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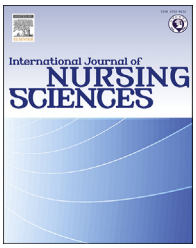

Original Article

Positive correlations between the health locus of control and self-management behaviors in hemodialysis patients in Xiamen

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ABSTRACT

Objective: To investigate the association between the health locus of control and self-management behaviors in patients receiving hemodialysis.
Methods: Patients receiving hemodialysis in Xiamen, Fujian province, from December 2014 to March 2015 answered the Chinese version of the Multidimensional Health Locus of Control scale and the self-management behavior questionnaire.
Results: The participants in this study indicated that they believed others exerted more control over their health than themselves or chance. In addition, the majority of participants had a medium to low level of self-management behaviors. Positive correlations were also observed between a participant's health locus of control and their level of self-management behaviors. Internal health locus of control and external (others) health locus of control were significant predictors of self-management behaviors controlling for the effect of payment method.
Conclusion: The results of this study provided evidence that there is a strong relationship between the health locus of control and self-management behaviors in hemodialysis patients. This study provides important information for medical professionals as they design strategies to educate hemodialysis patients on their health locus of control and self-management behaviors.

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1. Introduction

End-stage renal disease is a progressive and irreversible chronic disease causing a major health crisis worldwide. The incidence of end-stage renal disease is increasing by 7% annually [1]. End-stage renal disease can only be treated by transplantation or long-term dialysis (i.e. peritoneal dialysis or hemodialysis) [2]. Most patients choose dialysis due to risks associated with transplantation. Of the patients receiving dialysis, most choose hemodialysis over peritoneal dialysis [3–8].

Due to the chronic nature of end-stage renal disease, patients need to not only adhere to their treatment protocol, but also make multiple lifestyle changes to effectively manage their disease. Patients with high levels of adherence and self-care are better able to manage their disease [9,10]. Currently, there is a focus on "patient self-management" [11–13] in the chronic disease field. However, self-management is a source of health setbacks for end-stage renal disease patients and caregivers. The lack of self-management in regards to diet, fluid intake, and medication adherence is a problem worldwide [2,14–16].

Recent studies suggest that the health locus of control (HLC) may be useful in patient compliance and disease management [17,18]. The HLC is a concept by which individuals place their health outcomes in the control of their own behavior (internal HLC) or in the control of others or chance (external HLC) [19,20]. Current research suggests that an internal HLC in dialysis patients is associated with a positive perception of their quality of life [21,22]. Whereas, an external HLC in dialysis patients is associated with more illness, treatment disruption, and more symptoms [23].

The purpose of this study was to assess the current self-management behaviors and HLC of patients undergoing maintenance hemodialysis (HD) in Xiamen. We then analyzed the association between a patient's self-management behaviors and their HLC.

2. Method

2.1. Participants

Convenience sampling was used to recruit participants in Xiamen City, Fujian province, China, from December 2014 to March 2015. A total of 301 HD patients were recruited from three tertiary hospital's outpatient blood purification centers. The selection criteria were: (1) 18 years old or older; (2) receiving hemodialysis treatment two to three times a week for at least three months; (3) urea clearance index (Kt/V) > 1.2, and subjective global assessment (SGA) > 12; (4) able to communicate in Chinese; and (5) agreement to participate in this study. Subjects with severe illness and/or mental illness were excluded from this study.

2.2. Data collection

The purpose and procedures of this study were explained to the center managers and all participants. Questionnaires were distributed to patients during their HD treatment. The same language was used to explain how to complete the questionnaire. If patients were unable to complete the questionnaire on their own, then the investigators assisted them.

2.3. Ethical considerations

This study was approved by all participating hospitals. Consent was obtained from each participant in the study. Patients were informed that their participation was voluntary and their refusal to participate would not affect their treatment. All data were processed anonymously using code numbers.

2.4. Data analysis tools

Data were gathered through a demographic and disease specific information form, the Chinese version of the Multidimensional Health Locus of Control (MHLC) scale, and the hemodialysis patient self-management behavior questionnaire.

2.4.1. Multidimensional Health Locus of Control (MHLC) scale

The MHLC Scale [19,24]was used to evaluate a patient's beliefs about control over her/his health status. We used Form A which was previously translated into Chinese [25]. This form consisted of three subscales: internal, others, and chance. Each of these subscales contained 18 items in which the patient could respond on the six-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. The score for each subscale ranged from 6 to 36. The reliabilities of the subscales using Cronbach's α ranged from 0.75 to 0.83. The test–retest reliability coefficient ranged from 0.66 to 0.73. This showed the effectiveness of the inventory. In order to expedite interpretation of the results, it was determined beforehand that each MHLC subscale would be divided into three categories (lower third = 'low', middle third = 'medium' and upper third = 'high'). The cut-off scores for the three levels of each subscale were as follows: (i) Internality HLC: low (≤23), medium (24–27), and high (≥28); (ii) Chance HLC: low (≤14), medium (15–18), and high (≥19); and (iii) Powerful others HLC: low (≤19), medium (20–24), and high (≥25).

2.4.2. Hemodialysis patients self-management behavior questionnaire

The quality of self-management behaviors was measured by the HD patient self-management behavior questionnaire [26]. The scale consisted of 25 items divided into four categories of self-management behaviors: (i) restriction of liquids; (ii) diet management; (iii) physical activity and stress management; and (iv) symptom management. The participants responded on a four-point Likert scale ranging from 'never do this' to 'always do this'. The total score for the total scale is 25–100 (a higher score indicates a higher level of self-management behavior). When it was applied to 301 HD patients, the Cronbach's α was 0.814 for the total scale and ranged from 0.710 to 0.821 for the subscales. An index analysis was applied to the self-management behavior score [27],and was calculated as follows: the score index = the scale actual score/the highest possible score × 100. The score index of self-management