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The effects of psychological intervention on anxiety symptoms of COVID19-positive patients isolated in hospital wards

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Abstract. – OBJECTIVE: The study aimed to explore the effects of psychological intervention on alleviating anxiety in patients in novel coronavirus (2019-nCoV) isolation wards.

PATIENTS AND METHODS: Between January 24th, 2020 and March 5th, 2020, 103 patients were studied. Among these, 32 were patients in the isolation ward of the Infectious Disease Department in Baoding Second Hospital with suspected 2019-nCoV, and 71 patients diagnosed with 2019-nCoV were in the Tangshan Infectious Disease Hospital. Of the 103 patients included, 97 cases were observed in isolation. Using a self-control study design, each patient's anxiety was scored on a self-rating anxiety scale before receiving the psychological intervention (on the 7th day of isolation) and after receiving the intervention (on the 14th day of isolation). The severity of anxiety was evaluated based on the anxiety score before receiving the intervention. The anxiety scores before and after receiving the intervention were then compared using the paired *t*-test, and $p<0.05$ was considered statistically significant.

RESULTS: After receiving the psychological intervention once or twice a week, the anxiety of the patients improved significantly after one week.

CONCLUSIONS: The anxiety of patients with 2019-nCoV in isolation wards can be alleviated through psychological intervention. By alleviating patient anxiety, this intervention also helps patients maintain their psychological wellbeing, which promotes rehabilitation and helps with the control of 2019-nCoV.

Key Words:
Novel coronavirus pneumonia, Isolation ward, Anxiety, Psychological intervention, Control.

Introduction

Novel coronavirus pneumonia (2019-nCoV) has spread widely and is highly infectious; therefore, it is a public health emergency. There is currently no specific treatment, so it poses a considerable threat to human life and health. In such circumstances, it is easy for people to become anxious, which can lead to acute stress disorder, traumatic stress disorder, depression, other psychological disorders, and suicide[1]. Most of the psychological interventions currently available in China are passive psychotherapy methods administered after the occurrence of psychological problems; active intervention is rarely performed. However, psychological intervention is an important part of the response to a public health emergency that cannot be ignored. A perfect crisis prevention and control system should include the monitoring and prevention of public psychological disorders. More than 58% of respondents had psychological problems during public health emergencies and therefore had significant psychological intervention requirements[2,3]. Consequently, it is necessary to consider the use of psychological intervention in preventing psychological disorders in patients in 2019-nCoV isolation wards while focusing on

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the epidemiological investigation of 2019-nCoV and the prevention of nosocomial infection[4,5].

Patients and Methods

Between January 24th, 2020 and March 5th, 2020, 103 patients were studied. Of these, 32 were in the isolation ward of the Infectious Disease Department in Baoding Second Hospital with suspected 2019-nCoV and 71 diagnosed with 2019-nCoV were in Tangshan Infectious Disease Hospital. Of these, one critically ill patient in Tangshan Infectious Disease Hospital died, and five pediatric patients were unable to complete the self-rating anxiety scale (SAS). A total of 97 patients (47 male and 50 female) completed the SAS. The age of the patients ranged from 13 to 85 years, with an average age of 41.2 years. The duration of their isolation was more than 14 days, with the longest being 28 days, and the average duration was 19.2 days. The study was conducted in accordance with the Declaration of Helsinki(as was revised in 2013). The study was approved by Ethics Committee of Baoding Second Hospital and informed consent was taken from all the patients.

The SAS score was obtained before receiving the psychological intervention (on the seventh day of isolation), and the severity of the anxiety was graded based on this score as normal, mild, moderate, or severe. The patients were then divided into two groups for the psychological intervention. Patients in the mild group (patients experiencing normal and mild anxiety) received the psychological intervention and communication treatment from a psychotherapist once or twice a week. Patients in the moderate and severe group (patients experiencing moderate and severe anxiety) received the psychological intervention from a psychotherapist two or three times a week. After one week of treatment, namely on the 14th day of isolation, the SAS score was obtained again for all the patients. The self-control method was adopted, and the paired *t*-test was used to compare each patient's anxiety scores before and after receiving the psychological intervention.

SPSS 17.0 was used for the statistical analysis (SPSS Inc., Chicago, IL, USA). The results were presented as mean ± standard deviation ($\bar{x} \pm s$). The paired *t*-test was used for comparison between the two groups, and $p<0.05$ was considered statistically significant (Table I).

Results

The results of the study revealed that after receiving the psychological intervention from psychotherapists, the SAS score of patients was significantly lower on the 14th day of isolation than on the 7th day; this difference was statistically significant (Table I). It can therefore be suggested that after receiving psychological intervention from a psychotherapist, the psychological status of patients in the 2019-nCoV isolation wards improved significantly.

Discussion

Since emerging in China, 2019-nCoV has spread worldwide and attracted global attention from the media, policymakers, and the public[6-10]. The global outbreak has affected the security of many countries and the global economy[11-13]. With the rapid spread and local outbreaks of the virus, the key to a rapid response from all countries is to control its transmission[14-16].

There is currently no specific treatment for 2019-nCoV[17-22]. When facing public events that threaten life and safety, it is normal for people to be afraid. When the object of that fear has many uncertainties, it is also easy for people's psychological tension to increase, shaking the cornerstone of their mental stability and strength. When an object of fear cannot be seen or touched and no effective means of control is available, it is difficult to relieve anxiety. This anxiety may cause dysfunction in a patient's autonomic nervous system, resulting in arrhythmia, increased heart rate,

Table I. Comparison of SAS scores on the 7th and 14th day.

Number of cases	Day 7 SAS score ($\bar{x} \pm s$)	Day 14 SAS score ($\bar{x} \pm s$)
N = 97	73.814 ± 9.708*	63.423 ± 8.855*

*$p<0.01$.

shortness of breath, rapid breathing, tightness of the chest, dizziness, headache, mydriasis, elevated blood pressure, and other sympathetic nervous excitation symptoms. Clinically, this is called an acute anxiety attack.

In the diagnosis and treatment plan of 2019-nCoV, it is stated that patients often experience anxiety and fear, and that improved psychological counseling should be offered. When patients are informed that they are, or it is suspected that they are, infected, they display two stages of psychological reaction: psychological shock and psychological conflict. In the first stage, when the patient is informed of their diagnosis, they are often "at a loss" and feel like a bystander or that they are dreaming. This feeling can last for days or weeks. In the second stage, the patient experiences confusion and difficulty concentrating, feels helpless, and suffers from despair, anxiety, and depression; they may also feel disconnected from reality. Patients often deny that they have the virus to reduce their psychological response, while others may doubt the treatment measures.

Due to these stages of reaction, professional psychological intervention becomes increasingly important during the isolation period. Although it may not be required frequently, psychological help and counseling should be offered to patients in isolation at any time. Medical staff in isolation wards should identify patients' psychological fluctuations over time, evaluate the severity of their anxiety through SAS scoring, and inform psychiatrists so that psychological intervention can be provided at the right time. This will help avoiding the occurrence of negative events in isolation wards[23-26].

Jin et al[19] found that the psychological anxiety of patients in isolation improved significantly after receiving psychological intervention, and that psychological intervention was feasible. Although most patients will not need psychological intervention, staff on isolation wards should include a psychiatrist. Psychotherapy *via* conversation should be offered at any time as long as the conditions permit. Based on a patient's symptoms, a psychiatrist can also prescribe medications to improve sleep, such as benzodiazepines; antidepressants, such as tricyclic antidepressants; or anti-anxiety medications. For patients being treated with noninvasive ventilators, the dosage of sedatives should be based on the premise of not inhibiting respiration[27].

Among the 97 patients in this study, one had a suicidal tendency and two did not obey the management rules of the isolation ward and were violent. These patients were not critically affected by 2019-nCoV, but the duration of their hospitalization was longer than a month, so their behaviors and tendencies may have been influenced by the time they had spent in hospital. After receiving therapy from a psychotherapist and appropriate medication, their symptoms improved, and they were discharged successfully. No evident psychological disturbance was observed during follow-up checks.

One of the risks of using SAS scoring to evaluate a patient's anxiety and identify the most appropriate psychological intervention is that patients in isolation may not cooperate with the scoring or the psychological intervention due to emotional anxiety and agitation. In the present study, all the patients cooperated with the investigation and treatment after repeated persuasion by medical staff and psychiatrists. Another risk is that staff is in close contact with patients with 2019-nCoV during SAS scoring, so infection of staff is possible. Psychiatrists are also in contact with these patients during psychological intervention, which might lead to further infection.

Conclusions

Briefly, early psychological intervention can reduce the occurrence of high-risk factors, such as suicide and injury to medical staff. It can also relieve anxiety symptoms, which reduces the pressure of work in isolation wards. The present study can help in the early identification of anxiety in patients and early stratified psychological intervention, which reduces the occurrence of high-risk factors.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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