THE EXPERIENCES OF TREETOP HOSPITAL (TTH) NURSES IN COVID-19 PANDEMIC IN THE MALDIVES

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Declaration

This thesis report is a partial fulfilment of the requirements for the Masters of Nursing subject NUR625. I, Ms Khadhiyya Simany, declare that this thesis report is an original report of my research inquiry from the data collected from 20th November 2020 to 12th December 2020. I have written the piece under the supervision of Ms Asiya Ibrahim, Dean, School of Nursing and the report has not submitted for any previous degree. All collaborative contributions are indicated in the report, and the due references have provided for all the supporting literature and resources. This report is the final product of the research conducted with the approval of MNU (ethics approval number is RE/2020/C-04) and the National health research committee (NHRC/2020/021).

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Abstract

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Abstract

This paper aims to explore nurses' experiences in providing nursing care for COVID-19 patients in the TTH COVID-19 facility. The study examined the preparation of nursing care, nursing routine changes, and the challenges in providing nursing care. Based on the research paradigm and supportive literature, the author employed a descriptive phenomenological approach of inquiry. The author conducted semi-structured face-to-face interviews using purposive convenience sampling of nurses with nursing experience in the TTH COVID-19 facility.

The nursing experience of the TTH nurses during the pandemic is identified through this study. The significant themes developed was; preparation for the new challenge, combatting infection control, meeting daily patient needs, challenges in caring and rising above and psychological impact of working in a pandemic. The study's findings are supported through literature as nursing in a pandemic is more focused on infection control and requires polices and guidelines. The findings also suggest the need to have practical skill and knowledge development for nurses.

Furthermore, the study recommends developing of mentally and physically healthy nurses, to assess nurses prior to pandemic nursing care, during care and post care. The study recommends adaptation to challenges in nursing care and use of innovate tools for nursing care. It also emphasize on empowering nurses, creating support systems for nurses and motivate nurses through supportive leadership.

Keywords: COVID-19, nursing experiences, Nursing care, Infection control, Personal protective equipment.

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Ms.Khadhiyya Simany

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Abbreviations

1. **WHO**: World Health Organization
2. **TTH**: Treetop Hospital
3. **COVID 19**: Coronavirus Disease 2019
4. **MERS**: Middle East respiratory syndrome
5. **PPE:** Personal Protective Equipment
6. **HCW**: Health Care Worker
7. **CDC:** Center for disease prevention and control
8. **2019-nCoV**: Severe Acute Respiratory Syndrome Coronavirus 2
9. **MERS**: Middle East Respiratory syndrome
10. **CPR :** Cardiopulmonary resuscitation
11. **ER :**Emergency room
12. **ICU :** Intensive care unit

CHAPTER 1

1. Introduction

This chapter gives a brief background on the topic and justifies the need for an inquiry. Further, on given evidence, the research aim and objectives are discussed. The research topic is "The experiences of treetop hospital (TTH) nurses in COVID-19 pandemic in the Maldives." As a novice nurse researcher and as someone who experienced the pandemic first hand found in imperative to understand this new phenomenon in the Maldives.

The year 2020 has marked its place in history as the year of COVID-19. COVID-19 or coronavirus disease-19, caused by a zoonotic virus known Severe Acute Respiratory Syndrome Coronavirus 2 (2019-nCoV) originated first from China's Hubei province in late December 2019. Since the virus has spread across the globe, it has led to a Global pandemic (Zhu et al., 2020). As of 27th September 2020, the global number of confirmed cases of COVID-19 is 32 730 945 with a confirmed 991 224 deaths. With the Maldives being one of the 235 countries areas with cases (WHO, 2020). The global healthcare workers are under immense pressure to manage the health crisis with significant risk, shortage of workforce and resources. Health care workers are at higher risk of contracting the infection, but they also have a higher potential to cause outbreaks within the healthcare facilities, given the nature of their work (CDC, 2020). The Pandemic has brought everyone's attention to the health care systems and health care personals. On the strengths and shortcomings in the health care provision. Similarly, nurses are the largest workforce in the healthcare system. The past pandemics and the current emphasize that nurses have a more significant role in improving and managing healthcare crises (Edmonson, 2017; Corless et al., 2018). As the most extensive workforce on the frontline and evolving roles, nurses' contribution in the pandemic can ensure preparedness in a future health crisis, develop nursing personal, and bring changes in health policy levels to improve

health care. The role nurse's play in the pandemic currently in the Maldives is yet unknown with limited evidence. This study explores nurse's experiences in the pandemic in the Maldives.

1.1. Background

Two hundred years after Florence Nightingale revolutionized, health care nurses are again leading the healthcare needs during the global pandemic situation (Newby et al., 2020). The timing of the World Health Organization (WHO) having designated 2020 as the "Year of the Nurse and the Midwife" cannot be more precise, with nurses globally leading the frontline in the current pandemic. Nurses also account for more than half of all healthcare workers worldwide today, yet there is a shortage of 5.9 million globally during the current health crisis (WHO, 2020). The current pandemic began with a Novel beta –coronavirus known as 2019-nCoV, causing an outbreak of pneumonia in Wuhan, Hubei province, China, in late December 2019 and officially known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Anastassopoulou et al., 2020; Gorbalenya et al., 2020; Rothan & Byrareddy, 2020). The highly contagious nature of the virus did not take long to reach the Maldives, a tourist destination with the first imported case of COVID-19(the disease caused by SARS-CoV-2) on 7th March 2020(Hussain et al., 2020; Suzana et al., 2020).

The COVID-19 weekly epidemiological update by WHO on 16th August 2020 reports 1.8 million new cases worldwide and 39 000 new deaths. The report also states the South-East Asia region as the second most affected region, with the Maldives having the highest incidence rate globally (WHO, 2020). Ministry of Health (MOH) of the Maldives reported the total number of cases of COVID-19 as 7,329 and 180 hospitalized on 27th August (COVID-19 dashboard, 2020), creating significant concerns for the health care services of the Maldives. The first case of local transmission in the country led to a community spread reported on 15th April 2020. Due to its

geographical dispersion, the Maldives has challenges such as lack of diagnostic and intensive care facilities at the peripheral level. The Maldives is also highly dependent on imported medicines and equipment. Like many other countries, Maldives also has a limited health workforce to face the challenges the pandemic brought (WHO,2020). With the most number of cases in the Maldives' capital city, the management of the pandemic itself is challenging due to the crowded nature of Male city and the cultural trend of living in the Maldives, such as gatherings for family events. As of now (27th August 2020), the country has seen 34 deaths, with a total of 1,210 hospitalized and the number of positive cases still rising (COVID-19 dashboard, 2020).

COVID-19 pandemic is globally challenging all health care systems in the world. Editorial by Smith et al. (2020) highlights how nurses possess invaluable information to deal with such health crisis and the importance of hearing from the nursing profession, not only in this battle against COVID-19 but also in preparing future health challenges well. Reviewing global health issue and nursing demonstrates that nurses are key contributors to emerging infectious disease prevention, response, and management (Edmonson, 2017). Corless et al. (2018) emphasize lessons learned in infectious disease outbreak can help develop nursing practice, health care systems, and refine health policies focusing on infectious disease outbreak.

Like many other countries, nurses in the Maldives are working in the front line of the pandemic, which is a new experience in the Maldives. This care involves most basic care to critical nursing care while doing full duty with Personal Protective Equipment (PPE) (Hassan, 2020). With a signing of the agreement between the Government of Maldives and TTH on 26th April 2020, in response to the Maldives' health crisis, the hospital began treating COVID-19 patients 3rd May 2020 (Treetop hospital, 2020). Treetop Hospital (TTH), a tertiary multispecialty private hospital

of Maldives in the greater Male' region, was transformed to a COVID-19 hospital on 3rd May of 2020. For a two-month duration, the hospital admitted only COVID-19 patients, bringing in new aspects of care to the healthcare workers (HCW) of the hospital. This descriptive phenomenological study is on the experiences of nurses in providing nursing care to COVID-19 patients in a hospital setting.

1.2. Justification

With the rapid health care changes, there is an emphasis on population health, quality of care, and service value (Fraher et al., 2015). Globally these changes include the emerging infectious disease. According to Devereaux (2015), it is important for nurses to be involved in pandemic preparedness, have sufficient staff and resources, and skilled and competent nurses who meet the communities' health care needs. Nursing roles have evolved to advance health, improve care, and increase value. Nursing now requires shifting the focus from disease episode to promoting health care and care continuum (Salmond & Echevarria, 2017). The nursing practice includes patient education, patient advocacy, rehabilitation, even effective communication, and counselling. These roles are ever changing and developing with the pandemic situation (Fraher et al., 2015; Joel, 2018; Jackson et al., 2020).

Addressing patients' care with infectious disease and preparing for it can ensure health systems can cope with infectious disease outbreaks (Corless et al., 2018). In her research finding based on MERS (Middle East Respiratory Syndrome) and patient care, Kim (2017, 2018) recommends the importance of learning from positive experiences and adverse effects of nurses caring for patients with infectious diseases. She also emphasizes the importance of nurses establishing a workforce,

developing the importance of nurses establishing a workforce, and developing a necessary guideline for nursing patients with new infectious diseases. Similarly, her study on nurse's experience in the care of patients with MERS reported on nurse's growth professionally in the face of danger. The study further highlights the importance of examining the difficulties and demands when caring for such patients.

Like MERS, another zoonotic virus on last December 2019 known as SARS-CoV-2 caused a pneumonia outbreak in Wuhan, Hubei province, China, that eventually led to the current pandemic (Rothan & Byrareddy, 2020). The COVID-19 presented a similar clinical manifestation to SARS and MERS that resembled viral pneumonia with 81% of cases with mild symptoms with recovery within two weeks. (Wu & McGoogan, 2020). There are no therapeutic or vaccines for COVID-19, but only protective measures in place with symptomatic management (Bchetnia et al., 2020; Gorbalenya et al., 2020). Nurses have multiple roles from identifying, managing, educating, and supporting these patients (Deitrick et al., 2020; Liu et al., 2020). Health care workers require training, experience, and social support to combat the public health emergency (Cai et al., 2020).

The current pandemic in the Maldives demanded nurses to train for infection control practices, critical care, case management, and waste disposal even (WHO, 2020). Though the preparation can indeed be helpful, it is different from actual patient care while working for hours in full PPE (Personal protective equipment). A procedure such as Intravenous cannulation becomes more challenging when performing with multiple gloves and diminished vision under face shields and goggles. Nurses and other healthcare workers in the Maldives have reported working with full PPE as a challenging and uncomfortable experience (Hassan, 2020). Analyzing the nursing care of

COVID-19 patients in the Maldivian can help understand the challenges and make better preparations for future nursing care practices under such dire circumstances.

The shortage of nurses globally does not exempt the Maldives, and yet nurses are vital to healthcare. Liu et al. (2020) evaluated that nurses had the closest contact with patients and spent the most time with patients in carrying out interventions performing assessments, providing medications, offering nutrition and fluids, providing skincare and oral hygiene. Though the Maldives is amid the pandemic, there is limited evidence on the nursing care of COVID-19 patients in the Maldivian context. Since TTH, nurses were involved in the nursing care of COVID-19 patients; the researcher seek answer of the question, what the experiences of nurses taking care of COVID-19 patients in the Maldives.

Evaluation of nursing helps to improve the nursing practice and health care, has a better patient outcome, and deliver the quality care. According to the Kaiser Permanente model of integrated health delivery, nursing had better patient outcome and quality health care (McHugh et al., 2016). A key concept of this model is about empowering healthcare professionals to improve care. It also analyzes challenges within the system and proactively addresses the issue ensuring professional growth and better patient outcome. However, the study does not use the model but takes concepts from health plans that implemented this model, such as the importance of analyzing the health care professionals in their environment. One main goal of the model is to deliver quality care and improve health professionals. The study's findings could contribute to improving nursing care and developing plans for better care in the COVID-19 situation.

Lessons from nurse's experiences in previous pandemic situations emphasize nurse's actions and perceptions effects the preparedness and their role in those situations (McMullan, 2016). The everyday routine of nursing care has changed for those nurses working in pandemics, with more focus on infection control practices, clustered nursing care, infection control education, monitoring self-development with changes in the pandemic guidelines. (Deitrick et al., 2020; Newby et al., 2020). Though this is the case globally, the Maldives lacks evidence on nursing care of patients in the pandemic situation. Exploring the experiences of nurses taking care of COVID-19 patients in the Maldives can evaluate the preparedness in nursing for the pandemic improve nursing practice and influence mainly on health care and quality.

1.3 Research questions, aims and objectives

The researcher conducted this study to answer questions; what are the nurse's experiences in taking care of COVID-19 patients? How did nurses prepare for care? What was different or similar in nursing, and what were the challenges? This study aims to explore the experiences of TTH nurses in providing nursing care for COVID-19 patients. Understanding these experiences will help analyze the nursing care and further develop it, as did previous pandemics experiences in other countries.

The main objectives of the proposed study are:

1. To examine the preparations carried in the nursing care of COVID19 patients.
2. To examine the changes in nursing routines concerning caring for COVID19 patients.
3. To analyze the challenges caring for COVID19 patients.

1.4 Definitions of terms

Conceptual definitions

COVID-19 patients: Any person diagnosed with COVID-19 disease, infected with SARS-CoV-2 virus with a laboratory confirmation irrespective of clinical signs and symptoms (WHO, 2020).

Nursing care: According to the American Nursing Association, nursing care is the responsibilities performed by the nurse in assessment, promoting health, counselling, and education, administering nursing interventions and coordination of health care (American Nurses Association, n.d.).

Experience: An experience is a direction toward an object by virtue of its content or meaning (which represents the object) together with appropriate enabling conditions (Smith, 2013).

Operational definitions

COVID-19 patients: Any patient admitted to TTH COVID-19 facility with laboratory confirmation of SARS-CoV-2 virus.

Nursing care: Any act the TTH nurse performs as her duty as a nurse while taking care of CVOID-19 patients from the preparation for patient care, patient care and post-care.

Experience: Those events the nurse observed, lived, occurred, and felt during the care of COVID-19 patients.

CHAPTER 2. REVIEW OF THE LITERATURE

2.1. Introduction

This chapter provides an overview of the experiences of health care workers, nurses in taking care of COVID-19 patients. The chapter serves to introduce a framework of the existing knowledge surrounding the ideas related to the research title. The main aim of this literature was to gain an understanding and generalize the concepts and main aspects related to the researcher's inquiry. The literature review seeks to obtain evidence, review, and critique of the phenomena of the study. The chapter evolved in stages, first by identifying what literature should be included for the study. This phenomenological study focuses on nurse's experience in taking care of COVID-19 patients and thus is the body of literature. The other literature analysis steps are data collection, data evaluation, data analysis, and interpretation. Databases such as PubMed, CINAHL, ERIC, Hinari, Ebscore and Google Scholar were used to search for literature. Data collection started in August and extended until September 2020. It was in October to November 2020 that the chapter was finalized. The search terms used for the literature review included "COVID-19, nurse's experience in COVID-19, Health care workers experience, pandemic, nursing care in the pandemic. Research articles chosen was on the number of times cited and the strength of evidence each article represents. Similar themes in the literature organized into categories and the findings are reviewed here. The literature review includes a brief introduction to the disease process, followed by the main themes. These are preparing to provide care in a pandemic, healthcare workers role in managing pandemic, challenges for healthcare providers, and the psychological impact of working in a pandemic situation. The themes with health care workers developed, as most of the literature was not limited only to nursing but as healthcare worker, including nurses. Though the disease

process was not a theme for this study, it was also essential to review the literature on this to understand what nurses were confronting in the pandemic.

2.1.1. Introduction to the disease process

In 2019 December, an outbreak of respiratory syndrome emerged in Wuhan, China. Initially named as 2019 novel coronavirus, 2019-nCoV has renamed to SARS-CoV-2. This zoonotic virus from an animal to human crossover is the third spillover in the last two decades resulting in the current global pandemic (Anastassopoulou et al., 2020; Gorbalena et al., 2020; Liu et al., 2020)). The SARS-CoV-2 is highly contagious, easily spreads from human to human through the droplet, contact, and aerosol transmission, and currently investigated. It can cause a respiratory illness that can cause severe pneumonia and acute respiratory distress syndrome (Guo et al., 2020; Yang et al., 2020). Many vaccines are in trial stages, and the transparency of development is a concern as of now (Spence et al., 2019), and with no therapeutics, world continues to battle it and learn from the experiences (Bchetnia et al., 2020).

Understanding the disease process ensures that nurses expertise to manage and protect themselves (Ren et al., 2020). The disease caused by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is spreading globally, causing health concerns (Esakandari et al., 2020; Mohanty et al., 2020; Muralidar et al., 2020). In the acute phase of infection, the virus shows similarity with typical flu symptoms like fever, headache, muscle ache, cough, shortness of breath and tiredness (Guo et al., 2020). Clinical data from 137 COVID-19 patients showed that 81.8% had a fever, 48.2% had a cough, and 32.1% had muscle pain and fatigue. Nearly 80%, patients had normal or decreased white blood count, and 72.3% had lymphocytopenia (Liu et al., 2020). The lungs are the

mostly affected organ by the SARS-CoV-2, and the chest CT scan shows ground-glass opacity lesions in the lungs as characteristics of the disease (Dong et al., 2020; Zulkar et al., 2020). A retrospective study on 138 patients in Wuhan showed that patients admitted to ICU were more likely to have dyspnea (Wang et al., 2020). Similar studies also support this, with 13.5% of the patients developing Hospital-acquired infections and 71% of the patient's required mechanical ventilation (Yang et al., 2020), emphasizing the role of nurses in infection control. On the other hand, ensuring viral transmission does not occur within hospitals is also essential. Epidemiological evidence establishes that human to human transmission has occurred in families, hospitals and even across, suggesting a need for strong infection control practices (Khan et al.,2020). Due to the complexity of the disease and its effect on the body, managing it has become challenging (Pruijssers et al., 2019).

2.2. Preparing for providing care in a pandemic

With HCWs doing their best to deliver care against infectious diseases, preparation for the worse case scenarios will ensure lives are not lost in service (Corless et al., 2018). Previous pandemic study with influenza reported that 90% of nurse's view treating and caring for the patient as their vital role despite their concerns of being infected increased workload and stress. This study also highlights how nurse's perceptions and actions could affect the hospitals' preparedness for pandemic (McMullan, 2016). Preparation of care includes developing protocols and policies for triaging, infection control practices, defining roles, and designations in view of care (Christopher et al., 2020; Peters et al., 2020). An observation study done in Chongqing on the effects of policies and containment measures with the control of the COVID-19 epidemic identified the necessity to have proper policies in place. The findings of the study indicate that the spread of COVID-19 was controlled through effective policies that included improving supervision, ensuring the adequacy of daily necessities and medical equipment, and enhancing health education (Liang et al., 2020).

Policies can also ensure that the required training for healthcare workers take place. A qualitative study on HCWs experiences in China recommends training for infectious disease outbreak and the challenges while working in PPE (Liu et al., 2020). Nurse's self-confidence increases when provision of educational program on caring for patients with pandemic diseases and reduces their concern as found in a descriptive, cross-sectional survey study in Korea (Lee & Kang, 2019). Similarly, another cross-sectional study revealed that health care workers facing the COVID-19 disease required a high level of training and professional experience. (Cai et al., 2020).

On the other hand, nurses can also experience anxiety caused by a lack of knowledge, and the knowledge they have may facilitate to take actions as well to make psychological adjustments (Sun, 2020). A cross-sectional online quantitative survey study done by the School of Nursing, the Maldives National University established that the online training for nurses on care of COVID-19 patients improved their knowledge and understating of the situation. The nurses also learned about their role in the pandemic situation and gained a better understanding of safety measure in the COVID-19 pandemic (Ibrahim et al., 2020). During the pandemic, many countries have focused on training and sustaining nurse's knowledge to prepare and manage the pandemic situation (Al-Dossary et al., 2020; Padula & Davidson, 2020). Different methods of training can be employed. Lababidi et al., 2020 identified that simulation-based training and testing the preparedness can evaluate the health care workers and their ability for the safe care of COVID-19 patients. This study also recommends Post-drill debriefing sessions, ensuring PPE availability with different sizes and developing an algorithm for patient transfer.

In Turkey, the assessment of oncology nurses knowledge regarding COVID-19 showed that oncology nurses had good knowledge of COVID-19. The finding from 185 oncology nurses in this study relayed that 48.1% received education for COVID-19, and 70.3% followed the COVID-19 guidelines by the Turkish Ministry of Health (Semerci et al., 2020). Evidence from across-section descriptive study with 500 nurses working in Saudi indicates that health systems need to prioritize training for nurses to support during the COVID-19 pandemic. In this study, 96.85% had excellent knowledge, 83.2% of nurses reported having significant prevention knowledge and treatment, while 7.6% of nurses had less knowledge (Al-Dossary et al., 2020). Nursing knowledge and nurses are vital to managing the pandemic. An interesting finding from a cohort study with 172 countries

found that Countries with High Registered Nurse (RN) had lower mortality rates of COVID-19. The results indicated that with 1.0 increases in RN per 1,000 individuals, there was decreased mortality rate by 1.98 per 1 million individuals (Padula & Davidson, 2020). Improving care through education is essential, and so is adapting and changing with the pandemic situation.

The pandemic has also lead nurses to become innovative out of the need to improve nursing care. These are reforming staffing ratio, cluster-nursing care, mock-up rooms and practice items, strategies to reduce footwork, taping floor to denote 6 foot, relocation of Intravenous pump and ventilator controls outside of the room (Newby et al., 2020). Evidence indicates that COVID-19 patients require more nursing staff as these patients require more nursing hours (Bruyneel et al., 2020; Lucchini et al., 2020). Bruyneel et al., (2020) conducted a retrospective observational study that evaluated the nurse-patient ratio for COVID-19 and the implication of nursing care. The Nursing Activities Score (NAS) for ICU COVID-19 patients were higher than -non-COVID-19 ICU. This study from five ICUs in Belgium had higher NAS for COVID-19 as they required more time for monitoring, titration, hygiene, and mobilization. Another similar study in Italy also resulted in higher NAS in the COVID-19 group ($M = 84 \pm 10$) in comparison to the non-COVID-19 group ($M = 63 \pm 15$) (Lucchini et al., 2020). Not only does the care require more nursing staff but change in the nursing role as well. An explorative study regarding the care of older people found that the nurse's role changed. These include telehealth use to provide ongoing care, environmental restricting, online health care teamwork, and meetings. These changes in nurses' role had made them feel empowered (Ní Shé et al., 2020).

2.3. Healthcare workers role in managing pandemic

Effective management in any pandemic depends on the resources available, management plans, and population compliance (Akin & Gözel, 2020). The nurses' role in this pandemic varies from screening suspected patients, providing care, and ensuring infection control in health care facilities (Zhang, 2020). Despite the changes in role and challenges, lessons from the past can also help managing the current situation (Priyadarsini et al., 2020; Morens et al., 2020). A study on the potential role of environmental contamination by MERS-CoV in healthcare settings evaluated contamination of touchable surfaces in the MERS unit by patients and health care workers, emphasizing the need for better infection control practices (Bin et al., 2015). However, better infection control practices in place can minimize the risk of transmission. A study on transmission of MERS in healthcare workers(HCW) in Thailand reported 100 % compliance with hand hygiene and wearing protective PPE correctly, concluding that strict infection control practices can protect HCWs (Wiboonchutikul et al.,2016). Research from MERS outbreak in Jeddah reports that most of the patients in the outbreak were exposed to healthcare facilities, patients, or both, thus emphasizing that HCWs have an essential role in preventing and managing infectious disease (Oboho et al., 2015).

With the most HCWs as nurses, evidence on nursing care in the pandemic shows the vital role of nurses in managing the routine clinical practice, symptom management, infection management, ensuring the quality of care and psychological support. (Kako & Kajiwara,2020; Paterson et al.,2020).A systematic review of nurses experiences in acute care hospitals in the pandemic validated that nurses are essential for health care responses during an infectious disease outbreak. This review also emphasizes that the government, the policy makes, and nursing group are pivotal

to support and engage with nurses during the pandemic and following a pandemic (Fernandez et al., 2020). A study on emergency nursing care with COVID-19 patients reports nursing care is mostly supportive management with, decisive actions on preventing spread of infection. The study also signifies more rigorous infection control measure such as patient isolation, clustered nursing care and new means of communication during pandemic situation (Deitrick et al., 2020). Further evidence emphasizes similar practices of patient isolation, appropriate PPE usage, respiratory etiquettes, and handwashing in emergency practice (Chavez et al., 2020). The evidence suggests that infection control practices are also low in the emergency department, including hand hygiene, PPE usage, and isolation practices (Foote et al., 2017; Zottele et al., 2017). Evidence from China indicated the importance of effective infection control practices. A study on six departments in Wuhan hospital demonstrated the use of N95 masks, effective hand washing, disinfection and cleaning strategies were effective in prevention from COVID-19 infection (Wang et al., 2020). Few studies on hand hygiene practices indicated good practice and self-reported compliance rates with hand hygiene is moderate, with nurses having a higher percentage (Alsahafi & Cheng, 2016; Saqlain, 2020). Changing the caregiver's place of residence during the pandemic also became necessary for infection control. A retrospective cohort including 17 nursing homes found that when health care workers remained in the facility, the number of COVID-19 cases among the residents and staffs reduced, and so did the mortality rate (Belmin et al., 2020).

Along with the evident role in infection management, nurse leader's roles also have evolved. Evidence indicates that nurse leaders can help nurses stay focused and determined to work in pandemic by establishing effective communication (Lord et al., 2020). Regardless of the, problematic situation nurses face in the pandemic; their experiences can be valuable knowledge to

governments, health systems. Nurses require strong leadership, support from each other, public and nursing organizations, their employers to serve the communities, protect, and save lives to prevent sufferings in this crisis and new emerging diseases (Corless et al., 2018; Turale et al., 2020). Catania et al., (2020) emphasized how the nurse leader role had an essential role in managing emergencies and suggested that nurse leaders need to be prepared for the impact of the pandemic on nurses. This study also highlighted how some health care settings developed support systems and listening services for those involved in patient care. Further evidence from a phenomenological study found that nurses required nurse manager, policymakers to consider the nursing care in the pandemic, contribute to the development of advance plans, and provide required training for nurses as preparation for nursing care in the Pandemic. (Karimi et al., 2020).

Apart from health care workers role in a pandemic, it is equally important to evaluate surveillance and the preventive measure already in place. With the emerging and re-emerging of diseases like COVID-19, vigilant surveillance is necessary to prepare for future threats. A critical component of the infectious disease surveillance system is risk assessment and early warning systems. Countries that use such systems can forecast future infectious disease trends and identify gaps in health care, such as those used in China, the Netherlands, and countries like Uganda and Mongolia (Blake et al., 2019; Davgasuren et al., 2019; Vleig et al., 2017). Countries like the Netherlands have the Early Warning Committee (NEWC) to identify infectious diseases challenging the Dutch public health. A retrospective analysis by NEWC on ECDC Round Table Report and ProMed-mail found it the most useful informational source that reported 95% of threats promptly (Bijkerk et al., 2020). The country also uses ICARES (Integrated Crisis Alert and Response System), a real-time tool used for early detection of clusters of infectious diseases. Evidence suggests that ICARES

can detect infection clusters like Zika and Influenza outbreaks (Groeneveld et al., 2016; 2017). These types of systems help healthcare systems to prepare for the management of pandemics.

2.4. Challenges for healthcare providers

The HCW's role as front liners in a pandemic situation can be stressful and mentally challenging (Kang et al., 2020; Pappa et al., 2020). The sudden change in roles and more demands at work itself can also be challenging. Despite the challenges, nurses need to follow the changes to health care due to COVID-19. These changes depend on the care required. Such as the changes brought to surgical procedures and protocols in hospitals. A systematic review on surgical practice identified the recommendations from other studies such as reducing the circulation of health care workers, increasing use of PPE and adopt for three protective measures, educating the surgical staffs and offering psychological support and use of negative pressure room for suspected or confirmed cases (Hojaij et al., 2020). A web-based survey done on neurosurgical practice resulted in 446 respondents from Italy, India, and Pakistan demonstrates similar findings. The surgical procedures reduced by 79%, and hospitals have implemented dedicated patient routes. Among these respondents, 92% had changed surgical planning (Fontanella et al., 2020).

Similarly, the impact of COVID-19 on cancer care has also changed. A cross-sectional web-based study on the impact of COVID 19 on cancer care across 54 countries resulted in 88.2% facing challenges in delivering palliative care. The reasons were overwhelmed health systems, lack of PPE, staff shortage and restricted access to medications. Some of the centers reported 80% of patients exposed to harm due to lack of care (Jazieh et al., 2020). Nursing care to other vulnerable groups, such as those with a developmental disability, elderly care and oncology care, is more challenging in the pandemic(Desoches et al., 2020; Jazieh et al.,2020; Paterson et al.,2020). A study that analyzed the challenges faced by 556 developmental disability nurses found that nurses were not included in the COVID-19 planning despite their high risk. They faced challenges in

obtaining PPE, sanitizers, meeting the patients' care need and performing essentials of care due to the pandemic situation (Desroches et al.,2020). Though PPE was essential to nursing in the pandemic, PPE itself brought about challenges in care. Evidence from a qualitative study on nurses' perception in taking care of COVID-19 patients described nurses as "Prisoner in a fence of protective equipment." The study highlights, the restrictions nurses faced on drinking, eating, and going to the bathroom (Galedar et al., 2020). The study also confirms with other studies how PPE was limiting movement, diminishing vision, effecting care due to restrictive movement of hands with extended hours in PPE and feeling of suffocation and increase in body temperatures (Fernandaz et al.,2020; Q.Liu et al.,2020). Pandemic does not only increased the demand for medical supplies but for human resources as well (Halcomb et al., 2020)

The pandemic has undoubtedly brought the demand for more nurses; however, the number of healthcare workers infected while working on the frontline itself is of great concern. A single retrospective analysis from Zhongnan Hospital in Wuhan showed approximately 70% of the COVID-19 patients in the study were healthcare workers, and they worked in general wards (77.5%), emergency department (17.5%) and critical care (5%) areas (Wang et al.,2020). Indicating the health care workers challenging and hazardous environment in the pandemic. A systematic review indicates that the risk of infection is more for those involved with performing multiple aerosol-generating procedures (Tran et al., 2012). With the fact that COVID-19 has no cure, health care workers require support from the health care systems. The pandemic situation for nurses and healthcare workers are further complicated, with limited PPE and medical resources (Badnjević et al., 2020). A cross sectional study done to evaluate the effectiveness of PPE resulted in all 420 health care professional who cared for COVID-19 patients tested negative despite doing

aerosol-generating procedures as well. The study concludes on the importance of the availability of PPE when giving care to COVID-19 patients (Liu et al., 2020). Evidence from a prospective cohort study comparing frontline health care workers (HCW) to the general community and the influence of PPE determined that HCWs had a significant increase risk for infecting with COVID-19. This was higher among HCW who had insufficient PPE or reused the PPE. This indicates that health care workers needed support from health systems to combat the pandemic and ensure their safety (Nguyen et al., 2020). The stressful work environment with uncertainty due to the shortage of staff, change of roles, lack of resources, the uncertainty of the disease has all led nurses at the risk of mental trauma (Hu et al., 2020; Nowicki et al.,2020; Zheng et al.,2020). Another challenge in care was with communication. A systematic review on COVID-19 communication to identify opportunities for improving the communication of health care providers and develop tools found that communication was hindered due to the infection control practices, such as the use of PPE and minimum exposure to patients and isolation and separation from family (Wittenberg et al.,2020).

Finally, the ethical issues that raise with a pandemic situation can be overwhelming for healthcare providers. The ethical problems experienced requires mulita-disciplinary thinking and policies. Ethical frameworks need to be revised and developed in nursing practice with support from nursing organizations, educators, and leaders necessary for hospital settings, clinics, care homes, and communities (Maben & Bridges, 2020; Turale et al., 2020). The infectious environment and the many other factors make it ethically challenging to work. A qualitative study that examined the ethical challenges nurses face discovered that nurses' major ethical challenges came from patients, inequality, job competency, and professional ethics. For example, the professional ethics nurses

face manifested due to the insufficient response to emergencies that may be related to treatments and protection requirements (Jia et al., 2020). Sperling, 2020 conducted a descriptive correlational study on ethical dilemmas, perceived risks among Israeli nurses. The study found that though most nurse feared to work due to lack of resources, 74.7% believed that they had no right to refuse specific treatment or patients. The nurse felt that all patients had the right to treat regardless of their age, medical condition, and right for use of scarce resources such as ventilators. A pandemic itself becomes a magnet for ethical dilemmas with nurses having fear of getting infected themselves, social stigmatization, and the uncertainty of infection control measures (Choi & Kim, 2016). The, nurses who face more ethical issues showed lower job satisfaction and are more likely to leave the profession (Hassani et al., 2017). As evidenced by research, health care systems need to manage ethical concerns and have a positive ethical environment at work (Aly et al., 2020).

2.5. Psychological Impact of working in a pandemic situation.

Despite the need for a good standard of care and support from health care systems, the challenges nurses face during the pandemic cost them psychologically. It could be a trigger, such as a lack of resources. A study on the experiences of nurses working in Australia to understand the nurse's role, access to PPE resulted in nurses expressing concerns about work-related risks to their families and themselves and not having sufficient PPE in the workplace (Halcomb et al., 2020). A similar qualitative analysis on the psychological experiences of caregivers shows that nurses are leading the pandemic with positive and negative emotions interweaved. Through these emotions, self-coping styles and inner growth have played an essential role in nurses' mental health (Sun et al., 2020). A systematic review the psychological impact of COVID-19 on HCWs identified that HCWS are at risk of acquiring mental trauma or stress-related disorders, anxiety and depression in several studies. The review also found that being a nurse and being a female posed a greater risk (Cabarkapa et al., 2020).

Other studies indicate the mental stress of nurses due to the challenging phenomena at work. A cross-sectional survey analysis in the USA with 2040 healthcare workers, including nurses, revealed that those spending 50 % of work hours with COVID-19 patients were associated with higher levels of depression, anxiety and burn-out relative to those who spent less than 25% of working hours with COVID-19 patients(Firew et al.,2020). Another survey on ICU nurses in Wuhan hospital showed that 59% of nurses reported decreased appetite or indigestion,55% reported fatigue,45% had sleeping issues,28% nervousness,26% crying, and 2% reported having suicidal thoughts (Shen et al., 2020). Another qualitative study in Turkey on nurse's experience

and psychosocial problems when taking care of COVID-19 patients found that it affected nurses psychologically and socially. They experienced burn out and mental trauma and identified the need for psychosocial support and better resource management (Kackin et al., 2020). Zheng et al., (2020) tried to evaluate the Psychological Change Process the nurses go through. This study found that frontline nurses went through three stages of psychological change known as early, middle, and later stages. Each stage had psychological characteristics of ambivalence, emotional exhaustion, and energy renewal. Another significant finding of this study was that nurse leaders played a vital role in the psychological adaptations of nurses.

Pandemics also has a positive impact on nurses at the personal and professional level as well. Evidence suggests that the pandemic potentially influences the professional identity of nurses by enhancing the sense of professional and social responsibility and cultivating a sense of professional value and fulfilment (Li et al., 2020). Those health care facilities that support and empower nurses enable them to cope when distressed and feel appreciated and positively contribute to the pandemic (Travers et al., 2020). Evidence suggests that healthcare systems need to support nurses to retain them at work and address the psychological distress they face that has caused fear, anxiety, depression, stress, burnout, and even suicidal thought (Huang et al., 2020; Said & El-Shafei, 2020). Given the lack of resources and challenges faced in the pandemic, it affects the nurses psychologically and put them in an ethical dilemma, as discussed before (Jia et al., 2020).

Similarly, across-sectional study on factors associated with the psychological problems faced by health care workers suggest the same. This study also found that these problems were more in those health care workers who received negative information about the pandemic, got negative

feedback from their families, and were separated from their families. The evidence from this study recommends that nurses require community support for their mental health (Que et al., 2020).

2.6. Conclusion

Nurses play a significant role in public health responses, regardless of the challenges. The pandemic has brought the world's attention to nurses and their roles, and as of now, their experiences shape the care dynamics. Evidence from a systemic review on nurse's experiences identifies the nurse's significance in the pandemic. The findings generated three categories. That nurses developed in a pandemic, required supportive nursing teams providing quality care, and the pandemic brings physical and emotional impact. In addition to these, governments, nursing bodies, health care systems, and policy makers must support nurses, both during this pandemic and after it (Fernandez et al., 2020).

CHAPTER 3: METHODOLOGY

Introduction

Multiple disciplines guide a qualitative inquiry. The method of inquiry is developed to address the qualitative research question of interest (Polit & Bach, 2018). This chapter will discuss the research paradigm for this inquiry. It covers the research design, the sampling used for the study, data analysis with rigor and ethical consideration.

3.1. Research design:

To achieve a new understanding of a subject of interest, one must explore meticulously. The discovery of a phenomenon of interest is through research. Such a detailed understanding of the phenomenon requires exploring the experiences of those who lived the phenomenon (Sundler et al., 2019). The study is on the lived experiences of nurses who provided nursing care to COVID19 patients in the Treetop Hospital. The phenomenological descriptive study design is best suited for exploring the lived experiences. The transcendental or descriptive phenomenological study originates from Husserl's philosophical tradition. This research method explores and describes phenomena that include "the lived experiences" of a situation or condition (Harney, 2015; Gray et al., 2017). Phenomenologists believe that individual lived experience by a person gives meaning to a particular phenomenon (Polit & Back, 2018), such as the experiences of nurses in taking care of COVID19 patients. This research approach is appropriate when the phenomenon of evaluation is poorly conceptualized (Polit & Beck, 2018). Descriptive phenomenology tries to achieve an understanding of the essence of the phenomena as lived by the participants. It provides a deep understanding of the phenomenon as experienced by several individuals (Creswell & Poth, 2018). According to Husserl, the essence of the phenomenon represents the true nature of that

phenomenon. This approach is beneficial in healthcare as healing and caring are important phenomena, and others can learn from those who experienced a phenomenon (Neubauer et al., 2019). Health --related phenomenological questions describes the structure and meanings of health and illness experience (Holloway & Galvin, 2017).

Nursing care for COVID-19 patients is a new experience in the Maldives health care system. A phenomenological approach to describe the essence of providing nursing care to COVID-19 patients will uncover the depths of the process. This approach captures the essential and universal structure surrounding this experience and interprets the meaning of the phenomena in context (Creswell & Poth, 2018; Holloway & Galvin, 2017). The in-depth descriptions enabled the researcher to analyze the situation (Gray et al., 2017). The preparations carried out for nursing care and examined the changes in nursing routines concerning caring for COVID-19 patients. It also helped in analyzing the challenges of providing nursing care for these patients. Using the descriptive method of phenomenology described not only the lived experiences of nurses and identified the true nature of the phenomenon. This method of research yields rich data and gives a unique perspective; however, establishing reliability and validity can be challenging. This study method is more discovery-oriented rather than verification-oriented and does not analyze the phenomena but keeps the “voice” of the participants and captures the subjective perspective of the participants of the phenomena (Rahman, 2016). The researcher here aim to explore nurses' experience taking care of COVID-19 patients through detailed descriptions. However, this inquiry does not seek to interpret the meaning of the nurse’s actions. Figure 1 is a summary of the whole research design employed for this study.

3.2 Sampling

The sampling process is searching for the situations or participants who generate rich data of interest phenomena (Polit & Beck, 2018). The sampling for the study was through convenience purposive sampling. Given that all are still working nurses, it was only appropriate to collect information from those who might be useful or available. The researcher purposively selected those nurses from the ward and intensive care unit, and emergency unit to access a range of experiences from many different people who shared the ordinary phenomena. It was to explore the nursing experiences from a different point of view. This method of sampling is applicable as it helps to identify potential participants who have the knowledge and may be willing to share their experiences (Creswell & Poth, 2018). The researcher approached the nurse educator and nursing management team to identify the best possible participants. All the names of short-listed individuals received a mail with all the ethical forms and research information. The participants approached at the workplace received a debriefing. Those who gave verbal consent progressed to data collection. For a qualitative study, the sample size does not have to be large, but the purpose is to uncover the in-depth data related to the inquiry (Holloway & Galvin, 2017). For a phenomenological study 8-10 participants is enough, as data becomes saturated as the sample size is determined by the informational needs (Polit & Beck, 2018). A sample of this size can produce data saturation, which is when new data begins to redundant (Gray et al., 2017). Therefore, the sample size for the study was planned as 8-10 participants maximum; however, data saturation for this study attained with six participants and data collection was stopped from that point. Data saturation was verified with the research supervisor for confirmation to ensure the reliability of the data gathered.

The inclusion and exclusion criteria used for sampling is described below.

Inclusion criteria: All TTH nurses who have taken care of COVID-19 patients admitted to the hospital with a minimum experience of at least one month in taking care of COVID-19 patients. The nurse also must have the ability of good command of speaking in English.

Exclusion criteria: Those nurses as standby on duty for taking care of COVID -19 patients and who had only attended a short duration of work when required and do not complete a full nursing care shift.

3.3. Data collection

For data collection purpose for this study, semi-structured interviews were used. In phenomenological study methods, interviewing has two purposes. That is to explore and develop a rich understanding of the phenomenon and to develop a conversation surrounding the meaning of the experience (Max Van Manen & Routledge, 2017). One to one interview is the most common form of an interview for qualitative research interviews. It contributes to a better understanding of the participants and the culture (Gray et al., 2017; Max Van Manen & Routledge, 2017). The use of Semi-structured face-to-face interviews was appropriate for this study. Using a semi-structured interview gave the researcher the flexibility to prompt for more information and to explore. It also allowed the participants to react spontaneously and honestly, thus bringing more meaning to the phenomena of interest (Gray et al., 2017; Holloway & Galvin, 2017). In response to the participant's communications, the researcher used probing questions to enhance the exploration of the phenomena. The sample semi-structured interview is provided in Appendix A.

Interviews took place in Treetop hospital as per the time preference of the participants. The specific location of the interview was on the decision of the interviewees. It was where they felt comfortable and uninterrupted to talk, such as the nurse's lounge, nurse's office. The researcher ensured that it was only the researcher and the interviewee present at the interview time and the participant was comfortable talking openly. The interviews were audio-recorded, and observations made during the interview was noted. The time duration allocated for the interviews was one hour. Except for one interview, all interviews concluded within an hour. Phenomenological study interviews focus on specific phenomena and may not be that long because of the phenomena' reflective character. , Besides, it may be tiresome to continue for long (Holloway & Galvin, 2017).

The audio-recorded data of the interviews stored with the date and code number assigned for the participant. The interviews were all in English, as the official communication TTH happens in English. The data was stored in a computer system with locked files, password protected and only accessible to the researcher. The participants were informed that the audio recordings are available to them on request. The data will be stored only for 5 years and then permanently deleted. Note taking of the observations were made while the participant spoke so that the researcher may probe further or relate to the expressions to what was being said. A computer system stores data of the scanned documents of observations. Confidentiality of the documents is maintained through storage in locked computer files with security software. The interviews were transcribed word to word from the recorded audio while comparing with the observations notes. Transcribing of each interview took place within 24 hours of collecting data. This approach helps the novice researcher immerse in the data and become sensitive to the issue (Holloway & Galvin, 2017).

Pilot study

A pilot study is essential to find the issues and barriers to participant recruitment for a qualitative study. It can help the researcher develop oneself from a phenomenological perspective and reflect on the bracketing oneself. A pilot study can help modify the interview questions to get rich descriptions of the phenomena of interest (Kim, 2010; Malmqvist et al., 2019). However, there was no pilot study conducted. A pilot interview was conducted to evaluate the data collection method and modify the interview questions. The research supervisor analyzed the first interview and guided on further data collection.

3.4 Data Analysis:

1. Rigor and interpretation

Data is organized using computer software. Each interview was transcribed into a word document. Microsoft office 2016 word and excel was used for coding interviews and data organization such as statement separation, meaning-making and developing clusters and themes. The interviews in document form ere colour coded and went through multiple coding phases from simple case nodes to phrases and clusters. Visualization of data develops an account of the findings. Colaizzi's 7-step phenomenological analysis approach was used to analyze the data. This approach is beneficial in descriptive phenomenology. The seven steps enable rigorous analysis, capturing the detailed descriptions of the phenomena (Morrow et al., 2015). Principles of the Colaizzi method enables the production of an exhaustive description of the phenomenological study. Themes developed using this method is the main product of data analysis, which yields practical results. The themes generated through this approach contain codes that unify the ideas regarding inquiry components (Vaismoradi et al., 2016). The themes developed from analysis undergoes refining with existing literature to evaluate similarities and contradictions in the findings. Colaizzi's approach to data analysis originates from the Duquesne School of phenomenology. Colaizzi advocates seven steps in the data analysis process. The first step involves reading all interview data and making meaning out of it. Significant statements are then extracted that directs towards a phenomenon. Meanings making from each significant statement is by going back and forth from the data. The meanings are then clustered into themes. Referencing the themes back to the original data helps to validate them. These results in the exhaustion of the topic investigated. The fundamental structure of the phenomena is then identified from the exhaustive descriptions. Final validation is by returning to the participants. However, Colaizzi encourages flexibility of the stages by the researcher

(Vaismoradi et al., 2016; Holloway & Galvin, 2017). The participants were given the transcripts to verify the data but not the result. Colaizzi's method greatly implicit and explicit meaning out of lived experiences, such as nurses who took care of COVID-19 patients. This method of data interpretation helps to achieve rigor in qualitative analysis (Northall et al., 2020). With each theme formation, the researcher referred to literature in view of, to generate the better meaning of the data. Repeated referral back to the original data in each step can fully leverage the richness of data.

Step one

Each interview transcript was read thoroughly multiple times to gain a sense of understanding of the phenomena. During this stage, the researcher had to bracket her feelings, which arose as the researcher has also experienced the phenomena. It was important to ensure rigor in data analysis.

Step two

In this stage, significant statements and phrases of the nurse's experiences were extracted from each transcript. These statements were colour-coded and documented in separate sheets. After extracting the significant statements, the researcher worked with the supervisor to reach a consensus.

Table (1) provides examples from the significant statements, which were extracted from the transcripts.

Table 1

Significant statement	Color code	Transcript number	Page number, line number
"before starting the covid sessions they trained us. Like how to take care of the patients, the ventilator setups, how to give CPR to the covid patient, how to protect ourselves and than how to .then then…suction regarding suctioning…each and everything they taught us before starting the care.."	Continuous nursing education Infection control practices Nursing procedures	2	Page 3,line 15

Step three

This stage involves meaning making from significant statements. Each underlying meaning was coded again into a category, as they will help in developing clusters. Table (2) shows an example of how a significant statement was converted to formulate meanings.

Table 2

Significant statement	Meaning-making
" I think they have given a good training and good thing was no staff was infected during that time, so I think it went well, it was a good planning	Nurse realizes that preparation training before working in Covid facility was effective, as he believed staffs adhered to the training and thus no staff was infected.

Step four

Once the meanings were formulated, it was grouped into categories that reflected a unique structure of clusters that developed into themes. Each cluster was coded and to the groups that reflect the same meanings. The cluster groups were then incorporated to reflect a particular vision and construct a distinctive theme. The researcher compared the clusters with the initial data and checked the accuracy of the overall thematic map with the supervisor. Table 3 provides an example of cluster development

Examples of formulated meanings	Cluster formation	Emergent theme
1.The trainings provided were effective Clinical guidelines were shared and oriented 2. Maintaining healthy balanced diet Ensuring enough rest before and after duty	**Continuous nursing education** **Self-preparation**	**Preparation for the new challenge**

Step five

In this stage of analysis, all emergent themes were formulated into the detailed description. When all the themes merged, the whole structure of the phenomena was extracted. The findings reviewed by an expert researcher in terms of richness and completeness of the descriptions confirms nurses' experiences taking care of COVID-19 patients.

Step six

The exhaustive descriptions are again analyzed to emphasize the fundamental structure of the phenomena. In this step, the researcher eradicated the overestimated descriptions and made amendments to generate a clear relationship with themes and clusters.

Step seven

This step aims to validate study findings using the "member checking" technique. However, it is a flexible approach as participants' feedback can have the researcher reanalyze the data, and the research process can get prolonged. Thus, the participants were given the initial transcripts to verify if it was accurately transcribed. In addition, during the interview, further questioning to verified the thoughts expressed

2. Trustworthiness of the data

Creswell & Poth (2018) describes the nine frequently used strategies in improving data and suggests using at least two qualitative research study strategies. Qualitative research focuses on credibility, dependability, confirmability, and transferability to improve the trustworthiness of data (Gray et al., 2017). One such strategy known as the gold standard in a qualitative study is member checking. This method, when used, will improve data trustworthiness (Kornbluh, 2015). The researcher validated the data by presenting the preliminary data to the participants and obtaining verbal feedback during the analysis phase. It allowed the participants to reflect on the account. Another strategy that is proposed is peer reviewing. Peer review or peer debriefing is to have a competent researcher to re-analyze that data of the researcher. The credibility of the data is improved when peers challenge the researcher's decisions, assumptions, and interpretations (Holloway & Galvin, 2017). The researcher had the data analyzed by the supervisor. It was also crucial that the researcher exclude herself from her own experience of providing nursing care to COVID-19 patients and only acknowledged the experience but did not influencer perspectives in data analysis. Thus, the researcher used bracketing before starting the research in a bracketing diary. It helped avoid preconceived notions and conducted a literature review unbiased. The researcher used semi-structured interviews to probe the participants' experiences and set aside the researchers own experiences.

Further, on this, the researcher reviewed her own experiences during data analysis to avoid personal bias. The researcher used purposive sampling to obtain rich data from those who will contribute to these phenomena. The research findings are further on discussed in detail and detailed descriptions. The strategies for trustworthiness employed by Lincoln and Guba ensured credibility of data findings (Polit & Beck, 2018).

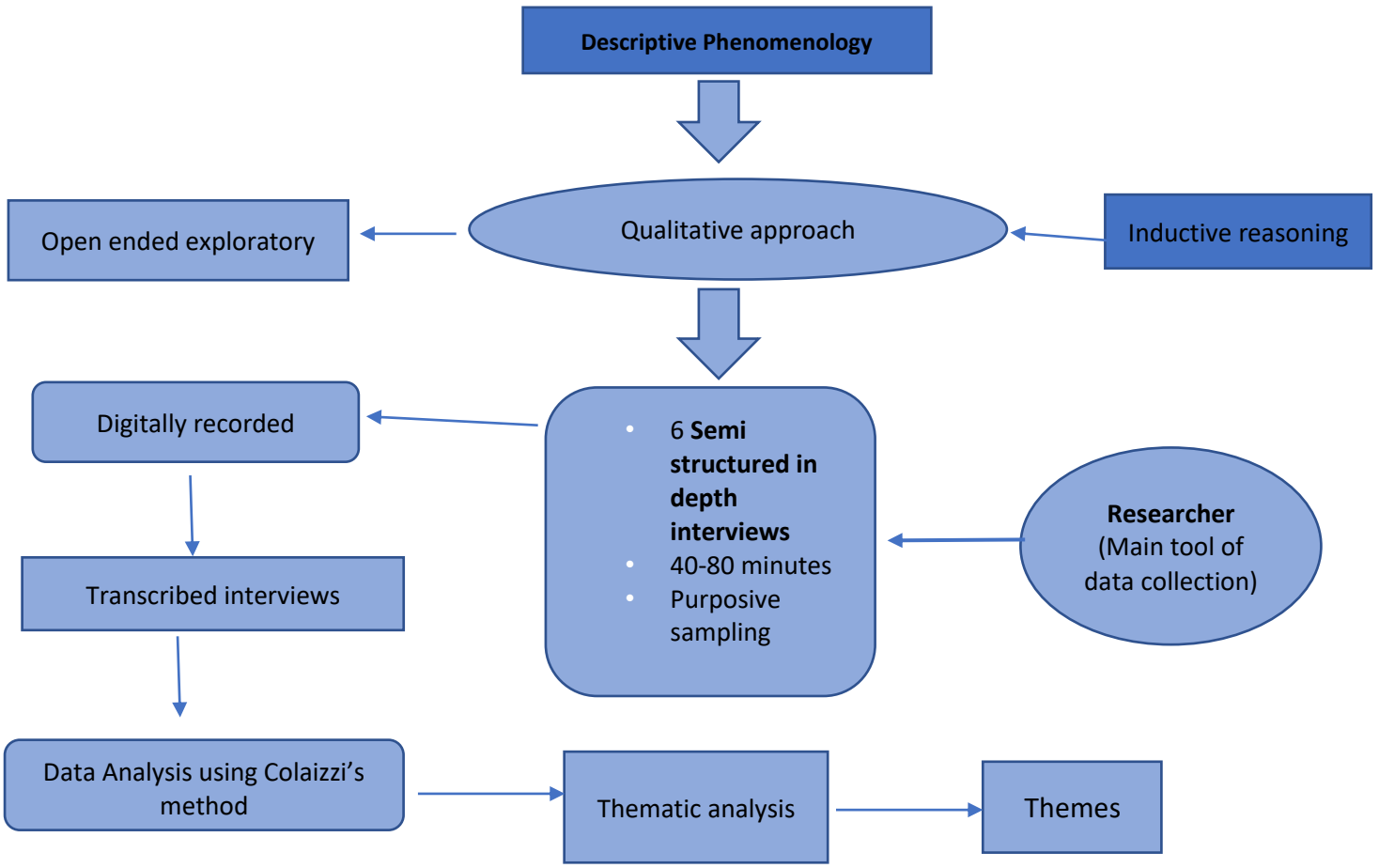
3. Ethical considerations

Ethical consideration ensures the researcher adheres to the principles and rules of ethical frameworks that protect the dignity, safety, and rights of participants (Gray et al., 2017; Holloway & Galvin, 2017). Initial ethical clearance was first from Maldives National University (MNU) research committee. Treetop hospital also required ethical clearance after proposal presentation. The researcher had presented her proposal to the hospital research committee and got approval before applying for ethical clearance from the Ministry of Health, Maldives research council. Refer to appendix C for ethical consent and information forms for this ethical clearance and the ethical forms. Once the ethical clearance was obtained from the Ministry of Health, the researcher approached each participant with information and ethical form.

Each participant was prior informed about the study. The researcher approached them directly at workplace and explained the participant's role in the study. The participants were not from the same department as the researcher being the charge nurse of a unit may imply the participant was obliged to participate. Written information provided a guide to the participant and they were given time for question and answer before they came for the interviews. The participants who gave verbal consent than received written ethical consent for the study. Each participant was explained of withdrawal or declining to take part in the study. The study focus was only on nursing practice and did not involve any personal information of the participant. It was ensured so that there will be no distress to any participant. There are no medical procedures performed or observed. Audio recording was made with written consent, and the audio does not have any identifiers tracing back to the participant. The researcher being the instrument in the qualitative study (Gray et al., 2017), ensured confidentiality and non-maleficence with informed consent. The raw data is unavailable to anyone other than the researcher and is stored in a computer in password-protected files under

code names. The participant's anonymity was ensured with a code assigned and omission of identifiers that reflect on the participant. The study will have to undergo ethical clearance of publishing by the Treetop hospital research committee prior to disseminating the findings to the public.

Figure 1: Summary of the research methodology



CHAPTER 4: **FINDINGS/RESULTS**

4.1 Introduction

This chapter aims to describe the nurse's experiences of taking care of COVID-19 patients. This chapter means to describe the experiences and provide detailed descriptions of the phenomenology. Figure 4.1.1 Illustrates the change in ground floor set up for entry and exit and donning and doffing. It is the location where the nurses had experienced the first step in coming to work in a COVID-19 hospital daily.

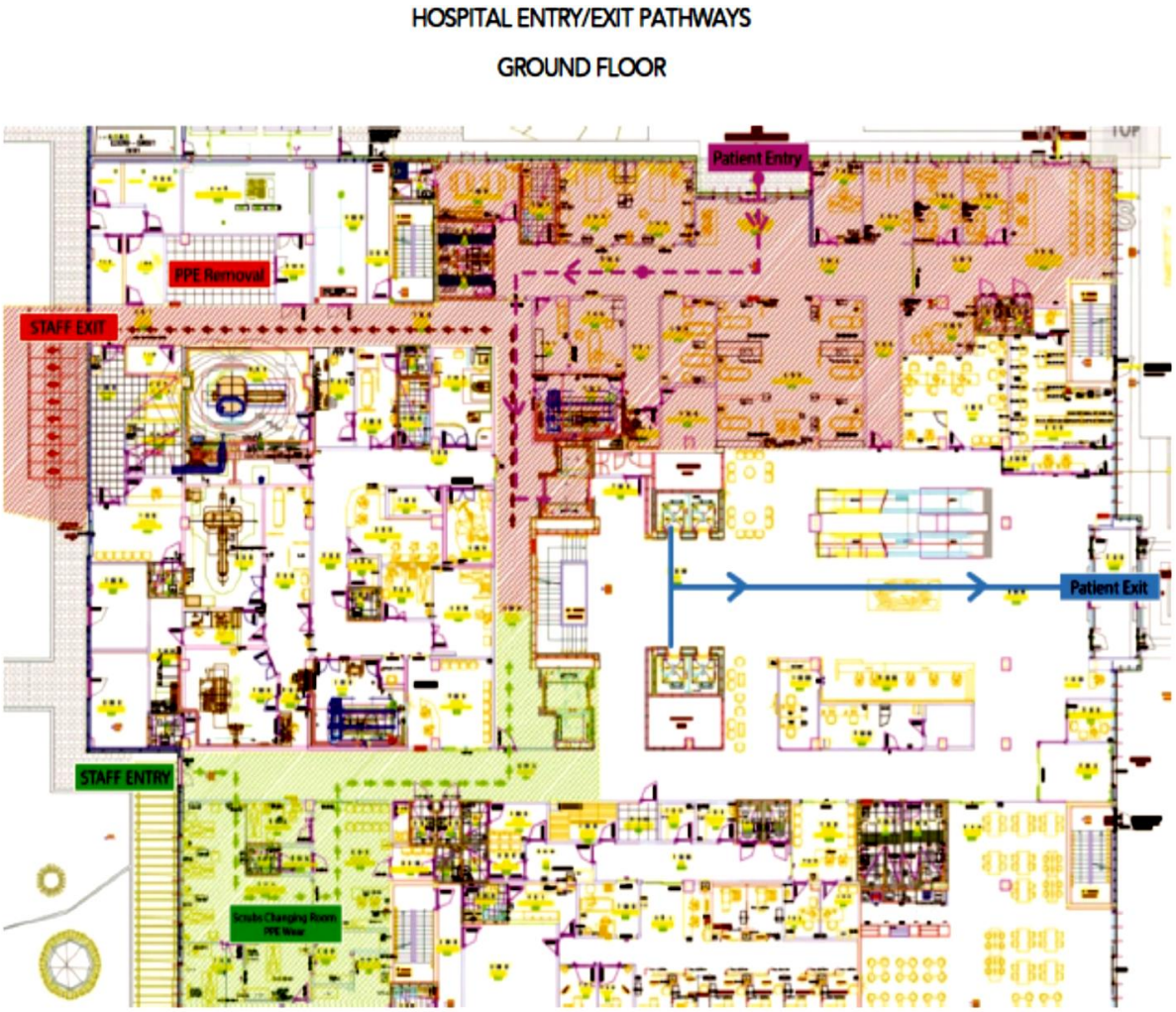
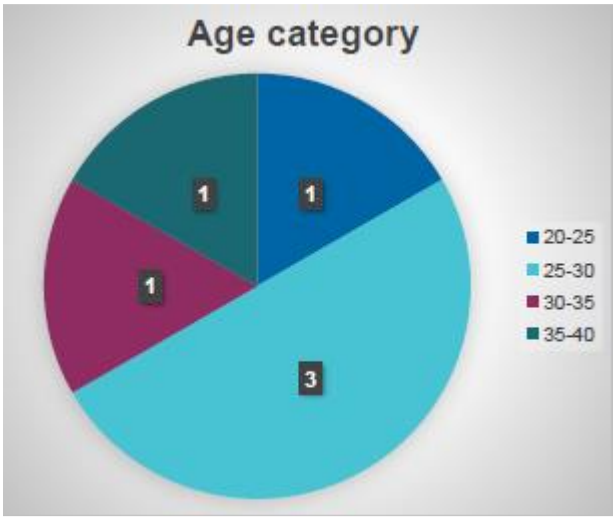


Figure 4.1.1

4.1.2 Demographics variables of participants

Variable	N (%)
Sex	
Male	2(33.3%)
Female	4(66.6%)
Designation	
Head nurse	1(16.6%)
Staff nurse grade 1	3(50%)
Staff nurse gra1de 2	2(33.3%)
Area of work	
Emergency Unit	1(16.6%)
General Ward	2(33.3%)
Intensive Care unit	3(50%)
Country of Origin	
Maldives	1(16.6%)
Philippines	2(33.3%)
India	3(50%)



Prior to commencing of the semi-structured interview the demographics was obtained. Since the hospital has more female to male nurse ratio, similar demographics are found among the six interview participants. TTH also have very few Maldivians, and thus only one Maldivian nurse took part in the study. The country of origin for the nurses was not considered as the study is purely

on nursing experience, and the objectives are focused on nursing care. The participants are from different areas with different years of experience to capture rich data.

Figure 4.1.3: The final themes of the study

The initial interview with six participants, extracted 192 codes. After formulating meanings and required analysis, the integrated clusters developed. Further analysis determined the themes from the clusters. These themes are “Preparation for the new challenge”, “Combating Infection control,” “Meeting daily patient’s needs”,” Challenges in caring and rising above” and “The psychological impact of working in a pandemic”. Figure 4.1.3 shows the final themes that surfaced from the nurse’s experiences of caring for Covid-19 patients. Each theme is an essential component of the whole experience.

Figure 4.1.4 is the word frequency cloud developed from all of the interviews. It shows the most frequently occurring words in the interviews. The content of the word cloud represents the words related to the most prominent concepts and themes that emerged from these; such as preparation, meeting daily patient needs, infection control practices, the challenges and the emotions associated with the whole process.

Figure 4.1.4

4.2. Preparation for the new challenge

Figure 4.2.1: Theme and the cluster for "Preparation for the new challenge."

Based on study results, nurses faced the new challenge in providing care by preparing themselves mentally, physically. Similarly, the institute also prepared them before the hospital changed to a COVID-19 facility. The significant clusters for this theme include continuous nursing education and training, setting up of the work environment, self-preparation, and daily preparation for care.

The hospital was converted to a COVID-19 facility in May 2020 when the Maldives was still at the early stage of the pandemic. The nurses had been informed that the Government of Maldives collaborated with TTH to convert it to a COVID-19 facility. Nurses were given the option to leave if they wished not to be part of this, and those who stayed were trained for infection control and ICU basic training. However, due to the uncertainty of the COVID-19 disease, nurses had taken on themselves to seek knowledge and become better prepared. ICU nurses were all included in the training, and selected staff members attended the other training. However, infection control training was mandatory for all. It was the first step of preparation.

Nurse 2 *"before starting the COVID sessions they trained us. Like how to take care of the patients, the ventilator setups , how to give CPR to the COVID patient, how to protect ourselves… it was not only regarding the care of the patient but it was also protecting our self from the exposure to the patient. We were trained to use the PPE."*

Nurse1 who felt the need to self-educate stated, *"I looked at it up online and the signs and symptoms like how to manage and I just familiarize myself with COVID so that nothing new will come…"*

Nurses felt this training was essential for them, making them feel confident and ready to face the challenges ahead. The nurses had taken part in a mock drill before taking actual patients. The nurses were guided by floor pathways, signage on where to go and guidelines were given to read and familiarize with clinical flow pathways displayed.

Nurse 5 believed this training were effective and stated, *" I think they have given a good training, and good thing was no staff was infected during that time, so I think it went well, it was a good planning."*

Though nurses believed that training were good, they were never prepared to work with the PPE but rather just to put on the PPE. All the nurses stated that infection control steps were taught, along with orientation to flow pathways and basic ICU training for selected nurses.

Nurse 3 "*they gave infection control training like. Step one you put this …and step two is this. But you have the actual experience of being in PPE at least 6 hours in duty. Then you were sent like to the battel field without preparations."*

Nurse 5 *" Our infection control manager also took class regarding how to don and doff .at that time wearing it for five minutes it was so difficult task. while learning the procedures for COVID-*

19 patients it was totally different and we didn't learn anything with PPE on. Then after wearing PPE it was totally a different scenario"

As much emphasis was given on training, the work environment had to be ideal for nurses to work in a difficult situation. It started with the hospital management planning on how many nurses are required in each area and how long the working hours be will. The flow pathways were defined, and those who were not in direct contact with patients were given other supportive roles. The whole hospital staff roles were defined, nurses, and doctors were joined with staff from diagnostics, laboratory, rehabilitation, and so on. The nurses had help in donning and people supervising them while doffing. All of this had a positive impact on nurses, such as building teamwork and feeling under good care.

Nurse 4 *" they had made this plan for the whole hospital the routes and everything, like the dirty side and the clean side was separated, and they gave classes regarding that. Then we made the place ready like stocks and everything…"*

Nurses acknowledged the help they received from other health care workers. They were helping in donning, in doffing, being runners and even vitals recording before donning in.

Nurse 2 *"we had staffs helping us to don…we got a lot of help from them during the donning. We had runners who will bring in and take things, they were actually very helpful during the COVID time, and they were actually connecting the clean and dirty side."*

Besides strategic plans, individual needs of nurses was addressed. Individual needs, such as the arrangement of food, addressing staffs concerns was also part of the preparation. The nurse's mealtimes were arranged in a way they get food according to their scheduling which had changed. The nurse's schedule was changed from 10 hours to a total 8 hours, where one hour was for

donning and one hour for doffing and showering. Some nurses who had raised concerns like relocating families or with existing medical conditions were attended by the institute so they would be ready to provide care.

Nurse 5 "*From the institute they helped to relocate my family, and also the food they provided during the shift end it was free for the staffs. They even set up shower facility outside which was very good, also the infection control guidelines was very nice."*

Nurses were positively encouraged by all the support they got from other health care workers in their daily preparation for COVID-19 duties and during their duties.

Nurse 1 "*all the participants…like even the occupational therapist, the physiotherapist they were the runners …the whole hospital came together, and the hospital involvement was there."*

Though the nurses felt that the institute supported them, they had their issues. According to the nurses, they never felt they were never ready, and each person had their strategies to prepare for daily duty. This pandemic made more nurses self-aware of their health and worked towards improved physical fitness. It included being more conscious of own hygiene, food habits and even sleep and even being more vigilant with own infection control practices.

Nurse 2 " *Actually you know during the COVID time only I came to know what are the types of food we should take, like nutrious food and then the citrus food. I really practiced drinking the turmeric water, which I am really practicing till now also. I took a lot of water and made myself refresh ".*

Nurse 4 *" it got me thinking ,I should shower at least 3-5 times a day…I should change clothes when I am going out,I should change my clothes when I come back … you have to drink all your vitamins, you have to have a large meal before your shift…you have to have enough sleep. The*

lack of sleep can be lack of performance and you have to have your own set of infection control management."

All the nurses believed that they need to be mentally, physically ready to handle the situation, and each had their strategy that they used to manage themselves before duty and after duty. While they were on duty, nurses also used their own strategies to combat the mentally and physically distraught.

Nurse 3 " *I used to counsel myself mentally that I can do this, ,when I was exhausted I will sit for five minutes and tell myself no you can do it. It is only four hours more you can do it…after five minutes I will start my work …."*

The daily self-preparation was also part of the daily preparation of care. Those nurses who worked with the admitted patient were grouped into batches that will don and give direct care to patients. In the meantime, others will wait in the clean area as stand by nurses. Since the hospital was working in collaboration with the Health Protection Agency of the Maldives, the ER team was informed before the arrival of a patient. This gave them enough time to get ready and wait for receiving the patient. Before donning, the nurses got their vitals checked and helped in each step of donning and was checked before they left for the COVID-19 ward. This was the first step of their daily care. The donning area became an essential part of their daily duties where they help, encourage each other, and just keep their mind open before they go in all together.

4.3. Combating Infection control

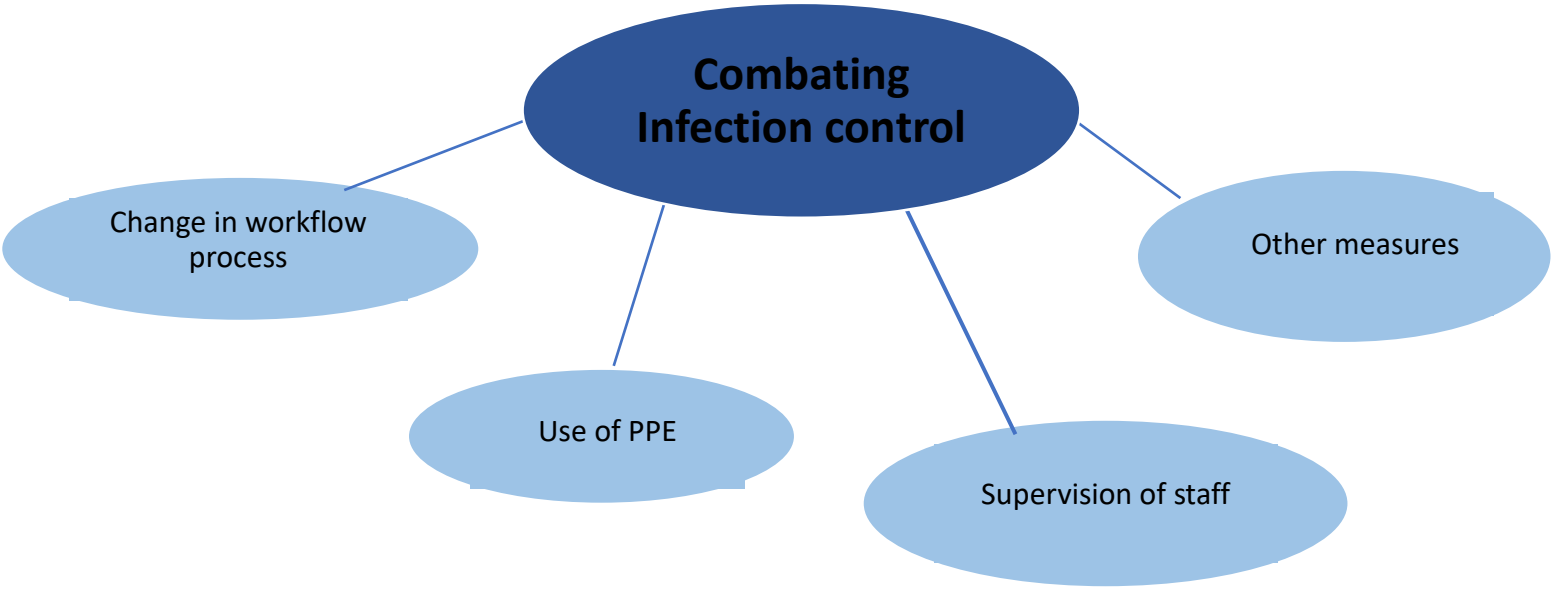


Figure 4.3.1: Theme and the cluster for "Combatting Infection control."

Due to the nature of the transmission of the virus, the nurses had to take strict infection control measure. The hospital had strict guidelines and training to ensure infection control practices as nurses had experienced in the preparatory phase. The clusters that generated the theme include change in workflow process, the use of PPE, and other measures to ensure infection control and staff supervision. From the preparation phase, it is understood the normal walk in and walk out or simply to say, the pathways for movement had changed in the hospital as a COVID-19 facility. To control the flow of patients and to have strict infection control measures, the receiving of patients to the hospital had a completely different set up in the COVID-19 facility.

Nurse 6 *"we will receive the patient in the negative pressure room, and we will stabilize there," and similarly the ICU receive the COVID-19 patients to the negative pressure room."*

Nurse 1 " *when we get a call from ER are getting an admission we will prepare first the isolation room, only a doctor and two nurses will be there inside the isolation room and they do all the procedures there , they will complete it and shift the patient to ICU cubicles".*

These guidelines ensured that nurses knew their roles and were prepared with strict infection control practices. Other than the guidelines, some changes in the standard practice of specific procedures took place. These included closed suctioning, intubating only in the negative pressure room, performing CPR in the prone position, minimizing the movement in and out of patient rooms, more use of disposable items to avoid the use of stethoscope. Assisting with intubation was a challenging task for the nurses, the doctors, as it was performed through a glass box. On the other hand, for all procedures where aerosol-generating risk was noted, only one staff or the minimal number was assigned.

Nurse 4, "*When you are intubating the patient you have to put the head into a box and then you intubate and that is very difficult but then you have to as it will double your chances of being safe as a healthcare worker."*

Nurse two "*unnecessary exposure is avoided, for the COVID patient we were doing only closed suction...so that the spillage of saliva or something will not be there and we kept on changing our gloves, the external gloves. We used to be wearing three gloves so the outermost gloves we will be taking off and then the gown that we were using also we will be throwing it each time when we expose to the patient."*

Nurse 5 " *main thing is when we do some aerosol generating procedure we will let the staff to expose minimally"*

The nurses were well informed of the importance of these measures, and they tried their best to follow, but when the situation becomes challenging, infection control measures also becomes difficult. In emergencies, the PPE might come off, are torn or when the patient collapsed, more staffs are needed to resuscitate.

Nurse 5 " *we tried actually to minimize the exposure but the patient need that type of care, than so many people were there inside on a single time… but patients were very bad and they were having pneumothorax and it was a very difficult situation".*

Nurse 6 "*our PPE will not be fit for us…some of the days ...while turning patient our face shield may go off"*

The nurses became cautious and more mindful with infection control measures. The time they spent in the rooms became less, and patients were oriented to use the call bells. The pneumatic shoot system was not used to send samples, and the runner assisted in sending the samples. This was also to ensure that the clean area of the hospital did not become contaminated.

Nurse 4 "*for the blood samples also we are taking and keeping the sample container near the door of the clean area and the runners will disinfect and they will take the sample container."*

Daily donning and doffing became part of their routine. Donning and Doffing of PPE was also a meticulous procedure where they had assistance, and they were assessed for ensuring the correct donning process.

Nurse 1 "*they were constantly observing us during our doffing time. So they will observe us, like the steps which we follow and the way we touch…".*

Nurses became more through with these steps as they were doing it daily, and they acknowledged that their infection control practices doubled. Though doffing was also time-consuming, all the nurses were happy with the shower facility.

Nurse 2 " *doffing…they will spray the shoes, sodium hypochlorite… it was done properly before we enter the shower area and we take the box with our clothing, it was really good. The shower is always hot and the use of chlorhexidine is very good."*

The nurses felt refreshed and happy after taking a shower in the facility before going back to their rooms. Some nurses believed that having to take care of COVID-19 patients had made them self-aware of infection control practices and improved it. They also believe it is important to be informed about infection control practices and to have continuous nursing education.

Nurse 3 "*the infection control practices should be updated on the latest management…because the infection control can say just do the usual thing...that we did before. It's not good…because the virus keep on changing; evolving so I think they should give updates."*

Nurse 2, "*You have to manage or you have double your infection control practices …management on your own. You have to wear PPE and you have to be very cautious. So there is the decision that we perform all step by step for infection control practices."*

Nurses felt they were responsible for maintaining these practices to ensure the safety of patients and themselves. Having people observe them and having defined pathways training and facilities to ensure infection control practices gave nurses a sense of safety and relief that they are safe if they carried out all steps. In fact, the nurses believed that this was indeed, why none of the staff was infected while working in the COVID-19 facility.

4.4. Meeting daily patient's needs

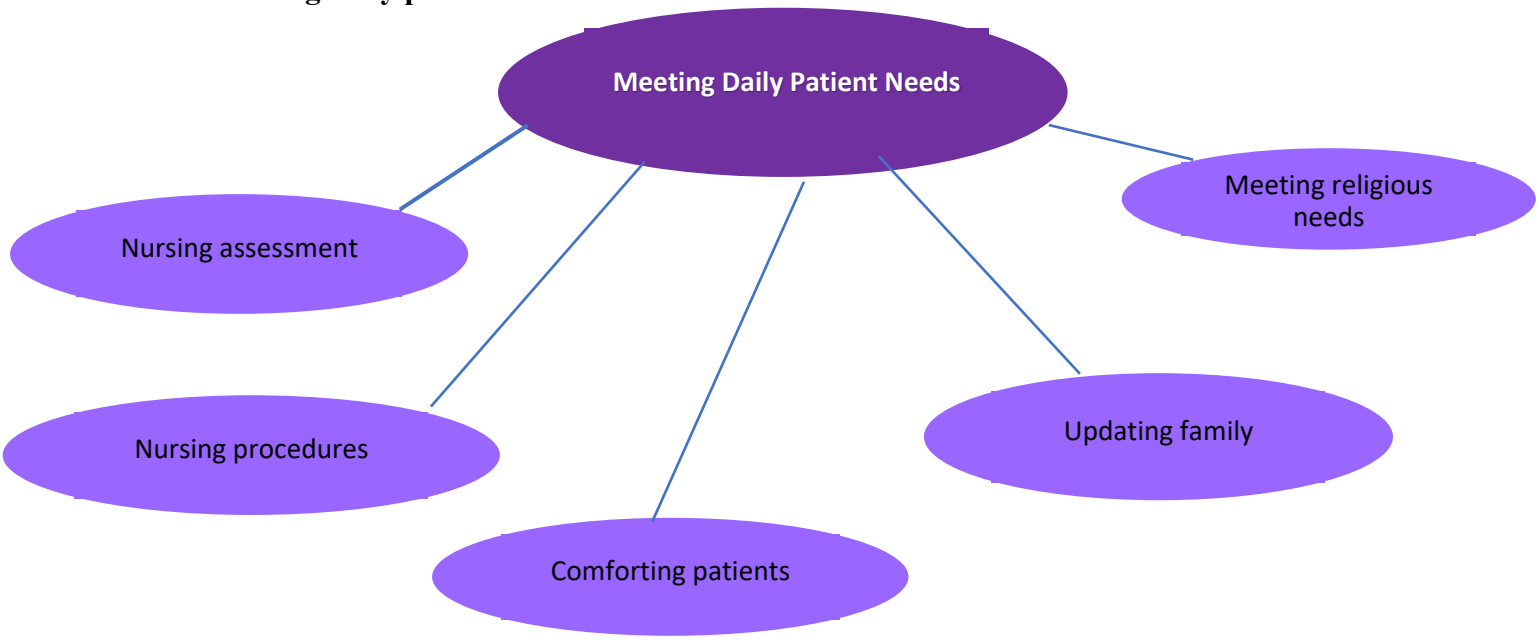


Figure 4.4.1: Theme and the cluster for "Meeting Daily patient needs."

Nursing in a different environment does not change the nurse's perspectives of attending to the daily needs of the patient. These are the core values of nurses, and all nurses involved in the study had substantial professional responsibilities and passion for taking care of the sick. Even in the COVID-19 facility, nurses prioritized patient over their own needs or safety. They went by attending and doing their normal procedures in full PPE with hazmat suits, masks, gowns, goggles, face shields, and shoe covers. However, due to the nature of the disease and changes in places, nurses had to modify their normal routines when addressing the COVID-19 patients. The clusters that developed this theme include nursing handover, nursing assessment, nursing procedures, and comforting patients, meeting religious needs and updating the family on the patient status.

The nurses felt that even though multiple processes were in place for infection control purposes, there was not much nursing care change.

Nurse 1 " *nothing was different everything we did was the same...whatever we did for the normal patient we were doing...for the COVID patients."*

Nurse 4 *" we didn't miss anything ,we did everything we could do, we did our best actually. Whichever nursing care it maybe, in giving medicines, in giving back care,we did all the care, we did each and everything we did for the normal patients"*

However, all nurses corresponded that they focused on cluster nursing care more than what they usually did to avoid direct exposure time.

Nurse 6 " *the care plan for the patient is the same as any other patient but you have to minimize the time inside of being exposed".*

When talking about procedures, the nurses did not find any differences except using more single-use items and increasing infection control practices. However, when intubating, nurses mentioned it was with the patient head inside a glass box and the doctors and nurses wearing an additional hood over the PPE. Another change the nurses noticed was how they gave CPR.

Nurse 1 "*Once the patient was in prone and the patient had arrested and we did CPR in prone."*

The nurse's work began with handing over and relieving the previous shift staff. The patient allocation was planned so that the same nurse kept on taking the same patient to be more familiar with the patient and the patient felt more comfortable. Nurses ensured patient comfort from the point of receiving to the hospital until discharge, knowing that patients were also scared and anxious. Nurses were also aware that not having the family beside the patient made it difficult for them; thus, they spent time with them, comforting them and becoming means of communication

with the family. This made nurses more conscious on building rapport with the patient, knowing that they had only their company and support.

Nurse 5 "*some of the patient when we received they were very nervous … we make sure they are very comfortable and we explain everything, the treatment plan, provide better support from our side".*

Nurse 3 "*you have to be prepared that you have to be strong that they can take that strength from you because the patient doesn't have bystander, they don't have the family with them. You have to give them the care, that they can take strength from you as a not only…not just as nurse but as a human".*

Nurse 6 " *so you have to introduce yourself that I am your nurse for the day and have to build the rapport with them…the relationship between them…so they will be trusting you and will be less anxious".*

The hospital provided the nurses' pictures to put on the hazmat suit to ensure that patients felt comfortable. Nursing care for any patient started with handover, history and planning of care to ensure most of the work is done inside the rooms. The ward nurses had special handover templates for COVID-19 patients made to reduce the time of handover. They had routine care planned more meticulously to ensure that no aspect of care was missed.

Nurse 3 "*before you handle the patients you will get the list of the patients you will handling, we try to look at the history and ask from the previous nurse during handover and from there you will be able to prepare for care."*

Nurses felt the need to give holistic care, and they were concerned about their patients. They guided the patients who wanted to perform prayer and arranged to do so. The COVID-19 facility

was opened during the holy month for Muslims, Ramazan, which was when they performed fasting and religious activities. Though patients were not fasting, they were still performing prayer.

Nurse 6 "*we just tell them this is the direction of qibla and prayer times also"*

Nurse 1 "*If they wanted to pray we clean them and allow them to pray."*

In the Maldivian community, the family is always with the patient, which was not the case in the COVID facility. Other than providing nursing care, the nurses had taken the roles of the family as well. Since the patients did not have family members with them, nurses took the role of communicating with the families and feeding them food. The nurses had become a bridge between the patient and the family. The hospital had arranged for phones in each unit for the patient to call and even provide means of video calls for those who cannot call.

Nurse 4 "*we give the phone to the patient and the patient will talk to the relative and the response of the patients will be translated again to us from the phone by the relative."*

Nurse 6 "*We had a phone that was specially designated for the patients to call their family, if the patient is a really old person, the family would call us and we do facilitate the phone call between the patient and the family."*

Nurse 3*"some of the old Maama…and some from the ICU they are not able to feed themselves we are the one feeding them…we are the one giving food. Especially the ones weaned from the NGT."*

Nurse 1 " *old grandfather was like he was at home with us and he behaved like so, like grandpa he called us for everything, like applying oil on his feet ,massaging him for the pain, so he was very happy with our care…I felt so"*

The daily care included careful observation than regular patients. The nurses knew the progression of the disease and believed careful observation skills were essential as patients could deteriorate at any time. Almost all the patients were on continuous monitoring, even if they were in a general ward.

Nurse 2 "*observation skills…even in assessing the patient...as the patient would deteriorate in very short amount of time …that sharpens you."*

Other than closer observation and quick response, everything else was usual for the nurses, except they were performing in PPE. Nurses had support in organizing nursing care from their supervisors, who ensures that all nurses had the required consumables. They also emphasized during duty times; the supervisors called in to check if they were having any issues. Having enough stock on hand and someone outside the COVID-19 ward to help make it easier for nurses to go ahead with their care. Usually, the general ward will not have a doctor always at the station. However, during the COVID-19 facility, the management changed this. It helped nurses in the case when they had to escalate care concerns.

Nurse 5 "*During COVID time our doctors are with us 24/7 … so it's easier for us to call them whenever we have a patient who needs a doctor to come in immediately."*

The changes in the care process, the short duration of preparation and continuous duties in PPE brought its own challenges.

4.5. Challenges in caring and rising above

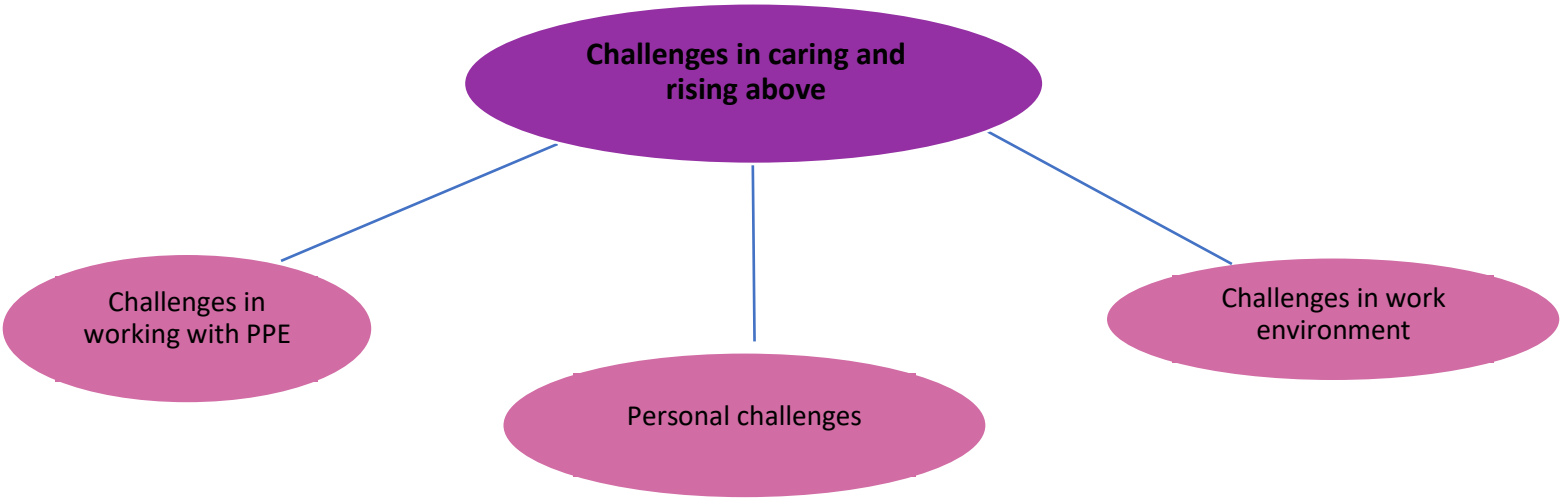


Figure 4.5.1: Theme and the cluster for "Challenges in caring and rising above"

Nursing itself has become challenging with the increase in demand in health care, and the COVID-19 situation itself posed many more challenges. During the yearly months of 2020, less was known about the disease, yet it was evidenced that the virus was easily transmissible. Health care workers had to take precautions for themselves and not let the infection spread within the facility. This theme emerged from clusters such as challenges in working with PPE, personal challenges, challenges in the work environment.

The most significantly highlighted challenges by all nurses is working in PPE. Nurses had worked in PPE even before also, but in this case, there were working full duty without a break in PPE. They cannot eat or drink once they are in PPE. The nurses were working in almost three layers of clothing with goggles and face shields. It include their scrubs, hazmat suit, surgical gown, disposable apron, N95 mask, surgical mask, face shield or goggles, three layers of surgical gloves and shoe covers. Nurses were not used to working for long in N95 mask, and in this case, they had a surgical mask on top of the N95 mask. Nurses were in PPE for almost 6-8 hours, and they became

dehydrated while working in the multiple layers of PPE. Nurses found the goggle and face shield getting foggy with time, hypoxic with prolong use of multiple masks and hands numb while using a triple layer of more gloves. Nurses found walking in the shoe covers and all the PPE difficult due to the slippery nature of the covers, and they had to be more cautious. Maldivian nurses on duty had difficulties as they were fasting during the day, and on night duties, they miss the meal before fasting starts. However, this became a strength for the ex-pat nurses seeing Maldivian doing duties while fasting.

Nurse 5 " *…we can't breathe…we feel very thirsty… the urge to pass urine…one of my colleague had an asthma attack during taking care of the COVID-19 patient",*

Nurse1 *" The face shield will get foggy and sometime when we come out …our whole scrubs is soaked with sweat and it was very uncomfortable".*

Nurse 4 "*it is very difficult to move ...with the shoe cover and all, the grip is not firm on the floor".*

Nurse 3 *"you have several gloves on top of your hands so you can't even feel your hands… you can't even touch the laptop while documenting..."*

Nurse 6 " *by the time we are done we can feel the sweat dripping inside …it was very difficult and very hot, that was the most difficult thing. It was very hot and I had dry skin ...on top of that we were fasting and that was difficult..."*

Nurse 2 " *than they were like very prompt they were not even drinking water. I was like Oh my God they are great …I will run and drink water after doffing and they can't drink water later also. They are fasting and doing duty and why can't I do it than. So after seeing everyone I used to actually get strength to do this..."*

Wearing PPE for female nurses brought its challenges, especially when they menstruating. Nurses were provided with adult diapers, yet they chose not to wear it due to the heat caused by the multiple layers of PPE. Despite the uncomfortableness that they felt in PPE, they went into work each day. After-effects of the PPE was also difficult for the nurses, they reported skin rash, pain on the pinnae of the ear, skin damage on the face, headaches, and even becoming hypertensive. Some of the nurses reported not being able to sleep, weight loss and not being able to hydrate for water loss. These were all physical issues with the PPE, yet the PPE also affected their performance and challenged their nursing skills.

Nurse 2 "seeing *our face in the mirror and then N95 mask full marks on our face, redness than skin peels everywhere"*

Nurse 1 " *everyday I will have sore on my nose and it is really horrible.. my pinna was very painful and at the end of the duty, I usually will have a headache, eventhough I sleep hours together it will not go…"*

Nurses found the goggles and the face shields becoming foggy, and it made their vision blurred. They performed procedures like IV cannulation in multiple layers of gloves with numb hands where they cannot palpate the veins.

Nurse 4 "*we have to give a blind prick, with these three gloves and goggles full of fog and we were like in some situations like I felt like I will remove my gloves."*

Nurse 6 "*challenge for me is that whenever you have the patient you have the gloves and you cannot palpate as before if you want to extract blood."*

The nurses were using vein finders, and they got help from each other. The patients also had multiple samplings, so it became even more challenging for them. One major issue the nurses faced was communicating with the PPE. They found it hard to listen with the PPE and speaking; their voices were not that audible. They had to speak louder and get closer to patients to hear them or to each other. On the other hand, much communication to the other units or outside to the clean area happened through the phone.

Nurse 3 " *people will be coming nearer to us and talk to us as if putting the words in your mouth like that, and we will again be requesting please repeat it again".*

Nurse 6 "*to talk, the other person on the phone, they will not understand what we are talking also and what they are talking also we will not be getting any idea. The communication I think there was no connection between the two ends".*

Nurse 4 "*we have to shout when we are talking to patients and go very close to hear them and we get a lot of phone calls so put the phones in speakers and basically we are shouting…we couldn't hear properly, the communication was really difficult. We have to talk really slowly and loudly…like most of the time we can't hear"*

Later on, IT had developed messenger connection in the computer and laptop systems. Nurses managed their physical fatigue while in PPE, and they observed each other in places like ICU so no one missed any steps of infection control and reminded each other so they would miss on something important like medication. Though it was challenging to work in PPE, nurses rose together to the challenge, as a team, and some nurses believed that their skills also improved and their endurance and ability to work under stress.

Nurse 3 "*I felt like I was ..my skills were improving, like taking arterial blood gases and I felt like if I could do this I could do anything …that was my motivation".*

Nurse 1 "*It really improved the team work, we just felt like we really had each other, working in that situation brought us all together."*

As discussed above, the hospital set up and work process changed for the COVID facility. Nurses had to physically take samples to the runner, get food from the runners, they had to collect the medication and distribute it. The respective departments previously did all of these tasks before. This meant much moving up and down, but then again, due to the clean pathway and contaminated pathway setup, the movement had to be as per those. Nurses had to organize their care, assign one person to get food or medicine and as much as possible try to go in turns and if possible all at one time.

Nurse 5 " *like during the night shift we will have blood investigations for almost all the patients ,so we will collect all together and put everything in one box and take …so it will be easier for the runners and us also…rather doing different trips to here and there".*

Since all nurses found themselves in the same difficult situations, they all worked together with their supervisors and figured out ways that made work more productive. However, the whole process of working was demanding, and the unknown situation had affected all nurses physically and psychologically.

4.6. The psychological impact of working in pandemic

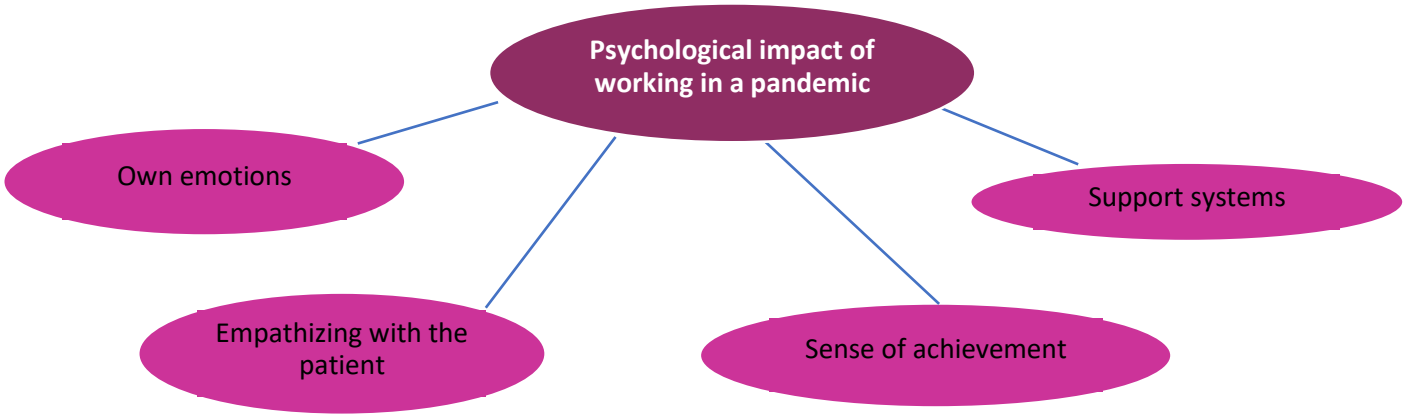


Figure 4.6.1: Theme and clusters for "The psychological impact of working in a pandemic"

Throughout the whole journey of working in the COVID-19 facility, the nurses were on a roller coaster of emotions. . Own emotions did not only affect them, but they were affected by their families concerns, seeing how the patients were isolated from family, how the disease progressed as well. They rejoiced on each recovery and felt depressed with the emotional distraught of patients. In the COVID-19 facility, they became the patient's family, and this role affected them. Clusters such as combatting emotions, empathizing with the patient, support systems from family and colleagues, and sense of achievement formed this theme.

Each individual is different and how he or she deals with his or her own emotions is different. However, in this case, all nurses had fear for themselves and their families. They were caught between the sense of responsibility and the fear of their families. In fact, some nurses left the profession for the sake of their families, and some had to take a stand against their family to continue to work. Engulfed in fear of the unknown, nurses entered the COVID-19 facility, yet the love for nursing and professional responsibility rose above everything else. Most of the hospital nurses were expatriates who feared that if they die, their families would not see them. Their families were disapproving, as this was not their country or people to put their lives at risk.

However, they stood by the decision that this was their calling, their profession and whichever country, race, and ethnicity they serve did not matter to them as long as they served humanity. On the other hand, nurses had to stay separately from their families, which affected them deeply.

Nurse 4 "*In the worst case scenario if anything happens and we are dying, our body will not be taken to our country and it will be buried in this island."*

Nurse 5 *"I have twins, they are 5 years old… so they were not staying with me ,it was very difficult to stay without them. Personally, I was feeling very low…So whenever possible I was going to the other accommodation I stayed outside, most like 6 feet away and I was seeing them."*

Nurse 6 "*I have always been a very family oriented person and I have never been away from my family and it was very difficult for me especially as it was Ramazan"*

Despite such challenges, the nurses made their set and worked without hesitation, attending to what they felt was their call. Some of the nurses avoided the thinking of the worst-case scenarios, others educated themselves and became more careful in their practices to ensure their safety, but the fear remained with them. Fear had gripped the TTH nurses despite being in PPE.

Nurse 4 *" I remember the first time when I got hold of the PPE and I am always searching for any cuts on the PPE ,is my gloves fitted very well .. is my hair out…because you have to minimize the skin exposed."*

Nurse 3 " *nursing practice now it is much more difficult and it takes a lot of passion.It's a combination of sheer hard work and you need to have that sense of urgency to help someone…not all people can do this so..at least we are lucky."*

Nurse 5 " *when my day came to don I was really scared and I was so nervous ,like I,I think I was feeling numb inside, I was very scared but it was not that bad…"*

Nurses managed to console and confront their emotions, but then they witnessed what was happening around them. Nurses had to guard their feelings and comfort the patients when they lost hope.

Nurse 1 "when *patients are awake they are telling like you know...can I talk to my son. can I talk to my wife, and then they are crying and then we have to explain to them like its fine its fine you are going to be...you have to guard your own emotions ,because the patient will tell you what will happen to my son if I die. What will happen to wife. I am very very young. I still have so much to do."*

Empathizing with the patient and being emotionally available had taken a toll on the nurses as well. The patients deteriorated quickly despite efforts, and then not having their family with them was difficult for patients and those caring for them.

Nurse 3 "*emotionally speaking we I think I was imbalanced, I think we were not happy, we not at all laughing during the, those days and we were not speaking … we were like isolated… We kept on sleeping only and return to duty and room, it was the only thing we did during those days, I believe so…"*

Nurse 6 "*because it was like a mental trauma for all of us …I think if you have asked the same question to all of colleagues they will tell. It was really like a huge trauma for everyone."*

Nurse 2 "*intubated patients they are conscious they could not be able to talk ...so we will speak to the relatives…and whatever they will tell we will be communicating to the patient even if they can't respond…so in that I really felt pity on them…sorry."*

The nurses had each other and supported each other throughout these emotions. Nurse Manager's focus was more on nursing work, and staffs were not evaluated for their concerns. There was no pre or post assessment of nurses to address their psychological conflicts though they were proper meals and medical checkup if required. It was an unseen impact on nurses. On the other hand, nurses were caught between doing what is right and doing what is necessary. The nurses often forgot to ensure all measure taken when they felt the patient lives were at risk. All nurses understood that there is no real emergency, and they should be protected first. However, the sense of duty and nursing responsibility took over, then putting themselves first.

Nurse 2 " *as I told you I am passionate and that may not be possible for all the time… there was one emergency intubation during my period we really forgot ourselves… there was slipping off face shield I could remember, but the patient was dying and could not bother taking on the face shield."*

Nurse 3 " *I think the support we got was ok but it could have been much more better…we didn't raise some concerns as I felt it would be misunderstood… they could have arranged sessions to express our feelings, like debriefings"*

Nurse 1 "we *should encourage ourselves; we should think that we can change our mind from the stressful situation. Maybe we can go for a yoga class or something like that which we can do by ourselves rather than depending on the institution"*

It was an internal conflict for nurses to protect themselves so they could go working on or attend immediately, as they have been doing as a nurse. Despite all this, by the end of the time, the hospital was changed back to its normal routine, all nurses felt pride and happy with their work. The nurses felt they are capable of facing any situation and a sense of achievement that they can overcome any obstacle.

Nurse 2 "*as a professional nurse I think it improved not only me but the whole nursing…the whole nursing fraternity…it improves us to become more cautious, to be observant…it improves us to become more an advocate for the patient.."*

Nurse 1 " *I felt like facing the COVID situation…the whole two months is…like very fulfilling…and I will always be grateful for that experience I had…at least now I have that experience as a professional"*

Nurse 3 " *I guess you have to bear in mind the reason why you are a nurse. And care for the patient with or without COVID-19, as that is your passion... it's not your job...nursing is a way of life for me…but you have to be mindful. You have to be very organized and cautious when you are in PPE to minimize any error…"*

Nurse 4 *"two months we had COVID duties and two months were like very hard situation, despite that we were very proud. We were very proud as a team, I felt like I was hero."*

4.7 Conclusion

TTH nurses received preparation by the institute, and they took measures to prepare for patient care. They had to work in a challenging environment, yet nursing care remained the same except

for strict infection control. Psychologically impact of working in the COVID-19 TTH facility was unseen yet persisted, nurses their professional responsibility enhanced, and there was professional growth for nurses.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

Introduction

The aim of this chapter is to, comparatively; review the finding in view of the existing literature. This chapter also acknowledges the limitations of the study. Further, on, the recommendations and implications for practice is discussed. This chapter concludes the research report.

5.1. Discussion

The COVID-19 pandemic situation was not something the world nor the Maldives had comprehended to evolve the way it did. With so much uncertainty around the disease, The Maldives had to face the pandemic in early 2020. TTH was converted to a COVID-19 facility to accommodate the patients with 100-bedded capacity for a two-month duration. This was not something the nurses working in the hospital had expected to happen, and the two-month duration was a completely new experience for the nurses. There had been limited literature on nurses' experience when the study was proposed in August 2020, especially in the Maldivian health system. Thus, this study explored the experiences of TTH nurses in providing nursing care for COVID-19 patients. For that purpose, the researcher formulated the main objectives to examine the preparations carried for nursing care, the changes in routine, and the challenges. The semi-structured questions used in the interview aim to focus on exploring the experiences. Through this study, the researcher was able to explore the nursing experience, and the results are development of themes. These themes are preparation for the new challenge, meeting daily patient needs,

combatting infection control, challenges in caring and rising above, and psychological impact of working in a pandemic.

This study found preparation of care as the first step in the nursing experience of COVID-19 patients. The study also found that nurses felt empowered and safe with the training for proper PPE usage and orientation to the work environment through mock drills and proper guidelines. This is similar to findings evidenced from a descriptive, cross-sectional survey study, where nurses felt their self-confidence built when provided training on caring for patients with pandemic diseases (Lee & Kang, 2019). Many studies have found it important to focus on preparedness of skill and knowledge in pandemic nursing care, assessing knowledge of nurses working in pandemic and making it a priority to sustain it (Al-Dossary et al., 2020; Lababidi et al., 2020; Padula & Davidson, 2020). However, pandemic poses difficulties in training in clinical settings with working nurses. A solution can be through means such as online training. A study conducted by the School of nursing, Maldives National University on online training of nurses on care of COVID-19 patients improved their knowledge, and they developed a better understanding of the situation (Ibrahim et al., 2020). On the contrary, TTH nurses had sessions face to face focused more on infection control practices and selected nurses got ICU basic training. Even though, evidence on assessing knowledge of nurses during pandemic nursing is found essential in other studies (Liang et al., 2020; Semerci et al., 2020), this was not the case in the TTH set up. In this study, the TTH nurses felt the need to acquire more knowledge and each individual had taken steps to learn more about the disease, latest treatments, and management through other means to relieve anxiety and feel better prepared. This could have also been due to the short duration the hospital had to prepare the nurses. Therefore, for a preparation phase it is essential nurses to have

professional experience and training (Cai et al., 2020) and also guidelines of practice (Liang et al., 2020).

The result of this study demonstrated that daily nursing care is similar as in any case with more measures taken for infection control. Nurses spent more time in care due to closer observation, interventions, and vigorous infection control measures with each procedure. These findings are similar to evidence by Bruyneel et al., (2020) where the nursing activity score for COVID-19 patients was more due to the activities such as frequent monitoring. Lucchini et al., (2020) also identified that the nursing activity score was higher when nurses took care of COVID-19 patients. However strict infection control measures were essential for nursing care as evidenced by studies to prevent spread of COVID-19 virus in health care facilities across the globe (Chavez et al., 2020; Khan et al.,2020;Wang et al., 2020).This study found nurses taking strict measures to ensure infection control measures were effectively performed. All the nurses in the study identified the hospital's process flow and the careful steps they took daily to prevent infection prevention. Besides donning and doffing, they practiced conscious hand hygiene measures, disinfecting, and use of disposable items and proper waste segregations. Nurses also had firm belief strong infection control measures were essential to prevent spread of COVID-19 virus within the hospital. Studies indicate the necessity for strong infection control measures during pandemic. Khan et al., (2020) identified patients infected from hospital settings and suggested strong infection control measures. Similarly Wang et al., (2020) also identified effective COVID-19 infection prevention measures include using N95 mask, effective hand hygiene, and disinfection and cleaning strategies within health care facilities. During the pandemic, globally, health care providers have found it challenging to work due to the unavailability of PPE or medical resources (Desroches et al., 2020;

Jazieh et al., 2020; Nguyen et al., 2020). On the contrary, this study found nurses had adequate supply of PPE and required items available for care. The nurses felt privileged and safe that they did not struggle with a lack of resources.

This study found changes in not only infection control practices but also to nurses' normal roles in the hospital. Nurses in the study noted taking over the pharmacist's role in medication delivery, the role of food delivery, transporting samples, and even getting stocks along with skill mix of nurses. Such changes were required for the pandemic situation yet the roles were not clearly defined though guidelines and process flow was shared with the nurses. TTH nurses noted changes that took place once the hospital started functioning as a COVID-19 facility with identified issues in practicality of the situation. The pandemic has brought the need for such changes around the globe. Studies indicate the need to have protocols in place, designating care roles and defining them (Christopher et al., 2020; Peters et al., 2020). Karimi et al.,(2020),conducted a phenomenological study and found that nurses required nurse manager and policymakers to consider the nursing care in the pandemic, develop an advance plan, and provide nurses with the required training to adapt to demands of nursing care in Pandemic. However, with added roles TTH nurses emphasized how other healthcare workers contributed to work with the nursing team as runners or helpers in donning and doffing areas. In this study, it was to combat the nursing shortage and to have supervision of infection control practices. Teams coming together and having managements supports corresponds with studies that emphasize support from organizations under strong nursing leadership (Corless et al., 2018; Turale et al., 2020). Despite these efforts nurses in this study found challenges in providing nursing care.

Nurses faced different challenges in providing nursing care for COVID-19 patients. Like similar other studies the challenges in providing nursing care due to use of PPE was a major finding in this study as well (Fernandez et al.,2020; Karimi et al., 2020). The study findings are in consistent to nurses' experiences elsewhere on how PPE restricted their movement, feeling unable to breathe, unable to feel blood vessels on patients and sweating with multiple layers of PPE. (Karimi et al., 2020; Liu et al., 2020; Tan et al., 2020).On the other hand nurses also felt PPE hindered their communication and perceived lack of connection with the patient as the patient could not see the nurse through the PPE. This is similar to the evidence from a systematic review where communication issues arose due to the infection control practices, such as the use of PPE and minimum contact time with the patient. This study does emphasize the need for communication tools while providing nursing care (Wittenberg et al., 2020). Despite the challenges, the study also found the number of nurses attending to provide care was minimal for infection control measures. This is similar to findings from a systematic review on surgical practice during the pandemic where hospitals implemented in reduction in the number of nurses attending to the patients, increasing the use of PPE and even the use of negative pressure room (Hojaij et al., 2020). Other than physical difficulties, TTH nurses also had psychological issues working in the pandemic

One such concern nurses had was to live away from family. Those nurses living with their family in the TTH facility had to relocate their families and those nurses who were living out of the facility moved to the facility. This was again to ensure more strict infection control measures, yet it resulted in psychological distress among nurses. This action is similar to the intervention in 17 nursing homes to reduce infection control and management (Belmin et al., 2020). The impact of being away from family is evidenced in studies where nurses had been psychologically affected,

leading to more concerning issues such as burn out, suicidal thoughts, and even leaving the profession(Huang et al., 2020; Que et al., 2020; Said & El-Shafei, 2020). TTH nurses also reported other psychological issues where they felt anxious, fear, loss of appetite and even lack of sleep which is evidenced as similar to the psychological issues nurses face globally (Firew et al.,2020; Kackin et al., 2020; Shen et al., 2020). TTH nurses went through stages of emotional adaptations, such as fear, anxiety, for some nurses' acceptance with a sense of achievement. Zheng et al., (2020) found similar evidence where frontline nurses went through three stages of psychological change characterized ambivalence, emotional exhaustion, and energy renewal. A significant finding from the same study was that nurse leaders played a vital role in the psychological adaptations of nurses. However, the TTH nursing experience differs as nurses supported each other and had to adapt on their own psychologically. TTH nurses felt some form of support such as debriefing could have helped those affected. Lessons from Italian front line nurses experience also showed how the nurse leader role had an essential role in managing emergencies and suggested that nurse leaders need to be prepared for the impact of the pandemic on nurses. This study also highlighted how some health care settings developed support systems and listening services for those involved in patient care (Catania et al., 2020).

The findings of this study are similar to the other studies on healthcare workers; nurses experience in taking care of COVID-19 patients with some minor differences. The finding of this study is similar from evidence through a systematic review of nurses' experience in an acute care hospital during the pandemic. The systematic review's findings generated categories as supporting nursing team proving care, acknowledging the physical and emotional impact and the responsiveness of the organization. The review further suggests that nurses require government, policymakers, and

nursing groups to support and actively engage with nurses during and following the pandemic (Fernandez et al.,2020). In this study, TTH nurses felt professional responsibility to provide care for COVID-19 patient, and despite any challenges, they believed it was their duty to take care of COVID-19 patients, and showed a passion for nursing. These findings coincide with a qualitative study on nurses' experiences that found that nurses developed a strong sense of professional responsibility and a high sense of professional identity (Tan et al., 2020). Though most of the findings are similar to other studies, in a qualitative study like this, each individual brings in their perception and experiences as the phenomena they experienced.

5.2. Limitations

This is a descriptive phenomenological study, which seeks to explore the phenomenon. It does not analyses the experience, the thought, or actions shared by the nurses. Therefore, the study does not give insight into why the nurses performed or felt in a certain way but instead emphasized the actual reality of the phenomenon. The sample size for this study was six as data saturation was attained, and this may inhibit rich experience from other nurses the researcher who might have undergone through the phenomena and might be suitable candidates for the study. For the phenomenological study, as the researcher is the instrument and maintains confidentiality, the researcher has to assume all the information shared was the participants' truthful experiences and not hindered in any way. A nurse research student did this study on a time limit, and the participants were also working in a hospital and thus, getting their feedbacks for validation was difficult, and the participants could not provide much information. The experiences of nurses were during the initial phase of the pandemic in the Maldives. Moreover, this experience was the pandemic's most

uncertain time and may not be congruent as the pandemic progresses. The findings represent a snapshot in time and will not capture the changing perceptions and experience that develops with policies and practice changes.

5.3. Recommendations

The finding of the study emphasizes the importance of having a preplan for the functioning of health care facilities. Further, on nursing care of COVID-19 patients requires policies and guidelines .These can establish workflows, pathways guiding health care in COVID-19 facility. Having nursing ratios, better working schedule, taking turns to handle COVID-19 patients and even self-care such as adequate sleep, healthy diet. Findings from this study indicate nurses required ongoing competency skill and knowledge development before working a COVID-19 facility, during and continuous education. Pre evaluation can identify gaps in knowledge and skill. Assessment during and after care can ensure skill and knowledge competency of nurses. Nurses also require ongoing learning for emergency or crisis on a large scale like a pandemic. These can be to learn through mock drills, simulations on performing nursing procedures and building their endurance to work in PPE. Hospitals can adapt learning and teaching techniques using innovative methods that can accommodate all nurses.

The study participants reflect on how they self-managed physically, mentally and did not identify help provided through the health care facility. In fact, nurses felt post debriefing could also help them. Nurses need to ensure their health maintenance with regular health checkup, sustaining healthy lifestyle, seeking help for psychological issues, and adapting to challenges. Preparation for

care includes not just training but also nurses to be mentally and physically healthy. This study found nurses taking measures such as having better sleep schedule, adapting healthy diets. In terms of psychological health TTH, nurses in this study supported each other in pandemic care. It is essential to identify support systems for nurses. Nurse leaders have an essential role in supporting frontline nurses, building their confidence and address their issues. This study brought to light the psychological distress nurses experienced due to the challenges in providing care. It is important for nurses and nursing bodies to acknowledge psychological distress and create support systems for nurses. Nurses have to identify and apply positive coping styles and create stimulating positive emotions in a pandemic or any stressful situation. This will promote their psychological health and create a professionally healthy environment. On the contrary, there was no post evaluation of nurses during their work or after the work in the COVID-19 facility. Such an evaluation can identify gaps in knowledge, practice and identify any concerns nurses face during pandemic nursing. Though nursing itself can be stressful, increased infection control measures brought more challenges.

The findings of the study also indicate the need to have vigilant infection control measures in place. These could include audits and providing feedback, ongoing training on infection as per the recent updates. The findings of the study identified how supervision of infection control measures, especially in donning and doffing, was critical to infection control measure. Another significant finding with the communication issues due to the use of can be to develop tools to communicate or to use technological means to ensure effective communications takes place. Since the findings of the study identify the challenges in working in PPE, nursing care needs adaptations to ensure maintenance of quality of care despite the challenges. These can be using simple tools such as vein

finders, electronic medical records, central monitoring at nurses stations or even online tools for communication within the hospital nursing community , support system tools where concerns can be raised and addressed. The findings of the study indicate that nurses need to self-reflect on their care and identify innovative or productive ways to overcome challenges. Nurse leader's roles develops in the pandemic situation as they have responsibility for ensuring staff competency, stock availability, and feasible process flows. Nurse leaders are also responsible for contribution to preparedness plan on going staff assessments and even supporting staff.

Further, on nursing in a health care crisis also calls upon an implementable preparedness plan. These would first include assessing the existing nursing strengths and role definition. The findings support having guidelines and process flows with in the system. Nurses also need to understand how the process flow works and be able to alert needs to change in practice as it arises. The plans for pandemic nursing care should include the workforce and the tools used for providing nursing care. The finding of this study supports the importance of having enough stocks for crisis care. The documentation of records through electronic records made easier access to those in the COVID-19 ward and those outside to communicate. Thus ensuring effective electronic medical records systems for documentation is also an important aspect of pandemic nursing.

Further, on issues with nursing staffing, sustaining, training, and nursing empowerment is essential as nurses role becomes more demanding and evolves in a pandemic. Nurses in this study showed immense professional responsibility and passion for nursing that sustained them during the pandemic to serve the community. However, the need to develop nurses, retain them in the profession is recommended. This study identified the importance of nursing education in crisis.

Nurses need to focus on continuous nursing education and develop initiative to learn and adapt to new situations. Skilled and knowledge will empower nurses and ensure the quality of care. TTH nurses emphasized how they prior training and self-learning assisted in pandemic nursing care.

Table 5.1 below shows the summary of the recommendation from this study.

Preparation for care	Addressing challenges and developing care	Developing nurses for future pandemics
Metal and physical preparation of nurses. Incorporating healthy lifestyles, developing positive self-image, emotions and coping abilities	Evaluating skill and knowledge during pandemic nursing care.	Empowering nurses through skill, knowledge development, and build cultures supporting continuous nursing education.
Assessing nurses skills and knowledge prior to training for pandemic nursing care.	Adopt and innovate tools to nursing such as communication tools, use of nursing pathways, use of simple tools such as vein finders, using electronic medical records, multidisciplinary approaches to nursing education for pandemics	Post evaluation of nurses and nursing care to adapt and develop better guidelines for pandemic nursing care.

Contributing to development of policies, guidelines, care pathways and familiarizing before providing care.	Ensure better infection control practices, supervision and strengthen infection control practices. Use of proper infection control practices, strict hand hygiene, proper waste segregation.	Create support systems for nurses and motivate nurses through supportive leadership.

5.4. Conclusion

This study was conducted to explore the Nursing experience in the TTH COVID-19 Facility of the Maldives. The researcher has tried to identify the preparedness for care, the normal routine changes, and the challenges. The findings of the study was the development of themes; “Preparation for the new challenge”, “Combating Infection control”, “Meeting daily patient’s needs” ,” Challenges in caring and rising above” and “ The psychological impact of working in a pandemic”. These themes were similar to findings from other studies on health care workers during a pandemic. The findings of the study suggest the need to have the better continuous skill and knowledge development of nurses, to support nurses with psychological issues and ensure efficient infection control practices. Further on polices and guidelines ensures effective nursing care. Nurses and nurse leaders have a role in ensuring these polices are practically feasible and effective, alert health systems in need to change them accordingly. However, the findings are limited to TTH nurses' experiences in the TTH COVID-19 facility during the early phase of the pandemic in the country. The findings gave insight into the phenomena of inquiry, bringing out

how nurses worked to meet patients' daily needs, how they combat infection control, and prepared for the daily work.

Nurses had never worked in a pandemic situation in the Maldives and required multiple level of preparedness and self-development to overcome challenges. Nurses and nursing bodies need to learn from such experiences and ensure nursing empowerment and support for the frontline nurses. The findings of the study recommend more research on certain aspects of nursing such as knowledge, skill, physical and mental impact of working in pandemic, infection control practice, nurse leadership etc. Further studies are recommended to understand and analyze the experiences of giving nursing care; these can focus on knowledge gained in the pandemic, self-management strategies to work in a pandemic, critical thinking in pandemic, infection control strategies, nursing procedures etc.

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Appendix A

Semi-Structured Interview questions for the research study: The experiences of Treetop Hospital (TTH) nurses' in the covid-19 pandemic in the Maldives

Date:

Time duration: Interview code number:

Aim of the study: To explore the experiences of TTH nurses in providing care for COVID19 patients

- Following are the semi-structured questions for the interview.

1. Describe how you prepared in relation to caring of COVID19 patients that were going to be admitted?

2. Explain the usefulness of the preparation done in taking care of covid-19 patients?

3. Explain how the nursing care of covid-19 patients differs from that of regular patients?

4. Describe how your daily nursing routines changed with regard to caring of covid-19 patients?

5. Describe the positive aspects of providing nursing care to the covid-19 patients?

6. Describe the challenges in taking care of covid-19 patients and how you overcame it?

Appendix B: Ethical forms

Information for Participants

You are invited to participate as a subject in the research project: Experiences of TTH nurses in the COVID-19 pandemic in Maldives.

The aim of this project is to explore the experiences of TTH nurses in providing care for COVID19 patients

Your involvement in this project will be to take part in the verbal interview of estimated 60 minutes and the right to withdraw from the project at any time, including withdrawal of any information provided without any penalty. With the participant approval the interviews maybe audio recorded to capture accurate data. The data gathered will be saved in password-protected computer and stored for 5 years, after which it is deleted. The data will only be available to the researcher and supervisor and upon request presented to the participants.

As a follow-up to this investigation, you will be asked to give feedback to the transcribed interview for accuracy and the final report will be made available to the participants.

There are no risks involved in taking part of this study and it focuses on the nursing experience of COVID-19 patients.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: the identity of participants will not be made public without

their consent. To ensure anonymity and confidentiality, each participant's identity will be kept anonymous and none of the interview data will reflect to any individual.

The project being carried out as a requirement for Masters of Nursing by Khadhiyya Simany under the supervision of Ms.Asiya Ibrahim, who can be contacted at School of Nursing. We will be pleased to discuss any concerns you may have about participation in the project.

The Maldives National University Ethics Committee, Treetop Hospital research committee, and National Health Research Committee has reviewed and approved the project.

[Researchers name: Khadhiyya Simany]

[Contact Address: Hulhumale flat 143.2.03]

[Date: 08.20.20]

CONSENT FORM

[Research Project: Experiences of TTH nurses in the COVID-19 pandemic of Maldives.]

I have read and understood the description of the above-named project. On this basis I agree to participate as a subject in the project, and I consent to publication of the results of the project with the understanding that anonymity will be preserved.

I understand also that I may at any time withdraw from the project, including withdrawal of any information I have provided.

I note that the project has been reviewed ***and approved*** by The Maldives National University Ethics Committee.

Name (please print) …….

Signature:

Date:

Appendix :C Ethical clearance letters from TTH and National health research council

TREE TOP HOSPITAL
Excellence in Healthcare

Tree Top Hospital
A Division of Tree Top Health Pvt. Ltd.
Lot 10608, Dhumbuti Magu, Hulhumale', 23000, Maldives.
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GENERAL CONSENT FOR NO OBJECTION LETTER FROM THE ORGANIZATION /INSTITUTE WHERE RESEARCH DATA WILL BE COLLECTED

To whomsoever it may concern

This is to certify that Tree top hospital; Maldives has No objection in allowing Charge nurse, Ms.KHADHIYYA SIMANY(A151474) to use Interview data of TTH nurses who took care of COVID-19 patients in the hospital. The Research proposal has been presented in the Hospital Research and Education committee and was duly approved by committee members on date.....31/08/2020.. c) The Researcher has ensured that confidentiality of the data is well maintained. The Researcher has submitted a full report to Management which was duly reviewed by Research and education committee.

Topic of Study - Experiences of TTH nurse's in the COVID-19 pandemic in Maldives

Principal Investigator- -KHADHIYYA SIMANY(Staff ID: 00939),CHARGE NURSE NICU

Total Sample Size -8-10 Participants...

Type of data used for study : Interview transcripts

Type of study – Phenomenological descriptive research

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David S Feinberg
Chief Executive officer /Acting
Medical Director

.....

Renee Janse Van Rensburg
Director of Nursing

بسم الله الرحمن الرحيم

National Health Research Council
Ministry of Health
Male'
Republic Of Maldives

19th November 2020

Khadhiyya Simany
Male'
Republic of Maldives

Approval of Research Proposal

Title of Study Proposal: Experiences of TTH nurses in the COVID-19 pandemic in Maldives

Researcher: Khadhiyya Simany

Dear Khadhiyya Simany,

The members of the National Health Research Council have reviewed your research proposal "Experiences of TTH nurses in the COVID-19 pandemic in Maldives". Following the review, the proposed study has been approved by the council.

The research registration number is NHRC/2020/021.

It is requested that the final report of the research and research abstract be forwarded to the Ministry of Health for future reference and use. Please also note that researchers are required to submit a "Yearly Monitoring Form" to NHRC for review by NHRC on progress of researches conducted in Maldives.

For the Chair of National Health Research Council (NHRC)
Aminath Shafia

MINISTRY OF HEALTH
Male', Republic of Maldives

Tel: (960) 3328887, Fax: (960) 3330699, Email: ppd@health.gov.mv

Appendix D: Research timeline

August								
week1	9	10	11	12	13	14	15	Writing of proposal
week 2	16	17	18	19	20	21	22	Finalizing proposal for MNU ethical application and TTH ethical application
week3	23	24	25	26	27	28	29	Presenting proposal to TTH research committee
week 4	30	31	**September**					
			1	2	3	4	5	Writing up of introduction: Chapter 1
week 5	6	7	8	9	10	11	12	Writing up of introduction: Chapter 1 and submission of NHRC proposal
week 6	13	14	15	16	17	18	19	Literature review: Chapter 2
week 7	20	21	22	23	24	25	26	Literature review: Chapter 2
week 8	27	28	29	30	**October**			
					1	2	3	Literature review: Chapter 2
week9	4	5	6	7	8	9	10	Methodology: Chapter 3
week10	11	12	13	14	15	16	17	Methodology: Chapter 3
week 11	18	19	20	21	22	23	24	Reviewing Chapter 1,2,3
week 12	25	26	27	28	29	30	31	Planning with TTH nursing department of possible participants and place for interviewing
November								
week 13	1	2	3	4	5	6	7	Reviewing the feedback for NHRC proposal and resubmission, Finalizing chapter1,2,3
week 14	8	9	10	11	12	13	14	

week 15	15	16	17	18	19	20	21	Data collection: Pilot interview(NHRC approved on 20.11.20)
week 16	22	23	24	25	26	27	28	Data collection: Interviewing and transcribing
				December				
week 17	29	30	1	2	3	4	5	Data collection: Interviewing and transcribing
Week 18	6	7	8	9	10	11	12	
Week 19	13	14	15	16	17	18	19	
Week 20	20	21	22	23	24	25	26	Data analysis
Week 21	27	28	29	30	31	January		
						1	2	
Week 22	3	4	5	6	7	8	9	
Week 23	10	11	12	13	14	15	16	
Week 24	17	18	19	20	21	22	23	
Week 25	24	25	26	27	28	29	30	Data analysis: data reviewing and validation
Week 26	31	February						
		1	2	3	4	5	6	Report writing
Week 27	7	8	09	10	11	12	13	Report writing
Week 28	14	15	16	17	18	19	20	Final report and defense presentation: minor thesis and dissemination