

Assess the Level of Anxiety, Stress and Somatic Symptoms among Nursing Personnel Working During COVID 19 Pandemic Situation

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ABSTRACT

The novel corona virus disease (COVID-19) pandemic has presented an unprecedented challenge to healthcare systems across the globe. Nurses have always been frontline care providers in health care sector but this time remarkable professional service to public along with keeping their personal life at stake represented them as a warrior globally. Situation is alarming as nurses are witnessing massive amount of grief, sorrow and deaths which make them vulnerable for burnout, stress, anxiety, depression and post-traumatic stress disorder. **Objectives** -To identify the relationship between the level of anxiety, stress and somatic symptoms and to find association with their selected demographic variables among nursing personnel working during COVID 19 pandemic situation. **Methodology** - A descriptive correlational study design was used. 100 nursing personnel were selected by purposive sampling technique. Beck Anxiety Inventory, Perceived Stress Scale and Somatic symptom scale were used to collect the data from the participants. Results - The mean score of anxiety, stress and somatic symptoms were 48.96 ± 5.69 , 18.99 ± 4.74 and 48.96 ± 5.69 and there exists a significant positive correlation between anxiety and stress ($r = 0.231$, $p < 0.05$), between anxiety and somatic symptom ($r = 0.20$, $p < 0.05$) and between stress and somatic symptoms ($r = 0.351$, $p < 0.001$) respectively. Conclusion - The work of the nurses during the COVID-19 pandemic has shown a high risk of experiencing Anxiety, stress and somatic symptoms. So far, the nurses have tried to control stress, anxiety and somatic symptoms independently by themselves.

Keywords: COVID-19, Nursing personnel, Anxiety, Stress, Somatic symptoms

Health is a resource for life, not the object of living. It is a positive concept emphasizing social and personal resources, as well as physical capacities. Unique strengths and health need are a common theme in most cultures [1]. Health is multi-dimensional and is the condition of being sound in body, mind or spirit especially freedom from physical disease or pain. Health is the outcome of a large number of determinants [2]. According to the World Health Organization (WHO) mental health includes - subjective

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Received: July 22, 2021; Revision Received: September 10, 2021; Accepted: September 22, 2021

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well-being, perceived self-efficacy, autonomy, competence, inter-generational dependence and self-actualization of one's intellectual and emotional potential, among others [3].

The novel coronavirus disease (COVID-19) pandemic has presented an unprecedented challenge to healthcare systems across the globe [4]. According to WHO report June 24, 2021, the outbreak of the coronavirus disease (COVID-19) had been confirmed in over 210 countries and territories. The virus had infected over 180 million people worldwide, and the number of deaths had reached around 3.9 million. The most severely affected countries include the U.S., Brazil, and India. Around 165 million people had recovered from the disease, The United States, India, and Brazil have been among the countries hardest hit by the pandemic [5]. With the pandemic, nurses have confronted a perfect storm of conditions that threaten their health, well-being, and ability to perform their jobs. Media reports from many of the world's COVID hotspots; including Italy and the United States, document extreme exhaustion, physical discomfort from long working hours with face masks and other PPE, fear of contagion, and emotional distress in nurses [6].

In India, first case of COVID-19 was reported on 3rd January 2020 and since then government and people of the country is trying all possible efforts to put a break on this chain of COVID-19 spread but no downfall in cases have been reported yet with the recent report of more than 85 thousand new cases per day. This rapid progress in number of cases with reported deaths bring out intense panic with feeling of fear and apprehension of somatic symptoms. Anxiety and stress are closely related to somatic symptoms [7].

Nurses have always been frontline care providers in health care sector but this time remarkable professional service to public along with keeping their personal life at stake represented them as a warrior globally [8]. Although, government and hospitals administration are trying their best to provide all necessary facilities to health care providers but suspicion of getting contracted, long working hours, lack of resources along with isolation from family and friends are all heart wrenching and difficult to deal with [9]. Although, there is no systematic reporting system for tracking COVID-19 cases and associated mortality among health care workers but a recent published report stated that around 1.8% of the health care workers were tested positive and those who are posted in high-risk units are at more risk for getting positive for COVID-19 [10].

Nurses' reactions to the stress of the current pandemic must be viewed from an occupational health and safety perspective. This combination of physical and emotional strain on an already stressed nursing workforce has become a hallmark of the COVID-19 pandemic [11]. It is therefore critical to study nurses' experiences and well-being during and in the aftermath of the current crisis in order to identify risk groups for ill health and potential sources of organizational intervention. The objectives of the present study were,

- To assess the level of anxiety, stress and somatic symptoms among nursing personnel working during COVID – 19 pandemic situations.
- To identify the relationship between anxiety, stress and somatic symptoms among nursing personnel working during COVID – 19 pandemic situations.
- To associate between the level of anxiety, stress and somatic symptoms with their selected demographic variables.

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METHODOLOGY

A Descriptive correlational study was conducted among Nursing personnel working during COVID 19 pandemic situation. 100 nursing personnel were selected by purposive sampling technique in selected hospital, Chennai. The eligibility criteria were a) Nurses working during COVID 19 pandemic situation. b) Nurses of both the sexes were included in the study. c) Nurses who were available at the time of data collection. d) Nurses who are able to read and write Tamil and English. e) Nurses who are willing to participate in the study. During the initial interview, the purpose of the study was explained to the participants. The participants have been informed that participation is voluntary and they can withdraw from the study at any time. Confidentiality of information was achieved by maintaining anonymity of the participants. Formal permission was obtained from the concerned authorities to conduct the study. Written informed consent was obtained from the participants in their preferred language. The data collection was done with socio-demographic questionnaire followed by Beck Anxiety Inventory, Perceived Stress Scale and Somatic symptom scale. Beck Anxiety Inventory is 4-point likert scale consists of 21 questions with scores interpreted as 0 – 21 – Low anxiety, 22 – 35 – Moderate anxiety and >36 – Severe anxiety. Perceived Stress Scale 5 point likert scale consists of 10 questions with scores interpreted as 0 – 13 – Low stress, 14 – 26 – Moderate stress and 27 - 40 – High stress. Somatic symptom scale is 5-point likert scale consists of 8 questions with scores interpreted as 0 – 3 – No burden, 4 - 7 – Low Somatic Symptom burden, 8 - 11 – Medium Somatic Symptom burden, 12 - 15 – High Somatic Symptom burden and 16 - 32 – Very high Somatic Symptom burden. About 15-30 minutes were spent on each participant to elicit data using the selected tool. Descriptive statistics were used to describe the demographic variables, clinical variables and the level of anxiety, stress and somatic symptoms. Demographic variables and level of stress, anxiety and somatic symptoms were given in frequencies with percentage. Correlation between anxiety, stress and somatic symptoms towards among nursing personnel was analyzed using Karl Pearson correlation coefficient. Association between level of anxiety, stress and somatic symptoms among nursing personnel with their selected demographic variables was analyzed using Chi-Square test. $P < 0.05$ was considered as statistically significant.

RESULTS

About 100 Nursing Personnel participated in the study. Based on the demographic variables (82%) were aged between 20 – 35 years, (93%) were female, (53%) were Christians, (64%) were B.Sc. Nursing, (59%) were staff nurse, (55%) had a monthly income of Rs.15,000 – 20,000, (60%) were married, (42%) had 1 – 5 years of experience, (47%) had 6–8 hrs of sleep.

Based on the clinical variables, (45%) were working in COVID-19 General ward, (44%) were working for 6 hrs per day, (53%) had 1 night shift per day, (44%) were assigned 15 – 20 patients per shift, (50%) had a leisure activity of listening music and reading books and (43%) had pain due to PPE difficulty.

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Table 1: Frequency and percentage distribution of demographic variables of nursing personnel. N = 100

Demographic Variables	No.	%	
Age	20 – 35 years	82	82.0
	35 – 45 years	16	16.0
	>45 years	2	2.0
Sex	Male	7	7.0
	Female	93	93.0
	Others	-	-
Religion	Hindu	43	43.0
	Christian	53	53.0
	Muslim	4	4.0
	Others	-	-
Professional qualification	Ph.D in Nursing	-	-
	M.Sc. Nursing	26	26.0
	B.Sc. Nursing	64	64.0
	GNM	10	10.0
Professional title	Staff nurse	59	59.0
	Nurse supervisor	8	8.0
	ANS	19	19.0
	DNS	14	14.0
Monthly income	Rs,10,000 – 15,000	36	36.0
	Rs.15,000 – 20,000	55	55.0
	Rs.20,000 – 25,000	9	9.0
	>Rs.25,000	-	-
Marital status	Married	40	40.0
	Unmarried	60	60.0
	Divorced	-	-
	Separated	-	-
Years of experience	<1 year	10	10.0
	1 – 5 years	42	42.0
	6 – 10 years	33	33.0
	>10 years	15	15.0
Duration of sleep	4 – 6 hrs	38	38.0
	6 – 8 hrs	47	47.0
	>8 hrs	15	15.0
Work environment	Quarantine area – ICU	40	40.0
	COVID-19 General Ward	45	45.0
	Suspect wards	15	15.0
Working hours per day	6 hrs	44	44.0
	7 – 12 hrs	37	37.0
	>12 hrs	19	19.0
No. of night shifts per day	1	53	53.0
	2	47	47.0
	3	-	-
	≤4	-	-
No. of patients assigned	10 – 15 pts	37	37.0

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Demographic Variables		No.	%
while on duty per shift	15 – 20 pts	44	44.0
	>20 pts	19	19.0
Use of leisure of activity	Listening music	50	50.0
	Reading books	50	50.0
	Watching videos	-	-
	Others	-	-
PPE difficulty	Irritation	27	27.0
	Pain	43	43.0
	Urinary tract infection	30	30.0
	Any other	-	-

Level of Anxiety

The level of anxiety among nursing personnel was assessed using Beck Anxiety Inventory. The results showed that 98(98%) had severe anxiety and 2(2%) had moderate anxiety among nursing personnel working during COVID-19 pandemic situation.

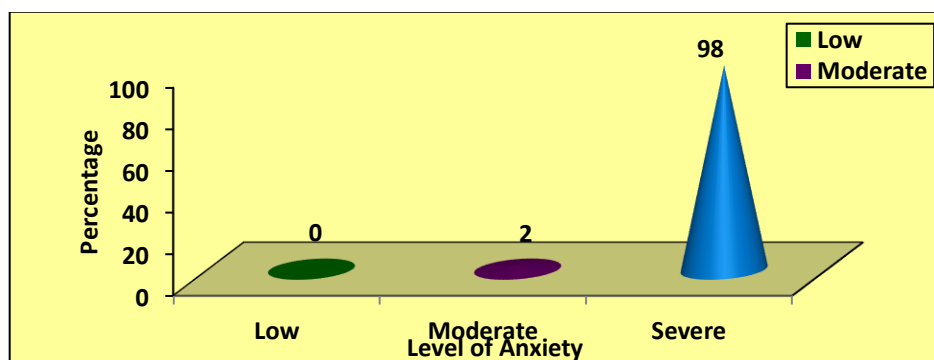


Fig. 1 - Level of anxiety among nursing personnel working during COVID-19 pandemic situation

Level of Stress

The level of stress among nursing personnel was assessed using Perceived Stress Scale. The results showed that 84(84%) had moderate stress, 13(13%) had low stress and 3(3%) had high stress among nursing personnel working during COVID-19 pandemic situation.

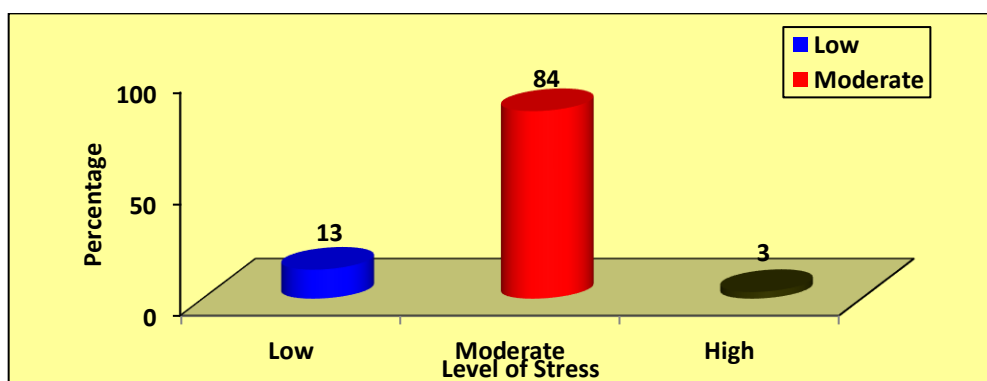


Fig. 2 - Level of stress among nursing personnel working during COVID-19 pandemic situation

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Level Of Somatic Symptoms

The level of somatic symptom among nursing personnel was assessed using Somatic Symptom Scale. The results showed that 86(86%) had very high somatic symptom burden, 13(13%) had high somatic symptom burden and only 1(1%) had medium somatic symptom burden among nursing personnel working during COVID-19 pandemic situation.

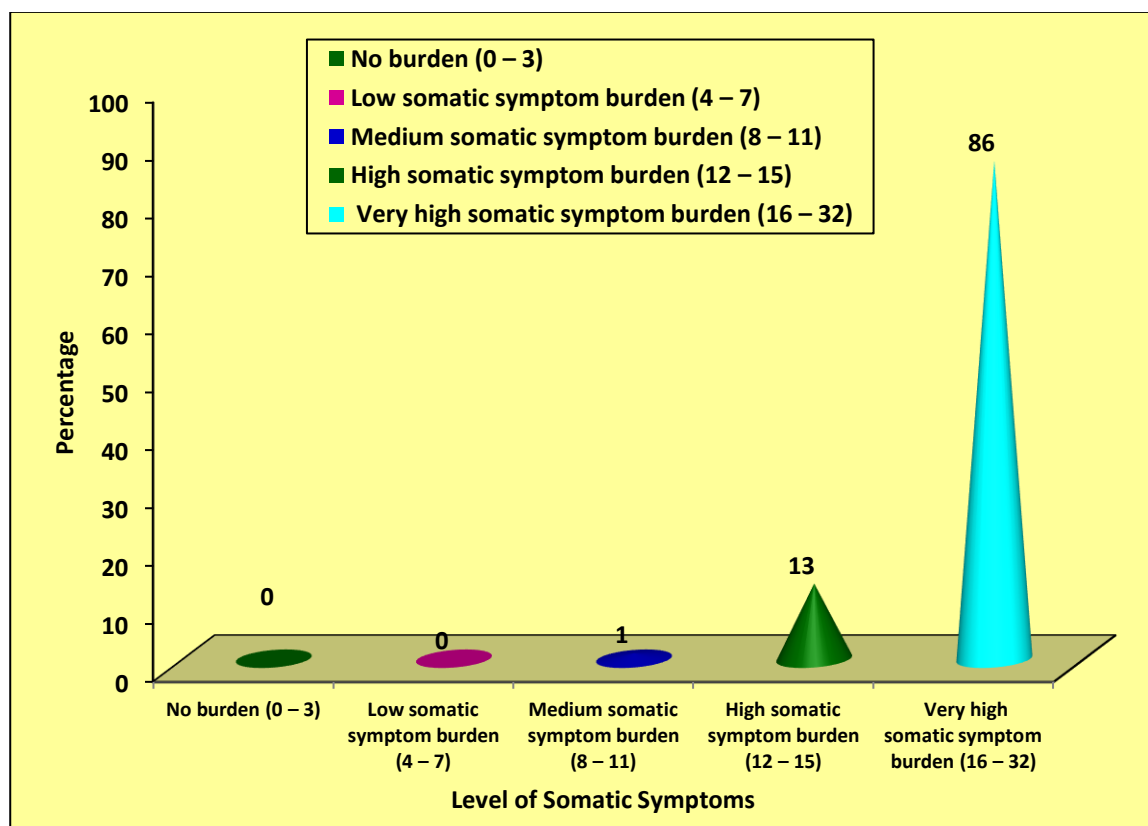


Fig. 3 - Level of somatic symptoms among nursing personnel working during COVID-19 pandemic situation

Table 2: Correlation anxiety, stress and somatic symptoms towards among nursing personnel working during Covid-19 pandemic situation N = 100

Variables	Mean	S.D	Karl Pearson's Correlation Value
Anxiety	48.96	5.69	r = 0.231 p = 0.021, S*
Stress	18.99	4.74	
Anxiety	48.96	5.69	r = 0.201 p = 0.045, S*
Somatic Symptoms	19.14	4.57	
Stress	18.99	4.74	r = 0.351 p = 0.0001, S***
Somatic Symptoms	19.14	4.57	

*****p<0.001, *p<0.05, S – Significant**

The calculated Karl Pearson's Correlation value of $r = 0.231$ between anxiety and stress, $r=0.201$ between anxiety and somatic symptoms and $r=0.351$ between stress and somatic symptoms shows a positive correlation which was found to be statistically significant at $p<0.05$, $p<0.05$ and $p<0.001$ level respectively

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The association between socio-demographic variables with Medication adherence and Information need score was analyzed using Chi square test. The association between demographic variable age ($\chi^2=15.865$, $p=0.003$) had shown statistically significant association with level of stress among nursing personnel working during COVID-19 pandemic situation at $p<0.01$ level. The demographic variables sex ($\chi^2=6.034$, $p=0.049$), years of experience ($\chi^2=16.212$, $p=0.013$) and working hours per day ($\chi^2=12.574$, $p=0.014$) had shown statistically significant association with level of stress among nursing personnel working during COVID-19 pandemic situation at $p<0.05$ level.

DISCUSSION

The present study results revealed that (98%) had severe anxiety and (2%) had moderate anxiety among nursing personnel working during COVID-19 pandemic situation. The present study results were supported by the following studies. **EmanAlnazly et al. (2021)** conducted a cross-sectional, correlational design to assess anxiety, depression, stress, fear and social support during COVID – 19 pandemics among 365 health-care workers in Amman, Jordan. The study result showed that 35% of the participants had extremely severe depression, over 40% had moderate to severe depression, and approximately 20% had normal to mild depression. For anxiety, 60% of the participants reported extremely severe anxiety. Regarding stress, 35% was severely distressed [12]. **Danna tu et al; (2021)** conducted a descriptive cross-sectional study to assess the prevalence and associated factors of depression, anxiety, and stress among 617 Hubei pediatric nurses during COVID-19 pandemic situation. The study results showed that about 15.4% of pediatric nurses reported symptoms of depression ($n = 95$), 32.6% reported anxiety ($n = 201$), 18% of nurses reported stress ($n = 111$) and 40% had overall mental health problems ($n=247$) [13].

The present study results showed that (84%) had moderate stress, 13(13%) had low stress and 3(3%) had high stress among nursing personnel working during COVID-19 pandemic situation. The present study results were supported by the following studies. **Fatmamohmedelmansy et al.(2020)** conducted a descriptive cross sectional study to assess the effect of COVID 19 stressors on health care workers performance and attitude. 57.4% of the medical participants had moderate COVID-19 psychological stress levels, 49.1% of the paramedical participants had moderate COVID-19 psychological stress levels [14]. **Nandita K Shetrimayum (2019)** conducted a descriptive cross-sectional study conducted among 500 staff nurses selected from eight hospitals in Mysore City, India. The study result showed that 277 (55.4%) had a moderate level of perceived stress and 249 (49.8%) had moderate occupational stress [15].

The present study results showed that (86%) had very high somatic symptom burden, (13%) had high somatic symptom burden and only (1%) had medium somatic symptom burden among nursing personnel working during Covid-19 pandemic situation. The present study was supported by the following studies. **Yousef Jaradat et al. (2019)** cross-sectional study among 542 nurses working at hospitals and primary health care centers in the Hebron district of Palestine. The study result showed that 45.3% reported back pain, while this symptom was reported by 31.3% of the men. Tension headache was reported by 36.8% of the women with high perceived stressful working conditions, compared with 26.9% of the men with high perceived stressful working conditions. On the other hand, among the nurses with high perceived stressful working conditions, 37.9% of the men and 19.8% of the women reported sleeping problems, and 23.9% of the men and 17.5% of the women reported stomach acidity [16]. **Sailaxmi Gandhiet al. (2014)** conducted a descriptive correlational study to assess and

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correlate the level of somatic symptoms, perceived stress and perceived job satisfaction among 150 nurses in a psychiatric wing of Super-specialty hospital, Bangalore. The study result showed that 128 nurses reported mainly pain related (4.87 ± 2.97) somatic symptoms. Somatic symptoms positively correlated ($r = 0.302, p = 0.000$) with stress perception and negatively correlated ($r = 0.231, p = 0.000$) with perceived job satisfaction [17].

The correlation between level of anxiety, stress and somatic symptoms among nursing personnel was calculated using Karl Pearson Coefficient Correlation. The study result showed that a significant, positive correlation between correlation between anxiety and stress ($r = 0.231, p < 0.05$), between anxiety and somatic symptom ($r = 0.20, p < 0.05$) and between stress and somatic symptoms ($r = 0.351, p < 0.001$) level respectively. The present study results were supported by the following studies. **Bo Gu MN et al. (2020)** conducted a descriptive correlational study to assess the association between occupational stress and psychosomatic wellbeing among Chinese Nurses. The study result showed that 68.3% nurses had high levels of occupational stress. The multivariate analyses revealed that workload and time pressure was correlated with anxiety ($P = .003$). Professional and career issues was associated with depression ($P = .033$) and sleep quality ($P = .078$). Professional and career issues was correlated with anxiety ($P = .031$) and somatic symptoms ($P = .005$). Interpersonal relationship and management problems was associated with anxiety ($P = .018$), depression ($P = .001$), and somatic symptoms ($P = .025$) [18]. **Li H, Zhang Y et Al (2020)** conducted a descriptive cross-sectional design to identify the relationship between symptoms of anxiety and somatic symptoms in healthcare professionals working during the corona virus disease 2019 pandemic. The study result showed that the SCL-10 somatization subscale score was significantly positively correlated with location ($r = 0.328, p = 0.009$), history of somatic diseases ($r = 0.276, p = 0.029$), GAD-7 score ($r = 0.361, p = 0.004$) and ISI score ($r = 0.451, p < 0.001$). However, SCL-10 somatization subscale score was significantly negatively correlated with education level ($r = -0.274, p = 0.030$). The SCL-90 somatization subscale score was significantly positively correlated with history of somatic diseases, GAD-7 score and ISI score in participants with symptoms of anxiety [19].

Objective – 3: The present study results revealed that the demographic variable age ($\chi^2 = 15.865, p = 0.003$) had shown statistically significant association with level of stress among nursing personnel working during Covid-19 pandemic situation at $p < 0.01$ level. The demographic variables sex ($\chi^2 = 6.034, p = 0.049$), year of experience ($\chi^2 = 16.212, p = 0.013$) and working hours per day ($\chi^2 = 12.574, p = 0.014$) had shown statistically significant association with level of stress among nursing personnel working during COVID-19 pandemic situation at $p < 0.05$ level. Demographic variable religion ($\chi^2 = 24.853, p = 0.0001$) had shown statistically significant association with level of somatic symptoms among nursing personnel working during Covid-19 pandemic situation at $p < 0.001$ level.

The present study results were supported by the following studies. **Mark Shevlin et Al (2020)** conducted a descriptive correlational study to assess the COVID-19-related anxiety and somatic symptoms in the UK population. Results showed moderate to high levels of anxiety associated with COVID-19 and were significantly associated with general somatic symptoms and in particular with gastrointestinal ($\chi^2 = 0.327, p = 0.001$) and fatigue symptoms ($\chi^2 = 0.933, p = 0.0001$). This pattern of associations remained significant after controlling for generalized anxiety disorder (GAD), pre-existing health problems, age, gender, and income [20]. **Yousef Jaradat et al. (2019)** cross-sectional study among 542 nurses working at

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hospitals and primary health care centers in the Hebron district of Palestine. The study result showed that 47.4% reported medium stressful working conditions, and 40.2% reported high stressful working conditions. A significant association was found between high self-reported stressful working conditions and education, providing financial support to extended family members, working in settings other than governmental organizations, working alternating shifts, and long working hours per week ($P=0.001$) [16].

Limitations

The study has some limitations. The researcher could not generalize the study findings as the sample size is relatively small and limited to 100 staff nurses. Only nursing personnel working during pandemic situation were included into the study. Another limitation is lack of follow up and implementation of appropriate coping strategies. Psychological well-being among nurses can differ based on their cultural differences and background. The current study has only few supportive studies in Indian Population due to paucity of literature.

CONCLUSION

Nurses are one of the Frontline Teams for handling COVID-19. The work of the nurses during the COVID-19 pandemic has shown a high risk of experiencing Anxiety, stress and somatic symptoms. So far, the nurses have tried to control stress, anxiety and somatic symptoms independently by themselves. Hospital management needs to enforce policies to meet their demands effectively and conduct staff development activities to empower staffs for achieving positive health outcomes. They should also conduct periodic evaluation of nurse's health status and help in creating healthy working environment.

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Acknowledgement

The Researchers would like to extend their gratitude and thanks to the study participants.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Tamil Elakiya. T & Mushrif Banu. N (2021). Assess the Level of Anxiety, Stress and Somatic Symptoms among Nursing Personnel Working During COVID 19 Pandemic Situation. *International Journal of Indian Psychology*, 9(3), 1717-1726. DIP:18.01.163.20210903, DOI:10.25215/0903.163