

## Original Article

# Cognitive behavioral therapy combined with “empathy nursing” model on recurrent depressive disorder

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**Abstract:** Objective: To explore the effects of cognitive behavioral therapy combined with “empathy nursing” model on recurrent depressive disorder. Methods: The clinical data of 80 patients with recurrent depressive disorder were analyzed retrospectively. Among them, 40 patients receiving routine treatment and nursing were regarded as the control group, and 40 patients receiving additional cognitive behavioral therapy combined with “empathy nursing” on the basis of routine treatment and nursing were considered as the observation group. Results: Total nursing compliance of the observation group was much higher than that of the control group throughout the intervention. After the intervention, the SES and GQOL scores were both increased, and the observation group had a more obvious increase. The SDSS, Pittsburgh sleep quality index (PSQI), Hamilton Depression (HAMD) and LOTCA scores were all decreased after the intervention, and the observation group had much lower scores. Total nursing satisfaction of the observation group was markedly higher than that of the control group. Conclusion: Additional cognitive behavioral therapy combined with “empathy nursing” model can effectively promote the self-esteem and cognitive function, enhance nursing compliance, improve adverse emotions, restore sleep quality, reduce social function defects, and improve the quality of life.

**Keywords:** Recurrent depressive disorder, cognitive-behavioral therapy, empathy nursing, sleeping quality, prognosis, quality of life

## Introduction

Depression, also known as the depressive disorder, is characterized by high recurrence, persistence and universality. Depression is commonly comorbid with mental illness such as anxiety disorder, with significant and lasting depression as its main clinical feature [1]. Depression has no specific etiology at present, but it is closely related to social environment, family, physiological and psychological personality. Negative emotion of depression patients mainly manifests in their over processing and perception of information, which invades the processing resources of positive information. More seriously, patients with serious depression may even commit suicide. Thus, the society and family should pay special attention and active psychological intervention to depression population on the basis of drug treatment [2].

Cognitive behavioral therapy is a cognitive process that corrects patients’ wrong behaviors and improves negative emotions through rectifying the wrong cognition. Besides, cognitive behavioral therapy has certain influence and decisive effect on patients’ behaviors and emotions [3]. However, currently this therapy mode needs to be intervened under the condition of voluntary participation of patients with the help of other auxiliary intervention methods, thus the related effectiveness is relatively unstable [4]. Empathy nursing model is an emerging nursing model which aims at empathy using psychological knowledge in nursing process and it has been gradually applied to the nursing work of depression. By showing more respect and understanding for the patients, empathy nursing makes it easier for the patients to accept further treatment and intervention, and express their feelings actively. There-

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fore, empathy nursing improves not only the negative emotions of patients, but also their self-esteem, so as to enhance the quality of life [5, 6]. At present, empathy nursing has already been widely applied in clinical practice abroad, but the application of empathy nursing combined with cognitive behavioral therapy in the clinical treatment of depression is still relatively rare [7]. Based on this, this study analyzed the effects of cognitive behavioral therapy combined with empathy nursing model on nursing compliance and satisfaction of patients with depression.

## Materials and methods

### *General materials*

The clinical data of 80 patients with mild to moderate recurrent depression in our hospital from July 2018 to June 2019 were analyzed retrospectively. Among them, 40 patients receiving routine treatment and nursing were assigned to the control group and 40 patients receiving additional cognitive behavioral therapy combined with “empathy nursing” were assigned to the observation group. The study was approved by the ethics committee of our hospital (Approval No. KY-201902). All the patients were informed of the study and signed the informed consent.

### *Inclusion criteria*

Inclusion criteria: patients met the diagnostic criteria for mild or moderate recurrence of recurrent depression in Chinese Classification and Diagnostic Criteria for Mental Disorders [8]; patients accompanied by family members; patients with Hamilton Depression (HAMD) score higher than 7; patients with good vision.

Exclusion criteria: patients with organic lesions; alcohol abusers; patients with severe physical disorders; patients with personality disorder; patients with bipolar disorder.

### *Methods*

#### Control group

The patients were given routine nursing including keeping the environment comfortable and health education. Sertraline capsules (Sichuan Baicao Biopharmaceutical Co., Ltd., China) were administered orally once a day (50 mg from

day 1 to day 6 and increased to 100 mg on day 7). All patients were maintained with sertraline capsule at 100 mg/d until the observation point.

#### Observation group

Besides routine treatment and nursing, patients in the observation group were intervened by additional cognitive behavioral therapy combined with the “empathy nursing” (mainly including empathic thinking, patient listening, and health education lectures).

*Cognitive behavioral therapy:* The therapy was in charge by the psychiatrist trained in cognitive behavioral therapy with the national level II psychological consultant qualification [9]. (a) Popularize disease-related knowledge, guide patients to master the identification of early symptoms and possible adverse consequences in the later stage and improve patients’ mastery of disease knowledge. (b) To find out the key factors that affect the emotion of patients, and parallel hypothesis test was carried out to verify the uncertain factors. By exploring the relationship among emotion, cognition and life practice, we can help the patients to understand the source and causes of pathological beliefs and eliminate negative emotions in time so as to re-establish confidence. (c) Scientific and reasonable conceptual thinking was used to establish a new cognitive model for patients, so that the patients can carry out basic daily life in a new behavior mode.

*Empathy nursing:* (a) A professional nursing group was established to train the relevant knowledge about empathy nursing [10]. At the same time, understanding and care for patients by the staff were cultivated, and gradually developed into humanistic care consciousness. (b) Nursing staff carried out health education sincerely, so as to gain the trust of patients and establish the connection between nurses and patients. (c) The communication between nurses and patients was carried out in the way of transposition thinking. The patients’ psychology was taken as the center, the real thoughts and thoughts of patients were fully understood, and counseling measures were taken. (d) Listened to the psychological thoughts of patients patiently and observed the changes of patients’ behaviors and emotions. Through the interaction of eyes

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and nodding, help the patients to feel the care, understanding and support from the nursing staff. (e) According to the severity and development of the disease, the emotional and physical conditions of the patients were comprehensively evaluated, and the empathy feedback was carried out one by one; coping skills when facing problems were taught to the patients, and the patients were encouraged to face life and work with a positive and optimistic attitude. (f) Health education lecture was carried out once a week in the hospital to popularize the knowledge of depression. The way of early recognition and management of symptoms were also propagated, so that patients could realize the importance of adhering to treatment. At the same time, patients were encouraged to actively cooperate with the treatment and adjust their emotions with successful cases, and always maintain an optimistic attitude.

The patients were nursed and treated by professional nursing staff from the first day after admission. After discharge, a fixed family member was chosen to receive the training of empathy nursing knowledge and reach the standard of complete mastery. Then, the family members provided empathy nursing for patients at home. At the same time, regular nurses were followed up by fixed caregivers through the face-to-face or telephone follow-up every week, and cognitive-behavioral therapy was given once a week for a total of 3 months.

### *Outcome measures*

#### Main outcome measures

(1) The quality of life before and 3 months after intervention was evaluated using the Generic Quality of Life Inventory-74 (GQOL-74) [11]. There were 74 items in the scale, which were evaluated from four dimensions: psychological function, somatic function, social function and material life. The score ranges from 20 to 100. Higher score means better quality of life.

(2) Cognitive function of the two groups before and 3 months after intervention was evaluated according to the Loewenstein (LOTCA) cognitive function assessment scale [12]. The scale includes 26 items including location orientation, time orientation, geometric pattern recognition, color block puzzle, body direction, etc. The total score is 115, which is divided into the

following grades: mild cognitive impairment,  $\geq 90$  points; moderate cognitive impairment, 70-89 points; severe cognitive impairment,  $\leq 69$  points.

(3) Sleep quality of the two groups before and 3 months after intervention was evaluated using the Pittsburgh sleep quality index (PSQI) [13]. Sleep quality, time to fall asleep, sleep efficiency, sleep time, sleep disorder, hypnotic drugs and daytime function are all included in the scale. Each item is scored 0-3, with the total score of 21. Higher score means worse sleep quality.

(4) The emotional state of the two groups before and 3 months after intervention was scored following the HAMD scale [14]. Anxiety, loss of weight, cognitive impairment, day and night change, block, sleep disorder, and despair are all included in the scale. Most of the items are scored with a 5-level scale of 0-4 scores: 0 means none; 1 indicates suspicious or slight; 2 indicates mild; 3 indicates moderate; 4 indicates severe. The other items are scored with a 3-level scale of 0-2 scores: 0 means none; 1 indicates suspicious or slight; 2 indicates obvious symptoms. The total score  $< 7$  indicates normal; 7-16 indicates suspicious or slight; 17-24 indicates depression.

#### Secondary outcome measures

(1) The compliance of the two groups during the nursing period was investigated, including standardized medication, reasonable diet, social activities, living habits, psychological emotions, etc. In the above contents, the compliance of patients and their family members can be divided into the following grades: less than 70% is non-compliance; 70-90% is partial compliance; 91%-100% is compliance. Total compliance = cases of (compliance + partial compliance)/total number of cases  $\times 100\%$ .

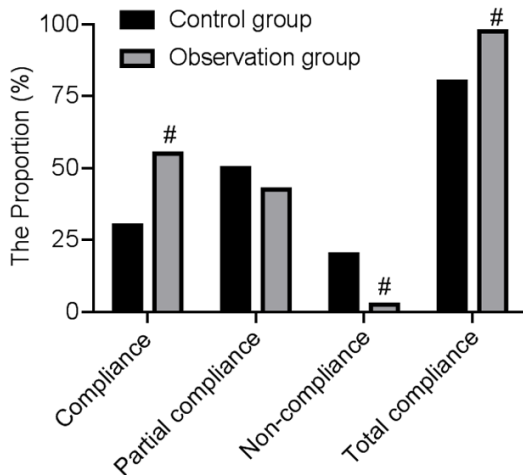
(2) The social function of the two groups before and after 3 months of intervention was evaluated following social deficit screening scale (SDSS) [15]. The scale has 7 dimensions and is divided into 10 items. Each item ranges 0-2 points, with the full score of 20 points. 0 point: minor problems or no problems; 1 point: obvious problems; 2 points: serious problems.

(3) The two groups of patients were investigated using the self-made nursing satisfaction

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**Table 1.** Comparison of clinical data between the two groups

Group (n=40)	Gender (male/female, cases)	Average age (years)	Average course of disease (years)
Control group	19/21	48.4±4.8	1.7±0.5
Observation group	18/22	48.1±4.3	1.6±0.4
$\chi^2/t$	0.503	0.294	0.988
P	0.823	0.769	0.326



**Figure 1.** Comparison of nursing compliance. Compared with the control group, #P<0.05.

questionnaire and the reliability and validity were 0.881 [16]. The questionnaire contains 20 questions, each of them scores 1-5 points. The higher the score is, the higher the satisfaction is. The satisfaction can be divided into the following grades: 90-100 points are very satisfied; 70-89 points are satisfied, and less than 70 points are not satisfied. The total satisfaction rate = satisfaction rate + very satisfaction rate.

(4) The self-esteem of the two groups before and 3 months after intervention was evaluated using the Rosenberg Self-Esteem Scale (SES) [17]. There are 10 items in the scale, with 1-4 points for each item. The higher the score is, the stronger the self-esteem is.

### Statistical analysis

Data processing was conducted using the SPSS 23.0 software. The measurement data were expressed as mean  $\pm$  standard deviation ( $\bar{x} \pm sd$ ). Independent sample t test was used

for comparison between the two groups, and paired t test was used for intra-group comparison. The enumeration data were expressed by percentage and were compared using the  $\chi^2$  test. P<0.05 indicates statistically significant difference.

## Results

### Clinical data

No significant differences existed in age, gender, course of disease and other general information between the control group and the observation group (P>0.05). The two groups were comparable. See **Table 1**.

### Nursing compliance

Total nursing compliance of observation group (97.50%) was much higher than that of the control group (80.00%) (P<0.05). Therefore, compared with single cognitive behavioral therapy intervention, cognitive behavior therapy combined with empathy nursing intervention can effectively improve nursing compliance. See **Figure 1**.

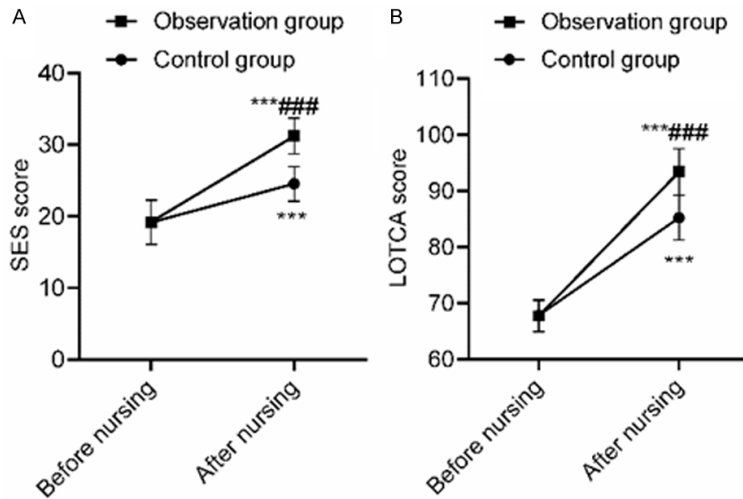
### Scoring of self-esteem and cognitive function

No significant difference existed in SES and LOTCA scores between the two groups before the intervention (P>0.05). SES and LOTCA scores of the two groups were both increased after the intervention, and all the related indexes of the observation group were significantly higher than those of the control group after the intervention (P<0.001). It can be seen that the promotive effects of cognitive behavior therapy combined with empathy nursing on self-esteem and cognitive function are much better than those of single cognitive behavior therapy. See **Figure 2**.

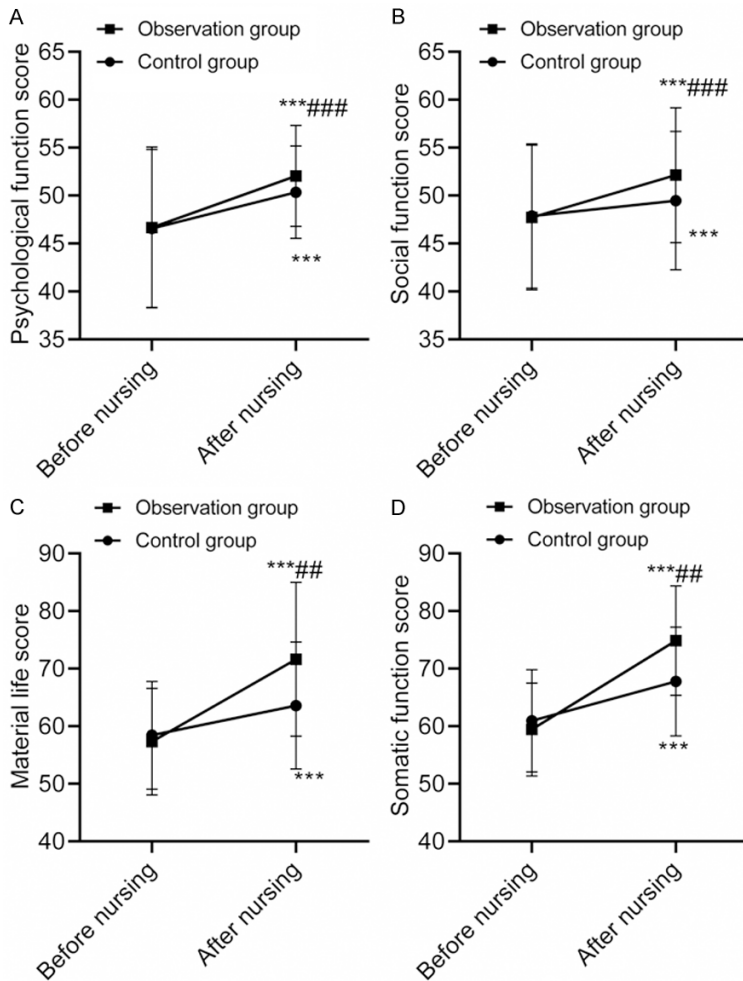
### Quality of life

No significant difference existed in scores of psychological function, somatic function, material life and social function between the two groups before the intervention (P>0.05). The scores of these four dimensions of the two groups were all increased after the intervention, and all the indices in the observation group were markedly higher than those in the control group after the intervention (P<0.01). It

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**Figure 2.** Comparison of SES and LOTCA scores before and 3 months after intervention. A: SES scores; B: LOTCA scores. Compared with the same group before intervention, \*\*\* $P < 0.001$ ; compared with the control group, ### $P < 0.001$ . SES: self-esteem scale; LOTCA: loewenstein occupational therapy cognitive assessment.



**Figure 3.** Comparison of quality of life scores before and 3 months after intervention. A: Psychological function scores; B: Social function scores; C: Material life scores; D: Somatic function scores. Compared with the same group before intervention, \*\*\* $P < 0.001$ ; compared with the control group, ## $P < 0.01$ , ### $P < 0.001$ .

can be seen that the effects of combined empathy nursing on improving the quality of life is much better than those of single cognitive behavior therapy. See **Figure 3**.

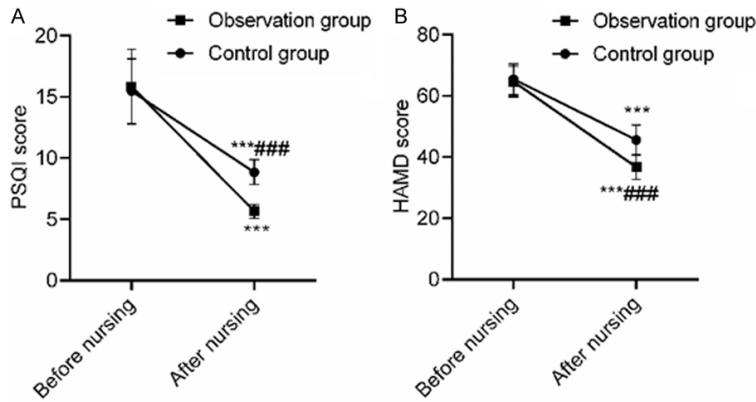
### Scoring of sleep quality and emotional symptom

No significant difference existed in PSQI and HAMD scores between the two groups before intervention ( $P > 0.05$ ). PSQI and HAMD scores of the two groups both decreased after the intervention, and all the indices of the observation group were sharply lower than those of the control group ( $P < 0.001$ ). It can be seen that combined with empathy care is more helpful to improve the sleep quality and emotional symptoms of patients compared with single cognitive behavior therapy. See **Figure 4**.

### Social function

No significant difference existed in social withdrawal, occupational work, family activity, social activity, responsibility planning, degree of interest and personal life scores between the two groups before the intervention ( $P > 0.05$ ); Those scores in the two groups were all decreased after the intervention, and the indices in the observation group were much lower than those in the control group ( $P < 0.001$ ). Therefore, combined empathy

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**Figure 4.** Comparison of sleep quality and emotional symptom scores before and 3 months after intervention. A: Sleep quality scores; B: Emotional symptom scores. Compared with the same group before intervention, \*\*\* $P < 0.001$ ; compared with the control group, ### $P < 0.001$ . PSQI: Pittsburgh sleep quality index; HAMD: Hamilton Depression.

care is more helpful to reduce the social function defects of patients compared with single cognitive behavior therapy. See **Table 2**.

### Nursing satisfaction

The total nursing satisfaction of the observation group (97.50%) was significantly higher than that of the control group (77.50%) ( $P < 0.01$ ). It can be seen that the satisfaction of combined empathy nursing is much higher than that of single cognitive behavior therapy. See **Table 3**.

### Discussion

In social life, biases for depression and mental illness patients are still existed, which makes the patients with depression alienated due to the deficiency of awareness of mental illness. In addition, patients with depression cannot face up to their own disease as they have a sense of disgust for themselves. The best treatment period is usually missed due to their escape behaviors, thus the rate of truly effective and professional treatment is only about 2%. Therefore, improving medical care services, changing patients' wrong concept of disease and helping the patients to improve their life function and depression are the focus of current clinical research in the treatment of depression [18].

The results showed that the quality of life and social function scores of the observation group were significantly higher than those of the control group, while the HAMD score of the obser-

vation group was lower than that of the control group. Similarly, in the study of Li, scores of HAMD and the quality of life of patients with postpartum depression were significantly improved after empathy nursing combined with cognitive behavior intervention [19]. Above results showed that cognitive behavioral therapy combined with empathy nursing effectively improved the negative emotions of patients with recurrent depression, reduced social function defects and improved their quality of life. We believe that cognitive behavioral therapy works from

the following three steps: first, psychological intervention through the most basic mental health education in patients with recurrent depression was conducted, so as to improve the symptoms of recurrent depression and enhance positive emotions. Second, wrong cognition of the disease of the patients should be corrected, the patients' mastery of disease-related knowledge should be improved, and behavior training should be guided. At last, correct cognitive ability should be strengthened to prevent recurrence, and social function and quality of life should be improved.

The adaptability of an individual to the environment depends on the level of individual self-esteem [5]. The self-esteem level of patients with recurrent depression decreases with the aggravation of symptoms, so the degree of self-esteem reflects the occurrence of depression. Cognitive behavioral therapy combined with empathy nursing can improve patients' self-esteem by alleviating their negative emotions [20]. Our present study showed that the SES score of the observation group was much higher than that of the control group after the intervention, indicating that the combined intervention of cognitive behavior therapy and empathy nursing effectively improved the self-esteem of patients with recurrent depression. Sleep quality is a major problem for patients with recurrent depression, and good sleep quality helps to improve the prognosis of patients. In our present study, the PSQI score of the observation group was much lower than

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**Table 2.** Comparison of social function scores before and 3 months after intervention ( $\bar{x} \pm \text{sd}$ , score)

Group (n=40)	Social withdrawal	Occupational work	Family activity	Social activity	Responsibility planning	Degree of interest	Personal life
Before intervention							
Control group	1.75±0.53	1.85±0.77	1.73±0.34	1.82±0.72	1.81±0.65	1.83±0.66	1.77±0.63
Observation group	1.76±0.54	1.82±0.85	1.72±0.33	1.88±0.75	1.84±0.65	1.87±0.62	1.74±0.66
t	0.084	0.165	0.133	0.365	0.206	2.279	0.208
P	0.993	0.869	0.895	0.716	0.837	0.781	0.836
After intervention							
Control group	0.96±0.72***	0.94±0.42***	0.81±0.46***	1.07±0.22***	0.95±0.37***	0.92±0.34***	0.97±0.12***
Observation group	0.48±0.32***	0.36±0.12***	0.37±0.22***	0.33±0.23***	0.54±0.07***	0.36±0.12***	0.36±0.23***
t	3.853	8.398	5.458	14.705	6.886	9.823	14.871
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Note: Compared with the same group before the intervention, \*\*\*P<0.001.

**Table 3.** Comparison of nursing satisfaction (n, %)

Group (n=40)	Very satisfied	Satisfied	Dissatisfied	Total satisfaction
Control group	10 (25.00)	21 (52.50)	9 (22.50)	31 (77.50)
Observation group	24 (60.00)	15 (37.50)	1 (2.50)	39 (97.50)
$\chi^2$	10.026	1.818	7.314	7.314
P	0.002	0.178	0.007	0.007

that of the control group after the intervention. Consistent with the results of our study, Li et al. found that the PSQI score of patients with depression in empathy nursing intervention group was  $10.68 \pm 1.57$  after the intervention, which was significantly lower than that of the routine nursing group ( $12.34 \pm 1.65$ ) [21]. Thus, we suggest that cognitive behavioral therapy combined with empathy nursing can effectively improve sleep quality of patients with recurrent depression through eliminating negative emotions and relieving psychological pressure.

The results showed that the LOTCA score of the observation group was much lower than that of the control group after the intervention, which further indicated that cognitive behavioral therapy combined with empathy nursing could effectively improve the cognitive function of patients with recurrent depression. Empathy nursing enables nursing staff to share the mental pressure with the patients, and fully experience the spiritual world of patients. To achieve the best therapeutic effect through transposition thinking is also the essence of nurse-patient communication [22]. In the process of empathy nursing, a state of mutual trust was achieved between the nurses and

the patients. Through confiding their true feelings in detail, the patients feel that they are fully accepted and understood through the careful listening and timely affirmation and empathy from the medical staff [23]. On the basis of feeling the care of nursing staff, patients can get

mental support at the same time, change the wrong cognition about the disease, and then improve their own cognitive function. In addition, empathy nursing helps patients to relieve their bad emotions, improves their confidence in conquering the disease, and makes them yearn for the beautiful things and new life in the future, so as to effectively improve the current status [24]. Similar to the results of our present study, Lu et al. found that psychological nursing combined with empathic nursing improved the cognition and life of postpartum depression mothers [25]. Taken together, combination of cognitive behavioral therapy with empathy nursing can strengthen the effects of empathy nursing. Not only the compliance of patients was improved, the recognition of patients and their families was also obtained at the same time, which has a certain value in clinical practice.

In conclusion, the combined intervention of cognitive behavior therapy and empathy nursing can effectively improve the self-esteem and cognitive function of patients with recurrent depression and enhance nursing compliance. At the same time, this comprehensive therapy can effectively eliminate the bad

mood of patients, restore sleep quality, reduce social function defects, improve the quality of life of patients, thus improving the prognosis of patients and nursing satisfaction. However, the results of this study may be biased due to the small sample size and single center study, thus the number of clinical samples should be increased for further in-depth studies in the future.

### Disclosure of conflict of interest

None.

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