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Investigation on the Psychological Status and Influencing Factors of Medical Staff in Fever Clinics under the Context of Normalized Epidemic Prevention and Control in Taishan City

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Abstract: To explore the psychological condition of medical personnel in fever clinic in Taishan City under the background of normalized epidemic prevention and control, and to analyze the related influencing factors. The medical staff of fever outpatient clinics in 24 medical institutions in Taishan City under the prevention and control of the normalized COVID-19 outbreak were selected as the study subjects,using the whole-population sampling method. The psychological status of the medical staff of the fever outpatient clinics and their influencing factors were analyzed by using statistical methods such as multiple linear regression, with the Self-rating Scale of Mental Health Symptoms, the Stress Perception Scale, and the Family Apathy Index. In the study,a total of 422 questionnaires were collected with a validity rate of 82.46%. Person correlation results showed that stress feeling score was positively correlated with SCL-90 score ($r<0.60$), and family caring was negatively correlated with SCL-90 score ($r<-0.30$). Multiple linear regression models showed that respondents had difficulty in falling asleep ($\beta=8.96$), early awakening ($\beta=9.07$), humanistic care in hospitals ($\beta=6.82$), feelings of stress ($\beta=2.29$), and family caringness score ($\beta=-1.34$), were linearly correlated with the mental health status of medical staff. Medical staff of fever clinics in Taishan City in the context of normalised epidemic prevention and control are still in a highly stressful working environment, resulting in such situations as reduced sleep quality and deteriorated psychological conditions. Hospital management should make effort to provide sufficient humanistic care and sleep guidance for medical staff in fever clinics.

Keywords: Medical Personnel, Mental Health, Influencing Factors, Psychological Condition

Introduction

The novel coronavirus pneumonia has the characteristics of strong infectivity, rapid spread and wide epidemic range[1], which has seriously affected people's health and normal life. Only scientific prevention and control management can effectively prevent the spread and spread of the virus, and general hospitals are high-risk places for virus transmission and infection. Although the epidemic prevention and control has become normal, there are still scattered outbreaks. In order to better control the epidemic and curb the spread of the virus, major hospitals have set up fever clinics one after another. The fever clinic is the only way for COVID-19 patients to seek treatment[2]. The medical staff come from different departments with high work intensity and special work nature.Therefore, it is imperative to focus on the psychological status of medical personnel in the fever clinic of Taishan City, given the ongoing normal epidemic prevention and control efforts. A comprehensive analysis of the pertinent influencing factors is crucial in order to gain a deeper understanding of the challenges faced by these healthcare workers, which analysis will not only provide valuable insights but also serve as a reference for improving psychological crisis intervention measures tailored for medical staff in the fever clinic during routine epidemic prevention and control. Ultimately, this will contribute to the normal and orderly progression of epidemic prevention and control efforts .

Research design and data source

Research Objects

The medical staff of fever clinic in 24 medical institutions in Taishan city were selected as the research subjects under the normal COVID-19 prevention and control. All subjects were free from mental illness and volunteered to participate in this study.

Investigation Methods

This study adopts the method of sending questionnaires on WeChat for investigation. A total of 422 questionnaires were collected, of which 348 were valid, resulting in an effective rate of 82.46%. The contents of the survey include:
(1) General information questionnaire: Variable description and assignment are detailed in Table 1.

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(2) Mental Health Symptom Checklist (SCL-90)[8], Stress Perception Scale (PSS) [9]and family caring index [10]were used to evaluate the psychological status of the study subjects.

Mental Health Symptom Checklist (SCL-90) is a commonly used mental health test scale in China. The scale adopts 5 Licht scale, including somatization, obsessive-compulsive symptom, interpersonal sensitivity, depression, anxiety, hostility, terror, paranoia, psychotic disorder, and other 10 symptom factors. A higher score on the total scale or any specific symptom factor indicates a poorer psychological condition. In this study, the total scale score was utilized as the dependent variable.

The Perceived Stress Scale is used to assess an individual's own perception of uncontrollable, unpredictable, or overloaded situations in their life. It consists of 10 items, each rated on a 5-point scale ranging from 0 (never) to 4 (very often). The total score is calculated by summing the scores of all items, with a higher score indicating a higher level of perceived stress.

Family Caring index: This index comprises 5 items, each rated on a 3-point scale ranging from 0 (almost never) to 2 (often). A higher score indicates better family functioning.

Argument	Assignment case
Gender	1= male, 2= female
Age stratification	1= "<=30", 2= "31~40", 3= "41~50", 4= ">=50"
Education	1= Junior College and below, 2= undergraduate and above
Job titles	1= junior title, 2= intermediate title, 3= senior title
Work environment satisfaction	1= satisfied, 2= somewhat satisfied, 3= average, 4= dissatisfied
The degree of system and system perfection	1= perfect, 2= relatively perfect, 3= average, 4= imperfect
Scheduling pattern identification	1= reasonable, 2= relatively reasonable, 3= average, 4= unreasonable
Night shift frequency	1= no night shift, 2=1 time/week, 3=2 times/week, 4= more than 2 times/week
Sleep satisfaction	1= very satisfied, 2= satisfied, 3= mostly satisfied, 4= dissatisfied
Difficulty falling asleep	1= none, 2= mild, 3= moderate, 4= severe, 5= extremely severe
Wake up early	1= none, 2= mild, 3= moderate, 4= severe, 5= extremely severe
Satisfaction of humanistic care in hospital	1= very satisfied, 2= satisfied, 3= basically satisfied, 4= dissatisfied

Table 1. Independent variables and their assignment

Statistical Analysis

SPSS 26.0 software was used to conduct logical test on the data and delete invalid samples. t test, ANOVA and person correlation were used to compare the differences in SCL-90 scores of different variables. Multiple linear regression model was used to analyze the influencing factors of the psychological status of the subjects, and a multi-factor model was constructed by step-up method. The standard 入 α=0.05 was included, the standard 出 α=0.10 was excluded, and a bilateral test was adopted with the test level α=0.05.

Results

General Situation

The descriptive statistical analysis results for independent and dependent variables are shown in Table 2.Specifically, the score of SCL-90 is 130.62 ± 46.70, the score of stress scale is 12.42 ± 8.95, and the score of family caring degree is 6.84 ± 3.10. Male accounted for 34.20%, female accounted for 65.80%. In the composition of education, junior college or below accounted for 65.23%, undergraduate or above accounted for 34.77%. 76.72% of the subjects hold junior professional titles, 20.40% hold intermediate professional titles, and 2.88% hold senior professional titles.

Univariate statistical analysis of independent variables and dependent variables

The results of univariate statistical analysis of independent variables and dependent variables are shown in Table 2. Except for gender, education, age and SCL-90 score, the difference was not statistically significant (P <0.05), while the difference between other variables and dependent variables was statistically significant (P <0.05). The person correlation results showed that stress perception is positively correlated with the SCL-90 score, with a correlation coefficient of less than 0.60. (r<0.60).The degree of family caring is negatively correlated with the SCL-90 score, with a correlation coefficient of less than -0.30. (r<-0.30).

Variables	**Cases / s**	**x**	**T/F/r values**	**Variables**	**Cases / s**	**x**	**T/F/r value**
Gender				The degree of system and system perfection			
For males	119		-0.58[a]	Perfect	130		11.99 * *
female	229			Relatively complete	101		
Degree			0.12[a]	General	92		

Junior College and below	227	
Bachelor's degree or above	121	
Age		
30	117	
31 ~ 40	97	
41 ~ 50	96	0.18
>50	38	
Titles		
Junior title	267	
Intermediate title	71	3.79 *
Senior title	10	
Work environment satisfaction		
Satisfied	133	
Fairly satisfied	84	9.16 *
normal	107	
Unsatisfied	24	
Difficulty falling asleep		
There is no	86	
Mild	154	31.67 * *
Moderate	80	
Severe	19	
Extremely severe	9	
Humanistic care in hospital		
Very satisfied	44	
Satisfied	95	25.55 * *
Mostly satisfied	129	
Not satisfied	80	
Imperfect	25	
Identification with scheduling patterns		
rational	142	12.74 * *
Reasonably	92	
Average	90	
Unreasonable	24	
Night shift frequency		
No night shift	104	
1 time/week	91	3.11 *
2 times/week	94	
More than 2 times/week	59	
Sleep satisfaction		
Very satisfied	17	
Satisfied	44	17.01 * *
Average	102	
Discontented	185	
Wake early		
There is no	97	
Mild	152	25.90 * *
Moderate	68	
Severe	25	
Extremely severe	6	
Feelings of Stress	12.42 8.95	0.60 *[b] *
Degree of family care	6.84 3.10	0.30[b] * *
SCL-90 overall score	130.62 46.70	

Table 2. General information and statistical analysis results of variables (n=348)

Multiple linear Regression

The SCL-90 total was divided into dependent variables, and the variables with statistical differences in the univariate statistical analysis were taken as independent variables to build a multiple linear regression model. The results are shown in Table 3. The variables finally included in the equation are five variables: difficulty falling asleep (x_{12}), early waking up (x), hospital humanistic care (x_3), stress feeling (x_4) and family caring index (x_5). Among these variables, difficulty falling asleep, early waking, hospital humanistic care and stress feeling were in direct proportion to the psychological status of the respondents, indicating: As the difficulty in falling asleep increases, so does the severity of early waking.Lower levels of hospital humanistic care and higher stress perception are associated with poorer mental health status.Conversely, the family care index was inversely proportional to the psychological status of the subjects, indicating that the higher the family care index correspond to better mental health status. The results of multicollinearity analysis showed that the tolerance of the model is less than 1, and the variance expansion coefficient (VIF) is less than 10, suggesting that there is no multicollinearity between the variables. The coefficient of determination (R^2) is equal to 0.53, indicating that the proportion of the total variation of the dependent variable can be explained by the independent variable in the regression model is 0.53. The regression model is as follows:

$$Y = 54.33 + 8.96_1 + 9.07_2 + 6.82 + 2.29\ x_3\ x\ x_4\ x\ to\ 1.34\ x$$

Variables	βvalue	Tolerance	VIF	F	R^2	Corrective R
Constant	54.33 * *			75.90	0.53 * *	0.52
Difficulty falling asleep (x_1)	8.96 * *	0.525	1.19			
Wake up early (x_2)	9.07 * *	0.571	1.90			
Hospital Humane Care (x_3)	6.82 * *	0.801	1.75			
Feelings of Stress (x_4)	2.29 * *	0.844	1.25			
Family Caring Index (x_5)	1.34 *	0.904	1.10			

Table 3. Results of multiple linear regression

Discussion

Although the novel coronavirus pneumonia epidemic has been effectively controlled and has entered into regular epidemic prevention and control, the psychological condition of front-line medical staff, especially those in fever clinics, has attracted widespread attention from society. At present, foreign and domestic studies have pointed out that during the global pandemic of novel coronavirus pneumonia, medical personnel are under great work pressure, with mental health issues becoming increasingly prominent and mental stress intensifying[3-5]. Notably, front-line medical personnel in fever clinics of major hospitals during the pandemic are faced with risk factors such as high infection rate and high exposure rate, which greatly increases the psychological burden[6-7]. If these mental sub-health states are not properly dealt with in time, they may lead to irreversible mental diseases. Therefore, it is imperative to understand the mental state of medical personnel in the context of normal epidemic prevention, implement timely and appropriate coping strategies.

In the face of similar global public health emergencies, fever clinics are still the frontline of COVID-19 during the current stage of routine prevention and control, necessitating continued support and collaboration from both external and internal hospital departments. Due to the high work pressure and high infection rate, medical staff working in fever clinics need stronger psychological endurance, as well as increased understanding and psychological counseling from various societal sectors.

This study investigated the psychological status of medical staff in fever clinics across 24 medical institutions in Taishan City during routine COVID-19 prevention and control, which revealed that the factors such as difficulty falling asleep, early waking, hospital humanistic care, stress feeling and family care index were closely related to the psychological status of medical staff. Specifically, the more serious the difficulty falling asleep, the more serious the early waking, the lower the humanistic care of the hospital, the higher the stress level of the stress feeling, the worse the mental health status of the respondents. The family care index was inversely proportional to the psychological status of the respondents, indicating that the higher the family care index of the respondents, the better their mental health status.

To alleviate the psychological crisis among medical staff in the fever clinic in the Taishan area, adjustments should be made in the following aspects. At the hospital organizational level,the work place and rest place of medical staff in fever clinic should be improved, and the shift time should be reasonably arranged to ensure that medical staff have sufficient sleep time. In terms of social institutions, medical staff should be provided with professional mental health consultation on a regular basis, and their families should be carefully listened to, and psychological support should be given to medical staff members to understand their family conditions and give corresponding help when necessary. From the aspect of medical themselves, the medical personnel who are under high pressure for a long time must regularly evaluate their own psychological condition, if the psychological condition improves, adjust the rest in time, and seek professional psychological counseling.

Conclusion

In conclusion, despite the routine prevention and control of the novel coronavirus pneumonia epidemic, medical personnel in fever clinics are still under tremendous psychological pressure. Hospitals and relevant social institutions should promptly assess the mental health status of front-line medical personnel, improve the working environment of fever clinics, promptly identify medical personnel with psychological issues, and provide appropriate and effective intervention programs to ensure that every medical worker is in optimal working condition.

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