

Stress, Anxiety, Coping and Support from Nurses as Frontline Workers Caring for Covid-19 Patients

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Abstract: Purpose: The purpose of this study is to recommend and develop intervention strategies to support the COVID-19 nurses as frontlines from experiencing post-traumatic stress by comparing their level of anxiety and stress and coping capacity in selected government hospitals in the Klang Valley. **Objectives:** To explore frontline workers' experiences, to assess nurses' level of anxiety and stress in caring for COVID-19 patients, to determine the level of coping ability of nurses in caring for COVID-19 patients in relation to their demographic data and to compare nurses' coping capacity in caring for COVID-19 patients among different units (ICU and wards) in two different hospitals. **Design:** Quantitative questionnaire survey. **Setting:** Intensive Care Unit, High Dependency Unit and COVID-19 wards, Hospital Kuala Lumpur and Hospital Sg Buloh, Malaysia. **Sample:** One hundred eight (n=108) Registered Nurses caring for COVID-19 patients. **Findings:** Participants experienced a mild level of anxiety and a mild to moderate level of stress with mean scores 1.03 to 1.97 and 1.81 to 2.53 respectively. In general, correlation between level of anxiety and coping strategies was significant for items of religion and friends or family support ($p = 0.005$ and 0.353 and $p = 0.042$ and 0.049). In addition, all the other coping strategies domains and individual items reported no correlation between level of anxiety and stress. **Conclusion:** Experiencing or witnessing life-threatening and traumatic events in life can have short-term and long-term effects on the individual. However, choosing the correct coping strategy and relevant types of support resources could mitigate the effects. In addition, support from subordinates, friends, family, organisation, government, and public could help in motivating frontline workers from this overwhelming pandemic.

Keywords: Frontlines, Level of Anxiety and Stress, Coping Strategies, Types of Support

1. Introduction

The novel virus started in a wet market in Wuhan, China and rapidly spread to a global pandemic. The sheer scale of this adversity and the rate it ravaged the world sent shock waves in both the medical community and the public. It was obvious that pandemonium would exist if government did not come up with ways to stop this deadly virus in its tracks. In Malaysia, the virus has claimed more than 14,818 lives and infected over 2 million people. Efforts are being made but not enough to stop the spread of this plague.

2. Literature Review

COVID-19 pandemic has disrupted the well-being of almost every citizen in the world, directly or indirectly. It is noted that this pandemic has put a negative impact on the health as well as mental conditions of people (Mohd et al., 2021; Yuxia Zhang et al., 2020). Since the announcement of COVID-19 pandemic in early 2020 by the World Health Organization (WHO), Malaysia was hit by several waves of this pandemic that started in January 2020, second wave in September 2020, up until today. The first Malaysian confirmed with COVID-19 was on the 4th February 2020 (BERNAMA, 2020). Then the cases in Malaysia grew rapidly to more than 2.8 million as at 19th January 2022 (MOH, 2022). COVID-19 continue to spread around the globe with increasing numbers of infected persons, health consequences and mortality. The emergence of COVID-19 pandemic created social restrictions, lockdowns, schools and business closures, resulting losses of livelihoods, decreases in economic activities (Salim et al., 2020; Waliul Hasanat et al., 2020) and shifting priorities of government resources in their attempt to control COVID-19 outbreaks. Consequently, the changes of environment and people need affected the psychological and mental health status around the globe. Nevertheless, frontline workers are also at risks experiencing psychological and mental health (Santomauro et al., 2021).

In this study, frontline workers are defined as nurses who worked in healthcare setting that are actively involved in handling outbreaks cases, delivering treatment and care of COVID-19 patients. They are directly in contact with suspected or confirmed cases. Frontline workers are amongst the vulnerable groups at risk of physical and mental health problem (Mohd et al., 2021; Sahimi et al., 2021; Uphoff et al., 2021). Frontline workers need to follow all the standardized protocol required by health care workers to protect themselves, take precautions and prevent transmission of the viruses in the healthcare setting. Personal protective equipment (PPE) such as disposable N95 mask, face shield, disposable gowns, boots with shoes cover, self-cleaning, wearing and disposal protocol (Mohd et al., 2021; World Health Organization, 2020) are observed. Similar standardized protocol was implemented during SARS and MERS outbreak (Benkouiten et al., 2014; Hashim et al., 2016).

Despite all the standardized protocol, the challenges amongst frontline workers during caring of patients infected with COVID-19 included lack of personal protective equipment (Mohd et al., 2021), self-fear for unknown viruses and stigma, fear for being infected, psychological and mental health distress (Bansal et al., 2020; De Kock et al., 2021; Mohd et al., 2021; Yingfei Zhang & Ma, 2020). In addition, lack of manpower during the pandemic gave the frontline workers no choice. They needed to work double shifts, extra hours and worse, they need to work seven days a week without rest days (Aziz, 2021; Mohd et al., 2021; Sahimi et al., 2021). Although there were support from government and organizations, but due to the dire situation, the physical and mental health of the frontline workers were overlooked and neglected (Chen et al., 2013; De Kock et al., 2021)

Consequently, frontline workers are amongst the most affected groups with an increased risk for mental health problems (Gupta & Sahoo, 2020), Globally, Mental health. Frontline workers suffered from short term emotional disturbance, sleep disorders, isolated, anxiety, depression. Long term psychological and mentally distress such as post traumatic disorder (De Kock et al., 2021; Kang et al., 2020). Despite the interventions, such as counselling and other psychological support, the psychologists and mentally distressed could affect the quality of work amongst frontline workers. This will increase the total number of medical certificates issued, poor self-motivation, and poor attention span at work. Such attitude will bring negative implications for

individual, patients, and organizations. Nevertheless, this situation could also affect the lifestyle, friendships and relationships of the individual affected.

Experiencing or witnessing life threatening and traumatic events in life can have short-term and long-term effects on the individual. However, choosing the correct coping strategies and relevant support resources could mitigate the effects. Personal coping strategy such as religious practice, self-control, own self-awareness, self-isolation are the coping strategies which could help individual overcome their stress, depress, fears or burnout (Aziz, 2021; Mohd et al., 2021). In addition, support from subordinates, friends, family, administration, organizations, government and public sector could help motivate frontline workers from this critical situation (Aziz, 2021; De Kock et al., 2021; Mohd et al., 2021; Sahimi et al., 2021).

3. Methods

Sample and Setting

An on-line survey using prepared questionnaire was conducted. Informed consents were given to the participants to obtain approval to participate. A total of 108 participants took part in this online survey. Participants were selected based on the inclusive and exclusive criteria. Data was collected from July 2021 until Sept 2021.

Procedures

The research opted a quantitative research method. The respondents were chosen using purposive sampling method. All eligible frontline workers were approached through WhatsApp after the list of participants had been given. Name list of participants agreed to participate in the study was given by administration of hospital. Written informed consents were obtained from participants through online communication. Questionnaires were then distributed to all eligible participants through WhatsApp platform. The questionnaires consists of four (4) parts : A) demographics data; B) Perceived Stress Scale (PSS); C) Self Anxiety Scale (SAS); D) COPE Inventory consists (COPE with Religious (4 questions), COPE with Friend and Family Support (7 questions), COPE with Self-Isolation (3 questions), COPE with Self-Control (5 questions) and COPE with Self-Awareness (10 questions)); F) Support required from The Ministry of Health, The Organization, Nursing Administration, Yourself, Family and Public; G) Suggestion for intervention in case another pandemic appears in the future from Nursing, Ministry of Health and Organization or Administration.

Instruments

Demographics data were obtained at baseline for the following variables: age, gender, race religion, marital status, living location, living companion, education background, post basic qualifications, questionnaire related to works (distance from house to workplace, transport, current position, current employment status, hospital location, hospital status, workplace before and after COVID-19, working hours before and after COVID-19, durations working hours/day before and after COVID-19, total working days/week before and after COVID-19 and total off days/week before and after COVID-19.

Frontline workers feelings and thoughts during the last months of the pandemic were assessed using Perceived Stress Scale (PSS) and Self-rating Anxiety Scale (SAS). The PSS and SAS consists of 10 questions rated on a 5 Linkert-Scale, ranging from 0 (never) to 4 (very often). Coping strategies (COPE)

Data Analysis

Data were scanned and read into Statistics Packaged for Social Sciences (SPSS) version 20. Descriptive statistics were computed for all variables representing the sample demographics characteristic. A total of 108 respondents' response to the questionnaires given. A Pearson Chi-Square test was used to analyze relationships between level of anxiety and level of stress and coping strategies. Mean scores were computed to determine the levels of anxiety and stress.

Results

The 108 participants were frontline registered nurses working at ICU, HDU and COVID-19 wards who cared for patients with COVID-19 symptoms. Most of the participants in the study were female n=103 (95.4%), married n=82 (79.5%) and living with spouse and children n=54 (50%) (Table 1).

Table 1: Demographic Breakdown Frontline Carers of COVID-19 Patients (N=108)

Items	n	Percentages (%)
Age		
20-29	40	37.0
30-35	39	36.1
36-40	20	18.5
41-45	4	3.7
46-50	2	1.9
51-55	3	2.8
Gender		
Male	5	4.6
Female	103	95.4
Religion		
Muslim	97	89.8
Other	11	10.2
Race		
Malay	97	89.8
Other	11	10.2
Marital Status		
Single	25	23.1
Married	82	79.5
Divorced	1	0.9
Living Situation		
Spouse	12	11.1
Spouse and Children	54	50
Spouse, mother & grandmother in-law	1	0.9
Spouse, mother in-law & children	1	0.9
Parents	8	7.4
Friends	26	24.1
Alone	6	5.6
House Location		
Selangor	67	62
Kuala Lumpur	41	38

Table 2 presents findings for all outcomes that measures the levels of anxiety and level of stress in the study. All items were categorized into 3 levels of anxiety and stress which are: mild level

with mean scores 0 to 1.99; moderate level with mean scores 2.00 to 3.99 and higher level with mean scores 4.00 to 5.00. Participants experienced mild level of anxiety with mean scores 1.03 to 1.97. However, participants experienced mild to moderate level of stress with mean scores 1.81 to 2.53.

Table 2: Level of Anxiety and Level of Stress

No	Items	Mean	Standard Deviation
Self-Rating Anxiety Scale (SAS)			
1	I feel more nervous and anxious than usual	1.74	1.177
2	I feel afraid for no reason at all	1.34	1.209
3	I get upset easily or feel panicky	1.74	1.278
4	I feel like I'm falling apart and going to pieces	1.45	1.203
5	I feel that everything is all right and nothing bad will happen	1.85	1.142
6	My arms and legs shake and tremble	1.03	1.292
7	I am bothered by headaches neck and back pain	2.22	1.139
8	I feel weak and get tired easily	2.53	1.180
9	I feel calm and can sit still easily	1.97	1.082
10	I can feel my heart beating fast	1.74	1.062
Perceived Stress Scale (PSS)			
1	In the last month, how often have you been upset because of something that happened unexpectedly?	2.41	1.200
2	In the last month, how often have you felt that you were unable to control the important things in your life?	2.10	1.275
3	In the last month, how often have you felt nervous and "stressed"?	2.53	1.148
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	2.33	0.970
5	In the last month, how often have you felt that things were going your way?	2.07	0.914
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	2.03	1.131
7	In the last month, how often have you been able to control irritations in your life	2.13	1.060
8	In the last month, how often have you felt that you were on top of things?	1.81	0.990
9	In the last month, how often have you been angered because of things that were outside of your control?	2.17	1.164
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	1.98	1.111

Table 3: Relationships between Level of Anxiety and Level of Stress with Coping Strategies

Coping Strategies	Level of Anxiety (SAS) Pearson Chi-Square $\rho = < 0.05$	Level of Stress (PSS) Pearson Chi-Square $\rho = < 0.05$
1. Religions		
a) Pray more than usual	0.676	0.13
b) Find control in my religion	0.320	5.72
c) Seek God's helps	0.005	0.353
d) Put trust in God	0.004	0.540
2. Friends or Family Support		
a) Get advice from someone about what to do	0.623	0.710
b) Discuss feelings with someone	0.254	0.694
c) Talk to someone to find out more about the situation	0.279	0.531
d) Get emotional support from friends or relatives	0.259	0.531
e) Let my feelings out	0.183	0.284
f) Get sympathy and understanding from someone	0.042	0.437
g) Talk to someone about how I felt	0.049	0.882
3. Self-Isolation		
a) Sleep more than usual	0.242	0.692
b) Put aside other activities in order to concentrate on this	0.060	0.479
c) Learn to live with it	0.096	0.474
4. Self-Control		
a) Turn to work or other substitute activities to take mind off things	0.417	0.384
b) Concentrate efforts on doing something about it	0.113	0.039
c) Keep getting distracted by other thoughts or activities	0.833	0.131
d) Try to see it in a different light, to make it seem more positive	0.423	0.169
e) Think about how best might handle the problem	0.386	0.028

Table 3 presents correlation between individual items for Level of Anxiety and Level of stress with individual items in coping strategies among frontline workers caring for COVID-19 patients. Pearson Chi-Square with ρ value < 0.005 indicate that is significant correlation. Five domains for coping strategies were selected for this study. The domains are: religious coping strategy; friends or family support; self-isolation; self-control and self-awareness. For religion domain, reported significant correlation with Level of Anxiety for items such as “seek God’s helps” and “put trust in God” with higher level of significant Chi-Square at 0.005 and 0.353 ($\rho = < 0.05$) with $n=94$ (87%) and $n=98$ (90.7%) respectively. Participants also reported significant correlation with Level of Anxiety for domain of friends or family supports with items of “get sympathy and understanding from someone” and “talk to someone about how I feel” with $\rho= 0.042$ and $\rho = 0.049$ ($\rho = < 0.05$) and $n=45$ (41.7%), $n=39$ (36.1%) respectively. In addition, domain self-awareness with item of “do what has to be done one step a time” showed significant correlation findings at $\rho = 0.046$ ($\rho = < 0.05$), $n=57$ (52.8%). However, for other

domains of coping strategies and each item reported no significant different with a Level of Anxiety.

Table 3: Relationships between Level of Anxiety and Level of Stress with Coping Strategies (Continued)

Coping Strategies	Level of Anxiety (SAS) Pearson Chi-Square $\rho = < 0.05$	Level of Stress (PSS) Pearson Chi-Square $\rho = < 0.05$
5. Self-Awareness		
a) Make a plan of action	0.341	0.165
b) Try to come up with a strategy what to do	0.211	0.173
c) Focus on dealing with this problem and if necessary let other things slide a little	0.268	0.032
d) Make sure not to make matters worse by acting too soon	0.376	0.016
e) Learn do something from the experiences	0.337	0.181
f) Do what has to be done one step a time	0.046	0.168
g) Think hard about what steps to take	0.787	0.004

For the Level of Stress, domain coping strategy of self-awareness and self-control reported significant correlation between some of the items in the study. For self-awareness domain, the items of “focus on dealing with this problem and if necessary, let other things slide a little”, “make sure not to make matters worse by acting too soon” and “think hard about what steps to take” reported significant correlation with level of stress $\rho = 0.032$, $n=54(50\%)$, $\rho = 0.016$, $n=57(52.8\%)$ and $\rho = 0.004$, $n=51(47.2\%)$. For domain coping strategy reported significant correlation between Level of Stress at the items of “concentrate efforts on doing something about it” and “think about how best might handle the problem” with $\rho= 0.039$ $n=47(43.5\%)$ and $\rho = 0.028$ $n=52(48.1\%)$. All the other coping strategies domains and individual items reported no significant relationship between Levels of Stress during the study (Table 3).

Table 4: Types of Support Required from Frontline Carers of COVID-19 Patients

No. Support	No. Support
1. Oneself	2. Administration
a) Enough Rest Day	a) Provide Enough Support
b) Team Work	b) Provide Rest day in Between of
Schedule c) Salary Increment	c) Change Policy for Continuous
Study	d) Good Recommendation for:
d) Increase Annual Leave	- study
e) Insurance Coverage	- salary increment
f) Equal Benefit with Other Healthcare	- promotion
g) Psychological, Emotional Support	
3. Organisation	4. Ministry of Health
a) Provide Enough Staffing	a) Continue Allowance after pandemic
b) Salary Increment	b) Insurance Coverage
c) Equal Treatment with Others	c) Enough Supply of PPE
d) Increase Annual Leave	d) Recognition/Award/Certificate
e) Recognition/Award/Certificate of Appreciation	e) No Travelling Restriction
f) Training (Infection Diseases or Disaster)	f) Staffing
g) Counselling Team	

h) Provide Child Care Centre

Table 4: Types of Support Required from Frontline Carers of COVID-19 Patients

No. Support	No. Support
5. Family	6. Public
a) Special Holiday	a) Follow SOP to reduce infected cases
b) No Travelling Restriction	b) Continue to Educate the Public
c) Insurance Coverage	c) Appreciate and Support
d) Free Child Care Centre	d) Psychological & Emotional Support

Table 4 presents the view of supports required of frontline carers from various perspectives. The frontline carers required support from oneself, administration, organisation, Ministry of Health, family and public.

5. Discussion and Conclusion

In this study, the researchers wanted to see the relationships between level of stress and anxiety with coping strategies. Different types of supports and types of preparedness for oneself, administration, organization, and Ministry of Health were identified. According to the results of this study, nurses had experienced mild level of anxiety and mild to moderate level of stress. Numerous studies have confirmed the level of anxiety and stress during disaster are interrelated. According to Gupta & Sahoo (2020), hospital professionals showed 95% of level of anxiety dealing with confirmed cases. In the research conducted by Zakeri et al., 2021 showed that nurses had higher level of anxiety and depression while working in the COVID-19 wards comparing with the nurses working in other wards. Another finding by Cai et al., 2020 showed that pandemic have a significant impact on the psychological states of healthcare workers. In general, although pandemic has significant differences due to geographic location, pathogen characteristics, route of transmission, infectivity, mortality rate, and availability of treatments, previous studies found that pandemic have a significant impact on the psychological wellbeing of medical staff (Cai et al., 2020; Zakeri et al., 2021). During the pandemic, nurses play an important role in providing care for the patients with COVID-19. In general, pandemic COVID-19 has a psychological impact among healthcare workers worldwide and appropriate coping strategies are essential to avoid the negative mental health effects. In the context for COVID-19, nurses as frontlines need to take an action to cope with stress and anxiety. This may mean not compromised quality and safety of care, breach of protocols and guidelines, increased risk of infections and compromised capacity of the health system and emergency response teams. In addition, they showed significant correlation between self-awareness and self-control with level of anxiety. Interestingly, religious beliefs, including keeping trust in good and bad merits, have become a strong coping mechanism (Rathnayake et al., 2021). In this study, according to the researchers, frontline who cope with religion showed significant correlation with level of stress. These beliefs help people to manage their stresses effectively compared to those who do not have religious practices. On the other hand, level of anxiety amongst nurses as frontline caring for patients with COVID-19, component of getting support from friends or family has significantly correlation with coping strategy. In the research conducted by Htay et al., 2021 proven getting support from friends, family or social will improve personal resilience during COVID-19 pandemic. In this study, various types of supports and types of preparedness for oneself, administration, organization, and Ministry of Health were identified. Workplace support mechanisms include the availability of enough resources to provide a safe working environment, welfare facilities, recognition and incentive programmes, and counselling services (Rathnayake et al., 2021; Yin

& Zeng, 2020). This study, like other studies, emphasizes the importance of adequate resources, such as human resources, physical facilities, equipment, and personal protective equipment (PPE), to promote a comfortable work environment (Sun et al., 2020). The need of timely policies and the involvement of administrators in addressing the above issues were also underlined in this study. Nurse leaders have a critical role in safeguarding the safety of nurses; as a result, nurse managers must possess strong leadership abilities (Yin & Zeng, 2020). The relevance of support networks was highlighted in this study, which included help from supervisors, colleagues, coworkers, family, friends, and neighbours. The lack of adequate assistance during infectious pandemics has both short-term and long-term consequences for nurses' mental health. Appreciations and incentives are critical in complete workforce planning and development to attract, retain, and inspire health workers (Mukhamedyarova et al., 2021).

The limitations of this study are the participants' psychological state and stigma from authorities that influence the results of this study and is beyond the control of the researchers.

Conclusion

In conclusion, the COVID-19 pandemic has had major effects on our lives. Those facing challenges can be stressful, overwhelming, and resulting in strong emotional impact that affected psychologically, mentally, and physically. Some will accept it positively whilst others, negatively. However, it is important for the authorities to include mental health problem as one of the priority agenda in the discussion and healthcare management policy and budgeting. Further research to evaluate and assess the effectiveness of the proposed solutions in the intervention stage is vital. Improved healthcare systems in managing the frontline caregivers, its administration, overall organization, and policies are imperative when formulating resolutions in the uncertain future.

Competing interests

The authors have no competing interests to report.

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