

## Original Article

# Effects of motivational psychological nursing combined with cognitive behavioral intervention on anxiety and depression, self-care ability and sleep quality of elderly patients undergoing glaucoma surgery

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**Abstract:** Objective: To explore the effect of motivational psychological nursing combined with cognitive behavioral interventions on anxiety and depression, self-care ability and sleep quality of elderly patients undergoing glaucoma surgery. Methods: Seventy-eight senile patients undergoing glaucoma surgery were selected and divided into a control group and a research group according to a random number table method, with 39 cases in each group. The patients in the control group received routine nursing, while those in the research group additionally received motivational psychological nursing combined with cognitive behavioral intervention. The self-rating depression scale (SDS) and self-rating anxiety scale (SAS) were used to evaluate the emotions of the patients. The exercise of self-care agency (ESCA) scale was used to assess the self-care ability, and the Pittsburgh sleep quality index scale (PSQI) was used to evaluate the sleep quality of patients. The incidence of postoperative complications in the two groups was recorded. Results: SDS and SAS scores in the research group were lower than those in the control group after nursing ( $P < 0.05$ ). The self-concept, self-care responsibility, self-care skills, mastery of health knowledge and ESCA comprehensive score in the research group were higher than those in the control group after nursing ( $P < 0.05$ ). While the sleep quality, sleep time, sleep latency, sleep efficiency, dosage of hypnotic drugs, daytime function and sleep disorder scores in the research group were significantly lower than those in the control group ( $P < 0.05$ ). The incidence of postoperative complications in the research group was 17.95%, lower than that in the control group (38.46%) ( $P < 0.05$ ). Conclusion: Motivational psychological nursing combined with cognitive behavioral intervention can relieve anxiety and depression in elderly patients undergoing glaucoma surgery, improve self-care abilities and sleep quality, and reduce postoperative complications, which has a high application value.

**Keywords:** Motivational psychological nursing, cognitive behavioral intervention, elderly, glaucoma surgery, self-care ability, sleep quality

## Introduction

Glaucoma is a visual impairment due to the damage of relevant ocular tissues caused by the intermittent or continuous increase of intraocular pressure [1]. If not treated in time, it will cause blindness, seriously affecting the daily life of elderly patients [2]. Meanwhile, it has a complicated pathogenesis, which is mainly characterized by optic atrophy and visual field defects [3]. The visual function damage caused by glaucoma is irreversible, and can cause

blindness in serious cases [4]. The clinical manifestations include elevated intraocular pressure, decreased vision, visual field defects, etc.; resulting in a decline in the quality of life [5, 6]. Glaucoma patients are often have anxiety, depression and emotional disorders, which affects their confidence and compliance [7, 8]. According to research, 16.4% and 22.9% of glaucoma patients suffer from anxiety and depression, respectively; far higher than 1.4% and 2.4% of the normal population [9]. Surgery is an effective method to quickly relieve glau-

coma symptoms and restore vision, but many factors affect the recovery of patients after surgery; including insufficient cognition, bad living habits and negative emotions [10, 11].

Elderly patients suffer from body decline and do not easily recover after surgery and anesthesia, so they require increased nursing requirements [12]. In addition, elderly glaucoma patients have difficulty moving, a lack of awareness of this disease and poor self-care abilities. Therefore, during the treatment, both physiological and psychological interventions need to be given [13, 14]. Routine nursing has deficiencies because it mainly focuses on diseases and ignores the particular needs of elderly patients in psychological support, cognition and social support. On the contrary, motivational psychological nursing focuses on this support, encouragement and motivation to make the patients feel full of confidence. The point of cognitive behavioral intervention is to improve the patients' understanding of the disease, correct the lack of knowledge, and improve the self-care ability and compliance.

The current application of motivational psychological nursing has achieved good results in hospitalized patients in cardiovascular medicine, anorectal surgery, and neurosurgery, etc. [15-17]. However, there are no reports on its application in elderly patients undergoing glaucoma surgery. Therefore, this study applied motivational psychological nursing combined with cognitive behavioral intervention to elderly patients undergoing glaucoma surgery to explore its effects on patients' adverse emotions, self-care ability and sleep quality. The report is as follows.

### Materials and methods

#### General data

Seventy-eight elderly people with monocular glaucoma admitted to Xijing Hospital Affiliated to Air Force Military Medical University from January 2016 to January 2017 were selected as observation subjects. Inclusion criteria: (1) all conformed to the diagnostic criteria for glaucoma in the *Consensus on Diagnosis and Treatment of Primary Glaucoma in China (2014)* [18]; (2) patients were 60-70 years old; (3) no contraindications to surgery; (4) primary school education or above; (5) signed the con-

sent form. Exclusion criteria: (1) cataract patients; (2) binocular glaucoma; (3) severe cardio-cerebrovascular diseases; (4) malignant tumor diseases; (5) mental diseases and consciousness disorders. The patients enrolled were divided into the control group and research group according to a random number table, with 39 cases each.

#### Methods

Routine nursing in the control group: the operation method, surgeon and specific surgery time were introduced and explained to the patients, and the preoperative examinations and skin preparation were perfected. The incision dressing was changed regularly after surgery, and changes of intraocular pressure and the prognosis of the disease were closely observed. Drugs were prescribed according to the doctors' advice. Health education was given before and after surgery to explain the disease and matters needing attention after surgery.

Routine nursing in addition to motivational psychological nursing and cognitive behavioral interventions in the research group. Motivational psychological nursing: (1) Psychological counseling: nurses communicated with patients for 10-15 min every day to understand their condition and analyze their psychological status. Nurses used motivational words to guide, comfort and encourage and help patients maintain a good mood. (2) Social support: relatives were asked to care, love and accompany patients in order to give psychological support and encouragement. The patients were guided by medical personnel and professional psychologists to establish confidence in a recovery. (3) Case explanation: examples with effective treatment, active cooperation and good mentality were shown to the patients, and the treatment process, treatment effects and current situation were introduced, so as to inspire the patients and enhance their confidence. (4) Affirming the patients' progress: nurses guided the patients to develop self-care abilities and perform self-psychological adjustments, and set small goals every day, such as "finish eating independently", "be free from pessimism and anger for one day" and so on; and encouraged the patients to complete their daily goals. In addition, affirmation and support were given to the patients' efforts and progress, and the

**Table 1.** Comparison of general data between two groups ( $\bar{x} \pm sd$ )

Group	Research group (n=39)	Control group (n=39)	$\chi^2/t$	P
Gender			0.253	0.615
Male	27	29		
Female	12	10		
Average age (year)	61.8 $\pm$ 5.1	61.2 $\pm$ 5.4	0.473	0.637
Glaucoma type			0.468	0.791
Primary	19	22		
Secondary	12	10		
Miscibility	8	7		
Educational level			0.743	0.690
Primary school	6	9		
Secondary school	11	10		
College degree and above	22	20		

advantages were excavated and patients were encouraged to improve their perception of self-worth and enhance their confidence in healing. (5) Introducing the advantages and safety of the surgery: the safety, success rate and prognosis of the surgery were explained and the qualifications and experience of the surgeons were explained so as to increase the confidence of the patients in the surgery. Cognitive behavioral intervention: (1) Disease explanation: the elderly have poor and slow acceptance to complicated knowledge. Therefore, when explaining the basic knowledge of glaucoma, videos and pictures were applied. Simple and easily understandable words were used to answer the patients' questions in order to improve their understanding and cognition of the disease. (2) Health behavior intervention: the function of healthy behavior habits was explained to improve the enthusiasm of the patients to pursue a high standard for quality of life. Patients were guided to cooperate with the daily regimen, develop good habits, fall asleep and get up at fixed points, and get sufficient rest. Patients were instructed to perform appropriate activities every day, including walking, stretching limbs, etc. Meanwhile, patients were asked to quit smoking and stop drinking alcohol, eat fresh and digestible foods every day, avoid overeating or not eating on time, and avoid greasy, cold and spicy food.

#### Outcome measures

Main outcome measures: (1) Self-rating depression scale (SDS) and self-rating anxiety scale (SAS): each scale contains 20 scored items,

0-3 points for each item. The SDS and SAS critical scores were 53 points and 50 points, respectively. Exceeding the critical score indicated anxiety and/or depression. The higher the scores were, the more serious the anxiety and depression were. (2) Exercise of self-care agency (ESCA) scale: there were 4 dimensions, self-concept, self-care responsibility, self-care skills and health knowledge mastery; totaling 43 scored items, and each item adopted a 0-4 scoring method.

The higher the score was, the stronger the patients' self-care ability was. (3) The incidence of postoperative complications in the two groups was recorded.

Secondary outcome measures: Pittsburgh sleep quality index (PSQI) scale: PSQI scale consisted of 19 items and 7 components. Each component was scored with 0-3 points. The higher the score was, the worse the sleep quality was.

#### Statistical analysis

SPSS 19.0 statistical software was used to analyze the data. The measurement data were expressed by  $\bar{x} \pm sd$ . The comparison between groups was conducted by an independent t-test, and the comparison before and after treatment in the same group was conducted by paired t-test. The counting data expressed by % were measured by  $\chi^2$  test. A value of  $P < 0.05$  was required for statistical significance.

#### Results

##### Comparison of general data between two groups

There was no significant difference in gender, age, glaucoma type and educational level between the two groups before treatment ( $P > 0.05$ ), as shown in **Table 1**.

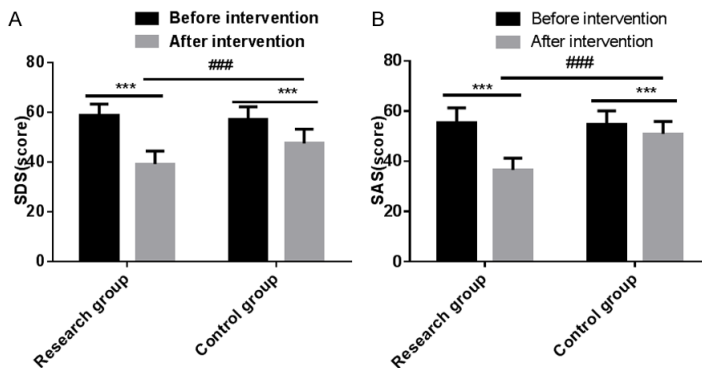
##### Comparison of anxiety and depression between the two groups

The SDS and SAS scores in the two groups were not significantly different before nursing. While

**Table 2.** Comparison of anxiety and depression between the two groups

Group	Research group (n=39)	Control group (n=39)	t	P
<b>SDS</b>				
Before nursing	58.85 ± 4.72	57.12 ± 5.03	1.566	0.121
After nursing	36.64 ± 4.63	50.95 ± 4.92	13.228	0.000
<b>SAS</b>				
Before nursing	55.47 ± 5.88	54.26 ± 5.45	0.943	0.349
After nursing	39.23 ± 5.18	47.48 ± 5.75	6.657	0.000

Note: SDS, self-rating depression scale; SAS, self-rating anxiety scale.



**Figure 1.** Comparison of anxiety and depression between the two groups. A: SDS scores. B: SAS scores. Compared with before intervention, \*\*\*P<0.001; compared with control group, ###P<0.001. SDS, self-rating depression scale; SAS, self-rating anxiety scale.

the scores in the two groups after nursing were significantly lower than before nursing, and the research group was lower than the control group, indicating greater improvement (P<0.05), as shown in **Table 2** and **Figure 1**.

*Comparison of self-care ability between the two groups*

The self-concept, self-care responsibility, self-care skills, health knowledge mastery and ESCA comprehensive scores in the research group were higher than those in the control group after nursing (P<0.05), as shown in **Table 3** and **Figure 2**.

*Comparison of sleep quality between the two groups*

After nursing, the sleep quality, sleep time, sleep latency, sleep efficiency, dosage of hypnotic drugs, daytime function and sleep disorder scores in the research group were signifi-

cantly lower than those in the control group (P<0.05), as shown in **Table 4**.

*Comparison of postoperative complications between the two groups*

The incidence of postoperative complications in the research group was 17.95%, which is lower than that in the control group (38.46%) (P<0.05), as shown in **Table 5**.

**Discussion**

Motivational psychological nursing understands, comforts and motivates patients from the perspective of the patients. Moreover, it mobilizes family members, medical staff and psychologists to guide and intervene, so that patients can feel the care, support and encouragement from the surrounding people, thus enhancing their confidence and healing [19, 20]. Helping patients to set small goals, giving affirmations and encouragement to hard-working and progressive patients can guide patients to perceive their

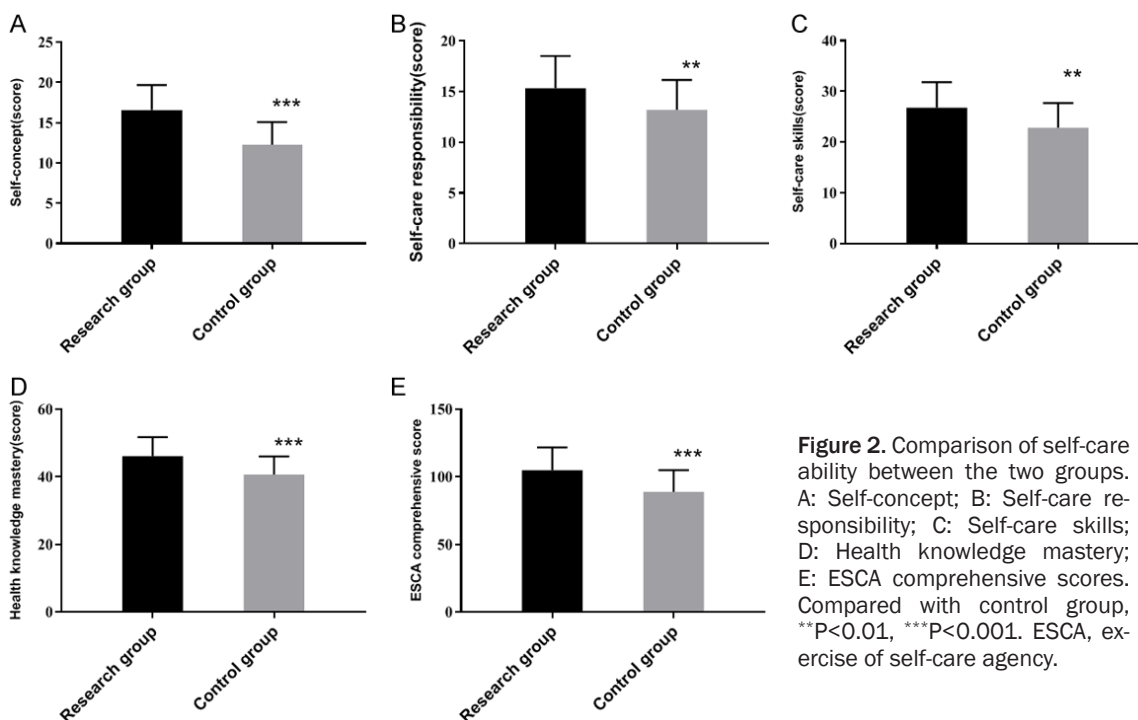
self-value and help them have the will to self-regulate, which effectively helps patients enhance their confidence in the treatment. Cognitive behavioral intervention is mainly divided into two parts. The first is the improvement of patients' understanding of the disease. Enhancing patients' knowledge by explaining glaucoma is helpful to increase the patients' understanding of their own diseases and build up their confidence in coping with diseases. The second is behavioral intervention, mainly including routine, diet and exercise intervention, which is conducive to developing patients' good living habits and promoting postoperative rehabilitation.

The results of this study showed that SDS and SAS scores in the research group were lower than those in the control group after nursing. The self-concept, self-care responsibility, self-care skills, mastery of health knowledge and ESCA comprehensive scores in the research group were higher than those in the control

**Table 3.** Comparison of self-care ability between the two groups ( $\bar{x} \pm sd$ )

Group	Research group (n=39)	Control group (n=39)	t	P
Self-concept	16.59 ± 3.11	12.26 ± 2.84	6.421	0.000
Self-care responsibility	15.33 ± 3.17	13.19 ± 2.95	3.086	0.003
Self-care skills	26.76 ± 5.03	22.82 ± 4.85	3.521	0.001
Health knowledge mastery	46.14 ± 5.56	40.68 ± 5.31	4.435	0.000
ESCA comprehensive scores	104.82 ± 16.87	88.95 ± 15.95	4.269	0.000

Note: ESCA, exercise of self-care agency.



**Figure 2.** Comparison of self-care ability between the two groups. A: Self-concept; B: Self-care responsibility; C: Self-care skills; D: Health knowledge mastery; E: ESCA comprehensive scores. Compared with control group, \*\*P<0.01, \*\*\*P<0.001. ESCA, exercise of self-care agency.

**Table 4.** Comparison of sleep quality between the two groups ( $\bar{x} \pm sd$ )

Group	Sleep quality	Sleep time	Sleep latency	Sleep efficiency	Dosage of hypnotic drugs	Daytime function	Sleep disorder scores
Research group (n=39)							
Before nursing	1.52 ± 0.76	1.33 ± 0.86	1.83 ± 0.92	1.06 ± 0.55	1.09 ± 0.63	2.08 ± 1.01	1.28 ± 0.96
After nursing	1.04 ± 0.39	0.66 ± 0.27	1.01 ± 0.48	0.53 ± 0.26	0.52 ± 0.23	1.42 ± 0.47	0.69 ± 0.45
Control group (n=39)							
Before nursing	1.50 ± 0.78	1.31 ± 0.83	1.81 ± 0.97	1.09 ± 0.52	1.12 ± 0.67	2.10 ± 1.03	1.31 ± 0.99
After nursing	1.35 ± 0.41	0.93 ± 0.34	1.42 ± 0.40	0.74 ± 0.31	0.78 ± 0.29	1.83 ± 0.44	0.93 ± 0.43
t <sub>1</sub> /t <sub>2</sub>	0.115/0.909	0.105/3.884	0.093/4.098	0.165/3.241	0.204/4.387	0.087/3.977	0.136/2.408
P <sub>1</sub> /P <sub>2</sub>	3.421/0.001	0.917/0.000	0.926/0.000	0.869/0.002	0.839/0.000	0.931/0.000	0.892/0.019

Note: t<sub>1</sub> and P<sub>1</sub> were compared between the two groups before nursing, t<sub>2</sub> and P<sub>2</sub> were compared between the two groups after nursing.

group. Related research shows that cognitive intervention for glaucoma surgery patients improves the self-care efficiency of patients [21]. A study also demonstrated that implementation of motivational psychological nursing for patients undergoing thyroid cancer surgery

improved their anxiety and depression [22]. The above results are similar to ours, suggesting that the combination of motivational psychological nursing and cognitive behavioral interventions can relieve the anxiety and depression of patients and improve their self-

**Table 5.** Comparison of postoperative complications between the two groups (n/%)

Group	Research group (n=39)	Control group (n=39)	$\chi^2$	P
Shallow anterior chamber	3 (7.69)	5 (12.82)		
Detachment of choroid	0 (0.00)	1 (2.56)		
Hyphema	1 (2.56)	2 (5.13)		
Filtered blister scar	1 (2.56)	2 (5.13)		
High intraocular pressure	2 (5.13)	5 (12.82)		
Occurrence rate	7 (17.95)	15 (38.46)	4.052	0.044

care abilities. The prevalence rate of sleep disorders in glaucoma patients is relatively high [23]. The results of this study showed that the sleep quality, sleep time, sleep latency, sleep efficiency, dosage of hypnotic drugs, daytime function and sleep disorder scores in the research group were significantly improved over those in the control group after nursing. Previous literature reported that the PSQI score decreased significantly after cognitive behavioral intervention was performed on patients in a study group (n=83) undergoing glaucoma surgery, which is similar to the results of this study [24]. It is suggested that motivational psychological nursing combined with cognitive behavioral intervention can improve the sleep quality of patients. Postoperative complications of glaucoma surgery affect the vision recovery in patients. Therefore, patients need to maintain a good mental status, actively cooperate with nursing staff, and control intraocular pressure after surgery [25].

This study showed that the incidence of postoperative complications in the research group was 17.95%, which is lower than that in the control group (38.46%). In another study, psychological care and cognitive intervention were performed in a study group patients undergoing glaucoma and cataract surgery (n=33), and conventional care was applied to the control group. The results showed that the incidence of complications in the study group (40.48%) was lower than that in the control group (69.05%), which are both higher than that in our study [26]. This may be caused by a large error due to a small sample size, or by greater advantages of motivational psychological care combined with cognitive behavior intervention. Our study suggested that motivational psychological nursing combined with

cognitive behavioral intervention can prevent postoperative complications of glaucoma. However, the sample size in our study was small, the observation period was short, and there was bias in screening cases, so the sample size will be expanded for further confirmation.

In summary, motivational psychological nursing combined with cognitive behavioral interventions can relieve anxiety and depression in elderly patients undergoing glaucoma surgery, improve self-care ability and sleep quality, and reduce postoperative complications. Moreover, this type of care is simple, convenient and effective. Therefore, this therapy has a high application value.

**Disclosure of conflict of interest**

None.

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