Depression and Its Predictors in Hemodialysis Patients in Taiwan

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Introduction

Depressive moods are common in patients receiving HD, causing patients to not comply with their treatment procedures (Oh, Park, & Seo, 2013). With regard to depression influencing factors for HD patients, a previous study mentioned that demographic data, such as old age over 60 years, marital status, and low economic status were risk factors for depression (Park et al., 2010). In addition, other research has found that gender (Armaly et al., 2012), educational level, duration of dialysis (Pop-Jordanova & Polenakovic, 2013), and serum creatinine concentrations (Joshwa, Khakha, & Mahajan, 2012) are also related to depression in HD patients. However, some studies have shown that sociodemographic factors, such as gender, marital status, and duration of dialysis, did not significantly influence patient depression (Cengić & Resić, 2010). As such, whether these factors can predict depression in HD patients still requires further investigation. The purpose of this study sought to investigate depression and relative influencing factors in ESRD patients on HD.

Research design

This study used a correlational cross-sectional design wherein the investigators collected questionnaire data. A convenience sample of 179 participants receiving HD was recruited from five dialysis centers in southern Taiwan.

Research Instruments

The research instruments consisted of a demographic and clinical variables questionnaire and two scales. The demographic variables included age, gender, education level, marital status, source of income, living situation, and exercise behavior. Clinical variables included number of comorbidities, duration of dialysis, and type of vascular access, as well as the most recent pre-HD plasma creatinine results. The two instruments were the Personal Resource Questionnaire 2000 (PRQ2000) and the Center for Epidemiologic Studies Depression Scale. Social support was measured using the PRQ2000 (Weinert, 2003). The PRQ2000 is a self-administered questionnaire consisting of 15 positively-posed questions and using a 7-point Likert scale. Depression was evaluated using the Chinese version of the Center for Epidemiologic Studies Depression Scale (CES-D Scale), a frequently used short self-report scale. This scale consists of 20 questions on a 4-point Likert-type scale, from 0 to 3. Total scores range from 0 to 60 (Radloff, 1977).

Results

All variables in this study were divided into three sets which were separately analyzed using hierarchical multiple regression analysis. Model 1 included six independent demographical variables: age, gender, marital status, education level, source of income, and living situation. Model 2 included five independent clinical variables: number of comorbidities, creatinine level, duration of dialysis, exercise behavior, and vascular access. Model 3 included social support. The predictor demographical descriptive data variables in model 1 could significantly explain degree of depression ($F = 3.63, p < 0.01$); however the only variable to reach a significant level was marital status (Beta = -0.27, $t = -3.53, p = 0.001$). After controlling variables and introducing clinical variables in model 2, the results showed a statistically significant relationship to explain the degree of depression with 19.8% variability ($F = 3.76, p < 0.001$). The explanatory variance increased 8.6% with number of comorbidities and exercise behavior both reaching significant levels. The predictive power of exercise behavior was greater. After including social support into model 3, including all independent variables, the total explanatory variance rose to 31.3% ($F = 6.31, p < 0.001$), indicating that addition of social support increased explanatory variance 11.5%. The explanatory variance of social support for depressions was very significant (Beta = -0.36, $t = -5.64, p < 0.001$), showing that less social support was significantly related to greater depression.

Implications for nursing practice

This study revealed that social support for Taiwanese HD patients was moderate and a large portion of these patients may have depression. This study also provided data on predictors of depression in HD patients, including marital status, comorbidities, exercise, and social support. Therefore, during the care of middle-aged and elderly HD patients, health care professionals should consider these factors. Health care professionals can also help find an appropriate method of exercise and providing patients with concrete home exercise guidance. Under permitting circumstances, HD centers can also be utilized as a place for activities and provide exercise equipment and regular events for HD patients. This can also increase patients’ opportunities for social interaction which may help adjust to the impact of their disease and improve their depression.