



## Original Article

## Assessment of Secondary Traumatic Stress in Health Care Professionals Working in Tertiary Care Hospitals of Islamabad

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## ABSTRACT

Health care professionals are at a higher risk of developing secondary traumatic stress due to various factors related to the nature of their job. **Objectives:** To assess the level, severity & factors associated with secondary traumatic stress symptoms among health care professionals working with trauma victims in tertiary care hospitals of Islamabad. **Methods:** A cross-sectional study was carried out in which 170 healthcare professionals participated from both public and private tertiary care hospitals of Islamabad. Data were collected by using STS Scale, TIPI and demographics. Analyses was done using independent t-test, ANOVA and Pearson's Correlation Coefficient. **Results:** The results showed, 94(55.3%) and 71(41.7 %) little and mild to moderate level of STS in healthcare professionals respectively. Female gender was significantly associated with STS ( $p = 0.01$ ) along with MBBS graduates ( $p = 0.02$ ) and junior doctors ( $p = 0.01$ ) showed symptoms of STS. Those who were exposed to trauma multiple times had significant association STS. Emotionally stable personality trait of the healthcare professionals had an indirect relation with the development STS symptoms ( $r = -0.46$ ). **Conclusions:** The results emphasized hospital administration to take measures in order to reduce stress level especially among female HCWs, junior doctors and those who had multiple exposure of trauma. If necessary steps are not taken, this stress may lead to worse mental health of this target population

## INTRODUCTION

Secondary traumatic stress (STS) is a condition that develops as a result of a traumatic event that has been experienced by someone other than the person suffering from trauma [1]. STS a term that gained its recognition by Charles Figley; which has a meaning of stress that occurs by helping others suffering from trauma. A social, psychological and emotional response as a result of understanding the other individual's traumatic experiences [2]. Health care professionals are at a higher risk of developing secondary traumatic stress due to various factors related to the nature of their job, one of the most important factors is dealing with patients who are suffering from trauma; other factors include job

dissatisfaction, long working hours, often working over the hours, loss of personal and social life. This eventually leads to a state where psychological burden coupled with poor decision-making leads to unintentional ethical and medical errors [3]. The emotional, physical and mental exhaustion of healthcare professionals has negative repercussions on their ability to work efficiently. As the work of a health professional is directly concerned with the lives of their patients it adds more to the already negative outcomes of their psychological state [4]. Compassion fatigue another term that has a similar meaning as that of STS. Where former term especially affects the feeling of empathy towards the patients' ailments and other conditions [5]. As

per a study it is suggested that 16% to 85% health care workers working in different clinical areas, might develop secondary traumatic stress symptoms [6]. Levels of secondary trauma exposure and perceptions of trauma resolution were positively related to STS [1]. Out of 87 Portuguese nurses, 59% were found to have a high level of STS [7]. 72% of the doctors were found higher level of STS [8]. In Australia 91% of the physicians' trainees were found to have higher level of STS [9]. 77.6% of the Nepalese doctors were found to have STS [10]. A study conducted in Pakistan showed 65.4% of healthcare professionals had moderate level of compassion fatigue [11]. As the current situation worldwide is suggestive of more trauma victims' influx in emergency departments and trauma units, health care professionals are at the risk of developing secondary traumatic stress symptoms more often than it used to be. Pakistan has literature gap, as there is no such study performed specially on healthcare professionals that are employed in trauma units and the prevalence of STS symptoms among them. The purpose of this study is to address the neglected issue of STS in health professionals in Pakistan; its prevalence, associated factors and ultimate consequences. That will help in making workplace policies and interventions can be recommended for this issue. The aim of this study was to assess the level of STS and identify the factors associated with STS among HCP working with trauma victims in tertiary care hospitals of Islamabad.

## METHODS

A cross-section study design was carried out in emergency departments of Tertiary Care Hospitals of Islamabad over a period of six months from December 2021 to May 2022. Sample size was calculated after taking the total population of emergency respondents from each of the selected hospital, with 50% proportion and 5% non-response rate a total of 170. HCP who met inclusion criteria, were conveniently included in this study. Data were collected by questionnaire which consisted of socio-demographic information of the HCP and two internationally validated tools of Ten Item Personality Trait Inventory and Secondary Traumatic Stress Scale. A total score below 28 corresponded to "little or no STS," a score between 28 and 37 means "mild STS," between 38 and 43 "moderate STS," between 44 and 48 "high STS," and beyond 49 "severe STS" [12]. The IBM SPSS, version 26.0 was used to verify the obtained data. The data analysis was divided into three stages. First descriptive analyses were run for socio-demographics variables which included frequencies and percentages. In second stage independent sample t-test and ANOVA were run for association of socio-demographics variables with the STSS. In the third phase Pearson's Correlation was applied to ten item personality traits to the STSS. P value more than 0.05 is considered

significant.

## RESULTS

The demographic characteristics of the samples are presented in Table 1. More than half of the respondent were female. Majority of respondents were medical officer and House Officer 64(37.4%).

Demographic Characteristics	Category	No. of Respondents (%)
Gender	Male	80 (47.1%)
	Female	90 (52.9%)
Marital Status	Married	67 (39.4%)
	Unmarried	103 (60%)
Education	MBBS	101 (59.4%)
	BSN	66 (38.8%)
	Post-Graduate	3 (1.3%)
Designation	Medical & House Officer	64 (37.6%)
	Nurse	67 (39.4%)
	Post-Graduate Trainee	33 (19.4%)
	Consultant	6 (3.5%)
Birth Order	First Child	44 (25.9%)
	Middle Child	82 (48.2%)
	Last Child	40 (23.5%)
	Only Child	4 (2.4%)
Work Shift	Day Shift	34 (20%)
	Night Shift	1 (0.6%)
	Rotating	133 (98.8%)
Directly dealing with trauma patients	Yes	128 (75.3%)
	No	42 (24.7%)
Last time exposure /experience with trauma	Daily	35 (20.6%)
	Few days ago,	67 (39.4%)
	Month ago,	67 (39.4%)
	Never	1 (0.6%)
Work or personal trauma	Work	100 (58.8%)
	Personal	44 (25.9%)
	Both	25 (14.7%)
	None	1 (0.6%)
Frequency of trauma experience	Once	26 (15.3%)
	Daily	5 (2.9%)
	Multiple	138 (81.2%)
	None	1 (0.6%)

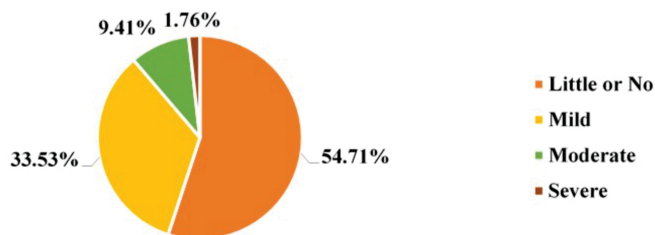
**Table 1:** Demographic Characteristics

The mean of ages of the participant are of  $28.36 \pm 4.4$  while 21 years being the minimum and 40 maximum age. Working hours of the participants have a mean of  $9.11 \pm 1.88$  while minimum working hours are 6 and maximum 12. The respondents were asked about their trauma related experience by five questions. Majority of the respondents dealt with trauma patient directly 128(75.3%). Regarding the trauma exposure of the respondents, 67(39.4%) were exposed to trauma few days and months ago. Majority of the respondents' trauma exposure work related 100(58.8%). Nearly 15% respondents were exposed to both work and personal trauma (Table 2).

Personality Trait	N	Mean ± SD
Extroversion	170	4.01 ± 1.3
Agreeableness	170	4.83 ± 1.0
Conscientiousness	170	5.17 ± 0.91
Emotional Stability	170	4.2 ± 1.2
Openness	170	4.8 ± 1.0

**Table 2:** Ten Item Personality Scale

The Secondary traumatic stress scale has a range of 51, with minimum score 0 and maximum 51, with a mean of 25.54±10.12. Study results showed that more than half respondents have little to no secondary traumatic stress (Figure 1).



**Figure 1:** Secondary Traumatic Stress categories

The significant factors associated with STS was gender, educational status, designation of the respondents and how many times these respondents experienced trauma ( $p < 0.05$ ). Details of associated factors is given in table 3.

Variables	N	Mean ± SD	Test Statistics (df)	p-Value
<b>Gender</b>				
Male	80	23 ± 1.1	2.557 (168)	0.01*
Female	90	27 ± 1.1		
<b>Age</b>				
20-30 years	127	25 ± 9.4	1.186 (168)	0.2
More than 30	43	27 ± 11		
<b>Working Hours</b>				
6-9 hours	120	25 ± 9.9	0.701(168)	0.4
More than 9 hours	50	26 ± 10.8		
<b>Marital Status</b>				
Unmarried	103	26 ± 10.3	1.712 (168)	0.08
Married	67	23 ± 9.7		
<b>Dealing directly with trauma patients</b>				
Yes	128	25 ± 10.6	0.289(168)	0.7
No	42	25 ± 8.8		
<b>Educational Status</b>				
MBBS	101	26 ± 9.8	3.87(169)	0.02*
BSN	66	25 ± 10.1		
Post-Graduate	3	10 ± 9.6		
<b>Designation</b>				
Medical Officer/ House Officer	64	27 ± 9.5	3.73(169)	0.01*
Nurse	67	24 ± 10.1		
Post-Graduate Trainee	33	24 ± 9.9		
Consultant	6	14 ± 10.1		
<b>Birth Order</b>				
First Child	44	24 ± 9.2	0.30(169)	0.8
Middle Child	82	25 ± 10.2		

Last Child	40	26 ± 10.1		
Only Child	4	26 ± 17.7		
<b>Work Shift</b>				
Day shift	34	26 ± 9.4	0.60(167)	0.5
Night shift	1	36		
Rotating	133	25 ± 10		
<b>Last Exposed to Trauma</b>				
Daily	35	27 ± 7.7	1.06(169)	0.3
Few days ago,	67	25 ± 11		
Month ago,	67	24 ± 10		
Never	1	14		
<b>Trauma Relation</b>				
Work	100	25 ± 10	0.660(169)	0.5
Personal	44	24 ± 8.1		
Both	25	26 ± 10		
None	1	14		
<b>Times Trauma Experienced</b>				
Once	26	23 ± 11	3.08(169)	0.02*
Daily	5	15 ± 10		
Multiple	138	26 ± 9.6		
None	1	14		

**Table 3:** Associated Factors with Secondary Traumatic Stress

Correlation of STS with personality traits is given in table 4.

Correlated Factors	STS	Extroversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
STS	1	0.03	-0.101	-0.08	-0.46**	-0.03
Extroversion		1	0.02	-0.07	-0.03	0.09
Agreeableness			1	0.59	0.15	0.18*
Conscientiousness				1	0.01	0.06
Emotional Stability					1	0.01
Openness						1

**Table 4:** Correlated Factors with STS

## DISCUSSION

Varying levels of secondary traumatic stress is present in health care professionals, especially those who have a direct dealing with the trauma victims. In the current study nearly half of the health care professionals had little to no symptoms of secondary traumatic stress. In Iran a similar study showed that half of the respondents who were providing professional care in emergency department and intensive care units were found to have mild- moderate level secondary traumatic stress [13]. Another study conducted in India showed that mild to moderate level of compassion fatigue was reported in majority of healthcare professionals working in different hospitals [14]. The present study showed the level of secondary traumatic stress in females was higher as compared to their male counterparts. In line with the current study, females were found to suffer more from emotional stress as compared to the males in Karachi [15]. In the current study, it was seen that doctors tend to suffer more from secondary traumatic stress as compared to the other healthcare professionals. Similarly, study conducted in China showed that, 73.6% of the doctors are shown to have suffer from emotional

exhaustion [16]. This study showed that doctors who were in the start of their professional career (House Officers and Medical Officers) were found to have more symptoms of secondary traumatic stress, which is in line with the previous study where higher rate of burnout was identified in young doctors in Hong Kong [17]. Contributing factors for the young doctors to demonstrate higher level of secondary traumatic stress include repeated night and weekend call duties, thorough documentation both manual and in electronic medical records, lesser time spent in home with family and a sub-conscious fear of malpractice and its consequences. This study revealed that health care professionals who experienced trauma multiple times showed symptoms of secondary traumatic stress. The reason behind this finding could be work environment of the health care professionals and that is the Emergency department. Emergency department of a tertiary care hospitals is often burdened with trauma patients. The result of this study was also confirmed by a Polish study where medical persons developed secondary traumatic stress due to poor coping skills while dealing with trauma victims [2]. Secondary traumatic stress can be affected by number of factors, one of that is the personality type of the individual. In this study the relationship of the personality trait of healthcare professional was assessed with the secondary traumatic stress. In the current study it was found that Emotional Stability of health care professionals was indirectly associated with secondary traumatic stress. The reason for this, could be the fact that emotional stable personality traits remain calm and stable. The emotional reaction of the individuals who exhibit emotional stability is less and do not get easily upset. A study conducted in Australia showed that health care providers who were found to be emotionally stable, showed more effective work engagement [18]. Similarly in China nurses who were found to be emotional stable showed gentle responses to work-related stressors and were found to have impulse control [19]. On the other hand, neurotic personality trait had a positive relation in the development of burnout, showed by a study conducted in Spain [7]. Another similar finding is a previous study where neuroticism was a positive predictor in the development of burnout in healthcare workers, in Greece [20].

## CONCLUSIONS

The results of this study were suggestive of that hospital administrations need to take measures to reduce the levels of stress especially among the female health care professionals, junior doctors and those who have experienced trauma multiple times. Emotional stability of the health care professionals should be evaluated before appointing in those departments where work-related stressors are known to be high.

## Conflicts of Interest

The authors declare no conflict of interest

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