



Original Article

## Psychosocial therapy model to reduce anxiety levels in hemodialysis patients

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### ABSTRACT

**Background:** Chronic kidney disease (CKD) is a global health issue that significantly impacts the quality of life of patients undergoing hemodialysis. Anxiety is one of the common psychological challenges faced by these patients. While various studies have addressed psychological and social interventions, most have focused on only one aspect, such as family support or psychological therapy, without considering the biological, social, and spiritual needs simultaneously. No research has integrated all these dimensions into a holistic approach.

**Purpose:** This study aims to develop and evaluate a holistic nursing management model that combines all of these aspects to reduce anxiety levels for hemodialysis patients.

**Methods:** This study used a mixed-method approach with an action research design. It was conducted at the Klaten Islamic Hospital. The population in the study was patients undergoing hemodialysis; as many as 15 patients participated in this study. The holistic nursing module was tested in five sessions, each lasting 15-30 minutes. Anxiety levels were measured using the Hamilton Rating Scale for Anxiety (HRS-A) before and after the intervention.

**Results:** The study's results showed that the average level of anxiety in patients before the intervention was  $35.13 \pm 3.22$ ; after the intervention, it decreased to  $24.87 \pm 1.68$  ( $p < 0.001$ ).

**Conclusion:** The application of the holistic nursing management model effectively reduced anxiety levels in hemodialysis patients.

### INTRODUCTION

Chronic Kidney Disease (CKD) is a major global health problem that causes millions of deaths each year, with only a tiny proportion of patients receiving adequate treatment. In Indonesia, the number of CKD patients undergoing hemodialysis continues to increase, reaching more than 132,000 in 2018. This growing number draws attention to the psychological challenges faced by these patients, especially anxiety and stress, which significantly affect their quality of life.<sup>1,2</sup>

Anxiety, depression, and stress are common in hemodialysis patients, negatively impacting their well-being. Although hemodialysis is essential for survival, it disrupts daily routines, including medications, fluid restrictions, and social life, which can increase psychological distress. This emotional burden further reduces the overall quality of life of these patients.

In addition to medical challenges, hemodialysis patients face socio-economic, environmental, and healthcare-related stressors. Although holistic care, which addresses physical, psychological, and spiritual needs, is essential, such an approach is still underdeveloped for chronic diseases such as CKD. Most current interventions focus on one aspect of care, such as psychological support or spiritual therapy, without addressing the patient's holistic needs.<sup>3-5</sup>

Several studies have shown that interventions such as support groups or spiritual techniques can reduce anxiety in hemodialysis patients. However, these methods often isolate specific dimensions of care and do not provide a comprehensive approach. For example, while therapies such as "foot massage" help reduce anxiety, they do not include other essential aspects such as social or spiritual support.<sup>3-6</sup>

This gap in care models highlights the need for a more integrated approach that combines biological, psychological, social, and spiritual elements. This study

aims to test a holistic nursing model that addresses all of these aspects to reduce anxiety in hemodialysis patients, ultimately improving their quality of life.

## METHOD

### Study Design

This research uses a qualitative approach with an action research design.<sup>7</sup>

### Setting and Respondent

This study was conducted at the Klaten Islamic Hospital, Makkah Dialysis Unit, from April to June 2024. The study population was all patients undergoing routine hemodialysis, the sample used in this study was 15 people with the inclusion criteria of stage 5 chronic kidney disease patients undergoing routine hemodialysis scheduled for less than three months, outpatients, Muslim patients aged 18 to 65 years, have good mental health, do not have significant physical limitations (e.g. using a wheelchair or bedridden), and are willing to participate by giving consent. Exclusion criteria included having other medical conditions, heart conditions, severe mental disorders, intellectual disabilities, communication limitations (e.g. speech or hearing disorders), or taking antidepressants. The sampling technique used was accidental sampling.<sup>8</sup>

### Variables, Instruments, and Measurements

The variable in this study was the level of anxiety. The instrument used to measure the level of anxiety was the modified Hamilton Rating Scale for Anxiety (HRS-A), which has been tested for validity and reliability.<sup>7</sup> The validity test showed a correlation coefficient (*r*) between 0.474 and 0.743 (*r* table = 0.381), and the results of the reliability test produced a Cronbach's alpha of 0.806, which indicated the reliability of the instrument ( $\alpha > 0.60$ ). The anxiety level variable was measured directly through the holistic nursing module through a qualitative approach with an action research design involving the following stages: identifying and diagnosing problems, planning module development, simulating and testing the module, evaluating and refining the module, and verifying the holistic nursing model.<sup>10</sup> The action research approach was carried out through focus group discussions (FGD) with colleagues regarding barriers, strengths, and areas for improvement. Feedback was recorded and used to improve the holistic nursing module.

### Experimental Procedure

The holistic nursing module trial has four dimensions: biological, psychological, social, and spiritual. The quantitative approach used the Hamilton Rating Scale for Anxiety (HRS-A) questionnaire to measure anxiety levels before the intervention. The intervention was conducted over five sessions, each lasting 15-30 minutes.

First Session (Orientation and Preparation): The research objectives and an introduction to the respondents were explained, including information on the research phases

and meeting schedule. Initial data collection using the Hamilton Rating Scale for Anxiety (HRS-A) measured pre-intervention anxiety levels. Second Session (Biological Education): Education was provided on fluid management and diet, including the amount of fluid to consume, allowed food types, and preparation methods. Group discussions were held on experiences with fluid and diet management.<sup>10,11</sup>

Third Session (Psychological Support): Psychological support sessions focused on the importance of family support in reducing anxiety. Group activities involved patients sharing their experiences and the support they received from their families. Progress in managing anxiety with family support was monitored.<sup>12</sup>

### Data Analysis

The research design was pre-experimental, using a paired t-test to compare anxiety levels before and after the intervention.<sup>10</sup>

### Ethical Consideration

Research ethics approval was obtained from the Health Research Ethics Committee of the Faculty of Medicine, Universitas Muhammadiyah Surakarta (FK UMS), on March 30, 2024, with approval number No. 5206/B.1/KEPK-FKUMS/III/2024.

## RESULTS

The results of the study indicated that the majority of respondents were female (53.3%), with most falling in the 51-60 age group (53.3%) and having completed high school (40%). A significant proportion of respondents were employed in private sector jobs (46.7%) and had been undergoing hemodialysis for 9-12 weeks (46.7%). Prior to the intervention, all respondents (100%) exhibited moderate levels of anxiety, but following the intervention, all respondents experienced a reduction in anxiety to mild levels (100%) (Table 1). The study found a significant reduction in anxiety levels, with the mean score decreasing from  $35.13 \pm 3.22$  pre-test to  $24.87 \pm 1.68$  post-test, showing a mean difference of  $10.26 \pm 2.84$  ( $p = 0.0001$ ). (Table 2).

**Table 1.** Characteristics of Respondent (n=15)

Characteristic	Result
<b>Gender</b>	
Male	7 (46.7 %)
Female	8 (53.3%)
<b>Age</b>	
40-50 years	4 (26.7%)
51-60 years	8 (53.3%)
Over 60 years	3 (20%)
<b>Education</b>	
Middle School	4 (26.7%)
High School	6 (40%)
College (Diploma/Bachelor's)	5 (33.3%)
<b>Occupation</b>	
Housewife	3 (20%)

Private Employee	7 (46.7%)
Retired	5 (33.3%)
<b>Duration on HD</b>	
1- 4 weeks	3 (20%)
5- 8 weeks	5 (33.3%)
9-12 weeks	7 (46.7%)
<b>Anxiety Level Before</b>	
Moderate anxiety	15 (100%)
<b>Anxiety Level After</b>	
Mild anxiety	15 (100%)

**Table 2.** Comparison of Anxiety Levels Before and After Intervention (n=15)

Variable	Pre-test	Post-test	Mean diff	p-value
Anxiety Level	35.13±3.22	24.87±1.68	10.26±2.84	0.0001

## DISCUSSION

The findings of this study demonstrate a significant reduction in anxiety levels ( $p < 0.0001$ ) among hemodialysis patients through a holistic nursing approach. This outcome supports the concept that holistic nursing, which integrates biological, psychological, social, and spiritual aspects, is essential in addressing the anxiety frequently experienced by hemodialysis patients. Painful hemodialysis procedures can become a source of stress, and holistic interventions allow for a more comprehensive approach to managing patients' physical and emotional needs, aligning with research that highlights the importance of psychosocial care in managing hemodialysis patients' anxiety.<sup>15-17</sup>

The holistic nursing module designed in this study encompasses four primary dimensions: Biological Dimension: Education on fluid restriction and dietary guidelines is critical in reducing physical condition-related anxiety. This education allows patients to feel more in control of their physical health, leading to a significant decrease in anxiety levels.<sup>10,11</sup> Psychological Dimension: Family support, including empathy and moral encouragement, has been shown to aid patients in maintaining emotional stability, which directly impacts anxiety reduction.<sup>12</sup> Social Dimension: Peer support groups provide a platform for patients to share experiences and mutual support, reinforcing self-management and alleviating anxiety.<sup>13</sup> Spiritual Dimension: Spiritual group therapy through religious teachings meets patients' spiritual needs, offering emotional comfort and guidance in accepting their health condition.<sup>14</sup>

The significant anxiety reduction observed in this study is also consistent with previous research showing that social and spiritual support can reduce anxiety in hemodialysis patients. A previous study found that family and peer support effectively reduced anxiety in hemodialysis patients in China, suggesting the need for a multidimensional approach to anxiety management. A previous study in Brazil highlighted that psychosocial interventions improved

patients' emotional well-being, underscoring the value of a comprehensive approach.<sup>18-19</sup>

Although some studies have focused on aspects of physical education, such as dietary and fluid restrictions, these interventions have often been less effective without including psychological and spiritual support to address the patient's broader emotional state. However, this study highlights the psychological and spiritual dimensions that comprehensively improve patients' quality of life by significantly reducing anxiety levels. Research linking socioeconomic status to anxiety has shown that low socioeconomic status can increase anxiety in hemodialysis patients, regardless of nursing interventions. However, this study shows that holistic interventions can effectively reduce anxiety, even among economically disadvantaged patients, suggesting that a comprehensive approach can yield positive outcomes regardless of economic factors.<sup>20-22</sup>

These findings are consistent with several studies that underscore the importance of a holistic approach to patient care. For example, Deep Breathing Relaxation (DBR) techniques have been shown to reduce anxiety scores in hemodialysis patients significantly.<sup>23</sup> In this study, the holistic intervention applied demonstrated effectiveness in helping patients achieve lower anxiety levels more comprehensively than single relaxation techniques or physical interventions alone. Furthermore, studies on progressive muscle relaxation (PMR) therapy for chronic kidney disease (CKD) patients have shown mixed results. Although PMR has been shown to reduce anxiety, its effects are limited to the physical relaxation aspect without addressing the deeper social or spiritual dimensions, which were shown to be important in alleviating anxiety comprehensively in this study.<sup>24</sup>

This study supports the hypothesis that a holistic nursing approach that includes biological, psychological, social, and spiritual dimensions can effectively reduce anxiety levels in hemodialysis patients.<sup>21</sup> Although some studies have focused on aspects of physical education, such as dietary and fluid restrictions, these interventions have often been less effective without including psychological and spiritual support to address the patient's broader emotional state.<sup>21</sup> However, this study highlights the psychological and spiritual dimensions that comprehensively improve patients' quality of life by significantly reducing anxiety levels.

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## CONCLUSIONS AND RECOMMENDATION

This study suggests that holistic nursing management, integrating biological, psychological, social, and spiritual aspects, effectively reduces anxiety in hemodialysis patients. Future studies with larger sample sizes are recommended to increase generalizability. Long-term studies tracking anxiety levels over time may validate the model's effectiveness. Additionally, examining spiritual and social dimensions across cultural and religious contexts, along with socioeconomic and physical factors, would provide a more comprehensive understanding of the determinants of anxiety in hemodialysis patients. Exploring technological solutions, such as mental health apps and telemedicine, may also increase accessibility to holistic care.

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