
Secondary Traumatic Stress among Medical Doctors and Nurses Working in the Intensive and Critical Care Units of Hospitals of Ulaanbaatar During the Covid-19 Pandemic

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Abstract

Professional quality of life for those providing care has been a topic of growing interest over the past twenty years. The Professional Quality of Life includes positive aspects of helping others or Compassion satisfaction (CS) and Compassion fatigue (CF) associated with the negative aspect. CF contains two aspects as Burnout (BO) and Secondary Traumatic Stress (STS) (Stamm).

Our study was a hospital-based, cross sectional study based in The Specialized Medical Centers and The District General Hospitals of Ulaanbaatar, Mongolia. A total of 300 medical doctors and nurses were involved in our survey. In this study we were used the Professional Quality of Life Scale, version 5 (ProQOL-5) measure, developed by Stamm (2005). The average and high rate of experiencing secondary trauma stress was 73.1% of nurses (138 of 194 nurses); and was 82% of doctors (88 of 106 doctors). It is necessary to develop support systems for nurses and medical doctors at risk for secondary traumatic stress who working in intensive and critical care units of hospitals in Mongolia.

Keywords: compassion fatigue, professional quality of life, secondary traumatic stress

1. Introduction

Emergency situations such as the COVID-19 pandemic can lead among medical doctors and nurses working in the intensive and critical care units of hospitals to undergo severe stress reactions that increase the risk of developing secondary trauma. Research has that shown those who help people that have been exposed to traumatic stressors are at risk for developing negative symptoms associated with burnout, depression, and posttraumatic stress disorder (Stamm, 2010). The Professional quality of life was measured using the Professional Quality of Life Scale, version 5 (ProQOL-5), developed by Stamm (2005). Since its development in 1995, it has been revised multiple times (Stamm, 2005). The Professional Quality of Life includes positive aspects of helping others or Compassion satisfaction (CS) and Compassion fatigue (CF) associated with

the negative aspect. CF contains two aspects as Burnout (BO) and Secondary Traumatic Stress (STS) (Stamm).

2. Method

This study was a hospital-based, cross sectional study based in The Specialized Medical Centers and The District General Hospitals of Ulaanbaatar, Mongolia. A total of 300 medical doctors and nurses were involved in our survey. In this study we were used the Professional Quality of Life Scale, version 5 (ProQOL-5) measure, developed by Stamm (2005) and updated at 2012. The ProQOL-5 is a 30-item scale with three subscales to measure compassion satisfaction, burnout, and STS. Each subscale includes 10 items. Respondents were asked to rate how frequently they have experienced each item on 5-point Likert scale (1=never to 5=very often). Our study goals were to determine and to compare the several aspects of Professional Quality of Life Scale (Stamm, 2005).

Statistical analysis: The collected data was expressed as the mean±standard deviation (SD) and categorical variables were summarized as frequency counts and percentages. We evaluated associations of the secondary traumatic stress scores with demographic features using analysis of variance, one-way ANOVA tests, chi-square tests (p-values <0.05 were considered statistically significant). We reported the scores as numerical variables and analyzed them as continuous data and ordinal data in three categories-high, average and low levels of secondary traumatic stress. Statistical analyses were performed and analyzed by SPSS 20.0 software by descriptive statistics.

3. Results

3.1 The demographic and the job characteristics in study participants

A total of 300 subjects were included in the study, 28.9 % of them were doctors and 70.6 % of them were nurses. The ages of the subjects ranged from 22 to 56 years with mean age of 34.5 (±8.5) years old. In our study were participated 84.8% were female of the subjects and from that 95% were female nurses. The professional working years (mean±SD) in health sector was 9.23 (± 8.06) years and working experience of the subjects were distributed similar within working year groups. The medical doctors were more likely to work for extra hours more than nurses (86.2% of doctors and 74.8% nurses had working by extra work (Table 1).

Table 1. The demographic and the job characteristics in study participants

Demographics		Total (n=300)	Doctor (n=106)	Nurse (n=194)
Age (mean±SD)		34.5 (±8.5)	35 (±7.3)	34.3 (±8.89)
Gender	Male - n (%)	30 (15.2)	23 (39.7)	7 (5.0)
	Female - n (%)	167 (84.8)	35 (60.3)	132 (95.0)
The professional working years in health sector (mean±SD)		9.23± 8.06	8.16±7.07	9.68±8.42
Extra work n (%)	Yes	154 (78.2)	50 (86.2)	104 (74.8)
	No	43 (21.8)	8 (13.8)	35 (25.2)

3.2 The level of secondary traumatic stress in a doctors and nurses

The scores of participants were calculated and categorized into the cut-offs for low, average and high levels of secondary traumatic stress (LSTS) in accordance with Stamm's guidelines (Figure 1, 2). Our study revealed that low level (mean score: 36.12 ± 2.23) of the secondary traumatic stress was 23.7%, and the average level (49.02 ± 3.98) of the STS was 43.8% , The high level scores (62.7 ± 2.0) of the STS was 32.5% in among all participants. (Figure 1, 2).

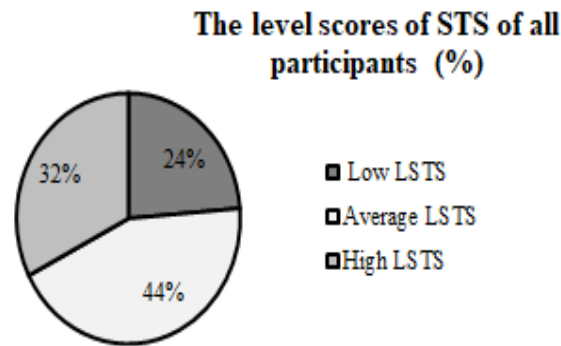


Figure 1. The three level scores of STS of all participants (%)

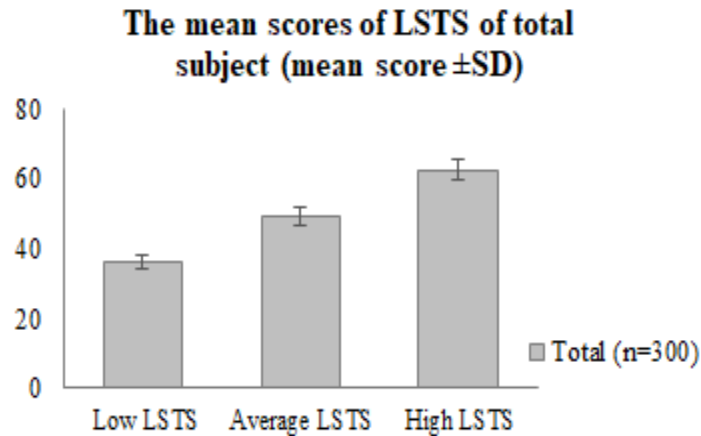
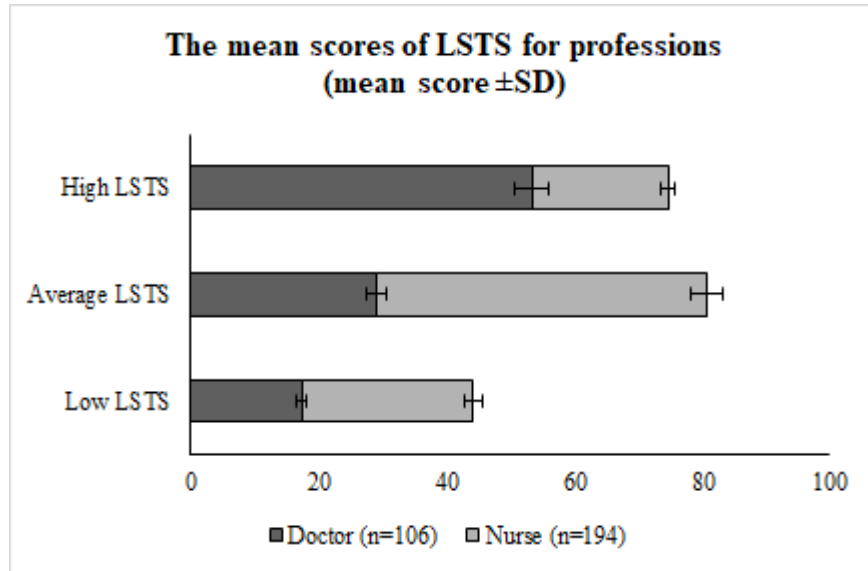


Figure 2. The mean scores of three LSTS of total subjects (mean score \pm SD)

The low LSTS were revealed 17.4.0% for doctors, 26.9% for nurses respectively. The average LSTS were revealed 29.1% for doctors, 51.7% for nurses respectively. This survey showed that haven't high level STS for medical doctors 53.4%, for nurses 21.6% respectively (Figure 3).



3.3 The correlation between the workload and the levels scores of STS

The work environment related STS by units of hospital (mean score 2.03±1.40 for doctors and 1.81±1.28 for nurses) and the working by professions related the STS (mean score 1.84±0.37 for doctors and 1.92±0.38 for nurses) had statistical difference ($p < 0.005$) respectively (Table 2).

Table 2. The correlation between the workload and the levels scores of STS

Scale	Doctor (n=106)	Nurse (n=194)	p-value
	Mean score± SD	Mean score± SD	
Work environment related STS (units of hospital)	2.03±1.40	1.81±1.28	0.000
Professions	1.84±0.37	1.92±0.38	0.010

3.4 Regression analysis for Secondary traumatic stress

As seen in table 3, comparison of the secondary traumatic stress related to stress level of units ($\beta = .472, p < 0.001$), the working overtime ($\beta = .170, p < 0.05$), the relationship with colleagues ($\beta = .159, p < 0.05$), lack of supply ($\beta = .250, p < 0.01$), lack of patient’s health education ($\beta = .244, p < 0.01$), death of patient ($\beta = .176, p < 0.05$), talking about patients off-duty time ($\beta = .165, p < 0.05$), negative relation with age ($\beta = -.567, p < 0.05$)

Table 3. Regression analysis for Secondary traumatic stress

Risk factors		B	Beta	p-Value
The demographic and the job characteristics	Stress level of units	.190	.472	.000
	Age	-.040	-.567	.006
	Over load	.003	.170	.028
Causes of work-related stress	The relationship with colleagues	.170	.159	.024
	Lack of supply	.272	.250	.004
	Lack of patient's health education	.299	.244	.008
Depends on the patient	Death of patient	.185	.176	.034
	Talking about patients off-duty time	.145	.165	.018
R²			0.895	
F test			9.947	

4. Discussion

The term secondary traumatic stress has been used to refer to the observation that those who come into continued close contact with trauma survivors, including social workers, may experience considerable emotional disruption and may become indirect victims of the trauma themselves (Figley, 1995). Consequently, secondary traumatic stress is becoming viewed as an occupational hazard of providing direct services to traumatized populations (Figley, 1999; Munroe et al., 1995; Pearlman, 1999, Bride et al., 2004). Both the positive and negative aspects of doing work influence worker's professional quality of life. People who work helping others may respond to individual, community, national, and even international crises. They may be health care professionals, social service workers, teachers, attorneys, police officers, firefighters, clergy, transportation staff, disaster responders, and others. The scores of secondary traumatic stress in accordance with Stamm's guidelines were designed to specifically measure secondary trauma symptoms in social workers, health providers and other helping professionals. It is widely recognized that engaging in trauma work may impact therapists (Figley, 1995, Figley, 2012). Nurses can experience secondary traumatic events while caring for patients. Some research findings in Japan suggest that, among Japanese health-care professionals, scores for trauma related to a non-life threatening event are lower than those for trauma related to a life-threatening event (Komachi, 2012). The research of USA study was the high prevalence of STS (19.2%)

among mental health providers working with military patients (Cieslak, 2013). In study of St. Joseph Hospital, USA was the prevalence of STS ranged from 16% (Bride's method) to 37% (cutoff-score method) among oncology staff (Quinal, 2009).

In the Italian context, in fact, healthcare workers had, in several cases, to re-organize their departments and, in the absence of clear and pre-existing procedure protocols, seem to have experienced greater decision-making uncertainty compared to emergency staff, sometimes failing to fully imagine the consequences of their intervention (Ornell, 2020). This exposed them to tensions in their teams, and led to uncertainty, frustration and helplessness when facing the disease and numerous deaths. The risk of being infected, as well as the risk of infecting their family members, was very serious, especially in hospital operators, where being in contact with COVID-19 patients or with contaminated environments was constant and prolonged. The scores on the COVID-19 scale of the ESQ questionnaire, which specifically measures the fear of developing the disease and spreading the virus to others, were very high for hospital operators, especially for those who were working in direct contact with COVID-19 patients. To have given aid and assistance to COVID-19 patients was a predictor of total stress, but not of secondary trauma (Vagni, 2020). In 2018, 197 participants were recruited in our study, which were 84.8% female. High levels of burnout measured among physicians by 20.7% (mean t score 62.3 ± 4.0) and among nurses by 25.9% (mean t-score 63.87 ± 5.3) respectively, where physicians attributed higher risk of STS than nurses by 5.8 scores. Therefore, we found a significant negative correlation between the BO and STS mean t-scores ($r = -0.304$, $p < 0.05$) (Bazarragchaa, 2018).

5. Conclusion

76.3% of participants in this survey had the average and high level of STS. The secondary traumatic stress related to stress level of units ($\beta = .472$, $p < 0.001$), the working overtime ($\beta = .170$, $p < 0.05$), the relationship with colleagues ($\beta = .159$, $p < 0.05$), lack of supply ($\beta = .250$, $p < 0.01$), lack of patient's health education ($\beta = .244$, $p < 0.01$), death of patient ($\beta = .176$, $p < 0.05$), talking about patients off-duty time ($\beta = .165$, $p < 0.05$), negative relation with age ($\beta = -.567$, $p < 0.05$). Among individuals who participated in our survey had most symptoms as like as insomnia (82.6%), headache (63.8%), think about patients (physicians 75.7%, nurses 62%). It is necessary to develop support systems for nurses and medical doctors at risk for secondary traumatic stress who working in intensive and critical care units of hospitals in Mongolia.

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