Physical Symptoms and Associated Factors in Chinese Renal Transplant Recipients

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ABSTRACT

Objective. This study aimed to investigate physical symptoms in renal transplant recipients as well as the correlation between self-efficacy and symptom distress.

Methods. A total of 274 consecutive renal transplant recipients were enrolled using a convenience sampling method. The basic characteristics of renal transplant recipients were collected using a general situation questionnaire. Physical symptom distress and self-efficacy were assessed by the Kidney Transplant Questionnaire and the Perceived Health Competence Scale, respectively. Correlations between self-efficacy and symptom distress were analyzed using Spearman's rank correlation test.

Results. Among 274 patients, 254 (92.7%) reported physical symptoms. Forgetfulness (29.56%), fatigue (28.1%), and tremor (27.37%) were the most frequent symptoms. The median score for the distress caused by physical symptoms was 5.33 (interquartile range, 4.29−6.33), suggesting that the perceived physical symptoms did not cause serious distress to patients overall. Uncertainty/fear was the most important factor affecting the quality of the life, whereas appearance seemed to be the factor that contributed least to a poor quality of life. The median self-efficacy of the participants was 27.0 (interquartile range, 24.0−30.0), suggesting a relatively high self-efficacy among kidney transplant recipients. There was a positive correlation between self-efficacy and symptom distress scores ($r_s = 0.33$; $P < .001$).

Conclusions. Patients are encouraged to enhance their self-efficacy with help and support from family and communities to reduce the level of distress and improve their quality of life.

CURRENTLY, renal transplantation is the most effective treatment for end-stage renal disease. However, despite improved survival, kidney transplant recipients often encounter physical and psychological problems after transplantation [1]. Health-related quality of life (HRQoL) refers to a subjective evaluation of the impact of disease and treatment across the physical, psychological, social, and somatic domains of functioning and well-being [2]. As a health indicator, HRQoL not only reflects the survival of kidney transplant recipients, but also their ability to achieve and maintain a level of overall function that allows them to pursue valued life goals by comprehensively evaluating the impact of surgery and immunosuppressants on physical,

psychological, and social aspects of renal transplant recipients' lives posttransplantation.

Studies have found that after surgery renal transplant recipients face a variety of physical symptoms or problems associated with immunosuppressive treatment [3–6]. These physical symptoms or problems, as a source of negative stress, can bring miserable distress to their lives. Thus, distress caused by perceived symptoms is a multifactorial, unpleasant emotional experience that contributes to the evaluation of their quality of life. Evidence has shown that the less severe side effects of immunosuppressive treatment are associated with both higher physical and mental HRQoL [7,8]. Moreover, perceived symptom distress in kidney transplant recipients may directly or indirectly affect the adherence of recipients to immunosuppressive treatment, causing severe complications (acute rejection, graft loss, readmission, and even death), which in turn negatively influences the physical and mental HRQoL of patients [3–5]. Therefore, special attention should be paid to the level of perceived symptom distress and its impact on the daily life of kidney transplant recipients.

Self-efficacy refers to subjective judgments of one's capabilities to organize and execute courses of action to attain designated goals [9]. It regulates almost every aspect of life, ranging from cognition to behavior to the health of a human being [10]. Research has showed the importance of self-efficacy as a predictor of HRQoL in kidney transplant recipients [11]. Patients with high levels of self-efficacy are more likely to cope with confidence-related problems, actively make efforts to improve, persevere through setbacks, and ultimately to improve their physical and mental HRQoL. However, few studies have explored the correlation between self-efficacy and symptom distress in renal transplant recipients, especially in China. This study aimed to investigate physical symptoms in renal transplant recipients after surgery as well as the correlation between self-efficacy and symptom distress to provide a theoretical basis for the successful management of renal transplant recipients.

MATERIAL AND METHODS
Study Population

This study was conducted in the organ transplant center of the General Hospital of the Chinese People's Armed Police Forces from April 2013 to July 2014, selecting consecutive renal transplant recipients using a convenience sampling method. Patients who met the following criteria were included: age ≥18 years old, primary renal transplantation, duration from transplantation >3 months, and stable renal allograft function. Moreover, the patients were capable of reading and understanding the questionnaire supplied and were willing to voluntarily participate this study. Patients who received ≥2 organ transplants or artificial organs, or had serious complications such as heart, brain, lung, and psychiatric disorders, were excluded.

Assessment Tools

General Situation Questionnaire. Synchronized analysis and data sorting were conducted, including factors such as gender, age, educational attainment, family income, current occupation, graft source, postoperative time, and current use of immunosuppressive agents.

Kidney Transplant Questionnaire. The Kidney Transplant Questionnaire (KTQ) was developed by Laupacis et al. [12] and assesses the characteristics and conditions associated with life that are specific for kidney transplant recipients. The questionnaire offers good levels of validity and reliability [13,14]. In this study, the questionnaires were translated using the Brislin double backtranslation model after acquiring permission from the author of the questionnaire [15,16]. Briefly, 2 translators who were familiar with English independently translated the questionnaire into Chinese. A professional researcher was invited, together with 2 translators, to compare the translated questionnaire. The differences between the 2 versions were discussed until consensus was reached. Then, 2 bilingual (English–Chinese) translators retranslated the Chinese translation of the questionnaire back into English. The initial Chinese version of the KTQ was checked for differences compare with the original KTQ and the translated version, and revisions were made as needed. Next, a committee of experts, including 2 social psychological experts, 2 renal transplant experts, and 1 specialist who was familiar with the questionnaire, assessed the questionnaire by discussion. Subsequently, the provisional translated questionnaire was piloted in 30 kidney transplant recipients to determine its cultural adaptation and whether the participants could understand the intentions of the items in the questionnaire. The Chinese version of the KTQ was finally formed when all of these steps were done. The questionnaire had a total of 25 items, which were grouped into 5 dimensions: physical symptoms, fatigue, uncertainty/fear, appearance, and emotional. Among these, this research adopted the dimension of "physical symptoms" in the KTQ to evaluate the physiologic symptoms and symptom distress in renal transplant recipients after surgery. This dimension consisted of 3 parts. The first part listed 33 common symptoms that arise after transplantation, letting the recipients select which symptoms occurred in the previous 2 weeks. In the second part, the patient chose the 6 symptoms with the highest frequency, and in the third part, the patient scored the 6 symptoms with the highest frequency using a 7-point Likert scale, with the score of 7 indicating the best health status and the score of 1 indicating the worst possible state. The average score was obtained by adding the scores for each item and dividing by the number of items.

Responses for the other 4 dimensions (fatigue, uncertainty/fear, appearance, and emotional) were also obtained on a 7-point Likert scale. For the analysis, all scores in each dimension were added and divided by the number of items in that dimension. The lowest score represented the lowest quality of life. In this study, the construct validity of the questionnaire was 0.92. The internal consistency (measured by the Cronbach's alpha) for each dimension was 0.876 (physical symptoms), 0.896 (fatigue), 0.686 (uncertainty/fear), 0.701 (appearance), and 0.886 (emotional). The 2-week test−retest reliability was found to range from 0.69 to 0.95 across all dimensions.

Perceived Health Competence Scale. The Perceived Health Competence Scale, which was developed by Smith et al. [17], is a specific measurement of self-efficacy and perceived competence in general health management that is used to predict health outcomes and behaviors. The scales have good predictive validity and convergent validity [18]. In the development of the scale, internal consistency coefficients ranged from 0.82 to 0.90 across samples [19]. The test−retest reliability coefficient for a 2-week interval was 0.85. The scale contains a total of eight items and is scored with a 5-point Likert scale format, ranging from 5