

Application value of high-quality services in nursing of senile diabetic nephropathy patients receiving hemodialysis

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ABSTRACT

Objective: To explore the application value of high-quality services in the nursing of senile diabetic nephropathy (SDN) patients receiving hemodialysis.

Methods: A total of 120 SDN patients who were admitted and received hemodialysis in our hospital from January 2018 to October 2019 were selected and divided into 2 groups using a random number table (n=60). Routine nursing was given in control group, while high-quality nursing was given in observation group. The treatment compliance, blood glucose level, renal function indices, negative emotion score, quality-of-life score and nursing satisfaction were compared between the two groups.

Results: The total rate of treatment compliance was higher in observation group (93.33%) than that in control group (78.33%) ($P<0.05$). The fasting blood glucose, 2-hour postprandial blood glucose, serum creatinine and blood urea nitrogen declined in the two groups after nursing compared with those before nursing ($P<0.05$), while they were lower after nursing in observation group than those in control group ($P<0.05$). The anxiety and depression scores declined in the two groups after nursing compared with those before nursing ($P<0.05$), while they were lower after nursing in observation group than those in control group ($P<0.05$). The quality-of-life score was higher in the two groups after nursing than that before nursing ($P<0.05$), while it was higher after nursing in observation group than that in control group ($P<0.05$). The overall satisfaction rate of nursing was 96.67% in observation group, which was higher than that in control group (83.33%) ($P<0.05$).

Conclusion: High-quality nursing services can effectively strengthen the treatment compliance, enhance the control effect on blood glucose and improvement effect on renal function, reduce the negative emotions, and raise the quality of life and nursing satisfaction of SDN patients receiving hemodialysis.

KEYWORDS: senile diabetic nephropathy; hemodialysis; high-quality nursing

INTRODUCTION

Diabetic nephropathy (DN) is one of the most common complications of diabetic patients, in which the blood glucose level in patients remains high for a long time, the renal function is damaged, and such damage becomes worse as the disease progresses, threatening the life safety of diabetic patients [1-3]. Hemodialysis is the main method for clinical treatment of DN patients, which can control the condition of disease through removing toxin molecules in the patient's blood [4]. However, the treatment cycle of hemodialysis for DN patients is long, and the patients are prone to poor treatment

compliance and negative emotions due to the impact of disease, harming the therapeutic effect, so nursing intervention is needed for patients. High-quality nursing is a nursing idea vigorously advocated in clinical practice, involving a series of nursing measures with the goal of "realizing high-quality medical services". In this study, to explore the application value of high-quality nursing in the nursing of senile DN (SDN) patients receiving hemodialysis, a randomized controlled study was conducted on 120 SDN patients.

MATERIALS AND METHODS

General information

A total of 120 SDN patients who were admitted and received hemodialysis in our hospital from January 2018 to October 2019 were selected and divided into 2 groups using a random number table

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(n=60). In control group, there were 33 males and 27 females aged 60-84 years, with an average of (71.43 ± 9.14) years. In observation group, there were 32 males and 28 females aged 60-85 years, with an average of (71.68 ± 9.32) years. The age and gender of patients were comparable between the two groups ($P>0.05$). This study was approved by the Medical Ethics Committee, and the patients gave informed consent to the study.

Methods

In control group, routine nursing was given, and routine health education was provided. The patients were informed of precautions during hemodialysis, and their vital signs were monitored during hemodialysis.

In observation group, high-quality nursing was given, as follows: (1) Psychological nursing: According to the patients' educational level and age, caregivers talked with patients face to face, listened carefully to their complaint, analyzed the source of their psychological pressure and summarized their psychological problems, followed by targeted guidance and comfort. The patients were informed of the accurate information about the disease promptly, so as to eliminate their negative emotions such as fear and anxiety. (2) Diet nursing: Doctors, nurses and dietitians evaluated the patients' dietary cognition. According to the characteristics of hemodialysis, the diet plan was developed and the importance of reasonable diet was emphasized to the patients. Relevant knowledge to diet was explained in detail to the patients and their families, and the diet information was provided. The patients could record their diet for 3 consecutive days. Then according to their diet diary, their irregular dietary behaviors were corrected, and they were urged to strictly control their diet. (3) Family nursing: Caregivers communicated with the patients' families, explained the precautions during hemodialysis, and asked them to accompany the patients for hemodialysis, thereby encouraging and caring for the patients, and giving family support to the patients.

Observation indices

The following items were compared between the two groups: (1) Treatment compliance: Full compliance (the patient consciously cooperated in the treatment), partial compliance (the patient cooperated in the treatment after supervision by nurses), and non-compliance (the patient resisted the treatment). Compliance rate = full compliance rate + partial compliance rate. (2) Blood glucose level: fasting blood glucose (FBG), and 2-hour postprandial blood glucose (2hPBG). (3) Renal function indices: serum creatinine (SCr) and blood urea nitrogen (BUN). (4) Negative emotion score: The self-rating anxiety scale (SAS) and self-rating depression scale (SDS) scores were given (0-100 points), and the scores are directly proportional to the degrees of anxiety and depression [5]. (5) Quality-of-life score: The World Health Organization Quality of Life Scale Brief Version (WHOQOL-BREF) was used for evaluation. The scale includes 4 dimensions (physiology, psychology, environment and social relation). The score of each dimension ranges from 0 to 100 points, and it is directly proportional to the quality of life [6]. (6) Nursing satisfaction: The self-made nursing satisfaction questionnaire was used, and the total score is 100 points: high satisfaction (81-100 points), general satisfaction (60-80 points), and no satisfaction (0-59 points). The overall satisfaction rate = high satisfaction rate + general satisfaction rate.

Statistical analysis

All data were statistically analyzed by SPSS 26.0 software. The numerical data were expressed as $\bar{x} \pm s$ and subjected to the χ^2 test. The quantitative data were represented as $(\bar{x} \pm s)$ and subjected to the t test. $P<0.05$ was considered statistically significant.

RESULTS

Compliance rates

The total rate of treatment compliance was higher in observation group (93.33%) than that in control group (78.33%) ($P<0.05$) (Table 1).

Table 1. Compliance rates [case (%)]

Group	Case No.	Full compliance	Partial compliance	Non-compliance	Total compliance rate
Control	60	22 (36.67%)	25 (41.67%)	13 (21.67%)	47 (78.33%)
Observation	60	27 (45.00%)	29 (48.33%)	4 (6.67%)	56 (93.33%)*

Compared with control group, * $P<0.05$.

Blood glucose levels and renal function indices

The fasting blood glucose, 2-hour postprandial blood glucose, serum creatinine and blood urea

nitrogen declined in the two groups after nursing compared with those before nursing ($P<0.05$), while they were lower after nursing in observation group than those in control group ($P<0.05$) (Table 2).

Table 2. Blood glucose levels and renal function indices ($\bar{x} \pm s$)

Group	Time	Fasting blood glucose (mmol/L)	2-hour postprandial blood glucose (mmol/L)	Serum creatinine (mmol/L)	Urea nitrogen (μ mol/L)
Control (n=60)	Before nursing	9.12 \pm 1.54	12.74 \pm 2.08	16.27 \pm 2.65	357.51 \pm 68.91
	After nursing	7.58 \pm 1.19 [#]	10.69 \pm 1.65 [#]	13.72 \pm 2.17 [#]	278.43 \pm 51.07 [#]
Observation (n=60)	Before nursing	9.08 \pm 1.52	12.67 \pm 2.10	16.15 \pm 2.82	356.28 \pm 69.12
	After nursing	5.45 \pm 1.03 ^{#*}	8.56 \pm 1.27 ^{#*}	11.34 \pm 1.99 ^{#*}	217.05 \pm 43.79 ^{#*}

Compared with the same group before nursing, [#]P<0.05; compared with control group, *P<0.05.

Negative emotion scores

The anxiety and depression scores declined in the two groups after nursing compared with those

before nursing (P<0.05), while they were lower after nursing in observation group than those in control group (P<0.05) (Table 3).

Table 3. Negative emotion scores ($\bar{x} \pm s$, point)

Group	Time	Anxiety score	Depression score
Control (n=60)	Before nursing	54.57 \pm 6.91	55.28 \pm 6.74
	After nursing	47.23 \pm 5.47 [#]	48.37 \pm 5.86 [#]
Observation (n=60)	Before nursing	54.43 \pm 6.95	55.16 \pm 6.80
	After nursing	41.68 \pm 4.83 ^{#*}	42.50 \pm 5.19 ^{#*}

Compared with the same group before nursing, [#]P<0.05; compared with control group, *P<0.05.

Quality-of-life scores

The quality-of-life score was higher in the two groups after nursing than that before nursing (P<0.05), while it was higher after nursing in observation group than that in control group (P<0.05) (Table 4).

Nursing satisfaction degree

The overall satisfaction rate of nursing was 96.67% in observation group, which was higher than that in control group (83.33%) (P<0.05) (Table 5).

Table 4. Quality-of-life scores ($\bar{x} \pm s$, point)

Group	Time	Physiology	Psychology	Environment	Social relation
Control (n=60)	Before nursing	69.56 \pm 5.09	70.38 \pm 5.20	69.27 \pm 4.81	70.09 \pm 5.18
	After nursing	77.09 \pm 6.53 [#]	78.12 \pm 6.17 [#]	76.35 \pm 5.03 [#]	77.94 \pm 5.23 [#]
Observation (n=60)	Before nursing	69.68 \pm 5.04	70.52 \pm 5.13	69.38 \pm 4.75	70.20 \pm 5.04
	After nursing	83.45 \pm 6.37 ^{#*}	84.39 \pm 6.28 ^{#*}	82.46 \pm 5.14 ^{#*}	83.57 \pm 5.69 ^{#*}

Compared with the same group before nursing, [#]P<0.05; compared with control group, *P<0.05.

Table 5. Nursing satisfaction degrees [case (%)]

Group	Case No.	High satisfaction	General satisfaction	No satisfaction	Overall satisfaction rate
Control	60	24 (40.00%)	26 (43.33%)	10 (16.67%)	50 (83.33%)
Observation	60	30 (50.00%)	28 (46.67%)	2 (3.33%)	58 (96.67%)*

Compared with control group, *P<0.05.

DISCUSSION

DN is a complication caused by diabetes involving the kidneys. It is an important cause of death in diabetic patients, and frequently occurs in the elderly. Patients suffer from progressive injury of renal function, and they need active treatment [7-9]. It is advocated in clinic that renal injury of diabetic patients be treated with hemodialysis. Hemodialysis can remove toxins from the patient's blood through continuous blood purification, reduce the damage of toxins to renal function, correct the acid-base balance and alleviate the

renal inflammatory response [10-12]. However, the treatment cycle of hemodialysis is long, and some diabetic patients are prone to negative emotions such as anxiety and depression due to the impact of disease, thereby easily affecting the therapeutic effect of hemodialysis, prolonging the treatment time and increasing the treatment expenses in severe cases, and harming the control of disease [13]. Therefore, nursing intervention is needed for patients.

The routine nursing measure during hemodialysis is mainly dominated by simple health

education, which is less targeted, and the satisfactory nursing results often fail to be obtained after the implementation of nursing plan. In recent years, the high-quality nursing model has gradually been applied to clinical nursing work under the initiative of "high-quality medical service". According to this nursing model, the basic nursing measures are optimized, and each step of the patient-oriented nursing service is perfected based on the specific needs of patients, so as to provide higher-quality nursing services for patients^[14]. Compared with routine nursing measures, the nursing measures under the high-quality nursing model are more flexible, and better fit to the actual conditions of patients, fully displaying the humanized and individualized characteristics. Moreover, the nursing measures are more targeted, and can fully meet the individual needs of patients and eliminate risk factors. In this study, the results showed that (1) the total rate of treatment compliance was higher in observation group (93.33%) than that in control group (78.33%) ($P<0.05$), and the FBG, 2hPBG, SCr and BUN were lower after nursing in observation group than those in control group ($P<0.05$). It can be seen that high-quality nursing can effectively improve the patient's cooperation in hemodialysis, and better control the blood glucose and progression of renal injury. (2) The anxiety and depression scores were lower after nursing in observation group than those in control group ($P<0.05$), and the quality-of-life score and overall satisfaction rate of nursing were higher after nursing in observation group than those in control group ($P<0.05$), indicating that high-quality nursing can also relieve negative emotions, improve the quality of life, and raise the patient's nursing satisfaction. The main reason is that the psychological problems of the patients are solved directly through the psychological nursing in the high-quality nursing plan, and psychological nursing and other nursing measures are used to improve the control effect on the condition of disease, thereby reducing the impacts of psychological discomfort and disease on the quality of life of patients.

In conclusion, high-quality nursing services can effectively strengthen the treatment compliance, enhance the control effect on blood glucose and improvement effect on renal function, reduce the negative emotions, and raise the quality of life and nursing satisfaction of SDN patients receiving hemodialysis.

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