

# Research on the Application of Continuing Care Mode in the Home-Based Care of the Elderly with Chronic Renal Failure

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**Abstract**—In this study, effects of continuing care mode in elderly patients with chronic renal failure were studied. 84 elderly patients with chronic renal failure were randomly divided in an experimental group (41 cases) and a control group (43 cases). Patients in both the experimental group and the control group were comprehensively assessed in nursing, and hospital nursing plans for them were developed within 24 hours after they were admitted. The patients in the control group were given the conventional discharge guidance and health education, and those in the experimental group were given continuing care by the continuing care group. Patients with chronic renal failure in the two groups were compared in their self-care ability and quality of life between before and after discharge. The experimental group patients with chronic renal failure before discharge compared with the self-nursing ability of patients after discharge showed that self-care skills, sense of responsibility, self-concept and health knowledge score were significantly improved ( $P < 0.01$ ). The research showed that there were no obvious difference between the dimensions of the SF-36 scale of two groups were enrolled in ( $P > 0.05$ ), 3 months after the scales in two groups were higher than that of SF-36 group, there was significant difference ( $P < 0.05$ ), and the scores of experimental group in each dimension were higher than that of the control group ( $P < 0.05$ ). Continuing care can effectively improve the self-care ability of elderly patients with chronic renal failure, and the patients can actively cooperate with doctors and nurses in the treatment and nursing, thereby effectively controlling the progression of the disease, reducing the patients' suffering and economic burden, and improving their quality of life.

**Keywords**—*continuing care mode; home-based care; elderly; chronic renal failure*

## I. INTRODUCTION

Continuing care is widely regarded as one of the essential elements for high-quality health services, is of vital importance to health care providers, patients and their families, and its core concept is "coordination, connection and consistency" [1]. In 2003, continuing care was defined by American Geriatrics Society as a set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different levels of care and among a diverse range of providers,

services and settings [2]. In our country, with the increase of age, due to the progression of chronic systemic diseases or chronic kidney disease, chronic renal failure can be caused in the elderly, so that the treatment and nursing problems in elderly patients with chronic renal failure are increasingly prominent [3]. In the treatment and nursing care of elderly patients with chronic renal failure, many factors may influence the treatment compliance of patients, in which patients' self-care ability and other problems can result in an asymptotic development of the patient conditions, even the acute deterioration. Thereby reducing the quality life of patients, increasing the suffering and economic burden of patients and their families. In order to improve the therapeutic effect of home-based treatment in elderly patients with chronic renal failure to improve the quality of life of this population, in this study, a continue nursing model was used for the home-based nursing in elderly patients with chronic renal failure, that is, a care program was worked out by a group of kidney specialist nurses based on the continuing care concept and centered on the patients' planning diagnosis and treatment plans, so that the patients could continue to receive the guidance, assessment and coherent medical care of professional nurses after they were discharged [4].

## II. OBJECTS AND METHODS

### A. Objects

85 Hospitalized elderly patients with chronic renal failure were admitted in renal department in our hospital from January 2013 to June 2015 and diagnosed according to the diagnostic standards of chronic renal failure proposed by <Internal Medicine> published by people's Health Publishing House Eighth Edition. The patients, including 52 males and 33 females, and aged 60~77 years old ( $69.7 \pm 7.5$ ), were randomly divided into an experimental group (41 cases) and a control group (43 cases), and there was no statistically significant difference in the patients' gender, age and background diseases between the two groups ( $P > 0.05$ ), indicating they were comparable.

### B. Methods

*Establishment of continuing care group:* The patients in the experimental group were nursed with continuing care implemented by the continuing care group. The continuing care group members included a head nurse, hospital nurse, specialist nurse and doctor in charge, and they regularly learned the continuing care methods and related professional knowledge. One week before the patients were discharged, the group members instructed them to fill in a general health questionnaire, Exercise of Self-Care Agency Scale (ESCA) and Concise Health Examination Survey Scale (SF-36 scale). The patients in the experimental group were continued to receive the continuing care after discharge, and ESCA was used to evaluate their self-care ability and SF-36 scale was applied to assess their quality of life on the first month and the third month after they were discharged, respectively.

### C. Implementation of the continuing care:

A complete care assessment for patients in both the experimental group and the control group were completed and a hospital nursing plan for them was developed within 24 hours after they were admitted. The patients in the control group were given the conventional discharge guidance and health education when they were discharged. Those in the experimental group were assessed comprehensively and the nursing prescription was formulated one week before they were discharged. The patients were followed up by the specialist nurse and the hospital nurse of the continuing care group for 3 months after they were discharged. The specific follow-up contents were as follows: (1) within 48 hours after discharge, the patients were followed up by telephone for the guidance, supervision and evaluation of nursing treatment compliance of patients after discharge; (2) then, the patients were followed up by telephone once every two weeks, the frequency of the telephone follow-up should be increased if there were some changes in patients' conditions, and the patients could also call the nurses for the consultation or visit hospital at any time; (3) One and three months after they were discharged, the patients should go to the outpatient department of our hospital for subsequent visit and follow-up, and the group members should understand the changes in patients' conditions, and adjust the treatment nursing plan for the patients according to the real situations and go to the patients home for visiting the patients on occasion; (4) a "patient circle of friends" could be established, through which some specific seminars could be organized regularly, and the patients could also exchange their ideas in various ways, such as telephone or WeChat to encourage each other, help each other forward and maintain their health together.

### D. Research tools

*Exercise of Self-Care Agency Scale (ESCA):* ESCA was established American scholars in 1979 based on Orem's self-care theory, including 43 items in 4 dimensions and a total of 172 points, and the higher the score, the stronger the self-care ability is [5]. In 2000, ESCA was translated into Chinese by scholars in Taiwan, and the population in Taiwan was measured using ESCA, with a good reliability and validity [6]. Before the formal investigation of this study, the measured

validity coefficient of the scale was 0.91 and Crobach's  $\alpha$  was 0.89.

Chinese Version of Concise Health Questionnaire (SF-36) [7] is used to assess the quality of life of patients. The scale consists of 8 dimensions (physiological function, physical disease, general condition, vigor, social function, mental health, and emotional function), the full score is 100 points, and the higher the score the better the quality of life of patients is.

### E. Data management

The hospital nurse was responsible for the registration and management work of the patients' data in the experimental group, including the related examination and treatment data, such as the general information, period of hospitalization, outpatient review, on-site visits or telephone follow-up, and the collection and collating of questionnaires at each follow-up time point.

### F. Data analysis method

SPSS16.0 statistical software was used for the analysis, the data were expressed as means  $\pm$  s, and  $P < 0.05$  was considered to be statistically significant.

## III. RESULTS

### A. Comparison of patients' self-care ability in the experimental group before and after discharge

The results of self-care ability of patients with chronic renal failure before and after discharge are shown in TABLE I .

TABLE I. SCORES OF PATIENTS' SELF-CARE ABILITY LEVELS IN EXPERIMENTAL GROUPS OF (MEANS  $\pm$  S, N=41)

	WEEK ONE	MONTH ONE	MONTH THREE	F	P
SCL	97.23 $\pm$ 10.82	114.91 $\pm$ 12.23	127.25 $\pm$ 11.74	67.55	P < 0.01
SCS	21.70 $\pm$ 3.7	27.52 $\pm$ 4.28	30.85 $\pm$ 4.62	48.81	P < 0.01
SMR	14.23 $\pm$ 3.38	17.46 $\pm$ 2.92	21.92 $\pm$ 3.34	39.85	P < 0.01
SC	18.28 $\pm$ 3.37	20.45 $\pm$ 2.50	22.59 $\pm$ 2.94	24.06	P < 0.01
HN	42.03 $\pm$ 4.03	48.78 $\pm$ 4.74	53.92 $\pm$ 4.22	63.33	P < 0.01

Notes: SCL: self-competence level; SCS: self-care skills; SMR: self-care sense of responsibility; SC: self-concept; HN: health knowledge.

### B. Comparison of patients' QOL at admission and after discharge between the two groups

The data of the patients' QOL (quality of life) at admission and after discharge are shown in TABLE II.

TABLE II. THE TWO GROUPS OF PATIENTS QUALITY OF LIFE (SF-36) SCORE COMPARISON (, I)

ITEMS	ADMISSION	CONTROL GROUP 3 MONTHS AFTER DISCHARGE	EXPERIMENTAL GROUP ADMISSION 3 MONTHS AFTER	F
PhF	27.18±3.25	33.03±3.28*	27.31±3.26	36.98±3.72**
PhFS	23.10±4.05	27.05±3.48*	23.17±3.08	30.18±4.06**
PhD	29.23±3.14	32.12±3.37*	29.25±3.36	35.78±3.33**
GC	25.47±3.15	28.15±3.21*	24.25±3.18	31.79±3.17**
V	25.28±3.24	28.27±3.11*	30.09±3.23	38.72±3.65**
SF	31.16±3.15	35.05±3.42*	31.23±3.05	36.98±3.26**
EF	30.12±3.97	34.12±4.12*	30.09±1.20	37.04±4.19**
MH	32.72±3.76	35.66±3.13*	32.66±3.74	42.52±4.28**

Notes: PhF: physiological function; PhFs: physiological functions; PhD: physical disease; GC: general condition; V: vigour; SF: social function; MH: mental health; EF: emotional function; \*: compared with those in the control group at admission, P<0.05; \*\*: compared with those in the control group, P<0.05.

## IV. DISCUSSION

### A. Necessity of continuing nursing

Continuing care is an open and continuing nursing form that is carried out by telephone, letter, e-mail, visit and other information tools, and can meet the needs of patients to nursing service to a greater extent [8].

In this study, continuing care was carried out in elderly patients with chronic renal failure, to help the patient transit from the acute phase of treatment to the family care, considering that to ensure the continuity of care should be the key to ensure the recovery of patients.

In this study, the specialist nurse of the continuing care group followed up the patients by telephone once every two weeks, and at the outpatient department and at home one month and three months after they discharged. It is well known that the implementation of health plan for elderly patients with chronic renal failure can be timely inspected and supervised in a continuing care, to eliminate the risk of potential complications, improve the self-care ability of patients, and to

effectively ensure the patients' compliance to take medicine and receive treatment. Mental health includes vitality, mental health, emotional function, social function dimensions, the results showed that the two groups of patients with vitality, social function, and mental health changes with time. This study (Table 1) showed that the patients' scores in self-care skills, sense of responsibility, self-concept and health knowledge were significantly improved (P<0.01). The improvement of patients' self-care ability should be closely related to the continuing care group to remind the patients to strengthen their self-care and pay attention to the changes in their conditions [9].

Continuing care is through a regular follow-up to help patients complete the transition from hospital to home self-management. It is the nurse as the core, the whole process of continuous care, including personalized care during hospitalization, discharge guidance, discharge plan and follow-up after discharge.

### B. Improvement of continuing care on the quality of life

Continuing care was applied in elderly patients with chronic renal failure, and patients in the experimental and control groups were compared in their quality of life in this study (TABLE II). The results showed that there were no significant difference in the various dimensions indexes of SF-36 scale between the two groups were (P>0.05), while 3 months later, the various dimensions indexes of the scale in the two groups were significantly higher than those when they were admitted (P<0.05), and the scores of experimental group in each dimension were higher than those in the control group (P<0.05), suggesting that the implementation of continuing care in elderly patients with chronic renal failure can guide and supervise the patients on a reasonable diet, and their treatment compliance, postpone the development of their chronic renal failure, reduce or delay the occurrence of complications, and delay the time into the renal replacement treatment [10]. The nursing intervention under the guidance of continuing care model may help medical workers develop an individualized health guidance plan for patients, and patients participate in the daily management of their diseases, thereby improving the compliance of patients with treatment and the life quality of the patients. In addition, with the nursing intervention under the guidance of continuing care model, patients can firmly hold the confidence that adheres to treatment through regularly participating in the seminars and the effective communication among patients, and the treatment and nursing measures can be put in place in place through the telephone phone follow-up and other communication forms after discharge, so as to improve the quality of the survival of patients.

The curative effect of chronic renal failure is closely related to the understanding of the disease, the degree of cooperation and the active participation of the patients and their families. After the treatment, the renal function of the patients can be reached and stabilized at a good level, but it is often aggravated by various factors. Continuing care is to help patients and their families to improve self-care ability, rather than directly by the medical staff for long-term care of patients [11]. The goal of continuing care is not only to reduce symptoms, but also to improve the patient's kidney function, maintain optimism,

improve their quality of life and prolong life [12]. This study mainly through the following four aspects of the intervention. Psychological intervention in elderly patients with chronic heart failure due to disease can not be cured, need long-term treatment, heavy economic burden, prone to mental disorders. Therefore, this study focused on the psychological characteristics of elderly patients with chronic renal failure, nursing intervention from the psychological angle, relief the depression, anxiety, pessimism and other negative mental state intervention; Ability of daily life: the activities of intervention on elderly patients with chronic renal failure, which is engaged in a reasonable amount of activity, can improve lung function and reduce the long-term bed caused by thrombosis and orthostatic hypotension; Medication Guide: discharged patients elderly patients with chronic renal failure after the need to continue taking the medication, the necessity to introduce the repeated medication and their families and the matters needing attention, urge patients to take by the quantity, and self-monitoring, the patients with clear treatment methods and to improve compliance, improve the prognosis of the disease; Disease prevention interventions: to introduce the knowledge of influenza prevention to patients, so that patients can avoid the disease caused by cold. Through the continuity of care for the elderly patients with chronic renal failure, greatly improve the self-nursing ability of patients and their families and improve the quality of life of patients, save the medical expenses, but also reduce the pain of patients.

#### V. CONCLUSION

Continuing care is a safe and effective way, telephone follow-up and family visit can improve the compliance of disease cognitive level and self-management behavior of patients, establish the confidence to overcome the disease, improve the quality of life, improve the relationship between nurses and patients, reduce the hospitalization rate and medical expenses.

Continuing care should be effective and necessary for ensuring the smooth transition of elderly patients with chronic renal failure from the hospitalization to the home care [13]. The experimental group patients with chronic renal failure before discharge compared with the self-nursing ability of patients after discharge showed that self-care skills, sense of responsibility, self-concept and health knowledge score were significantly improved ( $P < 0.01$ ). The research showed that there were no obvious difference between the dimensions of the SF-36 scale of two groups were enrolled in ( $P > 0.05$ ), 3 months after the scales in two groups were higher than that of SF-36 group, there was significant difference ( $P < 0.05$ ), and the scores of experimental group in each dimension were higher than that of the control group ( $P < 0.05$ ). In the recovery, the

continuing care for elderly patients with chronic renal failure can help patients in the acute phase of treatment to the family care, confirm continuity care is the key to ensure the outcome of patients. It can also effectively improve the self-care ability of elderly patients with chronic renal failure at home, and the patients can actively cooperate with the treatment and nursing, so as to effectively control the progression of the disease, reduce the patient suffering and economic the burden, and improve the quality of life of elderly patients at home.

The deficiency of the study is that the duration of intervention is relatively short, and the effect of continuous nursing intervention needs to be further discussed. Its effect on the mental health status needs to be extended for the follow-up time.

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