UNDERSTANDING THE PSYCHOLOGICAL EXPERIENCE AND PERSPECTIVE OF FRONTLINE HEALTHCARE WORKERS AND PSYCHOLOGICAL FIRST AID PROVIDERS DURING THE COVID-19 PANDEMIC: A QUALITATIVE STUDY

DR HEMAVATHI A/P SHANMUGAM

DISSERTATION SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PSYCHOLOGICAL MEDICINE

DEPARTMENT OF PSYCHOLOGICAL MEDICINE
FACULTY OF MEDICINE UNIVERSITY OF MALAYA
KUALA LUMPUR

2021

Universiti Malaya

PREFACE

UNIVERSITI MALAYA

ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: HEMAVATHI A/P SHANMUGAM

Matric No: MGC170007

Name of Degree: MASTER OF PSYCHOLOGICAL MEDICINE

Title of Project Paper/Research Report/Dissertation/Thesis ("this Work"):

UNDERSTANDING THE PSYCHOLOGICAL EXPERIENCE AND PERSPECTIVE OF FRONTLINE HEALTHCARE WORKERS AND PSYCHOLOGICAL FIRST AID PROVIDERS DURING THE COVID-19 PANDEMIC: A QUALITATIVE STUDY

Field of Study: PSYCHIATRY

I do solemnly and sincerely declare that:

(1) I am the sole author/writer of this Work;

(2) This Work is original.

(3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyrighted work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;

(4) I do not have any actual knowledge, nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyrighted Work;

(5) I hereby assign all and every right in the copyrighted to this Work to the University of Malaya (UM), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;

Universiti Malaya

(6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature Date

Subscribed and solemnly declared before,

Witness's Signature Date

Name: Designation:

Universiti Malaya

CERTIFICATION

We hereby certify that the candidate, Dr. Hemavathi a/p Shanmugam has carried out this research project, and to the best of our knowledge this dissertation is entirely her work.

Principal Supervisor,

Dr Benedict Francis

Senior lecturer and Psychiatrist,

Department of Psychological Medicine,

University Malaya Medical Centre, Kuala Lumpur

Co-Supervisor,

Associate Professor Dr Ng Choong Guan

Senior lecturer and Consultant Psychiatrist,

Department of Psychological Medicine,

University Malaya Medical Centre, Kuala Lumpur

Universiti Malaya

ABSTRACT

Understanding the psychological experience and perspectives of frontline healthcare workers and Psychological First Aid providers during the COVID-19 Pandemic: A qualitative study.

Background: The growing number of coronavirus disease 2019 (COVID-19) cases since December 2019 has led to burnout and psychological distress among the frontline healthcare workers (HCWs). In Malaysia, remote Psychological First Aid (PFA) via teleconsultation was launched to ameliorate the mental health distress among HCWs.

Objectives: The purpose of this study was to understand the psychological experience and perspective of frontline HCWs and PFA providers as a guide in improvising the delivery of the remote PFA service during the COVID-19 pandemic.

Methodology: A descriptive qualitative research design based on semi-structured individual in-depth interviews were conducted with a total of 30 participants from the University Malaya Medical Centre (UMMC), Malaysia consisting of 20 frontline HCWs and 10 PFA providers. The study assessed frontline HCW's experience in handling their duties, the psychological stress they experienced, their coping strategies as well as their understanding regarding psychological first aid services. As for the PFA providers, we assessed their experience in administrating PFA, the challenges they encountered and their strategies to improve the PFA service. Transcripts were analyzed using Colaizzi's phenomenological analysis method.

Results: Three themes emerged from the data analysis of frontline HCWs, where they reported negative emotions in the early stages such as fear, uncertainty, fatigue, and

Universiti Malaya

sadness followed by adaptations of healthy coping strategies. However, frontline HCWs lacked awareness and showed apprehension to PFA service. As for PFA providers, the three themes recorded were challenges associated with remote PFA, administrative difficulties due to lack of PFA guidelines and the need for modification of the existing PFA services.

Conclusion: Our study suggests that frontline HCWs would benefit from early psychological assessment and that existing PFA needs to be improvised with follow-up psychosocial interventions due to the ongoing nature of the pandemic.

Keywords: COVID-19; frontline healthcare workers; psychological first aid, PFA providers.

Universiti Malaya

ABSTRAK

Memahami Keperluan Psikologi dan Perspektif Petugas Kesihatan Barisan Hadapan dan Penyedia Bantuan Awal Psikologi semasa Pandemik COVID-19: Kajian Kualitatif

Latarbelakang: Peningkatan jumlah kes penyakit koronavirus 2019 (COVID-19) sejak Disember 2019 telah menyebabkan tekanan psikologi dalam kalangan petugas kesihatan barisan hadapan. Di Malaysia, bantuan awal psikologi (PFA) jarak jauh melalui telefon atau atas talian telah dilancarkan untuk mengurangkan tekanan psikologi di kalangan petugas kesihatan.

Objektif: Tujuan kajian ini adalah untuk memahami pengalaman psikologi dan perspektif petugas kesihatan barisan hadapan dan penyedia bantuan awal psikologi sebagai panduan dalam memperbaiki penyampaian perkhidmatan PFA jarak jauh semasa pandemik COVID-19.

Kaedah kajian: Satu reka bentuk penyelidikan deskriptif berdasarkan temuduga individu secare mendalam separa berstruktur telah dijalankan dengan seramai 30 peserta dari Pusat Perubatan Universiti Malaya (UMMC), Malaysia yang terdiri daripada 20 petugas kesihatan barisan hadapan dan 10 penyedia PFA. Kajian ini menilai pengalaman petugas kesihatan barisan hadapan dalam mengendalikan tugas mereka, tekanan psikologi yang mereka alami, strategi mengatasi tekanan psikologi serta pemahaman mereka mengenai perkhidmatan pertolongan cemas psikologi. Bagi penyedia PFA, kami menilai pengalaman mereka dalam mengendalikan PFA, cabaran yang mereka hadapi dan strategi mereka untuk meningkatkan perkhidmatan PFA.Transkrip dianalisis menggunakan kaedah analisis ‘Colaizzi's phenomenological’.

Universiti Malaya

Keputusan: Tiga tema muncul dari analisis data petugas kesihatan barisan hadapan, di mana mereka melaporkan emosi negatif pada peringkat awal seperti ketakutan, ketidakpastian, keletihan, dan kesedihan diikuti dengan adaptasi strategi mengatasi tekanan yang sihat. Walau bagaimanapun, petugas kesihatan barisan hadapan tidak mempunyai kesedaran dan menunjukkan kekefahaman kepada perkhidmatan PFA. Bagi penyedia PFA, tiga tema yang direkodkan adalah cabaran yang dikaitkan dengan PFA terpencil, kesukaran pentadbiran kerana kekurangan garis panduan PFA dan keperluan pengubahsuaian perkhidmatan PFA sedia ada.

Kesimpulan: Kajian kami menunjukkan bahawa petugas kesihatan barisan hadapan akan mendapat manfaat daripada penilaian awal psikologi dan PFA sedia ada perlu diperbaiki dengan intervensi psikososial susulan kerana sifat berterusan pandemic ini.

Kata kunci: COVID-19; petugas kesihatan barisan hadapan; bantuan awal psikologi, penyedia PFA.

Universiti Malaya

ACKNOWLEDGEMENTS

First and foremost, I would like to express my sincere gratitude to my principal supervisor, Dr. Benedict Francis, for allowing me to conduct this study and for his continuous guidance throughout the research process. I am also thankful to my co-supervisor, Assoc Prof Ng Chong Guan, for sharing his expert opinions that were valuable in running the study.

I am thankful to all the frontline healthcare workers who spared me their precious time to be interviewed for this study. I sincerely appreciate and admire the healthcare workers for continuously risking themselves in the frontline to battle the COVID-19 pandemic.

I want to express my appreciation to the Psychological First Aid team, UMMC led by Prof Ahmad Hatim Sulaiman for their genuine efforts in supporting our healthcare workers during this unprecedented time.

I am also thankful to my clinical and academic supervisors, Dr. Siti Hazrah Selamat and Assoc Prof Rusdi Abd Rashid, for their encouragement throughout my master's journey. Lastly, I am ever grateful to my family and friends for being my healthy support system all these years.

Universiti Malaya

TABLE OF CONTENTS

Universiti Malaya

Universiti Malaya

Universiti Malaya

Universiti Malaya

LIST OF FIGURES

LIST OF TABLES

Universiti Malaya

LIST ABBREVIATION

Abbreviation	Full Text
COVID-19	Coronavirus disease 2019
HCW	Healthcare worker
PFA	Psychological First Aid
rPFA	Remote Psychological First Aid
UMMC	University Malaya Medical Centre
MERS	Middle East respiratory syndrome
SARS	Severe Acute Respiratory Syndrome
PPE	Personal Protective Equipment.
MCO	Movement Control Order
IDI	In-depth Interview
CDCU	Central Data Collation Unit
DASS	Depression, Anxiety and Stress Scale
CBI	Copenhagen Burnout Inventory
OSHE	The occupational safety& health, and environmental division

Universiti Malaya

LIST OF APPENDICES

Universiti Malaya

CHAPTER 1: INTRODUCTION

1.1 Background and prevalence

A wide range of viruses, including Middle East Respiratory Syndrome and Severe Acute Respiratory Syndrome, caused respiratory and intestinal infections in both animals and humans (SARS). Due to the new virus's similarity with the SARS and MERS viruses, SARS coronavirus 2, abbreviated as SARS-CoV-2, was named, and its respiratory disease was termed COVID-19 (coronavirus disease 2019). The first case of COVID-19 was reported in December 2019 in Wuhan, China (Du Toit 2020). However, no one expected the coronavirus outbreak to evolve so quickly into a deadly pandemic within a short time frame.

Although COVID-19 spreads rapidly from person to person, it was initially assumed that COVID-19 spread from animal to human through direct contact with intermediary hosts. Consumption of infected, uncooked, or semi-cooked meat can also lead to transmission of the virus. The virus is transmitted by asymptomatic infected individuals and symptomatic individuals via airborne oral fluid droplets.(Singhal 2020).

Some individuals may manifest milder symptoms of COVID-19 such as myalgia, headache, flu, or sore throat. However, certain high-risk individuals may develop severe pneumonia, multi-organ failure, and septic shock which can cause death. (Huang et al. 2020). Prevention measures like wearing masks, handwashing, social distancing, avoiding crowded places, early case detection, prompt contact tracing, and quarantine were found to reduce virus transmission. In the initial stages of the pandemic, there was

Universiti Malaya

no specific antiviral treatment, hence management of COVID-19 patients were mainly symptomatic and supportive. (Adhikari et al. 2020)

COVID-19 spread rapidly from China to worldwide and was listed as a pandemic by the WHO on 12th March 2020. By the 31st of May 2020 WHO reported, there were 5 934 936 cases of COVID-19 infection and 367 166 deaths worldwide. The Southeast Asian Nations Association (ASEAN) countries, including Malaysia, were not spared from COVID-19.

The first case of COVID-19 in Malaysia was identified on 25th January 2020, involving three Chinese nationals who had travelled from Singapore. They were treated in Hospital Sungai Buloh. The Ministry of Malaysia subsequently developed standard operating guidelines for COVID-19 and allocated designated hospitals in each state to manage and screen for COVID-19 cases. (Elengoe 2020).

Consequently, the government implemented a Movement Control Order (MCO) on 18th March 2020 to prevent the rapid transmission of COVID-19 in Malaysia, which was in place until 9th June 2020. During the MCO, strategies were implemented to preserve social distancing, such as border closure, the ban on mass gathering, and only allowed the operation of essential services. (Elengoe 2020).

However, by the 31st May 2020, the amount of confirmed COVID-19 cases in Malaysia slowly rose to 7762, and the fatality was 115. (World Health 2020). The increasing number of COVID-19 infection cases and the need for mass screening of active clusters inevitably led to burnout and mental health distress among the frontline HCWs (Minihan et al. 2020).

Universiti Malaya

On the front lines, HCWs play an essential role in delivering patient care during the COVID-19 pandemic. Unfortunately, the WHO estimated that more than 20,000 HCWs had been infected with COVID-19 in 52 countries by April 2020. (WHO 2020). The Ministry of Health, Malaysia, reported that as of 11th April 2020, a total of 224 HCWs were positive for COVID-19. However, 80% of such HCW cases were acquired mostly in community settings. (Nienhaus and Hod 2020)

HCWs can contract the virus in a work setting or in their community especially through infected family members. The late recognition of COVID-19 cases, non-adherence to infection precautions such as handwashing, working at high-risk departments, and improper use of personal protective equipment (PPE) were found to be factors that increased the risk of workplace infection. (Ran et al. 2020)

Since HCW's managing COVID-19 patients have been subjected to burnout, fatigue, psychological distress, and stigmatization it is crucial to make efforts to maintain HCW's physical and mental health. During the pandemic, psychological distress among HCWs can have adverse effects on the delivery of patient care and healthcare systems' capacity to respond to increasing demands. The WHO, therefore, recommended that infection prevention measures be accompanied by occupational health and safety measures such as providing adequate staffing, practicing clinical rotation, and respecting the rights of the HCWs in order to promote a healthy work environment and reduce the risk of burnout. (WHO 2020).

Early psychological intervention and support have been proven to restore confidence, alleviate mental symptoms and prevent post-trauma stress disorder (PTSD).

Universiti Malaya

(Cheng et al. 2020) Hence, many countries started to implement strategies to secure the mental wellbeing of frontline HCWs during the COVID-19 pandemic, which included counseling services (Chersich et al. 2020, Ehrlich, McKenney, and Elkbuli 2020, Mason DJ 2020).

The world health organization has suggested providing psychological first aid to those affected by a disaster, especially HCWs. The Malaysia Ministry of Health has also published guidance on "Mental health and psychosocial support (MHPSS) for COVID-19 patients and HCWs caring for them (MOH 2020). Psychiatrists, clinical psychologists, and counselors been managing these services to assist HCWs and the public in dealing with the psychological distress and stigmatization they encountered during the COVID-19 pandemic.

PFA is an evidence-based framework supporting resilience in individuals, communities, and organizations especially following a crisis event (Snider, Schafer, and Ommeren 2011). The essential elements of PFA include safety, self, and community-efficacy, calming, connectedness, and hope to help restore the client's social and behavioral functioning (Hobfoll et al. 2007). As social distancing is imperative during a pandemic, the traditional PFA method of looking, listening, and linking may not be feasible.

In Malaysia, remote PFA was launched to help ameliorate the mental health distress of frontline HCWs, in synergism with tele-counseling and hotline services (Abdullah et al. 2020, Francis et al. 2020). Due to direct contact restriction to minimize exposure during the COVID-19 pandemic, PFA was hence administered remotely by the providers. HCWs who required PFA were recruited via an online referral system. The

Universiti Malaya

providers subsequently contacted them via phone call or email for consent. PFA sessions were conducted via phone or online platform and modified to 'reflective listening and linking.

1.2 The rationale of the study

To our knowledge, there were no prior studies conducted regionally describing the psychological experience of frontline HCWs and PFA providers in a qualitative way. More systematic data on the psychological impact of COVID-19 on HCWs' mental health is urgently needed, particularly in the local settings, given the growing number of COVID-19 cases. Therefore, it is worth exploring the experience of HCWs in managing patients through qualitative research during this unpredictable and ongoing pandemic. Once we identify the psychological needs of the frontline HCWs, it is possible to improvise further our strategies in providing mental health support. Our frontline HCWs can then continue doing their best to combat the pandemic with less psychological stress and better mental health.

Besides, there is still limited PFA administration data during pandemics, particularly in the Southeast Asia region. Similarly, in Malaysia, PFA administration and efficacy have not been adequately investigated, so further qualitative research helps provide more in-depth insight into their challenges. The study also aims to serve as a guide in improvising the delivery of the remote PFA service during the COVID-19 pandemic.

Universiti Malaya

The University of Malaya Medical Centre in Kuala Lumpur is also a designated hospital for COVID-19, and PFA administration has been conducted remotely since the pandemic started. Hence, the research site was appropriate and relevant for our qualitative research. This research can also provide the much-needed baseline information for the Klang Valley frontline HCW population and guide future local research in this field.

Universiti Malaya

CHAPTER 2: LITERATURE REVIEW

2.1 Psychological Impact of previous Outbreak on HCWs

Outbreaks of contagious diseases are known to have an impact on the mental health of HCWs, and the psychological sequelae were seen during the 2003 outbreak of severe acute respiratory syndrome (SARS). Since SARS was first reported in November 2002 in Guangdong's Chinese province, it has spread rapidly worldwide, resulting in 8,096 cases and 774 deaths. (Shaw 2006) . The high infectivity, the virus's uncertain character, and the associated morbidity and mortality had placed everyone in a state of great panic.

Previous studies conducted during the SARS outbreak in 2003 found significant psychological symptoms were present in 18% –57% of HCWs, which included high depression, anxiety, and post-traumatic stress scores. (McAlonan et al. 2007) The essential variables that could account for distress were fear of contagion, quarantine, worries regarding family members, stressful work environment, perceived stigma, and loss of control or vulnerability. (Wong et al. 2005).

A study in Hong Kong found that nurses who spent more time and had more frequent physical contact with patients reported a higher level of psychological stress compared to other healthcare professionals. Besides, younger HCWs with less disaster management experience or infection precautions measures were found to be more stressed out during the SARS outbreak. (Tam et al. 2004). Also, HCWs have reported being stigmatized and rejected in their neighborhood as they work in high-risk healthcare settings. (Bai et al. 2004)

Universiti Malaya

The SARS outbreak has highlighted the emotional and occupational vulnerabilities of healthcare workers. Healthcare organizations thus had to review the existing measures and practices against infectious diseases and provided psychosocial support for their healthcare workers. (Chan and Huak 2004) Studies have shown that healthcare workers have benefited from practical interventions that demonstrate substantial support from their organizations. (Maunder et al. 2003)

Nevertheless, the HCWs also learned some positive lessons during the SARS outbreak such as increased teamwork, greater community sense, and more appreciation for work-life balance. (Nickell et al. 2004)

2.2 Psychological impact of current COVID-19 pandemic on HCWs

Recent research on the psychological impact of the Covid-19 pandemic on HCWs showed similar findings. A cross-sectional study on the mental health of medical and nursing staff conducted in Wuhan showed that 22.4% had moderate mental health symptoms while another 6.2% had severe symptoms (Kang, Ma, et al. 2020). A multinational, multicentered survey participated by 906 healthcare workers found a significant link between the prevalence of physical symptoms and psychological outcomes among healthcare workers during the COVID-19 outbreak. (Chew, Lee, et al. 2020).

Another multicentered study involving Malaysia and the Asia Pacific region reported that the prevalence of psychological adversity among healthcare workers among the participants was independent of the number of COVID-19 cases within each

Universiti Malaya

country. For example, despite having the lowest number of cases, Vietnam showed the highest prevalence of post-traumatic stress scores, suggesting that regardless of the burden of the disease, health workers from all countries are vulnerable to psychological distress due to the COVID-19 pandemic. (Chew, Ngiam, et al. 2020)

Frontline HCWs involved in the direct management of patients with COVID-19 were reported to have a higher risk to develop symptoms of depression, anxiety, insomnia, and distress (Lai et al. 2020). Frontline HCWs were always at risk of contracting the infection while handling COVID-19 patients. In the early stages, many HCWs in China were not adequately prepared to handle the infectious disease, faced a shortage of personal protective equipment (PPE), and lacked the workforce to cope with the increasing number of patients. Moreover, deploying HCWs to a new environment, stigmatization and social isolation have all led to more psychological stress. In addition to physical exhaustion, psychological stress has challenged the HCW's immune system and made them susceptible to COVID-19 infection (Zhang et al. 2020). Besides, frontline HCWs were also reported to experience psychological distress due to fear of infecting their family members from workplace exposure, witnessing colleagues who became critically ill with COVID-19 infection, and limited access to mental health services. (Ayanian 2020).

A New York hospital survey also found that nurses were significantly affected by the pandemic and reported higher rates of positive acute stress that they spend more time providing direct patient care, consistent with findings during the SARS outbreak. (Shechter et al. 2020). They also found that the other possible predisposing factors for depressive symptoms observed in HCWs working in COVID‐19 were found to be female and single.

Universiti Malaya

Another study in Italy showed that HCWs working in COVID wards reported higher levels of depressive symptoms and post-traumatic stress scores than those working in other healthcare units as they were struggling to keep patients alive. HCW's mental health can also be negatively affected by seeing death and feeling powerless over the level of patient death. (Di Tella et al. 2020)

A recent study also found that the HCWs also faced societal stigma while handling infectious diseases like COVID-19, which led to higher rates of stress and burnout among them (Ramaci et al. 2020). Besides, quarantined HCWs in their local neighborhoods were more likely to report stigmatization and rejection from the public. Moreover, being separated from a team, they are used to work in close contact, might add to feelings of isolation in the HCWs. These factors could further exacerbate the psychological distress. (Brooks et al. 2020) Furthermore, the high risk of COVID-19 related deaths of Italian HCWs could be a possible reason for the perceived fear they faced. (Modenese and Gobba 2020).

The moral injuries of HCWs would be another area of concern, and it is defined as a form of psychological distress resulting from, or the absence of, actions that violate the moral or ethical code of someone. The United Kingdom described moral injuries as a severe threat to HCWs' mental health; intense feelings of shame, guilt, or disgust due to the lack of available staff and resources. (Williamson, Murphy, and Greenberg 2020). A study involving Italian physicians reported that they could not follow the usual standard of care during the pandemic. Patients have been waiting for an intensive care bed for many hours, and elderly patients have not been resuscitated; they have died alone without adequate palliative care, while their families have been notified by phone. (Chirico,

Universiti Malaya

Nucera, and Magnavita 2021).

These adverse effects of mental health may result in harmful behaviors, such as alcohol, tobacco, or drug abuse, which may reduce the ability of HCWs to be productive. Moreover, these undesirable behaviors have also be linked to family breakdown and domestic abuse, which may further intensify depression, anxiety, and stress. Studies previously found that HCWs with mental health problems may have high absenteeism or presentism (turning up for work when unable to function optimally. (Salvagioni et al. 2017)

2.3 Protecting HCWs during COVID-19 pandemic

As our HCWs continue to battle the COVID-19 pandemic, they need continuous support to overcome any adverse effects on their physical or mental health. Although reducing the spread of the virus, saving lives, and treating infection have been the primary focus of health care systems, awareness should also be paid to lowering the HCWs' work-related burden. The World Health Organization (WHO) emphasized taking all necessary measures to ensure occupational safety as the first step in protecting HCWs during the pandemic, mainly by providing sufficient PPE to healthcare or other personnel caring for suspected or confirmed patients. (WHO 2020)

Several approaches have been suggested to support the wellbeing of frontline HCWs during outbreaks of disease. These include regular breaks, a healthy diet, physical activity, adequate rest and sleep, peer support, family support, avoiding unhelpful coping strategies such as substance use, and limiting social media use. Furthermore, keeping our HCWs updated on the recent info, such as guidelines or

Universiti Malaya

treatments may reduce their uncertainties and negative emotions. (Chen et al. 2020) Other suggested strategies that healthcare providers could implement include rotating employees from higher to lower stress positions, partnering trained and less experienced employees (buddy systems), allowing break times, flexible schedules, and providing social support. (Pollock et al. 2020)

Another suggestion was to create reserves for HCWs to help those on duty before they face burnout or mental health symptoms that may interfere with the quality of healthcare. Some suggestions include incorporating the hospital system with privately registered nurses, the re-employment of recently retired HCWs, and the addition of final year medical students. (Ehrlich, McKenney, and Elkbuli 2020). The local government of Wuhan, China, has implemented similar policies to address these issues. (Kang, Li, et al. 2020) Most general hospitals have established a shift system in Wuhan to allow frontline HCWs to rest and take turns in high-pressure situations. Moreover, HCWs infected with COVID-19 will be identified as having work-related injuries and given continuous support. Also, new HCWs have been sent to Wuhan from other states as a measure to help reduce the strain on existing HCWs.

Nevertheless, our HCWs' mental health needs must be addressed with the same importance as their physical health. Resources have traditionally been allocated to support staff after they have developed mental health symptoms, such as providing rapid access to counseling and psychiatry referral. However, a shift of focus is essential currently as prevention measures are far more important than cure. (Walton, Murray, and Christian 2020).

Universiti Malaya

2.4 Psychological First Aid during the COVID-19 pandemic

Psychological first aid has been proposed to provide necessary emotional and practical support to people affected by their stressful working environment. The interventions aim to strengthen and maintain personal resilience, enable workers to cope with their experience and enhance their work performance, and continue to contribute to the workplace. (Robertson et al. 2016)

The core action principles of PFA as described by the World Health Organization were: (1) look-check for safety and notice people experiencing distress reactions, (2) listen-talk to those people, ask about needs and concerns, and help them feel calm (3) link- basic needs, access services, provide social support. Another key feature of the PFA is that it is supportive but non-intrusive, whereby it is important to recognize that individuals have the right to accept or refuse aid. (World Health, War Trauma, and World Vision 2011)

The PFA application was useful during the SARS outbreak, as the people were afraid of the risk of infection. PFA sessions helped them to deal with stressors by allowing them to manage their emotion and developed better control of the situation. (Maunder et al. 2008) . Educating HCWs to manage stress using PFA will also help them handle the uncertainties of the pandemic, including work stress and quarantine periods. (Shah et al. 2020)

However, as compared to the usual psychological intervention settings, PFA providers in China reported obstacles in delivering PFA to HCWs and patients during the COVID-19 pandemic. There was a limited number of mental health workers for the

Universiti Malaya

widespread growing number of patients. Besides, patients' psychological difficulties have varied over time, requiring interventions to adjust to their needs promptly. Moreover, the closed-door atmosphere has impacted the effectiveness of psychological interventions and limited the use of face-to-face interactions. (Cheng et al. 2020)

Many countries have reached a consensus on the need for psychological support to be more flexible based on the nature of the current COVID-19 pandemic and the accessibility to resources. The potential solution would therefore be a web-based psychological intervention. Mental health providers may be able to provide more extensive psychological support coverage via telepsychiatry. Online and social media psychological support groups can keep people stay connected and promote recovery despite being placed under quarantine. (Shah et al. 2020)

PFA providers in China encouraged clients with smartphones to join online chat groups where they were provided with psychoeducation, brief cognitive-behavioural techniques, and social support to enhance coping during the pandemic. Besides, clients were also thought methods such as emotional regulation to help overcome their negative emotions such as guilt, helplessness, fear, and discrimination. Mental health providers also kept track of clients who required further individual interventions and continued to provide support to them. (Cheng et al. 2020) Another benefit of telepsychiatry would be the easier access to online survey tools whereby large data can be collected and analysed quickly to improve future intervention strategies. (Yang et al. 2020)

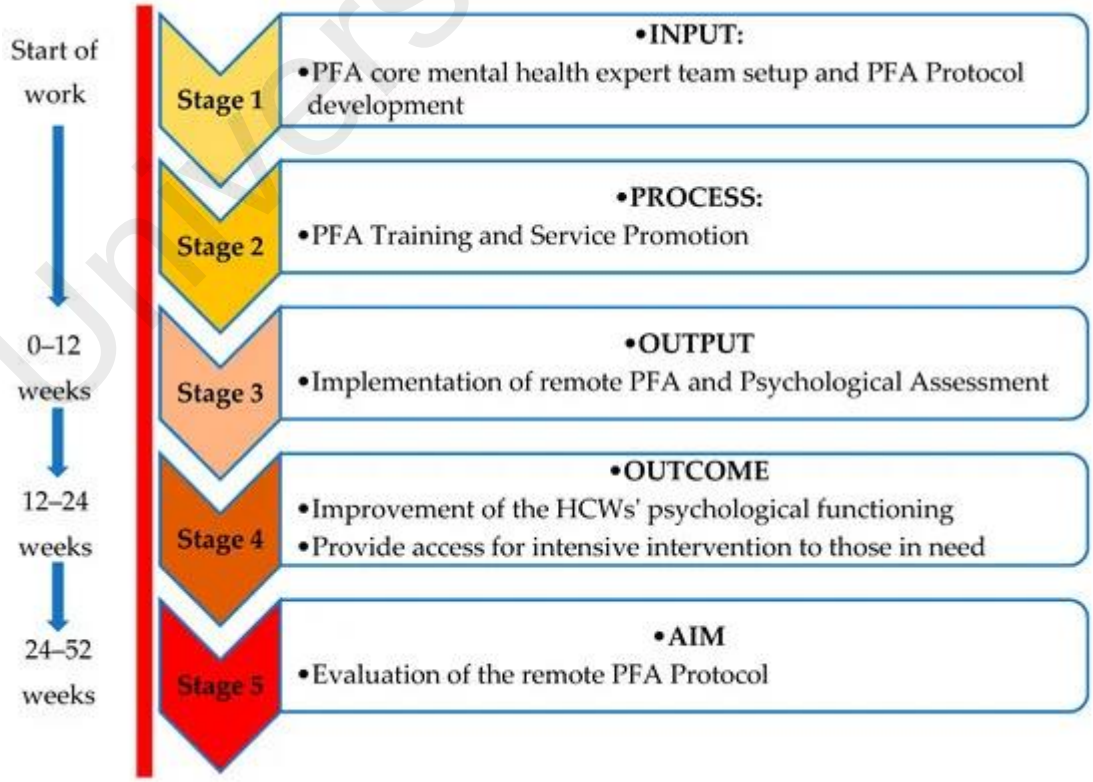
However, research has found that communication through online chat alone has not been effectively established trust, which is particularly important for a successful psychological intervention. Therefore, it is necessary to combine on-site and online

Universiti Malaya

methods to maximize the benefits of psychological support. (Cheng et al. 2020)

At the UMMC, remote PFA (rPFA) protocol was developed by the Department of Psychological Medicine, UM together with the Counselling and Psychological Management Unit, UMMC. The "Remote Psychological First Aid during the COVID-19 outbreak" guidelines by the International Federation of Red Crescent Societies were used as a reference for protocol development (Sulaiman AH 2020). The team used SMART framework tool (Specific, Measurable, Attainable, Relevant, Realistic Timeframe) for planning and evaluation of the intervention. In the initial stages, PFA training was provided to the mental health team comprising psychiatrists, psychologists, and counselors. The team subsequently promoted their service via the hospital's website, social media, and posters.

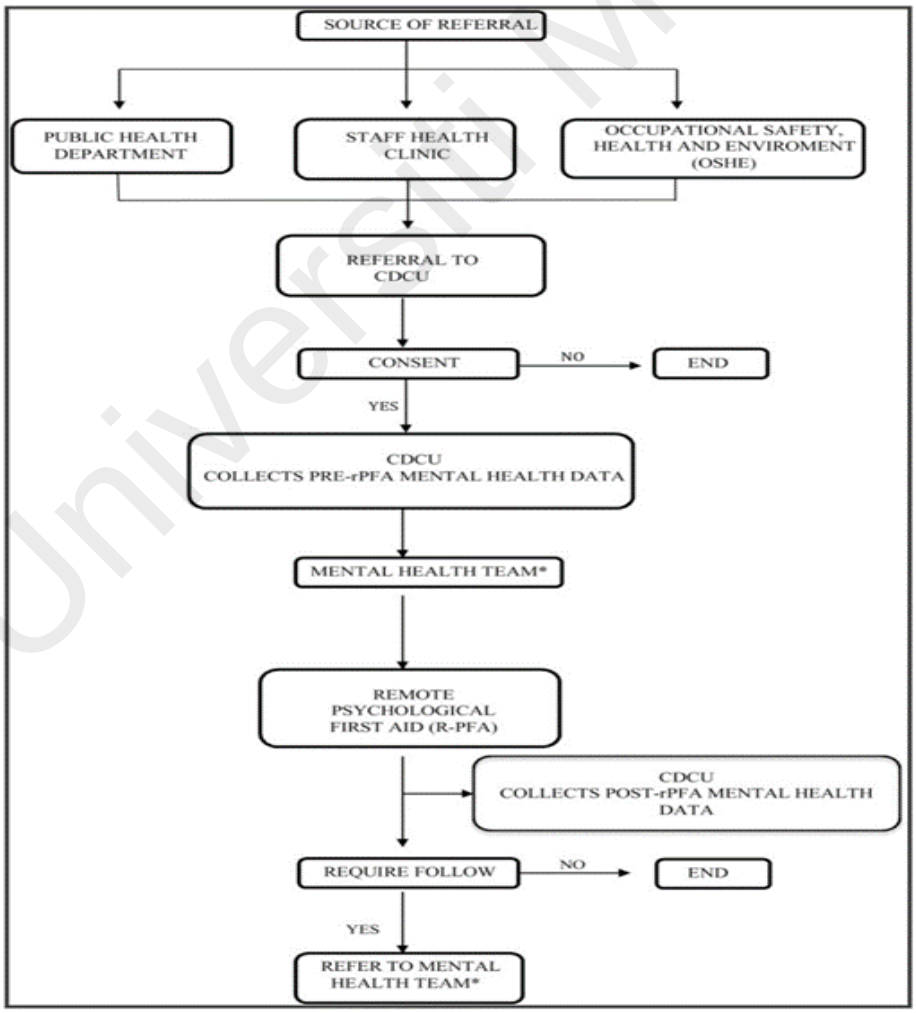
Figure 2.1: Remote PFA protocol development.



Universiti Malaya

HCWs were then identified and referred by the Public Health Department, Staff Health Clinic, and Occupational Safety & Health and Environment Division (OSHE). The Central Data Collation Unit collected data on mental health in the form of the Depression, Anxiety and Stress Scale (DASS) and the Copenhagen Burnout Inventory (CBI). rPFA was then administered by phone for a total duration of 4 weeks. The frequency of rPFA calls was based on individual HCWs. The severity of cases was decided based on the mental health team's clinical judgment and the pre-rPFA screening tools scores. Frontline HCWs needing further support were then scheduled for a remote follow-up consultations. (Francis et al. 2020)

Figure 2.2 The workflow of rPFA administration in UMMC.



Universiti Malaya

CHAPTER 3: OBJECTIVES

3.1 Research questions

The aim of this study was to address the following research questions:

1. What are the frontline HCW's psychological experiences during the COVID-19 pandemic including their experience in handling their duties, the psychological stress they experienced and their coping strategies?

2. What are the frontline HCWs perspective regarding PFA services?

3. What are the PFA providers' experience and challenges while conducting remote PFA during the COVID-19 pandemic and their strategies to improve the service?

3.2 Research objectives

This study has the following objectives with regards to the above research questions:

3.2.1 General Objectives

1. To explore frontline HCWs psychological experience during the COVID-19 pandemic which includes their experience in handling their duties, the psychological stress they experienced and their coping strategies.

2. To explore frontline HCWs perspectives and understanding regarding PFA services.

3. To explore PFA providers' experience and challenges while conducting remote PFA during the COVID-19 pandemic and their strategies to improve the service.

3.2.2 Specific Objectives

The study aimed to serve as a guide in improvising the delivery of the remote PFA service during the COVID-19 pandemic.

Universiti Malaya

CHAPTER 4: METHODOLOGY

4.1 Qualitative methodology

A descriptive qualitative study was conducted using in-depth face-to-face, semi-structured interviews (Moser and Korstjens 2018). In contrast to quantitative studies, qualitative studies are more flexible and subjective. Compared to the structured questionnaire, which mostly covers close-ended questions, semi-structured interviews allow participants to share, express, and further elaborate on their opinions, and experiences in a broader way.

The study design and reporting followed Consolidated Criteria for Reporting Qualitative research (COREQ) (Tong, Sainsbury, and Craig 2007).

4.2 Study design

This qualitative research applied a semi-structured in-depth interview method because of its flexibility and usefulness in understanding participants' lived experiences. Participants can also be more comfortable discussing sensitive issues during individual interviews. Some frontline HCWs may be reluctant to disclose their psychological symptoms during the focus group discussion. (Milena 2008)

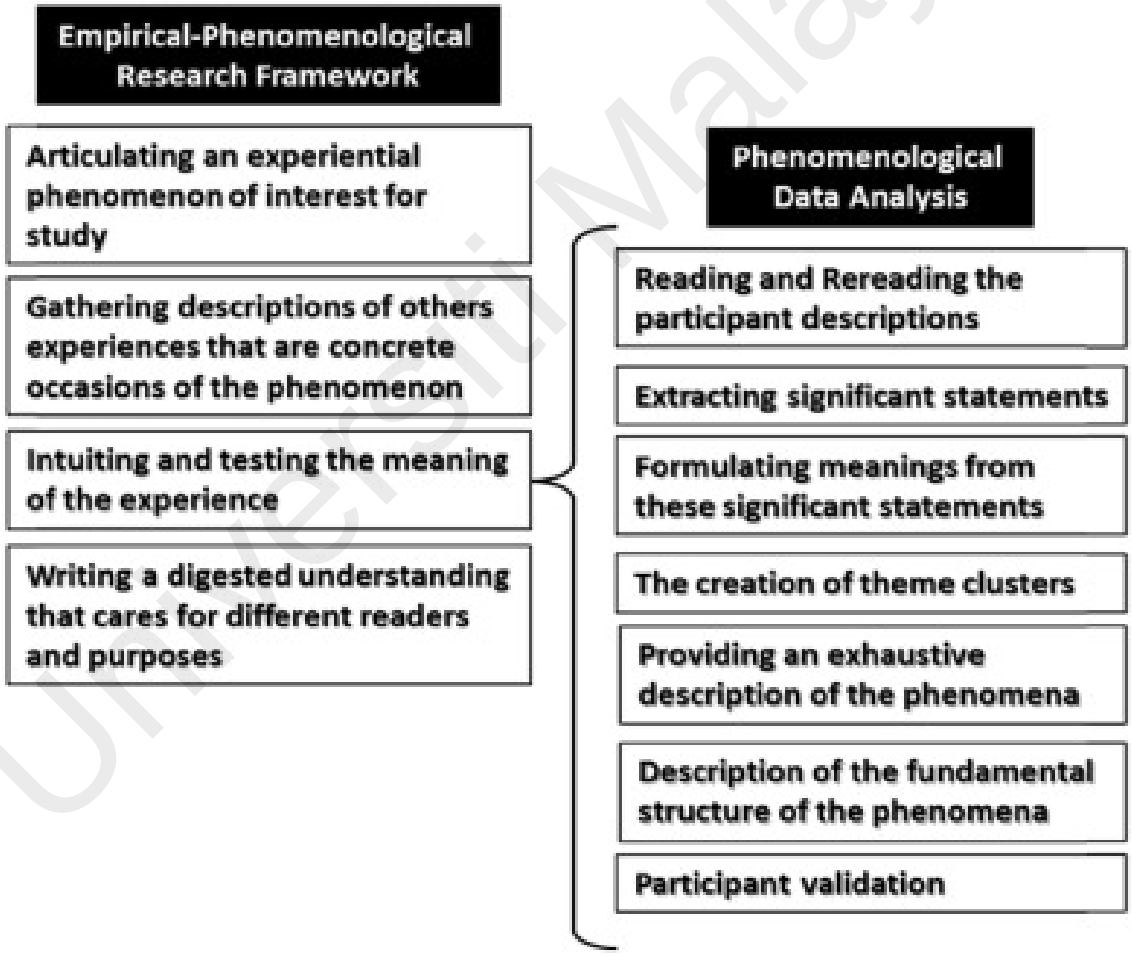
In this research study, semi-structured interviews were used to provide the researcher with a list of issues to be addressed during the interview, but at the same time, the nature of open-ended questions allows participants to fully express their views and experiences. (Turner 2010).

Universiti Malaya

4.3 Conceptual framework

An empirical phenomenological methodology was used to obtain detailed descriptions of the psychological experience and perspectives of frontline HCWs and PFA providers during the COVID-19 pandemic. (Todres and Holloway 2004)

Figure 4.1. Empirical-Phenomenological Framework -Todres and Holloway's (2004)



Universiti Malaya

Phenomenological research intended to describe the commonalities of experiences across a population as they encounter, engage and live through a situation. (Groenewald 2004) Most qualitative methodologies reject to formulate hypotheses before the conduct of research. Instead, they encourage an open approach to data collection and analysis. (Byrne 2001) In addition, the objective of the qualitative study is to generate an in-depth examination of certain phenomena and not to generate a theory that can be generalized throughout the entire population. (Christensen 2017)

The four stages of the empirical phenomenology framework described by (Todres and Holloway 2004) were:

a) Articulating an experiential phenomenon of interest for the study

In this stage, the researcher explores and recognizes her initial interest in the topic. The phenomenon of interest in this study is the COVID-19 pandemic.

b) Gathering Descriptions of other's experiences that are concrete occasions of this phenomenon

At this stage, the researcher-participant needed to engage in an open dialog to replicate a comprehensive explanation of the phenomena in question. For this study, the individual interviews were suitable since this study chose to understand frontline HCWs and PFA providers' experiences. Due to the nature of a descriptive phenomenology study, literature reviews and awareness of previous work to understand HCWs' experiences during the previous SARS outbreak have been carried out. Literature reviews served as a guide in developing an open-ended "phenomenological question" or interview guide that allows for disengagement from personal views and remaining committed to the phenomena under investigation.

Universiti Malaya

c) Intuiting and testing the meaning of the experience.

Through descriptive phenomenology, the lived experience's wholeness can never be fully clarified in a mere transcriptive form. The qualitative and phenomenological nature of this study was intended to explore in-depth life-experience and to understand the transferable meaning of phenomena in a generalized way.

d) Writing a digested understanding that cared for different readers and purposes.

The Todres and Holloways framework's final stage includes a discussion on both the scientific and communicative aspects of how the phenomenon was produced. The scientific aspect focuses on the nature of the phenomenon while the communicative concern is about the studies' ability to accentuate its value to a larger audience.

4.4 Study setting

The study took place at the Medical Center of Malaya University (UMMC). UMMC is a 1,600-bed tertiary hospital located in the heart of Kuala Lumpur, the capital of Malaysia. Besides being a training institution for undergraduate and post-graduate students, UMMC has also been designated as a COVID-19 hospital with more than 5600 HCWs. HCWs have been asked to screen, quarantine, and manage these patients with confirmed or suspected of COVID-19.

4.5 Study period

Data were collected through face-to-face semi-structured interviews in English from April 2020 to June 2020.

Universiti Malaya

4.6 Study Criteria

A total of twenty frontline HCWs participated in the study. For the study, frontline HCWs were defined as doctors or nurses directly involved in the screening, care, and treatment of patients with confirmed or suspected COVID-19 infection.

4.6.1 The inclusion criteria for frontline HCWs were:

- Frontline HCWs involved in the management of patients affected by COVID-19;
- University Malaya Medical Centre (UMMC) or University Malaya staff;
- Able to give informed consent for the study.

4.6.2 The exclusion criteria for frontline HCWs were:

- Frontline HCWs with underlying major psychiatry illness;
- Declined to participate in the study.

As for PFA providers, ten participants consisting of psychiatrists and counselors were recruited into the study.

4.6.3 The inclusion criteria for PFA providers were:

- PFA providers who were directly involved in administering PFA to HCWs during the COVID-19 pandemic;
- Able to give informed consent for the study.

4.6.4 The exclusion criteria for PFA providers were:

- Declined to participate in the study.

Universiti Malaya

4.7 Sampling technique

A purposive sampling method was used to recruit the participants (Palinkas et al. 2015). The interviewer introduced the study to frontline HCWs and PFA providers via phone to requite those interested in participating in the study. This study followed the principles outlined in the Declaration of Helsinki. Participants were informed of the study's aim and the amount of time required for the interview. Participants were assured that their data and interview responses would remain confidential before obtaining their informed consent. Participants could withdraw from the study at any time without giving any justification. All the interviewees gave informed consent for participation.

4.8 Sample size

The sample size was determined by data saturation, whereby there were no newer themes or coding emerged from participants' interviews and the ability to replicate the study. Data saturation can be achieved after a minimum of ten interviews (Guest, Bunce, and Johnson 2006). The sample size for this study was twenty frontline HCWs and ten PFA providers.

4.9 Study instrument

4.9.1 Interview guide

Researchers established the interview guide (Table 1) with open-ended questions based on the literature review of studies completed during the 2003 SARS outbreak (Straus et al. 2004, Rambaldini et al. 2005, Robertson et al. 2004). Additional domains were identified from discussion among the researchers with prior experience in PFA administration. Probing questions were also used to enhance the depth of discussion.

Universiti Malaya

Table 4.1: Semi-structured interview guide.

Study Subject	Interview guide
Frontline HCW	Can you tell me more about the task you are doing now as a frontline HCW and the duration? How did you feel about performing these tasks? Did you experience any form of psychological stress during this period? Can you share with me how you managed to cope with your task/stress? Were you aware of the availability of PFA and how to get access to this service? Did you have any apprehension to receive help in the form of PFA if required? What kind of psychological support did you wish to receive during the pandemic period?
PFA providers	How familiar are you with the PFA administration? Tell me more about your experience in counselling HCWs during the COVID-19 pandemic. What kind of difficulties did you face in administering PFA and how can it be improved? Were there external or administrative obstacles in administering effective PFA? Were there any other psychological interventions you have in mind during this period?

Universiti Malaya

4.9.2 Sociodemographic Questionnaire

The basic socio-demographic questionnaire was also used to collect data on the participants' socio-demographic background, including age, gender, position, years of work experience, original department, and current posting during the COVID-19 pandemic. (Appendix 4)

4.10 Data collection

Following ethics approval, the researcher introduced the study to frontline HCWs and PFA providers via phone and recruited those interested in participating and met the researcher's criteria. The interviewer then discussed with the participants and arranged the interview time and place.

All interviews were conducted at UMMC in a private room during office hours while at the same time conforming to social distancing such as wearing a face mask, maintaining 6 feet apart, and using a face shield. In order to avoid any disturbances throughout the interview, the participants were requested to switch their mobile phones to silent mode.

Prior to commencing the interview, the participants were first informed regarding the study's purpose and process. The interviewees provided informed consent for participation, and confidentiality was ensured. The same measures were applied during all the interview sessions.

The researcher conducted each interview individually with the participants in the English language to reduce biases during the translation process. However, a few nurses were more comfortable speaking in the Malay language; hence the interview was later translated to the English language while transcribing. The interviewer also built a rapport with participants to ease the interview process and actively responded to participants using verbal and non-verbal cues. Several open-ended questions were included while exploring an in-depth theme based on the interview guide.

A pilot study was conducted among three frontline HCWs to test the interview guide instrument and get feedback regarding any difficulty faced while answering. Following that, some minor changes were made to the interview guide, such as adding more descriptions for clarity. The data from the pilot study were included in the analysis process due to a limited number of research participants.

Universiti Malaya

Each interview lasted about 20 to 40 minutes. The interviews were audio-recorded with the consent of the participants. The interviewer audio recorded the interview using an RP1 voice recorder (Remax). The same interviewer took field notes to document facial expression and body language during the interview or immediately after leaving the site to allow the researcher to assess the participants and record what they observe discreetly.

4.11 Data analysis

All audio recordings have been transcribed within 24 hours of each interview. The transcripts have been checked for accuracy and used as data for analysis. In addition to the spoken words, field notes on silence, change of body language, or expression were included in the transcripts. A computer-assisted qualitative data analysis, QDA Miner Lite, was used for the data management purpose and to facilitate analysis.

The transcripts were then analyzed using Colaizzi's 1978 phenomenological analysis method, a unique seven-step process that provides a thorough analysis, with each step staying close to the records. The analysis method produces a comprehensive description of the phenomenon under study, validated by the participants who created it.

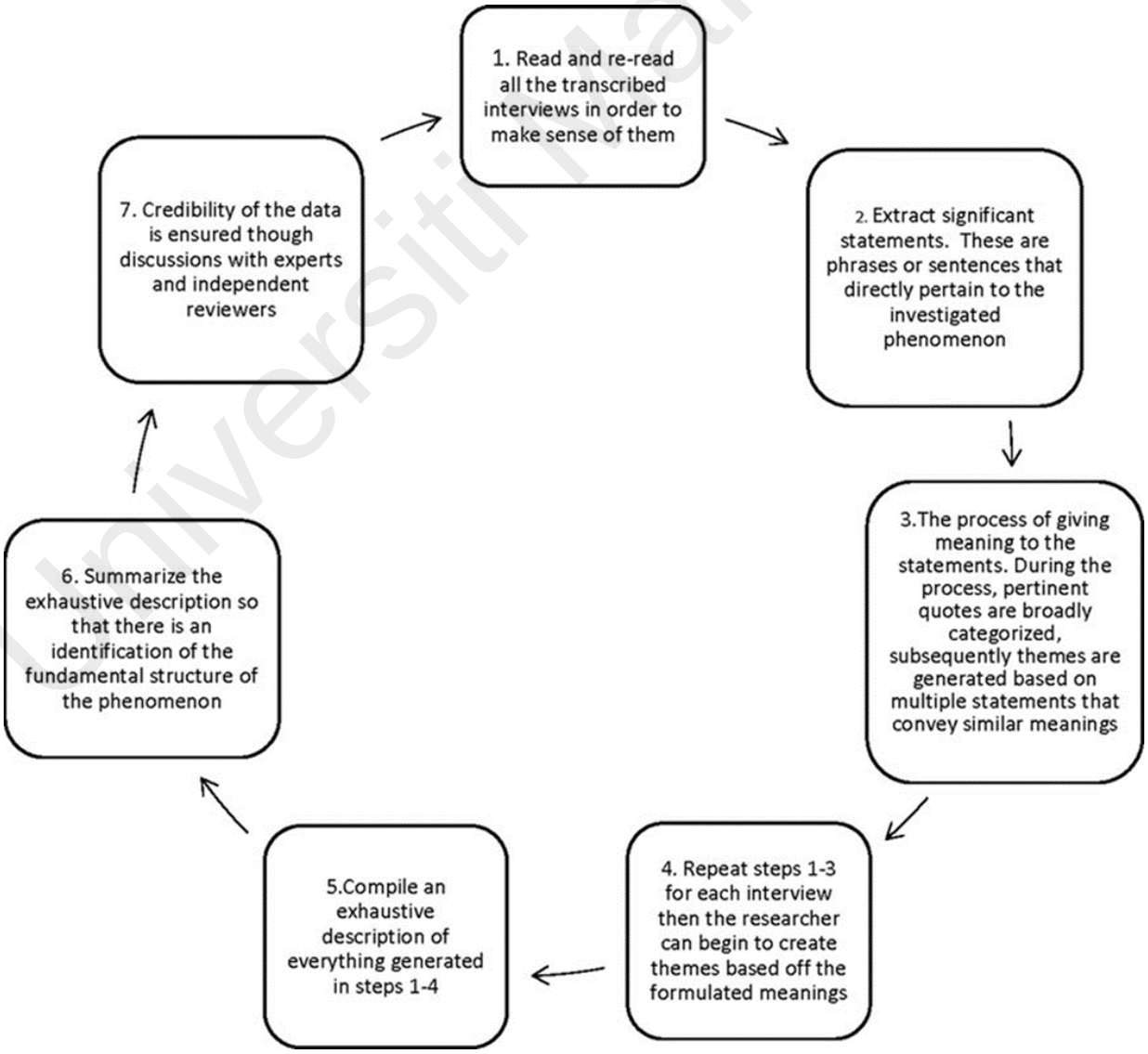
The process depends on rich first-person accounts of experience; these may come from face-to-face interviews and can be acquired in various ways; written narratives, blogs, online interviews, and research diaries. (Edward and Welch 2011, Colaizzi 1978).

The seven steps analysis consists of reading the participant's verbatim transcript several times to understand the meaning conveyed, extracting significant phrases of direct relevance to the investigated phenomenon. Subsequently, coding the recurring opinions from the significant phrases. The codes were then clustered into themes that conveyed similar meanings in step four. The specific enough themes to be discrete (non-repetitive)

Universiti Malaya

and broad enough to encapsulate a set of ideas in numerous text segments were selected (Attride-Stirling 2001). A detailed description of the phenomenon's essential structure was developed in the fifth step, incorporating all the earlier steps' themes. This step was followed by a thorough analysis and removal of redundant information to reveal the phenomenon's fundamental structure. In the final step of validation, the interviewer returned the fundamental structure statement to several participants to ask whether it captures their experience.

Figure 4.2: Colaizzi's 1978 phenomenological analysis method



Universiti Malaya

4.12 Ethical approval and consideration

Ethics approval for this research was received from The University of Malaya Research Ethics Committee (MREC approval number: 2020331-8405). (Appendix 1) This qualitative study was a part of a more extensive study conducted by the psychological department of UMMC. "Development of a Remote Psychological First Aid Protocol for Healthcare Workers Following the COVID-19 Pandemic in a University Teaching Hospital, Malaysia". A grant-funded this study by University Malaya (RG563-2020HWB).

This study was voluntary, and participants may refuse to participate or withdraw during an interview. However, none of the participants withdrew from the research during the interview. Written informed consent has been obtained from the participants. The nature of the study was explained to the participants using the Participant Information Sheet which is provided in Appendix 2. The study participants were not remunerated in the form of money for their participation. Anonymity has been guaranteed to participants and information is kept strictly confidential. The audio recordings were transcribed verbatim by the interviewer and all the personal identification has been removed. The audio-recordings and transcripts were kept in a password-protected computer by the principal researcher. The records will be kept safely for seven years and destroyed once the period of retention expires. The participants might be allowed to view their transcript and socio-demographic questionnaire upon request. The researcher declares there was no conflict of interest in this study.

Universiti Malaya

4.13 Reflexivity

Reflexivity is one of the foundations of qualitative research and relates to how the researcher can influence the study findings. Reflexivity is an ongoing method of self-reflection by the researcher on his or her ideas, values, behavior, preconception, and relationship with study participants which may influence the interpretation of the study. The researcher's position may impact the access to the study field, information the participant shares, and the development of the study. (Jootun, McGhee, and Marland 2009)

In qualitative studies, the researcher has deemed a part of the research instrument through which the data is analyzed and explained. Hence clarifications of the researcher's background allow readers to understand why the data was interpreted in such a manner and whether the analysis was logical and acceptable. (Watt 2007)

There are two main types of reflexivity are personal and epistemological reflexivity. Personal reflexivity is defined as 'self-awareness' and mirror reflection as a learning tool. In the meantime, epistemological reflexivity helps the researcher to reflect on the assumptions made and the consequences of these beliefs for the research and its results. (Dowling 2006)

It has been proposed that a reflexive diary may be helpful while collecting data as any new ideas that emerged can be written and reviewed later. A reflexive diary allows the researcher to ask meaningful and deep questions to reflect on their thoughts throughout the research process. "'What happened, why, what did I think and feel about it, and how could I do it better next time?" (Bolton 2010) Another method is to get help from a supervisor or colleagues who can question the assumptions made by the researcher. By challenging the researcher's thoughts through honest discussions, the data subjectivity can be limited thus enhancing its reliability. (Clancy 2013)

Universiti Malaya

This study's objective was to explore the first-line experiences of HCWs and PFA providers during the COVID-19 pandemic. The researcher was drawn to this topic as the pandemic is unprecedented, continuous in nature, and early studies have shown significant psychological impact among HCWs. Besides, remote PFA is a relatively new approach. Despite the lack of experience in conducting qualitative research, the researcher was interested in learning it. The researcher had a thesis guide and study example that served as guidance to conduct the study and reduced apprehension. The researcher was also involved in all research processes and researcher biases could affect data interpretations as the content of the interviews, and the participants' attitude is very subjective. Therefore, the researcher needed to identify this first and be aware of the risk.

The researcher is a trainee psychiatrist who works in the Psychiatry Department and been working in the psychiatric fraternity for the past six years hence it has helped the researcher to get familiar with the study topic, interview techniques and subsequently facilitated the research process. Prior experience with the study setting also made the data collection process more manageable. However, being familiar with the subject could have made the researcher approve most of the feedback without further exploration. It is essential to reflect as it could reduce the chance to develop variation in elaboration if overlooked.

The study was carried out entirely in English to reduce possible biases during the translation process. Moreover, the participants consisted of fluent English-language HCWs and PFA providers, so they were comfortable during the interview. However, few nurses were preferred speaking in the Malay language; hence the interview was later translated to the English language while transcribing. The participants were also

Universiti Malaya

contacted in advance, and the interview time was arranged according to their convenience. This step helped build rapport and trust. It was essential to create a safe space during the interview while reassuring participants about confidentiality to feel comfortable. It was also vital to create opportunities to ensure that participants were valued and that the researchers were aware of their contributions during the process.

All interviews were audio-recorded by the researcher and transcribed within 24 hours. Before proceeding to the subsequent interviews, the researcher listened to each interview's recorded audio, which allowed the researcher to reflect and recognize her personal bias. Although the investigator had some preconceived ideas about the study to guide the interview process, the investigator had to put the ideas aside during the interviews, as it may be biased. Throughout the research processes, continuous self-reflection and evaluation using a reflexive diary were carried out to ensure that the information extracted was not influenced by the researcher's personal biases or assumptions.

The data analysis process posed further challenges to the researcher, as this was the first time a qualitative study had been conducted. During the analysis, the researcher was fully aware that her previous experience and knowledge could not be used for the data. The researcher was immersed in the data through re-listening, re-coding, and re-theme. The coded data were regularly checked, traced back, and revised if there was an unnecessary theme. This study changed some of the researcher's preconceptions and discovered some new information about frontline HCWs and PFA providers during the COVID-19 pandemic. Besides, peer supervision and honest discussion were done with fellow co-researchers throughout the process until themes have been finalized.

Universiti Malaya

4.14 Trustworthiness and rigors

Qualitative research often criticized for lacking scientific methodology in comparison to quantitative studies. Rigor and validity are the quantitative research perspectives, while credibility and trustworthiness are the mainstays of qualitative research. (Cope 2014) The frameworks to ensure trustworthiness have been described in the literature for many years despite the reluctance of critics to accept it. One such example would be the Guba construction which was first described in 1982. (Korstjens and Moser 2018, Shenton 2004).

According to Guba 1982, the four criteria for trustworthiness were; a) Credibility (in preference to internal validity); b) transferability (in preference to external validity/generalizability); c) dependability (in preference to reliability); d) confirmability (in preference to objectivity).(Lincoln and Guba 1982)

a) Credibility

The credibility or the truthfulness of the researcher is enhanced by describing his or her experience as a researcher and verifying with the participants the findings of the research. The researcher should also demonstrate dedication, provide observation methods, and audit trails to support credibility in the reporting of a qualitative study.

b) Transferability

Transferability refers to results that may be applied in other settings or groups. Transferability criteria have been met by a qualitative study if the results are meaningful to individuals who are not involved in the study, and readers can relate the findings with their own experience.

Universiti Malaya

c) Dependability

Dependability refers to data consistency under similar conditions and can be achieved when a further researcher agrees with the decision pathways at each step of the research method.

Research would be considered reliable if the researcher's process and descriptions of the study's findings can be reproduced with similar participants under similar conditions.

d) Confirmability

Confirmability refers to the capability of the investigator to show that the data represents the experience of the participants and not the researcher's own points of view or biases. The researcher can prove confirmability by explaining in-depth how the findings were derived and especially by providing rich quotations from participants to represent the themes.

Throughout the study, the researcher applied measures to maintain data trustworthiness by considering the credibility, transferability, dependability, and confirmability of the data. The investigator ensured study credibility by prolonged engagement with participants during the interview, persistent observation of transcript materials, data triangulation, and investigator triangulation. Two researchers coded the interview materials independently, and any conflicting opinion on the contents of a theme was resolved together with the research group via peer check to ensure confirmability. Member check was also used after the formation of primary codes, where the researcher asked participants to determine whether the extracted codes were consistent with their experiences and perspectives. An effort was also made to include participants from various demographic backgrounds, and the researcher provided a thick description to

Universiti Malaya

enhance the transferability of the findings to other situations or groups. The researcher also ensured data dependability by providing an in-depth methodological description and keeping all the records throughout the study.

Universiti Malaya

CHAPTER 5: RESULTS

5.1 Participant's socio-demographic profiles

This study enrolled a total of twenty frontline HCWs consisting of 14 doctors (D1 – D14) and six nurses (N1-N6). There were seven males and 13 females between the ages of 25 and 34, with an average age of 30.9. The HCWs interviewed were of a multiracial background consisting of Malay, Chinese, and Indians.

The frontline HCWs had around 2 to 9 years of working experience, and the average interview duration (minutes) was around 25.25. We enrolled frontline HCWs from various departments such as medical, psychiatry, emergency, anesthesiology, and orthopedics. The frontline HCWs were placed at the COVID ward, COVID screening center, or emergency department at the time of interview.

As for PFA providers, a total of 10 providers consisting of six physiatrists (P1-P6) and four counselors (C1-C4) were recruited into this study. They had 10 to 25 years of work experience, and the interview lasted for approximately 20- 40 minutes for each provider. (Table 5.1)

A detailed description of frontline HCWs' and PFA provider's demographics were represented in Table 5.2 and Table 5.3, respectively.

Universiti Malaya

Table 5.1: Demographic details of frontline HCW and PFA providers.

Demographics of frontline HCW	**Number (n)**	**Mean, $\overline{x}$**	**Range**
Gender			
• Male	7		
• Female	13		
Age, years		30.9	25-34
Work experience, years		6.5	2-9
Length of interview, minutes		25.25	20-40
Demographic of PFA providers			
Gender			
• Male	5		
• Female	5		
Age, years		41.4	34-50
Work experience, years		16.9	10-25
Length of interview, minutes		29	20-40

Universiti Malaya

Table 5.2. Characteristics of frontline HCWs.

Code	Gender	Ethnicity	Age	Position	Original Department	Current placement
D 1	Female	Chinese	30	Doctor	Psychiatry	Emergency Department
D 2	Female	Indian	33	Doctor	Medical	COVID ward
D 3	Female	Malay	33	Doctor	Medical	COVID ward
D 4	Female	Chinese	32	Doctor	Psychiatry	Emergency department
D 5	Female	Chinese	32	Doctor	Medical	COVID ward
D 6	Male	Chinese	34	Doctor	Anaesthesiology	Emergency Department
D 7	Male	Chinese	29	Doctor	Psychiatry	Emergency Department
D 8	Male	Malay	34	Doctor	Psychiatry	Emergency Department
D 9	Male	Chinese	32	Doctor	Medical	COVID ward
D 10	Female	Indian	31	Doctor	Psychiatry	COVID screening
D 11	Male	Chinese	33	Doctor	Psychiatry	COVID screening
D 12	Male	Indian	31	Doctor	Psychiatry	Emergency Department
D 13	Female	Chinese	33	Doctor	Anaesthesiology	Emergency Department
D 14	Male	Chinese	28	Doctor	Emergency	Emergency department
N 1	Female	Malay	27	Nurse	Orthopaedic	COVID ward
N 2	Female	Malay	29	Nurse	Emergency	Emergency Department
N 3	Female	Malay	30	Nurse	Medical	COVID ward
N 4	Female	Malay	25	Nurse	Medical	COVID ward
N 5	Female	Malay	32	Nurse	Medical	COVID ward
N 6	Female	Malay	30	Nurse	Rehabilitation	COVID ward

Universiti Malaya

Table 5.3. Characteristics of PFA providers.

Code	Gender	Ethnicity	Age	Position	Department
C 1	Male	Malay	45	Counsellor	Psychiatry
C 2	Female	Malay	38	Counsellor	Counselling unit
C 3	Female	Malay	35	Counsellor	Counselling unit
C 4	Female	Malay	42	Counsellor	Psychiatry
P 1	Male	Indian	34	Psychiatrist	Psychiatry
P 2	Male	Chinese	49	Psychiatrist	Psychiatry
P 3	Male	Chinese	42	Psychiatrist	Psychiatry
P 4	Male	Malay	50	Psychiatrist	Psychiatry
P 5	Female	Chinese	39	Psychiatrist	Psychiatry
P 6	Female	Malay	40	Psychiatrist	Psychiatry

Universiti Malaya

5.2 Frontline HCWs phenomenological analysis results

The researcher explored frontline HCWs' psychological experiences and perspectives using phenomenological methods. We found three themes that are summarized below in Table 5.4.

Table 5.4. Themes identified through interviews with frontline HCWs**.**

Negative emotions in the early stage • Fear, uncertainty, anxiety • Fatigue, exhaustion • Sadness, disappointment, loneliness
Coping strategies • Adequate Safety precautions • Cognitive adjustment and mature defense mechanism • Good support system
Perspective on PFA • Lack of awareness regarding the service • Misperceptions regarding PFA • Fear of stigma and Confidentiality issues

Universiti Malaya

5.2.1 Theme 1: Negative emotions in early stage

5.2.1.1 Fear, uncertainty, anxiety

Almost all frontline HCWs interviewed experienced negative emotions in the early stage of the COVID-19 pandemic. They were mostly fear and anxiety related to the risk of contracting the infection themselves or infecting their loved ones. A few HCWs even decided to self-isolate and stayed away from their family members while serving at the frontline.

"In the beginning, I felt anxious because we heard how HCWs died in other countries. I was also quite worried regarding the risk of exposure and infection to my family members. So, I have been staying in Airbnb accommodation for the past 2 months." D3.

"My family members are more worried about me, questioning why I had to get involved as front-liners. They do not understand and maybe worried about themselves as they could be exposed to the risk too." D11

Besides, HCWs workers reported they were at risk while attending to patients in the emergency department or general ward who may have concealed their exposure risk. Despite wearing full PPE, HCWs still reported feeling apprehensive while being in close contact with the patient, such as when taking nasopharyngeal swabs.

"At times, I felt like I am at risk of infection because the patients sneezed, coughed and even tried to vomit while I was taking the swab. During that time, I felt anxious despite wearing full PPE. " D2.

"As a frontline HCW who was working in the non-COVID-19 zone, I am not required to wear a full protective equipment. However, I was also constantly at risk of being exposed to patients who might have lied about COVID-19 contact to get treatment. " D14.

Some HCWs also reported feeling nervous when their colleagues were quarantined as they must go through the screening process. The whole process of stratification was described as anxiety-provoking.

Universiti Malaya

“One of our ED staff nurses had respiratory symptoms and I had contact with her during Passover time. We were called by OSHE regarding risk- stratified us based on contact time and level of exposure. I was very anxious after hearing the news.” D12

Frontline HCWs also informed they felt uncertain regarding the management of COVID-19 as there were no proper guidelines available in the early stages, which gave rise to miscommunications. Nurses who had experience handling infectious diseases were also anxious as the COVID-19 was an unknown disease.

"In the initial period, there were more uncertainty and anxiety as we did not have a proper guideline when we reviewed cases. In fact, in my experience, I had a pneumonia patient whom I managed that turned out to be positive for COVID-19 infection.” D2.

"In the beginning, there were a lot of uncertainties as the emergency department system for the flow of patient care or COVID regulations were constantly ever-changing, but they lacked effective communication to the staff. Thus, we had to pick up new rules through hear-say which was confusing” D14.

“Although am used to handling infections disease patient such as tuberculosis and MERS-CoV. But we had some uncertainties because the COVID-19 disease is new, and we do not know much about it.” N3

Universiti Malaya

Several HCWs in the study who were deployed to other departments also faced uncertainties and doubts while trying to adapt to their new environment.

"I was deployed from the orthopaedic department to the COVID-19 ward. I must admit I felt anxious and stressed out initially because I had no experience in handling infectious patients" N1.

"I was deployed to ED from psychiatry department. It took time in the beginning to get adjusted to the ED, as we have not been in the emergency setting for a long time and there was a bit of learning curve. I took time to get adjusted to work, guidelines and handling COVID-19 patients" D12.

5.2.1.2: Fatigue, exhaustion

Although full personal protective equipment was essential to reduce the risk of exposure to infection, the HCWs reported they felt uncomfortable, exhausted, and restricted with prolonged PPE use.

"I felt safe when I wore full PPE, but it can be uncomfortable. The face shield turned foggy and made it difficult to do procedures such as blood taking. I also felt tired working in full PPE during my 7- 10 hours of a shift." D4.

"In the COVID-19 ward, we had to wear full PPE before contact with any patient. If the patient was bedridden, we had to enter the room multiple times to do procedures, hence we had to don and doff the PPE repeatedly, which was exhausting"-N3.

Universiti Malaya

5.2.1.3: Sadness, disappointment, loneliness

Nurses taking care of patients in the COVID-19 ward described the ward's environment where the patients needed to be isolated, no visitors were allowed, and contacts were minimized as much as possible. Nurses mentioned that they felt sad for patients, especially the elderly, who were scared to be on their own. Nurses sometimes witnessed patients deteriorated without loved ones by their sides.

"At times, our patients deteriorated, and unfortunately their family members were not allowed to visit. We watched a patient die in the ward without family, but it was beyond our control due to the nature of the illness, so we still had to obey by the rules made. "N3.

"Sometimes the patients were not cooperative and attempted to come out of the isolation ward especially the elderly patients as they were scared to stay alone. We felt sad for them and sometimes we helped them to make video calls to their families." N4.

Some of the frontline HCWs interviewed were undergoing their post-graduate training. However, during the COVID-19 pandemic, their training program was withheld, and exams were postponed. Moreover, due to the implementation of the Movement Control Order by the Malaysian government, many frontline HCWs could not return to their hometown. These unforeseen circumstances also made them sad, lonely, and disappointed.

"As a master student, I felt stressed out as exams were postponed, semester got extended, and I was not able to go back to hometown. I felt alone and less supported staying on my own here" D4

Universiti Malaya

"On the whole, the postponement of the master's exams has left some amount of confusion on how it affects the course progression and scholarships." D7

"I was disappointed and sad as my semester got extended another 6 months. My family members were expecting me to return to hometown and help them, but I was unable to fulfil my commitment towards them" D6.

5.2.2 Theme 2 Coping strategies

Frontline HCWs in the study adapted several coping strategies to help them deal with their negative emotions.

5.2.2.1 Adequate safety precautions

All the frontline HCWs practiced adequate safety precautions such as wearing full PPE, maintaining social distancing, and frequent hand washing to reduce infection risk. HCWs also received training on infectious precaution measures before being posted to COVID wards or emergency department.

"Wearing full PPE made me felt more secure. I also frequently used hand sanitizer before and after contact with others or surroundings" N1.

"I took bath before leaving the hospital and upon reaching home, I took bath again before any contact with my family members. I distant myself from my 15 months old baby until I felt I was clean and safe" N3.

Universiti Malaya

"We had training on safety precautions, especially on PPE technique before posted to COVID ward. The training was especially important because the PPE application differs for each procedure." D3.

"We also had a buddy system, so whenever we were donning and doffing PPE, we had one person looking if we were following the right technique and reminded us." D3.

5.2.2.2 Cognitive adjustment and mature defense mechanism

Frontline HCWs adapted several psychological copings either consciously or subconsciously, to adapt to their unpleasant negative emotions. Some of them actively adjusted their negative thoughts regarding the situation by doing self-reflection. While others seemed to demonstrate a mature defense mechanism such as altruism at these difficult times.

"Although there were concerns about dealing with COVID patient, I realized they were already screened for risk factors before sent to COVID tent. The doctors who performed the clerking and swab taking were well protected with adequate PPE, social distancing and there was no direct contact, hence I felt safe. "-D7.

"Once you get used to managing the patients or taking a swab, it became a routine, and the worries also reduced. I was also able to rationalize that I am still young with a good immune system and wore full PPE to protect myself from infection." D11.

Universiti Malaya

"Although I was upset exam was postponed, I had extra time to prepare for it. Moreover, I picked up some other skills during MCO. " D1.

"As a government servant, I must comply with ministry decisions and guidelines. I am trying my best to look at the bright side" D3.

"I felt honoured to be part of the frontline HCWs in serving our community and country, as it was rare that we could be facing a pandemic in this day and age." D14.

5.2.2.3 Good support system

One of the most important coping strategies that helped our frontline HCWs to battle their negative emotions was the presence of a great support system from all levels, including encouragement from family, colleagues, immediate supervisors, hospital management, and government policies.

HCWs reported they had excellent teamwork and were divided into smaller teams to work in a shift system and cover each other if they had to be quarantined. HCWs were also given adequate rest days after their department shifts and the workload lessened by rescheduling elective cases. HCWs mentioned that these strategies helped in reducing the risk of burnout.

"We were divided into smaller groups so that when one group gets quarantined, the other group took over. We had great teamwork among nurses"-N5.

Universiti Malaya

“While in the COVID team, we get adequate rest after our duty. We get one week off before stating our usual rotation." -D2.

“With the reduction of elective admission and clinic cases, the workload has reduced. Hence we get do get adequate rest and do not feel burnout” D5.

Moreover, nurses and doctors were given facilities to communicate with patients via phone while in COVID, which minimized their contact time and reduced their anxiety.

“When I came to COVID ward, I realised the patients here were quite stable and we do not need to have frequent close contact with them. We were also allowed to communicate via phone with them. All that has reduced my anxiety. “N1

Besides that, their department also provided information regarding COVID-19 recent updates to HCWs and praised their work in serving the people. HCWs felt motivated and appreciated when their efforts were being recognized.

“We have daily team discussion on cases which helped to improve my knowledge regarding COVID management too.”- D2.

"Our medical department frequently posted updates in the group regarding COVID-19 management and informed us about the reducing number of cases. They also praised us

Universiti Malaya

for our efforts in managing the cases which motivated us and decreased our worries."- D9.

The organization also frequently checked on HCW's physical and mental health, reassuring our participants.

"The occupational safety, health and environmental unit (OSHE) also checked on us, to make sure we did not have any symptoms after coming in contact with positive patients." D3.

"The emergency physicians were aware that we were not emergency department doctors and had only been deployed here. So, they were helpful and frequently assessed our morale as well as general wellbeing." D7.

Lastly, supportive family members were described as one of the main factors that helped our HCWs cope during difficult times.

"I am blessed because my wife was supportive as medical frontline HCW herself. My colleagues were also supportive, and we spoke to each other about our experiences. My family members did not demand me to come back to hometown during this stressful period." D8.

Universiti Malaya

5.2.3 Theme 3 Perspective on PFA

All the study subjects were also interviewed regarding their perspective on psychological first aid service provided in UMMC.

5.2.3.1 Lack of awareness regarding the service

A few frontline HCWs was not aware of the availability of PFA or the services offered.

"I was aware of the existence of PFA but unsure of the service they provided." D 11

"The awareness was still lacking among support staffs who often worked harder than doctors (Medical assistants and Nurses). They had more contact time with patients, but no one spoke to them regarding PFA and they were not aware of the availability of such a support system." D7

5.2.3.2 Misperceptions regarding PFA

Although some frontline HCWs were aware of the accessibility of PFA, they misunderstood the service and believed PFA was only catered for those with severe psychological distress.

"We were confused about PFA services and believed it was for someone with severe stress. Probably we needed more education to help us understand and to come forward to seek help from mental health services." N5.

Universiti Malaya

“For now, I am able to cope. However, if my stress level increases, I would consider getting help. I am open to it.” N2.

“I had friends and family who were supportive of me, so I did not think my stress level as pathological for me to seek psychological help” D3.

5.2.3.3 Fear of stigma and confidentiality issues

Some frontline HCWs were apprehensive about receiving PFA due to the perceived self and societal stigma. A few were reluctant to come forward as worried about confidentiality issues, especially when they had to involve a middle person such as their immediate supervisor.

"I would not consider PFA for myself. Maybe seeing a counsellor would make us feel like we have mental health problem hence most of us were reluctant to seek help until the symptoms got worse." D9.

"We were not sure where to seek help when we felt stressed out. We had to go through our supervisor if we needed counselling service and that made us reluctant to come forward, due to fear of being judged by the supervisor.” N6.

“Maybe healthcare workers needed more time to open up to PFA service because it was something new. They could be worried about confidentiality, wondered if their information was safe with the counsellor." D10.

Universiti Malaya

5.3 PFA Provider's phenomenological analysis results

The researcher explored their experience in administrating remote PFA to HCWs during the COVID-19 pandemic using phenomenological methods. We found three themes as summarized below in Table 5.5.

Table 5.5. Themes identified through interviews with PFA providers**.**

Remote consultation challenges • No face-to-face contact with clients • Client's reluctancy • Confidentiality concerns
Administrative difficulties • Lack of PFA guideline for ongoing pandemic • Differences of opinion among providers • Communication barriers
Modification of PFA service • Follow up interventions • Online group activities • Multidisciplinary team involvement

Universiti Malaya

5.3.1 Theme 1 Remote consultation challenges

Some PFA providers interviewed had prior experiences conducting PFA, while it was a relatively new experience for others. However, in the circumstance of an infectious pandemic like COVID-19, the PFA administration's method had to be modified to safeguard everyone. This modification nevertheless came along with some challenges, as elaborated below.

5.3.1.1 No face-to-face contact with clients

Almost all the PFA providers reported it was a challenge for them to conduct PFA without direct contact with clients. They were having difficulties assessing clients thoroughly, including their expression or body language changes. However, the providers agreed that the remote PFA was necessary for the current pandemic to reduce the risk of infections.

"What may be a challenge at this point was that we could not meet with our clients and had to use online methods. However, it was difficult to see the face and body language of the client. I felt the emotional support may not be conveyed so well. However, with the current situation, online methods were effective as it could reduce the risk of infection." C2.

"In the true PFA, the providers had to go to the site, but we could not do that because the disease was highly contagious. The PFA concept is to see, to listen and to link. However, we were only left to listen to their needs and that was something new for us." P6.

Universiti Malaya

5.3.1.2 Client's reluctancy

PFA providers also had to deal with client's apprehension for the service. Some HCWs, including doctors, showed reluctance when contacted by the providers, especially when introduced as a psychiatrist. Some HCWs were even upset with the providers and questioned why they were being approached.

"HCWs did not understand the concept of PFA. There was a lot of misconception as many thought it was same as counselling. PFA consisted more of listening than active intervention. Hence, there were many apprehensions among HCWs, and some were even upset when we reached out to them." P1.

"The difficulties were more with the target population and their reluctancy. The term PFA stands for psychological first aid. The term psychological put many people off, especially the doctors. Maybe because of their inability to accept that as doctors they may also require some degree of support. "P2

"Unfortunately, there was a stigma associated with psychiatry/psychological medicine. When we introduced ourselves as a psychiatrist, people became withdrawn and apprehensive. They perceived that they might be having serious psychological issues and were not forthcoming with the providers." P4.

Universiti Malaya

5.3.1.3 Confidentiality concerns

As for the remote PFA, providers could not go directly to the site to reach out to their clients. Instead, all registrations were made online, and the client's contact numbers were given to providers who would be administrating the PFA. However, providers reported some privacy problems, especially related to the client's informed consent. Some providers were also worried they might be perceived as scammers when approaching clients via phone calls.

"The way we reached out to clients was through phone number and we were not able to see them in person. So, we needed their consent before reaching out, or else we could appear like a scammer. Hence, we had a data manager to oversee online records." P4.

"There were challenges in getting client's data; from where we get their consent, how do we contact them, and how do we maintain confidentiality. We needed an algorithm to safeguard the sensitive information but at the same time provide adequate information to healthcare providers so they could contact clients." P1.

5.3.2 Theme 2 Administrative difficulties

Since the PFA administration for the COVID-19 pandemic was a new experience for many providers, they faced some difficulties at the administrative level.

5.3.2.1 Lack of PFA guideline for ongoing pandemic

There was no PFA guideline available for an ongoing pandemic like COVID-19; hence differences of opinion were raised among the providers. PFA providers reported

Universiti Malaya

they could not use the exciting PFA guideline, which was catered more for disasters like floods, mainly because they could not reach out at a large scale but based on a referral system. However, although they took time, the providers still managed to construct their own remote PFA guideline, which can be used for future references.

"There were no specific PFA guidelines for a pandemic elicited by coronavirus established internally, compared to guidelines for handling disasters like flood, etc. This contributed to confusion among the providers." C3.

"We never had any disaster in UMMC so far, fortunately. So, we never had a proper guideline, hence the challenge was to prepare own guideline that best suited our organization. The PFA coordinator prepared a good guideline with the help of other providers. The management was also supportive and encouraged us to continue providing PFA services." P4.

"From this experience, we need to gather to summarize what we have done, to come out with a protocol for future use, as we took some time this time to be ready for the pandemic. "P3

Universiti Malaya

5.3.2.2 Differences of opinion among providers

PFA providers consist of psychiatrist, counsellors, and psychologist who has been working independently and has their own standard operating procedure. However, during the pandemic, they had to come together to provide their expertise for the PFA

administration. However, this gave rise to some differences in providers' opinions as to how the PFA should be conducted and new guidelines constructed.

"The PFA providers consisted of personnel coming from psychology and counselling background (psychology officers), mental health experts like the psychiatrist, medical social workers, nurses and doctors from other disciplines who were interested to give a helping hand. Somehow, the personnel were tuned into their original roles, whereas PFA just needed the provider to be emphatic, with good communication skills, listening skills and the ability to analyse situations." C3.

"In terms of contacting the client, we (psychiatrist and counsellors) had different ideas. PFA providers wanted to contact the clients directly, but counsellor wanted to contact them on behalf. Finally, in the end, it was agreed that counsellor will contact, and communicate with the client, completing scales and being the middle person between the client and PFA providers." P1.

5.3.2.3 Communication barriers

Besides, due to movement control order and the need to maintain social distancing, providers also had difficulties organizing meetings regularly and communicate. Moreover, the PFA service involved multiple organizational levels; hence providers faced some hurdles initially to communicate effectively at all levels.

"The flow of the service was determined from the beginning, but somehow communication became a problem among the parties involved namely communication from PFA team to

Universiti Malaya

other departments. Hence, the cases were referred late and some of the clients were beyond their critical period." C3.

"Since the team consists of different departments, personnel tend to follow their leaders from the same department. And there was an overlap with the psychosocial activities being done by other teams. This created internal obstacles". C4

"PFA team comprised of a multidisciplinary unit- psychiatry, counselling, social worker, management. Hence, the initial coordination of the team was challenging. It was also difficult to have a meeting while maintaining social distancing." P4.

5.3.3 Theme 3 Modification of PFA service

Despite the challenges encountered, PFA providers were determined to provide the best intervention for their clients, although they had to make several modifications to the existing PFA component.

5.3.3.1 Follow up interventions.

Clients were offered follow-up interventions such as mindfulness therapy, relaxation techniques, mental health educations, either individually or in a small group. The PFA providers realized HCWs needed more support as the pandemic was ongoing and could not provide reassurance to everyone through a single PFA session.

Universiti Malaya

"We could not give a false impression that everything was okay. The reassurance factor might not be there due to the illness's nature since it was chronic and ongoing, unlike a disaster.

Our PFA was a modified version and more of psychosocial support rather than first aid." P4.

"Our PFA was a modified version. The actual PFA had no interventions like mindfulness that we provided to our clients." P6.

5.3.3.2 Online group activities

PFA providers provided online sessions via zoom meetings, which was more flexible for their clients, and they found HCWs were more comfortable during online group activities. Besides providing psychological interventions, PFA providers also used online platforms to educate clients on mental health.

"If the clients were still stressed or anxious after PFA, we placed them into the mindfulness group. Clients were very receptive and even asked for more sessions. The frontline HCWs preferred online zoom meeting because the session time was flexible and could even be done after working hours." P5.

"People were comfortable to be in groups and appeared to be more secure. In the group setting, everyone had the same problem, so they felt at ease to share. Probably it was the stigma, when we did one to one session, they might feel something was wrong with them and perceived they could not cope with stress." P6.

Universiti Malaya

"Experts on mental health, psychology and counselling combined forces to create education to people on managing their emotions during the period. Education was conducted in terms of articles, videos, online streaming through zoom, Facebook live, etc." C3.

5.3.3.3 Multidisciplinary team involvement

PFA providers also included a multidisciplinary team consisting of social workers and human resources to cater to their clients' needs during the pandemic.

"During PFA, we also screened for more serious symptoms like depression, anxiety and assessed psychosocial support so we could refer them according to their needs. The psychosocial support involved a multidisciplinary team, so if clients had difficulties like mood symptoms, they were referred to psychiatry, finance- to the social worker, and job issues to human resources. " P4.

Universiti Malaya

CHAPTER 6: DISCUSSION

6.1 Summary of main findings

This study found that the frontline HCWs experienced negative emotions in the early stages of the COVID-19 pandemic. The initial response was uncertainty and fear to face an unfamiliar disease. Frontline HCWs were mainly anxious about the risk of infection to themselves and their family members. They felt exhausted after wearing full protective equipment for long hours, while others felt sad and lonely to be away from loved ones during Movement Control Order.

The frontline HCWs consequently adapted healthy coping strategies to reduce their negative emotions by practicing infectious safety measures, adjusting their cognition to face the situation rationally, and taking the initiative to be altruistic. The pandemic has also brought the HCWs from various departments who shared the common goal. The combination of great teamwork between them and the ongoing support from their supervisors and hospital management has motivated our frontline HCWs to continue fighting the COVID-19 pandemic.

However, we found that frontline HCWs still lacked awareness of the PFA service, while some were apprehensive of receiving any form of psychological assistance due to perceived self or societal stigma.

Our interview with PFA providers, on the other hand, found the administration of PFA during an ongoing pandemic like COVID-19 was fraught with challenges. Due to a lack of standard policies, the providers took time to construct their guidelines with

Universiti Malaya

several modifications to cater to their needs. The modifications included conducting a remote PFA through phone calls or online platforms, offering to follow up psychological interventions, and involving multidisciplinary teams to assist the clients. They also encouraged HCWs to get psychological help through online promotion and awareness campaigns to minimize stigma.

6.2 Frontline HCWs

6.2.1 Negative emotions in early stages

Systematic review and meta-analysis of 13 cross-sectional studies consisting of a total of 33,062 participants provide early evidence that a high amount of health professionals experienced significant levels of anxiety, depression, and insomnia during the COVID-19 pandemic. The prevalence rates of anxiety and depression among HCWs during COVID-19 were 23·2 % and 22·8 %. (Pappa et al. 2020a)

Recent qualitative studies conducted in China regarding the psychological experience of HCWs caring for COVID-19 patients also produced similar results whereby there were significant negative emotions in the early stages such as fear, anxiety, fatigue, and helplessness (Sun et al. 2020, Liu et al. 2020). They found HCW's negative emotions to be more pronounced during the first week when they entered negative pressure COVID wards or underwent pre-requisite training.

In this study, almost all the HCWs interviewed experienced negative emotions in the early stages of the COVID-19 pandemic. They were mainly afraid and anxious about the

Universiti Malaya

risk of contracting or infecting their loved ones themselves. Some HCWs even decided to self-isolate themselves and stayed away from their family members. HCWs workers reported they were worried while attending to patients in the emergency department or general ward who may have concealed their exposure risk.

Several HCWs in this study who were deployed to other departments also faced uncertainties and doubts when attempting to adapt to their new environment. Besides, frontline HCWs reported that they felt doubtful about the management of COVID-19, as there were no proper guidelines available at an early stage that led to miscommunication and confusion. Moreover, due to the implementation of the Movement Control Order by the Malaysian government, many frontline HCWs could not return to their hometown which made them sad and lonely.

Recent studies emphasized the importance of early detection and management of milder clinical or sub-threshold mood symptoms before emerging into more severe or lasting mental illness. (Pappa et al. 2020b, Amanullah and Ramesh Shankar 2020) Early psychological intervention such as PFA might help frontline HCWs address their negative emotions and provide the initial support they need. A study involving HCWs in Wuhan also highlighted that mental health interventions were needed even for mild psychological consequences. (Kang, Ma, et al. 2020)

As the COVID-19 pandemic is an ongoing battle, there is a need for continuous psychological assessment for our frontline HCWs to prevent mental health consequences. Previous follow-up studies conducted in 2006 showed that about 10% of the hospital employees had suffered high levels of post-traumatic stress symptoms since the SARS outbreak in 2003, especially those under quarantine or posted to higher risk areas (Wu et

Universiti Malaya

al. 2009). Another follow-up study in Toronto, Canada, also found HCWs had significantly higher levels of burnout, psychological distress, and post-traumatic stress 13 to 26 months after the SARS 2003 outbreak (Maunder et al. 2006). Since the pandemic's long-term impact has been a concern, it is crucial to find ways to provide continuous psychological support to our frontline HCWs.

6.2.2 Coping strategies

Research has shown that psychological adjustment and social support play an intermediate role in stress-induced psychological rehabilitation. It has been shown that any coping strategy to an epidemic catastrophe can reduce stress and improve mental health. (Main et al. 2011)

Based on our interview with frontline HCWs, we found that they adapted several coping strategies to help them deal with their negative emotions. To reduce the risk of infection, all frontline HCWs practiced appropriate safety precautions such as wearing full PPE, maintaining social distance, and frequent hand washing. Before being posted to the COVID wards or emergency department, HCWs also received infectious precautionary measures. These findings are consistent with the WHO recommendation to ensure that measures to control infections are put in place and implemented in healthcare facilities to reduce health-related infections. (WHO 2020).

In a study of nurses managing COVID-19 patients, nurses were found to have been psychologically adjusting to the pandemic through avoidance, isolation, speculation, humor, and self-consciousness. (Sun et al. 2020) Previous studies during the SARS pandemic also showed that participants adopted various coping strategies,

Universiti Malaya

such as relaxation techniques, music, meditation, and mindfulness to alleviate stress. Moreover, active altruism and greater teamwork during the epidemic was linked to a positive mental health outcome. (Mak et al. 2009)

These findings are consistent with our study, whereby the frontline HCWs interviewed also adapted several psychological coping either consciously or subconsciously, to adapt to their unpleasant negative emotions. Some of them actively adjusted their negative thoughts regarding the situation by doing self-reflection. Simultaneously, others seemed to demonstrate a mature defense mechanism such as altruism during these difficult times.

Additionally, previous studies found that perceived social support has a positive and significant impact on the mental health status of SRAS survivors. (Wong et al. 2005) Organization support through providing adequate PPE, limiting shifts to less than 16 hours, and providing an adequate rest period helps prevent burnout among HCWs. Besides, support from family members and colleagues has also decreased burnout by 40% and 45%, respectively. Hence, we can conclude that helpful coworkers may reduce the HCWs' burden in the stressful work environment. (Amanullah and Ramesh Shankar 2020)

Our study also found that the most important coping strategies that helped our frontline HCWs combat their negative emotions were the presence of a sound support system at all levels. Support from family, peers, immediate supervisors, hospital management, and government policies were essential. HCWs reported that they had a great teamwork and were subdivided into smaller teams so that if they had to be quarantined, they could cover each other. Their department also gave HCWs adequate

Universiti Malaya

rest days, and the workload has also decreased by the rescheduling of elective cases. HCWs have stated that these approaches have helped lower the risk of burnout.

There is evidence that supportive employers during pandemic management can be a protective factor for HCWs. Health professionals' motivation and morality have considerably improved when they realized that their contributions are appreciated and reciprocated by employers. (Aoyagi et al. 2015) Our study's frontline HCWs also reported that their department regularly provided information on COVID-19 updates to HCWs and praised their work in the service of the people. When their efforts were recognized, the HCWs felt motivated and appreciated. HCW physical and mental health were also checked continuously by the organization such as OSHE, which was reassuring for our participants.

Workplace stress is thought to affect resilience, but adaptation processes and personal development can build strength and influence the ability to cope with stressful situations. Some strategies to strengthen and maintain personal resilience in the workplace may include the development of positive relationships and networks, which is also helpful in developing a healthy work-life balance (Robertson et al. 2016)

6.2.3 Stigma among HCWs

Based on this qualitative analysis, we found that frontline HCWs still lacked awareness of the PFA service, while some were apprehensive of receiving any form of psychological assistance. One of the reasons for this disconnect is stigma; that is, to avoid the label of mental illness and the harm it causes. (Corrigan 2004) Some frontline HCWs interviewed in our study were hesitant regarding receiving PFA due to perceived self-

Universiti Malaya

stigma and societal stigma. A few were reluctant to come forward as concerned about confidentiality issues, especially when they had to involve a middle person like their immediate supervisor.

HCWs had been facing mental health challenges long before the pandemic, and doctors especially struggled with stigma in seeking psychological support (Wallace 2012). Another survey showed that even physicians who had met the criteria for mental illness avoided psychiatry treatment as they believed they could manage their condition independently, were afraid of being reported to the licensing board, or felt too embarrassed with the diagnosis (Gold et al. 2016). The Royal College of Psychiatrists has tried to reduce stigma among the public and the HCWs through anti-stigma campaigns and publications. However, the most frequently mentioned obstacle to seeking help is lack of time and work pressure, coupled with severe concerns about confidentiality. (Garelick 2012)

Besides, workplaces are social spaces, and others can play a crucial role in enabling access to mental health support. (Ross and Goldner 2009) Poor support from employers reportedly doubles the risk of absenteeism related to mental illness. Discrimination against HCWs with mental health issues can further hinder them from getting the help they need promptly. (Moll 2014)

Besides, hesitation in identifying mental health symptoms reflects the lack of mental health literacy. Literacy in mental health has been described as a combination of knowledge and attitudes that contribute to recognizing, managing, or preventing mental disorders.(Jorm et al. 1997) Hence, it is essential to increase mental health literacy or awareness early on through education to reduce stigma and encourage more HCWs to

Universiti Malaya

come forward for assistance (Thornicroft et al. 2016). The University of Nottingham, United Kingdom (UK) recently created a digital learning package that included evidence-based guidance, support, and signposting relating to psychological wellbeing. The e-package was distributed to all UK healthcare employees during the COVID-19 pandemic and has been positively evaluated (Blake et al. 2020).

Additionally, to increase organizational support, all healthcare facilities must implement strategies to promote psychological first aid service that was still underutilized by HCWs due to perceived stigma. Incentives such as positive recognition and supervisor support may be needed for HCWs to reach out or seek help. Furthermore, support and policies for mental health must also be readily available to employees who need them. (Moll 2014)

6.3 PFA Providers

6.3.1 Remote PFA challenges

Almost all PFA providers in this study have reported it was a challenge for them to conduct PFA without direct contact with clients. They had difficulty assessing clients thoroughly, including changes in their expression or body language. However, the providers were mindful that remote PFA was necessary for the current pandemic to reduce infection risk. These findings were also consistent with the dilemma faced by PFA providers in China, who found that no direct contact with clients could have an impact on the effectiveness of the psychological intervention provided. (Cheng et al. 2020)

Universiti Malaya

Besides, in this study, PFA providers mentioned that there was no PFA guideline available for ongoing pandemics such as COVID-19; hence, it gave rise to differences of opinion among providers. The lack of scientific understanding of the COVID-19 pandemic and the required interventions led to confusion during pandemic preparation, especially in low- and intermediate-income countries. The pandemics will continue to challenge and cause uncertainty among policymakers, health leaders, and mental health professionals. Psychiatrists have to continue working more efficiently with insufficient resources and plan for mental health interventions in such difficult situations. (De Sousa, Mohandas, and Javed 2020)

As far as remote PFA is concerned, the providers in this study could not reach their HCWs directly at the site. Instead, all registrations were made online, and the client's contact numbers were provided to PFA providers that would administer the PFA. However, providers reported some confidentiality problems, especially regarding informed consent and online data safety. Some providers were also concerned that they could be perceived as scammers when calling clients.

During the COVID-19 pandemic, many countries have started to offer mental health services via telepsychiatry. (Shah et al. 2020) However, the quality of these services and the protection of ethical practices are not subject to a strict regulatory authority. (Cheng et al. 2020) Telepsychiatry's legal aspects are different from one country to another, and the same is true of email or online prescription. (De Sousa, Mohandas, and Javed 2020) It is therefore prudent that telepsychiatry professionals are professionally qualified and trained. The sensible use of telepsychiatry, its maintenance, and the right idea of referring to a hospital represents another challenge the mental health providers face during the pandemic. (Knopf 2020, Corruble 2020)

Universiti Malaya

6.3.2 Implementation of psychological interventions

However, a single PFA session may not be sufficient to support the psychological wellbeing of our HCWs. Mainly because HCWs are continuously exposed to stress related to the ongoing pandemic, early evidence from the meta-analysis showed a significant proportion of HCWs experienced mood and sleep disruptions (Pappa et al. 2020b). Evidence suggests that recovery-enhancing actions such as relaxation, coupled with physical activity and stress management, can prevent ill health among HCWs. (Bhui et al. 2016)

Our PFA providers in the study implemented interventional methods such as relaxation techniques, mindfulness therapy, and online group therapy for their clients. Previous studies had shown that mindfulness training was beneficial in decreasing stress for HCWs and may improve the quality of their communications with patients. The mindfulness skills are suitable for stressful workplaces and they can be performed in private or in groups in almost any environment. A major trigger for stress reactions is negative automatic thoughts. Mindfulness interventions encourage HCWs to be conscious of their negative beliefs while acquiring a new outlook on how those beliefs affect their emotions and behavior, thus allowing them to develop a healthier coping strategy. (Morgan, Simpson, and Smith 2015, La Torre et al. 2020). Healthcare facilities should also increase awareness of the intervention strategies to minimize stress and promote healthy behavior to face pandemic fears. (Adams and Walls 2020)

The COVID-19 pandemic has also affected the economy and led to a financial crisis for some (McKibbin and Fernando 2020, Priyadarshini et al. 2020). As such, PFA needs to be modified as a psychosocial intervention to address other areas of concern for

Universiti Malaya

clients in such situations. The PFA providers interviewed had also been taking such measures by including social workers and human resource teams as part of their multidisciplinary unit.

Additionally, Malaysia is a multiracial country, and our frontline HCWs have different religious believes. Hence, another consideration would be implementing religious and spiritual copings to guide them during a stressful situation (Francis et al. 2019). Besides, seeking help from religious communities would play a vital role in improving their believers' wellbeing by providing emotional assurances during the challenging times. Malaysian HCWs have specific beliefs, depending on their religions; therefore, religious institutions' awareness-raising programs and campaigns are equally important along with psychological interventions. (Shah et al. 2020)

Universiti Malaya

6.6 Strength and limitation

6.6.1 Strength

This study was conducted during the COVID-19 pandemic whereby the HCWs were still actively involved in providing care for patients affected by COVID-19 infection. Thus, researchers managed to explore the psychological experiences in the early stages of the pandemic instead of most existing qualitative studies that might be retrospective. The researchers also used a more flexible semi-structured interview consisting of some critical questions that help define the areas to be explored, but it also allowed the interviewer to diverge from pursuing any response more comprehensively. The researchers conducted interviews with both frontline HCWs and PFA providers, which gave us a more in-depth insight into the challenges associated with remote PFA, which was a relatively new experience to many during the COVID-19 pandemic. Although the study mainly emphasized the existing knowledge about the psychological impact of a COVID-19 pandemic on HCWs, we also explored the HCW's perspective regarding psychological first aid, especially its stigma.

6.6.2 Limitations

This study's sample size was limited due to qualitative research's nature, and the results are not statistically representative. A qualitative study aims to have a large enough sample size to uncover a variety of opinions among frontline HCWs but to limit the sample size at the point of saturation. Additionally, the study results were the perspective or experiences of a saturated group of participants and cannot be generalized. Moreover, due to the nature of the highly infectious disease, we were unable to conduct focus group discussions and did not collect data from multiple centers to avoid the risk of cross-infection.

Universiti Malaya

CHAPTER 7: CONCLUSION

7.1 Clinical implications and recommendations

This study identified frontline HCWs and PFA providers' psychological experience and perspective during the COVID-19 pandemic through a phenomenological approach. We found that during the early stages of the pandemic, frontline HCWs experienced negative emotions, but they managed to adopt healthy coping strategies with support from their surroundings.

One of the notable findings from our study was that the frontline HCWs were still apprehensive about receiving psychological interventions due to the stigma of other HCWs. Hence, it is essential to address stigma in the workplace, particularly towards HCWs treated for COVID-19 or as a patient under investigation through mental health awareness programs. Moving forward, hospital administration should ensure the widespread availability of early mental health assessments and psychosocial support for their HCWs battling the COVID-19 pandemic.

PFA providers faced challenges to administer PFA to HCWs due to lack of standard guidelines in an ongoing pandemic, client's reluctance, and technical difficulties while conducting a remote PFA via telepsychiatry. Despite these difficulties, PFA providers in the study could construct their own remote PFA guidelines with several modifications. The providers also offered psychological interventions involving multidisciplinary teams to their clients.

Thus, our study suggests that the current remote PFA administration needs to be further refined to accommodate the needs of HCWs better. Future studies should address the effectiveness of modified remote PFA during the COVID-19 pandemic for frontline HCWs and their long-term impact on their mental health outcomes.

Universiti Malaya

REFERENCES

Abdullah, Jafri Malin, Wan Faisham Nu'man Wan Ismail, Irfan Mohamad, Asrenee Ab Razak, Azian Harun, Kamarul Imran Musa, and Yeong Yeh Lee. 2020. "A Critical Appraisal of COVID-19 in Malaysia and Beyond." *The Malaysian journal of medical sciences : MJMS* 27 (2):1-9. doi: 10.21315/mjms2020.27.2.1.

Adams, James G, and Ron M Walls. 2020. "Supporting the health care workforce during the COVID-19 global epidemic." *Jama* 323 (15):1439-1440.

Adhikari, S. P., S. Meng, Y. J. Wu, Y. P. Mao, R. X. Ye, Q. Z. Wang, C. Sun, S. Sylvia, S. Rozelle, H. Raat, and H. Zhou. 2020. "Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review." *Infect Dis Poverty* 9 (1):29. doi: 10.1186/s40249-020-00646-x.

Amanullah, Shabbir, and Rashmi Ramesh Shankar. 2020. "The Impact of COVID-19 on Physician Burnout Globally: A Review." *Healthcare (Basel, Switzerland)* 8 (4):421. doi: 10.3390/healthcare8040421.

Aoyagi, Yumiko, Charles R Beck, Robert Dingwall, and Jonathan S Nguyen-Van-Tam. 2015. "Healthcare workers' willingness to work during an influenza pandemic: A systematic review and meta-analysis." *Influenza and other respiratory viruses* 9 (3):120-130.

Attride-Stirling, Jennifer. 2001. "Thematic networks: an analytic tool for qualitative research." *Qualitative Research* 1 (3):385-405. doi: 10.1177/146879410100100307.

Ayanian, J. 2020. "Mental Health Needs of Health Care Workers Providing Frontline COVID-19 Care. ." *JAMA Health Forum 2020*.

Universiti Malaya

Bai, Y., C. C. Lin, C. Y. Lin, J. Y. Chen, C. M. Chue, and P. Chou. 2004. "Survey of stress reactions among health care workers involved with the SARS outbreak." *Psychiatr Serv* 55 (9):1055-7. doi: 10.1176/appi.ps.55.9.1055.

Bhui, Kamaldeep, Sokratis Dinos, Magdalena Galant-Miecznikowska, Bertine de Jongh, and Stephen Stansfeld. 2016. "Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study." *BJPsych bulletin* 40 (6):318-325. doi: 10.1192/pb.bp.115.050823.

Blake, H., F. Bermingham, G. Johnson, and A. Tabner. 2020. "Mitigating the Psychological Impact of COVID-19 on Healthcare Workers: A Digital Learning Package." *Int J Environ Res Public Health* 17 (9). doi: 10.3390/ijerph17092997.

Bolton, Gillie. 2010. *Reflective practice: Writing and professional development*: Sage publications.

Brooks, S. K., R. K. Webster, L. E. Smith, L. Woodland, S. Wessely, N. Greenberg, and G. J. Rubin. 2020. "The psychological impact of quarantine and how to reduce it: rapid review of the evidence." *Lancet* 395 (10227):912-920. doi: 10.1016/s0140-6736(20)30460-8.

Byrne, Michelle M. 2001. "Understanding life experiences through a phenomenological approach to research." *AORN journal* 73 (4):830-830.

Chan, Angelina O. M., and Chan Yiong Huak. 2004. "Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore." *Occupational Medicine* 54 (3):190-196. doi: 10.1093/occmed/kqh027.

Chen, Qiongni, Mining Liang, Yamin Li, Jincai Guo, Dongxue Fei, Ling Wang, Li He, Caihua Sheng, Yiwen Cai, Xiaojuan Li, Jianjian Wang, and Zhanzhou Zhang. 2020. "Mental health care for medical staff in China during the COVID-19

Universiti Malaya

outbreak." *The lancet. Psychiatry* 7 (4):e15-e16. doi: 10.1016/S2215-0366(20)30078-X.

Cheng, Wenhong, Fang Zhang, Yingqi Hua, Zhi Yang, and Jun Liu. 2020. "Development of a psychological first-aid model in inpatients with COVID-19 in Wuhan, China." *General psychiatry* 33 (3):e100292-e100292. doi: 10.1136/gpsych-2020-100292.

Chersich, Matthew F., Glenda Gray, Lee Fairlie, Quentin Eichbaum, Susannah Mayhew, Brian Allwood, Rene English, Fiona Scorgie, Stanley Luchters, Greg Simpson, Marjan Mosalman Haghighi, Minh Duc Pham, and Helen Rees. 2020. "COVID-19 in Africa: care and protection for frontline healthcare workers." *Globalization and Health* 16 (1):46. doi: 10.1186/s12992-020-00574-3.

Chew, Nicholas W. S., Grace K. H. Lee, Benjamin Y. Q. Tan, Mingxue Jing, Yihui Goh, Nicholas J. H. Ngiam, Leonard L. L. Yeo, Aftab Ahmad, Faheem Ahmed Khan, Ganesh Napolean Shanmugam, Arvind K. Sharma, R. N. Komalkumar, P. V. Meenakshi, Kenam Shah, Bhargesh Patel, Bernard P. L. Chan, Sibi Sunny, Bharatendu Chandra, Jonathan J. Y. Ong, Prakash R. Paliwal, Lily Y. H. Wong, Renarebecca Sagayanathan, Jin Tao Chen, Alison Ying Ying Ng, Hock Luen Teoh, Georgios Tsivgoulis, Cyrus S. Ho, Roger C. Ho, and Vijay K. Sharma. 2020. "A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak." *Brain, Behavior, and Immunity* 88:559-565. doi: https://doi.org/10.1016/j.bbi.2020.04.049.

Chew, Nicholas W. S., Jinghao Nicholas Ngiam, Benjamin Yong-Qiang Tan, Sai-Meng Tham, Celine Yan-Shan Tan, Mingxue Jing, Renarebecca Sagayanathan, Jin Tao Chen, Lily Y. H. Wong, Aftab Ahmad, Faheem Ahmed Khan, Maznah Marmin, Fadhlina Binte Hassan, Tai Mei-Ling Sharon, Chin Han Lim, Mohamad Iqbal Bin

Universiti Malaya

Mohaini, Rivan Danuaji, Thang H. Nguyen, Georgios Tsivgoulis, Sotirios Tsiodras, Paraskevi C. Fragkou, Dimitra Dimopoulou, Arvind K. Sharma, Kenam Shah, Bhargesh Patel, Suktara Sharma, R. N. Komalkumar, R. V. Meenakshi, Shikha Talati, Hock Luen Teoh, Cyrus S. Ho, Roger C. Ho, and Vijay K. Sharma. 2020. "Asian-Pacific perspective on the psychological well-being of healthcare workers during the evolution of the COVID-19 pandemic." *BJPsych Open* 6 (6):e116. doi: 10.1192/bjo.2020.98.

Chirico, Francesco, Gabriella Nucera, and Nicola Magnavita. 2021. "Protecting the mental health of healthcare workers during the COVID-19 emergency." *BJPsych International* 18 (1):E1. doi: 10.1192/bji.2020.39.

Christensen, M. 2017. "The empirical-phenomenological research framework: Reflecting on its use." *Journal of Nursing Education and Practice* 7:81.

Clancy, Marie. 2013. "Is reflexivity the key to minimising problems of interpretation in phenomenological research?" *Nurse researcher* 20 (6).

Colaizzi, P. 1978. "Reflections and research in psychology: A phenomenological study of learning." *Dubuque, IA: Kendall/Hunt*.

Cope, Diane G. 2014. "Methods and meanings: Credibility and trustworthiness of qualitative research." Oncology nursing forum.

Corrigan, P. 2004. "How stigma interferes with mental health care." *Am Psychol* 59 (7):614-625. doi: 10.1037/0003-066x.59.7.614.

Corruble, Emmanuelle. 2020. "A viewpoint from Paris on the COVID-19 pandemic: a necessary turn to telepsychiatry." *The Journal of clinical psychiatry* 81 (3):0-0.

De Sousa, Avinash, E. Mohandas, and Afzal Javed. 2020. "Psychological interventions during COVID-19: Challenges for low and middle income countries." *Asian Journal of Psychiatry* 51:102128. doi: https://doi.org/10.1016/j.ajp.2020.102128.

Universiti Malaya

Di Tella, Marialaura, Annunziata Romeo, Agata Benfante, and Lorys Castelli. 2020. "Mental health of healthcare workers during the COVID-19 pandemic in Italy." *Journal of Evaluation in Clinical Practice* 26 (6):1583-1587. doi: https://doi.org/10.1111/jep.13444.

Dowling, Maura. 2006. "Approaches to reflexivity in qualitative research." *Nurse researcher* 13 (3).

Du Toit, Andrea. 2020. "Outbreak of a novel coronavirus." *Nature Reviews Microbiology* 18 (3):123-123. doi: 10.1038/s41579-020-0332-0.

Edward, Karen-Leigh, and Tony Welch. 2011. "The extension of Colaizzi's method of phenomenological enquiry." *Contemporary Nurse* 39 (2):163-171. doi: 10.5172/conu.2011.39.2.163.

Ehrlich, Haley, Mark McKenney, and Adel Elkbuli. 2020. "Protecting our healthcare workers during the COVID-19 pandemic." *The American journal of emergency medicine*:S0735-6757(20)30252-7. doi: 10.1016/j.ajem.2020.04.024.

Elengoe, Asita. 2020. "COVID-19 Outbreak in Malaysia." *Osong Public Health Res Perspect* 11 (3):93-100. doi: 10.24171/j.phrp.2020.11.3.08.

Francis, B., J. S. Gill, N. Yit Han, C. F. Petrus, F. L. Azhar, Z. Ahmad Sabki, M. A. Said, K. Ong Hui, N. Chong Guan, and A. H. Sulaiman. 2019. "Religious Coping, Religiosity, Depression and Anxiety among Medical Students in a Multi-Religious Setting." *Int J Environ Res Public Health* 16 (2). doi: 10.3390/ijerph16020259.

Francis, Benedict, Aliaa Juares Rizal, Zuraida Ahmad Sabki, and Ahmad Hatim Sulaiman. 2020. "Remote Psychological First Aid (rPFA) in the time of Covid-19 : A preliminary report of the Malaysian experience." *Asian Journal of Psychiatry*:102240. doi: https://doi.org/10.1016/j.ajp.2020.102240.

Universiti Malaya

Garelick, Antony I. 2012. "Doctors' health: stigma and the professional discomfort in seeking help." *The Psychiatrist* 36 (3):81-84. doi: 10.1192/pb.bp.111.037903.

Gold, K. J., L. B. Andrew, E. B. Goldman, and T. L. Schwenk. 2016. ""I would never want to have a mental health diagnosis on my record": A survey of female physicians on mental health diagnosis, treatment, and reporting." *Gen Hosp Psychiatry* 43:51-57. doi: 10.1016/j.genhosppsych.2016.09.004.

Groenewald, Thomas. 2004. "A Phenomenological Research Design Illustrated." *International Journal of Qualitative Methods* 3 (1):42-55. doi: 10.1177/160940690400300104.

Guest, Greg, Arwen Bunce, and Laura Johnson. 2006. "How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability." *Field Methods* 18 (1):59-82. doi: 10.1177/1525822X05279903.

Hobfoll, S. E., P. Watson, C. C. Bell, R. A. Bryant, M. J. Brymer, M. J. Friedman, M. Friedman, B. P. Gersons, J. T. de Jong, C. M. Layne, S. Maguen, Y. Neria, A. E. Norwood, R. S. Pynoos, D. Reissman, J. I. Ruzek, A. Y. Shalev, Z. Solomon, A. M. Steinberg, and R. J. Ursano. 2007. "Five essential elements of immediate and mid-term mass trauma intervention: empirical evidence." *Psychiatry* 70 (4):283-315; discussion 316-69. doi: 10.1521/psyc.2007.70.4.283.

Huang, C., Y. Wang, X. Li, L. Ren, J. Zhao, Y. Hu, L. Zhang, G. Fan, J. Xu, X. Gu, Z. Cheng, T. Yu, J. Xia, Y. Wei, W. Wu, X. Xie, W. Yin, H. Li, M. Liu, Y. Xiao, H. Gao, L. Guo, J. Xie, G. Wang, R. Jiang, Z. Gao, Q. Jin, J. Wang, and B. Cao. 2020. "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China." *Lancet* 395 (10223):497-506. doi: 10.1016/s0140-6736(20)30183-5.

Jootun, Dev, Gerry McGhee, and Glenn R Marland. 2009. "Reflexivity: promoting rigour in qualitative research." *Nursing standard* 23 (23):42-47.

Universiti Malaya

Jorm, Anthony F, Ailsa E Korten, Patricia A Jacomb, Helen Christensen, Bryan Rodgers, and Penelope Pollitt. 1997. "“Mental health literacy”: a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment." *Medical journal of Australia* 166 (4):182-186.

Kang, L., S. Ma, M. Chen, J. Yang, Y. Wang, R. Li, L. Yao, H. Bai, Z. Cai, B. Xiang Yang, S. Hu, K. Zhang, G. Wang, C. Ma, and Z. Liu. 2020. "Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study." *Brain Behav Immun*. doi: 10.1016/j.bbi.2020.03.028.

Kang, Lijun, Yi Li, Shaohua Hu, Min Chen, Can Yang, Bing Xiang Yang, Ying Wang, Jianbo Hu, Jianbo Lai, Xiancang Ma, Jun Chen, Lili Guan, Gaohua Wang, Hong Ma, and Zhongchun Liu. 2020. "The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus." *The lancet. Psychiatry* 7 (3):e14. doi: 10.1016/s2215-0366(20)30047-x.

Knopf, Alison. 2020. "Addiction telemedicine comes into its own with COVID-19." *Alcoholism & Drug Abuse Weekly* 32 (13):5-6.

Korstjens, Irene, and Albine Moser. 2018. "Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing." *European Journal of General Practice* 24 (1):120-124. doi: 10.1080/13814788.2017.1375092.

La Torre, G., A. Raffone, M. Peruzzo, L. Calabrese, R. A. Cocchiara, V. D'Egidio, P. F. Leggieri, B. Dorelli, S. Zaffina, A. Mannocci, and Group Yomin Collaborative. 2020. "Yoga and Mindfulness as a Tool for Influencing Affectivity, Anxiety, Mental Health, and Stress among Healthcare Workers: Results of a Single-Arm Clinical Trial." *J Clin Med* 9 (4). doi: 10.3390/jcm9041037.

Lai, J., S. Ma, Y. Wang, Z. Cai, J. Hu, N. Wei, J. Wu, H. Du, T. Chen, R. Li, H. Tan, L. Kang, L. Yao, M. Huang, H. Wang, G. Wang, Z. Liu, and S. Hu. 2020. "Factors

Universiti Malaya

Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019." *JAMA Netw Open* 3 (3):e203976. doi: 10.1001/jamanetworkopen.2020.3976.

Lincoln, Yvonna S, and Egon G Guba. 1982. "Establishing Dependability and Confirmability in Naturalistic Inquiry Through an Audit."

Liu, Qian, Dan Luo, Joan E. Haase, Qiaohong Guo, Xiao Qin Wang, Shuo Liu, Lin Xia, Zhongchun Liu, Jiong Yang, and Bing Xiang Yang. 2020. "The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study." *The Lancet. Global Health* 8 (6):e790-e798. doi: 10.1016/S2214-109X(20)30204-7.

Main, Alexandra, Qing Zhou, Yue Ma, Linda J Luecken, and Xin Liu. 2011. "Relations of SARS-related stressors and coping to Chinese college students' psychological adjustment during the 2003 Beijing SARS epidemic." *Journal of counseling psychology* 58 (3):410.

Mak, Winnie WS, Rita W Law, Jean Woo, Fanny M Cheung, and Dominic Lee. 2009. "Social support and psychological adjustment to SARS: The mediating role of self-care self-efficacy." *Psychology and Health* 24 (2):161-174.

Mason DJ, Friese CR. 2020. "Protecting health care workers against COVID-19—and being prepared for future pandemics." *JAMA Health Forum 2020* 1(3):e200353. doi: doi:10.1001/jamahealthforum.2020.0353.

Maunder, R. G., W. J. Lancee, K. E. Balderson, J. P. Bennett, B. Borgundvaag, S. Evans, C. M. Fernandes, D. S. Goldbloom, M. Gupta, J. J. Hunter, L. McGillis Hall, L. M. Nagle, C. Pain, S. S. Peczeniuk, G. Raymond, N. Read, S. B. Rourke, R. J. Steinberg, T. E. Stewart, S. VanDeVelde-Coke, G. G. Veldhorst, and D. A. Wasylenki. 2006. "Long-term psychological and occupational effects of

Universiti Malaya

providing hospital healthcare during SARS outbreak." *Emerg Infect Dis* 12 (12):1924-32. doi: 10.3201/eid1212.060584.

Maunder, R., J. Hunter, L. Vincent, J. Bennett, N. Peladeau, M. Leszcz, J. Sadavoy, L. M. Verhaeghe, R. Steinberg, and T. Mazzulli. 2003. "The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital." *Cmaj* 168 (10):1245-51.

Maunder, Robert G., Molyn Leszcz, Diane Savage, Mary Anne Adam, Nathalie Peladeau, Donna Romano, Marci Rose, and Rabbi Bernard Schulman. 2008. "Applying the Lessons of SARS to Pandemic Influenza." *Canadian Journal of Public Health* 99 (6):486-488. doi: 10.1007/BF03403782.

McAlonan, Grainne M, Antoinette M Lee, Vinci Cheung, Charlton Cheung, Kenneth WT Tsang, Pak C Sham, Siew E Chua, and Josephine GWS Wong. 2007. "Immediate and Sustained Psychological Impact of an Emerging Infectious Disease Outbreak on Health Care Workers." *The Canadian Journal of Psychiatry* 52 (4):241-247. doi: 10.1177/070674370705200406.

McKibbin, Warwick, and Roshen Fernando. 2020. *The Global Macroeconomic Impacts of COVID-19: Seven Scenarios*.

Milena, Z. R., Dainora, G., & Alin, S. . 2008. "Qualitative Research Methods: A Comparison Between Focus-Group and In-Depth Interview " *Annals of Faculty of Economics* 4(1):1279-1283.

Minihan, E., B. Gavin, B. D. Kelly, and F. McNicholas. 2020. "Covid-19, Mental Health and Psychological First Aid." *Ir J Psychol Med*:1-12. doi: 10.1017/ipm.2020.41.

Modenese, Alberto, and Fabriziomaria Gobba. 2020. Increased Risk of COVID-19-Related Deaths among General Practitioners in Italy. *Healthcare (Basel, Switzerland)* 8 (2). Accessed 2020/06//. doi:10.3390/healthcare8020155.

Universiti Malaya

MOH, Ministry of Health Malaysia 2020. "Mental Health and Psychosocial Support in COVID-19."

Moll, Sandra E. 2014. "The web of silence: a qualitative case study of early intervention and support for healthcare workers with mental ill-health." *BMC Public Health* 14 (1):138. doi: 10.1186/1471-2458-14-138.

Morgan, Peter, Jane Simpson, and Alistair Smith. 2015. "Health Care Workers' Experiences of Mindfulness Training: a Qualitative Review." *Mindfulness* 6 (4):744-758. doi: 10.1007/s12671-014-0313-3.

Moser, Albine, and Irene Korstjens. 2018. "Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis." *European Journal of General Practice* 24 (1):9-18. doi: 10.1080/13814788.2017.1375091.

Nickell, Leslie A., Eric J. Crighton, C. Shawn Tracy, Hadi Al-Enazy, Yemisi Bolaji, Sagina Hanjrah, Ayesha Hussain, Samia Makhlouf, and Ross E. G. Upshur. 2004. "Psychosocial effects of SARS on hospital staff: survey of a large tertiary care institution." *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne* 170 (5):793-798. doi: 10.1503/cmaj.1031077.

Nienhaus, Albert, and Rozita Hod. 2020. "COVID-19 among Health Workers in Germany and Malaysia." *International journal of environmental research and public health* 17 (13):4881. doi: 10.3390/ijerph17134881.

Palinkas, Lawrence A., Sarah M. Horwitz, Carla A. Green, Jennifer P. Wisdom, Naihua Duan, and Kimberly Hoagwood. 2015. "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research." *Administration and policy in mental health* 42 (5):533-544. doi: 10.1007/s10488-013-0528-y.

Pappa, Sofia, Vasiliki Ntella, Timoleon Giannakas, Vassilis G. Giannakoulis, Eleni Papoutsi, and Paraskevi Katsaounou. 2020a. "Prevalence of depression, anxiety,

Universiti Malaya

and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis." *Brain, Behavior, and Immunity* 88:901-907. doi: https://doi.org/10.1016/j.bbi.2020.05.026.

Pappa, Sofia, Vasiliki Ntella, Timoleon Giannakas, Vassilis G. Giannakoulis, Eleni Papoutsi, and Paraskevi Katsaounou. 2020b. "Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis." *Brain, behavior, and immunity*:S0889-1591(20)30845-X. doi: 10.1016/j.bbi.2020.05.026.

Pollock, A., P. Campbell, J. Cheyne, J. Cowie, B. Davis, J. McCallum, K. McGill, A. Elders, S. Hagen, D. McClurg, C. Torrens, and M. Maxwell. 2020. "Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: a mixed methods systematic review." *Cochrane Database Syst Rev* 11:Cd013779. doi: 10.1002/14651858.Cd013779.

Priyadarshini, I., P. Mohanty, R. Kumar, L. H. Son, H. T. M. Chau, V. H. Nhu, P. T. Thi Ngo, and D. Tien Bui. 2020. "Analysis of Outbreak and Global Impacts of the COVID-19." *Healthcare (Basel)* 8 (2). doi: 10.3390/healthcare8020148.

Ramaci, Tiziana, Massimiliano Barattucci, Caterina Ledda, and Venerando Rapisarda. 2020. "Social Stigma during COVID-19 and its Impact on HCWs Outcomes." *Sustainability* 12:13. doi: 10.3390/su12093834.

Rambaldini, Gloria, Kumanan Wilson, Darlyne Rath, Yulia Lin, Wayne L. Gold, Moira K. Kapral, and Sharon E. Straus. 2005. "The impact of severe acute respiratory syndrome on medical house staff a qualitative study." *Journal of General Internal Medicine* 20 (5):381-385. doi: 10.1111/j.1525-1497.2005.0099.x.

Ran, L., X. Chen, Y. Wang, W. Wu, L. Zhang, and X. Tan. 2020. "Risk Factors of Healthcare Workers With Coronavirus Disease 2019: A Retrospective Cohort

Universiti Malaya

Study in a Designated Hospital of Wuhan in China." *Clin Infect Dis* 71 (16):2218-2221. doi: 10.1093/cid/ciaa287.

Robertson, Emma, Karen Hershenfield, Sherry Lynn Grace, and Donna Eileen Stewart. 2004. "The Psychosocial Effects of Being Quarantined following Exposure to SARS: A Qualitative Study of Toronto Health Care Workers." *The Canadian Journal of Psychiatry* 49 (6):403-407. doi: 10.1177/070674370404900612.

Robertson, Helen D., Alison M. Elliott, Christopher Burton, Lisa Iversen, Peter Murchie, Terry Porteous, and Catriona Matheson. 2016. "Resilience of primary healthcare professionals: a systematic review." *British Journal of General Practice* 66 (647):e423. doi: 10.3399/bjgp16X685261.

Ross, Charlotte A, and Elliot M Goldner. 2009. "Stigma, negative attitudes and discrimination towards mental illness within the nursing profession: a review of the literature." *Journal of psychiatric and mental health nursing* 16 (6):558-567.

Salvagioni, Denise Albieri Jodas, Francine Nesello Melanda, Arthur Eumann Mesas, Alberto Durán González, Flávia Lopes Gabani, and Selma Maffei de Andrade. 2017. "Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies." *PLOS ONE* 12 (10):e0185781. doi: 10.1371/journal.pone.0185781.

Shah, Kaushal, Sukhmeet Bedi, Henry Onyeaka, Romil Singh, and Gaurav Chaudhari. 2020. "The Role of Psychological First Aid to Support Public Mental Health in the COVID-19 Pandemic." *Cureus* 12 (6):e8821-e8821. doi: 10.7759/cureus.8821.

Shaw, Karen. 2006. "The 2003 SARS outbreak and its impact on infection control practices." *Public health* 120 (1):8-14. doi: 10.1016/j.puhe.2005.10.002.

Shechter, Ari, Franchesca Diaz, Nathalie Moise, D. Edmund Anstey, Siqin Ye, Sachin Agarwal, Jeffrey L. Birk, Daniel Brodie, Diane E. Cannone, Bernard Chang, Jan

Universiti Malaya

Claassen, Talea Cornelius, Lilly Derby, Melissa Dong, Raymond C. Givens, Beth Hochman, Shunichi Homma, Ian M. Kronish, Sung A. J. Lee, Wilhelmina Manzano, Laurel E. S. Mayer, Cara L. McMurry, Vivek Moitra, Patrick Pham, LeRoy Rabbani, Reynaldo R. Rivera, Allan Schwartz, Joseph E. Schwartz, Peter A. Shapiro, Kaitlin Shaw, Alexandra M. Sullivan, Courtney Vose, Lauren Wasson, Donald Edmondson, and Marwah Abdalla. 2020. "Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic." *General Hospital Psychiatry* 66:1-8. doi: https://doi.org/10.1016/j.genhosppsych.2020.06.007.

Shenton, Andrew K. 2004. "Strategies for ensuring trustworthiness in qualitative research projects." *Education for information* 22 (2):63-75.

Singhal, T. 2020. "A Review of Coronavirus Disease-2019 (COVID-19)." *Indian J Pediatr* 87 (4):281-286. doi: 10.1007/s12098-020-03263-6.

Snider, Leslie, Alison Schafer, and Mark Ommeren. 2011. *Psychological First Aid: Guide for Field Workers (English)*.

Straus, Sharon E, Kumanan Wilson, Gloria Rambaldini, Darlyne Rath, Yulia Lin, Wayne L Gold, and Moira K Kapral. 2004. "Severe acute respiratory syndrome and its impact on professionalism: qualitative study of physicians' behaviour during an emerging healthcare crisis." *BMJ* 329 (7457):83. doi: 10.1136/bmj.38127.444838.63.

Sulaiman AH, Ahmad Sabki Z, Jaafa MJ, Francis B, Razali KA, Juares Rizal A, Mokhtar NH, Juhari JA, Zainal S, Ng CG. . 2020. "Development of a Remote Psychological First Aid Protocol for Healthcare Workers Following the COVID-19 Pandemic in a University Teaching Hospital, Malaysia." *Healthcare* (8(3):228). doi: https://doi.org/10.3390/healthcare8030228.

Universiti Malaya

Sun, Niuniu, Luoqun Wei, Suling Shi, Dandan Jiao, Runluo Song, Lili Ma, Hongwei Wang, Chao Wang, Zhaoguo Wang, Yanli You, Shuhua Liu, and Hongyun Wang. 2020. "A qualitative study on the psychological experience of caregivers of COVID-19 patients." *American journal of infection control* 48 (6):592-598. doi: 10.1016/j.ajic.2020.03.018.

Tam, C. W., E. P. Pang, L. C. Lam, and H. F. Chiu. 2004. "Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: stress and psychological impact among frontline healthcare workers." *Psychol Med* 34 (7):1197-204. doi: 10.1017/s0033291704002247.

Thornicroft, G., N. Mehta, S. Clement, S. Evans-Lacko, M. Doherty, D. Rose, M. Koschorke, R. Shidhaye, C. O'Reilly, and C. Henderson. 2016. "Evidence for effective interventions to reduce mental-health-related stigma and discrimination." *Lancet* 387 (10023):1123-1132. doi: 10.1016/s0140-6736(15)00298-6.

Todres, L., and I. Holloway. 2004. "Descriptive phenomenology: life-world as evidence."

Tong, Allison, Peter Sainsbury, and Jonathan Craig. 2007. "Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups." *International Journal for Quality in Health Care* 19 (6):349-357. doi: 10.1093/intqhc/mzm042.

Turner, Daniel. 2010. "Qualitative Interview Design: A Practical Guide for Novice Investigators." *Qualitative Report* 15.

Wallace, Jean E. 2012. "Mental health and stigma in the medical profession." *Health* 16 (1):3-18. doi: 10.1177/1363459310371080.

Walton, Matthew, Esther Murray, and Michael D Christian. 2020. "Mental health care for medical staff and affiliated healthcare workers during the COVID-19 pandemic."

Universiti Malaya

European Heart Journal. Acute Cardiovascular Care 9 (3):241-247. doi: 10.1177/2048872620922795.

Watt, Diane. 2007. "On becoming a qualitative researcher: the value of reflexivity." *Qualitative Report* 12 (1):82-101.

WHO, World Health Organization 2020. "Coronavirus disease 2019 (COVID-19) Situation Report –82."

Williamson, V., D. Murphy, and N. Greenberg. 2020. "COVID-19 and experiences of moral injury in front-line key workers." *Occup Med (Lond)* 70 (5):317-319. doi: 10.1093/occmed/kqaa052.

Wong, Tai W., Josephine K.Y. Yau, Cecilia L.W. Chan, Rosalie S.Y. Kwong, Samuel M.Y. Ho, Chor C. Lau, Fei L. Lau, and Chau H. Lit. 2005. "The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope." *European Journal of Emergency Medicine* 12 (1):13-18.

World Health, Organization. 2020. Novel Coronavirus (2019-nCoV): situation report, 19. Geneva: World Health Organization.

World Health, Organization, Foundation War Trauma, and International World Vision. 2011. Psychological first aid: guide for field workers. Geneva: World Health Organization.

Wu, Ping, Yunyun Fang, Zhiqiang Guan, Bin Fan, Junhui Kong, Zhongling Yao, Xinhua Liu, Cordelia J. Fuller, Ezra Susser, Jin Lu, and Christina W. Hoven. 2009. "The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk." *Canadian journal of psychiatry. Revue canadienne de psychiatrie* 54 (5):302-311. doi: 10.1177/070674370905400504.

Universiti Malaya

Yang, Jianzhong, Jun Tong, Fu Meng, Qiang Feng, Hong Ma, Chuan Shi, Jing Yuan, Shuran Yang, Liang Liu, Li Xu, YingJun Xi, Wentian Li, Hans Rohlof, Xudong Zhao, and Chuanyuan Kang. 2020. "Characteristics and challenges of psychological first aid in China during the COVID-19 outbreak." *Brain, behavior, and immunity* 87:113-114. doi: 10.1016/j.bbi.2020.04.075.

Zhang, Z., S. Liu, M. Xiang, S. Li, D. Zhao, C. Huang, and S. Chen. 2020. "Protecting healthcare personnel from 2019-nCoV infection risks: lessons and suggestions." *Front Med* 14 (2):229-231. doi: 10.1007/s11684-020-0765-x.

Universiti Malaya