Adherence to dialysis therapy management in hemodialysis patients

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Abstract

Objective: Patients who suffer from end stage renal disease (ESRD) must adhere to dialysis therapy management, which consists of hemodialysis attendance, prescribed medications, fluid restrictions, and proper dietary intake. Non-adherence to this management can increase the morbidity and mortality rate, which indirectly affects quality of life. This study aimed to identify the adherence to dialysis therapy management in hemodialysis patients.

Methods: This cross-sectional study involved 57 hemodialysis patients selected using a purposive sampling technique from major governmental hospitals in Jakarta city. Clinical measures and a valid, reliable End Stage Renal Disease-Adherence Questionnaire (ESRD-AQ) were used to assess the patients’ adherence (hemodialysis attendance, prescribed medications, fluid restrictions, and dietary intake).

Results: The results showed that 50.9% of respondents (n = 29) adhered to dialysis therapy management. In addition, the prevalence of hemodialysis patients’ adherence to hemodialysis attendance, prescribed medications, fluid restrictions, and dietary intake was 50.9%, 56.1%, 61.4%, and 73.7%, respectively.

Conclusion: Patients who adhered to dialysis therapy management had a good quality of life. Therefore, this study recommends developing nursing interventions to maintain and improve patient compliance to improve quality of life.

Keywords: Adherence to dialysis therapy management; end stage renal disease; hemodialysis; quality of life

Introduction

End stage renal disease (ESRD) is progressive and irreversible kidney damage in which the kidneys are unable to maintain metabolic, fluid, and electrolyte balance. It is characterized by a glomerular filtration rate (GFR) ≤15 ml/min/1.73 m² that results in uremia and requires replacement kidney therapy to eliminate toxins in the body12. From 2013 to 2014, the prevalence of ESRD cases following hemodialysis increased by 11,456 inhabitants in Indonesia1.

Hemodialysis patients in hemodialysis therapy often tend to suffer malnutrition, fluid and electrolyte disturbances, and the onset of symptoms from disease such as hypertension, muscle cramps, fatigue, anemia, nausea, vomiting, pruritus, and uremia. Therefore, ESRD patients require dialysis therapy management that includes a hemodialysis program, prescribed medication, fluid restrictions, and continuous dietary intake3. Adherence to dialysis therapy management, however, remains a major problem in hemodialysis patients4.

A previous study showed that 0%–32.3% of patients were non-adherent to dialysis attendance, 1.2%–81% of patients were non-adherent to prescribed medication, 3.4%–74% of patients were non-adherent to fluid restrictions, and 1.2%–82.4% of patients were non-adherent to dietary intake5. Adherence was defined as the level of behavior of a person receiving treatment, following a diet, and/or implementing lifestyle changes appropriate with the recommendations of the health care provider5. Adherence to dialysis therapy management was related to an increased nutrition status and a decreased depression level, which indirectly affects quality of life6.

The above explanation demonstrates that adherence to dialysis therapy management in hemodialysis patients is key to preventing complications and improving quality of life. Nevertheless, few or no studies, particularly in Indonesia, have reported on adherence in hemodialysis patients by assessing four aspects (hemodialysis attendance, prescribed medications, fluid restrictions, and dietary intake). Therefore, we conducted this study to investigate hemodialysis patients’ adherence to dialysis therapy management at a major government hospital.
Methods

This cross-sectional study aimed to identify adherence to dialysis therapy management in hemodialysis patients. A purposive sample of 57 respondents with the following criteria were included: (1) all ESRD patients currently undergoing hemodialysis who had had routine hemodialysis for at least two months; (2) patients who are conscious and able to communicate well; (3) patients who can read and write; (4) patients who will be respondents and provide informed consent; and (5) patients of good hemodynamic status. The data were analyzed using frequencies and cross tabulations for a descriptive analysis. The researcher adhered to the ethical standards and followed the principles of research ethics: respect for human dignity; respect for free and informed consent; respect for privacy and confidentiality; respect for justice and inclusiveness; and balancing harms and benefits.

Results

The study results showed that the mean age of the subjects was 49.05 ± 12.18 years old (range 21 to 73 years). Approximately half of the patients (52.6%) were male. Most of the patients had a middle level education (54.4%), and there were equal proportions of patients with low and high education levels (22.8% each). More than three-fourths of the patients were married (86%).

The mean dialysis duration was 24 months (range 2 to 96 months). Over half of the patients were unemployed (56.1%). Most of the respondents had high economic status (≥3,355,750 or above the average minimum wage in Jakarta). Most respondents (50.9%) were adherent to therapy dialysis management whereas 49.1% were non-adherent to therapy dialysis management (Table 1).

Table 1: Adherence to Therapy Dialysis Management (N = 57)

<table>
<thead>
<tr>
<th>Variable to Therapy Dialysis Management</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherent</td>
<td>29</td>
<td>50.9</td>
</tr>
<tr>
<td>Non-adherent</td>
<td>28</td>
<td>49.1</td>
</tr>
</tbody>
</table>

Most of the patients (50.9%) were adherent to their hemodialysis attendance. Approximately half of the patients (56.1%) were adherent to their prescribed medications. Two-thirds of the patients (61.4%) were adherent to fluid restriction recommendations, and only 38.6% were non-adherent to those recommendations. Most of the patients (73.7%) were adherent to their diet restriction recommendations, and only 26.3% were non-adherence to their diet recommendations.

Details of the degree of adherence to different aspects of therapy dialysis management are presented in Table 2.

Table 2: Four Dimensions of Adherence to Dialysis Therapy Management (N = 57)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence to Hemodialysis Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherent</td>
<td>29</td>
<td>50.9</td>
</tr>
<tr>
<td>Non-adherent</td>
<td>28</td>
<td>49.1</td>
</tr>
<tr>
<td>Adherence to Prescribed Medications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherent</td>
<td>32</td>
<td>56.1</td>
</tr>
<tr>
<td>Non-adherent</td>
<td>25</td>
<td>43.9</td>
</tr>
<tr>
<td>Adherence to Fluid Restrictions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherent</td>
<td>35</td>
<td>61.4</td>
</tr>
<tr>
<td>Non-adherent</td>
<td>22</td>
<td>38.6</td>
</tr>
<tr>
<td>Adherence to Diet Restrictions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherent</td>
<td>42</td>
<td>73.7</td>
</tr>
<tr>
<td>Non-adherent</td>
<td>15</td>
<td>26.3</td>
</tr>
</tbody>
</table>

Discussion

This study showed 50.9% of patients were adherent to dialysis therapy management. Another study that evaluated the relationship between adherence to chronic dialysis therapy management and inter-dialysis weight gain in hemodialysis patients showed that 61.7% of hemodialysis patients were adherent to dialysis therapy management. This difference occurred because of the respondents’ characteristics; the inclusion and exclusion criteria were similar.

In the first aspect of adherence to dialysis therapy management, most of the patients were adherent (50.9%) to attending their hemodialysis appointments. This study result is in line with research conducted by Al-Khattabi, which showed that 55.96% of patients were adherent to attending their hemodialysis therapy sessions. Adherence to hemodialysis attendance was observed in both the respondents’ routine of following hemodialysis and the duration of hemodialysis. All respondents in this study had hemodialysis scheduled twice a week with a duration of four to five hours/session. This was appropriate with the reference set by Pernefi. Most respondents said that after a sufficient length of hemodialysis, there was no edema in the legs, and they slept soundly. This was in agreement with the theory stating that hemodialysis aims to clean up the metabolism of the body; restore fluid balance, electrolytes, and acid-base; and eliminate manifestations.

In the second aspect of adherence to dialysis therapy management, most of the patients were adherent to their prescribed treatment regimens. The results of this study did not differ much from a previous study showing that 91.5% of patients adhered to their treatment regimen. Some respondents explained that they had no
difficulty in taking their medications because the medications were always available and were covered by their health insurance. Moreover, when the patients skipped their medication, they reported complaints such as dizziness and weakness. Some non-adherent patients mentioned that they did not take their medication because they forgot. It was inconvenient to take the medication because it was continuous, and some respondents felt that the medications caused unfavorable effects on their body. Many factors lead to non-compliance with treatment regimens, such as fear of drug effects, drug size, frequency of taking medication, drug costs, lack of knowledge, and low communication with health care workers.

In the third aspect of adherence to dialysis therapy management, most of the patients were adherent to fluid restriction. The average patient consumed 500–750 cc of fluid per 24 hours coupled with the corresponding urine output. This result was supported by another study that showed that most hemodialysis patients were adherent (71.7%) to fluid restriction. Some respondents said there was no difficulty in controlling fluid intake. Some patients explained that consuming too much liquid made them breathless, tired, swollen, and caused difficulty sleeping. This result was supported by the theory that non-compliance with fluid restriction will lead to shortness of breath, muscle cramps, dizziness, anxiety, panic, pulmonary edema, and hypertension. A small percentage of respondents disobeyed their fluid restrictions for reasons they could not control such as often feeling thirsty during hot weather and having a dry throat. Consequently, they took medication with plenty of water. This was similar to another study stating that fluid restriction was difficult for clients, particularly when they took diuretic-type drugs that cause dry mucosa, which causes the patients to feel thirsty and try to drink.

The fourth aspect of adherence to dialysis therapy management showed that most of the patients were adherent to diet intake. These results were similar to those of another study showing that 81.7% of patients were adherent to the diet recommended by health care providers. Most of the patients admitted there was no difficulty controlling their food, and the fear of complications arose when they ate prohibited foods. This was in agreement with a theory stating that adherence to diet can prevent complications such as hyperkalemia, pulmonary edema, and renal osteodystrophy.

**Conclusion**

Our study aimed to identify the adherence of dialysis therapy management in hemodialysis patients. Most respondents adhered to their dialysis therapy. More than half of the patients were adherent in each dimension including hemodialysis attendance, prescribed medication, and fluid and diet restriction recommendations. Adhering to dialysis therapy management is important to hemodialysis patients because it can decrease the morbidity and mortality rate, which indirectly affects quality of life. Therefore, this study recommends that nurses or clinical care raise awareness and improve the patient’s adherence. Furthermore, this study recommends continuous monitoring of patient’s adherence and educating patients about the importance of adherence to dialysis therapy.

**Acknowledgment**

We acknowledge the INSympoFest committees who have facilitated the dissemination of this study.

**References**

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