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Research Article

Mental Health Problems and Coping Strategies of Medical Interns in Clinical Teaching Base During Epidemic Period - Data from China

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Abstract

Background: The COVID-19 pandemic has dealt a heavy blow to the mental health of tens of millions of people, with nearly 1 billion people living with a mental disorder globally and one person dying every 40 seconds from suicide. The World Health Organization declared the end of the global health emergency on May 5, 2023, but we continue to live with positive and similar cases of COVID-19 from time to time, and many people are feeling anxious. It shows that COVID-19 remains a global health threat. Therefore, we should pay attention to the mental health problems caused by the epidemic, especially the medical interns who are in the front line of fighting against the epidemic but have relatively weak self-protection ability. It is necessary to investigate their mental health status and explore coping strategies. **Methods:** A total of 312 medical interns from a large 3A hospital in Chengdu from May 2022 to December 2022 were selected as the research objects. We administered the Symptom Checklist 90 (SCL-90) and Simplified Coping Style Questionnaire (SCSQ) to assess somatization symptoms and coping styles, respectively, and compared results to national norms for Chinese youth**. Results:** The scores of somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, terror, paranoia and psychosis of the interns were higher than those of the national youth group norm. The scores of somatization and phobia in female students were higher than those in male students, and the scores of each factor in undergraduate students were higher than those in college students, and the differences were statistically significant ($P<0.05$). The score of negative coping style was positively correlated with the total score of negative factors of mental health (somatization, compulsion, depression, anxiety) ($\beta=-0.569$, $P<0.05$). Positive coping style was negatively correlated ($\beta=0.899$, $P<0.01$). **Conclusion:** During the epidemic period, the mental health level of interns in the base is lower than that of the national youth norm, and female and undergraduate interns are more serious. Positive coping style can reduce their mental health problems.

Keywords: Epidemic; Clinical teaching base; Medical interns; Psychological Problems; Solutions

Introduction

Clinical practice is an indispensable stage for the training of medical talents. Their physical and mental health is directly related to the sustainable development of medicine in the future [1]. Medical interns are curious about clinical work and social life when they enter the base practice. After the novelty, due to the lack of coping experience, their psychological adjustment ability and anti-stress ability are relatively weak. In the face of complicated and arduous multi-task pressures such as clinical work and anti-epidemic work, their physical and mental fatigue and psychological derangement phenomenon follow [2]. Therefore, attention should be paid to the mental health of interns in the base during the epidemic, and timely and effective intervention should be given to their possible psychological problems to ensure their physical and mental health [3]. At the same time, experience was summarized to provide a basis for the formulation of prevention and control programs for similar epidemics in the future.

Methods

Data sources

A total of 312 medical interns from a large 3A hospital in Chengdu from May 2022 to December 2022 were selected as the research objects. Inclusion criteria: 1) The intern had been practicing in the base for 6 months or more, and experienced the changes of the zero-community transmission policy and the new ten anti-pandemic policies in China. 2) The intern had no previous mental health problems. 3) The intern voluntarily participated in the mental health questionnaire survey.

Methods

Investigation tools

Demographic data questionnaire: The self-made demographic data questionnaire included name (not required, can be nickname), gender, age, education background, school name, major, and parents' occupation.

Symptom check list 90 (SCL-90) [4]

SCL-90（Symptom check list 90）was compiled by Derogatis, et al. in the 1970s, and since then it has been widely used in clinical research in psychiatry. It is a 90-item self-rating depression scale that measures subjective symptoms and their severity in outpatients and some inpatients. According to the research results of Derogatis, et al., the validity coefficients of each symptom ranged from 0.77 to 0.90, indicating that the results of this scale have high validity and can precisely reflect the severity of the patient's condition and its changes [5].

The scale included 9 symptom factors, including somatization, obsessive- compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobia, paranoia, and psychosis, with a total of 90 items [6]. A scale of 1 to 5 was used, with scores corresponding to symptoms of "none, very mild, moderate, heavy, and severe", respectively. Higher scores indicated worse mental health status.

Simplified Coping Style Questionnaire (SCSQ)

Simplified Coping Style Questionnaire (SCSQ) was developed by Xie Yaning in 1998. It is compiled based on the Chinese local culture, thus the content is more suitable for Chinese people, and has been widely used by domestic researchers in the past 20 years [7]. The Cronbach α coefficient of the whole scale was 0.90. The α coefficient of positive coping scale was 0.89. The α coefficient of negative coping style scale was 0.78, which showed good reliability. Factor analysis showed that the scale also had good validity [8].

The 20-item questionnaire involves different attitudes and measures that people may take in their daily life, such as trying to look on the bright side of things, seeking social support (positive coping style), and getting rid of worries by smoking and drinking (negative coping style). The questionnaire was a self-rating scale. After each item there were 4 choices (relative score is 0, 1, 2, 3): never, occasionally, sometimes, and often [9].

Methods of investigation

The questionnaire was distributed through the Wechat group of interns in the base. A total of 312 questionnaires were collected. Among them, 12 were judged as invalid questionnaires, and the exclusion criteria were as follows:

(1) The questionnaire response time was less than 3 minutes (There were 117 questions in this questionnaire, and the average time required to answer was 7.59 minutes). (2) The answers to the questionnaire are as all items are selected as "none".

The answers that met the above two exclusion criteria were judged as invalid questionnaires. Finally, 300 valid questionnaires were collected, and the effective questionnaire recovery rate was 96.15%.

Statistical method

SPSS 26.0 was used for data analysis. We conducted the single sample T-test to compare the differences between the scores of each SCL-90 factor of interns in the base and the norms of Chinese youth. The independent sample T-test was used to compare the differences in scores of each SCL-90 factor among interns of different genders and educational levels (junior college, bachelor degree or above). Then, Pearson correlation analysis was used to compare the correlation between interns' coping style scores and four major negative factors' (somatization, obsessive disorder, depression, anxiety) total scores in SCL-90. Finally, the scores of interns' positive coping styles (which have more positive components, such as seeking support and changing value system) and negative coping styles (which mainly have negative components, such as avoiding problems and venting anger) were taken as independent variables, and the total scores of negative factors were taken as dependent variables. Hierarchical regression method was used to analyze them, so as to furtherly explore the significance of correlation between variables. $P<0.05$ was considered statistically significant.

Results

Mental health status of interns in the base during the epidemic period

The scores of SCL-90 scale of the base interns were compared with the scores of each factor of the Chinese youth group norm [10]. The results showed that except for the hostile factor, the

scores of the remaining 8 factors were statistically significant between the two groups (P<0.05). Among the 8 factors, except for the two factors of interpersonal sensitivity and psychosis, the scores of the other 6 factors of the base interns were higher than the Chinese youth group norm. The results of the detailed analysis are shown in Table 1.

Factor	Bases Interns (n=300)	Chinese youth group norm(n=781)	*t*	*P*
somatization	1.77±0.83	1.34±0.45	8.953	<0.001
obsessive disorder	1.86±0.87	1.69±0.61	3.29	0.001
interpersonal sensitivity	1.64±0.78	1.76±0.67	-2.573	0.011
depression	1.69±0.82	1.57±0.61	2.474	0.014
anxiety	1.62±0.77	1.42±0.43	4.54	<0.001
hostility	1.56±0.77	1.50±0.57	1.424	0.156
horror	1.48±0.71	1.33±0.47	3.613	<0.001
paranoia	1.49±0.72	1.36±0.47	3.217	0.001
psychoticism	1.42±0.72	1.52±0.60	-2.592	0.01

Table 1: The SCL-90 Symptom Self-test Scores of the Base Interns Compared with the Results of the Chinese Youth Group Norm (Mean±SD).

Comparison of the scores of SCL-90 scale between interns of different gender

The SCL-90 scores of male interns (n=64) and female interns (n=236) were compared and analyzed. The results showed that there were statistically significant differences in the scores of somatization symptoms and phobic factor between the two groups (P<0.05), and the scores of girls were higher than those of boys. There was no significant difference in the scores of other 7 factors between boys and girls (P>0.05). The detailed results are shown in Table 2.

Factor	Male(n=64)	Female(n=236)	*F*	*P*
somatization	1.55±0.68	1.83±0.86	4.865	0.028
obsessive disorder	1.75±0.75	1.88±0.90	3.537	0.061
interpersonal sensitivity	1.64±0.76	1.64±0.79	0.096	0.757
depression	1.62±0.74	1.70±0.84	1.818	0.179
anxiety	1.51±0.64	1.65±0.80	2.775	0.097
hostility	1.48±0.72	1.59±0.78	0.782	0.377
horror	1.34±0.51	1.52±0.76	8.854	0.003
paranoia	1.50±0.67	1.50±0.74	0.992	0.32
psychoticism	1.39±0.56	1.43±0.67	1.161	0.282

Table 2: Comparison of the scores of SCL-90 scale between interns of different gender (Mean±SD).

Comparison of SCL-90 scores of interns with different educational levels

The scores of each factor of interns with college degree (n=175) and interns with bachelor degree or above (n=125) were compared and analyzed. The results showed that the scores of 9 factors between the two groups were statistically significant (P<0.05), and the scores of interns with bachelor degree or above were higher than those of interns with college degree. The detailed results are shown in Table 3.

Factor	College degree(n=175)	Bachelor degree or above(n=125)	*F*	*P*
somatization	1.64±0.74	1.95±0.92	9.768	0.002
obsessive disorder	1.77±0.80	1.98±0.95	5.114	0.024
interpersonal sensitivity	1.57±0.70	1.75±0.88	8.402	0.004
depression	1.59±0.73	1.82±0.92	9.042	0.003
anxiety	1.50±0.67	1.79±0.85	12.362	0.001
hostility	1.45±0.69	1.71±0.85	10.499	0.001
horror	1.41±0.64	1.58±0.79	7.099	0.008
paranoia	1.42±0.65	1.60±0.81	10.195	0.002
psychoticism	1.36±0.58	1.51±0.73	10.548	0.001

Table 3: Comparison of SCL-90 scores of interns with different educational levels (Mean±SD).

Correlation analysis of coping style and negative factor score of mental health in interns (n=300, r value)

The scores of positive coping dimension and negative coping dimension in the simplified coping style questionnaire of 300 medical interns were 15.11±8.17 and 8.17±5.12, respectively. Correlation analysis showed that the negative coping style of interns was positively correlated with the total score of four negative factors and the scores of each factor. Positive coping style was negatively correlated with the scores of somatization symptoms, obsessive-compulsive and depression. The detailed results are shown in Table 4.

Factor	Positive coping	Negative coping
somatization	-0.117*	0.191**
obsessive disorder	-0.116*	0.308**
depression	-0.127*	0.306**
anxiety	-0.097	0.281**
Total score of 4 factors	-0.056	0.186**
Note: *denotes significant correlation at the 0.05 level and **denotes significant correlation at the 0.01 level.		

Table 4: Correlation analysis of coping style and negative factor score of mental health in interns (n=300, r value).

Regression analysis of interns' coping style to the pandemic and negative factor scores of mental health

Taking the scores of positive coping (Coping style has positive elements, such as seeking support and changing value system) and negative coping (Coping style is mainly negative, such as escaping problems and complaining) as the independent variables, and the total score of negative factors of mental health as the dependent variable, hierarchical regression method was used to analyze them. The results showed that: positive coping and negative coping had a significant impact on the total score of negative factors. The detailed results are shown in Table 5.

Variable	Regression coefficient	Standard error	Standardized Coefficient	*t*	*P*
Constant	6.73	0.269		24.994	0
Negative coping	0.899	0.211	0.271	4.266	0
Positive coping	-0.569	0.198	-0.183	-2.874	0.004
Note: R^2=0.061, adjusted R^2=0.054					

Table 5: Regression analysis of coping style and negative factor score of mental health in interns.

Discussion

The survey was carried out a week after The State Council issued the "New Ten Points", as the number of COVID-19 positive patients admitted to medical institutions doubled due to the impact of the epidemic. In this context, the work intensity and psychological pressure of medical staff, including medical interns, increased significantly. Due to the lack of ability to respond to public health emergencies, interns' psychological adjustment ability is weaker than that of formal medical staff, and they are more likely to have mental health problems.

The results of this group showed that the scores of SCL-90 of the interns in the base were significantly higher than those of the national youth norm, except for interpersonal sensitivity and psychotic factors. The scores of the other 7 factors (somatization, compulsion, depression, anxiety, hostility, terror and paranoia) were significantly higher than those of the national youth norm. The results showed that the interns did have obvious negative emotions and physical symptoms during the epidemic period.

Compared with male interns, female interns show more obvious somatic symptoms and phobic emotions when faced with COVID-19 patients and heavy clinical work due to physical disadvantage and psychological sensitivity.

The somatization symptoms and emotional manifestations of interns with undergraduate degree were more obvious than those of interns with college degree. Through further interviews to explore the reasons, the main reason is that undergraduate interns face higher task pressure than college interns in graduation, postgraduate entrance examination, and various examinations. At the same time, teachers in the base zone have higher requirements for undergraduate interns than specialist interns in the process of teaching, resulting in greater psychological pressure of undergraduate interns.

Solutions

Since most interns are far away from their familiar families and schools and come to a relatively unfamiliar practice base, it is easy to form a misstructured psychology in such an environment and under the background of the epidemic. The base, school, family and society should work together to improve the mental health of interns.

1) **For the base:** Adequate protective equipment should be provided to interns during the epidemic period, and the training of epidemic prevention knowledge should be strengthened. For suspected exposed interns, necessary examinations and effective treatment drugs were provided; In order to reduce the psychological panic caused by the increase of positive patients during the epidemic period. Teachers should pay more attention to the psychological status of interns, especially female students and undergraduate interns.

2) Since the coping style can significantly affect the score of negative factors of mental health of interns, the teaching management department of the base should regularly invite psychosomatic medicine experts to provide group or individual targeted mental health counseling to interns. Group counseling can reduce the loneliness caused by epidemic isolation and has a certain lasting effect [11]. Individual psychotherapy is mainly for those with special requirements or severe psychological problems. Psychological counseling should guide interns to face various pressures of internship and academic work during the epidemic in a correct and positive way and attitude.

3) **For schools:** Special attention should be paid to the negative impact of the pandemic on medical students, and help them adapt to practice life as soon as possible [12]. Schools should strengthen the communication with the teaching base, and jointly solve the difficulties encountered by interns in this period. When the pandemic is severe, schools and the base can take measures such as postponing internship, allowing interns to return home, and converting to online internship to reduce the occurrence of psychological problems of students.

4) **For interns' family:** Most interns are far away from their parents and can get relatively little support from their families. Therefore, parents should pay more attention to contact with students at ordinary times. In addition to material support, they can provide emotional and spiritual support and encouragement to students through WeChat, telephone and other ways to help students face the pressure of the epidemic with a positive and optimistic attitude.

5) **For society:** Under public health emergencies, front-line medical staff generally suffer from physical and mental fatigue, and their physical and mental health status is not optimistic [13]. Medical interns are vulnerable people. As quasi-medical staff, they are the successors of people's health in the future. During the epidemic period, the number of patients increased significantly, and the work intensity of interns in the base also increased. During the period of treatment, patients showed more understanding and tolerance to medical staff, especially to interns, and showed more humanistic care to them, so as to effectively help them solve their practical difficulties. So that these frontline workers can provide medical and health services to the society with a better mental and psychological state.

6) **Educating for social responsibility:** Social responsibility education is an important measure to encourage medical students to respond to the epidemic with a positive attitude and reduce the breeding and spread of negative emotions. It is the duty of every

citizen to ensure the safety of himself and others. As prospective medical staff interns, schools, families, society and bases should encourage them to undertake anti-epidemic tasks within their ability. Schools should integrate the spirit of anti-epidemic into the specific cases and material database of ideological and political theory courses [14]; Cultivating medical students with social responsibility is an inevitable requirement for the strategic talent reserve of "Healthy China" in the post-epidemic era [15]. There is a significant correlation between parents' attitude and students' professional identity [16]. Therefore, parents should not spoil their children, accommodate or seek care everywhere. Children should be encouraged to actively participate in the anti-epidemic work within their ability and make contributions to society.

Conclusion, limitation and future research directions

There are at least two important findings of this study. First, the mental health status of medical interns during the pandemic is generally lower than the national youth norm, especially undergraduate interns with high comprehensive stress and female students with weak physical and mental health. It should attract the attention of clinical teaching base, school, family and society to solve the related problems together. Second, in addition to providing necessary rescue solutions for specific problems, interns should be encouraged to undertake anti-epidemic tasks within their ability and respond to changes in the epidemic with a positive attitude to maintain their physical and mental health.

Limitations of the Study

This study only included research subjects from one clinical teaching base in China, and there may be selection bias, which needs to be confirmed by multi-center and large sample research. Secondly, the attitudes of the main family members towards the epidemic and the effects of education methods on the mental health of medical interns also need further in-depth research.

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Availability of Data and Materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics Guideline Statement

This study involving human participants was reviewed and approved by the Ethics Committee of Wenjiang District People's Hospital of Chengdu, Sichuan Province in China. Granted No. WJQYY-2022-03-17. This is a study of mental health; Informed consent was obtained from all respondents prior to their participation in the survey. The data of the survey were all anonymized, and it was guaranteed that private information would not be leaked. We confirm that all study procedures were conducted in accordance with relevant guidelines and regulations.

Competing Interests

The authors declare that they have no competing interests.

References

1. WJ (2023) The system construction function and realization path of the psychological education mechanism in the post-pandemic era. China Journal of Health Psychology 1-10.
2. WHO (2023) Weekly epidemiological update on COVID-19 - 18 May 2023.
3. Li YT (2020) "Vulnerability" and "vulnerable groups" in the global pandemic of COVID-19. Journal of International Politics 41: 208-229+260.
4. Kass F, Charles E, Klein DF, Cohen P (1983) Discordance between the SCL-90 and therapists' psychopathology ratings. Arch Gen Psychiatry 40: 389-393.
5. Jin H, Wu W, Zhang M (1986) The Preliminary Analysis for Evaluation Results of SCL-90 in China Normal. Chin J Nervous Ment Dis 12: 260-263. (In Chinese).
6. Yang J, Qiu M (2022) The investigation and analysis of the mental health status of medical staff during the pandemic of COVID-19. Modern Medicine & Health 38: 113-116.
7. Fang J, Xiao SY (2018) Test of the Reliability and Validity of Simplified Coping Style Questionnaire in Adolescents. Chinese Journal of Clinical Psychology 26: 905-909.
8. Xie YN (1998) A Preliminary Study on the Reliability and Validity of Simplified Coping Style Scale. Chinese Journal of Clinical Psychology 1998: 53-54.
9. Sun C, Chen D, Yu Y (2022) Group guidance to reduce loss alone loneliness intervention effect. Chinese Journal of Health Psychology 30: 1464-1468.
10. Yang HB (2010) Meta-analysis of SCL-90 Survey Results of Chinese College Freshmen in Recent 10 Years and Determination of the Norm. Chinese Journal of School Health.
11. Yang L, Song C (2022) Analysis and Research on the Health Status of Front-line Medical Staff under Public Health Emergencies. China Health Industry 17: 200-203.
12. Xiao WH (2020) Investigation of Mental Health Status and Influencing Factors of 267 Nursing Interns During the Pandemic of COVID-19. China Higher Medical Education. 2020: 62-63.
13. Li XY, Yan LJ (2017) Study of the Mental Health Status of Nursing Interns and Its Influencing Factors. Guangdong, China: International Association of Digital Medicine Digital Chinese Medicine Branch annual meeting and the second digital Chinese Medicine Academic exchange conference. 2017:1017-8.
14. Zhang Y, Wang F (2022) Study on the Mental Health Status of Medical Interns. Health Vocational Education 40: 126-127.

15. Yang L, Ni TY (2022) Analysis and Research on the Health Status of Front-line Medical Staff under Public Health Emergencies. China Health Industry 17: 200-203.

16. Shen N, Wu JQ, Shen ZH (2017) Analysis of Mental Health and Influencing Factors of Medical Interns. Journal of Community Medicine 15: 22-25.