

Original Article

Evidence-based nursing improves treatment efficacy and nursing satisfaction for chronic bronchitis in the elderly

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Abstract: Objective: The aim of this study was to examine the effects of evidence-based nursing in senile chronic bronchitis. Methods: A total of 124 patients with senile CB were randomly divided into group A and group B (n=62). Patients in group B were given conventional nursing care, while patients in group A received evidence-based nursing in addition to conventional nursing. Treatment efficacy was observed. Anxiety and depression were evaluated using the anxiety self-rating scale (SAS) and depression self-rating scale (SDS), after nursing. Quality of life of patients, after discharge, was evaluated using quality of life questionnaires (QLQ-c30). Treatment compliance and nursing satisfaction were also compared. Results: The treatment effective rate of group A was significantly higher than that of group B (P=0.041). SAS scores and SDS scores, after nursing, were significantly lower than those before nursing in group A and group B (P<0.001). After nursing, life quality scores concerning disease control, life behavior, exercise, and emotion changes in group A were significantly higher than those in group B (P<0.001). Scores concerning punctual medication, regular reexamination, excise insistence, and eating habits in group A were significantly higher than those in group B (P<0.001). Nursing satisfaction of group A was significantly higher than that of group B (P=0.006). Conclusion: Evidence-based nursing in senile CB will improve treatment efficacy, treatment compliance, and nursing satisfaction of patients, as well as alleviate negative emotions and improve quality of life. Therefore, it is worthy of clinical application.

Keywords: Chronic bronchitis in the elderly, evidence-based nursing, clinical efficacy, nursing satisfaction, quality of life

Introduction

Chronic bronchitis (CB) is inflammation in bronchial mucosa and peri-bronchial tissues caused by infective or non-infective causes [1], including climate change, infections, allergies and smoking. CB manifests the symptoms of coughing and excessive phlegm for as long as 3 consecutive months [2]. When rhinoviruses and respiratory adenoviruses invade the human body, the viruses combine with the mycoplasma and damage the respiratory mucosa, which may result in the decrease of autoantibodies in respiratory mucosa when the climate changes. The blood circulation on submucosa of the respiratory tract will be less unobstructed and

the normal contraction of bronchial smooth muscles will fail. Consequently, bronchitis is induced [3]. Most chronic asthmatic bronchitis is caused by dust and pollen allergies [4]. A survey suggested that incidence of CB in smokers was significantly higher than that in non-smokers. Giving up smoking could significantly alleviate symptoms [5]. Most CB patients are elderly and they will suffer a series of clinical symptoms, including coughing, massive phlegm, and severe wheezing on cold days. Symptoms will significantly worsen in the morning and in the evening [6]. With the development of this disease, the hyperplasia of mucous glands aggravates, mucus secretion increases, and the sputum turns colored and frothy [7]. With aggrava-

tion of the disease, senile CB patients will cough year-round and be prone to complications of asthma and pulmonary heart disease. They will also be prone to emphysema and experience physical and psychological discomfort due to the limitations of self-care ability and physiological function [8]. In more severe cases, patients may be infected, which will impact clinical efficacy and quality of life [9]. Applying individualized, symptomatic, and scientific nursing intervention patterns in the treatment of elderly CB patients is of great significance to clinical nursing.

Evidence-based nursing is a new nursing model based on evidence-based medicine, with the characteristics of being empirical, dynamic, continuous, and scientific [10]. During evidence-based nursing, a personalized nursing protocol is made and corresponding nursing measures are given based on the professional skills and experience of clinical nurses, precise and clear research-based evidence, clinical symptoms, personal motivation, and the personal values of the patients [11]. In evidence-based nursing, the reliable basis is obtained by the clinical nursing practice. Therefore, evidence-based nursing is also called empirical care [12]. Many reports on the clinical application of evidence-based nursing have demonstrated that the nursing model will improve the condition of patients with various diseases during their hospital stay.

Aiming to further analyze the value of evidence-based nursing in senile CB patients, this study implemented evidence-based nursing in senile CB patients.

Materials and methods

General information

A total of 124 senile CB patients, from May 2016 to November 2017, were included as subjects and randomly divided into group A and group B. There were 62 cases in each group. They all used conventional symptomatic treatments, including oxygen inhalation, anti-infection, phlegm, cough and asthma relief, correction of water and acid imbalances, and treatment of various basic diseases. In group A, there were 43 males and 19 females, with ages ranging from 61 to 81 years old. Mean age was (68.35 ± 4.37) years old. The duration of

disease was 5~16 years and mean disease duration was (11.67 ± 1.63) years. In group B, there were 38 males and 24 females, with ages ranging from 62 to 79 years old. The average age was (67.51 ± 3.52) years old. Disease duration was 6 years to 14 years and average duration of disease was (12.01 ± 1.78) years. This study was approved by the Ethics Committee of Hubei Polytechnic University Affiliated Hospital. All study participants provided written informed consent before participating in the study.

Inclusion and exclusion criteria

Inclusion criteria: Patients complying with World Health Organization (WHO) diagnosis criteria for senile CB criteria [1]; At least one year of CB disease course, not younger than 60 years old; Able to afford regular treatment; Without any other organ failure except respiratory failure. **Exclusion criteria:** Patients accompanied with bronchial asthma, bronchiectasis, severe liver and kidney dysfunction, pulmonary tuberculosis, connective tissue disease, endocrine metabolic diseases, nervous system diseases, hematopoietic dysfunction, immune diseases, mental illness, or family history of mental illness.

After admission, the two groups of patients were subjected to traditional care and evidence-based care.

Nursing methods

Traditional nursing: Patients in group B were given traditional nursing. Detailed nursing measures included collecting basic information and creating files for patients concerning the family and social and cultural status of patients. There was a focus on popularizing knowledge of diseases and establishing good relationships with patients and their family members. The ward clean was kept clean, well ventilated, quiet, and tidy, as well as with an appropriate temperature and humidity. Vital signs of patients were closely monitored. Patients were tapped on the back regularly to encourage effective coughing. Staff observed the clinical efficacy and adverse reactions of patients after administration of medication. They instructed the patients, properly, for rehabilitation and provided psychological counseling.

Evidence-based nursing: Patients in group A were given evidence-based nursing based on

traditional nursing. Detailed information of the patients was collected and evaluated for nursing. A personalized nursing mode was made according to the requirement of evidence-based nursing, applying evidence-based nursing-related knowledge cautiously, wisely, and accurately. This method combines the concepts, meaning, implementation method, and implementation procedures of evidence-based nursing with the clinical experience of nursing workers and comprehensively considering the wishes, values, and actual conditions of the patients. Detailed nursing measures were as follows: Finding out the burning issues of patients using critical thinking. Patients may be faced with the following problems: anxiety, depression, and other negative emotions caused by dyspnea, insufficient family support, lack of CB-related knowledge, and ineffective personal response. Other problems may include the failure of respiratory tract clearing due to bronchospasm and sputum viscous, ineffective breathing patterns due to the increased respiratory resistance and bronchial obstruction, activity intolerance due to malnutrition and hypoxemia, cyanosis and impaired gas exchange due to the secondary infection of chronic obstructive pulmonary disease (COPD), and various potential complications due to respiratory failure and pneumothorax. Aiming to solve the problems of patients, the corresponding nursing measures were developed: ① Establishment of a ward management system. A complete ward management system shall be created to maintain the comfort, cleanness, quietness, and tidiness of the wards and to control the number of visitors and time of visits. Nursing work shall be concentrated and unnecessary movements shall be decreased; ② Education: Patients shall be educated on smoking, ensuring that they understand the disadvantages of smoking. They will be instructed on cold tolerance exercises, such as washing their face and bathing with cold water. Nutrient intake shall be given much importance to improve the nutritional status, enhance resistance, and prevent repeated infections of the respiratory tract; ③ Psychological care: CB patients often suffer from clinical symptoms, including coughing, massive phlegm, and repeated infections, as well as wheezing, with complications of obstructive pulmonary emphysema [13]. In severe cases, it may even develop into pulmonary heart disease. Because of long-term breathing

difficulties, patients may gradually lose confidence in treatment, their quality of life may worsen, and family support becomes weaker. These factors will always induce adverse psychological disorders, such as anxiety and depression [14]. The nursing staff shall recognize the specific problems of the patients and give them targeted evidence-based psychological nursing, educating them on CB-associated knowledge and the necessity of treatment. They will listen to the narration of patients and assist with communication between the patient and family members so that patients receive clinical treatment optimistically, recover confidence in defeating the disease, and cooperate with treatment actively [15]; ④ Disease condition observation: The appearance of sputum, the easiness or difficulty of expectoration, parameters of the breathing machine, and frequency of breathing shall be observed. The consciousness of patients and occurrence of cyanosis shall be given much attention and the medical workers shall be on the alert for pneumothorax. Patients shall be given oxygen therapy in cases of dyspnea to relieve symptoms; ⑤ Nutritional nursing: CB patients may suffer from the excessive respiration burden and, in severe cases, dyspnea may occur [16]. The anaerobic condition and side effects of therapeutic drugs may impact the appetite of patients, resulting in malnutrition. Concerning the disease condition, patients require more nutrition. Therefore, food with high-protein, high-calories, and rich vitamins, as well as fruits and vegetables, shall be given appropriately; ⑥ Medication nursing: Clinically, CB is principally treated with antibiotics to control infection. In the course of medication, the doctor's advice shall be strictly followed. Pathogen types and drug sensitivity shall be comprehensively considered. Body temperature and condition changes during medication treatment shall be closely observed and medication shall be appropriately adjusted according to the symptoms of patients; ⑦ Breathing training nursing: Patients shall be guided on abdominal breathing combined with pursed lip breathing, aiming to increase the efficiency and strength of breathing; ⑧ Discharge guidance: Patients and their families will be informed about precautions after discharge, advising them to avoid stress factors. They will be guided in self-management, thereby strengthening diet, lifestyle, and exercise intervention.

Outcome measures

Clinical efficacy was observed after 1 week of treatment. Excellence was regarded when vital signs and clinical symptoms recovered to normal, the sputum bacterial culture displayed negative, and the X chest radiograph showed the elimination of inflammatory lesions. Effectiveness was regarded when vital signs and clinical symptoms improved, to some extent, and the X chest radiograph displayed partial elimination of inflammatory lesions. Ineffectiveness was regarded when vital signs and clinical symptoms were not improved or even aggravated. After nursing, anxiety self-rating scale (SAS) [17] and self-rating depression scale (SDS) [18] scores were applied to evaluate anxiety and depression. Twenty items are included in each scale and there are 4 levels of scores in total, evaluating patient feelings. Scores ranging from 1 to 4 represent the frequency of symptoms defined in the item: Score 1 represents presence or occurrence seldomly. Score 2 represents occurrence a small quantity of time. Score 3 represents occurrence a lot of time. Score 4 represents occurrence most of the time or all the time. SAS scores ≥ 51 represent a bad psychological state, while SDS scores ≥ 53 represent a bad psychological state. Quality of life questionnaire (QLQ-c30) was used to assess the quality of life of patients after discharge from the hospital. Parameters include disease control, life behavior, exercise, and emotion changes, with 100 points for each item. Higher scores indicate better quality of life. The compliance rating scale was applied to evaluate punctual medication, regular reexamination, exercise insistence, and eating habits of the patients, with 100 points for each item. The score was 61~85 when compliance awareness was poor, compliance behavior was not good enough, and supervision from family members was required. The score was >86 when patients were good in both compliance awareness and compliance behavior and when they could take medicines and do exercises. Nursing satisfaction for the family members was evaluated with nursing satisfaction questionnaires made by the hospital [19]. Scores below 60 represent dissatisfaction, scores between 60 and 79 represent basic satisfaction, scores between 80 and 90 represent satisfaction, and scores above 90 represent high satisfaction. Satisfaction = (basic satisfaction + sat-

isfaction + high satisfaction)/total cases \times 100%.

Statistical methods

SPSS 20.0 (IBM, USA) was adopted for statistical analysis. Measurement data are expressed as mean \pm standard deviation and count data are expressed with [n (%)]. Independent t-test was used to compare measurement data between groups and Chi-squared test was used to compare count data between groups. $P < 0.05$ indicates statistical significance.

Results

Baseline information of the two groups of patients

Baseline information of patients, including gender, age, course of disease, body mass index, smoking history, drinking history, incidence of COPD, emphysema, pulmonary heart disease, diabetes, hyperlipidemia, hypertension, education level, place of residence, blood glucose (Glu), alanine aminotransferase (ALT), and aspartate aminotransferase (AST), in group A and group B was not statistically different ($P > 0.05$) (**Table 1**).

Treatment efficacy of the two groups of patients

In group A, excellence, effectiveness, and ineffectiveness were displayed, respectively, in 31 cases (50.00%), 26 cases (41.94%), and 5 cases (8.06%). The effective rate was 91.94%. In group B, excellence, effectiveness, and ineffectiveness were displayed, respectively, in 22 cases (35.48%), 27 cases (43.55%), and 13 cases (20.97%). The effective rate was 79.03%. The effective rate in group A was significantly higher than that in group B ($\chi^2 = 4.159$, $P = 0.041$) (**Table 2**).

Psychological states of the two groups of patients before and after nursing

SAS and SDS scores between group A and group B were not significantly different before nursing ($P > 0.05$). SAS and SDS scores, after nursing, were significantly lower than those before nursing in group A ($t = 21.575$, $P < 0.001$; $t = 27.974$, $P < 0.001$). SAS and SDS scores, after

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Table 1. Baseline data for patients in group A and group B [n (%)]/($\bar{x} \pm sd$)

Category	Group A (n=62)	Group B (n=62)	t/ χ^2	P
Gender			0.890	0.346
Male	43 (69.35)	38 (61.29)		
Female	19 (30.65)	24 (38.71)		
Age	68.35±4.37	67.51±3.52	1.179	0.241
Course of disease (year)	11.67±1.63	12.01±1.78	1.418	0.159
BMI (kg/m ²)	18.24±3.05	17.93±2.86	0.584	0.560
History of smoking			0.544	0.461
Yes	40 (64.52)	36 (58.06)		
No	22 (35.48)	26 (41.94)		
Drinking history			0.911	0.340
Yes	23 (37.10)	18 (29.03)		
No	39 (62.90)	44 (70.97)		
Merge COPD			0.129	0.719
Yes	29 (46.77)	31 (50.00)		
No	33 (53.23)	31 (50.00)		
Combined with Emphysema			0.553	0.457
Yes	21 (33.87)	25 (40.32)		
No	41 (66.13)	37 (59.68)		
Combined with Pulmonary heart disease			0.435	0.510
Yes	6 (9.68)	4 (6.45)		
No	56 (90.32)	58 (93.55)		
History of diabetes			0.287	0.592
Yes	7 (11.29)	9 (14.52)		
No	55 (88.71)	53 (85.48)		
History of hyperlipidemia			0.559	0.455
Yes	8 (12.90)	11 (17.74)		
No	54 (87.10)	51 (82.26)		
History of hypertension			1.148	0.284
Yes	10 (16.13)	6 (9.68)		
Yes	52 (83.87)	56 (90.32)		
Educational level			0.378	0.539
Primary school	3 (4.84)	2 (3.23)		
Junior high school	14 (22.58)	9 (14.52)		
High school	16 (25.81)	23 (37.10)		
University	29 (46.77)	28 (45.16)		
Place of residence			1.184	0.277
City	51 (82.26)	46 (74.19)		
Rural	11 (17.74)	16 (25.81)		
Glu (mmol/L)	6.01±0.57	6.13±0.39	1.368	0.174
ALT (U/L)	21.63±9.15	22.41±8.67	0.487	0.627
AST (U/L)	18.29±7.05	18.93±6.08	0.541	0.589

nursing, were significantly lower than those before nursing in group B ($t=8.944$, $P<0.001$; $t=15.307$, $P<0.001$). SAS and SDS scores in group A were significantly lower than those in group B after nursing (**Table 3** and **Figure 1**).

Quality of life of the two groups of patients after nursing

After nursing, scores of disease control, life behavior, exercise, and emotion changes in

Table 2. Comparison of clinical outcomes between patients in group A and group B [n (%)]

Group	n	Significant effect	Effective	Invalid	Efficient (%)
Group A	62	31 (50.00)	26 (41.94)	5 (8.06)	91.94
Group B	62	22 (35.48)	27 (43.55)	13 (20.97)	79.03
χ^2	-	-	-	-	4.159
P	-	-	-	-	0.041

Table 3. Comparison of SAS and SDS scores, before and after intervention, in patients in group A and group B ($\bar{x} \pm sd$, minute)

Score	Group A (n=62)	Group B (n=62)	t	P
SAS score				
Before intervention	54.25±1.82	54.37±1.27	0.426	0.671
After intervention	33.16±6.97*	42.36±9.16*	6.294	<0.001
SDS score				
Before intervention	56.64±1.38	56.28±1.49	1.396	0.165
After intervention	38.16±5.49*	44.63±8.28*	5.128	<0.001

Note: *P<0.001 compared to before intervention.

group A were significantly higher than those in group B (t=40.100, P<0.001; t=43.350, P<0.001; t=36.740, P<0.001; t=37.350, P<0.001) (Table 4 and Figure 2).

Compliance of patients after nursing in the two groups of patients

After nursing, scores on punctual medication, regular reexamination, exercise insistence, and eating habits were significantly higher than those in group B (t=34.610, P<0.001; t=35.250, P<0.001; t=26.480, P<0.001; t=22.710, P<0.001) (Table 5 and Figure 3).

Nursing satisfaction of the two groups of patients

In group A, there were, respectively, 39 cases (62.90%), 11 cases (17.74%), 8 cases (12.90%), and 4 cases (6.45%) of very satisfied, satisfied, basically satisfied, and dissatisfied. Nursing satisfaction rate was 93.55%. In group B, there were, respectively, 28 cases (45.16%), 10 cases (16.13%), 9 cases (14.52%), and 15 cases (24.19%) of very satisfied, satisfied, basically satisfied, and dissatisfied. Nursing satisfaction rate was 75.81%. After nursing, the nursing satisfaction rate of group A was significantly higher than that of group B ($\chi^2=7.521$, P=0.006) (Table 6).

Discussion

CB is a clinical common lung disease with main features of mucus secretion increase and bronchial gland hyperplasia in senile patients [20]. Viral infections and bacteria are the main factors inducing CB. Other factors, such as sudden temperature change, dust, smoke, smoking, and allergens, are also common causes resulting in CB [21]. Evidence-based nursing combines judgments and experience in the nursing work of others and concludes scientific and effective nursing methods. It can make the evidence-based nursing intervention mode more persuasive and practical, according to the rational and effective basis of the clinical plan, ensuring that patients can be more easily accept it. The disease process of CB lasts a long

time. CB also damages the body tissues of patients, to some extent, and is rarely cured even with long-term medication. With the development of this disease, the protracted course of disease may result in negative emotions, such as anxiety and depression, and seriously affect the treatment compliance of patients [22]. Elderly patients with CB, often with declined comprehension and memory, with poor compliance during nursing care, a lack of knowledge of the disease, and being fragile in psychology and prone to negative emotions, are generally poor at independent living [23]. Evidence-based nursing is a scientific and effective nursing mode based on the conclusions and experience of other nursing workers. Reasonable and effective evidence in the clinical protocol would make evidence-based nursing more persuasive, practical, and acceptable by patients [24]. Evidence-based nursing starts from the clinical nursing problems of patients, combines the actual symptoms, experience, and professional knowledge, and takes advantages of direct experience and indirect knowledge to upgrade the knowledge level and quality of care [25].

The current study carried out nursing intervention by establishment of a ward management system, education, condition observation, nutrient care, medication care, respiration train-

Evidence-based nursing

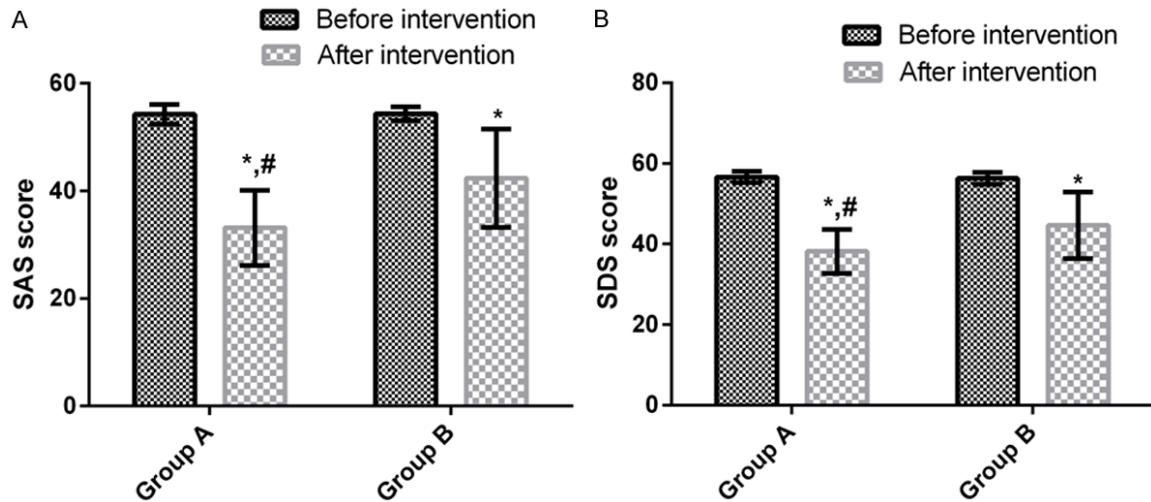


Figure 1. Psychological status of patients, before and after nursing, in group A and group B. Comparison of SAS scores before and after nursing in group A and group B (A); Comparison of SDS scores before and after nursing in group A and group B (B). Note: compared with that before nursing, * $P < 0.001$; compared with that after nursing in group B, # $P < 0.001$.

Table 4. Comparison of quality of life scores, after intervention, in group A and group B ($\bar{x} \pm sd$, minute)

Group	n	Condition control	Life behavior	Movement	Psychological emotional change
Group A	62	91.46±2.67	93.41±2.08	91.63±2.73	90.24±2.09
Group B	62	73.58±2.28	74.68±2.69	73.25±2.84	75.25±2.37
t	-	40.100	43.350	36.740	37.350
P	-	<0.001	<0.001	<0.001	<0.001

ing care, and other measures, aiming to improve self-management awareness and the treatment compliance of patients. The ultimate goal was recovery. Results of this study showed that patients given evidence-based nursing experienced better clinical efficacy. The effective rate in group A was significantly higher than that of group B. SAS and SDS scores in group A were significantly lower than those in group B, after nursing, and scores concerning quality of life, compliance, and nursing satisfaction in group A were significantly higher than those in group B. Results suggest that evidence-based nursing could alleviate the negative emotions of patients and improve clinical efficacy, compliance, and nursing satisfaction rates of the patients. Evidence-based nursing will improve the condition of patients, playing a significant role in recovery and improvement of quality of life. Targeted nursing will make different plans for the lives of patients, reduce bad habits in the daily lives of patients, accelerate condition improve-

ments, and promote physical rehabilitation. Blakemore et al. believed that the quality of life of patients is closely related with anxiety, depression, and COPD. Bad psychological emotions affect the quality of life of patients. The psychological state affects the quality of life of patients. The current study used the QLQ-c30 scale to assess the quality of life of patients after 6 months of discharge. Results showed that quality of life scores of group A patients were significantly higher than those of group B, after intervention, and nursing satisfaction rates of group A patients were significantly higher than those of group B after intervention. Results suggest that evidence-based nursing can improve the quality of life of elderly CB patients and patients are more satisfied with the nursing model. Hong et al. [26] showed that early care intervention for CB patients and emphysema patients can reduce incidence of emphysema in patients. Thus, quality of life and care satisfaction is significantly improved,

Evidence-based nursing

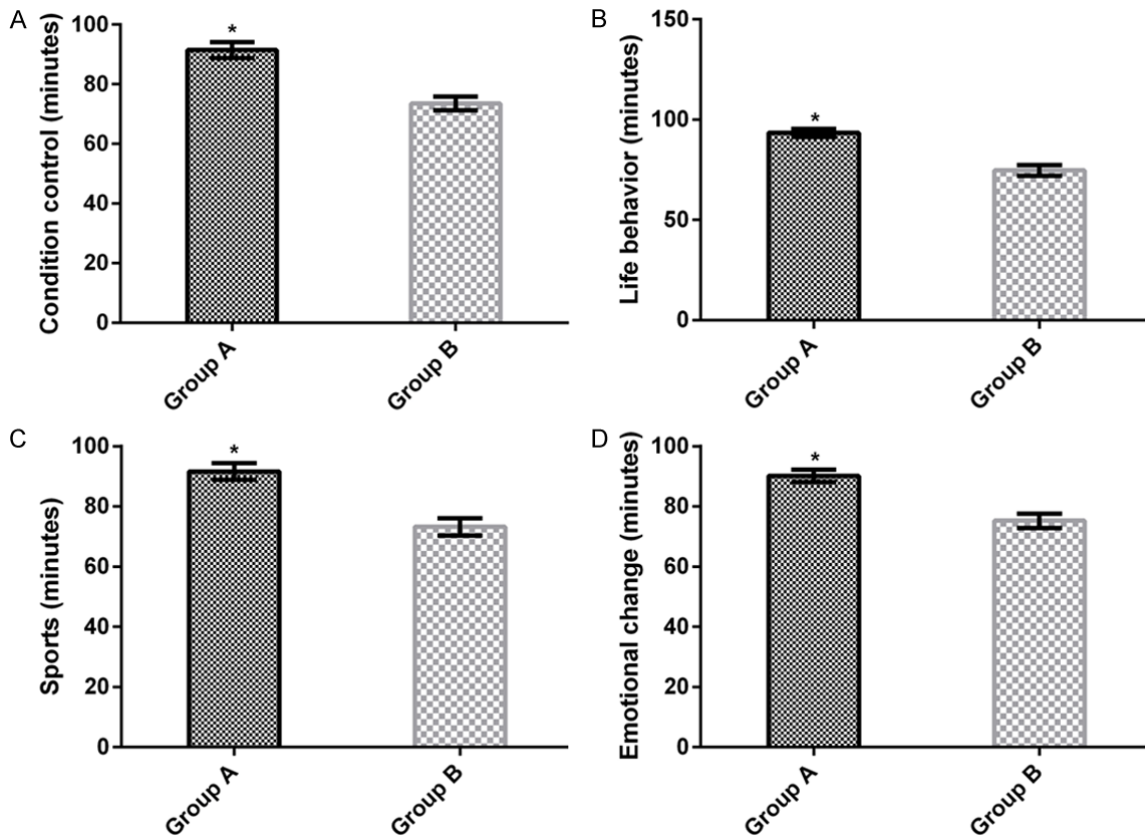


Figure 2. Comparison of quality of life scores, after intervention, between group A and group B. Comparison of disease control scores after nursing between group A and group B (A); Comparison of life behavior scores after nursing between group A and group B (B); Comparison of exercise scores after nursing between group A and group B (C); Comparison of emotion change scores after nursing between group A and group B (D); Remark: compared with that in group B, # $P < 0.001$.

Table 5. Comparison of results of adherence to medical scores, after intervention, in group A and group B ($\bar{x} \pm \text{sd}$, minute)

Group	n	Take medicine on time	Regular review	Exercise regularly	Eating habits
Group A	62	89.67±2.16	90.57±2.45	91.78±2.63	90.68±2.96
Group B	62	75.18±2.49	76.21±2.07	78.59±2.91	79.58±2.46
t	-	34.610	35.250	26.480	22.710
P	-	<0.001	<0.001	<0.001	<0.001

in accord with present conclusions. It may be that both modes of care are targeted psychological counseling, which can relieve psychological problems and make patients more emotionally stable. Through targeted intervention, patients have different life plans, reduce bad habits in their daily life, speed up the condition, and promote physical rehabilitation. However, the report also showed that early care intervention in CB patients can reduce incidence of emphysema. This study did not pro-

vide an in-depth observation of the incidence of emphysema during care. Thus, this result should be further explored in the future. However, early care is a kind of nursing mode that focuses on intervention before or during treatment [27]. In this study, evidence-based nursing comprehensively considered the patient's wishes, values, and actual conditions, developing a personalized nursing model before treatment. During treatment, nursing guidance is given after discharge. This is different from the

Evidence-based nursing

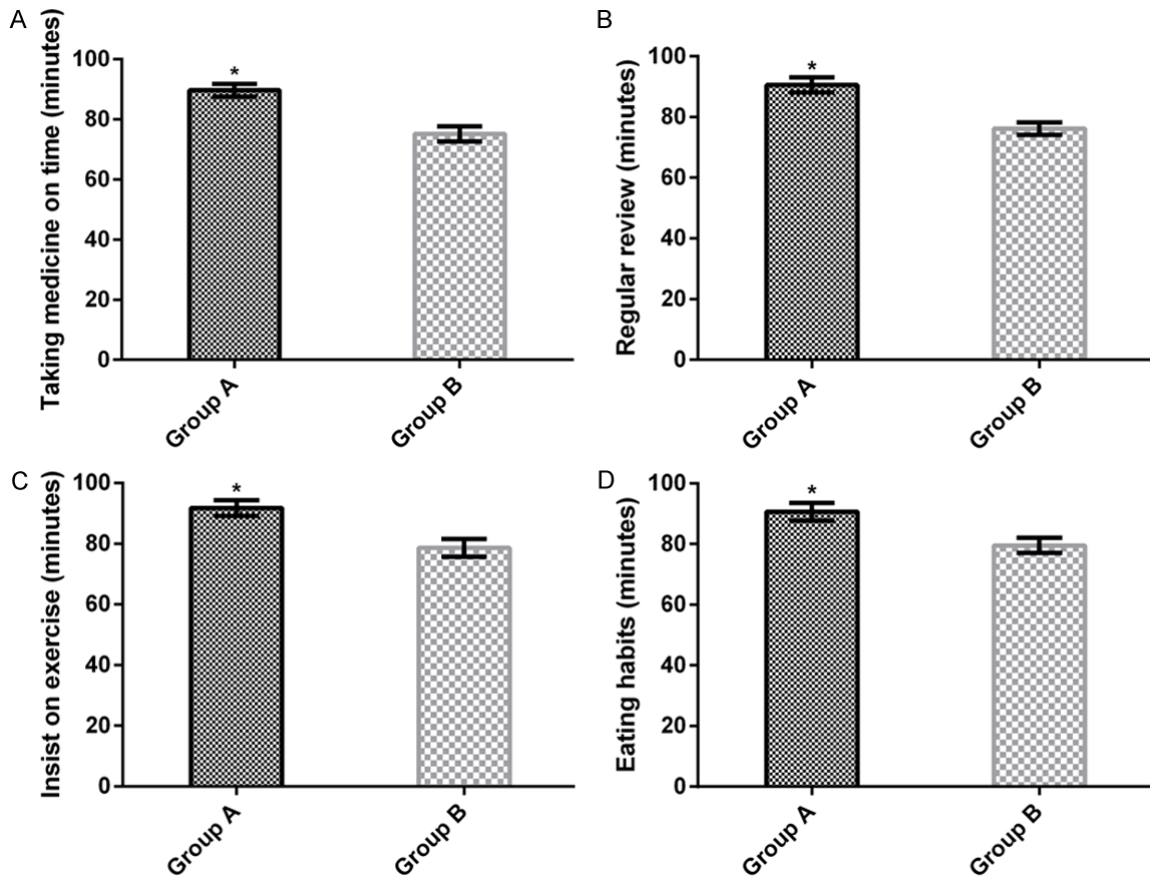


Figure 3. Comparison of treatment compliance results, after nursing, between group A and group B. Comparison of punctual medication scores after nursing between group A and group B (A); Comparison of regular reexamination scores after nursing between group A and group B (B); Comparison of exercise insistence scores after nursing between group A and group B (C); Comparison of eating habit scores after nursing between group A and group B (D); Remark: compared with that in group B, #P<0.001.

Table 6. Comparison of nursing satisfaction results, after intervention, in group A and group B patients [n,(%)]

Group	n	Very satisfied	Satisfaction	Basic satisfaction	Not satisfied	Satisfaction (%)
Group A	62	39 (62.90)	11 (17.74)	8 (12.90)	4 (6.45)	93.55
Group B	62	28 (45.16)	10 (16.13)	9 (14.52)	15 (24.19)	75.81
χ^2	-	-	-	-	-	7.521
P	-	-	-	-	-	0.006

implementation of early care. Therefore, evidence-based nursing in senile CB patients is of significant clinical value.

This study had some shortcomings, however. The quality of life of patients before treatment was not evaluated and long-term follow-ups were not performed. The psychological state and quality of life of patients at different time points were not observed. The time of the study was also limited. Therefore, the current study

had certain limitations. In future studies, present researchers will extend the time of the study, introduce long-term follow-ups, expand the types of diseases included in the study, and implement evidence-based nursing, aiming to verify present conclusions.

Overall, the application of evidence-based nursing in senile CB patients will improve clinical efficacy, treatment compliance, and nursing satisfaction, as well as alleviate negative emo-

tions and improve quality of life. Therefore, it is worthy of clinical application.

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Disclosure of conflict of interest

None.

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