



# **Stress and coping strategies among nurses during COVID-19.**

Literature review

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Abstract:	
<p>The coronavirus disease 2019 (COVID-19) pandemic has caused major crisis and many deaths around the world. The nurses are more affected with this pandemic because they all worked with infected patients with direct exposure. This caused stress, anxiety, and mental discomfort among them. Pandemic has highlighted the occupational stress that nurses confront in caring for patient and families.</p> <p>The aims of this literature review are to identify the risk factors of stress and coping strategies to reduce stress among nurses during COVID-19 pandemic. The research question is the study is: 1.What are the causes and risk factors of stress facing nurses during a COVID-19 pandemic? 2.What are the coping strategies to reduce stress? The theoretical framework that is used in study is Transactional Model of Stress and Coping Theory. Ten research articles are chosen to collect information and the answering the research question. Inductive content analysis method has been chosen for analyzing data. Articles were collected through PubMed, Sage, ScienceDirect and Google scholar. The main findings of the study is workload, fear of being infected and fear of exposing their family and friends, less job experience, dealing with death and dying, long working hours, lack of social support and lack of personal protective equipment.</p>	
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## **1 INTRODUCTION**

The current spread of Coronavirus (COVID-19) disease has affected people all over the world. The rapid and serious outbreak of this pandemic has resulted major loss to the functioning of communities across the world. Such as its impacts the loss of jobs, changes in the

mode of education, impacts in health care systems, society, and many other changes in people's lives. This rapid pandemic directly effects in every health care workers and the health care system all over the world. In this time of pandemic caring is a most stressful situation. Especially nurses are highly demanding, and the important part of the health system. Nurses faces the new challenges while working as a frontline to fight against the disease. In this situation nurses are at increased risk of infection for themselves and their families.

The aim of this thesis study was to investigate the causes of stress among nurses and stress coping strategies used by nurses during COVID-19 pandemic. In the Introduction chapter briefly describes the reason of the scientific study. The Background chapter starts with a definition of Coronavirus (COVID-19) pandemic, definition of stress, causes, risk factors and coping strategies. The theory chosen to guide the thesis is the Transactional Model of Stress and Coping. Nursing Theory which is described in the Theoretical framework chapter. The aim of this thesis defines with the following research question: 1 What are the causes and risk factors of stress facing nurses during a COVID-19 pandemic?; 2 What are the coping strategies to reduce stress? In the Methodology chapter included the details of ten articles which are collected from scientific journals and analyzed properly. Results of the articles are presented and described in the Finding chapter.

## **2 BACKGROUND**

### **2.1 COVID-19**

The COVID-19 pandemic is an ongoing pandemic of coronavirus disease 2019. COVID-19 is a disease caused by a virus SARSCoV-2. SARS-CoV-2 infection affects the respiratory system. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. Anyone can get sick with COVID-19 and become seriously ill or die at any age. WHO was informed of cases of pneumonia of unknown causes on 31 December 2019 in Wuhan China. The World Health Organization Emergency Committee declared the outbreak a global health emergency on 30 January 2020 and a pandemic in March 2020. Globally as of 8 March 2022, there have been 446,511,318 confirmed cases of COVID-19, including 6,004,421 deaths, reported to WHO. (WHO, 2022).

### **2.2 Definition of stress and causes**

“Stress arises when individuals perceive that they cannot adequately cope with the demands being made on them or with demands being made on them or with threats to their well-being.” Lazarus, R.S. (1966).

Stress is body response to anything which requires attention and stress is types of change which effect physical, psychological and emotional status. (Scott, E. 2020)

Due to its contagiousness, rapid spread, delay in treatment, lack of resources, and high death rate, the COVID-19 pandemic has created a stressful working environment for nurses and also have a strong impact on patients and their families (Rai, P. 2021).

In this pandemic the frontline nurses involved in direct care of the patients, so nurses are at high risk of having Psychological stress. Due to excessive workload, change in duty hours, inadequate experience of COVID-19 management, working with personal protective equipment, without having food and water for a longer period of time, inability to meet elimination needs of the body, and menstrual hygiene. Staying away from family, leaving children with relatives, maintaining a distance from loved ones, and fear of infecting others have created more anxiety, depression, and stress among nurses. (Rai, P. 2021).

Common risk factors that cause stress and anxiety during a pandemic include Less job experience, fear of being infected, Long working hours, Fear of exposing their family and friends, Involved in direct care of infected patients, Dealing with morbidity and mortality, Lived away from the family, Lack of social support, Physical and mental fatigue, workload, Difficulties in nursing care with protective clothing and equipment, Not having emergency protection training.

### **2.3 Stress coping strategies**

There are many known and effective ways to reduce everyday stress. Some intervention therapy include psychotherapy help to change negative thinking patterns and help reduce stress levels. Such medications may include antacids, sleep aids and antidepressants that may be helpful to reduce stress. There are some others ways that may also be helpful for reducing stress include aromatherapy, acupuncture, yoga, massage and meditation.(Scott, E. 2020). According to the American Psychological Association's 2014 the most common coping strategies are listening to music, reading, meditation, physical activity, yoga, praying, getting a massage. Many nurses got more support from their family before for their contribution during

COVID-19 pandemic So study showed that nurses thought that COVID-19 was a temporary problem, and they were happy to work for their country and humanity.(Rai et al., 2021)

### **3 THEORETICAL FRAMEWORK**

The framework that is used in study is Transactional Model of Stress and Coping by Lazarus & Folkman(1984). Transactional Model of Stress and Coping Theory is a framework which emphasizes appraisal to evaluate harm, threat and challenges, which results in the process of coping with stressful events (Lazarus, 1966; Lazarus & Folkman, 1984). According to Transactional Model(Glanz & Schwartz,2008) appraisals divided into primary appraisal (to assess the harm or threat that situation may pose) and secondary appraisal (which evaluates what can be done and the individual's ability to manage and cope with it).

Stress and coping theory provides a framework that is useful for formulating and testing hypotheses about the stress process and its relation to physical and mental health. The framework emphasizes the importance of two processes, appraisal and coping, as mediators of the ongoing relationship between the person and the environment.( Folkman S, 2013)

The level of stress experienced in the form of thoughts, feelings, emotions and behaviors, as a result of external stressors, depends on appraisals of the situation which involves a judgement about whether internal or external demands exceed resources and ability to cope when demands exceed resources (Lazarus & Folkman, 1984). Coping arises from appraisal that the demands of an event exceed personal



resources and is motivated by the emotional response to harm and threat (Lazarus & Folkman, 1987). This appraisal serves two primary functions: to change the person-environment relationship and to influence the level of emotional distress. Coping can be defined by the relationship between the person and the environment (Lazarus & Folkman, 1984).

Aim of this theory is to describe the causes and risk factors of stress for nurses and its coping strategies related with stressors. The concepts of theory are also matched to the results of the study and also discussed in discussion chapter.

*Table 1 Transactional Model of Stress and Coping (Glanz et al. 2008)*

<b>Concept</b>	<b>Definition</b>
Primary Appraisal	Evaluation of the significance of a stressor or threatening event.
Secondary Appraisal	Evaluation of the controllability of the stressor and a person's coping resources.
Coping efforts	Actual strategies used to mediate primary and secondary appraisals.
Problem management	Strategies directed at changing a stressful situation.
Emotional Regulation	Strategies aimed at changing the way one thinks or feels about a stressful situation.
Meaning-based coping	Coping processes that induce positive emotion, which in turn sustains the coping process by allowing reenactment of problem- or emotion focused coping.
Outcomes of coping	Emotional well-being, functional status, health behaviors.

Dispositional coping styles	Generalized ways of behaving that can affect a person's emotional or functional reaction to a stressor; relatively stable across time and situations.
Information Seeking	Attention(al) styles that are vigilant (monitoring) versus those that involve avoidance (blunting).
Optimism	Tendency to have generalized positive expectancies for outcomes.

#### **4 AIMS AND RESEARCH QUESTIONS**

Globally nurses are working hard to detect cases of COVID-19, to save lives or give comfort in the face of death. The aim of this scientific research study is to identify the risk factors of stress and coping strategies to reduce stress among nurses during covid-19 pandemic. The study is led by the following research questions:-

1. What are the causes and risk factors of stress facing nurses during a COVID-19 pandemic?
  
2. What are the coping strategies to reduce stress?

## **5 METHODOLOGY**

This study was conducted as a literature review. A qualitative research design is applied for this study. The purpose of conducting a literature review is to find the relevant information regarding the topic, to know current knowledge and to identify its gaps.

### **5.1 Data collection**

This literature review focused on papers published in 2020- 2022 after the advent of COVID-19 and involves all studies published in English across the world. The review used the keywords nursing or nurses AND stress AND causes or factors AND stress management or coping strategies AND pandemic AND COVID-19. Articles were collected from PubMed, Sage, ScienceDirect and google scholar. The criteria for selecting the papers for review involve all studies published in English in peer-reviewed journals and focused on the issues and challenges and stress facing nurses during their response to the COVID-19 crisis across the world. Ten studies were selected as they met the selection criteria; in particular, they explored the issues that face nurses during their response to COVID-19.

Table 2 Search result from different database

database	Search keyword	Year	hits	Article chosen
PubMed	Stress AND coping strategies among nurses during COVID-19 pandemic	2020 - 2022	125	5
Sage	Stress AND coping strategies among nurses during COVID-19 pandemic	2020 - 2022	859	1
ScienceDirect	Stress AND coping strategies among nurses during COVID-19 pandemic	2020 - 2022	865	1
Google scholar	Stress AND coping strategies among nurses during COVID-19 pandemic	2020 - 2022	980	3

## 5.2 Inclusion and exclusion criteria

Table 3 inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Articles must be peer reviewed	Articles do not peer reviewed
Articles from 2020- 2022	-
Articles that have keywords: nurses, AND stress, AND coping strategies, AND pandemic OR coronavirus.	Articles not relevant to topic
Articles in English	Articles not in English
Articles must have free access and full text.	Article not in full text and need to pay were excluded.

## 5.3 List of chosen articles

Table 4 list of chosen articles.

<b>Author</b>	<b>Article</b>	<b>Journal and Year</b>	<b>Purpose of the study</b>
<b>Article 1</b> Nadeem F, Sadiq A, Raziq A, Iqbal Q, Haider S, Saleem F, Bashaar M.	Depression, Anxiety, and Stress Among Nurses During the COVID-19 Wave III: Results of a Cross-Sectional Assessment.	Journal of Multidisciplinary Healthcare. 2022.	To evaluate depression, anxiety, and stress among nurses during the COVID-19 (wave III) at a public hospital in Quetta city, Pakistan.
<b>Article 2</b> Pallavi Rai, Santoshi Kumari, Deblina Roy, Manoj Kumar Sahu.	Stress Among the Nurses and Their Family Involved in COVID-19 Patient Management.	Journal of the Practice of Cardiovascular Sciences 2021.	To assess stress among nurses and family members related to COVID-19 outbreak
<b>Article 3</b> Nasser F. Easa.	Nurses' Emotional Intelligence and Stress at Workplace during the COVID-19 Pandemic: Evidence from Egypt.	Journal of Alexandria University for Administrative Sciences. 2021.	To examine the association between nurses' emotional intelligence and stress at workplace during COVID-19 pandemic.
<b>Article 4</b> Sehularo, L.A., Molato, B.J., Mokgaola, I.O.	Coping strategies used by nurses during the	Health SA Gesundheit. 2021.	To explore and describe the coping strategies used by nurses during the

& Gause, G.	COVID-19 pandemic: A narrative literature review.		COVID-19 pandemic.
<b>Article 5</b> Said, R.M., El-Shafei, D.A.	Occupational stress, job satisfaction, and intent to leave: nurses working on front lines during COVID-19 pandemic in Zagazig City, Egypt.	Environmental Science and Pollution Research. 2021.	To assess occupational stress, job satisfaction, and intent to leave among nurses dealing with suspected COVID-19 patients.
<b>Article 6</b> Cui, S., Jiang, Y., J., Shi, Q., Lei, Z., Dehua, K., Qian, M., Chu, J.,	Impact of COVID-19 on anxiety, stress, and coping style in nurses in emergency departments and fever clinics: a cross-sectional survey.	Risk Management and Healthcare Policy. 2021.	To identify the impact of COVID-19 on the psychology of Chinese nurses in emergency departments and fever clinics and to identify associated factors.
<b>Article 7</b> Mahboobeh Hosseini Moghaddam, Zinat Mohebbi,	A Study of Nurses' Stress Management in Facing and Caring for COVID-19	Research square. 2021.	To explore the challenges, strategies, and outcomes of stress management in nurses who face and

Banafsheh Tehranineshat et al.	Patients: A Qualitative Content Analysis.		provide care to COVID-19 patients.
<b>Article 8</b> Zhang Y, Wang C, Pan W, Zheng J, Gao J, Huang X, Cai S, Zhai Y, Latour JM, Zhu C.	Stress, Burnout, and Coping Strategies of Frontline Nurses During the COVID-19 Epidemic in Wuhan and Shanghai, China.	Front Psychiatry. 2020.	To identify stressors and burnout among frontline nurses caring for COVID-19 patients in Wuhan and Shanghai and to explore perceived effective morale support strategies.
<b>Article 9</b> Franco JA, Levi PLA.	Feelings, Stress, and Adaptation Strategies of Nurses against COVID-19 in Guayaquil.	Invest Educ Enferm. 2020	To explore the feelings, stress factors, and adaptation strategies of nurses during the COVID-19 pandemic in Guayaquil, Ecuador.
<b>Article 10</b> Arnetz, Judith E, Courtney M Goetz, Bengt B. Arnetz and Eamonn P Arble.	Nurse Reports of Stressful Situations during the COVID-19 Pandemic: Qualitative Analysis of Survey Responses.	International Journal of Environmental Research and Public Health. 2020.	To explore perceptions of the most salient sources of stress in the early stages of the coronavirus pandemic in a sample of U.S. nurses.

## 5.4 Data analysis

This literature review was conducted as a qualitative research design. The author went through all 10 chosen articles repeatedly and data analysis was done. The themes were extracted from research questions. The summary of the finding made from each articles to categorize into themes. The data is analyzed and combined properly and to come up with findings to get answers for the research question. Reading of the whole texts is done by author for the ten chosen articles. Re-reading of the selected articles is done repeatedly until to found relevant data to the research question. Notes are made separately. Reading through those separately written notes several times and picked relevant analysis from notes and they were listed and discussed. At last, author minimized the number of categories by combining into categories and sub-categories from each articles.

*Table 5 Categories and sub-categories of stress and coping strategies among nurses.*

<b>THEME S</b>	<b>CATEGORI ES</b>	<b>SUB-CATEGORIES</b>	<b>ARTIC ALS</b>
CAUSES AND RISK FACTORS	Occupationa l Factors	High demands, Lack of resources, Work overload, Work under pressure, Inadequate staff.	2,5,6,7
	Organizatio nal Factors	Lack of supportive relationship, Administration and optimization of scarce resources in services, Lack of PPE, Long work shift.	9
	Socio-demographi	Gender(Male/Female) differences, Age differences, work experience. Marital	1,2,3,9



	c Factors	status.	
	Psychographic Factors	Dealing with death and dying, Inadequate emotional preparation, Uncertainty concerning treatment, Personal demand and fear of infection among family members, Uncooperative family members, Lack of confidence in fighting transmission, Negative professional attitude.	3,5,6,7,9,10
COPING STRATEGIES	Self-care strategies	Avoiding public places or events, washing or disinfecting hands, avoiding public transports, social distancing, awareness of these protective measures.	3,4,9,10
	Organizational intervention	Support from the team leaders, supervisors, hospitals. sufficient material and nutrition supply, career promotion, sufficient training and benefits.	1,3,4,6,7,8,10
	Social supports	Supports and encouragement from friends, families, relatives and colleagues.	2,3,4,6,7,8,9
	Psychological intervention	Strengthening protective training, sufficient staffing, reducing the number of night shifts, ensuring adequate rest time, updating the latest information promptly, and encouraging nurses to share clinical experiences	3,4

## **5.5 Research ethics**

This thesis conducted as by the Finnish National Board Research Integrity Guidelines (2019) to follow proper research ethics and research integrity. The author has maintained instructions and guidelines for ethical research writing set by the Arcada University of Applied Science. The author has included peer reviewed articles from the scientific database such as PubMed, Sage, ScienceDirect and google scholar for this literature review. Plagiarism was consideration and thus all direct quotes or para-phrased quotes applied, and the selected literature is cited, sources used in thesis evaluated and Harvard referencing has been applied in an appropriate manner.

# **6 FINDINGS**

## **6.1 Risk factors**

Details from the 10 articles selected for the study were summarized based on the findings of the review. The risk factors that nurses face stress when dealing with patients with COVID-19 can be summarized into four categories: Category 1: Occupational Factors, Category 2: Organizational Factors, Category 3: Socio-demographic Factors, Category 4: Psychographic Factors and sub-category, which is described below in a detail.

### **6.1.1 Occupational factors**

Results found that occupational factors were main sources to develop stress among nurses. According to the articles high demand, physical

working environment, workload(overtime work, frequent night shift, unstable work, work under pressure) lack of resources, inadequate staff are the main causes of stress.(5,6,7). Nurses felt helpless and guilty, as they lived away, spend less time and maintain less contact with their families during COVID-19 to keep them safe.( Rai, P., Kumari, S., Roy, D., Sahu, K. M., 2021).

### **6.1.2 Organizational factors**

Articles indicated that the organizational factors are the sources of causing stress among nurses. In organizational factor management setting play a main role. Management may include head nurses, in charge nurses and supervisors and they supervised daily activities, staffs work timetable, availability of resources and the safety. This highly stressful work environment and lack of proper management resulted in job dissatisfaction with tendency to leave job in the future. (Said, R. M., El-Shafei, D. A., 2021). Work under pressure, administration and optimization of scarce resources in services, lack of PPE, long working hours are the causes of organizational stress. (Franco, J., Levi P., 2020).

### **6.1.3 Socio-demographic factors**

According to the results of literature review, articles (1,2,3) socio-demographic factors associated with stress such as gender and age. In cross sectional assessment From public hospital in Quetta city, Pakistan indicated that the marital status, working department, and job experience were significantly associated with depression, anxiety, and stress. ( Nadeem, F., Sadiq, A., Raziq, A., Iqbal, Q., Haider, S., Saleem, F., & Bashaar, M. 2021). The results shows that, the female nurses experience more stress then male and the younger nurses suffer from stress then older(1,2,3,8). Nurses with less experience were more likely to develop depression and single nurse were depressed and had

high anxiety than the married nurses. (Nadeem, F., Sadiq, A., Raziq, A., Iqbal, Q., Haider, S., Saleem, F., & Bashaar, M. 2021).

#### **6.1.4 Psychographic factors**

According to the different articles psychographic factors were associated with stress among nurses. Dealing with death and dying, inadequate emotional preparation, uncertainty concerning treatment, personal demand and fear of infection among family members, uncooperative family members, lack of confidence in fighting transmission, negative professional attitude are the sources of psychological stress.(3,5,6,7,10). According to the result most of the nurse experienced fear of being infected with COVID and infecting their relative and friend. (Franco, J., Levi P., 2020). And most of nurses facing psychological and mental tension because of families insistence on quitting job, working in difficult condition, lack of PPE and also feeling rejected. (Mahboobeh, H., Moghaddam, Z. M., Banafsheh, T., 2021).

## **6.2 Coping strategies**

Nurses are working under stressful conditions due to this ongoing coronavirus(COVID-19) pandemic. The effective coping strategies will help nurses to manage stressful conditions successfully. According to the article used in this study, there are list of four major coping strategies used by nurses:1 Self-care strategies; 2 Organizational intervention; 3 Social support; 4 Psychological intervention.

### **6.2.1 Self-care strategies**

The first self-care strategies used by nurses during the COVID-19 pandemic was the use of COVID-19 protective measures. According to literature the measures used by nurses are avoiding public places or events, washing or disinfecting hands more often than usual, avoiding public transports such as buses and trains. Awareness of these protective measures reduced numbers of reported cases and the stress of the nursing staff. (Sehularo, L. A., Molato, B. J., Mokgaola, I. O., & Gause, G., 2021).

According to the article the coping strategies most used by nurses included following strict personal protection measures at work and at home, social distancing (avoiding going out to the streets and public places) and acquiring actively greater knowledge about COVID-19 and its management. (Franco, J., Levi P., 2020).

### **6.2.2 Organizational Intervention**

Organizational Support from the team leaders, supervisors, hospitals, sufficient material supply, benefits such as an allowance, nutrition supply, career promotion, sufficient training should be provided to encourage frontline nurses. Experience from senior staff and encouragement from colleagues were also effective supports from organization.(8) Providing nurses with adequate personal protective equipment is one concrete measure that can help to keep nurses safe and to alleviate their fear of becoming infected. Healthcare units should provide opportunities for nurses to discuss the stress they are experiencing, support one another, and make suggestions for workplace adaptations during this pandemic. (Arnetz, E, J., Goetz, M, C., Arnetz, B, B., Arble, E., 2020).

### **6.2.3 Social support**

Social support is one of the important coping strategies to cope with stress. Especially the nurses who work hard without regretting as a frontline during this pandemic. So, nurses need to get more supports and encouragement from friends, families, relatives and colleagues. According to the article speaking with relatives and friends relieved stress, as well as renovating thoughts and motivating themselves positively served them as support. (Franco, J., Levi P., 2020). Most of the chosen articles claimed that they were seeking social supports from family and friends to relief stress and stressful situation. (2,3,4,6,7,8,9)

### **6.2.4 Psychological intervention**

Most of articles mentioned that the nurses need the most psychological support as a strategy to cope with the COVID-19 pandemic. For the psychological supports to the nurses during pandemic hospitals should take adequate measures include strengthening protective training, ensuring sufficient numbers of nurses for departments, reducing the number of night shifts, ensuring adequate rest time, updating the latest information promptly, and encouraging nurses to share clinical experiences. (Cui, S., Jiang, Y., J., Shi, Q., Lei, Z., Dehua, K., Qian, M., Chu, J., 2021).

According to the results of this literature, impact on the mental health of nurses could be severe. It must be remembered that they not only experience the stress caused by their work on the front line, but that they are also parents, spouses, sons and daughters, and citizens who are experiencing fear and vulnerability regarding this unprecedented situation for the current world. (Franco, J., Levi P., 2020).

## **7 DISCUSSION**

Stress to nurses is followed with fear, frustration, and exhaustion. Fear of transferring covid to themselves and their family, frustration of not being able to deliver treatment to the patients and exhaustion due to regular overtime duty, lack of timely rest and diet has been dangerous combination of stress to nurses. The main reason of studying this literatures is to identify the risk factors of stress and coping strategies to reduce stress among nurses during covid-19 pandemic. After going through and understanding 10 chosen articles it was possible to identify risk factors of stress among nurses. Factors are divided into four categories and sub- categories: 1.Occupational Factors; High demands, Lack of resources, Work overload, Work under pressure, Inadequate staff. 2. Organizational Factors; Lack of supportive relationship, Administration and optimization of scarce resources in services, Lack of PPE, Long work shift. 3. Socio-demographic Factors; Gender(Male/Female) differences, Age differences, work experience. Marital status. 4. Psychological Factors; Dealing with death and dying, Inadequate emotional preparation, Uncertainty concerning treatment, Personal demand and fear of infection among family members, Uncooperative family members, Lack of confidence in fighting transmission, Negative professional attitude.

Coping strategies used by nurses:1 Self-care strategies; 2 Organizational intervention; 3 Social support; 4 Psychological intervention.

Among many factors affecting stress among nurses, occupational factors are the prominent one. Due to the overwhelming patients in hospital, task demands were very high. Everything was so new and

panicking to every healthcare official. At the same time there were huge shortage of resources such as PPE which played a role in adding stress to the nurses. Study also showed that most of the nurses were compelled to overtime job to deal with patients overflow which has directly linked in physical and mental stress building. Such work overload and working in pressure situation lead to the anxiety, depression, exhaustion and frustration to the nurses. The study has shown that Inadequate staff in the health care centers has directly affected the long duty hours of nurses.

Along with occupational factors , another critical factor were organizational factor. Most of the health care administration went collapsed during Covid-19 pandemic. Those administrative failure enriched in pressure and stress to the nursing due to lack of essentials such as PPE. Most of the nurses had to work alone and without getting enough guidelines and suggestions from the seniors and supervisors. Organization in most cases also failed to give a moral and emotional support so as to motivate nurses to perform their duty with positivity. Study also found that there were no respectable pay for the nurses for their hard work and dedication in treating covid-19 patients. Also, administration were somehow failed to fulfill required number of staffs, maintaining co-operation among nurses and motivating each other.

Similarly, socio-demographic factors also contributed in building stress among nurses during Covid-19 pandemic. The study in many of the articles revealed that female nurses went through more stress and anxiety than male nurses. Physical weakness and emotional breakdown was also seen more on female nurses. It was also found that fresh graduate nurses or who has been new in the nursing business had suffered a lot more with stress than those who had better experience. Study suggested that severity of stress was seen different in different age group nurses. Young and older age group nurses were seen more stressful than middle aged nurses. Marital



status was other socio demographic factors affecting large number of nurses stress level during pandemic. It was found that nurses who had children were found more anxious about the safety of their children and old parents. To keep them safe, they spend less time and maintain minimal contact with family. Everyday fear of transferring covid to older parents and children boosted in stress level of most of the nurses.

Moreover, psychological condition of the many nurses were seen somehow deteriorated during covid-19 pandemic. Regular dealing with death and dying of large number of patients and working in those chaotic situation was seen very stressful to nurses. Similarly study found that nurses were not adequately prepared to handle those fearful situations which added immense stress level once the covid reached its peak. It was seen almost impossible to cope with the service demand specially when nurses were not known about the exact treatment method in the beginning. Nurses personal demands were not fulfilled, at the same time outsiders had a negative attitude towards nurses who is frequently dealing with the covid patients which was toughest situations for the nurses. Study also revealed that most of the nurses had a fear of getting infected and at the same time had even more fear of transmitting virus to other friends , family members and loved ones. At the same time nurses was in more stress when their own family members and relatives were not so supportive in how nurses have been going through during pandemic.

Despite all those ongoing challenges most of the nurses has been highly spirited and resilient to fight until the end. Mental health support from psychologists, psychiatrist along with direct face to face support, coaching of nursing staff how to deal with families and patients has played important role in reducing stress among the nurses. Also, organization has supported nurses with leadership, proper guidance, and enough personal protection equipment (PPE).

Self-care strategy was the first adopted coping strategy by nurses to minimize risk and stress by avoiding public interactions, limiting family visits and close contact, strict personal protection measures at work and at home. Proper knowledge of how to use PPE and proper understanding of covid -19 also helped some nurse to reduce stress level. Organization intervention was seriously necessary to help nurses to manage their stress and anxiety. Enough supervising and guidance from seniors along with enough availability of PPE and proper emotional and financial support was must to keep nurses away from stress during tough times. Social support has been other coping strategy for stress among nurses during pandemic. Most of the article pointed that nurses were usually seeking support from friends, family, relatives and community to cope with the stress during covid-19. Similarly, psychological intervention was also necessary to cope with the stress for nurses. Nurses were in immense need of psychological support and necessary treatment. Articles chosen also mentions that reducing duty hours, avoiding long night shifts, and providing enough rest time was important to keep nurses out of stress.

## **7.1 Discussion and its relation with the Theoretical Framework**

The theory of Transactional model of stress and coping is used in most of the discussion part of this thesis. This theory basically has three important and major components. Primary appraisal, secondary appraisal and coping efforts. The primary appraisal generally tries to point out the possible outcome and significance of the stressor as mentioned in the discussion part of this thesis. Secondary appraisal usually tends to identify and understand the ability of an individual to manage the possible negative outcome of stressor on him or her and third important component is coping with stress which signifies the

effort of an individual by themselves to cope with the stress and its possible consequences.

There are many other components which helps in dealing with those three major components. This theoretical Framework has been well related in the discussion part to identify the significance of stressor and coping with the stress. The result of the chosen research topic Stress and Coping strategies used by nurses during pandemic. )also resembles with Theoretical Framework (Transactional model of stress and coping ) on possible way.

## **8 CONCLUSION**

The aim of this literature review led to answer the risk factors of stress and coping strategies to reduce stress among nurses during a COVID-19 pandemic. Nurses as a frontline caregiver they have a significant role in fighting COVID-19 pandemic. The findings of study shows that occupational, organizational, socio-demographic and psychographic factors are four major sources of stress among nurses. The best and effective way of managing stress and coping strategies in nurses are self-care strategies, organizational intervention, social supports and psychological intervention. According to the articles

different factors were associated with stress among nurses in this ongoing pandemic, But without regret working in the nursing profession, the nurses presented a strong dedication to care for sick patients.

## **8.1 Recommendations**

This literature reviews aim to identify the causes and risk factors of stress and coping strategies used by nurses during COVID-19 pandemic. Based on the discussion of findings, the author recommends that we must ensure nurses respond effectively to the pandemic. To treat many Corona patients at a time, need a great knowledge, courage, and many supportive hands. Similarly, availability of resources and equipment such as PPE should be stockpiled for emergency. Author also recommends to train nurses and other healthcare worker beforehand to prepare for the worst possible conditions. This pandemic is ongoing, so we do not know the further consequences yet, so that more research is needed to explore the experiences of nurses who are on the frontlines for better response, and development for future pandemic.

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## **APPENDICES**

	<b>Articles</b>	<b>Categories</b>
<b>Major stressors for Nurses</b>	<p>Article 1</p> <ul style="list-style-type: none"> <li>-Less job experience</li> <li>-Fear of being infected</li> <li>-Working in the Corona ward</li> <li>-Patients interaction</li> <li>-Long working hours</li> </ul> <p>Article 2</p> <ul style="list-style-type: none"> <li>-Fear of exposing their family and friends</li> <li>-Involved in direct care of infected patients</li> <li>-Dealing with morbidity and mortality</li> <li>-Lived away from the family</li> <li>-Lack of social support</li> <li>-Physical and mental fatigue</li> <li>-workload</li> </ul>	<ol style="list-style-type: none"> <li>1. Occupational factors</li> <li>2. Organizational factors</li> <li>3. Socio-demographic factors</li> <li>4. Psycho-graphic factors</li> </ol>



	<p>-Difficulties in nursing care with protective clothing and equipment</p> <p>Article 3</p> <p>-Lack of emotional competency</p> <p>-Required to deal with infected patients along with death cases</p> <p>-long working hours</p> <p>Article 5</p> <p>-Workload</p> <p>-Physical working environment</p> <p>-Unsuitable work and work under pressure</p> <p>-Dealing with death and dying</p> <p>-inadequate emotional preparation</p> <p>-Uncertainty concerning treatment</p> <p>-Personal demands</p>	
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	<p>and fear</p> <p>Article 6</p> <ul style="list-style-type: none"> <li>-Fear of infection among family members</li> <li>-Workload</li> <li>-Lack of confidence in fighting transmission</li> <li>-Not having emergency protection training</li> <li>-Negative professional attitude</li> </ul> <p>Article 7</p> <ul style="list-style-type: none"> <li>-Workload</li> <li>-Providing care with uncertainty and anxiety</li> <li>-Feeling rejected</li> <li>-Working in difficult condition</li> <li>-Lack of PPE</li> <li>-Families insistence on quitting job</li> <li>-Fear of unknown</li> </ul>	
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	<p>aspects of the disease</p> <p>Article 8</p> <ul style="list-style-type: none"> <li>-Long working hours</li> <li>-Facing death of patient</li> <li>-Young and less experienced</li> <li>-Loneliness</li> <li>-Stress from prolonged wearing of protective equipment</li> </ul> <p>Article 9</p> <ul style="list-style-type: none"> <li>-Work under pressure</li> <li>-Lack of PPE</li> <li>-long work shifts</li> <li>-Fear of death</li> <li>-work overload</li> <li>-Poor work experience</li> <li>-Fear of being infected with COVID-19 and infecting their relative and friend</li> <li>-Administration and optimization of</li> </ul>	
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	<p>scarce resources in services</p> <p>Article 10</p> <ul style="list-style-type: none"> <li>-Exposure/infection</li> <li>-Illness/death</li> <li>-Workplace</li> <li>-PPE/supplies</li> <li>-Unknowns</li> <li>-Opinions/politics</li> </ul>	
<b>Coping strategies</b>	<p>Article 1</p> <ul style="list-style-type: none"> <li>-Hospital management</li> <li>-Mental health protective measures</li> </ul> <p>Article 2</p> <ul style="list-style-type: none"> <li>-Individual strategies</li> <li>-Social and family support</li> </ul> <p>Article 3</p> <ul style="list-style-type: none"> <li>-Organizational intervention</li> <li>-Self awareness</li> <li>-Social awareness</li> </ul>	<p>1 Self-care strategies</p> <p>2 Organizational intervention</p> <p>3 Social supports</p> <p>4 Psychological intervention</p>

	<p>-Relation management</p> <p>Article 4</p> <p>-COVID-19 protective measures</p> <p>-Avoidance strategy</p> <p>-Social support</p> <p>-Management support</p> <p>Article 5, 6, 7</p> <p>-Organizational support</p> <p>Article 8</p> <p>Psychological support</p> <p>-Support from team leader</p> <p>-morale supportive intervention</p> <p>-Social and family support</p> <p>Article 9</p> <p>-Acquiring actively graded knowledge about COVID-19 and its management</p>	
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	<ul style="list-style-type: none"><li>-Social and family support</li><li>-Nursing leaders and professional groups supports</li></ul> <p>Article 10</p> <ul style="list-style-type: none"><li>-Organizational intervention</li></ul>	
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