The psychological experience of COVID-19 front line healthcare workers

A Literature Review

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Abstract

Coronavirus is a new outbreak of infectious disease that spreads through saliva droplets or nasal discharges caused by an infected individual coughing or sneezing. The coronavirus has brought more mental health effects on nurses, including stress, depression, isolation, fatigue, anxiety, and the fear of spreading the virus. Many hospitals were not prepared; therefore, a lot of responsibilities befell upon the healthcare workers, who were not only responsible for the community but also their health and their families.
The literature review investigates the psychological experiences of COVID-19 on frontline nurses. The purpose of the article is to generate information to help nurses and health workers maintain good mental health during a pandemic outbreak. The research question is about the psychological experiences of nurses are caring for COVID patients
The research is conducted through a literature review focusing on data collection using three data sources: CINAHL (EBSCO), Medline and PubMed, resulting in selecting eight articles using inclusion and exclusion analysis. The following four main categories: Feelings and symptoms of health care workers responsible for COVID-19 patients, negative emotion in the early state, self-care and coping styles and factors affecting the psychological experiences of nurses were the findings. Again, an open-access Google Scholar database is used to search for additional articles. The results indicated the psychological problem COVID-19 frontline nurses experiences during the coronavirus pandemic.
The study findings point out how to manage the pressure and challenges COVID-19 has brought to nursing staff and other frontline healthcare workers. In addition, the finding suggests that health care leaders and the government should provide adequate health care equipment to the healthcare workers to support their quality. Additional detail about the coronavirus and its associated behavioral well-being action was recommended to assist nurses in promoting mental health well-being. Since the coronavirus is new, there is need of more research to enhance healthcare workers knowledge.

Keywords/tags (subjects)

COVID-19, pandemic, healthcare workers, nurses, psychological experience, mental health

Miscellaneous (Confidential information)

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1 Introduction

The emergence of a new coronavirus infection (COVID-19) was declared a Global Health Emergency of International Concern by the World Health Organization (WHO) in January 2020. COVID-19 is expected to be listed as a pandemic by March 2020, according to the WHO. (WHO,2020). Protecting the mental health of healthcare professionals caring forCOVID-19 patients has been underlined as vital to the health professional´s long-term capability. Psychological treatment for front-line workers has been described as an immense public mental health challenge for the upcoming future. (Holly, Fiona, et al.,2020; Lui et al., 2020.)

Mental wellbeing is a state/position of well-being in which an individual can cope with the pressures of everyday life. (Herrman & Jane-Llopis, 2012, p.4). Stress, anxiety, and depression can be considered natural emotional reactions during the pandemic. Healthcare workers who were exposed to COVID-19 are more prone to develop psychological problems compared to those who have not (e.g., SARS). In China, frontline healthcare workers, HCWs specifically responsible for COVID-19 patients presented higher levels of fatigue, insomnia, anxiety among other serious mental health symptoms, than those in secondary positions. Other surveys, on the other hand, have found a higher incidence of psychological distress in non-front-line employees, likely because of these workers' limited access to information and psychological assistance. (Jianyu, Shi, and coworkers, 2020; Lui et al., 2020).

The thesis will review the literature on what kinds of psychological experiences healthcare professionals concerned with COVID-19 patients encounter during the pandemic. This review explores the main findings from the literature review analysis of the psychological experiences of frontline HCWs in times of severe epidemics and identifying strategies to address this.

2 Coronavirus pandemic and its impact on frontline healthcare workers

2.1 Coronavirus pandemic

In the 2019 coronavirus pandemic, the fifth pandemic since the 1918 flu pandemic, the worldwide population have been infected by coronavirus disease. From now on, as of late December 2019, we can trace the first early warning and an outbreak of the novel human pneumonia cases. These cases were first recorded in Wuhan City, China. The first case of coronavirus symptom was detected on 1st December 2019. These patients' shows symptoms of viral pneumonia, including fever, dry cough, malaise, and dyspnea (Liu, et al., 2020).

Owing to the area and signs of pneumonia, Wuhan's pneumonia was initially named Wuhan by the press. Whole-genome sequencing research have indicated that a novel coronavirus is the causative agent. Corona virus is the seventh type of virus that can infect humans as a result. The World Health Organization (WHO) temporarily named (Zhang, Bo, et al., 2020) coronavirus virus 2019 (2019-nCoV) and officially named coronavirus disease outbreak 2019 on 12 January and 12 February 2020. (COVID-19; Chandrinos et al 2020).

The virus was later officially designated SARS-CoV-2 by the International Committee on Virus Taxonomy (ICTV) based on phylogeny, taxonomy, and established experience. Clinical proof of COVID-19 human-to-human transmission that existed in Hong Kong was later discovered. COVID-19 has evolved over the course of four months since it first emerged in China, and it has quickly spread as a global challenge to other nations. With regards to the 1918 Spanish flu (H1N1), the 1957 Asian flu (H2N2), the 1968 Hong Kong flu (H3N2), and the 2009 Pandemic flu (H1N1), which wipe out an estimated 50 million, 1.5 million, one million, and 300,000 people, respectively, the WHO eventually declared COVID-19 to be a pandemic on March 11, 2020(Liu, et al., 2020; Chandrinos et al., 2020).

2.2 COVID-19 disease

Coronavirus disease (COVID-19) is a recent discovered virus that leads to an infectious disease. Most people been exposed to the virus, experience mild to moderate respiratory symptoms and mostly recover without the need for medical care. The elderly and others with existing medical

conditions such as coronary disease, asthma, severe respiratory disease, and cancer are highly prone to the coronavirus. COVID-19 virus transmit through saliva droplets or nasal discharges caused by an infected individual coughing or sneezing. (WHO,2020.) During the data compilation for the thesis, there was no vaccination or specific therapy for COVID-19. However, recent advances have shown promising signs, with COVID-19 vaccine trials showing a 90 percent success rate. (Source: Pfizer 2020.)

At the early stages of the epidemic, several patients were believed to show a connection to common seafood and animal markets; however, subsequent reports without a market connection indicated person-to-person transmission of the disease. Then again, situations associated with tourism have been exported (CDC, 2020.)

COVID-19 has rendered health care professionals and own families at risk at unprecedented levels. COVID-19 infections among health workers are much higher than those among the general public, according to evidence from several countries across WHO regions (WHO, 2020).

2.3 Psychological experiences of frontline healthcare workers

Psychological experience is defined as the means of concern with a person's mind and thoughts. (Collins dictionary,2020). According to (Tiziana et al., 2020), psychological perception encompasses feelings other than fear and concern that are usually correlated with risk perception, such as distress, indignation, loneliness, annoyance, inadequacy, and ambiguity. It is also defined as an intentional practice that develops the ability to act in conjunction with those conducive to incorporating the personality, that prevents or resists those influences that would produce psychic disruption or disintegration (Elisabeth,2010; Tiziana et al., 2020).

A healthcare worker is anyone who provides medication and services to the those who are ill and injured directly or indirectly as aides, assistants, lab technicians, and sometimes even medical waste managers. Globally, there are nearly 59 million healthcare professionals. Healthcare continues to be one of the most dangerous professions to operate in. As a result of their employment, employees of this field are regularly exposed to a wide range of health and safety threats. (Bobby & Merlyn, 2016.; Daniele, Geoffery et al., 2018.)

For the most part, healthcare workers are resilient psychological professionals trained and experienced in dealing with illness and death. Prior to the current COVID-19 pandemic, this group's emotional and psychological wellbeing were already recognised as critical healthcare concerns. This is demonstrated by the increasing rates of stress, depression, burnout, drug and alcohol abuse, and suicide among majority of the health care providers in many countries. The greater jobs of frontline healthcare workers, along with all the unique stresses of the current COVID-19 crisis, have undeniably raised their risk of mental health problems, with previously research from across the world underlining an elevated risk of overweight, post-traumatic stress disorder (PTSD) suicide attempts and anxiety. (Jo, et al., 2020.)

The term frontline health worker refers to healthcare professionals who perform normal and critical medical practice functions. (Kavita et al., 2014). Frontline health workers are millions of people's first and often only point of contact with the healthcare system. They have a variety of life-saving treatments that help prevent sickness, death, and injury. Physicians, counsellors, respiratory therapists, environmental support staff, and managers are among the frontline workers (FHWC,2012; Ken,2020.)

COVID-19 has exposed frontline nurses and other healthcare workers (HCWs) to a wide range of social interactions and other mental health issues. Throughout nursing careers, nurses meet a wide range of people.

Psychosocial experience is defined and elaborated as an impacted caused by biological and environmental factors on a person´s social life (Alexandra, Patricia, et al., 2013.)

According to a study, healthcare workers (HCWs) are under immense pressure from COVID-19, predominantly those who contact a suspicion case or confirmed cases. Due to the high transmission rate, impaired immunity, lack of experience in combating the virus, loss of control, overworking, negative reviews from patients, feelings of guilt, drastic changes in their lifestyle, quarantine, and decreased family support, the psychological and mental health impact on them is heightened. These factors lead to an increase in the prevalence of psychological disorders among healthcare employees, such as fear, anxiety, depression, and insomnia, which can negatively affect job performance and long-term well-being. Hospital workers endured significant emotional distress during

the SARS outbreak. (Que, Shi, et al. 2020). Other studies on the Chinese population also indicate that many health workers have signs of depression, anxiety, insomnia, and discomfort. (Barbara, Tania, et al., 2020; jo et al., 2020)

2.4 Healthcare workers knowledge and perception of COVID-19

Research conducted by (Akshaya, Jamal, et al., 2020.) reveals essential gaps in information between doctors and other health care workers (HCWs). HCWS, for instance, doctors, nurses among other health professionals thought that COVID-19 came originated from bats. The majority of HCWs agreed that it is possible to minimize COVID-19 transmission by enhancing hand hygiene, shielding the nose and mouth while coughing, and isolating from positive patients. The majority of physicians suspected that COVID-19 would cause pneumonia, respiratory failure, and death and that supportive care was the only alternative available at the time. Participants' knowledge of the mode of transmission and the COVID-19 incubation cycle, however, was lacking. Additionally, other researchers report that HCWS are more informed of COVID-19 transmission, its incubation time, and its preventive length (Wafaa, Mamdouh, et al., 2020).

3 Psychological support for frontline healthcare workers

It can be challenging to work as a 'frontline' health provider or social worker provider during the global outbreak pandemic, such as COVID-19. Stress will eventually result in mental health issues such as depression and anxiety, interfering with employment, families, and other social relationships. Frontline healthcare workers could improve their mental health in numerous ways. These can involve job-related techniques, such as altering schedules or upgrading facilities and therapeutic intervention strategies, such as counselling (Pallock, Campbell, et al. 2020; Yumeng et al 2020).

3.1 Interventions provided by Governments and other NGOs

Many possible interventions can mitigate the demoralizing influence of today's situation. These interventions will prove useful in aiding health care professionals during the pandemic, as they experience numerous psychological impacts. Chandra and Vanjare (2020) have drawn attention to the fact that employers and healthcare leaders are counselling and training them for their jobs and related challenges, educating them by offering a good analysis of what they should anticipate and avoiding false reassurances. Address both social and emotional problems in depth by rotating workers in positions with a heavy workload, providing a reasonable time of rest between them. Health officials have taken into account the provision of an electronic gateway to offer medical advice to not only the public, but also medical staff at the hospital (Chandra & Vanjare, 2020; Yumeng et al., 2020).

Isolations were suggested to be made available to staff reducing the concerns about transmitting disease and provision to promote relaxation and leisure activities. Early monitoring of the disease and taking necessary intervention to staff who became unwell had standard mental health programs that offers online virtual courses as well as peer support programs. (Pollock et al., 2020).

In Finland, the government has strived to correspond to healthcare, community, and institutional needs to sustain healthcare workers and the people's mental well-being. However, the Covid-19 pandemic makes the situation very complicated, and decisions of different nature must be taken to ensure society's safety. Decisions taken are not always familiar with people because they can restrict their ordinary activities and lifestyle (Kestilä et al. 2020)

China mental health offers psychiatric counselling and assessments to the general population. Online self-assessment tools of individual mental well-being are available on official hospital web-sites and some popular applications. Online psychological assessment assistance is given without charge to respondents who rank above the cut-off points on these test instruments. Additionally, over 300 mental health hotlines have been operating since the outbreak of the virus providing counselling care to the general public (Yumeng et al., 2020.)

The UN Refugee Agency offered a forum to explore communications and fundraising patterns, the need to adapt to the ever-changing COVID-19 pandemic, and how to prevent and resolve reputational risks caused by or worsened by the pandemic (UNHCR, 2020.)

3.2 Management of the pandemic situation

For the safety of frontline nurses, material support and precautionary equipment were essential. The shortage of personal protective equipment supplies compounded the frontline health care workers' concern and therefore impaired their mental health. On the other hand, it proved difficult to provide appropriate protective equipment in the short run due to inadequate production resources. Some hospitals and organizations have changed the work schedule for nurses' shift to improve the psychological health problem developing from insufficient protective equipment among frontline nurses, reducing the duration of one shift to 4 or 6 hours, and scheduling 4-6 shifts of nurses every day. The work rate, consumption of personal protective equipment and the psychological burden of nurses have been reduced to some degree in this way (Anliu, Xiangfen, et al.,2020.)

The pandemic of Covid-19 has positioned healthcare professionals in an unprecedented condition worldwide, requiring them to make difficult choices and perform under intense pressure. Both healthcare staff must be prepared for the theological dilemmas that will arise during the Covid-19 pandemic. Health care leaders recognize that adequate career planning and the associated challenges help to alleviate mental health problems. (Mary Neil et al., 2020.)

4 Aim, Purpose and Research question

This study aims to investigate the psychological experiences of COVID-19 on frontline nurses. The research focuses on existing scientific literature about the experiences of nurses and healthcare workers during a pandemic. The purpose is to generate information to help nurses and health workers to maintain good mental health during a pandemic outbreak.

The question to be researched is:

What are the psychological experiences of nurses caring for COVID patients?

5 Methods

5.1 Literature review

This study was done on a scientific review. A literature review is a study of learned sources on a specific subject. It provides an overview of current knowledge, allowing for the identification of applicable theories, approaches, and research gaps. (Cronin et al., 2010). According to Kiteley & Stogdon (2014), a literature review summarises ideas, approaches and findings of previously published topics and problems.

Dena (2008.) explained astutely that a literature review is a summary of what has been published on a subject by reputable academics and researchers. In writing a literature review, the purpose is to convey what information, including concepts, have been discovered on a topic and their strengths and vulnerabilities. A guiding principle must describe the literature review as a piece of writing (e.g., research target, the topic or issue examined, or argumentative thesis). In the following order, the six measures drawn up by Tanya (2015) were applied to this study; step 1 decide on the areas of research, step 2 search for the articles and books, step 3 find relevant excerpts in articles, step 4 code the scientific articles by sorting out similar topics, step 5 create a conceptual schema by putting down the name of each of the coded themes and step 6 begin to writing the literature review.

As there was a visible need to collect multiple studies to coordinate and evaluate results on COVID-19 psychological experience on frontline healthcare workers, this bachelor thesis was designed as a literature review.

5.2 Scientific article selecting process

Analysis and synthesis data for the current scientific literature review were retrieved from Medline, PubMed and CINAHL database. The following picos table were developed to determine the best evidence articles relevant to the subject and provide information applicable to the conclusions (Table 1).

(PICOS)	
Population(participants)	COVID-19 frontline nurses and healthcare workers
Phenomena of Interest	Psychological experience on frontline healthcare workers and mental health
Context	Health care settings
Types of studies	Scientific studies

Table 1:PICOS table

The keywords used in the search were nurses, **COVID-19, psychological impact, mental illness** and they are shown in (Table 2). The inclusion and exclusion criteria (Table 3) required all available scientific articles published in the English language from 2019 to 2020 to explain the psychological impact of COVID-19 on frontline healthcare workers to be included.

Keywords
Psychological experiences
AND COVID-19 psychological impact
OR mental illness* OR mental experiences
nurses OR nurses*
AND frontline healthcare OR healthcare workers AND healthcare workers

Table 2: keywords

Inclusion and exclusion criteria

Inclusion Criteria	**Exclusion Criteria**
• Studies written in English. • Studies which were published after 2019. • Studies with an abstract. • Scientifically written articles. • Full text version of the study of interest. • Studies which focuses on psychological experience of COVID-19 frontline healthcare workers.	• Studies not published in English. • Studies published before 2019. • Literature review • Studies where it was not possible to access the full text version.

Table 3: Inclusion and exclusion criteria

5.3 Analysis and synthesis of data

The research question was answered after analyzing and synthesizing data from the selected articles in this review by adopted a descriptive approach based on inductive content analysis. The most common applications of content analysis are in psychiatry, gerontology, and public health research. (Elo & Kyngäs 2007). Content analysis is a method of explaining and evaluating phenomena that is both systematic and objective (Bengtsson, 2016). The researcher analyze the articles by sorting out similar topics and try to create a conceptual schema by putting down the name of each of the coded themes. (Dena, 2008).

The process of analyzing and synthesizing the articles obtained in this literature review is shown in Figure 1.

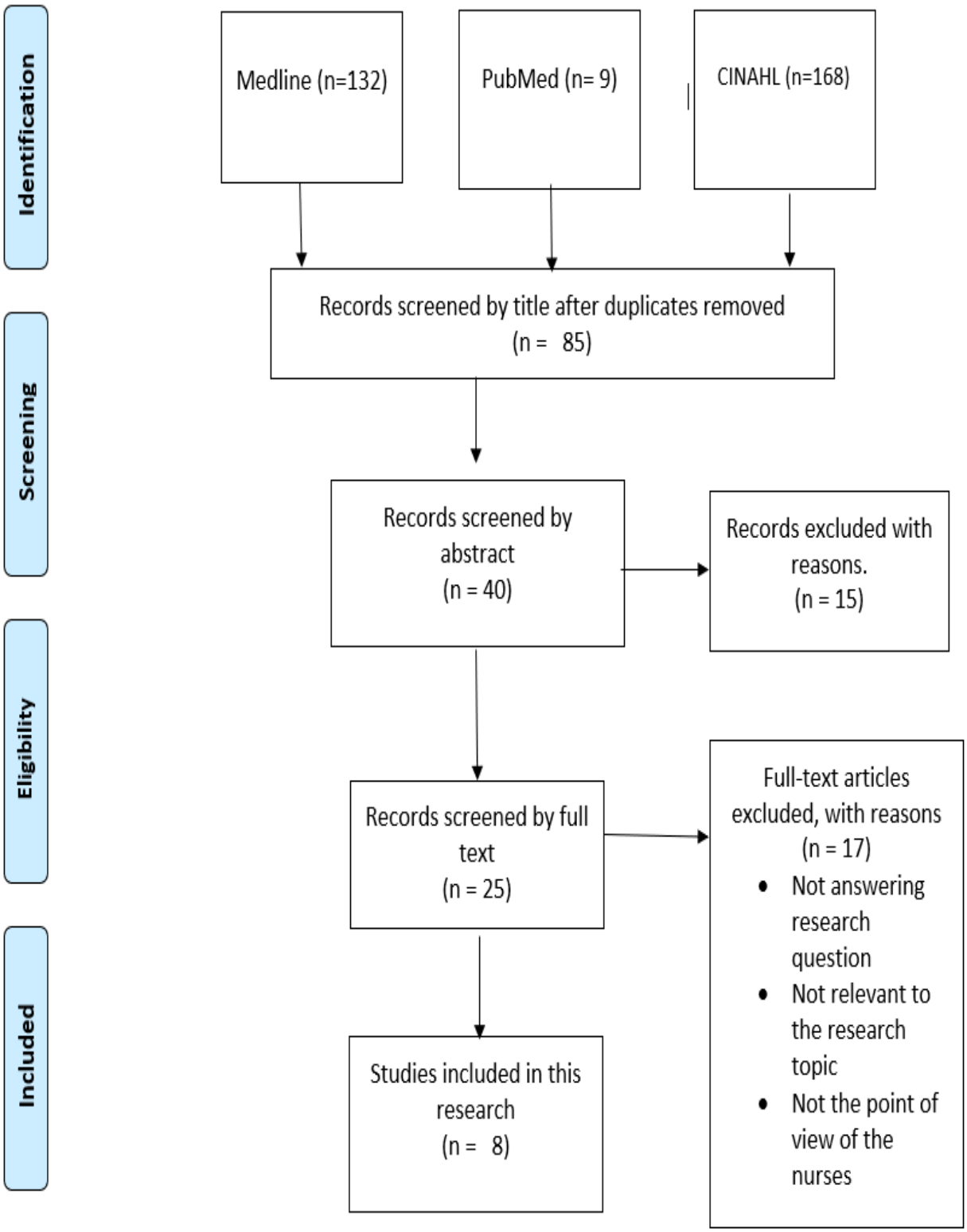

Figure 1: PRISMA chart

The search of articles began by screening the titles, then the abstracts and then the full text, as seen in the prism flow chart (Figure1). The studies answering the research question and meeting the criteria for inclusion were included in the analysis.

The search with the selected keywords and inclusion criteria gave a number of 132 articles from Medline, 168 from CINAHL and 9 from PubMed. After the articles were screened by relevance of titles, 85 articles were left. These articles were further screened by abstract, which eliminated 15 articles because the articles did not include nurses and were not related to COVID-19 and do not also evaluate the psychological health issues faced by Health care workers.

Full-text screening of 25 papers resulted in the exclusion of 17 articles since the articles were reviews and/or the studies did not address the research question. Furthermore, the articles were unrelated to the research topic and did not represent healthcare workers' perspectives. There were a total of 8 articles included in the final analysis, 4 of which were based on Chinese research.

The final step was reached after taking notes on the content of each of the eight articles using a checklist. According to Hawker et al. (2002), the papers were analyize using the criteria and assigned a score of 1 to 4 on a scale ranging from "poor" to "good." (Appendix 2). The papers were graded on a scale of 34 to 36. Additionally, the paper titles, analysis methodology, and significant conclusions are all scrutinised (Appendix 1).

6 Findings

The articles were read several times and extensively analyzed. The aim of this study was to answer the research question, "What are the psychological experiences of nurses caring for COVID-19 patients?". Following the review, fair knowledge of the topic was found from much research performed by different healthcare fields. Furthermore, there was a lack of knowledge during the article research on how health care staff were taking care of themselves during their psychological experiences caring for COVID patients. Another issue raised during the review of the article was how health authorities and the government provided frontline health personnel with assistance for COVID patients during the disease outbreak.

Through extensive analysis, 4 main categories emerged from the 8 articles: Health care workers' feelings and symptoms when caring for COVID-19 patients, negative emotion during the early stage, managing and identity behaviors, and factors influencing nurses' psychological experiences. The 4 main themes emerged from 13 subcategories after reading the selected articles several times (Appendix3). The major categories and subcategories of the data analysis method are depicted in Figure 2, followed by an explanation of the results.

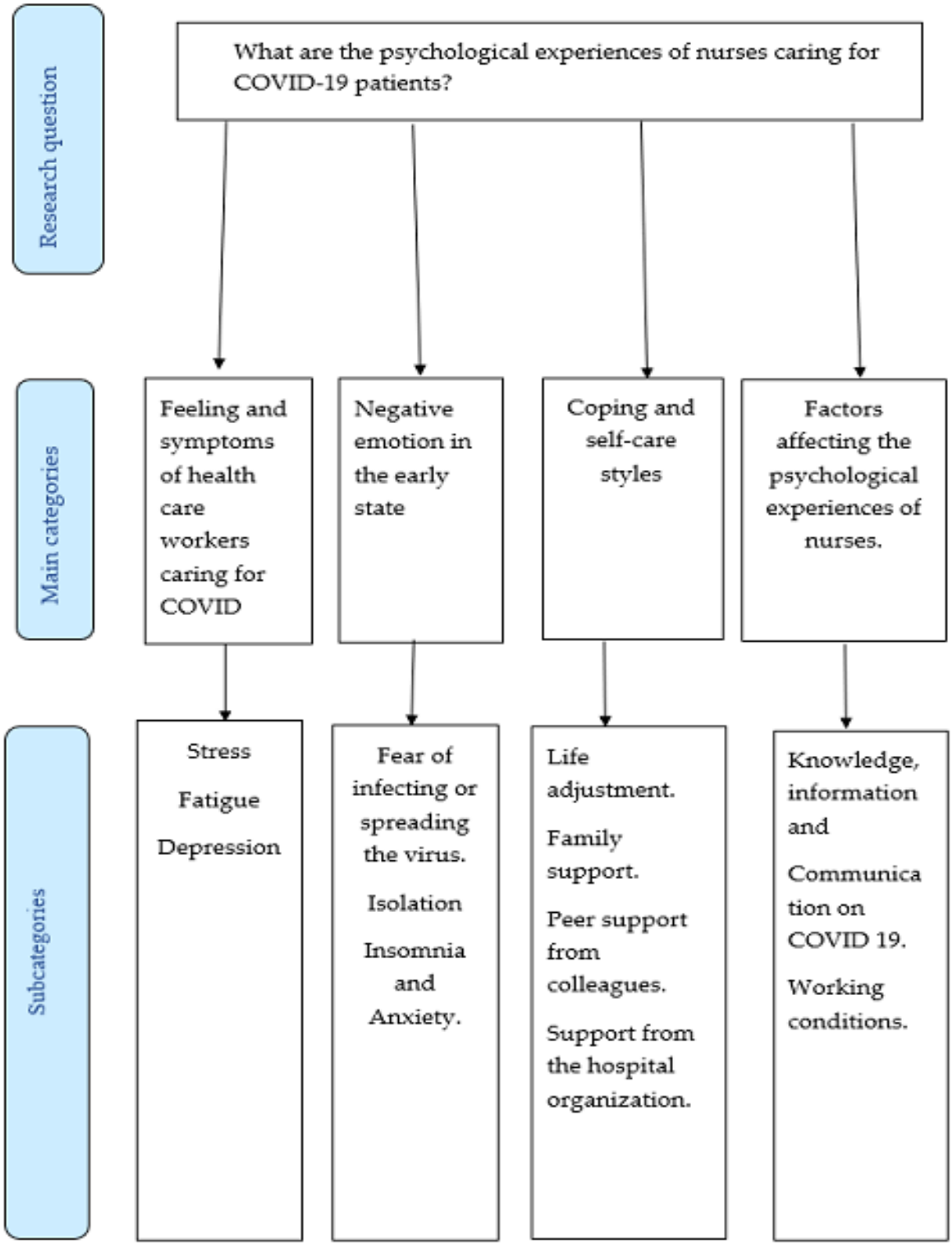

Figure 2: Results and data analysis

6.1 Feelings and symptoms of health care workers caring for COVID-19 patients

6.1.1 Stress

Nurses demonstrated excessive stress and responded positively to stress, especially for nurses working in emergency units. Higher risk of exposure to the corona virus, nurses in the medical unit who acted as the primary caregivers to their patients shows a higher stress rate than nurses in other departments. Additionally, some of the findings included in this research examined the social effect of acute epidemics on health care personnel. Post-traumatic stress syndrome was predominantly diagnosed neurological disorder. Fear, depression, and stress management tendency levels were shown to be affected by sociopsychological and work environment influences by the nurses. (Shasha et al., 2020).

COVID-19 related stress symptoms proved positively related to psychological distress. Healthcare workers demonstrated symptoms of stress. Compared to male nurses, female nurses who encountered close contact with COVID-19 patients tended to be at the highest risk of stress. (Anliu et al., 2020). Moreover, Xiao et al. and Blake et al. (2020) found out that frontline healthcare professionals caring for covid patients experience psychological stress as complained to HCW during SARS. (Xiao et al., 2020; Blake et al., 2020).

Moral damage, also known as "psychological distress," was encountered by nurses. Additionally, cultural practices and norms within an organization, communication habits management among members, leadership styles were identified as key impacts in workers stress. (Blake et al., 2020).

6.1.2 Fatigue

This subcategory represented how negative emotions manifested in the early stages as exhaustion, pain, and helplessness resulting from patients' and family members' panic, anxiety, and concerns. Nurses were exhausted due to the scarcity of protective equipment; nurses were forced to conserve it by reducing the number of times they wore it, which resulted in fatigue and discomfort. People felt helpless because their physical and psychological needs were not met. (Que, et al., 2020; Sun et al., 2020).

6.1.3 Depression

According to Xiao's (2020) study, depression levels varied significantly between male and female nurses, career titles, degrees of the inadequacy of preventive steps, and contact record. Additionally, it was determined that preventive measures and a patient's contact history were significant independent risk factors for depression. (2020, Xiao et al.) Furthermore, the majority of frontline healthcare workers reported depression as one of the factors associated with psychological issues. (Jianyu et al., 2020; Sun et al., 2020; Xiao et al., 2020).

6.2 Negative emotion in the early state

6.2.1 Fear of infecting or spreading the virus

Many of the nurses shared concern about the outbreak's effect on their families' and loved ones' well-being. Fear of infecting their families and friends with the COVID-19 disease placed the nurses in a difficult state of not returning home from the hospital after their shift. During the COVID-19 epidemic, nurses working in the accident and emergency and fever clinics in Chinese hospitals and other high-risk settings were more vulnerable to the virus. Due to the infectious nature of COVID-19, nurses became far more vigilant about their relatives. (Shasha et al., 2020; Sun et al. 2020). Experience of deaths among the frontline healthcare workers brought the fear of infecting and spreading the virus. (Felice et al., 2020).

Nurses were observed to experience moderate to high fear of COVID-19, with female nurses being more fearful of the virus. Furthermore, the nurses' anxiety influenced their psychological distress as well as their plans to leave the organization and profession. Nurses in different countries, including China, Taiwan, Italy, Singapore, India, and Philippine´s community nurses, were frightened by the pandemic. As a result, even whilst caring for asymptomatic to mild cases, nurses in the healthcare facilities had a moderate fear of COVID-19 (Janet Alexis et al., 2020.)

6.2.2 Isolation

Healthcare workers who suffer from isolation lack social support outside of the workplace and sometimes neglect personal relationships with friends and family because of intense workloads and responsibilities and worries on transmitting the virus to others due to their own occupational

exposure to the infection. Maintaining social interaction became increasingly difficult in the context of social distancing criteria. There have been indications of healthcare workers being subjected to social stigma and violence as a result of public fears of catching the virus from those exposed the most. (Blake et al., 2020.)

A lack of family support and social isolation harmed nurses who preferred to distance themselves from their families while caring for covid patients. Nurses used psychological defence techniques like speculation, isolation, relaxation, self-consciousness, humour, and rationalisation to help patients cope (Sun et al.,2020). (Sun et al., 2020). Moreover, a negative coping style that causes isolation was found among the frontline nurses. (Anliu et al., 2020).

6.2.3 Insomnia

In comparison to medical physicians, nurses were found to have the highest degree of insomnia symptoms when caring for covid patients. Furthermore, the studies discovered that insomnia was linked to a wide range of psychological issues (Que et al., 2020). Insomnia signs are visible in frontline nurses (Jianyu et al., 2020). Symptoms of insomnia (Blake et al., 2020).

6.2.4 Anxiety

During the COVID-19 pandemic in China, there was a high prevalence of anxiety symptoms among healthcare personnel (Jianyu et al., 2020). This factor is also highlighted in different countries such as Italy, Philippines, UK a. Therefore, anxiety is paramount in the experiences of health care ´workers during the pandemic.

The anxiety levels of the nurses were studied, and it was found that more than half of the nurses had no anxiety, less than half had mild anxiety, and a few nurses had moderate to severe anxiety. Apart from mild and moderate levels of anxiety, excessive workload, fear of family member infection, and the death of health workers all contributed to anxiety (Shasha et al., 2020; Que et al., 2020). Additionally, anxiety levels varied according to gender, job title, and degree of protective measures (Xiao et al., 2020).

6.3 Coping and self-care styles

6.3.1 Life adjustment

Psychological and life change, team supports, altruistic acts, and rational cognition were all part of the self-coping styles issue. HCWs also discovered that having a good mindset at work helped them get through the outbreak. Another analysis found that nurses who regretted becoming nurses mainly adopted negative coping styles (Sun et al., 2020; Shasha et al. 2020).

Sun et al. (2020) discovered that approximately 20 frontline nurses used therapeutic techniques such as writing diaries and emails, breathing calming, mindfulness practices, music therapy, and emotional expression and venting as self-care coping skills, as well as current and new knowledge of psychological decompression conveyed by colleagues or internet content. Furthermore, when nurses are tired at work, most of them chose to change their sleeping patterns. To retain daily work ability, some nurses increased their dietary intake, increased their physical activity, and retained their physical strength. Some nurses took the initiative to process information and analysed it by using medical experience to motivate themselves. (Sun et al., 2020.)

6.3.2 Family support

During COVID-19, frontline nurses received fewer support from their families' members, and the workplace became a vital source of social support. However, a clinical psychologist was advised to engage frontline nurses in informal individual contacts to offer support and guidance, such as relaxation techniques and sleep tips. Nurses were instructed to use online peer support and social media to provide social or emotional support (Anliu et al., 2020.)

Furthermore, Sun et al. (2020) indicated that, health care professionals emphasized gratefulness to their family members and friends due to the support they have provided. This also includes all members of the society who offered support during the pandemic by being dedicated in caring for COVID-19 patients in the critical unit as well as other healthcare centers. (Sun et al.,2020.)

6.3.3 Peer support from college

Supervisory and peer reinforcement were found to be a significant poor indicator of psychiatric symptoms. In a group of Chinese emergency healthcare workers, tenacity, resilience, and the availability of assistance were also found to be predictors of mental well-being. Psychological help and practical assistance with benefits and compensation issues had a protective impact against stress in the study HCWs. Additionally, healthcare workers expressed a lack of healthcare workers support to individual coping (Blake et al., 2020.). During stressful periods, nurses looked out for one another and demonstrated empathy for stress management (Anliu et al., 2020).

6.3.4 Support from the hospital organization

According to Blake et al. (2020), psychological care should be focused on both organizational and individual behaviors, to preserve a corporate culture. Prior pandemics have shown that the organizational context has a significant impact on employee psychological outcomes. Other suggestions made during this study were that consistent communication of directives and precautionary steps and peer support minimize the risk of emotional distress in this Coronavirus phase. Moreover, stakeholders provided online materials, other digital technologies and support to promote health and well-being to the healthcare workers (Blake et al. 2020). Other issues that were raised by Sun et al. (2020) were that physical and mental support was given to the nurses to support their mental state and relieved them from the fear of the epidemics. (Sun et al.,2020.)

6.4 Factors affecting the psychological experiences of nurses

6.4.1 Knowledge, information and communication on COVID-19

Healthcare professionals undoubtedly face tough choices and moral dilemmas during the pandemic due to a lack of tips and guidance regarding COVID-19 progression and interventions, including the challenges of limited resources. (Blake et al. 2020). On the other hand, nurses were afraid to join front-line work due to a lack of knowledge about the COVID-19 and poor reviews from those who served on the front lines. The results can be used to advise psychological interventions among healthcare professionals in other countries and religions. (Que et al., 2020)

In the study made by Blake et al. and Shasha et al., it was observed that previous studies findings show that nurses and frontline healthcare workers understanding of COVID-19 remain the same across the world (2020). In general, the nurse's knowledge was moderate due to the less confidence in fighting the outbreak of the virus and lack of information and support from the government and healthcare leaders (Blake et al. 2020; Shasha et al., 2020)

While the coronavirus instilled fear and anxiety in nurses, they also assessed the progress of disease prevention and control and expressed trust in the government's and its subunits' medical capabilities. At the same time, after preparation and practice, they felt more confident in their ability to self-prevent and manage. Many of the nurses eagerly embraced anti-epidemic missions, and the majority of them volunteered (Sun et al., 2020.)

It is essential to highlight the importance of using personal protective equipment (PPE) when addressing high-risk labelled fields such as pneumology, intensive care, infectious diseases, emergency microbiology, medicine, and radiology. According to healthcare workers caring for covid patients were not enough to care for covid patients. Moreover, it depicts their less knowledge and less PPE than the number of patients in the intensive care unit. Healthcare workers were engaged in the unprecedented treatment of COVID-19 patients, performing roles that were beyond their scope of practice (Felice et al., 2020; Xiao et al., 2020). Likewise, Anliu et al. (2020) also analyzed that inadequate protective equipment such as protective clothing and marks, and emergency medical supplies cause psychological health among frontline nurses. (Anliu et al., 2020).

6.4.2 Working condition

Nurses resented becoming a nurse because of the more night shifts and would prefer to switch to another profession because the workload contributes to risk factors for perceived stress and female nurses, particularly those with children, sleep less than male nurses. Additionally, nurses who worked fewer vacation days and more night shifts experienced elevated anxiety and stress levels. (Shasha et al., 2020; Janet Alexis et al., 2020; Que et al., 2020).

Besides workload, nurses in community settings had a moderate level of job satisfaction because they revealed being less stressed than nurses in acute and critical care settings, especially in

COVID-19 cases. Critical care nurses faced more stressful work pressures than nurses in community settings due to the increased demand for nursing services. Additionally, Janet Alexis et al. (2020) discuss how nurses are more motivated to work and demonstrate a more significant commitment to their professional responsibilities, especially when faced with professional challenges during pandemics, as stated by these community nurses (Janet Alexis et al., 2020.)

Since frontline nurses recorded daily job duties due to working overtime, healthcare leaders in some healthcare fields have adjusted the schedules for nurses shifts system and reduced the duration of a shift to four or six hours a day (Anliu et al., 2020). In addition, nurses in the Emergency Department (ED) had a higher rate of psychological discomfort than nurses in other units when it came to job stress. The emergency department (ED) is a high-stress, fast-paced environment where patients' medical conditions are constantly changing and unpredictable. Because of the fast-paced environment, ED nurses faced a higher degree of job stress than most nurses (Ibid.,2020).

There is a great deal to consider when it comes to working environments. Healthcare workers in high-risk positions, such as fever facilities, respiratory and infection wards, ICU, CT rooms, and clinical labs, were more likely to contract the infectious disease. As a result, safety precautions and previous experience with patients or specimens were considered. (Xiao et al., 2020). Likewise, nurses were working high-intensity work (Sun et al., 2020)

7 Discussion

COVID-19 and its psychological effects are common within the healthcare field and global population. Psychoneuroimmunology (PNI) researchers have looked at how the immune system and nervous system interact and have an effect on people's psychological health. Although the study is still in its infancy, extensive research has been done to examine the nervous and immune systems' influence mostly on mental stressors. Psychological stress, according to PNI reports, can trigger or exacerbate mood disorders such as depression and anxiety, bipolar disorder, cognition problems, mood changes, and psychopathology (Centre, 2010; Helhammer, et al, 2008). The result examined possible management for frontline nurses and other healthcare workers with psychological issues in order to avoid stress and depression. From the researcher's perspective, stress has to be taken with outmost importance due to the wide range of psychological illness and stress they can trigger, negatively impacting the immune and nervous system. Similarly, data was collected in the United States to investigate nurses' experiences of functioning during the epidemic's early days. It was discovered that more than half of respondents had signs of psychological distress, and almost one-third had PTSD. (Centre, 2010; Helhammer, et al. 2008).

In another study, where the main goal was to investigate the psychological factors affecting COVID19 nursing, it was discovered that, the influence of socio-psychological variables on anxiety was considered, as well as the connection of anxiety to working environments, the impact of stress, and stress, and the interdependence of both, were found to be prominent. (Shasha et a., 2020).

Without a doubt, the study also details the accelerated implementation and assessment of an e-package to aid healthcare workers' psychological well-being before and in the aftermath of the COVID-19 disease outbreak. The package was designed using an Agile approach that included systematic, incremental academic research processes including assessment by a representative community of health care providers in the United Kingdom. Through the application of validated processes, this work defined the production methods exhaustively and established the reliability of order fulfillment and interaction, and also the product execution performances. As a result, an online assistance kit is available directly to healthcare professionals working in hospital or neighborhood settings. 2020 (Blake et al.).

According to the study's findings, 25.1 % of frontline nurses reported having experienced mental distress, as shown by their GHQ-12 ranking. Nurses who work in the emergency room, are worried for their relatives, face differential care, are exposed to COVID-19, and have a pessimistic management strategy seem to be more likely to experience emotional distress. Increased social help and improved prevention strategies were effective in reducing emotional trauma. (Anliu and colleagues, 2020)

Nurses caring for covid-19 victims have been reported to experience anxiety symptoms as a result of their apprehension of transmission of the disease to their families and seeing their colleagues getting infected or dying. According to this viewpoint, stress serves as a pathway to anxiety, with nervousness as a chronic stressor and responses to stress. A person with the ability to effectively manage stress is unlikely to feel anxiety. Many who lack appropriate management skills are subjected to a high degree of anxiety (May`s, 2015). It is highlighted that health care professionals were immensely impacted by anxiety, this is especially true since the coronavirus pandemic is a newly found virus, which the world has not experienced before; thus, nurse and health care workers are forced to care for the sick with minimal knowledge about the disease itself, and also the possibility of infection.

Furthermore, when a person detects risk, the brain sends signals to the brain, causing various people's bodies to react to the neural system's reflex, with core symptoms including rapid breathing and pulse, elevated blood pressure, and sensations in the legs, head, chest, and hands. Additionally, the sweat glands produces numerous sweats. The phrase "fight of light" describes how the body reacts to these signs and reactions, either battling the threat or fleeing quickly. (Nemours, 2021)

Moreover, helping nurses maintain their well-being through effective and coordinated communication is a critical component of outbreak or other form of healthcare sustainability issues. Knowledge must enter the level of the population, apart from direct contact between government and healthcare institutions. Trusted and organized information increases the possibility of the following individuals. On the other hand, timely communication can produce effective results, but false information, on the other, can cause significant losses. Accurate scientific information will reduce disease spread and decrease confusion amongst the community (Chandra & Vanjare, 2020).

Additionally, a non-governmental agency must maintain vital communication by supplying prompt, precise, and scientific proof data about infection as well as the facility's response, including disastrous situations. Leaders ensure that consistent contact is offered, as well as the ability for check-ins and conversations on a regular basis. Rather than referring to the hospital's answer to COVID-19 as an impediment, characterise it as a challenge that all staff are informed about. Health care workers were given the autonomy and input into decision-making where possible (Jack, Tomlin & Gary, 2020.) Moreover, self-massage was recommended to be much more effective than we realize in reducing stress. A massage promotes deep relaxation, and when the body's muscles relax, so does your overworked mind. You can relax and relieve tension by using a variety of basic self-massage techniques. (Clinic Community Health Centre, 2010.)

Accordingly, throughout the COVID-19 disease outbreak, the strain of psychological issues was demonstrated by various healthcare workers. The results indicated that exposure to negative reports more about disease outbreak could be associated with an increased risk of psychological disorders. Being on the front lines is a strong predictor of anxiety, insomnia, and other psychiatric problems. (Que et al., 2020).

The preceding statements highlight the new and exciting psychological challenges that nurses face in the healthcare field. On the other hand, workloads can be reduced by cancelling elective cases such as minor illness and vital signs checks. Again, flexible work schedules must be created to allow nurses to stay at home when they are sick without having to cut their pay. Furthermore, healthcare leaders should rotate nurses from intensive care units to a less stressful unit every two weeks at the very least. Additionally, as other researchers have proposed in this work, appropriate personal protective equipment is provided to ensure safety of healthcare professionals while on the job.

Again, as previously mentioned, deep relaxation is another nursing approach to reducing psychological issues in healthcare. To improve the mental health of nurses and other healthcare professionals, healthcare leaders should hold mental health talks and provide psychological support for job stress and trauma to ensure that employees are in the right frame of mind to work. In order to provide support, reduce stress, and reinforce safety procedures, teamwork should encourage inexperienced partner workers to work with more experienced colleagues. Nurses should also be

encouraged to participate in social activities with their families and friends in order to relieve stress.

Through conducting a literature review, this research expanded on the clinical experience of nurses of COVID-19 patients. The results were categorized into 4 themes: early manifestations of major negative feelings, personality responses, development under conditions of stress, and improved mood that occur simultaneously or progressively with negative feelings. Health professionals for COVID-19 patients reported extreme physical fatigue and pain because of the outbreak's intensive work, heavy patient load, and lack of essential supplies, that was consistent with previous research mostly on MERS-CoV10 outbreak (Sun et al., 2020). Even though a scarcity of PPEs was apparent during the pandemic's early stages. This had an impact on Health care workers in Italy, but also offered valuable information for health authorities in tailoring infection prevention strategies and practices (Felice et al., 2020).

8 Ethical consideration

8.1 Research ethics

This research was carried out with respect towards the ethical principles of scientific research and other researchers together with their accomplishments among scientific studies. It was carried out by following the stages of conducting a literature review introduced by Tanya (2015). Moreover, the literature review included eight articles. In these studies, quantitative designs were used. Online questionnaires, online interviews, online surveys, and a cross-sectional sample inquiry were used to collect data. Nurses and other healthcare professionals made up the majority of the participants. The studies did not include any patients. And all the articles received were approved by the Ethics Committee. Participation was fully voluntary, and personal details about the participants was kept private. According to the papers, there were no conflicts of interest and this is reflected in the (Appendix 2).

The data was extracted and analyzed accurately and cautiously, with no misrepresentations created and no intention of fabricating or manipulating the data; thus, this analysis was free of falsification and fabrication. Similarly, plagiarism was avoided by adhering to reference guidelines and utilizing a proper paraphrasing author's skill without any personal desire to plagiarize.

8.2 Validity and reliability

Each article's validity and reliability were carefully examined. The articles that were analysed were all quantitative studies. The study was done by various researchers in different countries. As a result, the analysis techniques were slightly different. The studies had common areas of interest, and the findings were consistent in most of the areas studied, further validating the studies. Since the approach was legitimate and fair, the questionnaires contained fact-based questions. The participants volunteered to participate in the experiments. The results were considered valid and reliable.

Additionally, the three sources were used to find the research papers for this study: CINAHL, PubMed, and Medline. Both databases are open to any Jyväskylä University of Applied Sciences (JAMK) student and provide accurate, scientific, and peer-reviewed information. Because of their reliability and accessibility, these three databases were selected. Furthermore, these three databases produced a large number of findings that were important to the study and provided responses to the research question. To further ensure the validity and reliability of the data used in this analysis, the search was limited to current articles published between 2010 and 2020.

8.3 Limitation and further research

Nevertheless, some of the studies had some drawbacks. For example, female participants outnumbered male participants by a wide margin in all studies, so the results do not accurately reflect male nurses' perceptions. Furthermore, some studies presented some contradictory results, and one study did not produce any statistically significant findings due to the limited sample size. The COVID-19 patients' viewpoint was not considered since all experiments were focused on the experiences of frontline nurses. Nevertheless, since the corona virus is a new disease, as time goes by, the world will get adjusted to the situation, therefore, more research on ways to enhance healthcare workers experiences in a pandemic is required.

9 Conclusion

Psychological distress is widespread among healthcare workers who have been exposed to the COVID-19 deadly virus. Having received negative news and working in high-risk positions are both significant risk factors for psychological distress. The psychological well-being of various healthcare workers should be protected during the COVID-19 deadly virus through timely steps and appropriate information intake.

The above research included a comprehensive interpretation of caregivers' emotional responses with COVID-19. There is the discovery that frontline nurses' optimistic and pessimistic feelings about the epidemic intertwine and coexist during the outbreak. Negative emotions became prevalent in the beginning, and positive emotions emerged concurrently or eventually. Nurses must have a self-coping style and develop psychologically in order to sustain mental stability. This research provided crucial information for future psychological action.

Besides, the abrupt emergence and heavy infectiveness of COVID-19 poses a major obstacle for clinical prevention and disease management. The Italian decree of 9th March 2020 stipulates that healthcare workers should not be subject to quarantine and should only cease functioning on the basis if it has become symptomatic or positive. The coronavirus disease outbreak is a severe healthcare issue. Through stakeholder consultations, developers have identified the need to build a digital psychological support package for healthcare. This digital service is suitable for all health professionals, academics in health care, and students with international importance for a large proportion of the content. It is recommended that all health care personnel receive this kit to support worker situational wellbeing prior to and after the corona virus disease outbreak.

References

Abdel Wahed, W.Y., Hefzy, E.M., Ahmed, M.I. et al. (2020). Assessment of Knowledge, Attitudes, and Perception of Health Care Workers Regarding COVID-19, A Cross-Sectional Study from Egypt. J Community Health 45, 1242–1251. https://doi.org/10.1007/s10900-020-00882-0

Alka, C. and Hemant V. 2020. Coping by the healthcare workers during COVID-19 pandemic in developing countries - A review. https://doi.org/10.35975/apic.v24i3.1288

Arnetz, J. E., Goetz, C. M., Arnetz, B. B., & Arble, E. (2020). Nurse Reports of Stressful Situations during the COVID-19 Pandemic: Qualitative Analysis of Survey Responses. International journal of environmental research and public health, 17(21), 8126. https://doi.org/10.3390/ijerph17218126

Aristeidis, C., & Tzamouranis, D. (2020). The Pandemic of COVID-19 and the Use of Contact Lenses. 3. 24-30. 10.6084/m9.figshare. 12103797.v3.

Bhagavathula AS, Aldhaleei WA, Rahmani J, Mahabadi MA, Bandari DK. 2020. Knowledge and Perceptions of COVID-19 Among Health Care Workers: Cross-Sectional Study. JMIR Public Health Surveill. 2020 Apr 30;6(2): e19160. doi: 10.2196/19160. PMID: 32320381; PMCID: PMC7193987.

Billings, J., Ching, B., Gkofa, V., Greene, T., & Bloomfield, M. (2020). Healthcare workers experiences of working on the frontline and views about support during COVID-19 and comparable pandemics: A rapid review and meta-synthesis.

Blake, H.; Bermingham, F.; Johnson, G.; Tabner, A. (2020) Mitigating the Psychological Impact of COVID-19 on Healthcare Workers: A Digital Learning Package. Int. J. Environ. Res. Public Health, 2020, 17, 2997.

Bo Zhang, Hongwei Zhou and Fang Zhou. (2020). Study on SARS-CoV-2 Transmission and the Effects of Control Measures in China. PLoS One, vol. 15, no. 11, Public Library of Science, Nov. 2020, p. e0242649. doi: https://doi.org/10.1101/2020.02.16.20023770

Carrieri, Daniele & Briscoe, Simon & Jackson, Mark & Mattick, Karen & Papoutsi, Chrysanthi & Pearson, Mark & Wong, Geoffrey. (2018). 'Care Under Pressure': a realist review of interventions to tackle doctors' mental ill-health and its impacts on the clinical workforce and patient care. BMJ open. 8. e021273. 10.1136/bmjopen-2017-021273.

Centre for Disease Control. 2020. COVID-19 Overview and Infection Prevention and Control Priorities in non-US Healthcare Settings. Accessed on 11.10.2020. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/hcp/non-us-settings/overview/index.html

Centre, K. C. (2010). Stress and Stress Management. London: Press books.

Collins dictonary. 2020. Psychological. Accesses on 30.12.2020. Retrieved from https://www.collinsdictionary.com/dictionary/english/psychological

Cronin, P., Ryan, F., & Coughlan, M. 2010. Undertaking a literature review: a step-by-step approach. British Journal of Nursing 17, 38.

Elo, S., & Kyngas, H. 2007. The Qualitative Content Analysis Process. Journal of Advanced Nursing, 62, 107-115.

De Los Santos, J., Labrague, L., 2020. Impact of COVID-19 on the Psychological Well-Being and Turnover Intentions of Frontline Nurses in the Community: A Cross-Sectional Study in the Philippines. doi: https://doi.org/10.1101/2020.08.05.20167411

de Oliveira A.M., Buchain P.C., Vizzotto A.D.B., Elkis H., Cordeiro Q. (2013) Psychosocial Impact. 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_919

Felice, C., Di Tanna, G.L., Zanus, G. et al. Impact of COVID-19 Outbreak on Healthcare Workers in Italy: Results from a National E-Survey. J Community Health 45, 675–683 (2020). https://doi.org/10.1007/s10900-020-00845-5

Golash-Boza, T. 2015. Writing a Literature Review: Six Steps to Get You from Start to Finish. Accessed on 30.12-2020. Retrieved from https://www.wiley.com/network/researchers/preparing-your-article/writing-a-literature-review-six-steps-to-get-you-from-start-to-finish

Greenberg Neil, Docherty Mary, Gnanapragasam Sam, Wessely Simon. Managing mental health challenges faced by healthcare workers during covid-19 pandemic BMJ 2020; 368:m1211

Hawker, S., Payne, S., Kerr, C., Hardey, M., & Powell, J. (2002). Appraising the Evidence: Reviewing Disparate Data Systematically. Qualitative Health Research, 12(9), 1284–1299. https://doi.org/10.1177/1049732302238251

Healthy newborn network.org. 2012. Fontline Health Workers. Accessed on 24.12.2020. Retrieved from https://www.healthynewbornnetwork.org/hnn-content/uploads/FHWC_Issue_Brief.pdf

Hellhammer D. & Hellhammer, J. (2008). Stress (the brain body connection). Karger.

Herrman, H. & Jané-Llopis, E., 2012. The status of mental health promotion. Public Health Reviews, 34(2), 1-21.

Johnson & Johnson. 2020. Supporting Frontline Healthcare Workers and Our Communities. Accessed on 24.12.2020. Retrieved from https://www.jnj.com/coronavirus/frontline-workers

Joseph, B., & Joseph, M. (2016). The health of healthcare workers. Indian journal of occupational and environmental medicine, 20(2), 71–72. https://doi.org/10.4103/0019-5278.197518

Ju, Y., Zhang, Y., Wang, X. et al. 2020. China's mental health support in re-sponse to COVID-19: progression, challenges and reflection. Global Health 16, 102. https://doi.org/10.1186/s12992-020-00634-8

Kestilä, L., Härmä, V. & Rissanen, P. 2020. Impact of the Covid19 epidemic on well-being, the service system and the national economy: Expert assessment, autumn. Address of the publication is http://urn.fi/URN:ISBN:978-952-343-578-0

Kiteley, R., & Stogdon, C. 2014. Research Methods for Health & Social Care. Literature Reviews in Social Work.

Koenig E. (2010) Discernment. In: Leeming D.A., Madden K., Marlan S. (eds) Encyclopedia of Psychology and Religion. Springer, Boston, MA. https://doi.org/10.1007/978-0-387-71802-6_171

Lanciano, T., Graziano, G., Curci, A., Costadura, S., & Monaco, A. 2020. Risk Perceptions and Psychological Effects During the Italian COVID-19 Emergen-cy. https://doi.org/10.3389/fpsyg.2020.580053

Liu YC, Kuo RL, Shih SR. 2020. COVID-19: The first documented coronavirus pandemic in history. Biomed J. 2020 Aug;43(4):328-333. doi: 10.1016/j.bj.2020.04.007. Epub 2020 May 5. PMID: 32387617; PMCID: PMC7199674.

Mariette, B. 2016. How to plan and perform a qualitative study using content analysis. https://doi.org/10.1016/j.npls.2016.01.001

May, R. (2015). The meaning of anxiety. New York: www. Norton & company Ltd.

McCombes, S. 2019. How to write a literature review. Accessed on 30.12-2020. Retrieved from https://www.scribbr.com/dissertation/literature-review

Mental health: strengthening our response. Page on World Health Organization website. Accessed on 24 September 2020. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

Nemours. 2021. Fear and phobias. Retrieved 18.04.2021 from https://kidshealth.org/en/parents/emotions/?WT.ac=p-nav-emotions

Nie, A., Su, N., et al., 2020. The psychological impact of COVID-19 outbreak on frontline nurses: A cross-sectional survey study. DOI: 10.1111/join.15454

Patel, K., Nadel, J., West, M. 2014. Redesigning the Care Team: The Critical Role of Frontline Workers and Models for Success. Accessed on 24.12.2020. Retrieved from https://www.brookings.edu/wp-content/uploads/2016/06/FINAL-Hitachi-Toolkit-32014-1.pdf

Pfizer. 2020. Pfizer and biontech announce vaccine candidate against COVID-19 achieved success in first interim analysis from phase 3 study. Press release. Published 9.11.2020. Retrieved 13.04.2021 from https://www.pfizer.com/news/press-release/press-releasedetail/pfizer-and-biontech-announce-vaccine-candidate-against.

Pollock A, Campbell P, Cheyne J, Cowie J, Davis B, McCallum J, McGill K, Elders A, Hagen S, McClurg D, Torrens C, Maxwell M. (2020). Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: a mixed methods systematic review. Cochrane Database of Systematic Reviews 2020, Issue 11. Art. No.: CD013779. DOI: 10.1002/14651858. CD013779.

Que J, Shi L, Deng J, et al. (2020). Psychological impact of the COVID-19 pandemic on healthcare workers: a cross-sectiona study in China. General Psychiatry 2020;33: e100259. doi:10.1136/psych-2020-100259

Rodríguez, Bárbara Otonín, & Sánchez, Tania Lorca. (2020). The Psychosocial Impact of COVID-19 on health care workers. International braz j urol, 46(Suppl. 1), 195-200. Epub July 27, 2020.https://dx.doi.org/10.1590/s1677-5538.ibju.2020.s124

Sun, N., Wei, L., Shi, S., et al., 2020. A qualitative study on the psychological experience of caregivers of COVID-19 patients. https://doi.org/10.1016/j.ajic.2020.03.018

Taylor, D. 2008. The Literature Review: A Few Tips on Conducting It. Uni-versity of Toronto.

Terry,K. 2020. Frontline Health Workers Top 100 Most Influential People List. Accessed on 24.12.2020. retrieved from https://www.medscape.com/viewarticle/942546

The UN Refugee Agency (UNHCR). 2020. UNHCR-NGO Consultations on the COVID-19 response. Accessed on 10.03.2021. Retrieved from https://www.unhcr.org/2020-ngo-consultations-on-the-covid-19-response.html

Tomlin J, Dalgleish-Warburton B and Lamph G (2020) Psychosocial Support for Healthcare Workers During the COVID-19 Pandemic. Front. Psychol. 11:1960. doi: 10.3389/fpsyg.2020.01960

WHO. 2020. Keep health workers safe to keep patients safe. Accessed on 14.03.2021. Retrieved from https://www.who.int/news/item/17-09-2020-keep-health-workers-safe-to-keep-patients-safe-who

World Health Organization. 2020. Coronavirus. Accesses on 11.10.2020. Retrieved from https://www.who.int/health-topics/coronavirus#tab=tab_1

Xiao, X., Zhu, X., Fu, S., gtu et al. 2020. Psychological impact of healthcare workers in China during COVID-19 pneumonia epidemic: A multi-center cross-sectional survey investigation, Journal of Affective Disorders, Volume 274, 2020, Pages 405-410, ISSN 0165-0327, https://doi.org/10.1016/j.jad.2020.05.081

Appendices

Appendix 1. Table of articles

Authors, (year) country	Title	Purpose and Aims of the study	Research Methods or Instrument	Sample(n)	Main result
Blake, H., Birmingham., Johnson, G.& Tabner, A. 2020. UK	Mitigating the Psychological Impact of COVID-19 on Healthcare Workers	The aim of this study was to use content analysis to examine the results/findings of articles about the psychological effect of COVID-19 on healthcare workers.	Phenomenological methods (A Digital Learning Package)	The study only focused at a small group of healthcare workers in the Uk. Nurses (n = 25) were included in the study.	Stakeholders were largely optimistic about using emerging technology to improve health and well-being, because of the flexibility.
Sun, N., Wei, L. et al. 2020. American	A qualitative study on the psychological experience of	The aim of this study is to understand more about the subjective experiences	Phenomenological methods (online interview)	The study's sample size was small, with only 17 nurses and three head nurses participating.	The nurses in the study showed signs of fatigue, anxiety, depression, fear, and stress, according to the findings.

	caregivers of COVID-19 patients	of nurses who are taking part in COVID-19.			
Que, J., Shi, L., Deng, J., Liu, J. et al. 2020. China	The psychological impact of the COVID-19 pandemic on healthcare workers	The study's aim was to see how common psychological issues were among different types of healthcare workers in China during the COVID-19 pandemic.	Phenomenological methods (cross-sectional, web-based survey)	The study had a sample size of 2285 people. Physicians, medical residents, nurses, technicians, and public health workers are among those involved.	During the COVID-19 pandemic, healthcare workers self-reported psychological problems in high numbers. Furthermore, healthcare workers had a different rate of anxiety, depression, insomnia, and other psychological disorders than the general population.

Cui, S., Jiang, Y., et al. 2020. China	Impact of COVID-19 on the psychology of nurses working in the emergency and fever outpatient	The aim of the study was to see how COVID-19 affected EFO nurses in Chinese hospitals.	A Cross-sectional survey (online questionnaires)	A total of 481 healthcare workers including nurses working in hospitals in Jiangsu Province	The findings indicate that the COVID-19 outbreak in China had some psychosocial consequences for EFO nurses.
De Los Santos, J., Labrague, L., 2020. Philippines	Impact of COVID-19 on the Psychological Well-Being and Turnover Intentions of Frontline Nurses in the Community	The aim of the study was to evaluate nurses' fear of COVID-19 in a community setting.	A Cross-Sectional Study (self-report questionnaires)	Only 385 nurses responded to the questionnaire, despite the fact that the study expected 400 nurses to participate.	The findings showed that nurses have a moderate to high fear of COVID-19, and that fear of the virus is associated to female gender.
Carla, F., Di Tanna, L., et al., 2020. Italy	Impact of COVID-19 Outbreak on Healthcare Workers in Italy	The survey's aim was to investigate the outbreak's effects on healthcare	National electronic-survey (i.e., Twitter, Facebook, and LinkedIn)	A total of 527 healthcare workers, including nurses, were invited to participate.	Healthcare workers experienced typical symptoms (e.g., fever, dry cough,

	The psychological impact of COVID-19 outbreak on the frontline nurses	workers in detail.			myalgia) with in the past 14 days or were tested for COVID-19
Nie, A., Su, X., et al., 2020. China	The psychological impact of COVID-19 outbreak on the frontline nurses	The aim of the study was to determine the prevalence of psychological distress among frontline nurses during the COVID-19 outbreak, as well as the factors that contributed to it.	A cross-sectional survey study	The sample size was limited, and the approximate response rate for frontline nurses was low (n=199).	The study revealed that 25.1% of the frontline nurses experienced psychological distress.

Xiao, X., Zhu, X., et al. 2020. China	The psychological impact of healthcare workers in China during COVID-19 pneumonia epidemic.	The study aimed to assess the levels of stress and psychological morbidities such as anxiety and depression on HCWs during the COVID-19 outbreak.	A multi-centre cross-sectional survey investigation.	A total of 958 anonymous and valuable questionnaires were obtained from nurses in 26 provinces across China.	More than 50 % of the participants experience psychological stress that is higher than that of Healthcare workers during SARS.

Appendix 2. Quality of articles

Author	Title	Introduction and aims	Methods and data	Sampling	Data analysis	Ethics and bias	Results	Transferability	Implications	Total
Blake, H., Bermingham, F., et al.	4	4	4	4	4	4	4	4	4	36
Sun,N.,Wei, L. et. al.	4	4	4	3	4	4	3	4	4	34
Que, J., Shi, L., Deng, J., Liu, J. et al.	4	4	4	4	3		4	3	4	34
Cui, S., Jiang, Y., et al.	4	4	4	4	4	4	4	4	4	36
de Los Santos, J., Labrague, L.	4	4	4	3*	4	4	4	3*	4	35
Carla, F., Di Tanna, L., et al.	4	4	4	4	3	4	3	4	4	34
Nie, A., Su, X., et al.	4	4	4	4	4	3*	4	4	3*	35

Xiao, X., Zhu, X., et al. 2020. China	4	4	4	3	4	4	4	4	3	34

Appendix 3. Sample analysis process

Raw database	Subcategory	Main category
Negative emotions present in early stage consisting of fatigue, discomfort, and helplessness which was caused by fear and anxiety, and concern for patients and family members (Sun et al., 2020).	Psychological state of the nurses (Fatigue)	Feelings and symptoms of health care workers caring for COVID-19 patients
The nurses demonstrate effects of socio-psychological and working condition variables on scores of anxiety, stress and stress coping tendency (Shasha et al., 2020).	Stress	
COVID-19-related stress symptom were positive related to psychological distress (Anliu et al., 2020).		

Healthcare workers demonstrate symptoms of stress (Anliu et al., 2020).		
Healthcare workers experience psychological stress as complained to HCW during SARS (Xiao et al., 2020).		
The participants had symptoms depression (Xiao et al., 2020)	Depression	
Frontline nurses experience depression (Sun et al., 2020).		
Most frontline healthcare workers experience depression as one of the factors associated with psychological problems (Jianyu et al., 2020).		
Self-coping styles problem which included psychological and life adjustment, altruistic acts, team support, and rational cognition (Sun et al., 2020).	Psychological and life adjustment Family and friends support Peer and colleagues' support Organizational support	Coping and self-care style.
Positive and negative coping means (Shasha et al., 2020).		
Lack of Healthcare workers support to individual coping (Blake et al., 2020)		

All nurses expressed concern about the impact of the outbreak on the health of their families and their families also worried about their families. (Sun et al. 2020) Experience of deaths among acquaintances (Felice et al., 2020).	Fear of infecting or spreading the virus. The fear of mourning their patients and love ones.	Negative emotion in the early state
Fear of infecting their families with the COVID-19 disease (Shasha et al., 2020) Nurses display moderate to high fear of the virus (Janet Alexis et al., 2020).		
Nurses activated psychological defence mechanisms, such as speculation, isolation, distraction, self-consciousness, humour, rationalisation (Sun et al., 2020)	Isolation	
Dealing with difficult decisions and coping with guilt during self-isolation (Blake et al., 2020)		
Negative coping style (Anliu et al., 2020).		
COVID-19-related stress symptom were positive related to psychological distress (Anliu et al., 2020).		
Nurses experiences moral injury, described as 'the psychological distress´ (Blake et al., 2020).		
Frontline nurses shows symptoms of insomnia (Jianyu et al., 2020).	Insomnia	

Insomnia symptoms (Blake et al., 2020).		
Prevalence of symptoms of anxiety where found among healthcare workers during the COVID-19 pandemic China (Jianyu et al., 2020).	Anxiety	
Anxiety levels were different between gender, job title and degree of protective measures (Xiao et al., 2020).		
Degree of workload (Felice et al., 2020)	Working conditions-Work load	Factors affecting the psychological experiences of nurses.
High-intensity work (Sun et al., 2020)		
Full-time service in their present employment (Janet Alexis et al., 2020).		
Frontline nurses reported changes of regular job duties because of working overtime (Anliu et al., 2020).		
Frontline nurses perceive less support from their family, and workplace became a more important resource of social support during COVID-19 outbreak (Anliu et al., 2020).	Knowledge and information about COVID-19 Information and communication.	
Lack of information and support from the government and healthcare leaders (Blake, et al. 2020).		