PERCEIVED RISK OF COVID- 19 AND JOB STRESS IN HEALTH SECTOR: A QUALITATIVE META-SYNTHESIS STUDY

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Abstract:

The aim of this study is to conduct a meta-synthesis research on the stress caused by the current COVID-19 pandemic in the health care sector. The study examined a total of 17 studies conducted between 2020 and 2021, and synthesized and analyzed the findings with regard to certain themes through the use of meta-synthesis methods. For identifying studies that should be considered in the assessment, the Science Direct, Scopus, PubMed, Web of Science (ISI) and Google Scholar, Research Gate databases were employed. Various aspects of the studies were examined, including research methods, sample groups, measures, analysis data usage, and results. The purpose of this research within the context of its analyses is to guide future research and help increase the awareness of stress management that is impacted by COVID 19 in the health care sector.

Keywords: Stress, meta-synthesis, COVID 19, perceived risk, Depression, health sector

1. Introduction

In the twenty-first century, job stress has become one of the most common 'occupational diseases' to affect humans and has affected employees both psychologically and physically. An occupation-related stress, according to Nwadiani, (2006), is a disturbance of the psychological equilibrium of the individual, which results in a state of disorganization of their behavior and personality. Selye (1964, as cited in El Shikieri and Musa (2012) described stress as a set of physical and psychological responses to adverse conditions or influences. Based on many sources, occupational stress can be described as an event or sequence of events that are not physical in nature, but that are perceived as an attack by the receiver, leading to physical, mental, and emotional fighting responses. As a result of this repetitive offensive or defensive response, one's physical, mental, and emotional health begin to deteriorate. While there are a variety of stressors that can cause the eventual deterioration, the most recent one occurred due to a pandemic called COVID 19. Sri Lanka and around the globe experienced the devastation of COVID-19. The coronavirus disease (COVID-19) pandemic, which began in China in December 2019 (Paraskevis et al., 2020; Wang et al., 2020) and spread around the world, has given rise to new issues and debates.

COVID-19 has a significant impact on public health (Wang, et.al., 2020) and posing high risk of psychological health problems to medical staffs when facing these unprecedented challenges (Xie, 2021). Hence, medical personnel, in their role as frontline battlers in the fight against epidemics, are exposed to heavy workloads, high

risks of infection, and high work pressures. Particularly medical staff members are exposed to higher rates of infection and negative psychological stress than the general population when they care for confirmed or suspected patients. Whitehead and Torossian (2021) have outlined several features of COVID-19 that can lead to it being perceived as stressful. In close contact with another individual, the disease appears to spread. A lack of appropriate personal protective equipment in patient care areas put medical staff at significant risk of coming into contact with COVID-19. Job responsibilities expose them to greater COVID-19 epidemic risk. Furthermore, the heavy burden of medical work may also contribute to a deteriorating psychological state (Whitehead & Torossian, 2021). Aside from that, there are a number of other identifiable reasons for the unbearable psychological distress, such as fear of contracting the disease and infecting their family members, friends, or colleagues.

As the number of deaths from the virus rises globally, it is crucial to understand the perceived risk of the infection and its impact on job stress of medical staffs. Risk perceptions are beliefs about potential harm or the possibility of a loss. It is a subjective judgment that people make about the characteristics and severity of a risk (Darker, 2013). It is influenced by individual, social, cultural, and contextual factors, and they are based on experiences, beliefs, attitudes, judgments, misconceptions, and feelings (Cori et al., 2020 & Pérez-Fuentes et al., 2020). According to Darker (2013), a person perceives risk in three different ways: perceived likelihood (the likelihood that that hazard will harm them), perceived susceptibility (their constitutional vulnerability to harm), and perceived severity (the degree to which that risk will harm them). The research community is paying close attention to this disease, given the current situation of urgency where COVID-19 is arriving and its effect on the health staffs' stress levels.

In order to gain a deeper understanding of the risk perception of COVID 19 and its impact on medical staff job stress, and provide better guidance to countries in dealing with the outbreak, we conducted this study. Specifically, this study examines job stress due to perceptions of the COVID 19 pandemic within the health sector.

2. Methodology

Research Pattern

A traditional qualitative research pattern called meta-synthesis has been employed in this study to synthesize findings. The meta-synthesis process offers a qualitative understanding of research studies designed around a specific concept through the creation of categories, themes and main frameworks (Cihan & Araç Ilgar, 2018) and by utilizing a conceptual analysis, a meta-synthesis attempts to examine similarities and differences among studies (Gül & Sözbilir, 2015). With qualitative methods, induction sits at the heart of everything we do and hence the conceptualization of social phenomena is only possible through induction (Baltacı & Balcı, 2017). Meta synthesis was employed as the research method in this study since the aim was to compare the studies conducted on perceived COVID 19 risk and its impact on job stress in employees of the health sector. As the first step of this meta- analysis, the Science Direct, Scopus, PubMed, Web of Science (ISI) and Google Scholar, Research Gate databases were searched. To identify the articles, the search terms of Coronavirus, COVID-19, 2019-ncov, SARS-cov-2, Mental illness, Mental health problem, Distress, Anxiety, Depression, Perceived Risk and all the possible combinations of these keywords were used.

Research Limitations

A criterion sampling approach was used in this study. It consists of units that meet predefined criteria, and these units may include people, events, objects or situations.

Study Inclusion or Exclusion Criteria

One is Inclusion of terms "stress" or "perceived risk" or "COVID- 19" within either the titles or among the keywords of included in the books, periodicals, journals and research articles. Second in Clear indication of research pattern and all utilized data collection methods. Third is Studies conducted between 2020 and 2021.

Study Selection

Initially, duplicate articles that were repeatedly found in various databases were removed. Then, a title list of all the remaining articles was prepared, so that the articles could be filtered out during the evaluation phase in a structured way. As part of the first stage screening, the title and abstract of the remaining articles were carefully examined, and a number of articles were removed considering the inclusion and exclusion criteria. In the second stage, i.e. eligibility evaluation, the full text of the studies, remaining from the screening stage, were thoroughly examined according to the criteria, and similarly, a number of other unrelated studies were excluded. To prevent subjectivity, article review and data extraction activities were performed by us independently. If an article was not included, the reason for excluding it was mentioned. In cases where there was a disagreement between the us, a third person reviewed the article. Seventeen studies entered the third stage, i.e. quality evaluation.

Collection of Data

Access to the included studies was obtained through, the Science Direct, Scopus, PubMed, Web of Science (ISI) and Google Scholar, Research Gate databases. Keywords were used as a criterion to determine whether a particular study should be included in the data collection process. Data of from all the final studies were extracted using a different pre-prepared checklist. The items on the checklist included: article title, first author's name, year of publication, place of study, sample size, assessment method, gender, type of study, the prevalence of depression,

Data Analysis, Coding Process, Validity and Reliability Studies

The first step in the research is to decide and begin a factual study. Afterward, the gathered resources were reviewed and examined, inclusion and exclusion criteria were determined, and studies were selected. Afterward, the concept extraction was enabled. The themes and sub-themes of the studies were carefully noted for the ideas and metaphors/concepts residing in them. Then, deductions were synthesized in relation to themes, and reports were generated. The research articles were assigned a code of X1, X2, etc., Concepts of themes and subthemes were summarized as a report.

3. Findings

Table 1 includes the publication year, authors, and main objectives of the examined studies

Table 1. Studies that are included in meta-synthesis and their respective codes.

Code	Authors and Year	Purpose of the study
X1	(Al-Maraira & Shennaq, 2021)	To determine depression, anxiety and stress levels of health-care students during coronavirus (COVID-19) pandemic according to various socio-demographic variables
X2	(Aslan & Pekince, 2020)	To conducted to evaluate nursing students' views on the COVİD-19 pandemic and their perceived stress levels
X3	(Bassi et al., 2021)	To assess mental health of HW in Lombardy after the peak of COVID-19 related hospitalizations, through the joint evaluation of PTSD and positive mental health; and to explore the potential role of positive mental health in PTSD development.
X4	Ferdousi, R., Ahmed, O., & Nur, K. (2021)	To assess the association between COVID-19 fear and sleep quality and investigate the possible mediating effect of perceived stress during this pandemic.
X5	Hassannia, L., Taghizadeh, F.,	To assess the association between COVID-19 fear and sleep quality and investigate the possible mediating effect of perceived stress during this

	Moosazadeh, M., Zarghami, M., Taghizadeh, H., Dooki, A. F., Fathi, M., & Navaei, R. A. (2020).	pandemic.
X6	Kubo, T., Sugawara, D., & Masuyama, A. (2021).	To study the factors that improve mental health. In this study, we evaluated changing income, self-restraint, fear of COVID-19, depression, anxiety, stress, and ego-resiliency
X7	Linzer, M., Stillman, M., Brown, R., Taylor, S., Nankivil, N., Poplau, S., & Goelz, E. (2021)	To assess the impact of the COVID-19 crisis on physician stress and mental health
X8	Margaret, P., Arbet, J., Jenkins, P. A., Rosenthal, L., Carrington, S., Purcell, S. K., Lee, S., & Hoon, S. (2021).	To identify the stressors of graduate nursing students during the pandemic
X9	Rajcani, J., Vytykacova, S., Solarikova, P., & Brezina, I. (2021)	To elucidate the impact of COVID-19 related stress on healthcare professionals
X10	Salopek-žiha, D., Hlavati, M., Gvozdanovi, Z., & Gaši, M. (2020	To explore ways to deal with the coronavirus stressor and psychological outcomes among physicians and nurses
X11	Santos, J. A. A. D. L., & Labrague, L. J. (2021).	To assess fear of COVID-19 among nurses in a community setting.
X12	Simione, L., & Gnagnarella, C. (2020).	To investigate the perception of risk and the worries about COVID-19 infection in both healthcare workers and general population in Italy
X13	Sommer, J. L., Mota, N., & Reynolds, K. (2021).	This study identified respondents who endorsed a COVID-19-related trauma as their most stressful traumatic experience
X14	Sun, Y., Song, H., Liu, H., & Mao, F. (2020).	To investigate coronavirus disease-related occupational stress and its single and cumulative effect on mental health and self-efficacy among community mental health care workers.
X15	Talaee, N., Varahram, M., Jamaati, H., Salimi, A., & Attarchi, M. (2020)	To validate a questionnaire to assess stress and burnout in healthcare workers during COVID-19 pandemic
X16	Yan, J., Kim, S., Zhang, S. X., Foo, M., & Alvarez-risco, A. (2021	To investigate when hospitality workers' COVID-19 risk perception affects their likelihood of having depressive symptoms
X17	Zare, S., Mohammadi, M., Esmaeili, R., Kazemi, R., & Naseri, S. (2021)	To assess the status of occupational stress in the three occupational groups of nurses, physicians and hospital cleaning crew facing COVID-19 patients in hospitals

As per the above it is clear that main theme of these studies mainly focuses on the COVID-19 and its impact on Depression, Anxiety, Stress of peoples who works more health care sector. As a results respondent were expressed that COVID-19 as risk element for physical and mental health.

Table 2. Research methods used among included studies

Research Method	Frequency	Percent
Quantitative Method	17	100%
Qualitative Method	-	-
Mix Method	-	-
	Total	**100%**

Table 2 depicts the research method deployed for the selected studies. It shows interesting results that 100% studies have done based in the Quantitative methodology whereas none of the studies done based on Qualitative either mix method.

Table 3. Data collection tools and sample sizes among included studies

Code	Data Collection Tools	Sample Size
X1	Questionnaire	933
X2	Questionnaire	662
X3	Questionnaire	653
X4	Questionnaire	521
X5	Questionnaire	2,045
X6	Questionnaire	222
X7	Questionnaire	2,373
X8	Questionnaire	222
X9	Questionnaire	693
X10	Questionnaire	124
X11	Questionnaire	385
X12	Questionnaire	353
X13	Questionnaire	1,018
X14	Questionnaire	536
X15	Questionnaire	60
X16	Questionnaire	211
X17	Questionnaire	290

Table 3 reports the data collection tools and sample size of the selected studies. All studies were used questionnaire as a common data collection tool. Whereas sample minimum reported 60 meantime maximum reported 2,373.

Table 4. Sample groups in the included studies

Sample Group	Frequency	Percentage
General Public	3	18%
Health Care Workers	8	47%
Hospitality Worker	1	6%
Physicians	2	12%
Nurses	3	18%

Table 4 reveals the sample group frequency report. As per the finding it shows that 47% of the studies contacted among Health care workers. This is the sample group majority of the researchers used. The seconds sample

group are nurses and general public which is represent 18% of the studies. As per the statistics Nurses are the main segment of employees in the health sector who are mostly interact with COVID-19 patients. Next segment of health sector employees is Physicians which represents 12% of the studies and finally 6% of the sample groups is Hospitality Worker.

Table 5. Variables and Tools used in the included studies

Code	Variables	Tools
X1	Depression, Anxiety, Stress	DASS21
X2	Perceived stress,	Perceived Stress Scale (PSS)
X3	Post-Traumatic Stress Symptoms (PTSS)	DSM-5
X4	Fear of COVID-19 disease, Stress, Sleep Quality	Perceived Stress Scale (PSS)
X5	Anxiety and depression symptoms	Hospital Anxiety and Depression Scale (HADS)
X6	Depression, Anxiety, Stress	Fear of COVID-19 Scale (FCV-19S), DASS21
X7	COVID-related stress	Stress Summary Score
X8	Depression, Anxiety, Stress	DASS21
X9	Stress and Hair Cortisol Concentrations	Perceived Stress Scale (PSS), perceived social support (MSPSS), quality of sleep (PSQI)
X10	Depression, anxiety, stress	DASS21
X11	Fear of COVID-19, Job stress, Organizational turnover intention, Professional turnover intention	Job Stress Scale
X12	Anxiety, Stress	Perceived Stress Scale (PSS)
X13	Depression, Anxiety, Stress	DASS21
X14	Depression, Anxiety	The 9-item Patients Health Questionnaire Depression Module (PHQ-9)- DSM4
X15	Depression, Anxiety, Stress	DASS21
X16	COVID-19 Risk and Depression	7-item Middle East Respiratory Syndrome (MERS) risk perception scale
X17	Occupational Stress	Health and Safety Executive (HSE) tool indicator

The table 05 shows the common variables used in the sample studies. Under perceived risk, COVID-19 mainly courses Depression, Anxiety, Stress among public and health care workers. Majority of the studies used Depression, Anxiety, Stress as a variable to study the mental state of the employees. The commonly used tool is DASS 21 to measure the variables.

4. Conclusion

In less than a few months, the COVID-19 pandemic has created an emergency state globally. This contagious virus has not only raised concerns over general public health, but has also caused a number of psychological and mental disorders. According to our analysis, it can be concluded that the COVID-19 pandemic can affect mental health in individuals and different communities. Therefore, in the current crisis, it is vital to identify individuals prone to psychological disorders from different groups and at different layers of populations, so that with appropriate psychological strategies, techniques and interventions, the general population mental health is preserved and improved. This meta-analysis provides the most comprehensive information on the prevalence of

depression, anxiety and depression among health care workers during the COVID-19 pandemic, to date. Health care workers are at risk of common mental disorders, and the results of this review should inform action in policy and practice, to support the psychological wellbeing of health care workers. Additional research should be conducted into the factors associated with poor mental health, and future prevalence studies must adopt random sampling methods to improve the precision of estimates.

Our findings present a concerning outlook for health care workers, a group continually needed at the fore front of action against COVID-19, and at continued risk of associated psychological stressors. The response from policy makers and service providers must be decisive and swift, addressing mental health concerns in in this group, before long-term health and social impacts are realised. Support initiatives developed during the pandemic can help inform and inspire ideas in service provision across different regions, as the global society combats this pandemic. There must now be more attention given to generating and assessing the effectiveness of different interventions and initiatives to support the mental health of health care workers during this pandemic.

References

Al-maraira, O. A., & Shennaq, S. Z. (2021). *Investigation of depression , anxiety and stress levels of health-care students during COVID-19 pandemic. 26*(2), 113–127. https://doi.org/10.1108/MHRJ-10-2020-0070

Aslan, H., & Pekince, H. (2020). *Nursing students' views on the COVID-19 pandemic and their.pdf.*

Bassi, M., Negri, L., Delle, A., & Accardi, R. (2021). The relationship between post-traumatic stress and positive mental health symptoms among health workers during COVID-19 pandemic in. *Journal of Affective Disorders, 280*(PB), 1–6. https://doi.org/10.1016/j.jad.2020.11.065

Baltacı, A., & Balcı, A. (2017). Complexity Leadership: A Theorical Perspective. International *Journal of Educational Leadership and Management*, 5(1), 30-58. https://dx.doi.org/10.17583/ijelm.2017.243

Cihan, B. B., & Araç Ilgar, E. (2018). A Meta synthesis Study Related to Exhaustion Concept of Teachers in Turkey. *World Journal of Education*, 8(5), 31-40. https://doi.org/10.5430/wje.v8n5p31.

Cori L, Bianchi F, Cadum E, Anthonj C. (2020). *Risk Perception and COVID-19. Multidisciplinary Digital Publishing Institute.*

Darker C. (2013) Risk Perception. In: Gellman M.D., Turner J.R. (eds) Encyclopedia of Behavioral Medicine. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-1005-9_866

El Shikieri, A.B. & Musa, H.A. (2012). Factors associated with occupational stress and their effects on organizational performance in a Sudanese university. *Scientific Research.* 3(1), 134-144.

Ferdousi, R., Ahmed, O., & Nur, K. (2021). Heliyon Relationship between the fear of COVID-19 disease and sleep quality : the mediating role of stress. *Heliyon*, *7*(May), e07033. https://doi.org/10.1016/j.heliyon.2021.e07033

Fischer, R., Bortolini, T., Karl, J. A., Zilberberg, M., Robinson, K., Rabelo, A., Gemal, L., Wegerhoff, D., Irving, B., Chrystal, M., & Mattos, P. (2020). *Rapid Review and Meta-Meta-Analysis of Self-Guided Interventions to Address Anxiety , Depression , and Stress During COVID-19 Social Distancing. 11*(October). https://doi.org/10.3389/fpsyg.2020.563876

Gül, Ş., & Sözbilir, M. (2015). Thematic content analysis of scale development studies published in the field of science and mathematics education. *Education and Science*, 40(178), 85-102. https://doi.org/10.15390/EB.2015.4070

Hassannia, L., Taghizadeh, F., Moosazadeh, M., Zarghami, M., Taghizadeh, H., Dooki, A. F., Fathi, M., & Navaei, R. A. (2020). *Epidemic in IRAN: A Web-Based Cross Sectional Study.* 0–2.

Kubo, T., Sugawara, D., & Masuyama, A. (2021). The effect of ego-resiliency and COVID-19 -related stress on mental health among the Japanese population. *Personality and Individual Differences, 175*(February), 110702.

Li, Y., Scherer, N., Felix, L., & Kuper, H. (2021). *Prevalence of depression , anxiety and post- traumatic stress disorder in health care workers during the COVID-19 pandemic : A systematic review and meta-analysis.* 1–19. https://doi.org/10.1371/journal.pone.0246454

Linzer, M., Stillman, M., Brown, R., Taylor, S., Nankivil, N., Poplau, S., & Goelz, E. (2021). *Preliminary Report : US Physician Stress. 5*(February), 127–136. https://doi.org/10.1016/j.mayocpiqo.2021.01.005

Margaret, P., Arbet, J., Jenkins, P. A., Rosenthal, L., Carrington, S., Purcell, S. K., Lee, S., & Hoon, S. (2021). Graduate nursing student stressors during the COVID-19 pandemic. *Journal of Professional Nursing, 37*(4), 721–728. https://doi.org/10.1016/j.profnurs.2021.04.008

Nienhaus, A., & Hod, R. (2020). *COVID-19 among Health Workers in Germany and Malaysia. January*, 1–10.

Nwadiani, M. (2006). Level of perceived stress among lectures in Nigerian universities. Journal of Instructional Psychology. URL http://www.thefreelibrary.com/

Rajcani, J., Vytykacova, S., Solarikova, P., & Brezina, I. (2021). Psychoneuroendocrinology Stress and hair cortisol concentrations in nurses during the first wave of the COVID-19 pandemic. *Psychoneuroendocrinology, 129*(October 2020), 105245. https://doi.org/10.1016/j.psyneuen.2021.105245

Rajkumar, R. P. (2020). COVID-19 and mental health : A review of the existing literature. *Asian Journal of Psychiatry, 52*(March), 102066. https://doi.org/10.1016/j.ajp.2020.102066

Review, A. S. C. (2020). *COVID-19-Pandemie : Belastungen des medizinischen PersonalsEin kurzer aktueller Review COVID-19 Pandemic: Stress Experience of Healthcare Workers.* 190–197.

Pérez-Fuentes, M. C., Jurado, M.M.M, Ruiz, N.F.O, Martínez, A.M., Márquez, M.M.S., Herrera- Peco, I., and Linares, J.J.G. (2020). Questionnaire on Perception of Threat from COVID- 19, *Journal of Clinical Medicine*

Paraskevis, D., Kostaki, E. G., Magiorkinis, G., Panayiotakopoulos, G. C., Sourvinos, G., and Tsiodras, S. (2020). Full-genome evolutionary analysis of the novel corona virus (2019-nCoV) rejects the hypothesis of emergence as a result of a recent recombination event. Infect. Genet. Evol. 79:104212. doi: 10.1016/j.meegid.2020.104212

Salari, N., Hosseinian-far, A., Jalali, R., Vaisi-raygani, A., & Rasoulpoor, S. (2020). *Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis.* 1–11.

Salopek-žiha, D., Hlavati, M., Gvozdanovi, Z., & Gaši, M. (2020). *DIFFERENCESDISTRESS AND COPING WITH THE COVID-19 STRESSOR IN NURSES ANDPHYSICIANS. 32*(2), 287–293.

Santos, J. A. A. D. L., & Labrague, L. J. (2021). *The Impact of Fear of COVID-19 on JobStress, and Turnover Intentions of Frontline Nurses in the Community: A Cross-Sectional Study in the Philippines. 27*(1), 52–59.

Simione, L., & Gnagnarella, C. (2020). *Differences between health workers and general population in risk perception, behaviors, and psychological distress related to COVID-19 spread in Italy.* https://doi.org/10.3389/fpsyg.2020.02166

Sommer, J. L., Mota, N., & Reynolds, K. (2021). *COVID-19 as a traumatic stressor is an indicator of mental health symptomatology. 300*(December 2020), 2020–2021. https://doi.org/10.1016/j.psychres.2021.113936

Sun, Y., Song, H., Liu, H., & Mao, F. (2020). *Occupational stress, mental health, and self- efficacy among community mental health workers: A cross-sectional study duringCOVID-19 pandemic. 44.* https://doi.org/10.1177/0020764020972131

Talaee, N., Varahram, M., Jamaati, H., Salimi, A., & Attarchi, M. (2020). *Stress and burnout in health care workers during COVID-19 pandemic: validation of a questionnaire.*

Wang, C., Horby, P. W., Hayden, F. G., and Gao, G. (2020). A novel coronavirus outbreaksof global health concern. Lancet 395, 470–473. doi: 10.1016/S01406736(20)30185-9

Whitehead, B.R., and Torossian, E. (2021). Older Adults' Experience of the COVID-19Pandemic: A Mixed-Methods Analysis of Stresses and Joys, The Gerontologist, Vol.61 (1). 36-47.

Xie J, Liu Q, Jiang X, Manandhar U, Zhu Z, Li Y and Zhang B (2021) Psychological Health Issues of Medical Staff During the COVID-19 Outbreak. *Front. Psychiatry* 12:611223. doi:10.3389/fpsyt.2021.611223.

Yan, J., Kim, S., Zhang, S. X., Foo, M., & Alvarez-risco, A. (2021). *International Journal of Hospitality Management Hospitality workers' COVID-19 risk perception anddepression: A contingent model based on transactional theory of stress model. 95*(October 2020). https://doi.org/10.1016/j.ijhm.2021.102935

Zare, S., Mohammadi, M., Esmaeili, R., Kazemi, R., & Naseri, S. (2021). Heliyon Occupational stress assessment of health care workers (HCWs) facing COVID-19 patients in Kerman province hospitals in Iran. *Heliyon, 7*(May), e07035 https://doi.org/10.1016/j.heliyon.2021.e07035