SARS 　　　　、

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【　　】　　　　　SARS　　3　　　　　　　　(PTSD) 　　　
　　-　　　　、　　　　　　　　(IES-R) 、　　　　　　　(PSSS) 、　　　　　　(SCSQ) 、　　(SES) 、
　　　(EPQ) 　　　, SARS　　　、　　　　　　　　　1. SARS　　　　、　　　　　、
　　PTSD　　　　　: 55. 1%、25. 8%、31. 18%; SARS　　PTSD　　　　　　　(P< 0. 01) 。2　3
　　PTSD　　　　　　　　　; 　　　　　　　　SARS　　　、　　　　　,
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Investigation by comparison on the posttraumatic stress response among SARS patients hospital staffs and the public exposed to SARS

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【Abstract】 Objective This paper focuses on the investigation of the occurrence and influential factors of post traumatic stress disorder (PTSD) in SARS patients hospital staffs and the public exposed to SARS Methods Three groups were assessed by scale of self-compiled stressor Questionnaire impact of event scale revised (IES-R) , PSSS SCSQ SES and EPQ Results 1 The incidence of PTSD symptoms in the three groups were 55. 1%, 25. 8% and 31. 18%. 2. The main cause of the different incidence was the difference of the stressor intensity and characters Negative coping was the risk factor of SARS patients and the public Self esteem was the protected factor of SARS patients and the hospital staffs Social support was a protected factor on the hospital staffs 3. Comparing to the first investigate in September 2003 the data of follow-up study in September 2004 showed that the prevalence items significant decreased Conclusions 1 The investigation concludes that all three groups of people exposed to SARS exhibit PTSD symptom SARS patients have the highest occurrence (P< 0. 01) . 2 The main influencing factors of different incidence of PTSD in different groups are intensities and characteristics of stressors Different people who had PTSD symptoms have different influencing factors 3 With the change of time, the PTSD symptoms significant relieve with the attenuation gradually of exposure degree of stressor

【Key words】 Severe acute respiratory syndrome Stress disorder Post traumatic

Some documents have reported[1-3] that Severe Acute Respiratory Syndrome (SARS) patients and hospital staffs suffered from PTSD symptoms after the crisis There has yet any report on public exhibiting PTSD symptoms Series of investigations have been done in the third severest infected area in China Shanxi Province and have reported the study of mental state of hospital staffs working closely with SARS As one of the research series this paper will conclude the investigation and discuss PTSD symptoms as well as possible influential factors on SARS patients hospital staffs and the public in Shanxi Province

SUBJECTS AND METHODS

Participants

Chosen from three groups of people the first group consisted of diagnosed and questionable SARS patients (n= 114) coming from seven hospitals in Taiyuan 52 males and 62 females The mean age of the participants was 36. 9 ± 13. 9 years ranged from 8 to 81. The second group consisted of Hospital staffs (n= 89) coming from three provincial hospitals 8 males and 81 females The mean age of the participants was 30. 0 ± 5. 0 years ranged from 20 to 45. The third group consisted of the general public (n= 93) . 36 males and 57 females The mean age of the participants was 34. 9 ± 12. 3 years ranged from 13 to 70.

Assessment means

Demographic data include gender age occupation marital status and so on This study used self-compiled stressor Questionnaire which was based on the stress reaction theory and mechanism and

combined with reactive opinions about SARS affected peoples mental intervention. This scale which has been perfected many times consisted of seven types of stressors related to SARS crisis: fear of infection, physiological and psychological tension due to the isolation, inconveniences resulted from the changes of work and life styles, discrimination from the society, restraint of social function, economical loss and death of kins and friends. The study also includes the cognition of positions of preventive measures, and social harm of SARS. There are total of 36 items and are graded on a $1 \sim 5$ scale. The sample of PTSD was not diagnosed by clinic psychiatrists but measured by is the Impact of Event Scale-Revised[4] (IES-R), a self-assessed scale which includes twenty-two items and three areas of evaluation: intrusion, avoidance and alertness symptoms. It was graded on a $0 \sim 4$ scale. 0 as never and 4 as very often. In addition, the mesomerism factors including social support, coping, personality and self esteem were assessed by standard scales, Perceived Social Support Scale(PSSS)[5], Simplified Coping Style Questionnaire (SCSQ)[5], Self-Esteem Scale(SES)[5], and Eysenck Personality Questionnaire(EPQ)[6].

Statistical analysis

Statistical Package for Social Science (SPSS Inc, Chicage USA) was used for data analysis. Demographic data and continuous variables were summarized by mean value and standard deviation. Chi-square was used to compare difference of the incidence of PTSD symptoms in three groups. The relationship between IES-R scores and related factors was analyzed by Correlation Analysis. We used One-way analysis of variances to test and estimate associations related to variables between different stress respond groups.

RESULTS

The incidence of PTSD symptoms

IES-R score higher than 19[7-8] was suggested to have a signifying stress reaction. Sixty-five (55.1%) SARS patients showed a high level of psychological distress. Comparing to SARS patients, the incidences of PTSD symptoms(IES-R score greater than 19) in hospital staff and public were 25.8% and 31.18% respectively.

There were significant differences in incidences of PTSD symptoms on male and female group in three groups (Male $x^2 = 7.167$, $P = 0.028$, Female $x^2 = 15.704$, $P = 0.000$), as well as on high and low aged group in three groups($\leqslant 30$ years $x^2 = 13.616$, $P = 0.001$, > 30 years $x^2 = 16.193$, $P = 0.000$). See Table $1 \sim 2$.

Table 1 Compare with the Prevalence of PTSD Symptoms between Male and Female Group in Three Groups of People after SARS Crisis

	Male		Female	
	PTSD symptoms	Non-PTSD symptoms	PTSD symptoms	Non-PTSD symptoms
SARS Patients	29	20	35	25
Hospital Staff Who Work in the SARS Ward	2	6	21	56
Public in SARS Prevalent Area	12	24	17	39
Total	43	50	73	120

Note $x^2 = 7.167$, $P = 0.028$; Female $x^2 = 15.704$, $P = 0.000$

Table 2 Compare with the Prevalence of PTSD Symptoms between High and Low Aged Group in Three Groups of People after SARS Crisis

	$\leqslant 30$ years		> 30 years	
	PTSD symptoms	Non PTSD symptoms	PTSD symptoms	Non PTSD symptoms
SARS Patients	23	20	41	25
Hospital Staff Who Work in the SARS Ward	7	37	13	20
Public in SARS Prevalent Area	15	23	14	40
Total	45	80	68	85

Note $\leqslant 30$ years $x^2 = 13.616$, $P < 0.05$; > 30 years $x^2 = 16.193$, $P < 0.01$

Influencing factors

Results of ANOVA of the variable of significant statistical difference in different groups ($P < 0.05$). Dividing people into three groups by P_{25}, P_{75} of IES-R overall score, people with scores P_{75} score and above were categorized in the severe reaction group, people with P_{25} scores and below were categorized in the little reaction group. Moderate reaction group ranged from P_{25} to P_{75} score.

Sex, age, seven direct and indirect stressors, cognition and their media such as social support, self-esteem, coping style and personality and so on were tested by analysis of variance. See Table $3 \sim 5$.

Table 3 ANOVA on Influencing Variable of IES-R Score of SARS Patients ($\bar{x} \pm s$)

Variable	Group of Little Degree Stress Reaction(n=29)	Group of Moderate Degree Stress Reaction(n=58)	Group of Severe Degree Stress Reaction(n=30)	F	P Value
Isolation	4.36 ± 2.56※	5.19 ± 2.94	6.50 ± 3.05	3.417	0.037
Social Discrimination	1.68 ± 1.13※	2.64 ± 1.63※	4.00 ± 1.39	15.745	0.000
Negative Coping	16.43 ± 5.57※	18.50 ± 4.81	20.08 ± 5.33	3.102	0.042

Note: Compare with group of severe degree stress reaction ※ $P < 0.05$, Compare with group of moderate degree stress reaction $P < 0.05$

Table 4 ANOVA on Influencing Variable of IES-R Score of Hospital Staff Who Work in the SARS Ward ($\bar{x} \pm s$)

Variable	Group of Little Degree Stress Reaction(n=23)	Group of Moderate Degree Stress Reaction(n=44)	Group of Severe Degree Stress Reaction(n=22)	F	P Value
Isolation	2.88 ± 0.99※	4.98 ± 1.07※	4.05 ± 1.76	6.228	0.003
The Inconveniences Resulted from the Change of Work and Life	4.08 ± 1.26※	4.50 ± 1.37	5.05 ± 1.37	3.196	0.046
Social Discrimination	2.73 ± 0.93※	3.95 ± 1.86	4.57 ± 2.48	5.575	0.005
The Astriction of Social Function	5.88 ± 1.71※	7.78 ± 2.90	9.06 ± 2.08	6.847	0.002
Loss of Economy	2.40 ± 0.68※	3.38 ± 2.06	4.33 ± 2.29	5.330	0.007
Social Support	66.91 ± 11.69	70.79 ± 8.55※	64.00 ± 11.42	3.096	0.051

Note: Compare with group of severe degree stress reaction ※ $P < 0.05$, Compare with group of moderate degree stress reaction $P < 0.05$

Table 5 ANOVA on Influencing Variable of IES-R Score of Public ($\bar{x} \pm s$)

Variable	Group of Little Degree Stress Reaction(n=29)	Group of Moderate Degree Stress Reaction(n=27)	Group of Severe Degree Stress Reaction(n=41)	F	P Value
Fearing be Infected with SARS	8.85 ± 4.46※	10.18 ± 5.32※	13.23 ± 5.75	5.298	0.007
Kinships and Friends Death Because of SARS	2.29 ± 0.72	2.15 ± 0.53※	3.10 ± 2.27	3.410	0.038

Note: Compare with group of severe degree stress reaction ※ $P < 0.05$; Data of follow-up study

In our study, only 35 SARS patients finished follow-up data. In the first investigate(September, 2003), the most severely five items by prevalence items score $\geqslant 3$ of IES-R are " I tried not to talk about it, " I had waves of strong feelings about it, " Any reminder

brought back feelings about it, "I tried not to think about it. The prevalence items ranged from 8.6% to 51.4%. Comparing to the first investigate, the prevalence items significant decreased in second investigate (September 2004). The prevalence items ranged from 0% to 34.3%. The most severely five items are "I felt irritable and angry, "I had waves of strong feelings about it, "Any reminder brought back feelings about it, "I had trouble staying asleep, "I tried not to think about it.

DISCUSSION

This research shows that the PTSD symptoms appear in three groups of people after SARS crisis. The detection rate of PTSD symptoms is 55.1% for SARS patients, 25.8% and 31.18% for hospital staffs who worked in SARS ward and the public respectively. After crisis most of people who are involved in crisis appeared to have PTSD symptoms[9-11]. At the same time, some scholars in Beijing investigated 285 rehabilitees who suffer from SARS, and their research shows the occurrence of PTSD in this group is 9.79%, assessed by CID2.1 combining with clinical diagnoses[1]. In contrast to the study in Beijing, our research use IES-R which made it hard to confirm that the occurrence of PTSD among SARS patients in Shanxi. The occurrence among hospital staffs in SARS ward is 25.80% and is 20%[2] in Singapore. We can see that the occurrence of PTSD is higher in Shanxi. There are two possible reasons. First, the differences between the different regions, including work condition, staff treatment and so on, although these reason need to be confirmed through further research. Secondly, different scales were used in different studies. We use IES-R and the study in Singapore use IES. In addition, our study shows that the occurrence in public is 31.18%, which was similar to previous disaster[10-12]. In brief, the severe level of psychological impact related to SARS crisis is determined and place over other common diseases. This study shows that there are differences in occurrence of PTSD among three groups related to SARS crisis. SARS patients, the direct sufferers, shows the highest degree of PTSD symptoms because of due to the serious physiological and psychological trauma. It is a good verification that the exposure degree of stressor has dose response relation with appearance of PTSD symptoms[13].

This study find that the influential factors of PTSD are different among three groups. The stressors of SARS patient are isolation and social discrimination. Those of hospital staffs are isolation, social discrimination, inconveniences resulted from the change of work or life styles, restriction of social function, and economical loss. Fear of infection, the death of family members or friends are regard as the stressor for the public in SARS epidemic area. According to the analysis, the crisis intervention to the corresponding stressor could reduce occurrence of PTSD symptoms significantly.

Our research indicate that high self-esteem is a helpful factor of occurrence of PTSD among SARS patients and the hospital staffs. This belief can undoubtedly make SARS patients more confident to combat the disease and lessen the psychological impact related to SARS crisis. Negative coping was a harmful factor of PTSD symptom among patients and the public. Some study shows that positiveness is observed between positive coping and mental symptoms[14]. In another word, there is an association of high negative coping score with high mental problem scores. The coping styles is significantly related to the level of mental symptoms scores. So positive coping with crisis is a miracle drug to motivate lives and avoid PTSD symptoms. In addition, we find that low social support acted as a harmful factor of the occurrence of PTSD symptoms. This result is further authenticate that high social support could reduce the occurrence of PTSD symptoms[15]. Regrettably our research did not find correlation between gender, occupation, marital status and personality against the occurrence of PTSD symptoms in three groups.

The results of follow-up study show that the PTSD symptoms significant relieve one year after the first investigate with the attenuation gradually of exposure degree of stressor. So it is a good verification that the exposure degree of stressor has dose response relation with appearance of PTSD symptoms.

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