Investigation and Analysis of the Psychological Status of Medical Staff during the COVID-19

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Objectives: To investigate the psychological state of front-line medical staff during the prevention and control of COVID-19, in order to provide effective psychological support and social intervention, and to provide reference ideas. Methods The research method was a cross-sectional research method. The convenience sampling method was adopted to select 156 first-line medical staff during the prevention and control period of the COVID-19. The online survey scale developed by the "Questionnaire Star" was used to investigate the psychological state of the first-line medical staff. Results There were significant differences in the overall status of depression, anxiety, and stress among front-line medical staff in terms of gender, education level, professional title status, children's status, and working years (P<0.05); among the five dimensions of mental state, the fear and worry dimension scored the highest. The overall confidence dimension score was the lowest (P<0.05). According to Pearson correlation analysis, the overall confidence of front-line medical staff is related to the dimensions of fear and worry, hospital support, and psychological support (P<0.05); while fear and worry are mainly related to hospital support and psychological support (P<0.05). Front-line medical staff all have different degrees of depression and anxiety. The incidence of depression is 71.15%, and the incidence of depression is 30.77%. The incidence of anxiety is 74.36%, and the incidence of anxiety is 58.97%. Conclusion During the prevention and control of COVID-19, the psychological conditions of front-line medical staff are worrying. Therefore, it is advisable to formulate corresponding management and intervention measures to help medical staff survive the psychological crisis and ensure the smooth progress of the prevention and control of the new crown pneumonia epidemic.

Key words: COVID-19; medical staff; mental state
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New type of coronavirus pneumonia (COVID-19), referred to as "new coronary pneumonia", is an acute respiratory infectious disease with fever, fatigue, and dry cough following SARS and MERS[1]. The disease first occurred in Wuhan (2019.12) and then spread, and there are still cases to this day. At present, new coronary pneumonia has been included in the category B infectious disease, and its management is in accordance with the management of category A infectious diseases.[2] After the outbreak of the epidemic, various provinces and municipalities across the country responded quickly and immediately established and announced designated treatment institutions and new coronary pneumonia fever clinics. Medical staff have become the core force of epidemic prevention and control[3]. The sudden outbreak of the new crown pneumonia epidemic, coupled with little understanding of it and too many uncertain factors, has caused front-line medical staff to bear greater psychological pressure. The National Health Commission issued the "Guiding Principles for Emergency Psychological Crisis Intervention for the Novel Coronavirus Infected Pneumonia Epidemic" on January 27, 2020.01, and proposed psychological intervention measures for the psychological problems that may arise during the epidemic prevention and control of medical staff. In response to this, this article investigates and analyzes the psychological state of front-line medical staff during the prevention and control of the new crown epidemic, and proposes a reference basis and solutions for their psychological debugging. Details are as follows.

OBJECTS AND METHODS

Object

With 2020.01.27-2020.02.01 as the research time, according to the cross-sectional research method, the convenience sampling method was used to select 156 first-line medical staff during the prevention and control of the new crown epidemic. Inclusion criteria: (1) Nurse qualification certificate; (2) Informed in the research, voluntary participation; (3) Participation in the front line of anti-epidemic Exclusion criteria: (1) Medical personnel preparing to participate in the front-line anti-epidemic; (2) Medical personnel who are not in the front-line anti-epidemic. This time, 156 questionnaires were sent out, 156 qualified questionnaires were returned, and 100.00% of qualified questionnaires were returned. Among the 156 medical staff, 38 are males and 118 are females; aged 20-51, with an average of (34.59±2.86) years old; educational background: 28 college graduates, 61 undergraduates, 67 masters and above; job title status: junior professional title 21 Names, 97 with secondary professional titles, 38 with senior professional titles; children: 44 without children, 82 with 1 child, 30 with 2 or more; working years: 38 with 0-5 years, 44 with 5-10 years, 68 in 11-20 years, 6 in 20 years or more.

Method

In this survey, a third-party tool "Questionnaire Star" was used to make an online questionnaire and set up a WeChat group to request participating medical staff to join the group. The questionnaire was sent within the group, and the medical staff filled out the questionnaire online, and a dedicated person was responsible for sorting, entry, and analysis.

Mental State Questionnaire: Revised with reference to the "Psychological State of Medical Staff in Quarantine Areas Related to SARS"[4], including: general confidence, fear and worry, hospital support, treatment of patients, psychological support, etc., 1-4 points, high scores, indicating psychological needs Big. Cronbach's α coefficient is 0.801-0.927.

Depression-anxiety-stress scale: DASS-21 scale, including: depression, anxiety, stress, 0-3 points, a total score of 21 points in each dimension, used to describe the nega1.3 Statistical processing

SPSS24.0 is a statistical software. The variance of count data is tested. (%) means that measurement data should be expressed as mean ± standard deviation. Measurement data conforming to normal distribution shall be expressed by t-test, and rank sum shall be used for measurement data not conforming to normal distribution. Test; $\alpha=0.05$, $P<0.05$ indicates that there is a statistical difference.tive psychological emotions in the past 7 days.

RESULTS

DASS-21 Score Comparison of First-line Medical Staff

As shown in Table 1, there are significant differences in the overall status of depression, anxiety, and stress among front-line medical staff in terms of gender, education level, professional title status, children's status, and working years (P<0.05).

Table 1 DASS-21 Score Comparison of First-line Medical Staff (±s, points)

Project		Number (n)	DASS-21 score	*t/F*	*P*
Gender	male	38	32.95±2.17	22.828	0.000
	female	118	35.09±2.47		
Education	Junior college	28	31.85±2.45	12.364	0.000
	Undergraduate	61	32.75±2.98		
	Master degree and above	67	33.34±3.08		
Title status	Junior title	21	23.87±2.25	14.368	0.000
	Middle professional title	97	30.73±2.81		
	Senior title	38	33.36±2.38		
Children's status	No children	44	30.98±2.76	15.369	0.000
	1 child	82	35.66±2.58		
	2 and above	30	31.98±2.34		
Working years	0-5	38	31.02±2.07	12.369	0.000
	5-10	44	31.87±2.46		
	11-20	68	30.12±3.69		
	>20	6	33.52±3.37		

Psychological Status Scores of Front-line Medical Staff and Total Scores of the Scale

As shown in Table 2, among the five dimensions of mental state, the fear and worry dimension has the highest score, and the overall confidence dimension has the lowest score (P<0.05).

Table 2 Psychological Status Scores of Front-line Medical Staff and Total Scores of the Scale (±s, points)

Name Item Score Item Average	Name Item Score	Name Item Score	Name Item Score
	Item average	Item average	Item average
Overall confidence	1	1.38±0.25	1.38±0.25
Fear worry	3	6.48±1.38	2.16±0.46
Treat patients	3	4.51±1.32	1.50±0.44
Hospital support	3	5.16±1.12	1.72±0.37
Psychological support	3	4.54±1.23	1.51±0.41
Survey total score	13	22.07±3.41	7.36±1.14

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Correlation among the Five Dimensions of Mental State of Front-line Medical Staff

As shown in Table 3, after Pearson correlation analysis, the overall confidence of front-line medical staff is related to fear and worry, hospital support, psychological support and other dimensions (P<0.05); while fear worry is mainly related to hospital support and psychological support (P<0.05)).

Table 3 Correlation analysis among the five dimensions of mental state of front-line medical staff

Table 3
Correlation Analysis among the Five Dimensions of Mental State of Front-line Medical Staff

Project	Fear and worry treat patients hospital support psychological support		Fear and worry Treat patients Hospital support Psychological support		Fear and worry Treat patients Hospital support Psychological support		Fear and worry Treat patients Hospital support Psychological support	
	r	*P*	*r*	*P*	*r*	*P*	*r*	*P*
Overall confidence	0.226	0.005	0.010	0.921	0.201	0.036	0.326	0.003
Fear worry	1	-	0.071	0.468	0.328	0.001	0.284	0.005
Treat patients	0.071	0.469	1	-	0.031	0.753	0.168	0.089
Hospital support	0.328	0.002	0.031	0.754	1	-	0.397	0.002
Psychological support	0.268	0.004	0.073	0.468	0.326	0.001	1	-

Depression-anxiety-stress Status of Front-line Medical Staff

As shown in Table 4, the front-line medical staff all have different degrees of depression and anxiety. The incidence of depression is 71.15%, and the incidence of depression is 30.77%; the incidence of anxiety is 74.36%, and the incidence of anxiety is 58.97%.

Table 4
Depression-anxiety-stress Status of Front-line Medical Staff (±s, points)

Psychological condition depression anxiety stress	Psychological condition depression anxiety stress	Psychological condition depression anxiety stress	Psychological condition depression anxiety stress
Normal	45(28.85)	40(25.64)	144(92.31)
Mild	63(40.38)	24(15.38)	9(5.77)
Moderate	47(30.1)	72(46.15)	3(1.92)
Severe	1(0.64)	18(11.54)	0(0.00)
Extremely serious	0(0.00)	2(1.28)	0(0.00)

DISCUSSION

The Mental State of Front-line Medical Staff is Affected by Factors such as Gender, Education Level, and Professional Title Status

As shown in Table 1, the mental state of front-line medical staff is related to gender and job title. Front-line medical staff with young age, low job title and few years of work, because there is no high environmental adaptability, and psychologically accompanied by anxiety and fear, it is inevitable that they will experience anxiety

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and depression.[5,6] Also, DASS-21 scores with children are higher than DASS-21 scores without children. This is because the children are at school age and need the company of their parents. As the separation time increases, the anxiety and depression of the front-line medical staff will get worse. Moreover, the psychological stress, anxiety, and depression levels of medical staff with one child in the study are higher than those with two or more children, which is considered to be related to two-way parent-child dependence.

Psychological Conditions and Needs of Front-line Medical Staff

Studies have shown that through Pearson correlation analysis, the overall confidence of front-line medical staff is related to the dimensions of fear and worry, hospital support, and psychological support ($P<0.05$); while fear and worry are mainly related to hospital support and psychological support ($P<0.05$). Reminder: The hospital should provide corresponding support based on the actual situation of the medical staff, and carry out targeted systematic training on the latest developments and diagnosis methods of new coronary pneumonia. At the same time, it should ensure that medical equipment and protective equipment are adequately stocked, and provide medical staff with worries about the future. The communication platform, keeping the diet diversified, provides sufficient preparation for winning this tough battle.[7,8]

High Levels of Anxiety, Depression, and Stress among Front-line Medical Staff

Front-line medical staff all have different degrees of depression and anxiety. The incidence of depression is 71.15%, and the incidence of depression is 30.77%. The incidence of anxiety is 74.36%, and the incidence of anxiety is 58.97%. Consider that the anxiety and depression of front-line medical staff are mainly related to the following factors, such as[9,10] : (1)New coronary pneumonia appears for the first time, and it has the characteristics of strong contagion, rapid development, and many uncertain factors. In terms of cognition, This has led to the emergence of anxiety and depression among medical staff; (2) Worrying about the difficulty of performing the job, worrying about the difficulty in collecting throat swabs correctly, worrying about poor diagnosis and treatment of the disease; (3) Worrying about omissions in the prevention and control of hospital infection; (4) Long working hours and heavy work tasks; (5) Long separation from family members; (6) adverse events of protective equipment; (7) less social activities, network information impact and other factors cause anxiety[11].

In summary, during the prevention and control of the COVID-19, the psychological conditions of frontline medical staff are worrying. Therefore, it is necessary to understand the psychological conditions and needs of front-line medical staff, and formulate corresponding management and intervention measures according to the reasons, so as to reduce their psychological stress, ensure their mental health, and ensure the orderly progress of epidemic prevention and control.

Author Declaration

The authors declare no sponsored financial sources by any organization related to tobacco production for the undertaken study.

Conflicts of Interest

The authors declare that they have no competing interest.

Data Availability Statement

The data used to support the findings of this study are included within the article.

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