

# The Perspective of End-Stage Renal Disease (ESRD) Patients Undergoing Peritoneal Dialysis (PD) Toward Self-Care: Integrative Review

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## Abstract

To synthesize the meaning of self-care regarding peritoneal dialysis (PD) for end-stage renal disease (ESRD) patients. A systematic review and thematic analysis of qualitative studies were conducted regarding the perspectives of self-care by adults, and PD. MEDLINE, PsycINFO, and CINAHL databases were searched from January 1st, 2008 until April 1st, 2017. Seven studies involving 107 participants were included and three themes: self-control (adherence and confidence in managing PD), self-monitoring and self-management (lifestyle adaptation, managing dialysis, managing medicine and managing environment). The PD impacts on patients' behaviors and lifestyle were identified. Self-care refers to individual actions that are associated and interact with everyday life activities for good living. Self-care involves self-monitoring, management and control of personal activities that affect health. Healthcare providers must support and educate PD patients to develop their own self-care abilities.

**Keywords :** end-stage renal disease (ESRD), peritoneal dialysis (PD), perception, self-care

It is becoming increasingly difficult for healthcare systems to respond effectively to ever-growing patient needs, as chronic diseases are now spreading quicker than ever before. Patients with chronic diseases are usually self-cared at home since professional nursing costs are high and not easily manageable. One of the most common global chronic ailments is end-stage renal disease (ESRD), with increasing occurrences in both eastern and western countries as a result of diabetes and hypertension.<sup>1,2</sup> Kidney transplantation and chronic dialysis are the only treatments currently available for this condition, and due to the limited availability of organ donors, the majority of ESRD patients require dialysis to prolong their lives. There are two forms of dialysis; hemodialysis (HD) and peritoneal dialysis (PD).<sup>3</sup>

For people with ESRD, the most universally utilized form of home-based dialysis is PD. There are two types of treatment for PD as continuous ambulatory peritoneal dialysis (CAPD) and automated peritoneal dialysis (APD).<sup>4</sup> Lifestyle and behavior of patients is affected by PD treatment as it is required on a daily basis alongside a number of manual exchanges every 24-hours.<sup>5</sup> Fluid consumption has to be measured on a regular basis by ESRD patients who are undergoing PD to ascertain how much excess fluid is present which can be withdrawn via dialysis. Furthermore, dialysis bags are available with three standard concentrations of osmotic agents. If the dialysis solution concentration is higher than that of the body, then fluid is withdrawn by osmosis through the peritoneal membrane. Parameters like blood pressure and body weight have to be carefully checked by people undergoing PD. In addition, patients should possess the ability to recognize the symptoms of peripheral edema and shortness of breath. Patients can control their own PD treatment and care; therefore, PD can be regarded as a self-care modality. Treatment that is self-administered when a mental state has been achieved which allows consistent, controlled, effective, and purposeful action is termed as 'self-care'.<sup>6</sup> Thus, self-application of PD therapy to combat ESRD depends on the readiness and aspiration of each patient. A pathway

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is provided to increase the percentage of patients having the desire to self-treat PD and, thereby, upgrade their independence and sense of self-worth.<sup>7</sup>

Qualitative research was carried out regarding self-care theory to comprehend the viewpoints of ESRD patients receiving PD treatment and achieve a better understanding of their beliefs, viewpoints and attitudes. A specific matter might be the centralization of an individual qualitative study; nevertheless, further knowledge regarding the experiences and viewpoints of the patients across various healthcare backgrounds can be attained through the process of combining outcomes of a number of qualitative studies.

### Search Strategy

Whittemore and Knafl's systematic method for examining and unifying literature was utilized.<sup>8</sup> MEDLINE, PsycINFO and CINAHL were searched from January 1<sup>st</sup>, 2008 until April 1<sup>st</sup>, 2017 for the keywords 'self-care', 'peritoneal dialysis', and 'end-stage renal disease'. Dissimilar index terms are used by every database; therefore, 'qualitative' and other associated terms were not employed.<sup>9</sup> Screening of titles and abstracts followed inclusion criteria as follows:

- 1) Qualitative data for patients with ESRD undergoing PD who were at least 18 years old and offered their perspectives regarding self-care,
- 2) Complete articles only

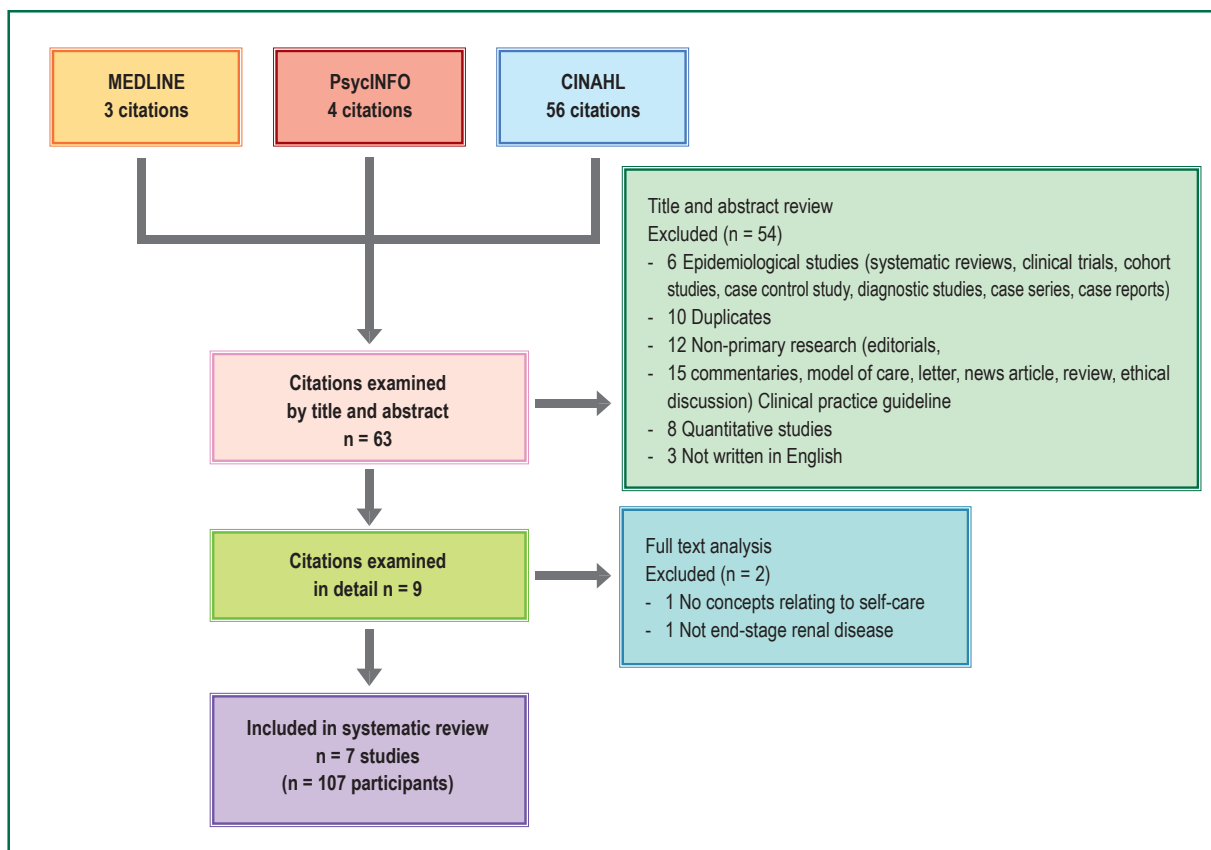
- 3) Primary sources as research and literature reviews. Articles that used organized questionnaires and published only quantitative data, observational epidemiologic studies, editorials, reviews and non-research publications were not included.

### Results

Guidelines of consolidated criteria for reporting qualitative research (COREQ) were followed (Figure 1) to assess the explicitness and comprehensiveness of the reports.<sup>9</sup> Criteria particular to the research terms, study methods, context, analysis, and interpretations were presented in the framework.<sup>9</sup> Particulars regarding the background can be provided to those reading for the purpose of evaluating the transferability and trustworthiness of each research to their own environment.

### Data Abstraction

The categorized codes were amalgamated into larger themes following self-care concepts and sub-themes developed by Orem. To probe the accuracy and difference between them, the subthemes of the original concepts were combined into three themes. A total of 56 articles were removed and seven articles involving at least 107 patients on PD therapy were included (Figure 1). Data were gathered from face-to-face or telephone interviews (in-depth and semi-structured) conducted in the United Kingdom, Australia, Sweden, Hong Kong, and Brazil (Table 1).



**Figure 1:** Search strategy to identify publications included in the review.

**Table 2:** Selecting articles that were relevant

Study (Year)	Country	n	Age range (Y)	Time on PD (Month)	Data collection	Methodology	Analysis	Topic
Lam LM, et al. 2014 <sup>10</sup>	Hong Kong	38	35 - 76	11-103	Face to face semi-structured interviews	NR	Thematic analysis	Adherence
Sadala MLA, et al. 2012 <sup>11</sup>	Brazil	19	20 - 77	at least 6 months	Face to face interviews	Phenomenology	Structural Analysis	Experiences of peritoneal dialysis at home
Morton RL, et al. 2010 <sup>12</sup>	Australia	13	NR	NR	Face-to-face semi-structured interviews	NR	Thematic analysis	Perspectives on treatment
McCarthy A, et al. 2010 <sup>13</sup>	Australia	5	48 - 85	at least 6 months	Face to face semi-structured interviews	Case study	Sequential analytic methods of categorical aggregation	Compliance Normality
Baillie J, et al. 2015 <sup>14</sup>	The United Kingdom	16	50 - 85	6 – > 30	Semi-structured interviews and observation	Ethnographic approaches	Thematic analysis	Perceptions on PD at home
Sadala MLA, et al. 2010 <sup>15</sup>	Brazil	14	26 - 76	6-31	Interviews	Merleau Ponty Existential Phenomenology	Phenomenological analysis	Communication
Lindberg M, et al. 2008 <sup>16</sup>	Sweden	2	39 - 83	NR	Telephone, face-to-face unstructured interviews	NR	Content analysis	Adherence to medication

NR = not reported

## Result

Three themes were identified: self-control (adherence and confidence in managing PD), self-monitoring and self-management (lifestyle adaptation, managing dialysis, managing medicine and managing environment).

### 1. Self-control

The views of patients regarding adherence and confidence in managing PD were assessed.

**1.1 Adherence.** Patients did not regard themselves as being in any way restricted; they believed that although conformity with the PD routine was obligatory, they were able to control their desires toward consuming food and drinking liquids. Noncompliance with fluid regimens is an issue experienced by patients with PD, resulting in adverse effects that can aggravate their condition due to excessive fluid levels. Weight gain, dyspnea and fatigue all result from drinking too much fluid. The desire to drink water is controlled by the patient.

“I wanted to drink water whenever I saw it...when I lifted the cup of water, I’d remind myself that my feet are swollen...so I’d wet my lips with a little bit of water”.<sup>10</sup>

“If you want to eat it, you can eat it once in a while. But you shouldn’t eat a lot of it in one go or eat it too often”.<sup>10</sup>

“I can’t eat or drink anything forbidden, no way. But you get used to everything. At least I’m better than before”.<sup>11</sup>

**1.2 Confidence in managing PD.** Without support from experts, patients increase their confidence levels so that PD

operations can be performed successfully. Any fluctuations regarding their treatment were redressed by their knowledgeable capabilities. The patients demonstrated their willpower to manage PD on their own by dispelling all negative thoughts from their minds.

“I found out that with the treatment I feel good. And I do it by myself. I don’t like to think whether I like it or not, or what might go wrong. I just do it. I don’t like to put bad ideas in my head”.<sup>11</sup>

“I do everything by myself: I clean my bedroom, I take care of the PD. There are medicines to take and visits to the doctor. I have to take care of the dialysis and what I eat”.<sup>11</sup>

“And with the peritoneal, even though it’s against the regulations . . . how I program it sometimes, but I look at how I feel. And I look at it, as long as I can, if I can wake up and do eight to nine hours work the next day I’ve succeeded”.<sup>12</sup>

### 2. Self-monitoring

PD involves physical daily monitoring of body weight, blood pressure, symptoms and signs of infection at more-or-less set times.

“I observed my feet. When my hands began to swell too I’d controlled my water intake without being told to do so for 2 or 3 days until the swelling subsided automatically”.<sup>10</sup>

“I’ve got to be careful how I cough, how I sneeze...ridiculous. For the amount of inconvenience [constipation causes], I’m quite prepared to put up with that rather than have a life of diarrhea and hemorrhoids. ...Left to my own devices, I do pretty well”.<sup>13</sup>

“It only takes ten minutes you know, do your blood pressure at dinner time, take your blood whenever and jumping on the scales takes no time at all”.<sup>14</sup>

### 3. Self-management

**3.1 Lifestyle adaptation:** Many patients were delighted that they were self-managing the schedule of their treatment, such as the timing of bag exchanges. Patients became entirely responsible; they built up the potential to integrate PD into their daily routines and developed the capacity to adjust their treatment around unforeseen or unintended occasions. In addition, participants successfully continued leading a normal life because of the flexibility and independence offered by the PD treatment.

“I incorporate the guidelines...into my daily life. It has become a habit...like part of life. It’s like the routine of meal-time: you just set the table, pick up the chopsticks and eat. ... I’m leading my life like someone normal”.<sup>10</sup>

**3.2 Managing dialysis:** Wide-ranging medical paraphernalia are required for PD and, as a result, the homes of all participants were affected. PD should be carried out in a clean environment to avoid infections, such as peritonitis.

“I had to change my room because it can’t be dirty. My daughter had a sink installed. There’s a white plastic table. You can only deal with medicines on it; you can’t put anything else on it”.<sup>15</sup>

Besides learning how to detect the bodily signs of infection, complications with the treatment and how to solve them were also progressively learnt by the participants. Significant improvements in the treatment procedure resulted from increased knowledge and experience, yielding desirable consequences. As a result, new methods were revealed about how to improve self-care.

“The only thing you have to be really careful about during the treatment is infection. It’s really hard if you get infected. I’ve already had many, but by following the treatment correctly I feel fine”.<sup>11</sup>

“I’ve [also learned] that if you tape your tube down towards your groin...and only use one tape instead of the two, your alarm goes off a lot less because it’s not kinked so much [and] because it’s in the middle there is more freedom to get around”.<sup>13</sup>

**3.3. Managing medicine:** Medicinal management is a vital task performed by ESRD patients experiencing PD. Multiple medications often cause unwelcome side effects and it is important to follow the prescribed doses. Some patients used dispensing aids to assist in taking their medicine at the correct time and dosage amount.

“Now I’ve tried to impose some discipline on myself so that I don’t get to eat until I’ve taken one of these”.<sup>16</sup>

“...put five in the first compartment in the box and the rest in the others. I take the first ones straight away in the morning when I wake up ... drink coffee and eat in the morning... and then I take my other morning medications”.<sup>16</sup>

The three themes of self-control, self-monitoring and self-management were amalgamated to understand the self-care observed by ESRD patients experiencing PD. Results indicated how patients under PD procedures can take care of themselves by managing a more flexible schedule. PD therapy also supported them to acquire the capability to carry out difficult self-care activities including restricting food intake, managing medications, monitoring blood pressure, controlling weight gain and following suitable peritonitis prevention procedures. Besides preoccupying themselves with work and activities, the patients demonstrated the capacity to adopt a positive attitude and incorporate dialysis into their everyday routines.

## Discussion

PD is largely a modality of self-care. In its nature, it gives patients the ability to oversee their own treatment, through such self-care duties as handling the dialysis processes, being responsible at taking their medicines, strictly adhering to the appropriate diet and keeping track of the critical symptoms, body weight and being observant for any alarm developments. It appears that the active treatment regimen for PD is generally subject to a patient’s capacity and eagerness to do a progression of varied and intricate self-care duties. Self-care has an array of definitions. Orem<sup>17</sup> defines self-care as the activities carried out by individuals while aiming at the appropriate management of their own lives and well-being. The nature of self-care requires individuals to utilize their own resources, and that is inclusive of such individual traits as abilities, fearlessness, assurance, inspirational dispositions, and good faith, to enhance poor health. <sup>18</sup> This study found that patients with ESRD who are undergoing PD use self-control, self-monitoring and self-management to care for themselves.

Self-control can be described as the capacity to control contemplations, practices, and sentiments, and is by all accounts essential for achievement at any area life. <sup>19</sup> The main point of this study as pertains to ESRD patients who take PD may also be linked with the beliefs that surround the ability to control one’s health. Most persons tend to believe that they have greater control of their ailments. This is somewhat true for there are behavioral and lifestyle habits, which determine the health condition of an individual, for instance, one has complete control over how much fluids and dietary components one takes. Furthermore, people have the absolute ability to carry out the PD procedures at their convenience wherever

they are. The most outstanding purpose of self-care is to enhance individuals' sense of self-sufficiency and responsibility for their bodies, and that reflects as a psychological, personal control effect unto the concerned individual. Moreover, access to information can also be considered as a psychological control for it drives one to prepare in readiness for adverse occasions and regularly likewise brings about the understanding of circumstances with the goal of lessening any potential risks.<sup>20</sup> Moreover, self-monitoring enables one to bring both actions and responses to cognizant mindfulness. This enables patients to have a greater capacity to reconsider their needs, gain new aptitudes or practices and plan their self-care.<sup>21</sup> For instance, observing reliably high BPs would convince a person that they do in fact have a high BP and this may motivate them to take improving actions. This study reports that patients with ESRD, who are also taking PD conducted physical monitoring actions for the blood pressure and body weight. An investigation by Klein and Artinian<sup>22</sup> found that home BP observing essentially enhanced systolic BP in test 37 dialysis patients. In addition, Nozaki and associates<sup>23</sup> backed up that checking of salt and liquid together with the intercession of cognitive behavior was efficient in lowering the intake of salt and liquid admission in the case of a dialysis patient. That leads to the conclusion that BP, salt and liquid intake monitoring appears to be a crucial component of the proposed self-care of dialysis patients. Moreover, self-management is a vital method to develop self-care ability. Self-management implies that patients play a dynamic part in their treatment and are in charge of the daily management of the disease.<sup>24</sup> Viable self-management incorporates the ability to screen one's condition and to accomplish the intellectual, habitual and passionate reactions essential to keep up a positive satisfaction.<sup>25</sup> Both self-care and self-management grasp proactive procedures to manage health conditions and to stick to medical treatment.<sup>26</sup> The key contrast between self-care and self-management is that self-management is more particular and alludes to currently recognizing diseases symptoms and seeking medical help. In this investigation, patients concentrate in adjusting their lifestyles, and on arranging the right surrounding for implementing PD. However, many studies demonstrated that the patients themselves or their family must do such methods of management. It is mostly discovered that healthcare providers offer help for self-management by engaging patients and making them active implementers of self-care.<sup>27</sup>

Nevertheless, Orem's Model of Nursing suggests that individuals possess a natural ability for self-care, and the identification of insufficient areas should be emphasized by the nursing.<sup>17</sup> Any deficit needs can be met by nursing through

supporting self-care. When the ability of an individual does not meet the demands for self-care, a self-care deficit takes place.<sup>17</sup> In this case, the self-care would be administered through the term Orem described as "nursing agency," i.e., the employment condition or structure where the nurse performs his/her duties. Thus, it is always recommended that nurses inform their patients of their conditions, and explain to them their own roles as patients toward their treatments through education on issues such as adherence to medical prescriptions, dietary restrictions, fluid restrictions, and performing certain jobs while in their homes. Patients need to be educated on matters, which affect their responses to medication or treatment of a particular illness. Certain approaches can be designed to encourage patients to take care of themselves. One technique is for patients to disclose the way they progress with medications on a daily, weekly or monthly basis to encourage them to undertake improved self-care. Providing self-administrated peritoneal dialysis treatment as a possible choice to ESRD patients largely depends on each individual's willingness and readiness for self-care. Growing numbers of patients are now requiring renal replacement therapy and the proactive approaches suggested here provide a pathway for enhancing perceptions of self-worth and independence for patients undergoing PD treatment.

However, this study has limitations; a few investigations did not report the kind of PD methodology that the patients involved in the examination were utilizing. The self-care of patients on the CAPD and the APD modality might not share the same perspective. In this way, we were not able to compare these distinctions sufficiently.

## Conclusion

Given the fact that patients with ESRD taking PD live longer, the multifaceted nature of their malady condition and treatment regimen will require more care. This integrative review investigates the perspective toward self-care in this populace. The most vital data from the seven articles is that self-care practices change with movement of the disease. Patients with ESRD experiencing PD pick what is suitable for them with incredible capacity and imaginativeness for minding themselves by putting into practice self-management, self-control and self-monitoring. Nursing can meet any patients' deficiency needs through showing support for self-care of patients. The attendant must build up the certainty and trust of the patients to lead their own dialysis by investigating the likely impacts of the disease and illustrating the procedures that the patients can take.

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