress and anxiety. Spirituality in the form of existential well-being was found to be associated with lower anxiety levels among students approaching exams. Existential well-being gives individuals meaning and purpose which can reduce the disruptive effects of test anxiety. There is evidence that some counseling clients will appreciate the inclusion of spirituality i.e. self-chosen in therapy.
Piyush M, et al.	Contemporary acupressure therapy: Adroit cure for painless recovery of therapeutic ailments	CAM therapy is a real traditional medicine practice around the world. Current investigations support traditional claims and validate the use of acupressure for the painless treatment of many people. The current review assesses different patented devices and practices with applications in the therapy of various acute and chronic diseases. With modern devices, one can adjust the pressure intensity as well. In addition to pain relief, acupressure devices offer the great advantage of no drugs, and consequently, no after effects. In order to support acupressure (CAM) in the near future and expand CAM therapy, we must further elucidate the therapeutic function of acupressure and to encourage its practice in all hospitals.
Mohammad Mojalli, et al.	Effect of Acupressure on Fecal Impaction in Hemodialysis Patients	Acupressure has a positive effect on fecal impaction in hemodialysis patients with constipation. Therefore, it can be used as a complementary treatment of constipation in hemodialysis patient.

The conclusion from the journal/literature review stated that the act of acupressure with coping religious can reduce anxiety, besides that it may have a role in improving the psychological well-being of patients. Promote psychological health will improve the patient's quality of life. The acupressure action to reduce anxiety is not burdensome in terms of financing.

### **Model Design**

The information obtained is used as a reference in designing acupressure models integrated with spiritual coping skills as an effort to reduce anxiety levels in patients with chronic kidney disease.

Table 3. Description of the Session

Session	Description
<b>Pre</b>	<ol style="list-style-type: none"> <li>1. Approach the subject (explaining the process and consequences of the research activities to be carried out. Allow time for officers and subjects to make introductions).</li> <li>2. Informed consent.</li> <li>3. Pretest.</li> <li>4. Physical and psychological observation of the subject.</li> <li>5. Interview the subject about the physical condition that is currently being experienced/perceived.</li> <li>6. Interview the subject about the psychological conditions that are being experienced/perceived (related to self, other people, environment and transcendence).</li> </ol>
<b>I–XII</b>	<p>Acupressure action integrated Spiritual Coping Skill</p> <ol style="list-style-type: none"> <li>1. Opening: asking news and situation (physical and psychological observation) of the subject in a lying position (supination).</li> <li>2. Emphasize the acupoint on the CV-4 below the navel.</li> <li>3. Emphasize the acupoints in Ki-1 on the left and right feet.</li> <li>4. Doing pressure on acupoints at Lv-3 on the left and right legs.</li> <li>5. Emphasize the acupoints on St-36 on the left and right feet.</li> <li>6. Emphasize the acupoints in LI-4 on the left and right hands.</li> <li>7. Emphasize the acupoint on the GV-20 at the top of the head.</li> <li>8. Give the subject a moment to rest/sleep.</li> <li>9. Continuing the action by inviting the subject to pray according to their religion.</li> <li>10. Prepare verses in the holy book (relating to oneself, others, the environment and God). The subject reads several verses.</li> <li>11. Listen to hymns/spiritual songs that have been prepared by officers (relating to oneself, others, the environment and God).</li> </ol>
<b>Post</b>	<ol style="list-style-type: none"> <li>1. Do a post test.</li> <li>2. Inquire about physical and psychological conditions.</li> <li>3. Say thank you.</li> </ol>

### Expert Validation

There are 9 expert validators, dr. Eddy Suhartono Ben Wibowo as Doctor, Nurrina, S.Psi, M.Psi, Psychologist, CHA, CGA and Adellina Anastasia, S.Psi as Psychologist, DR. Imam Yahya as an Islamic Religion Expert, Pastor Prasetyawan K, S.Ag, M.Si as a Christian Religion Expert, Rm. Raymundus Sugihartono, Pr as Catholic Religion Expert, A.A Ketut Darmaja as Hindu Expert, Bhikkhu Dhammamitta as Buddhist Expert, and the Indonesian Khonghuchu Religious Council as Konghuchu Expert.

Table 4. Expert Validation

	n	(%)	p-value
Relevant	10	90.9	
Irrelevant	1	0.09	0.000

Based on the assessment results from expert validators, it is known that the feasibility score is 90.9% in the very feasible category (without revision).

## Discussion

Based on the results of information collection, it was concluded that anxiety in chronic kidney failure patients with hemodialysis has characteristics with a high level of anxiety. This is in accordance with the results of research which confirms that patients undergoing hemodialysis have a high sense of anxiety due to the treatment they undergo to improve their quality of life (McMahon & C. Biggs, 2012). For this reason, a method is needed that can reduce the patient's anxiety level.

Anxiety is one of the problems that arises in patients undergoing hemodialysis. Anxiety in each patient is also different, including problems with the hemodialysis machine until the patient experiences complaints in the middle of undergoing hemodialysis. Anxiety makes the patient appear unsettled and restless, and worried that something will happen to him. Therefore, it is necessary to have therapy or treatment that can reduce anxiety. This study discusses the effect of acupressure on the anxiety of hemodialysis patients (Murti, Purwanti, & Purnama, 2020). The results of this study are in line with the study (Butar-butur & Siregar, 2012) which said that the most duration of hemodialysis was in respondents who underwent hemodialysis <1 year with a percentage of 57.7%. This study is in line with the study (Hmwe et al., 2015) which argues that acupressure can reduce anxiety levels in hemodialysis patients.

Acupressure is a therapy with the principle of healing touch which shows more caring behavior in respondents, so that it can give a feeling of calm, comfort, a more concerned feeling which can bring closer therapeutic relationships between researchers and respondents (El monshed et al., 2019). Acupressure therapy performed three times a week for four weeks was able to significantly reduce depression, anxiety, stress, and general psychological distress in patients with hemodialysis (Mojalli et al., 2016). The findings suggest that acupressure has a role in improving the psychological well-being of patients. Promoting psychological health will improve the patient's quality of life (Mehta et al., 2017). This is reinforced by the opinion. Acupressure has a positive effect on reducing anxiety and tachycardia (Mansoorzadeh et al., 2014). Therefore, acupressure can be used before performing critical procedures (Hmwe et al., 2015).

Patients who have been undergoing hemodialysis for a long time tend to perceive their quality of life to decrease. This decreased quality of life is associated with changes in economic life, the high costs that must be incurred for a single hemodialysis process (requiring at least Rp. 700,000/therapy) are often felt to be burdensome for patients, dependence on hemodialysis machines, also makes the patient's activities limited and a decrease in physical health and psychosocial over time (Manalu, 2020). One of the factors that affect the quality of life is religiosity. Religiosity is a person's spiritual expression related to belief systems, values, symbols and rituals. This means that religiosity in general has rules that must be obeyed and implemented which function to bind a person in a relationship with God, fellow humans and the surrounding nature (Koenig, King, & Carson, 2012). This is reinforced by the results of the study (Narayanasamy & Narayanasamy, 2008) that religiosity can be a coping mechanism and a contributing factor to the patient's recovery process. So that the aspect of religiosity is very important for patients who are suffering from an illness to be able to help cure the disease that the patient is suffering from. This is in accordance with the opinion expressed by (Yodchai et al., 2017) that religious people are happier and more satisfied with life than non-religious people. This is because religion gives hope for the future and creates meaning in life for humans. The relationship between hope for the future and religious belief is the basis of why faith is so effective against hopelessness and increases happiness.

Contemporary acupressure therapy is a traditional traditional treatment with acupressure techniques for painless treatment. In addition to pain relief, acupressure offers the great advantage of no drug, and consequently, no after effects. This need is what is required by patients who have undergone hemodialysis treatment (Bay et al., 2008). Acupressure is well documented to reduce fatigue (McMahon & C. Biggs 2012), and acupressure is effective in reducing cancer-related fatigue (Bravin et al., 2019). It was



also reported that acupressure is an effective non-pharmacological supplemental strategy for reducing the development and progression of type 2 diabetes-related complications (Yodchai et al., 2017).

Negative views about religion and spirituality, however, are balanced by positive activities that can be played by community life as a source of strength (Wang et al., 2005). The results of this study have found that there is a positive relationship between personal religious devotion (Valiee et al., 2012).

## Conclusion

The act of acupressure with coping religious can reduce anxiety, besides that it may have a role in improving the psychological well-being of patients so that the application of an integrated acupressure model of spiritual coping skills is effective as an effort to reduce anxiety levels in chronic kidney disease patients with hemodialysis.

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