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ORIGINAL RESEARCH

Current Status and Influencing Factors of Secondary Traumatic Stress in Emergency and Intensive Care nurses:A Cross-Sectional Analysis

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Objective: Secondary traumatic stress (STS) is stress caused by helping or wanting to help someone who has suffered a traumatic event. STS has adverse effects on nurses and their work, such as reduced career achievement, an increased staff turnover rate, inability to complete work, avoidance of contact with patients, mental exhaustion, negative emotions which seriously affect the quality of their work and life. The study to investigate secondary traumatic stress in emergency and intensive care nurses and analyze factors that influence it.

Material and Methods: The study was a cross-sectional survey. Convenience sampling was used to select hospital emergency and intensive care department nurses (n=434) who met the inclusion and exclusion criteria from August to October 2021 to participate in this study. They provided demographic data and completed measures of secondary traumatic stress, emotional intelligence, anxiety and depression. Data analysis included independent samples *t*-tests, one-way analysis of variance, Pearson correlation analysis and multiple linear regression analysis.

Results: Almost one-third (30.7%) of participants were at moderate risk for Secondary Traumatic Stress Scale or above, with high average scores on measures of anxiety (GAD-7 average = 6.05 ± 4.13), and depression (PHQ-9 average = 6.35 ± 4.85). The results of multiple linear regression analysis showed that the average daily amount of sleep in the past week, the number of night shifts in the past month, emotional intelligence, anxiety, and depression influenced secondary traumatic stress, explaining 70.8% of the variance.

Conclusion: The STS of emergency and intensive care nurses in Changzhou is at a high level. Sleep time, number of night shifts and emotional intelligence are related to secondary traumatic stress and anxiety and depression significantly predicted the degree of secondary traumatic stress. Nurses need to master effective treatment methods for secondary traumatic stress, to improve their work efficiency and nursing quality and ensure nursing safety.

Keywords: secondary traumatic stress, emergency and intensive care department nurses, anxiety, depression, emotional intelligence

Introduction

Secondary traumatic stress (STS) is stress caused by helping or wanting to help someone who has suffered a traumatic event. It results symptoms similar to Post-traumatic Stress Disorder (PTSD), such as anxiety, depression, sleep disturbances, intrusive thinking, adjustment disorders, and negative emotions including anger.[1] It is commonly seen in staff who have close contact with trauma patients, listen to traumatic experiences, and witness post-traumatic scenes, such as medical staff, psychotherapists, social workers, police and other professionals.[2,3] The incidence of STS in nurses is high, and is closely related to the department. Studies have shown that about 49% of emergency nurses have STS.[4] 96% of intensive care nurses have STS.[5] More than half of pediatric nurses have STS.[6] In South Korea, 84.4% of trauma center nurses have moderate or above STS.[7] 60% of oncology nurses have a high STS level.[8] It can be seen that nurses in emergency and intensive care related departments have a higher risk of STS than those in general departments.[9–11]

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However, there is no statistic on the incidence of STS in emergency and intensive care nurses in China. STS has adverse effects on nurses and their work, such as reduced career achievement, an increased staff turnover rate, inability to complete work, avoidance of contact with patients, mental exhaustion, negative emotions which seriously affect the quality of their work and life,[12] and the quality and management of nursing care.[13] Therefore, nurse managers need to take countermeasures to prevent and reduce the occurrence of STS in emergency and intensive care nurses. In the study on the STS situation of emergency nurses, it was found that 54% of emergency nurses were most likely to be irritable, 52% of nurses avoided contact with patients at work, and 46% of nurses would have the idea of harming patients.[14] It can be seen that the effect of STS is mainly manifested in the emotional aspect.[3] Moreover, nurses with STS symptoms in the emergency department scored higher on depression and anxiety than nurses without STS symptoms.[15] However, whether anxiety, depression and emotional control can affect STS in emergency and intensive care nurses is still unknown. In recent years, foreign researchers have used different strategies to intervene in groups at high risk for STS, but most studies have used scales such as the Professional Quality of Life scale (ProQOL) and Compassion Fatigue Self-Test (CFST) to evaluate STS. A targeted Secondary Traumatic Stress Scale (STSS), based on the symptoms of anxiety, depression, or PTSD caused by STS has rarely been used to assess the degree of STS. The accurate assessment and diagnosis of STS and its management are important. In this study, STSS was used to investigate the incidence of STS among emergency and intensive care nurses in Changzhou city, and the factors that might influence it. The results will provide important data to inform the implementation of targeted intervention measures to prevent STS and maintain nurses' healthy psychological well-being.

Methods

Participants

Convenience sampling was used to select emergency and intensive care clinical nurses from three tertiary hospitals in Changzhou City from August to October 2021 to participate in this study. Inclusion criteria were: (1) on-The-job clinical nurses who have worked in the emergency or intensive care department for at least one year, (2) voluntary participation in the study after providing informed consent, and (3) there was no self-reported history of mental illness. Exclusion criteria were: (1) nurses who are currently studying or planning to undertake further study; or (2) who have participated in STS related training.

Sample size calculation according to Kendall's estimation method, the sample size was 5 to 10 times of the total number of research variables. The secondary traumatic stress scale mainly used in this study had 17 items, and the sample size was required to be 85–170 cases. In order to reduce sampling error, the sample size was increased by 10%, and the final sample size was 93.5 to 187 cases. In this study, 434 valid questionnaires were collected, which met the sample size requirements. The research adhered to the Declaration of Helsinki and received approval from the Ethics Committee of the Medical School of Hunan Normal University (No. 256, 2021).

Instrument

The online survey itself was designed with the goal of investigating whether any relationships existed between anxiety, depression, and emotion levels (independent variable) and levels of STS (dependent variables). The survey had three major parts.

The demographics questionnaire was designed by the authors and included questions regarding gender, age, education level, job title, marital status, number of children, years working as a nurse, average number of hours of sleep per night, working hours, number of Grade I nursing or critically ill patients nursed by them, and whether they or their families had suffered major changes in the past month.

Secondary Traumatic Stress Scale (STSS) The STSS developed by Bride et al[16] was used to evaluate STS in emergency and intensive care nurses in this study. A survey conducted in pediatric nurses showed that Cronbach's α coefficient ranged from 0.81 to 0.87.[17] The STSS consists of 17 items with three dimensions and is scored using a 5-point Likert scale ranging from 1 "never" to 5 "always". Higher scores indicate higher levels of STS. Bride et al (YEAR) reported that the internal consistency coefficient of the scale: total STSS (0.94), intrusive subscale (0.83), avoidance

subscale (0.89) and arousal subscale (0.85), and other psychometric characteristics such as structural validity have been verified using various methods.[18]

Emotional Intelligence Scale (EIS) This scale was translated into Chinese by Professor Wang Caikang of the Psychology Department of South China Normal University,[19] and Cronbach's α coefficient was reported to be 0.84.[20] The original is a 33-item self-report scale with four dimensions, developed by Schutte et al, (YEAR).[21] Items are scored using a 5-point Likert scale ranging from 1 "very inconsistent" to 5 "very consistent". Total scores may range from 33 to 165 with higher scores reflecting higher emotional intelligence.

The 7-item Generalized Anxiety Disorder Scale (GAD-7) This scale was compiled by Spitzer et al (2006) according to the DSM-IV diagnostic criteria for GAD.[22] The scale includes seven items that assess a person's anxiety symptoms over the past two weeks. The response options were "not at all", "a few days", "more than half of the days", and "almost every day", with scores of 0, 1, 2, and 3, respectively. Total scores may range from 0 to 21, with higher scores indicating greater anxiety. A score of 10 or greater on the GAD-7 represents a reasonable cut point for identifying cases of GAD. Cut points of 5, 10, and 15 might be interpreted as representing mild, moderate, and severe levels of anxiety on the GAD-7.[23] The overall Cronbach's α coefficient of the GAD-7 is reported to be 0.89,[24] and the Cronbach's α coefficient of the Chinese version in the hospital patient population was 0.92.[25] GAD-7 not only performed well as a screening tool to detect generalized anxiety disorder, but also performed nearly equally well in detecting panic disorder, social anxiety disorder, and PTSD.

The 9-item Patient Health Questionnaire (PHQ-9) This 9-item scale was formulated based on the DSM-IV diagnostic criteria for depression.[26] Participants report problems they have experienced over the past two weeks with response options being "not at all", "a few days", "more than half of the days", and "almost every day". Possible scores range from 0 to 27, with higher scores reflecting higher degrees of depression. PHQ-9 scores ≥5, ≥10, and ≥15 can be considered as mild, moderate, and severe levels of depression.[27] The overall Cronbach's α coefficient is reported to be 0.89, and the Cronbach's α coefficient of the Chinese version in the hospital patient population is 0.839,[28] indicating it is an effective tool to rapidly screen people for depression in general hospitals.

Survey Methods and Quality Control

Data were collected by issuing questionnaires. Before issuing the questionnaire, a paragraph of instructions for filling out the questionnaire was added, the researcher explained the research purpose and provided instructions for completing it to participants. After obtaining informed consent, the respondents completed the questionnaire anonymously, and it was returned immediately. Of a total of 532 questionnaires issued, 434 valid questionnaires were retained, reflecting an effective response rate of 81.58%.

Statistical Analyses

SPSS 22.0 statistical analysis software (IBM Corp, 2013) was used for data analysis. Independent samples *t*-tests and one-way analysis of variance (ANOVA) were used to compare STSS scores according to participants' demographic characteristics. Pearson correlation analysis was used to assess relationships between anxiety, depression and emotional intelligence, and multiple linear regression analysis was undertaken to assess relationships between STS and factors that might influence it. $P < 0.05$ was considered statistically significant.

Results

STS, Anxiety, Depression and Emotional Intelligence Scores of Emergency and Intensive Care Nurses

Most participants reported at least moderate levels of anxiety (78.6%) as measured by the GAD-7 and at least moderate levels of depression (84.8%) as measured by the PHQ-9. Participants' scores on the measures of STSS, anxiety and depression are summarized in Table 1.

Table 1 Participants' (n=434) Stress, Anxiety and Depression Scores

Scale Scores	Score ($\bar{x} \pm s$)	Number (n=434)	%
STSS total	33.83±12.74		
Low	33.73±2.69	147	33.9
Medium	40.50±1.68	119	27.4
High	45.92±1.38	116	26.8
Extremely high	54.84±7.18	52	11.9
GAD-7	6.05±4.13		
No or mild anxiety	7.55±0.80	93	21.4
Moderate anxiety	11.76±1.13	114	26.3
More than moderate	14.61±1.06	184	42.4
Severe anxiety	21.72±2.63	43	9.9
PHQ-9	6.35±4.85		
No or mild depression	8.73±1.17	66	15.2
Moderate depression	11.97±1.42	118	27.2
Moderate depression or greater	17.20±1.20	199	45.8
Major depression	24.18±4.39	51	11.8

Abbreviations: STSS, Secondary Traumatic Stress Scale; GAD-7, The 7-item Generalized Anxiety Disorder Scale; PHQ-9, The 9-item Patient Health Questionnaire.

Analysis of STS Scores

Results of the independent samples t tests and ANOVAs of the STSS scores according to participants' demographic characteristics are summarized in Table 2. The results showed that STSS scores differed significantly according to the average hours of sleep per day in the past week and the number of night shifts in the past month ($P < 0.05$). No other differences in STSS scores were observed for any other demographic characteristic.

Table 2 Emergency and Intensive Care Nurses' Stress (STSS) Scores According to Demographic Characteristics

Characteristic	Number (n=434)	Percent	STSS Score	*t*/F	P
Gender				−1.672	0.095
Male	35	8.1	13.29±12.69		
Female	399	91.9	17.10±12.95		
Age (years)				2.147	0.094
<25	103	23.7	15.69±12.44		
25~<30	146	33.6	17.55±13.95		
30~<40	156	35.9	17.74±12.53		
>40	29	6.7	11.79±10.82		
Educational level				0.483	0.617
Junior college and below	56	12.9	16.21±12.59		
Undergraduate course	366	84.3	16.99±13.03		
Master's degree or above	12	2.8	13.50±12.95		
Job title				0.370	0.691
Nurse	274	63.1	16.90±13.50		
Supervisor nurse	146	33.6	16.87±12.07		
Associate chief nurse and above	14	3.2	13.86±11.41		
Marital status				1.087	0.338
Single	183	42.2	17.39±13.20		
Married	243	56.0	16.17±12.83		
Divorce	8	1.8	21.88±10.66		

(*Continued*)

Table 2 (Continued).

Characteristic	Number (n=434)	Percent	STSS Score	*t*/F	P
Number of children				2.924	0.055
None	216	49.8	17.27±13.17		
One	152	35.0	14.99±11.54		
Two or more	66	15.2	19.35±14.87		
Years of service (years)				1.117	0.342
<1	54	12.4	13.80±12.00		
1~<5	111	25.6	17.39±12.99		
5~<10	124	28.6	17.00±13.42		
>10	145	33.4	17.27±12.85		
Average sleep per day in the past week (hours)				5.262	0.001**
<6	79	18.2	20.39±12.56		
6~<8	337	77.6	15.80±12.89		
8~<10	16	3.7	16.69±11.57		
>10	2	0.5	41.50±0.71		
Average working hours per day in the last week (hours)				2.065	0.128
6~<8	175	40.3	15.39±12.68		
8~<10	237	54.6	17.53±12.69		
>10	22	5.1	19.95±16.96		
Number of night shifts in the last month				3.908	0.021*
<2	107	24.7	14.80±12.38		
2~<6	223	51.4	16.42±13.37		
>6	104	24.0	12.25±12.25		
Average number of Grade I or critically ill patients per day in the past week				1.967	0.141
0~<2	115	26.5	16.67±13.36		
2~<4	159	36.6	15.40±12.29		
≥4	160	36.9	18.26±13.22		
Have you or your family experienced any major changes in the past month? (such as divorce, death of a loved one, serious illness, etc.)				0.602	0.547
Yes	13	3.0	18.92±16.30		
No	421	97.0	16.72±12.86		

Notes:*p<0.05; **p<0.01.
Abbreviation: STSS, Secondary Traumatic Stress Scale.

Correlation analysis between STS and anxiety, depression and emotional intelligence in emergency and intensive care nurses.

Results of the Pearson correlation analysis between the total EIS, PHQ-9, GAD-7 and STSS scores are summarized in Table 3 which shows that all were positively correlated (all $P < 0.05$).

Multivariate Linear Regression Analysis of STS

Multiple linear regression analysis was conducted with STSS scores as the dependent variable, the two demographic variables (average hours of sleep per day in the past week and the number of night shifts in the past month) that significantly influenced participants' STS scores and EIS, PHQ-9 and GAD-7 as independent variables. The two demographic variables were grouped into categories for the analysis (see Table 4) while the EIS, PHQ-9 and GAD-7 scores were entered as continuous data. The results showed that all five factors were included in the regression equation, which explained 70.8% of the variation in STS scores (see Table 5).

Table 3 Results of Correlation Analysis Between EIS, PHQ-9 and GAD-7 and STSS

Pearson Correlation Coefficient; *r*				
	STSS	**EIS**	**PHQ-9**	**GAD-7**
STSS	1			
EIS	−0.111[b]	1		
PHQ-9	0.824[a]	−0.153[a]	1	
GAD-7	0.776[a]	−0.071[b]	0.833[a]	1

Notes: [a]Expression $P<0.05$. [b]Expression $P<0.01$.
Abbreviations: STSS, Secondary Traumatic Stress Scale; EIS, Emotional Intelligence Scale; PHQ-9, The 9-item Patient Health Questionnaire; GAD-7, The 7-item Generalized Anxiety Disorder Scale.

Table 4 Independent Variables Entered into the Regression Analysis

Variable	Categorization
Average sleep time over the past week	<6 =1; 6~<8 =2; 8~<10 =3; >10 =4
Number of night shifts in the last month	<2=1; 2~<6 =2; >6 =3
EIS	Original value entry
PHQ-9	Original value entry
GAD-7	Original value entry

Abbreviations: EIS, Emotional Intelligence Scale; PHQ-9, The 9-item Patient Health Questionnaire; GAD-7, The 7-item Generalized Anxiety Disorder Scale.

Table 5 Results of the Multivariate Linear Regression Analysis of STS

Independent Variable	B	SE	β	t	P	VIF
Constant	0.570	2.413		0.236	0.813	
Average hours of sleep over the past week	−0.256	0.728	−0.009	−0.352	0.725	1.013
Number of night shifts in the last month	0.823	0.490	0.044	1.681	0.093	1.018
EIS	−0.002	−0.014	−0.004	−0.156	0.876	1.039
PHQ-9	1.537	0.575	0.575	11.985	0.000	3.367
GAD-7	0.917	0.292	0.292	6.148	0.000	3.311

Notes: R^2=0.708, Adjust R^2=0.704, F=207.104, $P<0.01$.
Abbreviations: B, Partial Regression Coefficient; SE, Standard Error; β, Standard Regression Coefficient.

Discussion

The STS Situation of Emergency and Intensive Care Nurses Needs Urgent Attention

In this study, the incidence of STS among emergency and intensive care nurses was 66.13%, which was slightly lower than that reported by IIhan et al[29] in a survey of emergency medical staff, but considerably higher than the results reported by Gunusen et al[30] in a survey of the incidence of STS among pediatric nurses. Salimi et al[5] conducted a questionnaire survey on nurses in intensive care units in Iran using the Professional Quality of Life Scale (ProQOL), and their results showed that most respondents had a moderate or high level of STS. That study considered STS as a trauma-related negative emotion caused by contact with traumatized people. The incidence of STS may be related to the frequency or severity of exposure to traumatic events, cultural factors, and ways of dealing with them. Therefore, the incidence of STS in nurses ranges from 30% to 60%, and its incidence appears to be related to the type of department. Among them, emergency departments, intensive care medicine, oncology departments and trauma departments are high-risk departments for STS, with the incidence reported to be greater than 50%. However, the results of the present study are essentially consistent with the results of relevant foreign studies, indicating that there is little difference in the incidence of STS in emergency and

intensive care nurses from different cultural backgrounds. Emergency and intensive care is one healthcare settings most associated with stress and patients and their families in emergency and intensive care departments generally have a series of complex psychological problems. Nurses have almost no recovery time when caring for emergency and intensive care patients, constantly shifting from one traumatic event to another during working hours and intensively dealing with critical care and death. This high demand and highly tense working environment leads to psychological stress reactions in emergency and intensive care nurses.[31] Nursing managers should pay attention to improving the working environment of emergency and intensive care departments, rationally allocating nursing staff and ensuring appropriate bed-to-nurse ratios to address nurses' stress. Clinical nursing staff attend to their patients' and families' psychological problems, give appropriate guidance, and aim to improve the psychological well-being of acute and critically ill patients and their families. In addition, professional psychological assistance should be provided to nurses in emergency and intensive care departments in a timely manner to manage their stress. Additional interventions might include maintaining a healthy departmental atmosphere, providing interpersonal support, and holding regular knowledge lectures or mutual help groups to provide nurses with techniques for self-management.

Factors Related to STS in Emergency and Intensive Care Nurses

The Number of Night Shifts

This study showed that the number of night shifts worked by nurses was related to the severity of their STS. Shift work is one of the characteristics of nursing work, in which the condition of patients changes rapidly and illnesses are serious. Studies have shown[32] that nurse shift work disrupts family life, affects their children's education and family life, and increases the psychological burden of nurses resulting in compulsive worry, helplessness, stress overload and interpersonal conflict. Their physical health can also be adversely affected and sleep disorders and changes in their nutritional status and appearance may occur, among other impacts. Thus, working night shifts have a considerable negative impact on nurses, resulting in STS, burnout and other negative outcomes and the relationship is bidirectional. The results of this study show that the number of night shifts is correlated with the degree of STS, but it had no significant effect for two possible reasons The first may be that the sample size was too small and the sampling method may have resulted in bias, which may be addressed by conducting a larger-scale study to clarify the relationship between night shifts and STS. The second is the possibility that there may be mediating variables between the number of night shifts and STS, affecting the relationship between them.

Sleep Time

Results of this study showed that sleep duration was correlated with STS severity in emergency and intensive care nurses. This is a similar finding to the results of a multi-center study on empathic fatigue in Chinese nurses by Chinese scholar Wang et al[33] and a qualitative study on clinicians by Kruper et al.[34] Domestic studies have shown that nurses in intensive care units generally suffer from a lack of sleep.[35] Nurses in these departments face great work pressure and undertake heavy and complicated nursing work, in a fast-paced environment. They must also learn professional knowledge when off duty, and these stresses accumulate over time, resulting in long-term stress. It affects nurses' sleep quality, often manifested as a lack of sleep, decreased sleep quality, frequent waking and difficulty falling asleep. In addition, sleep quality is also closely related to depression and anxiety, and patients with depression and PTSD have long-term sleep disorders.[36] Therefore, it is suggested that nursing managers should rationally arrange nurses' workloads by adjusting human resources, providing psychological support for nurses, and reducing nurses' work pressure. These interventions will assist in improving nurses' psychological well-being and effectively reduce psychological pressure, improve the quality of nursing, and ensure patient safety.

Emotional Intelligence

This study showed that emotional intelligence was correlated with STS severity in emergency and intensive care nurses. Emotional intelligence is an individual's ability to deal with themselves and others. Law et al divided emotional intelligence into four dimensions: detecting one's own emotions, evaluating others' emotions, applying emotions and managing emotions.[37] Nursing researchers have conducted extensive research on emotional intelligence, and it is

generally believed that nurses' emotional intelligence is related to their psychological state and nursing quality.[38–40] The occurrence of STS is considered an emotional response, and the helper shows disturbing or painful psychological symptoms in the process of helping others, which can also be considered as a kind of emotional stress.[16] Singh et al[2] studied the relationship between emotional labor, emotional regulation, and STS in mental health professionals, and showed that intense emotional labor can predict high levels of STS. Thus, it is clear that there is a relationship between STS and emotion management, but this study did not identify an impact of emotional intelligence on STS, which may be related to the strong sensitivity of emotional intelligence to positive emotions.[37] As a kind of post-traumatic stress, STS often causes changes in negative emotions, resulting in the insignificant impact of emotional intelligence on STS.

STS in Emergency and Intensive Care Nurses Has an Impact on Their Anxiety and Depression

Results of this study showed that higher degrees of STS in emergency and intensive care nurses was associated with higher levels of anxiety and depression. This is similar to the results of a study on nurses by Bock et al,[41] which suggested that compared with nurses who did not experience STS, nurses with STS symptoms were more likely to have symptoms of anxiety and depression, and an increased risk of severe anxiety and depression, which was accompanied by increased work pressure and decreased ability to function at work. However, the current research on the psychological and work-related consequences of STS is insufficient and subjective and objective factors also affect STS. Studies have shown[42] that certain personality traits are prone to negative emotions, and personal coping strategies may also affect the perception of work stress and depressive symptoms. Among personality traits, type D personality traits are associated with higher levels of negative emotions, mental stress, and higher rates of illness and false illness, while people who use negative coping strategies are more likely to experience depression. Conversely, the use of positive coping strategies decreases the likelihood of depression. However, this study did not assess the impact of personality traits and coping strategies on STS. The perception of secondary traumatic events and STS cannot be excluded at the individual level. From an objective point of view, it is also impossible to evaluate whether stress caused by the work environment increases the impact of secondary traumatic events. In relevant studies, stress caused by nursing work is often regarded as job burnout.[43] At present, the two can only be separated theoretically, and there is a lack of research on the impact of nursing work on STS. It is suggested that managers should not only pay attention to nurses' STS severity and symptoms, but also consider the interaction between STS and nurses' personality traits, coping styles and working environment from both subjective and objective levels.

Conclusion

The results of this study show that the incidence of STS in emergency and intensive care nurses is high, and nursing managers should pay more attention to this issue. The number of night shifts, hours of sleep and emotional intelligence are closely related to STS, and the severity of STS is affected by anxiety and depression. Accordingly, nursing managers should conduct STS related training and provide psychological counseling for emergency and intensive care nurses in a targeted manner, so that nurses can learn about STS and its consequences and learn methods to manage it and work stress. These interventions will assist nurses to better manage STS, improve work efficiency and nursing quality and ensure the safety of patients. This study is a single-center cross-sectional study and only investigates emergency and intensive care nurses, which has certain limitations. In the future, multi-center investigation and research can be carried out to conduct in-depth investigation and analysis of STS in different regions, time and populations, so as to lay the foundation for exploring effective intervention programs.

Abbreviations

STS, Secondary traumatic stress; PTSD, Post-traumatic Stress Disorder; ProQOL, Professional Quality of Life scale; CFST, Compassion Fatigue Self-Test; STSS, Secondary Traumatic Stress Scale; EIS, Emotional Intelligence Scale; GAD-7, The 7-item Generalized Anxiety Disorder Scale; PHQ-9, The 9-item Patient Health Questionnaire.

Data Acquisition

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

Ethics Approval and Consent to Participate:

This study was approved by the Ethics Committee of the Medical School of Hunan Normal University (No. 256, 2021). There was no written consent, as replying to the assigned online survey implied agreement to participate, and the committee approved this procedure.

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Disclosure

The authors report no conflicts of interest in this work.

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