A CORRELATIONAL STUDY ON PSYCHOLOGICAL DISTRESS AND INSOMNIA AMONG NURSES DURING COVID-19 PANDEMIC

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Abstract: **By December 2019, novel coronavirus (COVID-19) pneumonia emerged in China. Tamil Nadu reported its first case on 7th March 2020 in Chennai. As this virus is highly contagious, health workers are under both physical and psychological pressure. Nurses viewed the novel coronavirus as a menace to their personal life and health. Despite the whole country being under lockdown and people working from their homes, health workers were on duty. They are secluded from their family regarding avoiding the spread of infection, thus creating additional psychological distress. This study aims at analysing the relation between the psychological distress; state of psychological sufferings characterised by symptoms of depression, anxiety and stress and Insomnia faced by frontline workers of COVID-19 pandemic. For this purpose, they were invited to complete an online questionnaire regarding their attitude towards the COVID-19 epidemic and manipulating the novel VIRUS that has no peculiar vaccine though. This study opted for a questionnaire upon nurses of Tamil Nadu as sample (N=100). Psychological parameters used were Depression Anxiety Stress Scale-21 (DASS-21) developed by Lovibond SH & Lovibond PF in 1995 and the Insomnia Severity Index (ISI) published by Charles. M. Morin in 2009. c. A correlation between depression, anxiety, stress and Insomnia is expected to be the result. This paper would conclude that Depression, Anxiety and Stress may lead to Insomnia among nurses.**

Keywords: **COVID-19, Nurse, Depression, Anxiety, Stress, Insomnia, Pandemic.**

1. INTRODUCTION

COVID-19 is a deadly disease being a strand of SARS-CoV-2. The first case has reported in CHINA. Later, it started spreading all over the world, which leads to ongoing PANDEMIC (WHO, 2020). People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. Symptoms may appear 2-14 days after exposure to the virus. People with these symptoms may have Fever or chills, Cough, Shortness of breath or difficulty breathing, Fatigue, Muscle or body aches, Headache, New loss of taste or smell, Sore throat, Congestion or runny nose, Nausea or vomiting and Diarrhoea (CDC, 2020). As this virus is highly contagious, health workers are under both physical and psychological pressure. Health Care Professionals exposed to working with patients during an epidemic/pandemic are at heightened risk of mental health problems in the short and long terms (Suzannah Stuijfzand and Joland Elmers, 2020). But according to the article, willingness to accept H1N1 pandemic influenza vaccine, nurses who were working in the isolation wards during the novel H1N1 pandemic showed professional senses that were strongly related to the willingness to work (Eliza LY Wong., Samuel YS Wong et al, 2011). The amount of time spent with infectious patients may underlie the difference in the effectiveness of job (Kunitaka Matsuishi, Ayako Kawazoe et al, 2012). Female nurses exhibit much higher rates of affective symptoms compared to male medical staffs (Timoleon

Giannakas, Sofia pappa et al, 2020). Such circumstances may lead to the state of psychological distress and Insomnia. Psychological distress may be an effect of Depression, Anxiety and Stress. Depression is a remarkably complex disease. The DSM-5 identifies several different symptoms of depression, but two main criteria such as depressed mood and anhedonia are the foremost. The depressed mood has to do with sadness or negative emotions. Anhedonia means that people no longer feel any pleasure or interest in the things once enjoyed. Stress is an organism's rejoinder to environmental needs or pressures. Presence of nine or more of the following symptoms from any of the five categories of intrusion, negative mood, dissociation, avoidance, and arousal, beginning or worsening after the traumatic event(s) occurred is the criteria for Acute Stress Disorder (DSM-5, 2017). In the workplace, stress-related ailment often takes the form of burnout—a lack of attention or inability to perform one's job due to long-term high-stress levels (Selda Yoruk and Dondu Guler, 2020). Anxiety is a feeling of agitation and worry, usually generalized and unfocused as an overreaction to a state that is only subjectively seen as menacing. The anxiety and worry are accompanied by at least three of the following physical or cognitive symptoms; edginess or restlessness, Tiring easily, Impaired concentration, Irritability, Increased muscle aches or soreness, Insomnia (DSM-5, 2017). The risk of anxiety leading to depression could even lead to an individual harming themselves. Insomnia is categorized as a sleep-wake disorder, insomnia disorder is characterized by difficulty in initiating sleep, staying asleep and/or waking early in the morning and being unable to get back to sleep.

Symptoms of insomnia disorder include the following; Trouble falling asleep at night, lying awake for long periods, waking several times during the night, waking up early unable to get back to sleep, not feeling refreshed after sleeping, feeling fatigued or sleepy during the day, having difficultly focused on a task and feeling irritable (DSM-5,2017). During the SARS outbreak in 2003, due to the increasing workload, frontline nurses were at high risks of anxiety and depression (T P Su, T C Lein, C Y Yang, et al, 2007). Some research problems are discussed below; Frontline nurses suffered from fears of infection and death as well as nosocomial spreading to their loved ones (Deying Hu, Yue Kong, 2020). Nurses who come close in contact with these patients when providing care are often left stricken with inadequate protection from contamination, high risk of infection, working burnout, fear, anxiety and depression (Y. Bao, Y. Sun, S. Meng, et al, 2020). The higher prevalence of anxiety depression among nurses is witness of a fact that the working situation of nurses need to be considered in due time not only during the COVID pandemic. It is the foremost importance that the psychological state of such nurses is maintained to control the pandemic. (Pramila karki, George B J Katwal,2020). As a result of growing demand for quality of care, rising public expectations and economic constraints, nurses are continually under both acute and chronic workplace stressors which predispose them to vulnerability to psychological disorders such as depression (Mealer M, Burnham EL, Goode CJ, Rothbaum B, Moss M. The prevalence and impact of post-traumatic stress disorder and burnout syndrome in nurses. *Depress Anxiety*. 2009;26(12):1118–1126.). But this pandemic might have created further psychological distress that would have led to the prevailing insomnia among nurses. This study focuses on the major psychological problems faced by the frontline nurses those served during this pandemic. The paper is limited only to the nurses those reside in Tamil Nadu; hence the results of the study cannot be generalised to the whose nurse community. Also, the results of this study are applicable only for the COVID-19 pandemic situation. This study also emphases on incorporating symptoms of Depression, Anxiety, Stress and Insomnia and thus finding their correlation among one another. Queries such as Why would a pandemic cause psychological distress on nurses? How will psychological distress lead to another psychological disorder i.e., Insomnia? The level of mental health disturbance like Depression, Anxiety, Stress and Insomnia that was prevailing among the nurses is discussed and correlation is set to find.

METHODS:

AIM:

To find the correlation between psychological distress and Insomnia

OBJECTIVE:

For nurses who worked in this COVID-19 outbreak;

➢ Depression and Insomnia might have correlation.

➢ Anxiety and Insomnia might have correlation.

➢ Stress and Insomnia might have correlation.

HYPOTHESIS:

➢ H1: There is a correlation between Insomnia and Depression among frontline nurses.

➢ H2: There is a correlation between Insomnia and Anxiety among frontline nurses.

➢ H3: There is a correlation between Insomnia and Stress among frontline nurses.

DESIGN AND TECHNIQUE:

Sampling method:

This correlational study used PURPOSIVE SAMPLING METHOD.

Participants:

Nurses are the target population for this study. Samples were from 15 hospitals that served to treat COVID-19 patients in Tamil Nadu. The admittance standard was registered as a nurse working in the frontline for the COVID-19, such as general wards, emergency departments, respiratory wards, cardiology department, isolation ward and Intensive Care Unit. Those working in departments affording auxiliary support were excluded. A total of 100 nurses engaged in this study.

DATA COLLECTION:

It is ensured that there exists no conflict of interest among the researcher/s and the supervisor/s in the conduct and presentation/publication of this research. After securing authorization from cooperated hospitals, data were flocked by anonymous online questionnaires which were circulated to all nurses of participated hospitals through WhatsApp (the commonly used messaging app in India) and mail. Ensuring that the details and the responses provided in the platform are classified and is employed only for the study purpose, the participants are asked to fill the form. The age range for participating in this questionnaire is 17-84. This study was conducted only after securing prior affirmation from the participated nurses. The collected data was used only for the study purpose.

TOOL USED:

The tool used for obtaining the statistical data are;

1. Socio-demographic Data:

In this part, the name, age, gender, marital status, number of family members, educational qualification, department of work, years of experience, duty hours and rest hours are designed with.

2. DASS-21:

Depression Anxiety Stress Scale- 21 is a scale designated by Lovibond SH & Lovibond PF in the year 1995. The Cronbach's alpha reliability range is 0.761 to 0.906, whereas Pearson's r value validity range is -0.47 to -0.66.

3. ISI:

Insomnia Severity Index is a scale designed as a brief screening tool for insomnia, the seven-item questionnaire rating scale. This scale was developed by Charles. M. Morin in the year 2009. The Cronbach's value, reliability ranges from 0.74 to 0.78 whereas, Pearson's r-value, validity ranges from -0.19 and -0.61.

RESULTS:

Table 1: Depicts the socio-demographic data of the sample.

Socio-demographic variables	Frequency	Percentage (%)
Mean Age: 36.58		
GENDER		
MALE	17	17 %
FEMALE	83	83 %
QUALIFICATION		
B. Sc. Nursing	16	16 %
B. Sc. Nursing (Post Basic)	16	16 %
B. Sc. Nursing (Specialization)	4	4 %

Auxiliary Nursing and Midwifery (ANM)	11	11 %
General Nursing and Midwifery (GNM)	19	19 %
M. Sc. Nursing	18	18 %
M. Sc. Nursing (Specialization)	5	5 %
MD	11	11 %
NATURE OF WORK		
Worked from native	55	55 %
Worked out of native	45	45 %
TYPE OF HOSPITAL		
Private hospital	45	45 %
Government hospital	55	55 %
DEPARTMENT OF WORK		
General ward	16	16 %
Isolation ward	17	17 %
Intensive Care Unit	16	16 %
Emergency ward	21	21 %
Pulmonology Department	12	12 %
Cardiology Department	18	18 %
WORKING EXPERIENCE		
0 – 5 Years	30	32%
5 – 15 Years	22	22 %
15 – 25 Years	14	14 %
25 & above	34	32 %
HOURS OF WORK DURING COVID-19 PANDEMIC		
More than usual	90	90 %
Less than usual	10	10 %
REST TIME DURING COVID-19 PANDEMIC		
More than usual	6	6 %
Less than usual	85	85 %
Same as usual	9	9 %
WORK DURING COVID-19 PANDEMIC WAS ON SHIFT BASIS		
Yes	21	21 %
No	79	79 %

This table shows that 17% of the participated nurses are male and 83% of them are female. This table depicts that 55% of the participated nurses worked from native and 45% of them worked out of native. Nurse from private hospital is 45% and 55% of the participated work in government hospital. Among the total data; 17% had duty in isolation ward; 21% in emergency wards; 18% in cardiology department while the remaining worked in other departments. About 64% of the participated had 5-25 years of experience in work. According to the collected data, 90% of the participated sample states that work hours during COVID-19 pandemic was more than usual hours. Rest time during COVID-19 pandemic was less than usual according to 85% of the contributed nurses. Also, 79% states that work during COVID-19 pandemic was not on shift basis.

Table 2: Depicts the mean and standard deviation for the collected data.

	Mean	Std. Dev.
Depression	29.86	4.285
Anxiety	30.16	3.946
Stress	30.06	4.614
Insomnia	22.30	2.038

Table 2 showing, the mean for Depression is 29.86 with a standard deviation of 4.28 and that for Anxiety, the mean is 30.16 with a standard deviation of 3.94 and mean for Stress is 30.06 and standard deviation is 4.61. While for Insomnia the mean is 22.30 and standard deviation is 2.03.

Table 3: Showing the correlational analysis of the present study.

	Depression	Anxiety	Stress	INSOMNIA
Depression	1	-0.09 (0.32)	-0.17 (0.08)	**-.20* (0.03)**
Anxiety		1	-0.02 (0.78)	**.19* (0.04)**
Stress			1	**0.11 (0.24)**

* indicates correlation at 0.05 level of significance.

- Depression and Insomnia are negatively correlated by -.20*(0.03).

- Anxiety and Insomnia are positively correlated by 0.19*(0.04).

- Stress and Insomnia are positively correlated by 0.11 (0.24).

4. DISCUSSION

In this current situation, health personnel are likely to experience emotional distress associated with a number of factors including the scale of disease and death they are encountering; shortages of staff and essential resources including personal protective equipment; grief; and moral distress associated with care rationing and other factors (Jackson et al., 2020). In addition to working in unsafe, under-resourced and morally distressing situations, health personnel face emotional distress caused by clinical uncertainty associated with lack of clinical guidelines, ambiguity about the trajectory of the pandemic and concerns about short and longer-term outcomes of the outbreak (Smith, Ng, Li, & W., 2020).

According to the analysis of the data obtained, Depression and Insomnia are negatively correlated. This negative correlation can be interpreted as higher the depression, higher the nervous energy utilisation would be. This might lead to higher activity of the pineal gland and in return might induce more sleep. This may be because of the fact that many sleep disorders may contribute to a person experiencing depression. However, depression can result in a person feeling excessively tired. This condition is known as excessive daytime sleepiness (EDS). According to a study in females that was a 10-year follow-up from baseline research, depression is an important factor in causing EDS (Timothy J. Legg, 2019). Also, Anxiety and Insomnia are positively correlated. When a person is more anxious, they are tented to think more and fear about upcoming, thus this might lead to deprivation of sleep. This underlies the fact that sleep deprivation can elevate the risk for anxiety disorders. Insomnia can also worsen the symptoms of anxiety disorders or prevent recovery. Anxiety can also contribute to disrupted sleep, often in the form of insomnia or nightmares. (Timothy J. Legg, 2019). This study deciphers that Stress and Insomnia are positively correlated. This might be because, Stress and Insomnia often come with similar symptoms. Insomnia and stress often occur simultaneously and have common conditions. The overlapping mechanisms in the central nervous system (CNS) are indicative of the common neurobiological context that may contribute to the development of disorders like stress. (Maryam Masoudi, Hamzeh Ahmadian, 2020).

5. CONCLUSION

H1 Hypothesis is proven as Depression and Insomnia having negative correlation whereas H2 and H3 are proven as Anxiety and Stress having positive correlation with Insomnia respectively. It is evident from the study that, frontline nurses working during pandemic face high amount of psychological distress and Insomnia which are correlated to one another. Moreover, it is of prime importance to look into the mental state and wellbeing of frontline workers, especially nurses as they are frequently in contact with the patients than doctors. As it is evident from the demographic data that there is a prevailing concern about family. There is no much difference between the mental state among nurses those worked in private and in government hospital. Be it any type of hospital, the psychological distress faced seems to be at par.

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