

Meta-Analysis of the Effect of Perioperative Psychological Nursing Intervention in Patients with Craniocerebral Tumor

Niannian Deng, Lu Mei*

Medical Office of Chongqing Sanxia University of Science and Technology, Chongqing 404100, China

Abstract: The aim is to analyze controlled studies on effect of psychological nursing intervention by meta analysis, to explore effect of psychological nursing on perioperative anxiety in patients with craniocerebral tumor, and to provide evidence-based basis for application of psychological nursing. After formulating search strategy, computer searched Pubmed, EMbase, Cochrane Library, China Biomedical Literature Database (CBM), China National Knowledge Infrastructure (CNKI), Chinese Science and Technology Journal Database (CSJD) and Wanfang Journal Full-text Database, supplemented by manual search. Relevant literature, comprehensively collect controlled study on effect of psychological nursing on perioperative anxiety in patients with craniocerebral tumor. Develop literature inclusion and exclusion criteria. Two researchers independently screened literature and evaluated quality of literature that met inclusion criteria. Meta-analysis was performed using Review Manager 5.2 software. Before data analysis, included studies were tested for heterogeneity. When heterogeneity test $P > 0.05$, included studies were considered to have statistical homogeneity, and results were analyzed by a fixed effects model; < 0.05 , it was considered that there was statistical heterogeneity among included studies, and results were analyzed by random effects model. A total of 7 articles were included, and 506 cases were included in study, including 256 cases in psychological nursing and routine nursing intervention, and 250 in routine nursing control. Meta-analysis results show that psychological nursing can improve perioperative anxiety in patients with craniocerebral tumor, and improve perioperative active coping in patients with craniocerebral tumor, reduce perioperative negative coping in patients with craniocerebral tumor, improve nursing satisfaction of patients with craniocerebral tumor. This paper summarizes and analyzes a number of studies related to psychological nursing. Meta-analysis shows that compared with routine nursing, psychological nursing can help reduce perioperative anxiety in patients with craniocerebral tumors and improve trait coping of patients with craniocerebral tumors. Ways to improve satisfaction of patients with craniocerebral tumor on nursing service. Due to limited number of studies included in this study, follow-up studies with large samples are needed to further explore and clarify intervention effect of psychological nursing on perioperative anxiety in patients with craniocerebral tumors treat.

Keywords: psychological nursing; perioperative period; anxiety; meta-analysis

1. Introduction

Psychological Nursing (Psychological Nursing) 120, is to integrate theory and skills of psychology throughout whole process of nursing procedures, to solve patient's targeted and individual psychological problems, and to impose on patient's psychological state in all aspects of nursing. Positive influence to maintain best physical and mental state of patient. It is an essential part of modern nursing program[1]. Psychological nursing is mainly divided into general psychological nursing and therapeutic psychological nursing. General psychological care refers to establishment of a good, psychological care nurse-patient relationship with patients. Coordinate interpersonal relationships of patients and assist patients to create a patient-friend relationship of mutual help, solidarity and harmony. Enrich life of patients during hospitalization and create a good rest and treatment environment for patients. Mobilize social support force of patients, and strive for more family members, friends and colleagues to actively participate in treatment and rehabilitation of patients[2]. Cultivate positive emotions in patients, maintain positive emotions in patients, and make them run through entire nursing program. Therapeutic psychological nursing is to apply method of psychotherapy to psychological nursing to change patient's wrong cognition, improve patient's bad mood, correct patient's bad behavior, so as to promote patient's physical and mental recovery and development. Commonly used clinical psychotherapy methods include psychological support, psychological counseling, cognitive therapy, behavioral therapy, relaxation therapy, music therapy, etc.[3]shows that cognitive behavioral therapy is beneficial to reduce anxiety level of PCI patients and correct bad behavior of patients.[4]It is believed that music therapy can reduce anxiety in patients with PCI, and can improve comfort of patients during operation. [4] showed that after comprehensive psychological nursing intervention, anxiety symptoms of PCI patients were improved, and postoperative complications were lower than those of control.

In recent years, incidence of craniocerebral tumors has been on rise. With improvement of medical level, more and

more patients with craniocerebral tumors have obtained a longer survival period under various treatment methods[5]. Studies have shown that anxiety is prevalent in patients with craniocerebral tumors, which not only causes mental stress, but also negatively affects quality of life of patients[6]. The main treatment method for patients with craniocerebral tumor is surgery, and anxiety is most common negative emotion during perioperative period of patients with craniocerebral tumor[7]. Excessive anxiety will reduce immune regulation function of body, affect treatment and prognosis of craniocerebral tumors, and thus endanger physical and mental health of patients. It also affects their own physical and mental health[8]. Cooperating with medical staff to actively treat disease can help patients reduce their psychological burden and improve their quality of life. Avoiding treatment and coping negatively will lead to more negative emotions about cancer and reduce quality of life[9]. Studies have shown that nursing staff should maintain communication with patients with craniocerebral tumors and their families, meet their information needs and provide psychological support during treatment process (many studies have analyzed effect of psychological nursing, but each study There are still differences in cognition, which hinders development of psychological nursing to a certain extent)[10]. In order to further clarify effect of psychological nursing intervention and promote its widespread application in clinical nursing of patients with craniocerebral tumors, this paper conducts a Meta-analysis of controlled studies on effect of psychological nursing intervention.

2. Materials and Methods

2.1 Inclusion Criteria

- (1) The controlled study is a parallel control, and language is not limited;
- (2) Research subjects: For patients with craniocerebral tumors diagnosed by clinicopathology and planned to undergo surgery, anxiety levels of intervention and control before intervention were higher than normal;
- (3) Intervention measures: intervention adopts psychological nursing and routine nursing, and control adopts routine nursing;
- (4) Evaluation indicators: Self-rating Anxiety Scale (SAS), Trait Coping Style Questionnaire (TCSQ), and patient satisfaction.

2.2 Exclusion Criteria

- (1) There is no comparative study of psychological care and routine care;
- (2) The subjects of study are patients with other causes or anxiety caused by other causes other than craniocerebral tumor surgery patients, and those who currently have mental illnesses, disorders of consciousness and communication disorders;
- (3) Intervention measures: In addition to psychological care and routine care, intervention and control also implemented other special care;
- (4) Only one with a large sample size and comprehensive information was reserved for repeated publications.

2.3 Electronic Retrieval

Computer searched Pubmed, EMBase, Cochrane Library, China Biomedical Literature Database (CBM), China National Knowledge Infrastructure (CNKI), Chinese Science and Technology Journal Database (CSJD) and Wanfang Journal Full-text Database. Since psychological nursing has been applied to clinical nursing in my country since 1994, retrieval time was from January 1994 to November 2014.

2.4 Manual Search

Relevant literatures were manually searched in school library, and data about psychological nursing intervention for perioperative anxiety in patients with craniocerebral tumors were collected as comprehensively as possible.

2.5 Retrieval Strategy

- (1) Foreign language database retrieval strategy ((therapeutic communication) AND ("neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "cancer"[All 3 Fields])) AND comparison[All Fields];
- (2) Chinese database retrieval strategy The Chinese biomedical literature database retrieval strategy is (("psychological nursing"[common field] AND ("craniocerebral tumor"[common field] OR "tumor"[common field] OR "cancer"[common field] OR "cranial tumor" [subject heading])) AND "control" [full field]) AND 1994-2014 [date]. The retrieval strategy of Chinese scientific journal database was (title or keyword=psychological nursing and any field=cranial tumor and abstract=control and year=1994-2014). The retrieval strategy of Chinese Journals Full-text Database was (SU= 'psychological nursing' AND FT= 'craniocerebral tumor' AND AB= 'control' AND YE= '1994-2014'). The retrieval strategy of Wanfang Journal Full-text Database is (Subject: (Psychological Nursing)*Cranial Tumor*Abstract: (Control)).

2.6 Data Extraction

After retrieval according to retrieval strategy, literature was screened according to above-mentioned literature inclusion and exclusion criteria. Two researchers independently read literature titles and abstracts to screen literature. The full text of undetermined literature was searched. whether to include. When two researchers disagreed during screening of literature, literature was evaluated by discussing with third researcher. After screening literatures that met inclusion criteria, two researchers independently extracted relevant data of included studies. Data extraction includes: basic information of included studies, baseline data of patients, number of patients, sample size of psychological nursing and routine nursing intervention and routine nursing control, intervention measures, evaluation indicators of research results, etc. When two researchers disagreed, solution was same as above, and final data extraction results were filled in a unified form after summarization.

2.7 Quality Evaluation

According to quality evaluation criteria of Cochrane System Reviewer's Handbook version 5.0.0, two researchers independently evaluated quality of literature. The evaluation content is as follows:

Random method: whether included literature uses random method and whether random method is correct;

Blind method: whether included literature adopts blind method, and whether there is a specific description;

Allocation concealment: Whether included literature has allocation concealment, and whether there is a specific description:

Whether there is loss to follow-up or withdrawal, and whether to use intention-to-treat analysis (ITT) when there is loss to follow-up or withdrawal. If literature meets all above evaluation criteria, quality of study is rated as A, and possibility of bias is lowest; if literature meets at least one of above four criteria, quality of study is rated as B, and possibility of bias is Moderate; if literature did not meet above four criteria at all, quality of study was rated as C, and possibility of bias was high.

2.8 Data Processing

Meta-analysis of included literature was performed using RevMan5.2 statistical software provided by Cochrane Collaboration. If graph shows symmetry, it indicates that there is no publication bias, otherwise, it indicates that there is publication bias. The difficulty of publishing articles with negative test results is main reason for existence of publication bias.

3. Results

According to retrieval strategy, a total of 370 related literatures about psychological nursing intervention in patients with craniocerebral tumor during perioperative period were retrieved. After 51 duplicate literatures were excluded, 276 literatures and abstracts were excluded from preliminary screening, and 36 literatures were excluded after further reading, 7 studies were finally included, with a total of 506 patients with craniocerebral tumor surgery (256 cases in intervention and 250 cases in control).

The 7 studies included in this study all reported baseline conditions of patients after grouping. The baselines between intervention and control in each study were consistent, which met inclusion criteria and had good comparability. The basic characteristics of each included study are shown in Table 1. Of 7 included studies, 1 study did not use randomization method, other 6 studies did randomization method, and 5 of them used randomization method description, but did not use blinding and randomization concealment: 4 1 study reported withdrawals or loss to follow-up, but none involved ITT analysis. According to quality score, 5 studies were rated B from 17 to 9.11, and 2 studies were rated C. The methodological quality evaluation of each included study is shown in Table 2.

Table 1. Basic characteristics of included studies

Included in study	Disease and pain	Anxiety before intervention	Intervention methods		Evaluating indicator
			Intervention	Control	
Li Lan 2011	Gynecological malignant tumor	Yes	Routine nursing + therapeutic communication	Routine care	(1)
Lin Di 2012	Thyroid tumor	Yes	Routine nursing + therapeutic communication	Routine care	(1)
Susie 1-2020	Gastric cancer	Yes	Routine nursing + therapeutic communication	Routine care	(1)(2)
Susie 2-2010	Malignant tumor of digestive system	Yes	Routine nursing + therapeutic communication	Routine care	(1)(2)(3)
Caiqiong 2014	Low rectal cancer	Yes	Routine nursing + therapeutic communication	Routine care	(1)(3)

Included in study	Disease and pain	Anxiety before intervention	Intervention methods		Evaluating indicator
			Intervention	Control	
Zhao Xu 2021	Gynecological malignant tumor	Yes	Routine nursing + therapeutic communication	Routine care	(1)(2)(3)
Jindi 2014	Gastric cancer	Yes	Routine nursing + therapeutic communication	Routine care	(1)(2)

Note: 1. Before intervention, there was no difference between anxiety in intervention and control; 2. Among evaluation indicators: (1) Self-rating Anxiety Scale (SAS); (2) Evaluation of trait coping styles; (3) Patient satisfaction.

Table 2. Quality evaluation of included studies

Included studies	Baseline similar	The specific method of random allocation	Whether to use blind	Whether to use random hiding	Whether to report loss/withdrawal	Whether to use ITT analysis	Quality grading
Li Lan 2011	Yes	Yes	No	No	Yes	No	B
Lin Di 2012	Yes	Yes	No	No	No	No	B
Susie 1-2010	Yes	Yes	No	No	No	No	C
Susie 2-2020	Yes	No	No	No	Yes	No	B
Caiqiong 2014	Yes	Yes	No	No	No	No	B
Zhao Xu 2021	Yes	No	No	No	No	No	B
Jindi 2014	Yes	Yes	No	No	Yes	No	C

Anxiety is shown in Figure 1. Seven studies have used Self-rating Anxiety Scale (SAS) to observe anxiety of patients with craniocerebral tumor in perioperative period. 7 A total of 506 patients were included, 256 in psychological nursing and routine nursing intervention groups, and 250 in routine nursing control. There was no statistical heterogeneity among groups ($P=0.69$, 12-0%), so a fixed effect model was used. Meta-analysis results showed that anxiety of intervention was lower than that of control. When testing existence of publication bias, it was found that graph was basically symmetrical, and no obvious publication bias was found, as shown in Figure 2.

Table 3. Meta-analysis of the intervention vs. control groups (7 studies, n = 506, fixed-effect model)

Study or Subgroup	Intervention			Control			Weight	Mean Difference IV,Fixed,95% CI
	Mean	SD	Total	Mean	SD	Total		
Li Lan 2011	43.54	3.43	20	51.53	1.87	20	28.2%	-8.00[-9.72,-6.31]
Lin Di 2012	39.63	4.07	42	46.42	3.55	41	30.0%	-6.78[-8.44,-5.16]
Susie 1-2010	41.95	7.94	31	50.43	9.44	28	4.3%	-8.45[-12.95,-4.02]
Susie 2-2020	42.046	8.403	41	51	8.442	46	6.7%	-8.93[-12.52,-5.40]
Caiqiong 2014	42.3	5.01	44	50.75	5.80	44	15.6%	-8.61[-10.92,-6.34]
Zhao Xu 2021	43.95	6.38	21	52.83	6.37	20	5.4%	-8.86[-12.76,-4.96]
Jindi 2014	42.05	7.03	57	51.56	8.14	51	9.9%	-9.45[-12.38,-6.57]
Total (95%CI)			256			250	100.0%	-8.00[-8.93,-7.08]

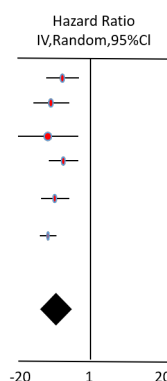


Figure 1. Effect evaluation of psychological nursing on perioperative anxiety in patients with craniocerebral tumor

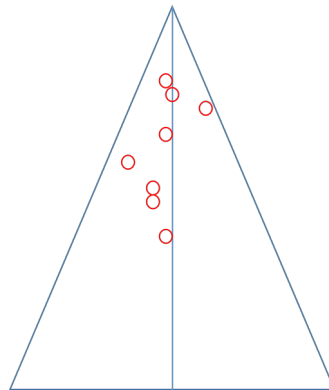


Figure 2. The funnel diagram of effect of psychological nursing on perioperative anxiety in patients with craniocerebral tumor

See Figures 3 and 4. Four studies used Trait Coping Style Questionnaire (TCSQ) to evaluate perioperative trait coping styles of patients with craniocerebral tumors. A total of 295 patients were included, including 150 in psychological nursing and routine nursing intervention groups, and 145 in routine nursing control. There was no statistical heterogeneity in positive coping (PC) among groups ($P=0.87$, $I^2=0\%$), so a fixed effect model was used. The results of Meta-analysis showed that psychological nursing and routine nursing intervention groups had higher positive coping levels than routine nursing control, see Figure 3. When testing existence of publication bias, it was found that graph was basically symmetrical, and no obvious publication bias was found, as shown in Figure 4. There was no statistical heterogeneity in negative coping (NC) among groups ($P=0.35$, $I^2=8\%$), so a fixed effect model was used, see Figure 5, when testing existence of publication bias, it is found that graph is basically symmetrical, and there is no obvious publication bias, see Figure 6.

Table 4. Meta-analysis of the intervention vs. control group (4 studies, n = 295, fixed-effect model)

Study or Subgroup	Intervention			Control			Weight	Mean Difference IV,Fixed,95% CI
	Mean	SD	Total	Mean	SD	Total		
Susie 1-2010	34.33	7.90	31	27.67	6.01	28	16.4%	6.71[3.15,10.25]
Susie 2-2020	33.563	7.836	41	28.738	7.07	46	21.0%	4.81[1.66,7.98]
Zhao Xu 2021	33.563	7.897	21	28.737	7.08	20	10.3%	4.84[0.28,9.36]
Jindi 2014	34.26	5.81	57	28.77	4.84	51	52.3%	5.51[3.53,7.51]
Total (95%CI)			150			145	100.0%	5.50[4.05,3.95]

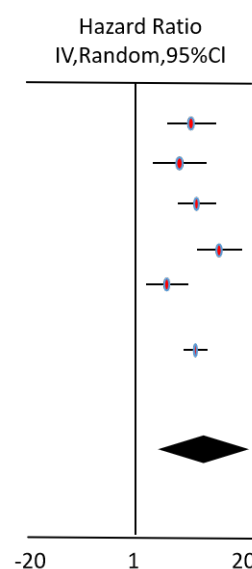


Figure 3. Evaluation of effect of psychological nursing on active coping in patients with craniocerebral tumors during perioperative period

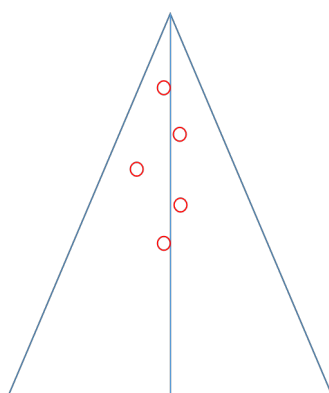


Figure 4. The funnel diagram of psychological nursing for patients with craniocerebral tumor in perioperative period

Table 5. Meta-analysis of patients with craniocerebral tumor during the perioperative period: intervention vs. control (4 studies, n = 295, fixed-effect model)

Study or Subgroup	Intervention			Control			Weight	Mean Difference
	Mean	SD	Total	Mean	SD	Total		IV,Fixed,95% CI
Susie 1-2010	26.33	8.10	31	34.63	7.69	28	14.3%	-8.31[-12.33,-4.27]
Susie 2-2020	27.733	8.552	21	33.15	7.83	46	18.7%	-5.40[-8.88,-1.91]
Zhao Xu 2021	27.733	8.552	21	33.15	7.83	20	9.0%	-5.41[-10.43,-0.37]
Jindi 2014	27.37	4.29	57	35.93	5.97	51	58.0%	-8.55[-10.52,-6.54]
Total (95%CI)			150			145	100.0%	-7.63[-9.14,-6.10]

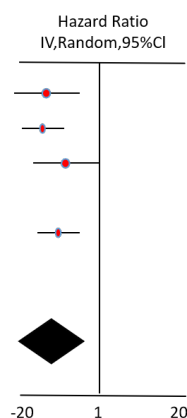


Figure 5. Evaluation of effect of psychological nursing on negative coping in patients with craniocerebral tumors during perioperative period

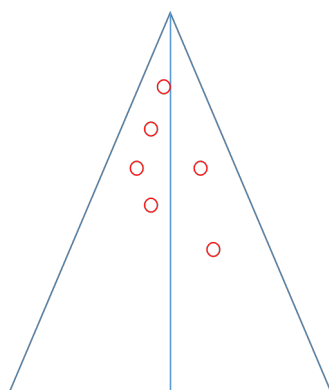


Figure 6. The funnel diagram of psychological nursing on negative coping in patients with craniocerebral tumor during perioperative period

Patient satisfaction is shown in Figure 7. There are 3 studies that provide feedback on patient satisfaction in perioperative

period of patients with craniocerebral tumors, of which 1 study "provided data that could not be converted and applied, and only other two conducted Meta-analysis. A total of 128 patients, psychological care and routine care. There were 62 cases in intervention and 66 cases in conventional nursing control. There was no statistical heterogeneity between groups ($P=0.99$, $I^2=0\%$), so a fixed effect model was used. The results showed that psychological nursing and routine nursing intervention groups were satisfied with patients Compared with conventional nursing control. When testing existence of publication bias, it was found that graph was basically symmetrical, and no obvious publication bias was found. See Figure 8.

Table 6. Meta-analysis of patients with intracranial tumor during the perioperative period: intervention vs. control (2 studies, n = 128, fixed-effect model)

Study or Subgroup	Intervention			Control			Weight	Mean Difference IV,Fixed,95% CI
	Mean	SD	Total	Mean	SD	Total		
Susie 2-2020	3.855	0.690	41	3.306	0.590	46	67.5%	0.55[0.29,0.81]
Zhao Xu 2011	3.847	0.691	21	3.303	0.581	20	32.8%	0.55[0.18,0.92]
Total (95%CI)			62			66	100.0%	0.55[0.33,0.77]

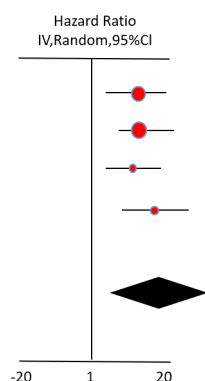


Figure 7. The effect evaluation of psychological nursing on satisfaction of patients with craniocerebral tumor during perioperative period

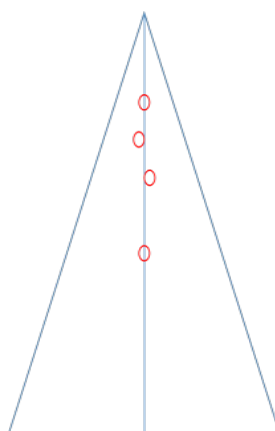


Figure 8. Funnel diagram of psychological nursing on perioperative patient satisfaction of patients with craniocerebral tumor

4. Discussion

The modern medical concept emphasizes team assistance between medical staff and patients in diagnosis and treatment of craniocerebral tumors, and good communication helps medical staff to understand individual needs of patients and promote teamwork [11]. It shows that patients with craniocerebral tumors prefer to communicate with medical staff to obtain treatment-related information to improve their confidence in overcoming disease. Nursing staff and patients with craniocerebral tumor to establish psychological care can not only meet information and psychological needs of patients with craniocerebral tumor, but also affect treatment process and outcome of patients with craniocerebral tumor. At same time, psychological nursing can improve nursing services and improve patient satisfaction[12]. At present, psychological nursing has been regarded by domestic and 11 foreign nursing circles as one of three nursing behaviors that can reflect professional

value of nurses[13]. The application of psychological nursing is an extension of connotation of nursing service. However, studies have shown that nurses tend to maintain a superficial, non-therapeutic level of communication with patients and families. In our country, psychological nursing is often limited to narrow psychological nursing, that is, communication between nursing staff and patients during treatment and nursing operations[14]. Therefore, it is of practical significance to make nursing staff realize importance of psychological nursing through evaluation of effect of psychological nursing. Craniocerebral tumor is a common malignant brain tumor disease, because brain tumor can compress nerves and blood circulation of patients, and then seriously threaten their life safety. Most patients suffer from depression, tension, anxiety and other negative emotions due to lack of deep and thorough understanding of disease[15]. At same time, most elderly patients are afraid of increasing burden on their children, and are prone to give up on themselves and internal diseases, and these negative emotions will seriously affect effect of surgical treatment[16]. Therefore, it is essential to give effective psychological care to patients with craniocerebral tumors, to eliminate their bad mentality and improve prognosis of patients[17]. This study showed that SDS and SAS scores of patients in study were lower than those in control; incidence of complications such as pulmonary infection, pressure ulcers, and cerebral hemorrhage in study was lower than that in control; patients in study had statistical significance; The nursing satisfaction was higher than that of control, which indicated that nursing staff implemented psychological nursing for patients with craniocerebral tumor during perioperative period, which could improve patients' unhealthy mentality, reduce incidence of complications, and effectively improve their nursing satisfaction[18]. The reason for analysis is that routine nursing is often implemented for patients with craniocerebral tumors during perioperative period. Although this nursing model has certain effects, due to its single nursing content, most nursing staff usually carry out nursing measures according to doctor's order, which is difficult to meet basic needs of patients[19]. Failing to consider its various aspects, unable to improve patient's treatment compliance and cooperation, nursing effect is not ideal[20]. In this study, on basis of routine nursing, psychological care was given to patients with craniocerebral tumors during perioperative period[21]. Before operation, nurses gave health education to patients, explained knowledge of intracranial tumors and surgical treatment, introduced previous successful cases of craniocerebral surgery, and reduced risk of brain tumors[22]. Psychological burden of patients; actively communicate with patients, listen to their inner thoughts patiently, analyze psychological needs of patients, timely conduct targeted psychological counseling for patients with bad mentality, improve their negative mentality, eliminate patients' fear, and encourage them to actively cooperate with treatment[23]. After operation, when patient wakes up, take initiative to inform him of operation situation, explain precautions after operation, improve his clinical cooperation, and promote early recovery of postoperative patient; number of ward visits increases, and nurses actively communicate with patient to answer their doubts and relieve patient[24]. Worry and 12 tension, and organize patient exchanges to improve patients' confidence in recovery. Affected by factors such as external environment and number of samples, quality of life needs to be analyzed and supplemented by clinical research[25]. To sum up, implementation of psychological nursing in perioperative period of craniocerebral tumor patients by nursing staff can not only alleviate patients' unhealthy mentality, reduce incidence of complications, but also effectively improve their nursing satisfaction, which is worthy of clinical application.

Author Contributions

N. D. designed the research and wrote the paper. The author has read and agreed to the published version of the manuscript.

Funding

This paper has no funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Not applicable.

Acknowledgments

The author wishes to express their hearty thanks to the anonymous referees for their valuable suggestions and comments.

Conflicts of Interest

The authors declare no conflict of interest.

References

- [1] Qin, S., Gu, Y., & Song, T. (2020). Effect of peer support on patient anxiety during the coronary angiography or percutaneous coronary intervention perioperative period: a protocol for a systematic review and meta-analysis of randomised controlled trials. *BMJ open*, 10(3), e031952.
- [2] Fang, J., Yu, C., Liu, J., Mao, X., Jia, X., Luo, J., & Liu, R. (2022). A systematic review and meta-analysis of the effects of muscle relaxation training vs. conventional nursing on the depression, anxiety and life quality of patients with breast cancer. *Translational Cancer Research*, 11(3), 548.
- [3] Zhu, H., Cheng, L., Tang, T., Ke, Y., Wu, D., & Huang, Y. (2021). The effect of operating room nursing intervention on the psychological status and incidence of emergence agitation in the recovery period of general anesthesia: A protocol for systematic review and meta-analysis. *Medicine*, 100(45), e27703.
- [4] Ruiz Hernández, C., Gómez-Urquiza, J. L., Pradas-Hernández, L., Vargas Roman, K., Suleiman-Martos, N., Albendín-García, L., & Cañadas-De la Fuente, G. A. (2021). Effectiveness of nursing interventions for preoperative anxiety in adults: A systematic review with meta-analysis. *Journal of advanced nursing*, 77(8), 3274-3285.
- [5] Nadinda, P. G., van Ryckeghem, D. M., & Peters, M. L. (2022). Can perioperative psychological interventions decrease the risk of postsurgical pain and disability? A systematic review and meta-analysis of randomized controlled trials. *Pain*, 163(7), 1254-1273.
- [6] Li, H., Liu, Y., Li, Q., Fan, J., Gan, L., & Wang, Y. (2020). Effects of a fast track surgery nursing program in perioperative care of older patients with a hip fracture. *European geriatric medicine*, 11(4), 519-525.
- [7] Shi, X., Ma, L., Hao, J., & Yan, W. (2021). Regulatory effects of comprehensive psychological intervention on adverse emotions and immune status of cervical cancer patients during the perioperative period. *American journal of translational research*, 13(6), 6362.
- [8] Busch, I. M., Moretti, F., Purgato, M., Barbui, C., Wu, A. W., & Rimondini, M. (2020). Psychological and psychosomatic symptoms of second victims of adverse events: a systematic review and meta-analysis. *Journal of patient safety*, 16(2), e61.
- [9] Stein, B., Mueller, M. M., Meyer, L. K., Söllner, W., & CL Guidelines Working Group. (2020). Psychiatric and psychosomatic consultation-liaison Services in General Hospitals: a systematic review and meta-analysis of effects on symptoms of depression and anxiety. *Psychotherapy and Psychosomatics*, 89(1), 6-16.
- [10] Simonetti, V., Tomietto, M., Comparcini, D., Vankova, N., Marcelli, S., & Cicolini, G. (2022). Effectiveness of virtual reality in the management of paediatric anxiety during the peri-operative period: A systematic review and meta-analysis. *International Journal of Nursing Studies*, 125, 104115.
- [11] Szeverenyi, C., Kekecs, Z., Johnson, A., Elkins, G., Csernatony, Z., & Varga, K. (2018). The use of adjunct psychosocial interventions can decrease postoperative pain and improve the quality of clinical care in orthopedic surgery: a systematic review and meta-analysis of randomized controlled trials. *The Journal of Pain*, 19(11), 1231-1252.
- [12] McFarland, S., Coufopolous, A., & Lycett, D. (2021). The effect of telehealth versus usual care for home-care patients with long-term conditions: A systematic review, meta-analysis and qualitative synthesis. *Journal of telemedicine and telecare*, 27(2), 69-87.
- [13] Pestana-Santos, M., Pires, R., Goncalves, A., Parola, V., Santos, M. R., & Lomba, L. (2021). Nonpharmacological interventions used in the perioperative period to prevent anxiety in adolescents: a scoping review. *JBIC Evidence Synthesis*, 19(9), 2155-2187.
- [14] Yuan, Y., Hu, Y., Cheng, J. X., & Ding, P. (2019). Psychological nursing approach on anxiety and depression of patients with severe urinary incontinence after radical prostatectomy—a pilot study. *Journal of International Medical Research*, 47(11), 5689-5701.
- [15] Cheng, H., Lin, L., Wang, S., Zhang, Y., Liu, T., Yuan, Y.,... & Tian, L. (2022). Aromatherapy with single essential oils can significantly improve the sleep quality of cancer patients: a meta-analysis. *BMC Complementary Medicine and Therapies*, 22(1), 1-12.
- [16] Alvarez-Garcia, C., & Yaban, Z. Ş. (2020). The effects of preoperative guided imagery interventions on preoperative anxiety and postoperative pain: A meta-analysis. *Complementary therapies in clinical practice*, 38, 101077.
- [17] Zhai, X., Ren, L. N., Liu, Y., Liu, C. J., Su, X. G., & Feng, B. E. (2021). Resilience Training for Nurses: A Meta-analysis. *Journal of Hospice & Palliative Nursing*, 23(6), 544-550.
- [18] Tong, Q. Y., Liu, R., Zhang, K., Gao, Y., Cui, G. W., & Shen, W. D. (2021). Can acupuncture therapy reduce preoperative anxiety? A systematic review and meta-analysis. *Journal of Integrative Medicine*, 19(1), 20-28.
- [19] Kim, N., Yang, J., Lee, K. S., & Shin, I. S. (2021). The effects of preoperative education for patients with cancer: a systematic review and meta-analysis. *Cancer Nursing*, 44(6), E715-E726.
- [20] Monfared, A., Mirzaee Jirdehi, M., Mansour Ghanaei, F., Joukar, F., & Kazemnezhad Leyli, E. (2020). The effect of lavender essential oil aromatherapy on the anxiety of endoscopy candidates: A clinical trial. *Iran Journal of Nursing*,

32(122), 55-68.

- [21] Liu, Y., Chen, J., Pan, Y., Cai, Y., Ge, C., Chu, H.,... & Wang, L. (2021). The effects of video based nursing education on perioperative anxiety and depression in patients with gastric cancer. *Psychology, Health & Medicine*, 26(7), 867-876.
- [22] Pestana-Santos, M., Pereira, M. J., Santos, E., Lomba, L., & Santos, M. R. (2021). Effectiveness of non-pharmacological interventions to manage anxiety in adolescents in the perioperative period: a systematic review protocol. *JBI Evidence Synthesis*, 19(10), 2863-2869.
- [23] Monterosso, L., Platt, V., Bulsara, M., & Berg, M. (2019). Systematic review and meta-analysis of patient reported outcomes for nurse-led models of survivorship care for adult cancer patients. *Cancer treatment reviews*, 73, 62-72.
- [24] Sorel, J. C., Veltman, E. S., Honig, A., & Poolman, R. W. (2019). The influence of preoperative psychological distress on pain and function after total knee arthroplasty: a systematic review and meta-analysis. *Bone Joint J*, 101(1), 7-14.
- [25] Shao, J., Xiao, T., Shi, M., Zhou, X., Wang, Z., Lin, T.,... & Zhang, A. (2019). Effect of multimedia-based nursing visit on perioperative anxiety in esophageal squamous cell carcinoma patients undergoing video-assisted thoracoscopic surgery. *Psychology, Health & Medicine*, 24(10), 1198-1206.