Secondary Traumatic Stress and Burnout among Nurses during Covid-19 in Riyadh

Nader jazi Alharbi¹

1 :BNS.MNS. Nursing Senior specialist, Head of medical department in king Salman hospital in Riyadh minster of health Email: A7la1000@hotmail.com Received: 11-April-2023 Revised: 08-May-2023 Accepted:03-June-2023

Abstract:

Nurses, who are often at the front lines of patient care, have been hit especially hard by the COVID-19 outbreak. The purpose of this research was to learn how many nurses in Riyadh had secondary traumatic stress and burnout as a result of the COVID-19 epidemic.

Methods Self-administered questionnaires were used to obtain quantitative data from a representative sample of Riyadh-based nurses. Secondary traumatic stress, burnout, and demographics were all measured by the survey instruments. One-way ANOVA and other inferential statistics were utilized to draw conclusions from the data.

The results showed that secondary traumatic stress and burnout were quite common among Riyadh's nurses during the 2009 COVID-19 outbreak. High levels of burnout, defined by emotional tiredness and lower personal achievement, were observed by nurses. Symptoms of secondary traumatic stress included intrusive thoughts and emotional anguish. There were no statistically significant variations in rates of PTSD and burnout by age or gender, according to the data.

The study's findings emphasize the severe mental toll the COVID-19 outbreak had on nurses in Riyadh. Nurses' well-being and productivity on the work might be negatively impacted by secondary traumatic stress and burnout. Secondary traumatic stress and burnout are serious problems in the healthcare industry that must be addressed via the implementation of treatments and support systems such as psychiatric counseling, mindfulness training, and time management techniques. Healthcare companies may improve patient outcomes and maintain a stable nursing staff by placing a premium on nurses' happiness and health. There needs to be further investigation into the causes of secondary traumatic stress and burnout among nurses, as well as an assessment of the efficacy of therapies aimed at addressing these issues.

Keywords: Burnout, compassion fatigue, COVID-19, nurses, traumatic stress.

Introduction:

Healthcare systems throughout the globe have been put to the test by the unprecedented COVID-19 outbreak. Being on the front lines of patient care, nurses have been instrumental in controlling the outbreak (Filip et al., 2022). However, worries have been expressed about their health because to their extended exposure to the pandemic's physical, mental, and psychological stressors(Lee et al., 2021). The purpose of this study is to investigate how many nurses in Riyadh experienced secondary traumatic stress and burnout as a result of the COVID-19 epidemic.

Nurses, who have played a crucial role in the response to the COVID-19 pandemic, have faced a number of difficulties in their work (Elliott et al., 2023). Increased workloads, less resources, the risk of contracting infectious illnesses, and the emotional toll of watching patients' suffering and death are only some of the particular pressures that nurses have encountered. These conditions have increased the likelihood that nurses may suffer from secondary traumatic stress and burnout (Nashwan et al., 2022).

Exposure to trauma and suffering in the workplace may lead to secondary traumatic stress, often known as compassion fatigue (Cocker & Joss, 2016). Secondary traumatic stress symptoms may develop in nurses who are repeatedly exposed to the devastating effects of COVID-19 on patients and their families, including patient decline, death, and family mourning (Shaban et al., 2022). These symptoms may include uncontrollable thinking, an inability to feel emotion, and a diminished feeling of achievement.

A further contributing factor to the growth of burnout among healthcare personnel is the lengthy and demanding character of the epidemic. Depression, a lack of interest in one's work, and a general feeling of futility are all symptoms of burnout (Leo et al., 2021). The symptoms of burnout in nurses include a lack of interest in their work and a deterioration in both job satisfaction and the quality of care provided to patients (Mudallal et al., 2017).

Although the effects of the COVID-19 epidemic on healthcare professionals' mental health have been well recognized, more investigation into these concerns is warranted, particularly among nurses in Riyadh. The local hospital system in Riyadh, Saudi Arabia's capital, has been severely stressed by the influx of COVID-19 patients. Interventions and support systems that are specifically designed to help Riyadh's nurses cope with secondary traumatic stress and burnout may save lives (Alenzi et al., 2022).

With the recent COVID-19 outbreak, researchers in Riyadh wanted to learn more about the prevalence of secondary traumatic stress and burnout among healthcare professionals. This study aims to add to the current knowledge on the mental health issues encountered by nurses in the context of a global health crisis by exploring the prevalence rates, related variables, and the link between secondary traumatic stress, burnout, and work performance.

Subject and methodology

Design

A descriptive cross-sectional design was employed to achieve the bjectives of this study.

1.2 Study Setting and Sample

Riyadh, the capital of Saudi Arabia, was chosen for the research because of its high COVID-19 incidence. There were 64 registered nurses in all, with both male and female participants and both Saudi and foreign citizens represented.

1.3 Tools of the Study

One tool was utilized in the current study, encompassing the following measures:

1.3.1 Demographic Information

The nurses' demographic information (such as age, gender, education level, years of experience, marital status, number of children, and diagnoses) was gathered in this portion of the instrument. In addition, five questions on the nurses' professional and personal lives during the COVID-19 epidemic were added..

1.3.2 Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is a 10-item questionnaire developed to assess whether or not a person feels pressure from their environment is too much for them to handle [19]. Participants were given a 5-point Likert scale on which to assess how often they experience various states of mind, from 0 (never) to 4 (very often). Higher overall scores on the scale, from 0 to 40, indicated more stress.

1.3.3 Secondary Traumatic Stress Scale (STSS)

To measure the harmful effects of secondhand exposure to trauma, researchers created the Secondary Traumatic Stress Scale (STSS), a 17-item questionnaire. On a Likert scale from 1 (never) to 5 (very frequently), participants indicated how often they engaged in each behavior. The STSS has a global score in addition to subscales measuring emotional intrusion, emotional avoidance, and arousal. The total score was determined by adding the weighted scores of each item, with higher scores indicating more frequent symptoms. For the STSS, a score of 17 meant no or little secondary trauma, a score of 28 meant mild subsequent trauma, a score of 38 meant moderate secondary trauma, a score of 44 meant high secondary trauma, and a score of 49 or more meant severe secondary trauma.

1.3.4 Maslach Burnout Inventory Human Service Survey (MBI-HSS)

Those who work in care and social services may be evaluated for burnout using the Maslach Burnout Inventory Human Service Survey (MBI-HSS), a 22-item questionnaire. Subjects were asked to use a 7-point Likert scale, from 0 (never) to 6 (every day), to assess how often they experienced certain emotions and perspectives. The MBI-HSS is divided into three sections, labeled "Emotional Exhaustion," "Depersonalization," and "Personal Accomplishment," with a total of 18 questions. The criteria for assessing each subscale are as follows: The Multi-Brain Index (MBI-EE) ranges from 0 to 16 points, while the MBI-D ranges from 0 to 12 points, and the MBI-PA ranges from 0 to 31 points, with 39 being the highest possible score.

Preparatory phase :

To avoid having to meet with everyone individually and to make it possible for nurses who were working extensively during this critical time to take part, an online questionnaire was employed. The form was created in Google Forms and distributed digitally (through Facebook, Instagram, and WhatsApp) between April 1 and 20, 2022.

Implementation phase:

During the SARS-CoV-19 outbreak, nurses from a King Salman hospital were among those recruited. Patients with COVID-19 must be treated at this designated hospital. Full-time nurses who had experience providing direct nursing care to COVID-19 inpatients were considered eligible for participation; nurses with a diagnosis of post-traumatic stress disorder (PTSD) and nurses in charge were disqualified.

By clicking on the provided link, the nurses will be able to see the study's rationale, informed consent, and the contact information for the study's researchers. Participating nurses may indicate their agreement by clicking the "Accept" button and then go on to answering the survey questions. After filling out the survey, individuals may immediately submit their answers to the researchers.

Data analysis

Statistical methods

The following statistical techniques software will be used by the researcher while performing statistical analyses on the Statistical Package for the hypotheses:The following statistical techniques underpin the successful implementation of (SPSS) V28. This section applies SPSS, a statistical package designed for social scientists, to the data collected from the study's sample. The following are examples of methods used for statistical analysis:

1 Distributions of the study variables in frequency and percentage

2. The use of Correlation Coefficients in a Factor Analysis of the Questionnaire

3.Included are descriptive statistics for the primary variables and the dimensions they represent.

4. Test for association between research variables using Spearman's correlation coefficient

5. Use a one-way analysis of variance (ANOVA) to compare patients' levels of fear of needles across specialty areas.

Descriptive Analysis

A descriptive analysis was performed to fully comprehend the data and their interrelationships. This study attempted to summarize the respondent profile in terms of age, gender, and degree of education. In addition, summary statistics were calculated for all model variables, including frequency, percentage, mean, and standard deviation.

Using descriptive statistics, the researcher could look at how the variables were broken down and what traits they all shared. Researchers may learn a lot about their study population by looking at the reported summary statistics and determining the population's major trends, variances, and proportions.

The age distribution of respondents was analyzed to get a sense of the spectrum and distribution of respondents. The gender breakdown of the sample was calculated so that researchers could learn how many male and female participants there were overall. In addition, participants' levels of education were evaluated to establish their respective educational foundations.

Results :

Table (1) Descriptive Statistics of the participants become one of the study sample variables

By answering the following questions, the participants become one of the study samples							
		Frequency	Percent				
Valid	Refuse	25	54.3				
	Accept	21	45.7				

Total	46	100.0

It is clear that the participants were given the option of taking part in the research or not. There were 46 people in the sample, and 54.3% (25 people) declined to take part. The remaining 45.7% (21 people) agreed to take part.

Table (1) provides summary information on several demographic variables. There were 46 people in the sample, with men making up 82.6% (38 people) and women making up 17.4% (8 people). Most participants were between the ages of 31 and 35 (34.8%), then those between the ages of 25 and 30 (32.6%), then those between the ages of 36 and 40 (19.6%), and finally those beyond the age of 40 (13.1%). There were 26 people who had Bachelor's degrees (56.5%), 18 people who had Masters degrees (39.5%), and 2 people who just had a high school diploma (4.3%). Participants with 6-8 years of experience made up the biggest group (54.3%), followed by those with more than 8 years of experience (21.7%) in the field. The vast majority of respondents were married (67.4%), whereas 28.3% were never married and 4.3% were widowed. Participants' average number of children ranged from 0 to 3, with 41.3% having none, 13.0% having 1, 19.6% having 2, and 26.1% having 3 or more. Furthermore, 91.3% of individuals reported suffering from cardiovascular diseases, 6.5% from a mental illness, and 2.2% from chronic discomfort. Descriptive statistics like this provide researchers a bird's-eye perspective of the demographics of the study's sample and lay the groundwork for analyzing and interpreting the results.

characteristics		Frequency	Percent
Gender	Male	38	82.6
	Female	8	17.4
Age	25-30 year	15	32.6
	31-35 year	16	34.8
	36-40 year	9	19.6
	more than 40	6	13.0
Education level	Bachelor's Degree	26	56.5
	Diploma	2	4.3
	Master's degree	18	39.1
Experience level	0-2 years	3	6.5
	2-4 years	4	8.7
	4-6 years	4	8.7
	6-8 years	25	54.3
	above 8 years	10	21.7
civil status	single	13	28.3
	married	31	67.4
	Divorced	2	4.3
Number of children	None	19	41.3
	One	6	13.0
	Two	9	19.6
	Three or more	12	26.1
Suffer from any	Cardiovascular pathology	42	91.3
pathologies	Psychiatric condition	3	6.5
	Chronic pain	1	2.2

Table (1) Descriptive Statistics of demographics characteristics

Also, according to questions that related to COVID-19 the result was as shown in Table 2

		Frequency	Percent
Are/were there COVID- 19 cases in your health care organization?	No	4	8.7
	Yes	42	91.3
Have you been diagnosed	No	21	45.7
with COVID-19?	Yes	25	54.3
Do you directly involved	No	11	23.9
in the assistance of COVID-19 patients	Yes	35	76.1
How many times daily	1 to 4 hrs. per day	12	26.1
work with COVID-19	4 to 8 hrs. per day	20	43.5
patients?	More than 8 hours	14	30.4
	Total	46	100.0
Did your exposure to	No	19	41.3
patients death:	Yes, sometimes	21	45.7
	Yes, very often	6	13.0

Table (2) Descriptive Statistics of questions that related to COVID-19

Most respondents (91.3%) said their healthcare organization has seen COVID-19 instances; this number represents the number of respondents whose responses were positive. Just 8.7 percent (4 people) said there were no instances at their healthcare facility. This indicates that the individuals were exposed to the pandemic in the workplace.

Five-and-a-half percent (25 people) said they had been diagnosed with COVID-19, while almost half (45 people) said they hadn't. This shows that many people in the study had personal encounter with the virus, which may have shaped their responses.

The table also analyzes the contributors' support for COVID-19 patients. Seventy-six percent of respondents (35 people) said they had direct experience helping people with COVID-19, while just 24 percent (11 people) said they had never done so. This shows that many participants had direct experience caring for people infected with COVID-19, which may have serious consequences for their health and their vulnerability to the stresses of the epidemic.

Patients with COVID-19 had their daily work schedules analyzed as well. The bulk of participants, 45% (20), said they spent 4-8 hours each day with COVID-19 patients in their roles. Twenty-six percent (12 people) said they worked 1–4 hours a day, while thirty percent (14 people) said they worked 8 hours or more. The results show that participants' stress and well-being may be affected in different ways according to their varying amounts of exposure and workload.

The table also looks at how often the participants heard of a patient dying. In all, 45.7% (21 people) said they had some experience with patients' deaths, whereas 41.3% (19 people) said they had none. Thirteen percent of the sample (6 people) reported being regularly exposed to patients' deaths. These answers indicate that many participants had felt the distress of seeing patient deaths, which is a risk factor for secondary traumatic stress and burnout.

Table (3): descriptive statistics of study scales

Descriptive Statistics					
	N	Minimum	Maximum	Mean	SD
Perceived Stress Scale	46	10.	50	29.0	9.1
SECONDARY TRAUMATIC STRESS SCALE	46	17	85	42.69	15.2
The Maslach Burnout Inventory Human Service Survey	46	22.	154	66.9	34.2

Table 4 displays the outcomes of the correlation study. The correlations among the Maslach Burnout Inventory for Human Service Workers, the Perceived Stress Scale, and the Secondary Traumatic Stress Scale are shown in the table below.

First, we find that the Maslach Burnout Inventory Human Service Survey correlates positively with the Perceived Stress Scale (r = 0.554, p 0.01). This indicates that participants' burnout levels increased as their perceived stress levels rose. The strong relationship between these two variables demonstrates the interrelated nature of stress and burnout and suggests that as stress levels rise, so too will burnout rates.

The results of the second correlation study show that the Perceived Stress Scale and the Secondary Traumatic Stress Scale are positively correlated with one another (r = 0.736, $p \ 0.01$). According to these results, individuals' reported feelings of stress were much greater when they had experienced a subsequent traumatic event. Higher levels of perceived stress lead to an increased risk of suffering secondary traumatic stress, as shown by the statistically significant association between the two.

A favorable link between the Maslach Burnout Inventory Human Service Survey and the Secondary Traumatic Stress Scale was found in a third study (r = 0.536, p 0.01). This suggests that secondary traumatic stress is linked to burnout severity. The substantial link between burnout and PTSD shows that the two conditions often occur together, with the risk of PTSD increasing with the severity of burnout.

These connections are robust, as shown by their significance at the 0.01 level (2-tailed). These results lend credence to the theory that the participants' experiences of stress, burnout, and secondary traumatic stress are all interconnected. The findings indicate a correlation between secondary traumatic stress and increasing levels of felt stress and burnout.

The consequences of these results for the mental health of those working in high-stress fields like healthcare are substantial. They call attention to the need of preventative measures, such as treatments and support networks, that aim to lower levels of perceived stress and burnout.

		The Maslach Burnout Inventory Human Service Survey						
Perceived Stress Scale	Pearson Correlation	.554**						
	Sig. (2-tailed)	0.000						
**. Correlation is significant at the	0.01 level (2-tailed).							
		secondary traumatic stress scale						
Perceived Stress Scale	Pearson Correlation	.736**						
	Sig (2 tailed)	0.000						
	Sig. (2-tailed)	0.000						
**. Correlation is significant at the	0.01 level (2-tailed).							
		The Maslach Burnout Inventory Human Service Survey						
SECONDARY TRAUMATIC	Pearson Correlation	.536**						
STRESS SCALE	Sig. (2-tailed)	0.000						
**. Correlation is significant at the	0.01 level (2-tailed).							

Table (4) Shows the relationship between the scales

Two independent t-tests were conducted to compare the mean scores on the scales by gender, and the results are shown in Table 5. Data for the Perceived Stress Scale, the Secondary Traumatic Stress Scale, and the Maslach

Burnout Inventory Human Service Survey are shown in a table together with their respective averages, standard deviations, t-values, and p-values.

Males averaged lower than females on the Perceived Stress Scale (M = 28.0000, SD = 8.78574) but higher than the average (M = 34.0000, SD = 9.51690). There may not be a significant difference in stress levels between men and women, since the t-value (-1.732; p = 0.090) was not statistically significant. Perhaps more data or research is needed to establish the significance of the discrepancy.

The mean score for men was marginally lower than the mean score for females on the Secondary Traumatic Stress Scale (M = 42.2632, SD = 15.23276). There was no statistically significant difference (t = -0.417, p = 0.679) between the sexes. Again, further research or a bigger sample size could be needed to make conclusive conclusions on gender differences in post-traumatic stress.

Males also scored higher than females on the Maslach Burnout Inventory Human Service Survey (M = 67.4211, SD = 34.57357), although only marginally so. There was no statistically significant difference between the sexes, as measured by the t-value (0.217; p = 0.829). This result indicates that the sample does not support the hypothesis that there is a significant difference in burnout levels between male and female participants.

Gender		Ν	Mean	Std.	t	Sig. (2-
				Deviation		tailed)
Perceived Stress	Male	38	28.0000	8.78574	-1.732	0.090
Scale						
	Female	8	34.0000	9.51690		
SECONDARY	Male	38	42.2632	15.23276 -0.417		0.679
TRAUMATIC	Female	8	44.7500	15.92617		
STRESS SCALE						
The Maslach	Male	38	67.4211	34.57357	0.217	0.829
Burnout Inventory	Famala	8	64 5000	35.04601		
Human Service	remate	0	0.000	55.07071		
Survey						

Table 5: shows Two independent sample t -test for level of scales according to Gender

The following table displays the results of a one-way analysis of variance performed on the scale for measuring felt stress and age. Examining whether or whether there are statistically significant variations in the mean perceived stress levels between age groups is a valuable use of this study.

Number of participants (N), mean score (S), and standard deviation (SD) are provided for each age group in the table. In addition, the p-value (Sig. 2-tailed) and F test statistic are provided.

When looking at the data, it is clear that there is a difference in the median levels of stress experienced by people of various ages. However, no statistically significant variation in felt stress levels can be seen across the age groups (F = 0.369, p = 0.775).

Table (6) shows ONE	WAY ANOVA test for	r level of Perceived Stress	Scale according to Age
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Age			Mean	Std. Deviation	F Test	Sig. (2-tailed)
Perceived Stress	25-30 year	15	30.1333	10.62253	0.369	0.775
Scale	31-35 year	16	28.7500	6.91375		
	36-40 year	9	30.0000	10.65364		
	more than 40		25.6667	9.24482	1	
	Total	46	29.0435	9.10179		

Table (7) shows	ONE WAY	Y ANOVA t	est for	level of	SECONDAR	Y TRAUMATIC	STRESS SCALE
according to Age							

Age			N	Mean	Std. Deviation	f test	Sig. tailed)	(2-
SECONDARY		25-30	15	42.0667	17.72596	0.456	0.714	
TRAUMATIC	STRESS	year						
SCALE		31-35	16	40.7500	9.61596			
		year						
		36-40	9	48.0000	18.83481			
		year						
		more	6	41.5000	17.02645	1		
		than 40						
		Total	46	42.6957	15.20361]		

Table (8)	shows	ONE	WAY	ANOVA	test	for	level	of	The	Maslach	Burnout	Inventory	Human	Service
Survey acc	ording	to Age	9											

Age		N	Mean	Std. Deviation	f test	Sig. (2- tailed)
The Maslach	25-30	15	64.1333	35.06090	0.955	0.423
Burnout Inventory	year					
Human Service	31-35	16	59.0625	26.75934		
Survey	year					
	36-40	9	82.3333	41.10657		
	year					
	more than	6	71.6667	40.08824	1	
	40					
	Total	46	66.9130	34.28043	1	

Discussion

Secondary traumatic stress and burnout were found to be prevalent and had a significant effect on nurses in Riyadh during the COVID-19 epidemic, and the results of this research shed light on these issues. These findings are consistent with what is known about the emotional strain that crisis situations place on medical staff, and especially on nurses.

This study's findings that STS is common among nurses are in line with those of others. Secondary traumatic stress has been demonstrated to develop in healthcare personnel who are exposed to both acute and chronic sources of stress (Tsouvelas et al., 2022). Secondary traumatic stress develops in nurses due to the continuous exposure to the physical and mental strains of care for COVID-19 patients, in conjunction with inadequate resources and experiencing patient suffering and loss (Lluch et al., 2022).

In this research, there was an unacceptably high rate of burnout among nurses. Extensive research has been conducted in the nursing field on burnout, which is defined by emotional weariness, depersonalization, and diminished personal achievement (Adeeb Shahin et al., 2020). Extremely high rates of burnout have been documented in response teams dealing with the epidemic (EL Dabbah & Elhadi, 2023) and presumably reflect the stressful nature of the situation, increasing workloads, and difficulties in preserving work-life balance.

Consistent with recent research showing a high frequency of burnout among nurses, especially at times of increasing workload and resource constraints (Zhang et al., 2018), our results highlight the need of addressing these issues.

Secondary traumatic stress and burnout have serious consequences for nurses' mental health and productivity on the workplace. It has been shown that nurses who have experienced secondary traumatic stress have more trouble controlling their emotions, which may interfere with their capacity to deliver care with empathy and compassion (Wolotira, 2023). Reduced work satisfaction, increased absenteeism, and subpar patient care are some of the negative outcomes linked to burnout (Garcia et al., 2019). Nurses' work unhappiness and their plans to leave their current positions may be exacerbated by the emotional tiredness component of burnout (Kelly et al., 2021).

The provision of adequate support networks for nurses during and after the pandemic is vital in addressing these difficulties. Debriefing sessions and other forms of psychological assistance have been shown to be effective in reducing symptoms of secondary traumatic stress and boosting the mental health of healthcare workers (Rose et al., 2002). Evidence suggests that introducing mindfulness training programs might help decrease nurse burnout and boost mental health (Penque, 2019). Secondary traumatic stress and burnout are common among nurses, but they may be alleviated with the use of peer support programs and workload management strategies (Rushforth et al., 2023).

To successfully combat STS and burnout, it is also necessary to address organizational problems. A pleasant work environment that fosters nurse well-being and resilience requires sufficient staffing levels, access to appropriate resources, and encouraging leadership (Al-Wathinani et al., 2023). De Oliveira, et al. (2019) found that nurses' burnout risk and work satisfaction were both reduced when they were provided with chances for rest and recuperation, as well as professional growth and career progression.

Limitations

It is vital to recognize the limits of this research, despite the fact that it adds to the understanding of secondary traumatic stress and burnout among nurses in Riyadh during COVID-19. Limitations in determining cause and effect result from the study's cross-sectional methodology. The results may also be less applicable to the broader population due to the limited sample size. To further understand the dynamic nature of secondary traumatic stress and burnout among nurses in Riyadh, future studies should adopt longitudinal methods and bigger sample numbers.

Conclusion

This study looked at how many nurses in Riyadh felt the effects of secondary traumatic stress and burnout during the 2009 COVID-19 epidemic. The results showed that nurses suffer psychological obstacles due to their demanding jobs, such as the high frequency of secondary traumatic stress and burnout. While emotional tiredness and a loss of motivation were hallmarks of burnout, intrusive thoughts and discomfort were indications of secondary traumatic stress. Nurses' mental health and productivity may suffer as a result of these difficulties. Interventions such as psychological support, mindfulness training, and workload management measures are essential for healthcare organizations to address these concerns and protect the mental health of nurses. It is also important to think about organizational aspects like having enough personnel and having leadership that is on board. The findings stress the need for more investigation and assessment of interventions aimed at improving nurses' well-being so that they can provide high-quality care to their patients.

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