



Effect Evaluation of Psychological Nursing Intervention Model for COVID-19 Patients

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Abstract: Objective — To explore the clinical effect of psychological nursing intervention on the anxiety, depression, fear and other adverse psychological problems of COVID-19 patients. Methods — Choose 23 cases of COVID-19 patients treated by our hospital from January 24, 2020 to February 28, 2020 as the research objects. The patients were given psy-chological care interventions when they were admitted to the hospital until they were discharged. Use Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SDS), Symptom Check List-90 (SCL-90) and fear scale to perform psycho-logical evaluations when the patients were admitted to the hospital (T1), one week after the psychological intervention was implemented (T2), and when they were discharged (T3). Results — The SAS, SDS, and SCL-90 fear factor scores of T2 were lower than those of T1 ($P<0.05$), and the SAS, SDS, and SCL-90 fear factor scores of T3 were lower than those of T2 ($P<0.05$). Conclusion — This psychological nursing intervention model established in this study can effectively improve COVID-19 patients' adverse psychological problems of the anxiety, depression, fear, etc.

Keywords: COVID-19, psychological characteristics, psychological interventions, effect evaluation

Since December 2019, the COVID-19 epidemic has occurred in Wuhan, Hubei, China. With the rapid spread of the virus, the epidemic has quickly spread to other regions of China and abroad. COVID-19 pneumonia is a new infectious disease. At present, humans are still further deepening their understanding of the pathogenesis of the disease, the full picture of the disease course, the outcome of the disease course and the characteristics of different stages of the disease. Due to the lack of human understanding of the disease, the disease spreads rapidly and widely, and the number of infected people is large, which seriously threatens human health and social stability.^[1] Patients not only endure physical pain, but also have unhealthy psychological emotions such as tension, pessimism, anxiety, depression, fear, and a sudden decrease in self-worth^[2-5]. Studies have shown^[6] that scientific and effective psychological nursing interventions for COVID-19 patients can keep patients in a good psychological state, promote disease outcomes, and maintain social stability. This study aims to explore effective psychological nursing intervention methods to enable patients with COVID-19 to maintain a good mental state and defeat the virus as soon as possible.

1. Research objects and methods

1.1 Research objects

23 COVID-19 patients admitted to our hospital from January 24, 2020 to February 28, 2020 were selected as the research objects. Inclusion criteria: meet the diagnostic criteria of COVID-19 diagnosis and treatment Program (trial version 1 to 6), aged 16 years old, clear consciousness, normal communication skills, and volunteered to participate in this study. Exclusion criteria: age <16 , critically ill patients, unconscious, unable to take care of themselves, and uncooperative.

1.2 Methods

1.2.1 Routine nursing intervention

(1) Basic nursing. Carefully take care of patients' daily life, morning and evening care, and provide necessary daily necessities. After the patient enters the isolation ward, there is no family member to accompany the patient. The nursing staff should not only take care of the treatment and care, but also assist in their daily life. In particular, they should strengthen the care of the elderly and children. When necessary, assist them in washing their faces, feet, combing hair, and eating meals. Help them to go to the toilet, dispose of domestic garbage in time. Help patients to have a haircut, shave, cut nails, bathe, and keep the skin clean and hygienic. Promptly replace sheets and quilts, keep the bed unit clean, strictly implement the disinfection and isolation system, and provide for patients safe, comfortable and harmonious hospital environment.

(2) Strictly implement the disinfection and isolation system. Air disinfection machine, towels and mops soaked in

chlorine disinfectant should be used in strict accordance with the specifications to disinfect the air, surface and ground to prevent cross-infection. Terminal disinfection was performed for patients discharged from hospital, transferred to another department or died. Introduce the purpose and significance of disinfection and isolation to the patient, and obtain the patient's understanding and cooperation.

(3) Condition observation. The main clinical manifestations of patients with COVID-19 are fever, cough and fatigue, sometimes accompanied by decreased appetite, diarrhea and other gastrointestinal symptoms. Every patient with COVID-19 is equipped with an ECG monitor when admitted to the hospital to closely observe the patient's condition. Monitor blood oxygen saturation at all times, and shift every 4 hours of nursing. Monitor body temperature, pulse, respiration, oxygen saturation, etc. in each shift to discover problems in time, deal with them in time, and relieve physical pain of patients.

(4) Nutritional support and management and health guidance. According to the "Chinese Resident Dietary Guidelines" (2016 Edition) and the "New Coronavirus Infection Pneumonia Diagnosis and Treatment Plan (Trial Version 1-7 Edition)" issued by the National Health Commission, combined with the specific situation of the patient, during the isolation treatment, the nursing department, medical department, and dietary department of the hospital will jointly distribute nutritious meals with balanced nutrition and sufficient energy to improve the body's immunity.

1.2.2 Psychosocial support^[7] and cognitive behavioral intervention^[8-9]

To establish a mutual trust between nurses and patients, medical staff should always maintain enthusiasm, mild language, dignified manners, kindly address patients, detailed self-introduction, patiently introduce the ward environment, admission instructions, related systems, etc., and use our responsibilities Heart, patience, love and empathy, to provide patients with life and psychological support, feel the sincerity and care from medical staff, and build a sense of security and trust.

Strengthen the education of related knowledge about COVID-19 to enable patients to correctly understand the disease, relieve their unnecessary anxiety and panic caused by not understanding the disease knowledge, and understand the medical staff and cooperate with the treatment.

Improve the professionalism of the nursing staff, and strengthen humanistic care. After the diagnosis of new coronary pneumonia, patients need to be hospitalized and isolated for treatment. Without family support, restrictions on the range of activities and freedom are prone to fear and anxiety, and they need more care.

(4) Positively guide patients to pay attention to positive information, establish doctor-patient groups, and talk about and share successful experiences. Especially play an example role in curing patients, and tell patients that the country, province, and city attach great importance to them. Hospitals actively diagnose and treat, and all sectors of society are strongly supporting them, giving everyone the confidence and courage to overcome the disease.

1.2.3 Use of psychological adjustment methods such as catharsis and relaxation^[10-11]

Listen carefully, let the patient vent bad emotions through crying or talk to family members and medical staff, and pay attention to empathy with the patient when listening. Even if the patient's thoughts are found to be excessive or deviated, he must express his understanding and not interrupt the patient.

(2) Under the guidance of psychologists, combined with the new coronary pneumonia diagnosis and treatment plan, nursing points, etc., guide the patient through listening to music, meditation, and body scanning Psychological adjustment methods such as Dharma, mindful breathing training, and landing techniques are used to soothe muscles, relieve pain, relax the body and mind, especially pay attention to proper exercise, and organize patients to sing, sing, do radio gymnastics, and perform radio gymnastics every day without affecting treatment and rest. Square dance, Tai Chi, Baduan Jin, etc. are consistent with the current psychological nursing practice of clinical patients^[24-27] and the nursing model proposed by the "fang cabin hospital" in Wuhan. The isolation ward has established a psychological counseling team consisting of 3 head nurses and several senior nurses, of which 2 nurses have electively studied mental health, and 1 nurse is qualified for psychological consultation. Under the guidance of psychologists, unified training In the isolation ward, a member of the psychological consultation team is arranged every day to be responsible for the psychological counseling and the teaching of psychological adjustment methods for the patients, which has well alleviated the patients' anxiety, depression, fear and other bad emotions.

1.3 Evaluation methods

Scientifically design questionnaires, and use a combination of on-site questionnaires and online questionnaires for psychological evaluation and scoring. Using Self-rating Anxiety Scale (SAS)^[12], Self-rating Depression Scale (SDS)^[13], Symptom Self-rating Scale (SCL-90)^[14] The fear subscale evaluates the anxiety, depression and fear scores of patients when they are admitted to the hospital, one week after the intervention measures are implemented, and when they are

discharged. The SAS judgment criteria are as follows: No anxiety under 50 points, mild anxiety under 50-59, moderate anxiety 60-69, and severe anxiety over 69 points; SDS judgment criteria are as follows. No depression under 53 points, mild anxiety 53-62 Degree depression, 63-72 is moderate depression, 72 points or more is severe depression; SCL90 fear factor judgment standard: the higher the score, the more fear, the score is less than 14 points, the fear symptoms are not obvious, and the fear symptoms above 21 points are obvious.

1.4 Statistical methods

Use Excel software to enter and establish a database, use SPSS19.0 and Amos7.0 for data processing and statistical analysis. Measurement data are expressed as mean ± standard deviation; use t test; P<0.05 indicates that the difference is statistically significant .

2. Results

When patients with new coronary pneumonia were admitted to the hospital, 19 of the 23 patients had anxiety, accounting for 82.60%; 19 cases of depression, accounting for 82.60%; 17 cases of fear, accounting for 73.91%. After a week of interventions, anxiety, depression, fear dropped to 65.22%, 52.18%, and 73.91% respectively; the number of people with anxiety, depression, and fear at discharge was further reduced to 39.13%, 43.48%, and 43.48%, respectively. See Table 1 for details.

Table 1. The distribution of anxiety, depression, and fear of COVID-19 patients (T1, T2 and T3)

	SAS anxiety scale			SDS depression scale			SCL-90 fear scale		
	Normal cases(%)	Mild to moderate cases (%)	Severe cases (%)	Normal cases (%)	Mild to moderate cases(%)	Severe cases(%)	Not obvious cases(%)	Moderate cases(%)	Obvious cases(%)
On admission (T1)	1(4%)	20(87%)	2(9%)	3(13)	17(73%)	3(13%)	1(4%)	13(57%)	9(39%)
Intervening (T2)	5(22%)	15(65%)	3(13%)	10(43%)	10(43%)	3(13%)	6(26%)	11(48%)	6(26%)
On discharge (T3)	16(70%)	4(17%)	3(13%)	14(61%)	9(39%)	0(0%)	13(57%)	6(26%)	4(17%)

The anxiety, depression, and fear scores of COVID-19 patients on admission were 58.34±8.58, 59.30±9.54, and 2.80±0.75, which were all higher than the domestic norm. After a week of intervention, they dropped to 55.61±10.62, 55.80±11.42 and 2.52±0.63 respectively., and dropped to 48.08±14.85, 50.38±10.96, 2.02±0.78 when they were discharged from the hospital, all of which were statistically significant (P<0.05). See Table 2 for details.

Table 2. Scores of anxiety, depression, and fear of COVID-19 patients (T1, T2, T3) ($\bar{X} \pm S$)

	Domestic norm	On admission	Intervening	On discharge	T Value	P value
SAS Anxiety scale (Mean ± standard deviation)	43.00±10.00	58.34±8.58	55.61±10.62	48.08±14.85	t1=2.518 t2=3.639	P1=0.20 P2=0.001
SDS Depression scale (Mean ± standard deviation)	42.00±11.00	59.30±9.54	55.80±11.42	50.38±10.96	t1=2.548 t2=3.960	P1=0.018 P2=0.001
SCL90 Fear scale (Mean ± standard deviation)	1.23±0.41	2.80±0.75	2.52±0.63	2.02±0.78	t1=2.757 t2=3.388	P1=0.011 P2=0.003

Note: t1 is the t value compared with te intervntion during admission, and t2 is the t value compared with the discharge during the intervention. P1 is the p-value compared with the intervention during admission, and P2 is the p-value compared with the discharge during the intervention;

3. Discussion

3.1 attention should be paid to anxiety, depression and bad psychological emotions of COVID-19 patients

Table 1 and Table 2 show that the anxiety, depression, and fear scores of COVID-19 patients when they are admitted to the hospital are significantly higher than the domestic norm ^[15-16]. Bad emotions such as fear ^[17-18]. The main reasons are

as follows.

(1) COVID-19 is a new and acute infectious disease^[19-20]. On January 30, 2020, the World Health Organization (WHO) designated the new coronavirus infection as an international public health emergency (Public Health Emergency of International Concern, PHEIC)^[21], the National Health Commission decided to include pneumonia infected by the new coronavirus into the statutory category B management of infectious diseases, and adopted preventive and control measures for category A infectious diseases^[22], which caused a great society panic and economic loss. Due to the lack of human understanding of it, there are no specific treatment drugs, therapies and vaccines, and its infectiousness, rapid spreading speed and wide spreading range have caused a world pandemic.

(2) Once the patients are diagnosed, they need to be treated in isolation. The patients are restricted in their range of activities and freedom, without family support, and no warmth from the family. They often feel abandoned and lonely.

(3) The medical staff in the isolation ward adopt secondary and tertiary protection, and are wrapped in layers of protective materials from head to toe. The ground, surface, and air in the ward must be subjected to strict disinfection and isolation measures. The patient is treated by a normal natural person. Facing these suddenly will inevitably cause fear and anxiety.

(4) Many patients are worried that the treatment effect is not good and the prognosis is not good when they are diagnosed with new coronary pneumonia. Even if cured, they will leave sequelae like SARS and seriously affect the quality of life; 5) New coronary pneumonia is very contagious. Of the 23 confirmed patients, 14 had a family or cluster disease. The patients were generally worried about the safety of their family members. In addition, they were worried about work, study, and leaders, friends, colleagues and neighbors who were afraid that they had contracted new coronary pneumonia. Isolate yourself, stay away from yourself, etc.

3.2 COVID-19 patients must be given scientific, standardized and comprehensive nursing intervention measures

Based on the nature of emerging infectious diseases^[20], how to care for patients with infectious diseases has become a common focus of clinical nurses. Routine basic nursing, treatment, condition observation, ward disinfection and isolation measures, dietary health guidance, health knowledge education, etc. are to meet the basic physiological and safety needs of patients, provide patients with a safe, comfortable and harmonious hospitalization environment, and solve the problems of patients. Regardless of your worries, you can receive and cooperate with treatment safely during hospitalization to improve the efficacy. However, according to Maslow's hierarchy of needs theory and modern nursing service requirements^[23], in addition, we should also pay attention to the social, respect and self-needs of patients, that is, pay more attention to the mental health needs of patients. Under the guidance of psychologists, we actively adopt psychosocial support, cognitive behavioral intervention, patient listening, encourage catharsis, relaxation therapy and other psychological therapies for patients to implement psychological counseling. These methods are simple, convenient for clinical operation, and easy for patients to accept. In particular, it pays attention to appropriate exercises. Under the premise of not affecting the treatment and rest of the patients, organize patients to sing singing, do radio gymnastics, dance square dances, practice Tai Chi, Baduan Jin, etc. every day, which is in line with the current psychological nursing practice of clinical patients^[24-27]. Consistent with the nursing model proposed by Wuhan "Square Cabin Hospital", it can not only strengthen the body, but also improve the mood, change the patient's thinking and behavior, restore their love of life, establish confidence in fighting the disease, and have a positive atmosphere in the ward for the better. It effectively improved the patient's anxiety, depression, fear and other bad emotions. This study effectively combines conventional basic, therapeutic care and psychological care, and integrates process-based communication skills^[28-29] into the overall patient care, which greatly improves the nurse's communication skills and establishes a good, mutual trust. The nurse-patient relationship makes the nursing service process and standardized, and effectively guides the development of nursing service.

3.3 The nursing intervention measures established in this study can effectively improve the negative psychological mood of COVID-19 patients

One week after the intervention measures were implemented, the patient's anxiety score decreased from 58.34 ± 8.58 to 55.61 ± 10.62 , $P < 0.05$, which was statistically significant; the depression score decreased from 59.30 ± 9.54 to 55.80 ± 11.42 , $P < 0.05$, which was statistically significant; fear score dropped from 2.80 ± 0.75 to 2.52 ± 0.63 , $P < 0.05$, which is statistically significant. At this time, the patient is receiving treatment and has not been cured and discharged. Therefore, the improvement of the patient's bad psychological mood is not due to the cure of the disease. It is the effect of nursing intervention. Comprehensive knowledge and education of new coronary pneumonia allow patients to correctly understand

the disease, avoid blind panic and anxiety, and positive psychological counseling and positive guidance allow patients to establish the courage and confidence to overcome the disease, and warm and sincere services have won patients. Through the uninterrupted systematic, standardized, and targeted nursing intervention during the whole hospitalization period, the anxiety score of the patient dropped to 48.08 ± 14.85 , the depression score dropped to 50.38 ± 10.96 , and the fear score dropped to 2.02 ± 0.78 . It effectively improved the bad mood of patients with new coronary pneumonia.

The nursing intervention measures for COVID-19 patients formulated in this study are scientific, comprehensive and standardized, and effectively improve the anxiety, depression, fear and other bad moods of COVID-19 patients. Although the sample size of this study is small, the nursing model in this study refers to COVID-19 diagnosis and treatment plan, nursing standard requirements, summary of nursing experience on platforms such as Healthy China, China Nursing Management, and literature on psychological care of COVID-19 patients, etc. Good results have been achieved, and the nursing intervention measures can be further used in clinical practice.

4. Acknowledgments

This article is supported and funded by Wuhu Municipal Health Bureau (project No.: 2020RKX1-6).

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