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‘Burnt Out Lamps’: Exploring the Impact of Occupational Stress and Burnout on the Wellbeing of Intensive Care Nurses in a Tertiary Hospital

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‘BURNT OUT LAMPS’: EXPLORING THE IMPACT OF OCCUPATIONAL STRESS AND BURNOUT ON THE WELLBEING OF INTENSIVE CARE NURSES IN A TERTIARY HOSPITAL

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Declaration of Authorship

This thesis is the candidate's work and contains no material accepted for the award of any degree or diploma in any other institution.

To the best of the candidate's knowledge, the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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Abstract

Occupational stress and burnout are commonly experienced by nurses in the intensive care unit and contribute to poor nursing practice. A study in the United Kingdom revealed that approximately one-third of the intensive care unit team members were at a ‘high risk’ for burnout syndrome. Research suggests that multiple factors contribute to occupational stress and burnout, including nursing shortages, staff turnover, high workloads, workplace conflicts, and bullying. Research suggests that the wellbeing of nurses is imperative in ensuring the best delivery of care to patients, which further results in positive health outcomes for patients.

This study was conducted in a public hospital in Western Australia. This mixed-methods study included quantitative and qualitative data collection and analysis with subsequent synthesis of the findings. Surveys were distributed to 200 intensive care unit nurses as the primary data collection method in phase one. The second phase of the study involved seven interviews.

The potential benefits of this research are that the results potentially could become a point of reference for organisations to encourage and facilitate support strategies for intensive care unit nurses at individual and organisational levels to address OS and burnout. Specifically, this study examined the burnout, self-perceived wellbeing and occupational factors related to burnout in the intensive care unit nurses working in one public metropolitan hospital. Improving the working environment for nurses will ultimately improve patient safety, patient outcomes and quality of care and create a positive work environment for nurses in the hospital. intensive care unit is one of the crucial locations of healthcare provision in acute medical cases. The outcome of this research is novel as it had been conducted at a newly established metropolitan hospital with no precedent in the field of occupational stress among intensive care nurses. The current study establishes baseline data in the field of burnout and wellbeing. In light of the current pandemic, wellbeing support groups and counselling need to be implemented to protect nurse wellbeing in intensive care unit. These experiences may serve as a valuable reference while designing psychological health interventions for nurses in future public health emergencies.

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List of Abbreviations

ACHS	Australian Council on Healthcare Standards
ACCCN	Australian College of Critical Care Nurses
A-EQUIP	Advocating and Educating for Quality Improvement Program,
AFHW	Australia's Future Health Workforce
ANU	Associate Nurse Unit Manager
CE	Clinical Educator
COVID-19	Coronavirus Disease 2019
EAP	Employee Assistance Program
EOC	Emotion-oriented Coping Style
HWA	Health Workforce Australia
HREC	Human Research Ethics Committee
ICN	International Council of Nurses
ICU	Intensive Care Unit
MMR	Mixed Methods Research
NHS	National Health Service
NNA	National Nursing Association
NUM	Nurse Unit Manager
OS	Occupational Stress
PNA	Professional Nurse Advocate
PP	Participants
QSR	Qualitative Research Software
RCS	Restorative Clinical supervision
RN	Registered Nurse
RGS	Research Governance System
SPSS	Statistical Package for Social Sciences
SARC	Sexual Assault Resource Centre
TOC	Task-Oriented Coping Style
MERS-CoV	Middle East Respiratory Syndrome Coronavirus
UK	United Kingdom
UNDA	University of Notre Dame Australia.
WA	Western Australia

Glossary

Australian Nursing and Midwifery Federation: The largest union in Australia, with over 30,000 members. The Australian Nursing and Midwifery Federation is operated by nurses and midwives to advance the industrial, political and professional status of its members.

Australian Institute of Health and Welfare: A statutory authority established in 1987 by the *Australian Institute of Health Act 1987* to report to the nation on the state of its health. In 1992, the role and functions of the then Australian Institute of Health were expanded to include welfare-related information and statistics, thereby changing the institute to the Australian Institute of Health and Welfare. The Act is now titled the *Australian Institute of Health and Welfare Act 1987*.

Burnout: Burnout is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: (1) feelings of energy depletion or exhaustion; (2) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and (3) reduced professional efficacy.

Enrolled Nurse: A person with appropriate educational preparation and compliance with practice who has acquired the requisite qualification to be an enrolled nurse with the Nursing and Midwifery Board of Australia. An enrolled nurse provides nursing care, working under the direction and supervision of the registered nurse.

Nurse Unit Manager: Manages the human resources, business and clinical activities of the health unit or hospital.

Registered Nurse: A person who has successfully completed the prescribed education program accredited by the Australian Nursing and Midwifery Accreditation Council and acquired the requisite qualification to be a registered nurse with the Nursing and Midwifery Board of Australia.

Hospital Acquired Complication (HAC)**:** A HAC is a medical condition or complication that a patient develops during a hospital stay, which was not present at admission.

Intensive Care Nurse: Intensive care nurses work in a hospital's intensive care unit (ICU), assisting critically ill patients. Critically ill patients have life-threatening medical problems that require frequent monitoring, and they generally

need interventions to assist with breathing as well as medications to regulate their blood pressure. Intensive care refers to the specialised treatment given to acutely unwell patients who require critical medical care.

Intensive Care Unit (ICU): An ICU provides critical care and life support for acutely ill and injured patients; unless you are an emergency admission, patients need a referral from the doctor or specialist to be admitted to ICU.

Occupational Stress (OS): Occupational stress is defined as "the reaction people have to excessive demands or pressures, arising when people try to cope with tasks, responsibilities or other types of pressure connected with their jobs, but find difficulty; strain or worry in doing so".

Resilience: Processes and skills that result in good individual and community health outcomes in the face of negative events, serious threats and hazards. Resilience, the term generally reflects the ability of a person, community, or system to withstand, adapt, recover, rebound, or even grow from adversity, stress, or trauma

Turnover: Employee turnover refers to the total number of workers who leave a company over a certain time period.

The Australian College of Critical Care Nurses (ACCCN): ACCCN is the peak national professional nursing body representing critical care nurses in state, national and international forums. ACCCN sets professional practice standards for critical care nurses and provides professional leadership through education, research, policy development and industrial advice.

Staffing levels: Appropriate nurse staffing level is a match of registered nurse expertise with the needs of the recipient of nursing care services in the context of the practice setting and situation. According to Australian Council of Healthcare Standards (ACHS) ICU patients require a standard nurse/patient ratio of at least 1:1 and High Dependency patients require a standard nurse/patient ratio of at least 1:2.

Wellbeing: Wellbeing is a positive state experienced by individuals and societies. Similar to health, it is a resource for daily life and is determined by social, economic and environmental conditions.

Chapter 1: Introduction

1.1 The Research Problem

Occupational stress (OS) and burnout among intensive care unit (ICU) nurses are prevalent worldwide (Barto & Burk, 2017). Working in a continuously stressful environment can lead to burnout among nursing staff, with potentially negative consequences for their health and the health of their patients (Chatzigianni et al., 2018; Vahedian-Azimi et al., 2019). Arrogante and Aparicio-Zaldivar (2019) argued that burnout is a predictor of ICU nurses' physical and mental wellbeing. Burnout is commonly conceptualised as a multidimensional syndrome comprising three components: emotional exhaustion, depersonalisation, and reduced personal accomplishment (Maslach, 1993). Emotional exhaustion arises 'as emotional resources are depleted, [and] workers feel they are no longer able to give of themselves at a psychological level' (Maslach, Jackson, Leiter, Schaufeli & Schwab, 1996, p. 4). Depersonalisation occurs when workers develop 'negative cynical attitudes and feelings about [their] patients (Maslach et al., 1996, p. 4). Reduced personal accomplishment 'refers to the tendency to evaluate oneself negatively, particularly in regard to one's work with clients' (Maslach et al., 1996, p. 4). Dall'Ora, Ball, Reinius and Griffiths (2020) conducted a theoretical review of 91 studies on burnout and factors associated with burnout in nursing and revealed that the potential consequences of burnout for staff as well as patients are severe. It is likely that burnt-out employees are less cognitively vigilant and consequently may compromise patient safety (Halbesleben, Wakefield, Wakefield & Cooper, 2008). Al Ma'mari, Sharour and Al Omari (2020) also suggest that as per intensive care, nurses' predictors of patient safety were influenced by depersonalisation, emotional exhaustion and personal accomplishment fatigue, and the work environment.

Burnout leads to exhaustion, fatigue, insomnia, muscle tension, headaches and gastrointestinal problems, amongst other consequences (Moss, Good, Gozal, Kleinpell & Sessler, 2016). Wilson, Parris and Aggarwal (2019) noted that if burnout were a disease, it would be classified as an epidemic due to its prevalence and impacts on the health of those affected. (Wilson et al., 2019). A study conducted in Western Australia with 84 nurses and student nurses by Oliver (2017) demonstrated that 60% of respondents perceived a high level of work-related stress. Moreover, Australia has one

of the highest workers' compensation claims rates for work-related mental disorders associated with stress (Safe Work Australia, 2015). Brunetto et al. (2013) found that Australian nurses experienced a high level of turnover intention. Duffield, Roche, Homer, Buchan and Dimitrelis (2014) compared the nurse turnover rate across countries and found that New Zealand had the highest rate (44.3%), followed by the United States (26.8%), Canada (19.9%) and Australia (15.1%). It has been reported that in Australia, 20%–40% of nurses experience burnout symptoms (McMillan et al., 2016). Research suggests burnout syndrome prevention would greatly reduce the incidence of ill health and improve the quality of health of health workers (de Oliveira, de Alcantara Sousa, Vieira Gadelha & do Nascimento, 2019)

Also linked to improving the quality of health workers' health is the maintenance of wellbeing. Wellbeing is 'the combination of feeling good and functioning effectively' (Huppert, 2009, p. 139). By managing workforce stress effectively employers can improve employee wellbeing and increase efficiency at work (Abbas, Ali, Bahgat & Shouman, 2019; Adams, Chamberlain & Giles, 2018; Gosselin, Bourgault & Lavoie, 2015; Kay Choong et al., 2018; Ricou et al., 2018). A study by Jarden, Narayanan, Sandham, Siegert and Koziol-McLain et al. (2019) noted that the wellbeing of nurses is strengthened by implementing workplace wellbeing programs, peer supervision, formal debriefing and supporting safe and appropriate staffing levels. Adopting workplace policies that address stress can improve wellbeing and reduce costs in healthcare organisations due to stress related absences. The study by Sundberg et al. (2017) stated that when nurses' wellbeing was improved, they felt better and delivered better care to their patients. Thus, the impact of these programs has a 'ripple effect' among nurses and their patients.

Amidst the COVID-19 global outbreak, targeted interventions to promote the physical and mental wellbeing of ICU nurses have been crucial. For example, a recent study by Lai et al. (2020) in Wuhan, China, showed that nurses reported high rates of depression, anxiety, insomnia and distress during the global COVID-19 pandemic that began there in December 2019. Similar observations on nurses' stress responses have been reported in similar contexts, including during the middle east respiratory syndrome coronavirus (MERS-CoV) pandemic, a disease similar to COVID-19 (Kim & Choi, 2016; Park, Lee, Park & Choi, 2018; Perlis, 2020). An International Council of Nurses (ICN) survey reported that 60% of the National Nursing Association (NNA) have sometimes or regularly received reports of mental health distress from nurses

involved in the COVID-19 response. Burnout, anxiety, depression and fear of stigma and discrimination are common mental health issues reported to our NNAs from frontline nurses. In light of the current pandemic, counselling and wellbeing support groups need to be implemented to protect the wellbeing of ICU nurses.

1.2 Significance of the Study

Existing research shows a correlation between wellbeing and success at the professional, personal and interpersonal levels, resulting in higher productivity in the workplace for those with a high level of wellbeing (Diener, 2012). According to a study by Liu, Zhang, Chang & Wang, (2017) understanding nurses' perceptions of factors that strengthen their wellbeing is the first step in improving wellbeing. While OS and burnout has been widely researched, wellbeing has largely been understood through academic or theoretical frameworks and not from the perspective of those nurses experiencing stress and burnout. There is a gap in the literature regarding in-depth studies on ICU nurses' experiences of stress and wellbeing in WA. It is expected that the findings of this study contribute to an understanding of the burnout and self-perceived wellbeing among ICU nurses in Western Australian tertiary hospital. The findings from this study in relation to burnout and wellbeing could be a point of reference for organisations to promote wellbeing and facilitate support strategies for ICU nurses to enhance a positive work environment. Therefore, staff will benefit from a reduction in stress levels and feel valued. This will also benefit the organisation to improve the working relationship of staff, increase staff retention and thereby improve patient safety, quality of care and patient outcomes.

1.3 Aim and Objectives

This study aimed to explore burnout, self-perceived wellbeing and related workplace factors which impact on ICU nurses within one public metropolitan hospital setting.

The objectives of this study were:

1. to assess the levels of burnout of ICU nurses
2. to identify the factors that can lead to burnout in ICU nurses
3. to identify the impact of workplace stressors on the wellbeing of ICU nurses
4. to identify the strategies employed by ICU nurses to overcome stress

5. to explore the factors that would help to minimise stress and improve the wellbeing of nurses from a nurse's perspective
6. to identify the relationship between burnout and wellbeing and the impact of COVID-19 on ICU nurses.

1.4 Overview of the Study

This study was conducted at a tertiary hospital in WA in the Perth metropolitan area with 200 ICU nurses. This study started before the COVID-19 pandemic and was completed after the first wave of COVID-19 in WA. To address the research objectives above, this study employed a sequential mixed-methods design. This involves both quantitative and qualitative viewpoints collected during two distinct phases.

1.4.1 Phase One

A quantitative survey assessed nurses' burnout levels and their experiences of individual wellbeing at a personal and organisational level. The Maslach Burnout Inventory (MBI) was used for measuring burnout. A personal wellbeing questionnaire and an organisational wellbeing questionnaire were used to examine personal wellbeing and organisational wellbeing. Finding the link between burnout and wellbeing in the nursing profession requires identifying staff wellbeing on an individual and organisational level. According to Check and Schutt (2012), surveys are preferable because they are less expensive, easily accessible and provide a rapid turnaround in data collection.

1.4.2 Phase Two

Phase two comprised semi-structured interviews, which allow the researcher to move from general to more specific topics. Semi-structured interviews are the preferred qualitative descriptive method in mixed-methods studies (Jamshed, 2014).

1.5 Conclusion

In conclusion, chapter one has highlighted the research problem, significance of the study, aim and objective and overview of the study.

In order to investigate the details of burnout and wellbeing a thorough literature review is conducted on factors causing OS and burnout among ICU nurses, theories of burnout, the significance of burnout on ICU nurses' wellbeing and strategies to improve wellbeing. The search provides an overview of current knowledge, theories behind burnout, and identifying gaps in existing research. These concepts set the background for the proposed study.

Chapter three details the methodology, including the mixed method explanatory sequential design used in the study. It also provides a brief discussion on the philosophy underpinning mixed method approach to research.
Chapter four describes the quantitative phase of the study. It explains in detail the process involved in the administration of the online survey, the data collection methods, and the subsequent analysis and presentation of the results. It provides an overview of the findings that required more explanation and exploration, that were subsequently used to develop the open-ended questions for the interviews.
Chapter five describes the qualitative phase of the study detailing the sequence of methods, analysis of data and the finding. This concludes with a brief synopsis of the chapter prior to the final discussion chapter.
Chapter six provides a synthesis of the findings from both the quantitative and qualitative phases of the study, compared with study aims and research questions. The chapter concludes by discussing the limitations of the study, together with recommendations.

Chapter 2: Literature Review

2.1 Introduction

The previous chapter provided a background and justification for the study. Chapter 2 provides a comprehensive narrative literature review of the main concepts and theories behind burnout. Literature review support research by identifying gaps and highlighting significant areas of research questions. The literature was searched using several scholarly databases including: CINAHL; PubMed, Joanna Briggs Institute; Medline; ScienceDirect; Scopus; and summon. The key search terms used for the literature review included: Burnout, Intensive care unit, stress, Occupational stress, Job stress, wellbeing, and work wellbeing

This chapter starts with conceptual framework of this study. While the theoretical framework describes the theoretical underpinnings of the burnout, the conceptual framework allows to make conclusions, and to help facilitate the understanding of the relationship among concepts in relation to burnout and wellbeing.

2.2 Conceptual Framework

The conceptual framework for this study is created following a narrative review of the literature on the concepts of burnout and wellbeing. Since the main purpose of the study is to explore burnout and self-perceived wellbeing, the basis of the conceptual framework formed around factors leads to burn out and wellbeing. The conceptual framework also displays the association between job demands, resources and burnout among nurses.

The conceptual framework establishes the purpose and focus of the research, which is identifying the factors that lead to burnout (Figure 1).

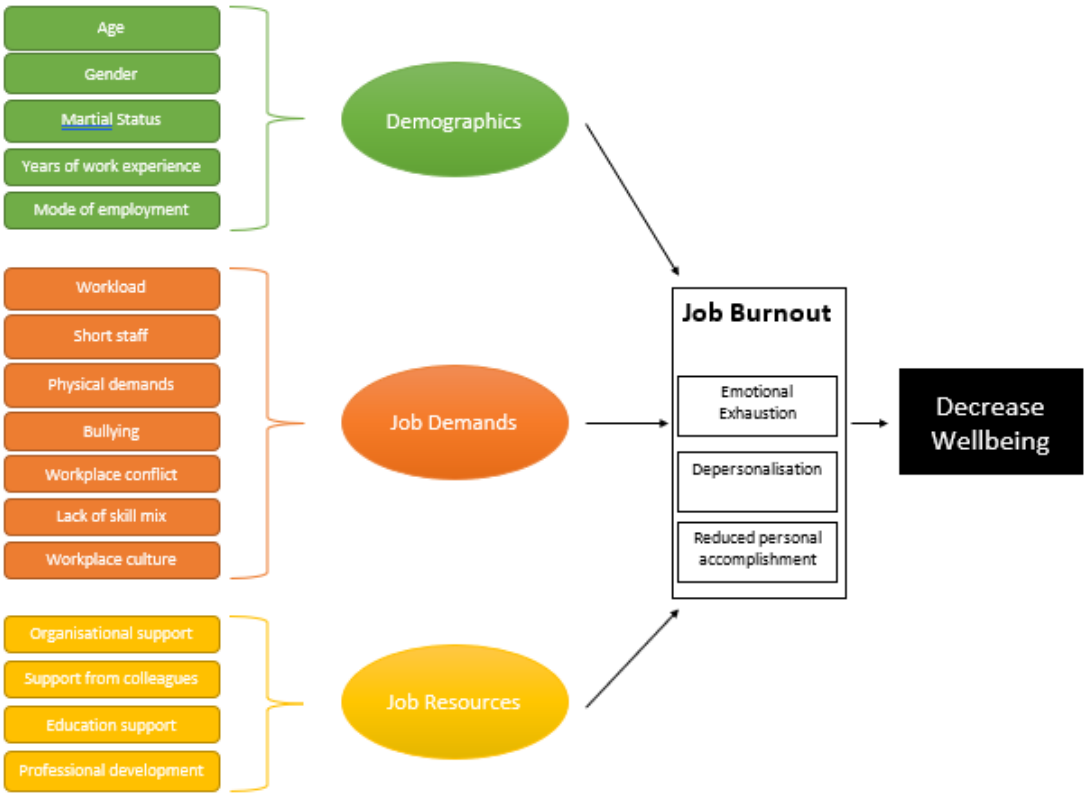

Figure 2.1. Conceptual Framework for the study

2.3 Occupational Stress

Stress is a common phenomenon in the workplace (Achour, Binti Abdul Ghani Azmi, Bin Isahak, Mohd Nor & Mohd Yusoff, 2019) and adversely impacts the physical and mental wellbeing of employees and workers. In Australia, over $133.9 million was paid in benefits to workers who claimed workplace stress during the 2004/2005 tax year. Ulrich et al. (2019), found that one-third of ICU nurses intended to leave their jobs in the near future. Health care systems incur high costs when ICU nurses leave their positions due to diminished wellbeing (Roche, Duffield, Homer, Buchan & Dimitrelis, 2015). According to the work-related injury report by work health and safety statistics Australia 2021,17% of work-related injury is reported from health sector (safe work Australia 2021). While stress and burnout are often conceptualised within the same framework, Costello, Walsh, Cooper and Livingston (2019) have pointed out that stress and burnout differ. Burnout is a work-related syndrome that results from prolonged job stressors (Costello et al., 2019). Thus, ongoing and significant stress is a precursor to burnout. The results of a systematic literature review by Hall, Johnson, Watt, Tsipa and O'Connor (2016) has indicated

that poor wellbeing and burnout are associated, and that patient safety is compromised. According to this research, creating a safe work environment is imperative when planning interventions to improve patient safety. In 2018, admissions associated with HACs* costs to the public sector were $4.1 billion, or 8.9% of total hospital expenditure (Australian Commission on Safety and Quality in Health Care, 2019). Therefore, this study also focuses on the association between burnout and wellbeing of nurses working in the high-stress environment of an Australian hospital's ICU.

The World Health Organization (WHO, 2019) recently declared burnout an 'occupational phenomenon' and a serious health issue in the International Classification of Diseases, eleventh revision (ICD-11), and serious health issue. Burnout is comprised of three different components, including emotional exhaustion (EE), depersonalisation (DP), and negative perceptions regarding professional accomplishments (PA) (Costello et al., 2019). Emotional exhaustion relates to a feeling of emotional depletion, depersonalisation involves the development of negative cynical attitudes towards recipients of care, and professional accomplishments entails negative perceptions among staff members about their professional accomplishments. Burnout is identified as one of the serious outcomes of high levels of work-related stress; as the level of stress rises, one becomes more prone to burnout syndrome (Lu et al., 2019).

Both burnout and stress contribute to negative impacts on the wellbeing of healthcare practitioners (Kwiatosz-Muc et al., 2019; Munnangi, Dupiton, Boutin & Angus, 2018; Zaher, Vafaei & Abianeh, 2016). According to Vahedian-Azimi et al. (2019), wellbeing is an important element of one's ability to function successfully in the broader society. Nurses are a working group exposed to various stressors within their work environments, including large workloads, lack of work shift choices, and time management challenges (Abbas et al., 2019). Other factors that contribute to high levels of stress and eventually burnout include insecure working conditions, as well as conflicts with colleagues or patient relatives (Abbas et al., 2019; Achour et al., 2019). All these have adverse implications on the various domains of healthcare institutions, such as high levels of sickness and absenteeism (Abbas et al., 2019).

Abbas, Ali, Bahgat and Shouman (2019) assert that ICU nurses in particular areas are exposed to highly stressful situations regularly and, therefore, are vulnerable to burnout. Their immediate environments are usually crowded with stressful elements, including the fact that they manage the care of patients with severe illnesses

and that their socio-familial relationships are interrupted by loaded work schedules. Kwiatosz-Muc et al. (2019), along with Abbas et al. (2019), note that intensive care nurses are required to make critical decisions about the health and safety of others constantly, which contributes to their stress and constant stress leads to burnout. These workplace factors are influenced by individual personality traits (Chatzigianni, Tsounis, Markopoulos & Sarafis, 2018; Chico-Barba et al., 2019; Vahedian-Azimi et al., 2019), as well as the structure of particular workplace organisations, including social support, levels of supervision and opportunities for professional development. One of the principal goals of this study is to offer ideas for how to mitigate workplace stress to help healthcare professionals and ICU nurses, in particular, experience higher levels of wellbeing and lower levels of stress.

2.2 Factors Causing Occupational Stress Among ICU Nurses

The ICU is characterised by multiple distractions and stress factors, such as high patient mortality, staff shortage, heavy workload, rapid patient turnover, and competing demands (Vincent et al., 2019). Intensive care nurses are usually regarded as dedicated, driven, and invested in their patients and their chosen area of specialisation (Vincent et al., 2019). In Australia, ICU nurses routinely handle highly technical devices such as mechanical ventilators, extracorporeal therapy and intra-aortic balloon pumps, measure cardiac output from highly technical hemodynamic devices and titrate vasoactive drugs. Intensive care nurses not only have technical skills but also the knowledge to apply these skills to better patient care. Each specialist ICU nurse manages multiple and complex needs of critically ill intensive care patients (Chamberlain, Pollock, & Fulbrook, 2018).

In Australia, the ACCCN ICU Staffing Position Statement (2003) on Intensive Care Nursing Staffing recommends 1:1 staff patient ratio to ensure optimal patient outcomes and a sustainable workforce in ICU nursing. The Australian and New Zealand Intensive Care Society. (2015) reports Intensive care nurses provide direct patient-centred care, which facilitates information sharing, effective communication, and consultation from various medical teams and families. However, the constant barrage of demands challenges even the most compassionate and dedicated nurses to hold stress and burnout at bay and maintain their wellbeing. Moreover, recent studies have shown that the nursing shortage is one of the most identified factors causing OS

and burnout (Gosselin, Bourgault & Lavoie, 2015; Mealer et al., 2014; Ricou et al., 2018; Siffleet, Williams, Rapley & Slatyer, 2015).

The sections below describe various workplace factors that contribute to high levels of stress and burnout for ICU nurses.

2.2.1 Staffing

2.2.1.1 Nurse shortages and staff turnover

The nursing profession is currently facing a shortage of qualified staff. The exodus of nurses from the profession directly feeds into the problem of burnout for staff who stay in the profession, who are faced with increased job demands and fewer resources (Costello et al., 2019; De Grande, Liu, Greene & Stankus, 2018; Sundberg et al., 2017). The study by Mealer et al. (2014) note that this is especially the case in ICUs, as shortages in critical care nursing are more apparent. In addition, Das et al. (2016) argued that stress and burnout lead to negative attitudes about work, which, with time, cumulatively results in absenteeism and staff turnover. The Summary for Health Report, published by the Australian Commission on Safety and Quality in Health Care (2019), states that, in 2030, the critical care and emergency care nursing sector will have the greatest impact on the workforce with a deficit of 10,753 staff and 11,294 more employees who intend to retire (Health Workforce Australia, 2014).

In this sense, there is a vicious cycle of staff shortages, burnout and negative feelings about the work environment. Therefore, a systematic response is needed at the organisational level to break this cycle. Ricou et al. (2018) argue that addressing the nursing shortage should be a managerial priority to tackle stress and burnout among medical professionals.

2.2.1.2 Workplace conflict

Another important predictor of OS and burnout is workplace conflict (Martins, Teixeira, Carvalho &Hernández-Marrero, 2016). Anxiety, stress and burnout are caused by conflicts involving ethical, moral, and religious beliefs (Danjoux & Hawryluck, 2007). Considering the nature of nursing, interpersonal conflict as a source of stress is a significant issue of interest in nursing research (Das et al., 2016; Zaki, 2018). Das et al. (2016) states that the conflicts at the workplace, especially role-conflicts, negatively influence nurses in relation to stress and burnout. Role-based conflict may imply limited power for a nurse, ambiguity in roles, uncertainty in career progression, risk of joblessness and being underestimated. When all these factors combine, it can result in stress that can indisputably diminish nurses' ability to perform

competently. The study by Das et al. (2016) shows that interpersonal conflicts adversely affect 33% of the nursing community causing severe stress while 27% of them are subjected to moderate stress.

Grace and VanHeuvelen (2019) found that interpersonal conflict among ICU nurses is more common among nurses with higher levels of authority on-the-job. This is said to result in more complexity when faced with the challenge of minimising interpersonal conflict between colleagues. Martins Pereira et al. (2016) noted that conflict as a source of OS is not only a result of conflict between colleagues but is also potentially a result of conflicts between nurses and patient relatives. Interpersonal conflict must be managed to minimise stress and burnout among ICU nurses (Rose, 2011).

2.2.1.3 Bullying

One of the most alarming OS factors nurses' experiences is exposure to workplace bullying by colleagues and supervisors. While workplace conflicts are an acceptable part of human interaction, bullying indicates that conflict has escalated to an unhealthy level. The Australian Nursing and Midwifery Federation (2011) described bullying as unreasonable behaviour directed towards an employee or group of employees that poses a risk to the employee's psychological or physical health or safety of the employee(s). Organisations as a whole can experience negative impacts of bullying in the form of lowered staff morale and motivation, increased absenteeism and staff turnover, which undermines organisational culture and productivity (Safe Work Australia, 2017).

In a systematic review, Lever et al. (2019) found that burnout and stress are associated with bullying. In fact, in the reviewed studies, employees that reported bullying took more sick leave and experienced serious mental health problems, such as psychological distress and depression. As a result, researchers have studied different approaches to creating a positive workplace environment, including introducing a zero-tolerance policy for bullying (Adams et al., 2018). It has been shown that nurses who are bullied in various ways, including being mistreated by senior nurses or management or being overly monitored, are vulnerable to stress, according to Adams et al. (2018).

Workplace bullying may be minimised by taking an active approach to identifying and addressing bullying behaviours, as well as the situations and environments that create a potential for bullying. Education and training also play an

important role in preventing and managing workplace bullying. A position statement by Australian College of Nursing, (2021), emphasized the impact of bullying on the "bullied", and the wider organization and their productivity. As well, the statement has pinpointed the responsibilities and the vital role that the individuals, managers, and supervisors have to play in preventing and managing work-place bullying. Ganz et al. (2015) reveals that an alarming percentage of ICU nurses are victims of bullying the prevalence of which, in fact, necessitates effective preventative measures to be in place to counter it. Levels of bullying were low to moderate, and the level of prevention was weak or moderate. Studies show bullying correlates with a negative performance by the surge of job burnout in ICU nurses (Amini, Miyanaji & Din Mohamadi, 2022)

2.2.1.4 Workload

It is well established that heavy workloads cause workplace stress and burnout among nurses (Adams et al., 2018; Carayon & Alvarado, 2007; Light Irin & Bincy, 2012). Carayon and Alvarado (2007) note that workload is a major job stress factor in ICU nursing. In Australia, it is noted that heavy workload often arises from a shortage of nursing staff, which has wider implications on the quality of care provided to the patients. Interestingly, Light Irin and Bincy (2012) found that even with stress management interventions, ICU nurses still report that their workload causes them stress.

An overwhelming workload can have a negative impact on nurses' wellbeing, which subsequently impinges on their ability to provide high-quality care to their patients. The wellbeing of nurses and their patients is highly related (Achour et al., 2019; Adams et al., 2018). At times, nurses' wellbeing is only considered once patient care has started to deteriorate. Administrators and nurses need to establish open communication to discuss workload issues as they develop, rather than waiting for them to reach a crisis point.

The term burnout has been associated with several approaches that attempted to explain how and why burnout appears. To better understand burnout, this section discusses the common theories which offer a more comprehensive explanation of the phenomenon.

2.3 Theories of Burnout

Burnout has been the subject of several studies since the term was introduced to the scientific literature in the 1960s. The following discussion will provide comprehensive coverage of the most current and empirically supported explanatory theories of burnout, recognising that they are complementary**.** The common theories of burnout are discussed below.

Maslach's theory underlines that the state of burnout occurs because of a prolonged disparity between a person (Maslach, Leiter & Fink, 2016) and that burnout is a feature of staff working in ICU. The writer also cites that burnout occurs due to one of the six dimensions of work, shown in Table 2.1 (Maslach, 1998).

Table 2.1

Maslach's (1998) Theory

Workload	Inability to recover due to excessive workload and demands
Control	An employee's lack of control over the resources hinders the achievement of the goals
Reward	Lack of or insufficient compliments or rewards-financial, social, and intrinsic (the pleasure of doing a job) is also a factor assisting in enhancing burnout among the ICU nurses
Community	A sense of community feeling or a feeling of oneness with co-workers and employers is intrinsically mandatory to ebb out despair and disappointment. Therefore, a lack of a community sense can erupt in burnout
Fairness	A person perceiving unfairness at the workplace, including inequity of workload and pay
Values	Burnout will result from a mismatch between nurses and employers' values and principles

Maslach's six work elements highlight the factors that essentially generate burnout syndromes leading to a decline in the physical wellbeing of the nurses and their job-generated outcomes (Maslach, 1998).

However, the models of burnout theorised later did not align with Maslach's theory. According to Ekstedt (2005), burnout is not objectified as a solely work-related disposition but is a process than a condition. In this regard, amidst those who regard burnout as a process, Cherniss (1980) used a longitudinal proposition to probe the evolution of burnout in early human service- providers. He postulated burnout as an activity characterised by negative alternations in attitudes and conducts toward patients often related to nurses' despair and disappointment about the principles that had taken them to adopt and assimilate their jobs in the ICU (Cherniss, 1989). Melamed, Kushnir and Shirom (1992) held that burnout was the resultant of OS but is the resultant of individuals fatiguing their resources because of prolonged emotional demands from work and lifestyles. Another well-known theory known as the Job-Demand-Control-Support model describes how job characteristics affect the psychological wellbeing of employees.

The context between mental strain and the workplace is well explained in this The Job Demand-Control (JDC) model (Karasek, 1979). According to this theory, stress from work results from one's interaction with stressful job demands and heavy workloads. This stress arises from the conflict between one another and the demands and control of the authorised personnel. This model deals with predicting the result of the psychological strain. According to this study, workers with higher demands and low control undergo psychological distress and strain due to their work (Beehr, Glaser, Canali & Wallwey, 2001).

The theory of Job Demands-Resources (JD-R)) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) is the most important theoretical model for existing burnout research. According to this theory, workers experience significant burnout due to the high demand of their job, depending on the individual's role in their job. Though some researchers say there is no work-related burnout, it still exists. The JD-R is used to examine employees' stress and their performance (Alarcon, 2011). The JD-R model also states that every job facilitates the wellbeing of all its employees. The factors responsible for this can be of two types: the demands of the job and its resources. This model is applied to many occupational fields (Bakker & Demerouti, 2018).

The Job Demand-Control (JDC) model (Karasek, 1979) and the Job Demand-Control-Support (JDCS) model of Karasek & Theorell (1990) have dominated research on occupational stress in the last 20 years. These theories are commonly used

to understand the relationship among work characteristics, health, and wellbeing. This detailed narrative review focuses on the JDC(S) model in relation to psychological wellbeing. The real idea of Job Demand and control widened in 1988 and developed into the Demand Control Support (DCS) theory, which states the possibility of societal support may also become difficult in times of high demand. A social supporter for individuals has been demonstrated to reduce job stress. A later version of the Job Demand and control (JDC) theory states only those people who undergo high demands with less support and control are at risk of psychological stress. This theory is the key factor in determining work-related issues and problems (Van der Doef & Maes, 1999).

The JDC/DCS model aims to explain the occurrence of mental strain in a workplace context. According to Demerouti, Bakker, Nachreiner and Schaufeli (2001), there are different reasons for employees' wellbeing, and it can be identified through the application of the Job Demand resources (JD-R). As per this model, it consists of two factors including job demands and job resources. Workload and time pressure are the main cause of job demands, which can cause serious mental stress in a person who works. When employees spend more time fulfilling the work demands, it affects their wellbeing (Bakker & de Vries, 2020). As a consequence of stress, psychological imbalances create burnout which will even cause ill (health of the employees. Burnout occurs due to intensive job demands (Bakker et al., 2019) and can lead to incidence of 'Burnout Syndrome'.

2.4 Burnout Syndrome

Burnout Syndrome (BOS) is defined as 'chronic emotional exhaustion due to interpersonal stressors in professional relationships at the organisational level' and can also include physical symptoms, such as tiredness, insomnia, emotional lability, frustration, and anxiety (Moss et al., 2016). It is persistently identified by Dall'Ora et al. (2020) that unfavourable job characteristics like excessive workload, insufficient staff, prolonged work hours and enhanced burnout in ICU nursing. According to the World Health Organisation (2019), BOS is a syndrome resulting from chronic workplace stress that has not been successfully managed' and needs to be acknowledged appropriately.

According to Bakker et al. (2005), burnout is contagious: it passes from nurse to nurse. Vincent et al. (2019) noted that approximately one-third of ICU team members undergo 'high risk' of BOS and nurses experience higher burnout than

doctors. Doctors and nurses working in the ICU, experience the same burnout symptomatology, with ICU nurses exhibiting higher rates of emotional exhaustion and ICU physicians exhibiting excessive rates of depersonalisation and reduction in professional satisfaction (Teixeira et al., 2013). Ledingham (2015) reported that burnout reduced a nurse's mental or physical health and work ability and reduced their ability to recognise burnout. Organisations must include regular staff wellbeing checks as part of their duty of care while also respecting their responsibilities for self-care.

The experience of burnout syndrome varies among people, including resulting in reduced workplace wellbeing and engagement. Maslach outlined three BOS domains: (i) Emotional exhaustion (a feeling of nothing left to give); (ii) Depersonalisation:(whereby caregivers feel disconnected, negative or cynical) and (iii) lack of personal accomplishment (whereby caregivers feel inadequate and ineffective in their work).

The COVID-19 pandemic worsened burnout, especially for ED and ICU nurses. For example, over 80% of ICU nurses were reported to be at high risk in at least one domain of BOS before the pandemic (Mealer et al., 2014). Melamed et al. (1992) held that burnout was the resultant of OS but is the result of individuals fatiguing their resources on account of prolonged emotional demands from work and lifestyles. Intensive care unit (ICU) nurses are the most affected healthcare workers by the COVID-19 pandemic and are at risk for developing burnout syndrome (Toscano, Tommasi, & Giusino, 2022). A study by Guttormson et al., (2022) revealed that the COVID-19 has a tremendous influence on ICU nurses' mental health. High levels of reported burnout and moral distress increase the risk of nurses leaving ICU practice or the profession.

Another research by Primavera & Leonelli, (2020) examined the relation between the fear of COVID-19 and depression, anxiety and burnout of intensive care nurses. The study results determined the intensive care nurses were at risk of mental health problems and had reached the point of burnout. A cross-sectional survey of Swiss health care workers reported low wellbeing, anxiety, depression and peritraumatic stress in ICU staff. Working in the ICU was associated with a significant change in eating habits, sleeping patterns, and alcohol consumption compared to other departments (Wozniak et al., 2021). A survey of Italian ICU workers assisting COVID-19 patients reported over half (60%) met the criteria for burnout. Nurses reported significantly higher scores of anxiety and insomnia

compared to physicians. Symptoms of depression were reported in 45% of participants (Stocchetti et al., 2021).

Burnout among ICU nurses is associated with inadequacy of staffing in the ICU. At the same time, this fact was not observed in three studies (Dhaini et al., 2018; Flynn, Thomas-Hawkins & Clarke, 2009; Lu, Ruan, Xing & Hu, 2015). These studies found that nurses were emotionally fatigued (Aiken, Clarke, Sloane, Sochalski & Silber, 2008) when the patient-to-nurse ratio was not equal. When this happened, nurses underwent depersonalisation and undue personal accomplishment (Hanrahan, Aiken, McClaine & Hanlon, 2010). Another study indicated that emotional weariness mediated the relationship between the patient-to-nurse ratio and safety (Liu et al., 2018).

Akman, Ozturk, Bektas, Ayar and Armstrong (2016) opine that the lower the number of patients that the nurses in the ICU were responsible for, the lower the chances of burnout. Similar observations were made by Faller, Gates, Georges and Connelly (2011). Thompson (2014) suggested to reduce the registered nurse (RN) work hours to alleviate burnout. The grad RNs exposed to staff shortages affected them years later with more emotional weariness and distrust in the later years of their profession in the ICU (Boamah, Read & Spence Laschinger, 2017).

A study later clarified the afore written statement about the relationship between staffing inadequacy and emotional fatigue (Kanai-Pak, Aiken, Sloane & Poghosyan, 2008). In the same way, Leineweber et al. (2014) also opined that lower staffing was associated with emotional weariness, depersonalisation and personal satisfaction with the work that nurses in the ICU do. Leiter and Spence Laschinger (2006) explored that staffing adequacy and depersonalisation were closely related to emotional fatigue. Time pressure was common in all these studies and led to emotional weariness (Adali et al., 2003; Cao & Naruse, 2019; Jansen, Kerkstra, Abu-Saad & Van Der Zee, 1996).

If summarised, it is clear that high workload and burn out are closely related and time pressure and emotional weariness are inseparable. Low independence influenced emotional fatigue through institutional trust (Laschinger, Shamian & Thomson, 2001). In one study, it was found that all ICU nurses were affected by organisational support deficits (Stone, Du & Gershon, 2007).

All MBI aspects were closely related to poor team communications (Galletta et al., 2016). Nineteen studies explicated those nurses intended to leave their

profession due to the impact of burnout. Another two studies explored the direct impact of distrust and emotional weariness on turnover (Greco, Laschinger & Wong, 2006). Four other studies supported the impact of EE on nurses leaving their profession (Dutra, Cimiotti & Guirardello, 2018; Flynn et al., 2009; Janssen, De Jonge & Bakker, 1999; Parker & Kulik, 1995). Mental health absenteeism was reported due to a significant association with emotional fatigue, and negatively impact healthcare providers, (Parker & Kulik, 1995).

In a model of burnout on job quality (Giorgi, Mattei, Notarnicola, Petrucci & Lancia, 2018), excessive burnout was predicted due to poor care being given to the condition of nurses in the ICUs (Liu & Aungsuroch, 2018). Burnout has negative consequences on staff and patients (Giorgi et al., 2018). Burnout predicts the intention of employees to leave their jobs and in many cases nursing altogether (Moloney, Boxall, Parsons & Cheung, 2018). Burnout in nurses' leads to organisational turnover and provides insight into other factors that contribute to why nurses may choose to change positions (Lesly et al., 2021). Three studies investigated the relationship between burnout and the intention to leave. One study aggregated all job outcomes in a single variable (i.e., job satisfaction, intention to leave the hospital, applied for another job, and intention to leave nursing) and reported that personalisation and personal accomplishment predict job outcomes (Van Bogaert et al., 2013).

Dall'Ora et al. (2020) analysed 91 quantitative primary empirical studies which probed complimentary associations between burnout and work-related factors in the ICU workforce. They identified that unpropitious job features have a phenomenal paramount connection bringing out serious outcomes for the nurses and their patients. The inherent nature of nursing in the ICU –its workload factors including low staffing levels, prolonged shifts, low control, role conflict, flexibility, overtime work, extreme job and psychological requirements, monotonous task style, low or unappreciative relationship between the nurses and physicians, inadequate or poor leadership- support, maladaptive team bonds, finally lead to burn out among the nurses in the ICU. World Health Organization (2021) has recognised the importance of the well-being of employees and its linkage to burnout in the workplace.

2.5 Wellbeing

According to the World Health Organisation, (2021), good mental health is essential to our overall wellbeing and is as important as physical health. When

individuals feel mentally well, they can work productively, enjoy free time and contribute actively to their communities. Well-being encompasses quality of life, as well as the ability of people and societies to contribute to the world in accordance with a sense of meaning and purpose. Focusing on wellbeing supports the tracking of the equitable distribution of resources, overall thriving, and sustainability (World Health Organisation, 2021). Intensive care nurses' wellbeing is a fundamental component of a strong healthcare system. The high prevalence of burnout affects the intensive care nurses' wellbeing which indicates the significance of the topic.

2.5.1 The Significance of Burnout on ICU Nurses' Wellbeing

Within the context of nursing, wellbeing consists of happiness, enjoyment and personal satisfaction when nurses feel they have performed well and are appreciated for their efforts (Adams et al., 2018). Several studies have revealed that improving work well being in healthcare has numerous benefits, including improved performance, engagement patient satisfaction, and lower turnover (Brunetto et al., 2013; Duffield, Roche, Homer, Buchan, & Dimitrelis, 2014).

Researchers have observed that nurses' wellbeing is crucial in shaping quality nursing care practices and team commitment (Jarden et al., 2020; Sundberg et al., 2017; Woo, Ho, Tang & Tam, 2020). These studies suggest that nurses worldwide have a high prevalence of burnout symptoms, which warrants systematic attention and the implementation of strategies to combat burnout. A good working environment ensures the safety and the overall wellbeing of nurses and patients.

Considering the importance of wellbeing in critical care nursing practice, it is reasonable to acknowledge the negative influence of stress and burnout on nurses' wellbeing. According to Maslach's (1998) conceptualisation, burnout is a response to excessive stress at work, characterised by feelings of being emotionally drained and lacking emotional resources. Multiple studies have been done in recent times focusing on the link between stress, burnout, and nurses' wellbeing (Achour et al., 2019; Arrogante & Aparicio-Zaldivar, 2019). The national survey 'What Nurses & Midwives Want: on Workplace Climate and Wellbeing' found that a quarter of those surveyed reported they were either likely or very likely to leave the profession (Holland, Tham & Gill, 2018). Holland et al. (2018) postulate that almost a third of Australia's nurses are thinking of leaving the profession because they are overworked, undervalued and in danger of burning out. Due to the nature of their job environments,

stress and heavy workloads can also lead nurses to experience poor physical and mental health (Abbas et al., 2019; Chico-Barba et al., 2019; Park et al., 2018).

Several studies have documented the direct impacts that stress and burnout have on nurses' emotional wellbeing (Abbas et al., 2019; Correa, Lopes, Almeida & Camargo, 2019). For example, Correa et al. (2019) stated that burnout and OS can contribute to negative effects, not only in the professional life of an ICU nurses but also in their personal life. When nurses feel dissatisfied and unhappy due to stress and burnout, this, in turn, reflects on their personal life. Abbas et al. (2019) reported that ICU nurses sometimes use negative social habits to escape job stress, including substance abuse and alcohol intake.

In Australia and New Zealand, 4,419 RN completed a questionnaire exploring their consumption of alcohol and the link to workplace stressors. It revealed that over 13.9% of nurses and midwives drank alcohol to excess daily (Schluter, Turner & Benefer, 2012). Thus, the impact of stress and burnout on the wellbeing of the health workforce cannot be understated.

2.5.2 Impact of Burnout on the Wellbeing of ICU Nurses

Burnout could result from psychological and physical stress that adversely affects nurses' wellbeing (Chuang, Tseng, Lin, Lin & Chen, 2016) Nurses' wellbeing is crucial in shaping quality nursing care practices and team commitment (Jarden et al., 2020). Nightingale (1859) explains that ever since the dawn of nursing, one way of ensuring nurses' wellbeing is by improving the work environment. A good working environment ensures the safety and the overall wellbeing of both nurses and patients.

As the healthcare environment and nurse wellbeing improve, nurses become more alert, allowing them to provide better patient care (Sundberg et al., 2017). Wellbeing is also associated with more support and care for the patients. Simultaneously, Adams et al. (2018) noted that wellbeing is associated with positive, caring behaviours among ICU nurses. In their meta-analysis of 61 studies, Woo et al. (2020) reviewed data on 45,539 nurses in various specialties in 49 countries. Their findings suggest that nurses worldwide have high burnout symptoms at a prevalence warranting attention and strategies to combat burnout.

Considering the importance of wellbeing in critical care nursing practice, it is reasonable to acknowledge the negative influence of stress and burnout on nurses' wellbeing. Multiple recent studies have focused on the link between stress, burnout,

and nurses' wellbeing (Achour et al., 2019; Adams et al. 2018; Arrogante & Aparicio-Zaldivar, 2019). In their study, Arrogante and Aparicio-Zaldivar (2019) reported that high levels of burnout are directly linked to ICU nurses' poor subjective/psychological state and physical/mental wellbeing. Adams et al. (2018) also pointed out that the negative implications of OS on ICU nurses' wellbeing include reduced resilience, a trait that allows an individual to succeed while enduring hardship. Achour et al. (2019) added that work stress is linked to poor subjective wellbeing and reduced satisfaction, productivity and professional commitment. The above studies depict that nurses who experience large amounts of OS are more likely to burn out and leave the nursing profession altogether.

Burnout can be better understood from the perspectives of those affected, namely nurses. Yet, in their study, Chico-Barba et al. (2019) found that nurses sometimes withhold their health information, which would instead have revealed the interconnection with burnout; therefore, they diminish their ability to be instrumental in suggesting appropriate strategies. For example, Chico-Barba et al. (2019) noted that physicians hide their illnesses due to several factors, such as loss of performance-based payments or promotions, fear of disciplinary action, aversion to the patient role, confidentiality issues and denial, among others. When medical professionals hide their health information, it is difficult to implement appropriate strategies, which compounds the situation as they continue to suffer burnout and associated impacts.

Further, low self-care has been reported to be a significant issue in medical profession. The findings of a study conducted by Leão et al. (2017) revealed that the concept of self-care was neglected by most healthcare professionals. Chipu & Downing, (2020) also agreed that the concept of self-care has been neglected by most nursing professionals as they focused primarily on the Nurses Pledge of Service, which states that patient care is their first consideration. This has resulted in misinterpretations and misunderstanding of the concepts 'patient care' and 'self-care'.

Stress and heavy workloads can also lead nurses to experience poor physical health, owing to the nature of their job environments (Park et al., 2018). In their recent observational study of the relationship between occupational burnout and metabolic syndrome in female nurses, the study by Chico-Barba et al. (2019) in Mexico City revealed an association between emotional and physical exhaustion, lack of personal accomplishment and working night shifts. Chico-Barba et al. (2019) concluded that strategies are needed to prevent metabolic syndrome and burnout in nurses,

particularly those who work the night shift. The risk of contracting infectious diseases also increases due to higher levels of burnout, as nurses' immune systems become depleted (Abbas et al., 2019). The literature on this topic can help hospitals to develop appropriate strategies to support nurses (Chico-Barba et al., 2019; Dempsey & Reilly, 2016; Friganović et al., 2017).

Stress and burnout also have direct impacts on nurses' emotional wellbeing. For example, Correa et al. (2019) highlighted the implication of high levels of OS and burnout on ICU nurses' wellbeing. Correa et al. (2019) stated that burnout and OS could contribute to negative effects not only on the personal life of an ICU nurse but also on their professional life. When nurses feel dissatisfied and unhappy due to stress and burnout, this reflects on their personal life. Sometimes, the high levels of stress result in serious physical and mental health issues that risk the safety of nurses (Correa et al., 2019). Abbas et al. (2019) reported that ICU nurses sometimes use bad social habits to escape job stress, including substance abuse and alcohol. In short, several recent studies have documented the mental and physical impacts of high-stress levels on nurses, especially those who work in the ICU of hospitals.

The consequences of burnout can be both personal and professional. Studies from outside health care demonstrated that individual workers experiencing burnout are at an increased risk for cardiovascular disease (Chuang et al., 2016), hypercholesterolemia, type 2 diabetes, musculoskeletal pain, changes in pain experiences, prolonged fatigue, headaches, gastrointestinal issues, respiratory problems and severe injuries (Salvagioni et al., 2017). Several studies have detected a correlation between burnout and depression (Koutsimani, Montgomery & Georganta, 2019). There has been considerable evidence that various wellbeing strategies benefit both employees and organisations.

2.6 Strategies to Improve Wellbeing

In the healthcare sector, nursing is arguably one of the most affected professions regarding work-related stress and burnout (De Oliveira et al., 2019; Starc, 2018). Nonetheless, it is worth noting that nurses can more effectively manage their stress levels in different work settings through several forms of intervention. Studies suggest that various nursing workplace wellbeing programs contribute positively to their wellbeing (De Oliveira et al., 2019; Montanari, Bowe, Chesak & Cutshall, 2019).

These interventions encompass organisational, group and individual actions. Several of these interventions are reviewed below.

Understanding nurses' perceptions of these strengthening factors first requires understanding the aspect of ‘wellbeing’. As suggested earlier in this paper, wellbeing can be described as a collection of elements, a rich and multifaceted construct (Jarden et al., 2019c). ICU nurses have identified different support systems in relation to maintaining wellbeing and combating burnout and stress. These are related to initiatives adopted at an individual/personal, social, and organisation level (Jarden et al., 2020). For instance, exercise and yoga have been noted as appropriate strategies for addressing burnout in nurses, especially those working the night shift (Chico-Barba et al., 2019). These are personal initiatives nurses can employ to improve their wellbeing. Nurses can create a stable work-life balance through these individual activities, further improving their overall wellbeing.

2.6.1 Individual Level Strategies

2.6.1.1 Mindfulness

Mindfulness strategies are one approach that has proven to be effective for nurses in dealing with stress, improving their wellbeing, and increasing their productivity (Jarden et al., 2020). In particular, the Mindful Moment approach has been studied by several researchers (Burton, Burgess, Dean, Koutsopoulou & Hugh-Jones, 2017; Foureur, Besley, K., Burton, Yu & Crisp, 2013; Montanari et al., 2019). Montanari et al. (2019) noted that thanks to mindfulness practices, human beings are ‘fully present, aware of where they are, what they are doing and not overly overwhelmed by what’s going on around them’ (p. 176).

In addition to reducing negative stress and extraneous factors associated with burnout, meditation stands out as a complementary therapy. Critical care nurses can regain control over their careers and personal lives with a mindful, meditative practice (Mehta et al., 2022). Burton et al. (2017) and Foureur et al. (2013) studied Mindful Moment practices among healthcare professionals in Australia. Foureur et al. (2013) recognised the importance of mindfulness-based stress reduction among midwives and nurses who self-identified as experiencing stress in Australian workplaces.

In their study of 42 Malaysian ICU nurses, Lan, Subramanian, Rahmat and Phang Cheng (2014) identified that a mindfulness-based cognitive therapy program benefits nurses greatly. For example, nurses reported moderate to large improvements in perceived stress, anxiety, depression, mindfulness and happiness. As these studies

show, mindfulness is one inexpensive yet effective intervention that can reduce stress among healthcare professionals.

2.6.1.2 Prayer

Although numerous approaches have been identified for coping with life stressors, few studies have linked stress relief strategies with religion and prayer. Prayer has often been used as a coping strategy and can contribute to promoting mental and physical health (Achour et al., 2019). For most monotheistic religions, prayer refers to the communication between human beings and God. In their study on Muslim female nurses working at the University of Malaya Medical Centre, Achour et al. (2019) indicated that religious coping strategies contribute to reducing job stressors. They consider prayer an effective way of alleviating stress and enhancing wellbeing among nurses. For the participants in the study conducted by Achour et al. (2019), those who regularly participated in collective religious prayers demonstrated higher levels of life satisfaction and wellbeing compared to the Muslim women who did not regularly attend prayer sessions. Another study by Jarden et al. (2020) identified spirituality as strengthening nurses' wellbeing in New Zealand and Australia. According to their study, showing spiritual concern for your colleagues and patients can significantly help create job satisfaction and reduce work burnout. In terms of their ability to offer spiritual support to patients, Azarsa, Davoodi, Markani, Gahramanian and Vargaeei (2015) noted through the responses of 109 Iranian ICU nurses that the higher the nurses' spiritual wellbeing and the more positive their attitude was towards spiritual care, the more they could provide spiritual care to patients. Prayer is another inexpensive intervention that may be beneficial in reducing nurses' stress and potentially improving their ability to assist patients with their spiritual needs.

2.6.1.3 Coping styles

Different individuals display different coping styles in the face of stressful situations. It is worth noting that nurses, like most other healthcare professionals, use various coping strategies. In their study conducted in several Polish hospitals, Kwiatosz-Muc et al. (2019) examined the coping styles of personnel working in the anaesthesiology and ICU sections. They identified the task-oriented coping style (TOC) as the dominant coping style. For the TOC style, people participate in coping activities that focus on addressing problems and finding solutions. Other coping styles examined in the research included the emotion-oriented coping style (EOC), where

individuals tend to focus on their own emotions, and the avoidance coping style, which is marked by rejecting thinking about an existing problem.

When considering various coping strategies, it can be important to note differences between how male and female personnel cope with difficult situations. For example, female personnel may prefer negative coping strategies such as reflecting, avoiding, escape or social support, more so than their male counterparts. Although more studies on these observations are recommended, male nurses may prefer to use certain coping styles that are more synonymous with female personnel. Burnout can be prevented by problem-focused coping strategies, according to a study of ICU nurses' coping strategies (Kwon & Lee, 2012). Along with healthy coping styles social level strategies also play a vital role in reducing the stress.

2.6.2 Social Level Strategies

Social isolation, a common behaviour among some nurses, has often been identified as a major obstacle in stress-reduction practice. Savic et al. (2019) further discover that avoiding social interaction is a leading cause of psychological problems among nurses in Australia. Therefore, cultivating social support is another effective mechanism for reducing OS and burnout. For example, Jarden et al. (2020) stated that the maintenance of team commitment is one of the most effective ways of improving the wellbeing of ICU nurses. Further, supervisor support is more likely to strengthen the relationship between individuals and organisations, improving nurses' wellbeing. Jarden et al. (2020) investigated coping strategies as moderating factors and predictors of nurses' levels of compassion fatigue. Similarly, Al Barmawi et al. (2019) indicated the importance of seeking social support (such as support groups) in the work environment. Other studies have also emphasised the strategy (Adriaenssens, De Gucht & Maes, 2015; Kim & Choi, 2016). Social support groups strongly influence the ability of nurses to keep up with the demanding nature of their work setting by sharing experiences with others. Socialising and social support has been linked to improved wellbeing and satisfaction with shift work among Australian nurses (Savic et al., 2019). Team commitment also fosters collaboration between interprofessional teams. A good working relationship between nurses and physicians can significantly transform organisations and the health of the individuals working within them (Jarden et al., 2020). Organisations can employ various techniques to alleviate and minimise harmful workplace stress for employees, along with individualised intervention.

2.6.3 Organisational Level Strategies

To achieve workplace wellbeing and provide support to intensive care nurses, managers need support and training from their organisations (Adams et al., 2019). Various studies have examined how the wellbeing of nurses is strengthened in the workplace (Jarden, 2019a; Jarden, Sandham, Siegert & Koziol-McLain, 2019c), which reflects the organisational level. Examples of tertiary intervention include counselling, employee assistance programs, and organisationally supported wellness programs aimed at helping those identified with the problem (Sutton, 2014). These interventions seek to create a stable, supportive work environment at numerous levels for nurses to perform their duties effectively.

However, many effective initiatives span the individual/personal, social and organisational levels. For example, a strategy such as mindfulness discussed above has been identified as a personal strengthening resource for intensive care nurses to improve their wellbeing, along with others such as yoga and exercise. This is consistent with another most recent study by Jarden et al. (2020) which emphasises the importance of mindfulness and spirituality in strengthening the well-being of ICU nurses. In a study involving New Zealand intensive care nurses, Jarden, Sandham et al. (2019c) identified strengthening factors that extended across organisational, relational and individual resources. The nurses identified actions such as accessing employee assistance programs, giving and receiving team support and simplifying their lives as being some of the key strengthening factors. Nurses have viewed supportive teamwork, formal debriefing and peer supervision as organisational and relational sources that strengthen their wellbeing. In their survey of Italian ICU nurses (n=222), Galletta et al. (2016) found that the relationship between nursing work characteristics and team commitment was mediated by perceived supervisor support and job satisfaction. These two factors proved key in creating a strong sense of individual and organisational wellbeing.

2.6.3.1 Restorative Clinical supervision

Restorative Clinical Supervision (RCS) is a program that provides open discussion spaces. Professionals are supported to engage in reflective conversations and receive open feedback without recordings (Pettit & Stephen, 2015). Staff members' emotional needs can be met through RCS. The provision of 'thinking space' in the workplace through RCS reduces stress and burnout, promotes employee

retention and improves staff wellbeing. NHS England launched the employer-led A-EQUIP (Advocating and Educating for Quality Improvement model, which is being tested alongside the PNA (professional nurse advocate) program to protect nurses' health and wellbeing and improve the quality of patient care (NHS England, 2017; Figure 2.1). The model's management aspect has helped nurses deal with large amounts of strain and distress (Nursing Times, 2022). Rouse (2019) explains RCS also assist staff in building their resilience and thereby increasing their ability to make appropriate clinical decisions in complex situations.

Figure 2.2. A-EQUIP model as adapted for use by nurses and midwives. Adapted from *The British Journal of Midwifery*, Dunkley-Bent, 2017.

This function focuses on addressing the emotional needs of the workforce and supporting the development of professional clinical leadership. The restorative approach 'promotes reflection of personal emotions and practice, has a positive impact on emotional wellbeing, provides a strategy to mitigate workplace stress, enhances retention and assists with managing personal and professional demands. Greenberg et al. (2021) reported in a study about potential mental health impact for ICU staff (n = 709), 59% reported good wellbeing, 45% had potential clinical significance relating to post-traumatic stress disorder (PTSD; 40%), severe anxiety (11%) severe

depression (6%) or alcohol intake (7%). In particular, the findings from the Restorative Supervision Program review support the recommendation that RCS improves the mental health and wellbeing of staff and reduced burnout by 43% (from 42.81 to 24.71) and stress by 62% (from 43.35 to 16.86) from regional baselines. The Coronavirus pandemic had significant impacts on people. Prioritising mental wellbeing is an important part of staying healthy in the present context than ever before.

2.7 Psychosocial Wellbeing During Pandemics

Described by Alzailai, Barriball, Alkhatib, & Xyrichis, (2022) that 'global COVID-19 outbreak creates a stressful time for ICU nurses. Lai et al. (2020) in Wuhan, China, demonstrated that nurses reported high rates of depression, anxiety, insomnia and distress during the global COVID-19 pandemic that began in Wuhan in December 2019. Similar observations of nurses have been reported in previous studies, including during the Middle East respiratory syndrome coronavirus (MERS-CoV) pandemic, a disease similar to COVID-19 (Kim & Choi, 2016; Park et al., 2018; Perlis, 2020).

To protect the wellbeing of nurses, support groups, debriefing and counselling are needed as interventions at the individual unit level. It is imperative for health care organisations to ensure infrastructure and resources are available to support nurses during times of adversity. Hospital administration and policymakers also need to support and promote nurses' wellbeing and mental health, as Park et al. (2018) emphasised in their study. This will enable nurses to focus on caring for their patients as a priority. According to Billings, Ching, Gkofa, Greene, & Bloomfield, (2021) support from their organisations was valued by healthcare workers.

A recent study revealed psychological support, including online services, hotlines and peer support programs, may help reduce mental health problems (Busch, Moretti, Mazzi, Wu, & Rimondini, 2021). It is critical to mobilise resources and be proactive by implementing effective and systematic programs in readiness for similar future pandemics (Park et al., 2018). Correspondingly the NSW Health adult intensive care workforce report in COVID-19 pandemic provides recommendations for supporting staff wellbeing and a sustainable workforce. Recommendations include providing debriefing and psychological support, assisting with accommodation and other basic needs, and access to testing and vaccination (New South Wales,

Health 2021).Similarly the South Australia Health Critical Care Surge Nursing Workforce Strategy for COVID-19 outlined wellbeing support measures for staff including psychological support, employee support programs, mindfulness and resilience training, debriefing and communication (South Australia Health 2020/202). Furthermore, the UK Intensive Care Society published advice for sustaining staff wellbeing in critical care during and post COVID-19 including communication updates, escalation planning, peer support, supporting basic needs, psychological first aid and debriefing (Intensive Care Society UK 2022).

2.8 Conclusion

Work-related stress and burnout have become increasingly common in nursing, especially in critical care nursing contexts in recent years. As we prepare to enter a new world created by the current global pandemic, it is more important than ever to acknowledge the importance of the wellbeing of ICU nurses since they are central and crucial to the health system. If we do not implement measures to alleviate stress and focus on nurses' wellbeing, we will face a shortage of nurses the next time a pandemic breaks out. Encouraging nurses' wellbeing fosters positive outcomes for nurses and improves health outcomes for the patients for which they care. Other studies have researched interventions to manage ICU nurses' stress and burnout, such as mindfulness, religious coping strategies (prayer), the TOC style and RCS.

The review above identified the factors causing burnout, the significance and impact of burnout on the wellbeing of ICU nurses. In addition to discussing strategies to improve wellbeing from several researchers' perspectives, this chapter covered psychosocial wellbeing during COVID-19. This mixed-methods study strengthen the current knowledge by examining individual, social, and organisational strategies for improving nurses' wellbeing based on the lived experiences of ICU nurses working at one hospital in Australia. This study can allow for further identification and development of coping strategies that align with their needs.

Chapter 3: Methodology

3.1 Introduction

The emergence of the mixed-methods approach as a third methodological movement in the social and behavioural sciences began during the 1980s (Tashakkori & Teddlie, 2010). Mixed-methods research (MMR) within the health sphere is now a well-established research approach that integrates qualitative and quantitative methods that give a breadth and depth of understanding of the phenomenon of interest (Irvine et al., 2020). An MMR approach is ideal for capturing the complex nature of nursing inquiries with the combination and integration of qualitative and quantitative approaches. (Fàbregues & Paré, 2018). This mixed methods study has pragmatism as a philosophical foundation. Pragmatism is a practical and humanistic approach to problem-solving that positivist and interpretivist paradigms could not accomplish in isolation (Kaushik & Walsh, 2019). Pragmatism was the amalgamation of quantitative and qualitative approaches to answer complex research questions and solve real-world problems (Kelly, Dowling & Millar, 2018).

3.2 Research Design

An explanatory sequential mixed method study was conducted at a public tertiary hospital (see Figure 3.1). The study has a qualitative and a quantitative component. In the first stage a questionnaire enabled demographic details and progression data to be gathered, with opportunities for free text responses. The second stage of the study used qualitative methodology to enable deeper exploration of experiences from the interviewees' perspective and based upon the survey findings.

The complex phenomenon of burnout and wellbeing can be better understood with MMR design which reflects the overarching pragmatic philosophy of human nature. Considering the complexity of burnout phenomenon, a practical and applied research philosophy informed the methodological choice of MMR. Interpretive approach was adopted during the interview to gather experiences including feelings, emotions and motivation which cannot be measured in an objective way. An increased level of knowledge can be gained through MMR. Mixed-method research contribute to theory and practice by increasing their comprehensiveness and scope of findings (Creswell & Plano Clark, 2011)

There were two phases involved in this explanatory sequential design: an initial quantitative data collection phase and a qualitative data collection phase, where the qualitative phase explains the quantitative results. This method allows for a deeper understanding of quantitative results through qualitative data. In this study, interviews were conducted to further explore survey results about burnout and wellbeing to understand how ICU nurses' personal experiences correspond with the results of burnout and wellbeing. The interview findings shed light on the high burnout results of ICU nurses.

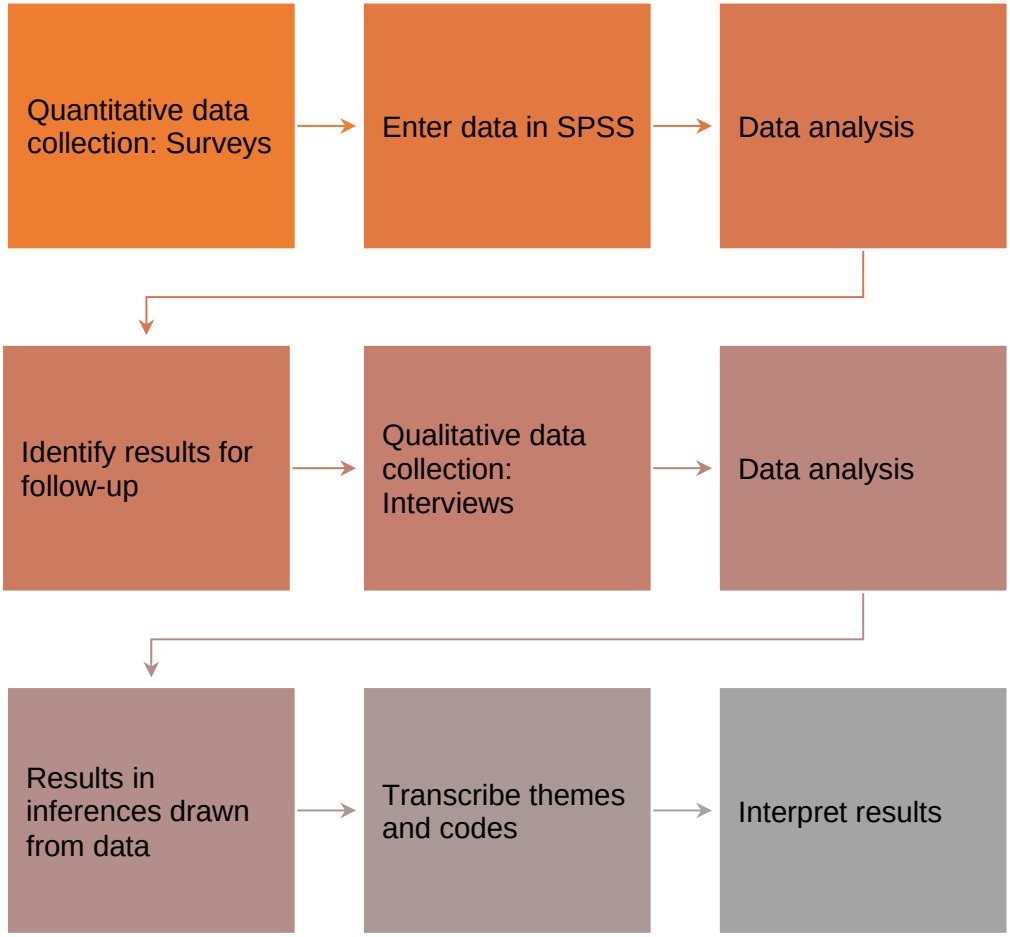

Figure 3.1. Explanatory sequential design.

3.2.1 Quantitative Component: Survey Methodology

A survey research methodology was used to gather data for the quantitative component. Three types of questions or statements are used in a survey: open-ended, partially open-ended, and closed (Privitera, 2014). Open-ended and closed questions were used in this study. It may aim to collect factual information along with open-

ended questions. Surveys are a practical way to gather information about something specific and allows a straightforward analysis process so that the results can be quickly visualised. Surveys may be wholly quantitative, but using mixed methods allows for greater depth in understanding of complex realities, in a subjective way. The collection of quantitative data during the first phase included the distribution of an online survey to 200 ICU nurse participants. Quantitative Component of the study focused on measuring burnout and wellbeing including demographics.

3.2.2 Qualitative Component: Interviews

This MMR study employed an Explanatory Sequential Design consisting of two phases: a quantitative phase followed by a qualitative phase (Green & Thorogood, 2018). These mixed methods design significantly enhanced the generalisability and transferability of research compared to relying on only quantitative or qualitative methods. The key findings of the online survey informed the second qualitative phase of the study, which included the use of semi-structured interviews with ICU nurses. A sample size of seven ICU nurses was selected for the second phase using purposive sampling based on favourable responses in the survey phase. The interviews were recorded and then transcribed. A process of thematic analysis was then undertaken to identify key themes from the qualitative data.

3.3 Setting

All interviews were conducted between July and November 2021 using a quiet room away from the main hospital building with only the participant and the interviewer present. This setting enabled a distraction free zone, to concentrate, with a closed door, rather than a public place. It was helpful to have a room where you can speak privately without interruption, and where it is quiet enough to hear and audio record the interview. Within the interview space, an arrangement made with a comfortable distance between the interviewer and interviewee with a table in between for the recorder and other materials (consent forms, questionnaires, and water).

3.4 Sample and Sampling

3.4.1 Study Population and Participants' Selection

The study population were RNs working in the ICU who used their health email account and agreed to participate in the study. Initially, the link that allowed access to the questionnaire was shared via email accompanied by a letter explaining the study and inviting participation. All 200 Registered Nurses (RNs) working in the

hospital ICU were sent the first email, including an initial invitation to participate in the study with the survey link attached (Appendix A; Dillman, Smyth & Christian, 2009). The second email thanked those who had already participated, highlighted the study's benefits, and renewed the invitation for RNs to participate (Dillman et al., 2009; Appendix B). The third email reiterated appreciation to the participants, emphasising the deadline to complete the survey as an appeal for assistance (Dillman et al., 2009; Appendix B).

The emails included an information sheet providing details on the purpose of the study, instructions for completing the survey and a link for completing the survey online (see Appendix A). Survey distribution uses implied consent, as mentioned in the National Statement on Ethical Conduct in Human Research (NHMRC; 2013). Informed consent resides on its three critical and essential elements: voluntarism, information disclosure, and decision-making capacity (Gupta, 2013). Therefore, opening the survey implied consent to participate in this study phase. Flyers were also posted in the clinical area to advertise the study (see Appendix C).

This sample size was chosen as it represented all the 200 nurses in the ICU, which helped to avoid sampling bias. Not all 200 nurses were likely willing to participate; thus, a minimum sample size of 60 nurses, or 30%, was deemed sufficient to explore the impact of ICU nurses' OS on wellbeing. This sample allowed the researcher to estimate the population's responses within 8% of the true population percentage, and the researcher estimated this with 95% confidence. At the end of the survey participants were asked to contact researcher via email if they consented to being contacted for qualitative phase of the study. Seven participants contacted via email expressing their interest to participate in the interview.

The second qualitative phase used a purposive sampling technique. This involved identifying and selecting individuals or groups of individuals that were especially knowledgeable about or experienced with the phenomenon of interest (Creswell & Plano Clark, 2011). In addition to including those with knowledge and experience in the sample, Bernard (2002) and Spradley (1979) noted the importance of participants' availability and willingness to participate. In addition, participants need to be able to communicate experiences and opinions in an articulate, expressive and reflective manner.

Inclusion criteria

Inclusion criteria for the sample are nurses with nursing registration and working in the ICU, in the particular Hospital, who are willing to participate in the study. All registered nurses working in ICU were eligible to participate in the study regardless of their experience.

Exclusion criteria

Exclusion criteria applied to enrolled nurses and agency nurses.

The decision of exclusion criteria was made because no enrolled nurses were working in the ICU and agency nurses' workloads differed from the workload of regular nurses.

3.5 Data Collection

The data collection was divided into two phases, with the second (qualitative) phase reliant upon the findings of the first phase (quantitative).

3.5.1 Quantitative Data Collection

Nurse researchers preferred to host the survey on a website, Qualtrics, for easy access and data collection. Ease of accessibility again pointed to higher convenience and satisfaction, leading to quality responses.

The survey included Likert-type questions and participant demographics (Appendix D). At the end of the survey, participants provided the researcher's contact details. Participants contacted the researcher to proceed to the second phase. A participant information sheet was also sent out to the population to explain the purpose of the research (Appendix E). The Maslach Burnout Inventory-Human Service Survey tool has acceptable validity and reliability for measuring burnout among nurses which is purchased for the purpose of the study (Appendix F). The inventory contains 22 items that assess the three components of burnout. Each item lists a work-related feeling, and respondents indicate how often they experience those feelings about their job on a 7-point Likert scale. EE was measured using nine items (e.g., 'I feel like I'm at the end of my rope'); depersonalisation was measured using five items (e.g., 'I feel I treat some patients as if they were impersonal objects'); and personal accomplishment was measured using eight items (e.g., 'I feel I'm positively influencing other people's lives through my work'). Response options for the items were zero 'never' to six 'every day'. Responses were added to form a score for each sub-scale, which gives each participant three scores for the three components of burnout.

The concept of wellbeing was explored using the Personal Wellbeing Tool and Organisational Wellbeing Tool (Appendix G). This questionnaire, which was developed by the Sexual Assault Resource Centre (SARC), is designed to measure the general wellbeing of employees. Three recruitment emails were sent to all ICU nurses explaining the study's purpose by the researcher, a WA health employee. In the first email, the researcher explained the purpose of the study, second email was a reminder to all the staff, and the third email thanked all participants for participating in the study (Appendix B).

3.5.2 Qualitative Data Collection

This study's second phase of data collection consisted of semi-structured interviews with seven nurses (Appendix H). The interviews lasted approximately 30 minutes to three hours and were completed in a quiet room in the education building away from the hospital. With consent from participants, a digital audio recording device recorded the interviews to provide an accurate account of the conversation, including sequencing, pauses, in-breaths and musings. Non-verbal observations were also noted by the researcher for later analysis. A consent form for interviews (Appendix I) and participant information sheet (Appendix J), along with a withdrawal of participation form (Appendix K) collected from participants. The interviews were transcribed verbatim to conduct the data analysis process.

3.5.3 Validity and Reliability

Reliability and validity are the two most important and fundamental features in the evaluation of any measurement tool for good research. Validity refers to how well the research method investigates what it intends to and the extent to which the researcher gained full access to participants knowledge and meaning (Mason, 2002). Reliability describes how far a particular test, procedure or tool, such as a questionnaire, will produce similar results in different circumstances, assuming nothing else has changed. (Roberts, Paula, and Helena (2006).

3.6 Quantitative Phase

The standardised MBI is a validated instrument to measure burnout within the workplace (Wheeler, Vassar, Worley & Barnes, 2011). Permission has been obtained and a licence purchased from Mind Garden, Inc. to administer the following copyrighted instrument. Along with this, a validated personal and organisational wellbeing questionnaire developed by the SARC used to measure personal and

organisational wellbeing. Written permission has been gained from the SARC to use this instrument. To demonstrate the validity of the questionnaire, the researcher checked face validity and content validity of the questionnaire. Face validity determined through feedback from supervisors of this proposed study and piloted with three clinical nurses working in the ICU. Cronbach's alpha coefficient was calculated in this study to see the consistency of a person's response to an item compared to each other scale items. Cronbach's alpha coefficient ranges from 0 to 1. The higher the figure, the more reliable the scale (De Vaus, 2002).

3.7 Qualitative Phase

Rigour in qualitative research is achieved in several ways. Lincoln and Guba (1985) defined rigour as credibility, dependability, confirmability, transferability and authenticity. The researcher utilised the audit trail, and categorised when coding, to demonstrate qualitative rigor. To demonstrate the validity of research the researcher utilised appropriate research process to find out the answers to the research questions and providing explanations. The collected data were checked with a second person, verified analysis process and validated the researcher's interpretations.

The researcher enhanced reliability by conducting the whole process in a transparent way that led to the research findings; by checking through participants' interpretations; by carrying out the process in a consistent format and ensuring all participants had sufficient opportunity to discuss their experiences; and by careful data interpretations and analysis.

The researcher maintained credibility by the evidence of 'truth' in representing and interpreting participants' views. This study achieved credibility through accurate reports on participant recruitment, interview process and maintaining a detailed research process record.

Researcher entailed dependability by providing consistency of the data over similar conditions, including research team decision-making regarding common themes, thereby ameliorating individual researcher bias.

Researcher ensured confirmability by demonstrating that the data represents participant viewpoints and not researcher biased. The researcher achieved this by describing the data coding process and demonstrating themes within the data with pertinent quotes.

Researcher confirmed transferability related to the degree to which findings can be generalised and applied to other similar contexts. Researcher cannot guarantee that study findings will be applicable to small established hospitals.

Authenticity confirmed by the need of the unit and related to the current environment. Researcher also validated faithful interpretation of participants' feelings and emotions. The researcher used pertinent quotes selected for interviews to highlight themes across all interviews

Evidence of credibility for this study's qualitative portion was established through an independent researcher's analysis of the participant interviews. More than two members of the research team verified the interview transcripts independently. Data triangulation aids in removing biases and contributes to the accuracy of the research. All disagreements were discussed within the research team and resolved through consensus. The interactive data collection and the constant comparison analysis chosen for this study aided the researcher in reaching theoretical saturation (Duan et al., 2018). The use of questionnaires and interviews formed the basis of the audit trail for the research and were supported by peer debriefing. Trustworthiness and rigour of qualitative research findings is valid through the processes of collecting, analysing and presenting findings rather than researcher to analyse the data helped to ensure the trustworthiness of the findings.

In this qualitative part of the study reflexivity is maintained through an audio recording of the interview along with jotting notes about participants' comments and researcher's observation during the interview, each interview transcribed into memos after the interview, and codes and nodes were created. The created themes and subthemes were counter checked with supervisors. Participants were provided a participant information sheet, with reassuring that participation in this study is completely voluntary and are free to withdraw from further participation at any time without giving a reason and with no negative consequence.

3.8 Data Analysis

3.8.1 Quantitative Data Analysis

Quantitative data from the surveys included questions on a Likert-type scale and participant demographics, which were analysed using descriptive statistics. This has been undertaken using the Statistical Package for Social Sciences (SPSS) 24.0

(IBM Corp, Armonk, NY, USA). SPSS was used to analyse the quantitative data and to portray the absolute and the relative frequencies of responses (Pathak & Intratat, 2016). Descriptive statistics make it possible to represent data more meaningful to readers. Statistical tests were the chi-squared text, the t test and multivariate ANOVA. The results of the data analysis were represented by Pearson correlation coefficients, which depict absolute and relative frequencies.

3.8.2 Qualitative Data Analysis

Qualitative data were analysed thematically in Nvivo 12.0 (QSR International, 2018) using Braun and Clarke's (2006) six-step method (see Table 3.1).

Table 3.1

Braun and Clarke's (2006) six-step method

According to Braun and Clarke (2006), 'Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data' (p. 79). The interviews analysed common themes identified by respondents regarding burnout and wellbeing, per the research questions. Thematic analysis using deductive and inductive coding is appropriate for analysing the semi-structured interviews. That is, although data were analysed inductively, there were some pre-determined codes to guide the researcher, given that the researcher was seeking responses to research questions about the study. Common themes were identified and reported using pertinent quotes to

highlight each theme. Member checks, audit trails and de-briefing sessions after all interviews conducted to ensure the study's trustworthiness.

3.8.3 Synthesis of all Data

The final phase involved synthesising the quantitative and the qualitative findings to present a holistic representation of the issues around stress and burnout among the population. The study consisted of mixed-methods analysis that used triangulation, integration and synthesis of the quantitative and qualitative data phases. Triangulation is a three-step strategy for quality assurance in MMR (Ivankova, 2014). Integrating the data involved using inductive reasoning from the qualitative results and deductive reasoning from the quantitative results to derive conclusions. These conclusions are referred to as 'meta-inferences' (Ivankova, 2014) which can be used to synthesise data in relation to addressing specific research questions. As this study is a sequential explanatory design, the qualitative results provided an in-depth exploration of the quantitative findings (Noyes et al., 2019). Differences between the two data types were also explored as to possible anomalies. The synthesis of the findings addressed the research questions and the purpose of the study.

3.9 Ethical Considerations

The study was conducted cognisant of the National Statement on Ethical Conduct in Human Research (NHMRC, 2017). The main purpose of this National Statement was to promote ethical human research ensuring participants are accorded respect and protection (NHMRC, 2017).

This proposal was submitted to the School of Nursing and Midwifery Research Committee for review and approval before being submitted to the Human Research Ethics Committee at UNDA. The University of Notre Dame Human Research Ethics Committee (HREC) has been reviewed in accordance with the National Statement on Ethical Conduct in Human Research (2013, updated 2018), and approval has been granted before proceeding with the study (Appendix L). A concurrent application was made via the Research Governance System (RGS) for WA Health for approval to conduct the study at a general public hospital, and approval was obtained before starting the study (Appendix M).

According to the Nursing and Midwifery Board of Australia (2013), all nursing research should consider ethics and potential harm. The study commenced once both applications were approved, and candidacy was awarded after the proposal

presentation. Following both ethics applications, an introduction meeting was conducted with the ward manager and nursing staff to inform them about the proposed study and invite them to participate. They were made aware that an official invite was sent via internal mail. As this study had no direct involvement of patients, it was anticipated that there was minimal harm to participants at any time during the study. However, it was acknowledged that participants might have feelings of anxiety, emotional distress, embarrassment, shame, regret and fear may occur. Therefore, every care was taken to adhere to the ethical principles of beneficence and non-maleficence. Participants were provided with an information sheet outlining the risks and benefits of their participation. The information provided included clauses on withdrawal from the study at any time with no negative ramifications. There was a debriefing post-interview, and the staff was provided with contact details of the EAP/counsellor should they need further assistance.

3.9.1 Informed (Implied) Consent

The survey (quantitative) component relied on an implied consent process. All staff were provided with a participant information sheet explaining what the study was about, including its purpose and significance. Participant information sheets addressed that all nursing staff working in this ICU were invited to this study, participation was voluntary, and everyone had the right to refuse to participate. For data collection, participants were informed that they are entitled to withdraw from the study before the survey was submitted. Once the survey was submitted, data could not withdraw from the study as surveys were non-identifiable and individual data could not be able to be extracted.

3.9.2 Anonymity and Confidentiality

The anonymity of the participants was ensured by deleting the personal information of the participants from the data and replacing it with numerical identifiers so that staff remained anonymous throughout the study. Further, no individuals were identified in the survey, the interview component of the analysis, or the findings. Specifically, participant data from the interviews were de-identified using a pseudonym for each participant and identifying information such as the hospital name, work unit and other particulars were removed. However, due to the small sample size and the fact that all participants work at the same hospital, there was a minor risk of participants being identified from the data.

All personal information was stored in a separate location from the data so that participants' identities were not traceable and identified. Completed questionnaires were stored in a secure location in a locked filing cabinet. An external hard drive was used for the backup of the data. All collected information were saved in a secure cabinet and digitally in a password-protected university research server for five years following the project's conclusion.

3.9.3 Risks

To the best of the researcher's knowledge, this study was low-risk research in which the primary foreseeable risk might be an inconvenience. Completing a questionnaire may be considered inconvenient for participants (National Statement of Ethical Conduct in Human Research, 2007).

3.10 Conclusion

This chapter discussed the methodology and tools used in the study. The proposed mixed method study adds to the current knowledge reviewed above by identifying major factors affecting OS and strategies for improving nurses' wellbeing based on the lived experiences of ICU nurses working at a large public hospital in Australia.

Chapter 4: Quantitative Data Analysis and Results

4.1 Introduction

Chapter 3 described the research design and methodology used in this study. In this chapter, the descriptive statistics of the data collected are presented according to the main outcomes measured: burnout, personal wellbeing and organisational wellbeing.

4.2 The Study Sample

A total of 97 participants completed the questionnaires, representing a 49% response rate from the sample. Frequencies were generated and presented in tables. Open-ended responses were analysed for themes and also presented in tables with pertinent quotes used to illustrate comments by respondents to two particular questions in the survey regarding factors affecting their OS and strategies used for improving their wellbeing. Quantitative data from the survey included Likert-type questions and participant demographics, which were analysed to obtain descriptive statistics. The Statistical Package for Social Sciences (SPSS; IBM Corporation, 2017) was used for the data analysis.

To assess the levels of burnout of the respondents, the MBI-HSS Score tool data with 22 questions divided into three categories was reviewed. Scoring of items adopted a Likert scale the 7-level frequency scale of Maslach Burnout Inventory – Human services scale is represented in Table 4.1. The responses were summarised into three categories: absence of determinant indicated by the zero scores, less frequency of the determinant indicated by 1–3 and more frequency of the determinant indicated by 4–6.

Table 4.1

Maslach Burnout Inventory – Human Services Scale

0	Never	The absence of a burnout determinant
1	A few times per year	The respondent experienced the determinant less frequently
2	Once a year	The respondent experienced the determinant less frequently

3	A few times a month	The respondent experienced the determinant less frequently
4	Once a week	Increased frequency of experiencing the determinant
5	A few times per week	Increased frequency of experiencing the determinant
6	Everyday	Very high frequency of experiencing the determinant causing or measuring burnout levels

4.3 Data Analysis

The data were analysed using SPSS 24.0 (IBM Corp, Armonk, NY, USA) and Microsoft Excel. Descriptive statistics were generated using SPSS and Excel, with only significant relationships highlighted

Mean values were created to analyse the descriptive statistics, describe the quantitative data, and portray the responses' absolute and relative frequencies (Pathak, 2016). Descriptive data makes it possible to represent data in a more meaningful way. The collected data were analysed using SPSS 24 software. Statistical tests in this study were the chi-squares test and the student's test.

4.4 Demographic Variables

Tables 4.2 to 4.6 show the demographic data of participants. Results showed that 12% of respondents were in the 21–25 years age group, 9% were in the 25–30 years age group, 42% were in the 30 –40 years age group, while nearly 9.5% were in the 50–59 years age group. 68.7% were married, 26.5% were single, and 4.8% of the respondents divorced. Considering the number of years of working in the ICU, 31% had worked in the ICU for >15 years, 16.5% had worked in the ICU for 10 -15 years, 24.7% worked in the ICU for 5-10 years, and 27.8% had worked in the ICU for below 5 years.

Table 4.2

Marital Status and Qualifications of the Respondents

Variable	Category	Number (n)	Percentage (%)
Marital status	Single	22	26.5

	Married	57	68.7
	Separated /Divorced	4	4.8
	Total	83	100

Table 4.3

Employment Type of Respondents

Variable	Category	Number (n)	Percentage (%)
Employment Type	Part-time	32	37.2
	Full-time	51	59.3
	Casual	3	3.5
	Total	86	100

Table 4.4

Employment Experience of Respondents

Variable	Category	Number (n)	Percentage (%)
Experience (years)	< 5	27	27.8
	5–10	24	24.7
	10–15	16	16.5
	>15	30	30.9
	Total	97	100

Table 4.5

Professional Qualifications of Respondents

Variable	Category	Number (n)	Percentage (%)
Professional Qualification	Registered Nurse	64	76.2
	Clinical Nurse	15	17.9
	Others	5	6.0
	Total	84	100

Table 4.6

Gender and Age Information of Respondents

Gender	Age Groups (years)					Total
	21–25	25–30	30–40	40–50	>50	
Male	0	0	6	3	1	10
Female	10	7	29	21	7	74
Total	10	7	35	24	8	84
Proportion of Total Respondents (%)	11.9	8.33	41.67	28.6	9.5	

The participants had an option of ‘prefer not to say’. In the case of type of employment 11 participants chose ‘prefer not to say’. Similarly, in the case of age, 13 participants chose ‘prefer not to say’. Tables 4.2 to 4.6 show that females constitute 88% of the study participants, and 69% of the nurse respondents are married. The number of nurses in full-time employment is 60%, and 37% have only part-time jobs. Regarding experience, the number of nurses in the categories below 5 years and greater than 15 years is much greater when compared to other groups. Though the ages of the nurses start from 21 years, about 42% of them belonged to the age group 30–40 years.

4.5 Burnout Scores

The MBI is the most used burnout instrument in the health industry and scores three major characteristics of burnout: EE, depersonalisation and personal accomplishment. It consisted of 22 items which are aggregated into the three sub-scales. The EE sub-scale was divided into items that assessed feelings of being emotionally overextended and exhausted by one’s work. The depersonalisation sub-scale consisted of items that measured an unfeeling and impersonal response towards ICU service recipients. Personal Accomplishment had items that assessed feelings of competence and successful achievement of one’s work by ICU nurses. For EE and depersonalisation, higher scores were equivalent to higher degrees of experienced burnout by ICU nurses. However, in the personal accomplishment sub-scale, measured by the lower scores The three sub-scales were scored separately in this study.

4.5.1 Levels of Burnout

To assess the levels of burnout of the respondents, the MBI-HSS Score tool with 22 questions divided into three categories was considered. Scoring of items

surveyed adopted a Likert scale from 0 to 6: (0) represented ‘never’; that is, the absence of a burnout determinant, one represented ‘a few times per year’ meaning the respondent experienced the determinant less frequently, 2 represented ‘once a year’ meaning the respondent experienced the determinant less frequently, 3 represented ‘a few times a month’ meaning the respondent experienced the determinant less frequently, 4 represented ‘once. The responses were summarised into three categories: absence of determinant indicated by the zero scores, less frequency of the determinant indicated by 1–3 and more frequency of the determinant indicated by 4–6. A high level of burnout is reflected in high scores on the EE and depersonalisation sub-scales and low scores on the personal accomplishment sub-scale. An average degree of burnout is reflected in average scores on the three sub-scales (high >27; moderate was between 19 and 26; low levels <18). A low degree of burnout is reflected in low scores on the EE and depersonalisation sub-scales and in high scores on the personal accomplishment sub-scale.

4.6 Analysis of the Emotional Exhaustion Scores

The emotional exhaustion of nurse’s scale has nine questions (7-point Likert-type scale) and the scores obtained on the questions provide the EE scores of the study participants (Figure 4.1; Table 4.7). The 9-item EE scales measures feelings of being emotionally overextended and exhausted in the workplace. Higher scores correspond to greater experience of burnout. The participants are classified into high (>27), moderate (between 19-26) give the numeric value range, and low levels (<18) of EE based on these scores.

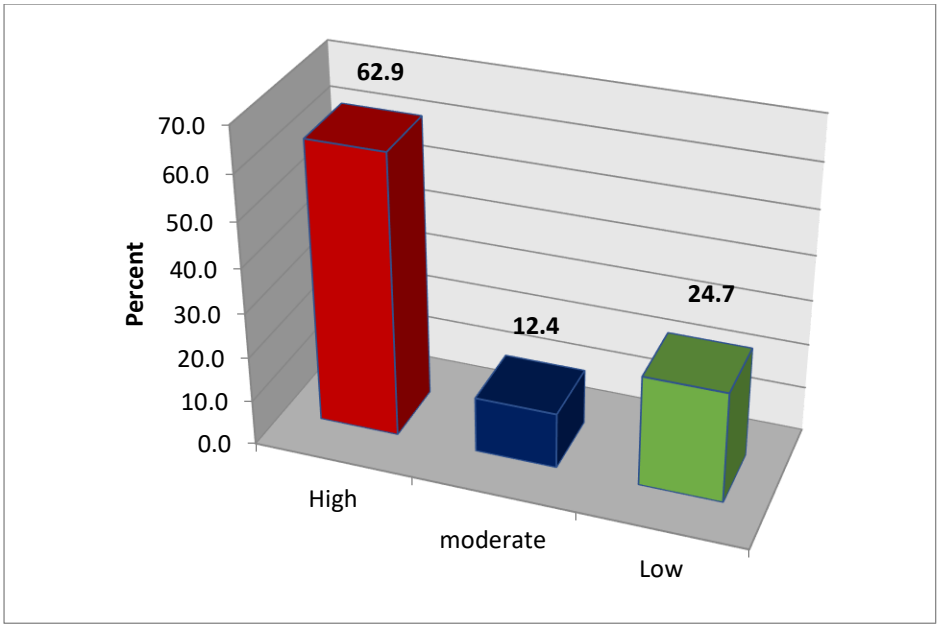

Figure 4.1. Emotional Exhaustion Level of Nurses.

Table 4.7

Emotion Exhaustion Category

(n = 97)	n	%
High	61	62.9
Moderate	12	12.4
Low	24	24.7
Total	97	100

An independent sample t test was carried out to test whether emotional exhaustion scores differ among gender groups. The mean and standard deviation (SD) for 10 males were 11.1 and 8.45, respectively, whereas the mean and SD for 74 females were 30.35 and 13.5, respectively. The value of the t statistic was 4.38, which was significant at a 5% level for 82 degrees of freedom. Hence, we conclude that in this study, the EE of male and female nurses differs significantly, and female nurses in this study sample seem to self-report greater EE.

In the case of factor age, the mean and SD of the EE scores for various age groups are as follows: 21–25 (25.50, 14.46), 25–30 (35.50, 12.41), 30–40 (29.05, 14.53), 40–50 (25.40, 14.38) and above 50 (29.33, 15.86). One-way ANOVA showed that F = 0.875 with P = 0.480, indicating that EE scores did not differ with age. When the marital status is considered, the mean and SD of the EE scores for various groups

were as follows: married (26.51, 14.62), single (28.82, 15.14) and separated (35.00, 6.32). Here the ANOVA gave F = 0.755 with P = 0.473, indicating that EE scores did not differ with marital status. With regard to a professional qualification, the mean and SD of the EE scores for various groups are as follows: registered nurse (28.98, 13.63), clinical nurse (23.80, 16.38) and others (22.80, 14.10) and the ANOVA gave the results F = 1.131 with P = 0.328, and this indicated that EE scores did not differ with a professional qualification. In the case of the type of employment, the results are part-time (27.44, 14.05), full-time (29.16, 14.21), and casual (12.33, 7.09), and the ANOVA showed F = 2.072 and P = 0.132 showing that EE scores did not differ with the type of employment.

The results show that the differences in EE are not significant in the case of all factors except gender (Figure 4.2, 4.3).

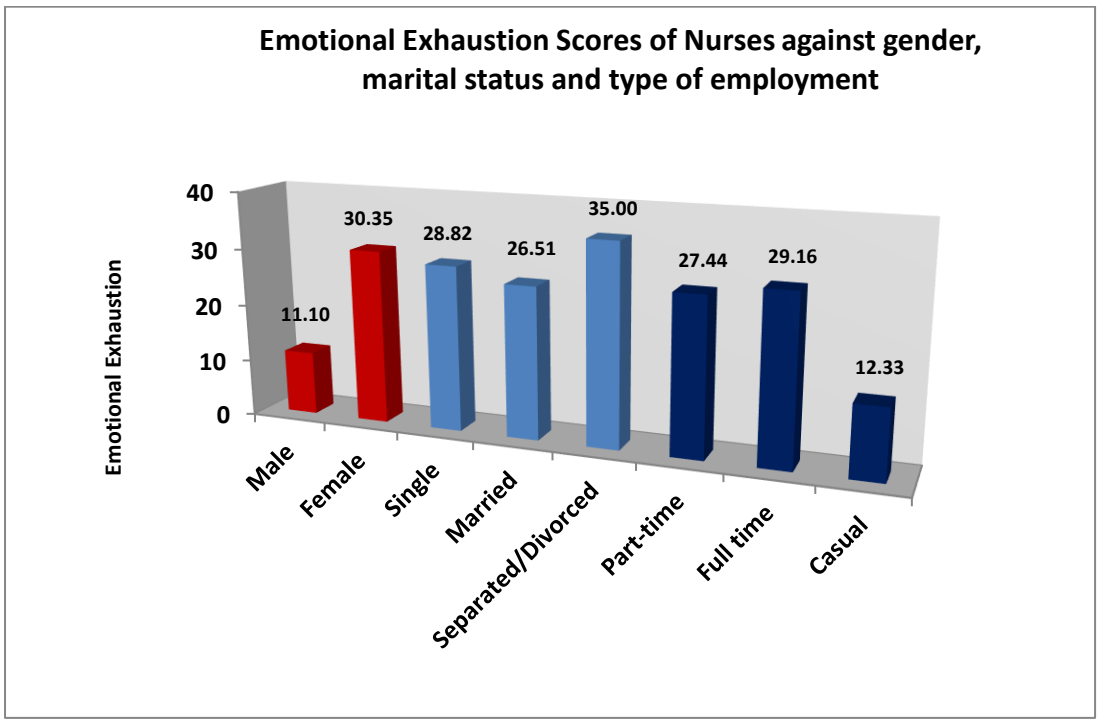

Figure 4.2. Emotional Exhaustion scores of nurses against gender, marital status and type of employment.

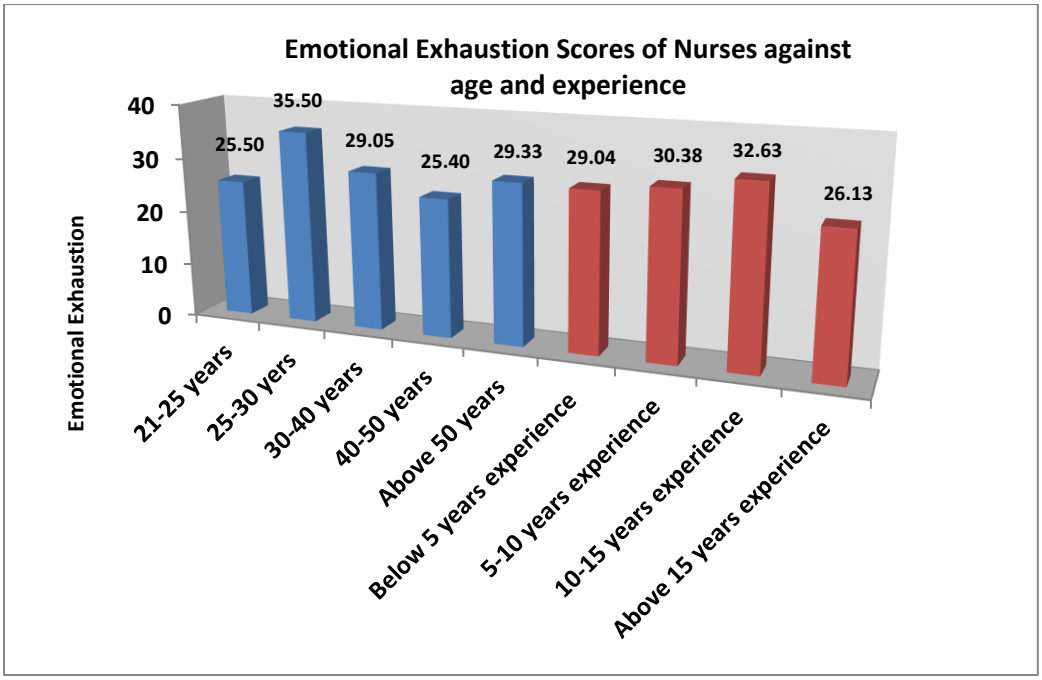

Figure 4.3. Emotional Exhaustion scores of Nurses against age and experience.

4.7 Analysis of the Depersonalisation Scores

Depersonalisation: Measures an unfeeling and impersonal response towards recipients of one's service, care, treatment or instruction. The depersonalisation of nurses is assessed based on five questions having a 7-points Likert scale. and the scores obtained on these questions are added to obtain the depersonalisation scores of the study participants. The participants are classified into high, moderate and low levels of depersonalisation based on these scores. A score greater than 10 was taken to be high, between 6 and 9 taken to be moderate, and below 6 taken, as shown in Table 4.8 and Figure 4.4.

Table 4.8

Depersonalisation Category

(n = 97)	n	%
High	38	39.2
Moderate	31	32.0
Low	28	28.9
Total	97	100.0

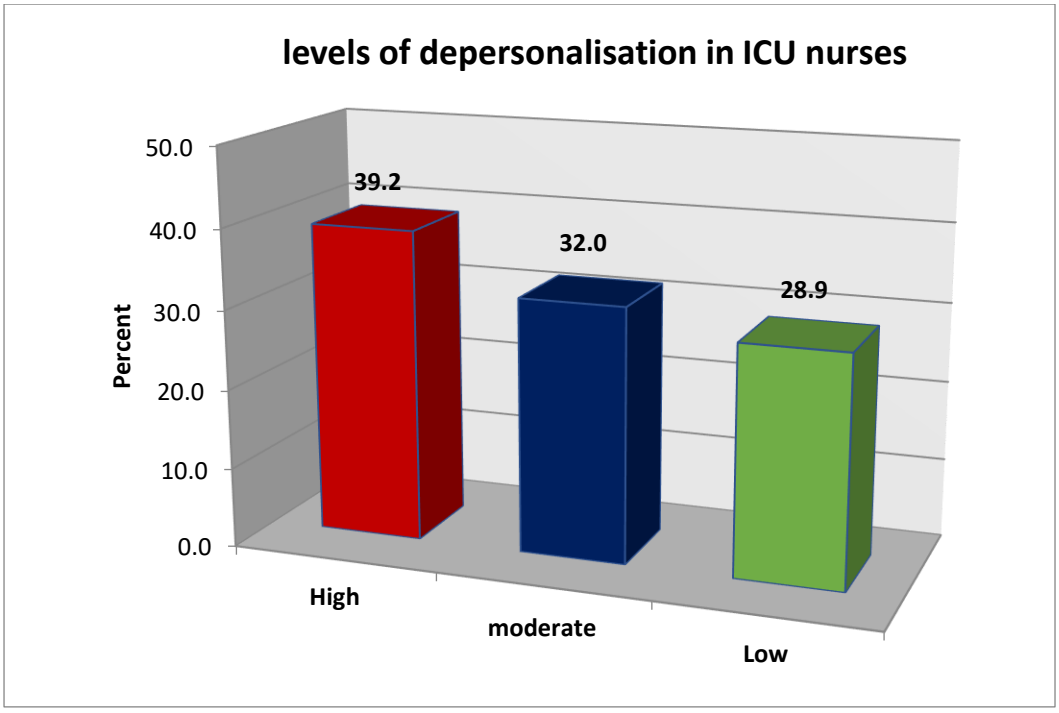

Figure 4.4. Levels of Depersonalisation in the ICU Nurses.

An independent t test was used to test whether depersonalisation scores differ with gender. The mean and SD for 10 males were 5.80 and 3.994, respectively, whereas the mean and SD for 74 females were 8.91 and 5.557, respectively. The value of the t statistic was 1.704, and this was significant at 5% level for 82 degrees of freedom. In conclusion, the depersonalisation of male and female nurses differs significantly. Female nurses exhibit greater depersonalisation.

In the case of the factorage, the mean and SD of the depersonalisation scores for various age groups are as follows: 21–25 (10.00, 3.86), 25–30 (12.50, 7.23), 30–40 (9.35, 5.19), 40–50 (6.12, 4.01) and above 50 (8.00, 7.86). The one-way ANOVA gave the results F = 2.877 with P = 0.028, indicating that depersonalisation scores differ with age. Since the ANOVA showed a significant difference, at least two group means are significantly different. The post hoc test is performed to ascertain which specific groups are significantly different. The post hoc test was performed to see which of the groups, when taken pairwise, showed significant differences. This is equivalent to an independent t test for various pairs, and here post hoc tests indicate that there is a significant difference in the case of the group ‘40–50 years’ with the two groups ‘25–30 years’ and ‘30–40 years’

When the marital status is considered, the mean and SD of the depersonalisation scores for various groups are as follows: married (10.32, 5.50), single (7.67, 5.22) and separated (5.25, 3.86). Here the ANOVA gave F = 2.71 with P = 0.073, indicating that depersonalisation scores do not differ with marital status. When professional qualification is considered, the mean and SD of the depersonalisation scores for various groups are registered nurse (8.55, 5.00), clinical nurse (9.53, 7.28) and others (5.00, 4.00), and the ANOVA gave F = 1.136 with P = 0.274, and this indicates that depersonalisation scores do not differ with a professional qualification. In the case of the type of employment, the results are part-time (8.22, 4.66), full-time (8.76, 5.77), and casual (6.33, 5.51) and here the results of ANOVA were F = 0.349 with P = 0.707 showing that depersonalisation scores do not differ with type of employment. In the case of experience the mean and SD of the depersonalisation scores for various groups are as follows: below 5 years (10.48, 4.74), 5-10 years (8.71, 5.97), 10-15 years (11.31, 5.08), Above 15 years (5.93, 4.58) and here ANOVA resulted in F = 5.479 with P = 0.002 and here post hoc tests revealed that there is significant difference in the case of the group 'greater than 15 years of experience' with all other groups. The results showed that the differences in the depersonalisation scores were significant only in the case of gender, age and years of experience (Figure 4.5, 4.6).

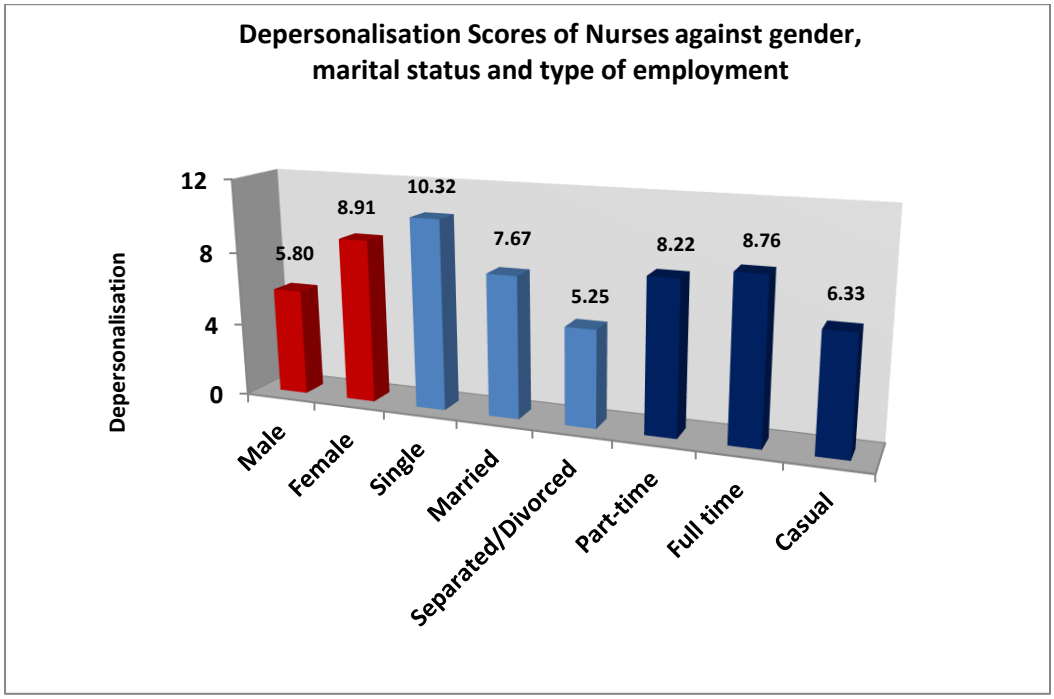

Figure 4.5. Depersonalisation Scores of Nurses against gender, marital status and type of employment.

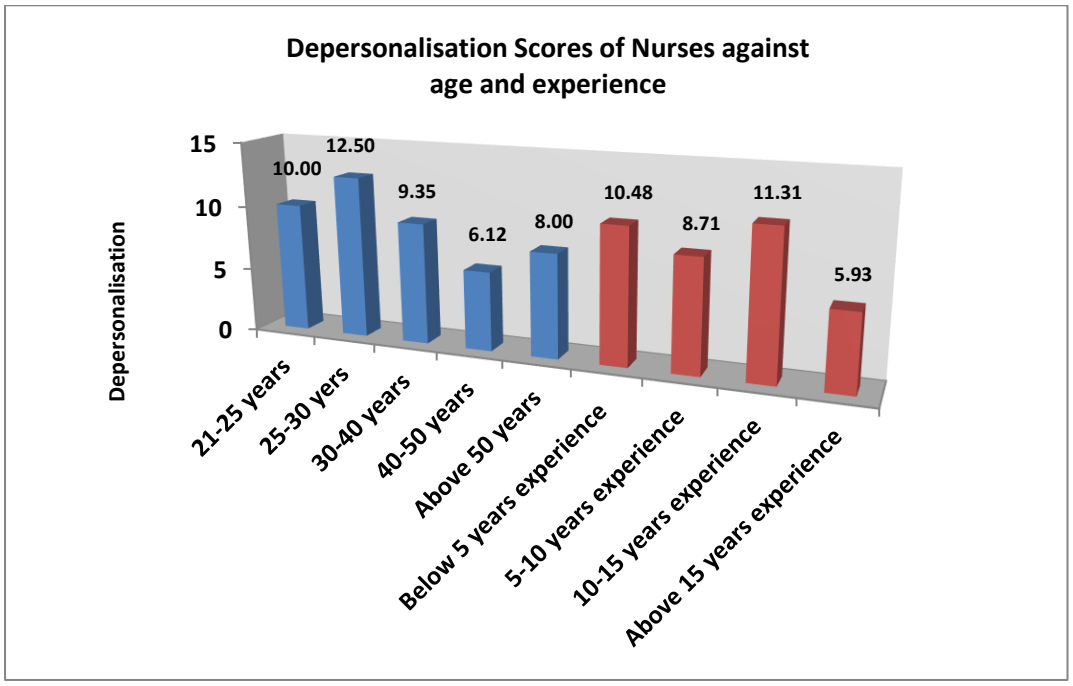

Figure 4.6. Depersonalisation Scores of Nurses against age and experience.

The personal accomplishment of nurses is assessed based on eight questions having 7-point, Likert scale and the scores obtained on these questions are added to obtain the personal accomplishment scores of the study participants. The sub-scale assessed feelings of competence and achievement in working with people (Table 4.9; Figure 4.7). The participants are classified into high, moderate and low levels of personal accomplishment based on these scores. A score greater than 40 was taken to be low, between 34 and 39 taken to be moderate, and below 33 to be high.

Table 4.9

Personal Accomplishment Category

(n = 97)	n	%
Low	31	32.0
Moderate	27	27.8.
High	39	40.2
Total	97	100.0

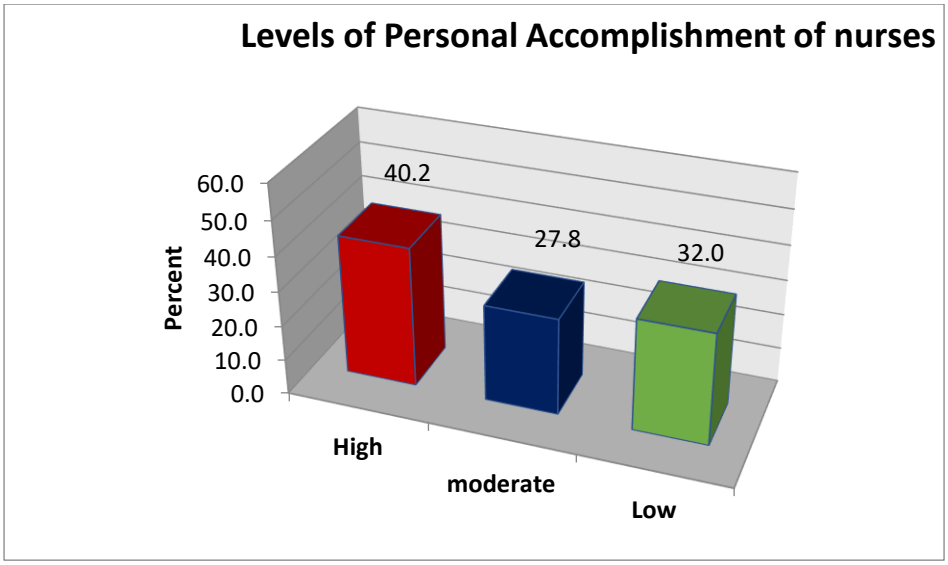

Figure 4.7. Levels of Personal Accomplishment of Nurses.

Using an independent sample t test, whether personal accomplishment scores differ with gender was tested. The mean and SD for 10 males were 39.6 and 7.32, respectively, whereas the mean and SD for 74 females were 34.91 and 7.251, respectively. The value of the t statistic was 1.92, and this was significant at 5% level for 82 degrees of freedom. Hence, we conclude that the personal accomplishment of male and female nurses differs significantly. We can see that male nurses have greater personal accomplishments.

When age is considered, the mean and SD of the personal accomplishment scores for various groups are as follows: 21–25 (40.40, 6.67), 25–30 (35.00, 5.26), 30–40 (34.92, 7.38), 40–50 (34.08, 7.45) and above 50 (37.89, 6.83). One-way ANOVA showed that F = 1.752 with P = 0.146, indicating that personal accomplishment scores do not differ with age. When the marital status is considered, the mean and SD of the personal accomplishment scores for various groups are as follows: married (35.12, 7.26), single (37.91, 7.08) and separated (35.50, 6.45). Here the ANOVA produced the results F = 1.199 with P = 0.307, indicating that personal accomplishment scores do not differ with marital status. When professional qualification is considered, the mean and SD of the personal accomplishment scores for various groups are as follows: registered nurse (35.67, 6.90), clinical nurse (34.07, 9.14) and others (40.80, 4.71) and the ANOVA generated the results F = 1.619 with P = 0.204, and this indicates that personal accomplishment scores do not differ with a professional qualification. In the case of the type of employment, the results are part-time (33.59, 6.66), full-time

(37.31, 7.11) and casual (31.67, 8.02), with F = 3.332 and P = 0.041 showing that personal accomplishment scores differ with the type of employment. The post hoc tests indicate a significant difference between part-time and full-time nurses. The results show that the differences in personal accomplishment are significant only in the case of gender and type of employment (Figure 4.8, 4.9).

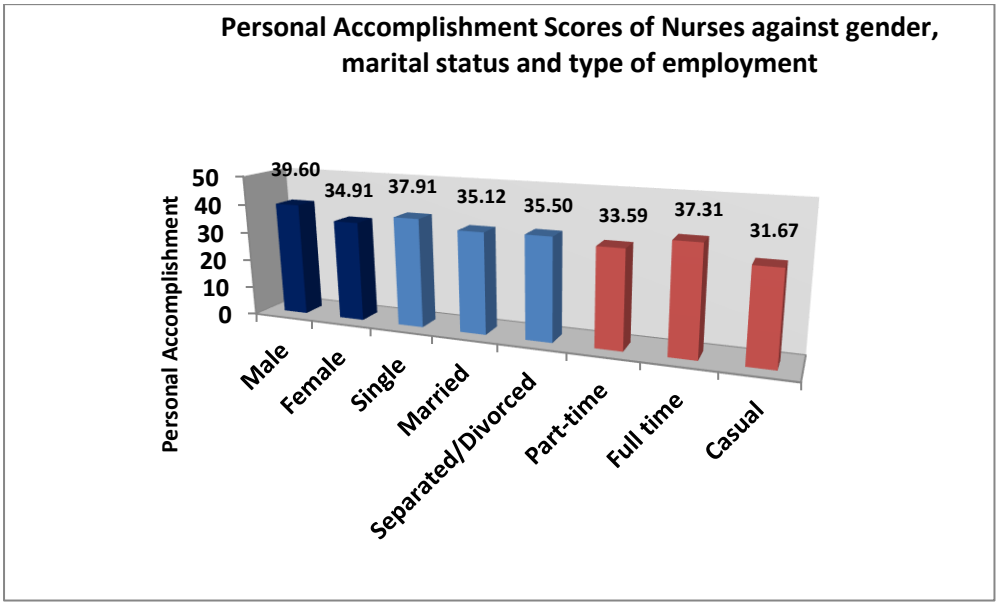

Figure 4.8. Personal Accomplishment Scores of Nurse against gender, marital status and type of employment.

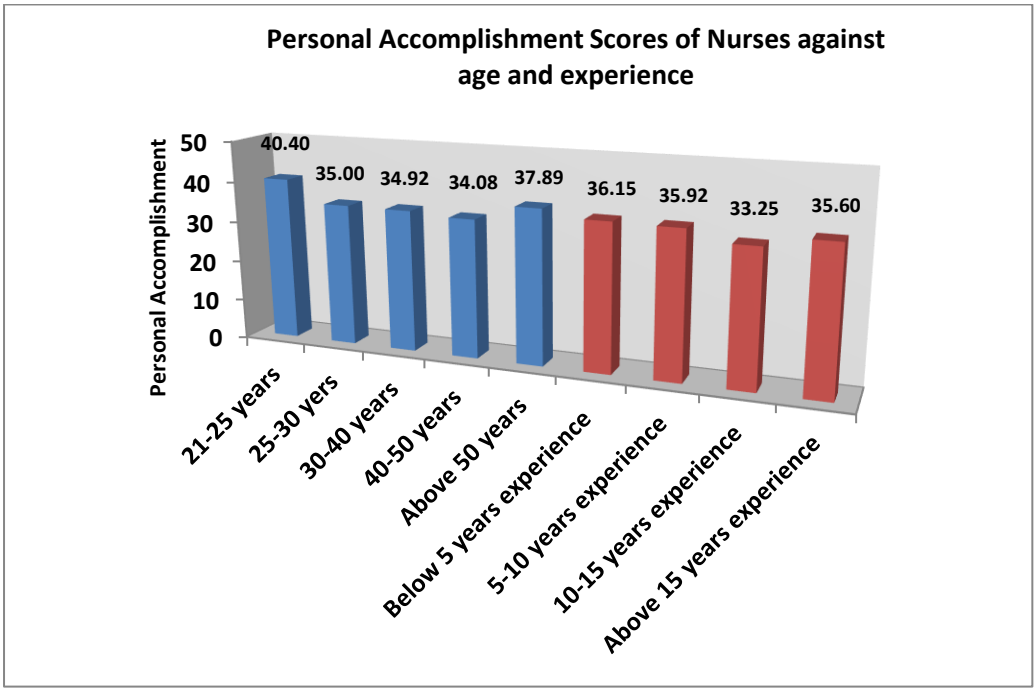

Figure 4.9. Personal Accomplishment Scores of Nurses against age and experience.

4.8 Analysis of the Burnout Scores of Nurses

The burnout scores of nurses are determined by adding the scores obtained on EE, depersonalisation and personal accomplishment. The respondents are classified into high, moderate and low levels of burnout based on these scores. A score greater than 77 was taken to be high, between 56 and 77 taken to be moderate, and below 56 to be low. The mean burnout score is 73.28, with an SD of 16.59. The histogram of the burnout scores is given in Tables 4.10 and 4.11 and Figures 4.10 and 4.11.

Table 4.10

Descriptive Statistics

	N	Minimum	Maximum	Mean	SD	Variance
Burnout score	97	38	111	73.28	16.596	275.411
Emotional exhaustion	97	3	54	29.06	14.253	203.142
Depersonalisation	97	0	24	8.77	5.423	29.406
Personal accomplishment	97	15	48	35.44	7.280	52.999
Personal wellbeing	97	12	26	20.54	3.407	11.605
organisational wellbeing	97	0	32	13.09	9.362	87.648

Note. SD, standard deviation.

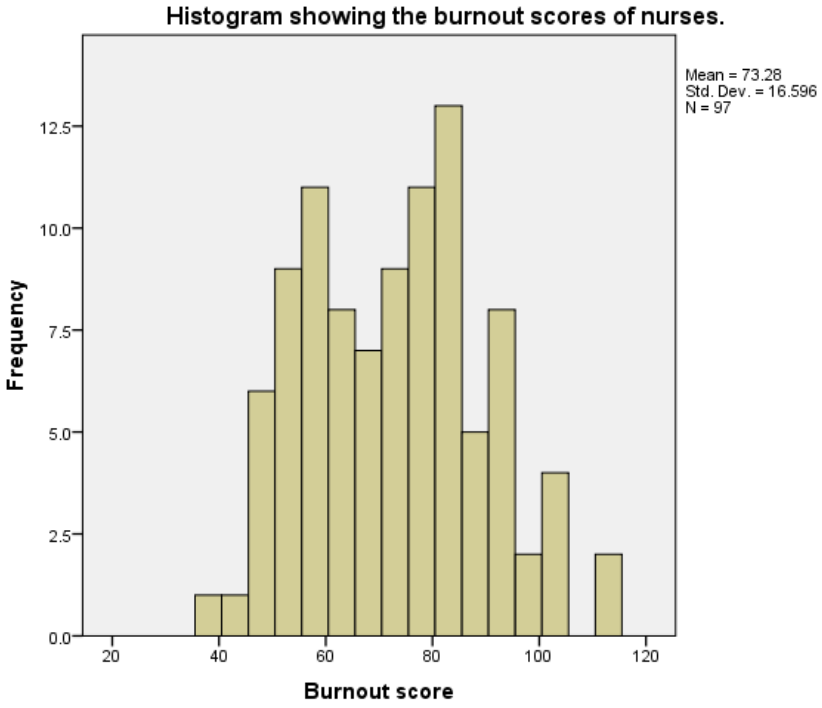

Figure 4.10. Burnout Score of Nurses.

Table 4.11

Burnout category

(n = 97)	n	%
High	45	46.4
Moderate	35	36.1
Low	17	17.5
Total	97	100.0

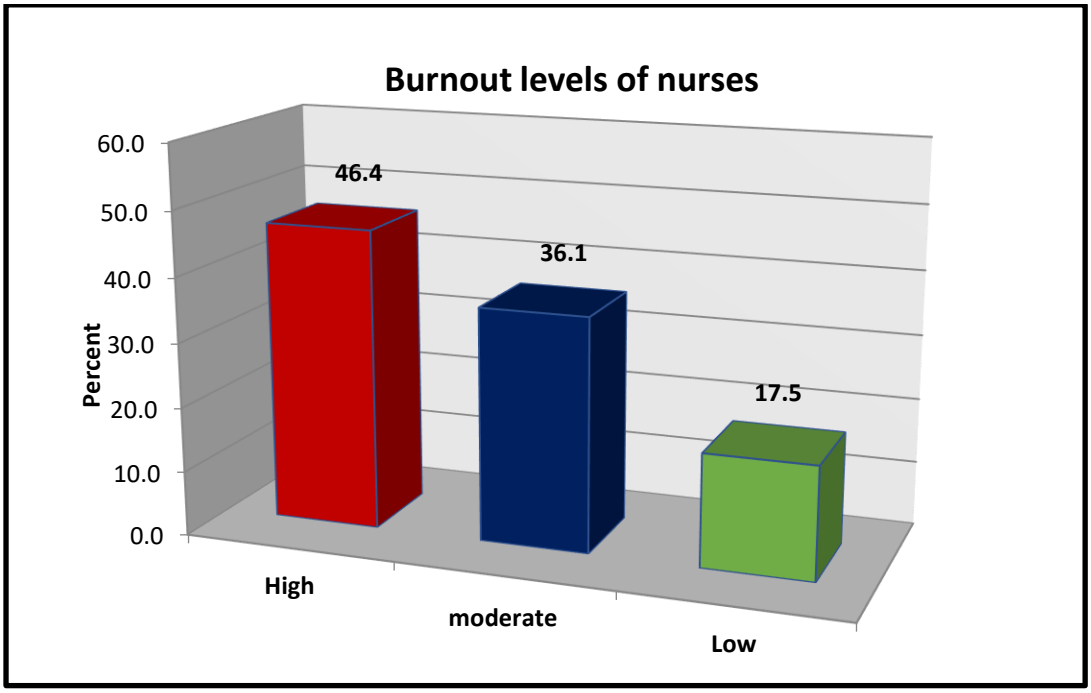

Figure 4.11. Burnout Levels of Nurses.

An independent sample t test was used to determine whether burnout scores differ by gender. The mean and SD for 10 males were 56.5 and 7.95, respectively, whereas the mean and SD for 74 females were 74.16 and 16.32, respectively. The value of the t statistic was 3.35, and this was significant at 5% level for 82 degrees of freedom. Hence, we conclude that the burnout of male and female nurses differs significantly. We can see that female nurses have greater burnout.

In the case of factor age, the mean and SD of the burnout scores for various groups are as follows: 21–25 (75.90, 12.88), 25–30 (83.00, 14.39), 30–40 (73.32, 17.20), 40–50 (65.60, 14.66) and above 50 (75.22, 21.69). ANOVA showed that F = 2.127 with P = 0.085, indicating that burnout scores do not differ with age.

When the marital status is considered, the mean and SD of the burnout scores for various groups are married (69.30, 17.20), single (77.05, 15.40), and separated (75.75, 8.73). Here ANOVA showed F = 1.88 with P = 0.159, indicating that burnout scores do not differ with marital status. When professional qualification is considered, the mean and SD of the burnout scores for various groups are as follows: registered nurse (73.20, 16.33), clinical nurse (67.40, 18.11) and others (68.60, 12.99), and the ANOVA gave F = 0.857 with P = 0.428, and this indicates that burnout scores do not differ with a professional qualification. In the case of the type of employment, the results are as follows: part-time (69.25, 15.32), full-time (75.24, 15.80) and casual (50.33, 4.04) with F = 4.576 and P = 0.013 showing that burnout scores differ with type of employment and here the post hoc tests reveal that there is significant difference between the category casual nurses with the other two categories part-time and full-time nurses. In the case of experience, the mean and SD of the burnout scores for various groups are as follows: below 5 years (75.67, 15.24), 5-10 years (75.00, 18.65), 10-15 years (77.19, 15.23), above 15 years (67.67, 16.08) and here using ANOVA we obtained F = 1.752 with P = 0.162 and this indicates that burnout scores do not differ with years of experience. The results show that the differences in the burnout scores are significant only in the case of gender and type of employment (Figure 4.12, 4.13).

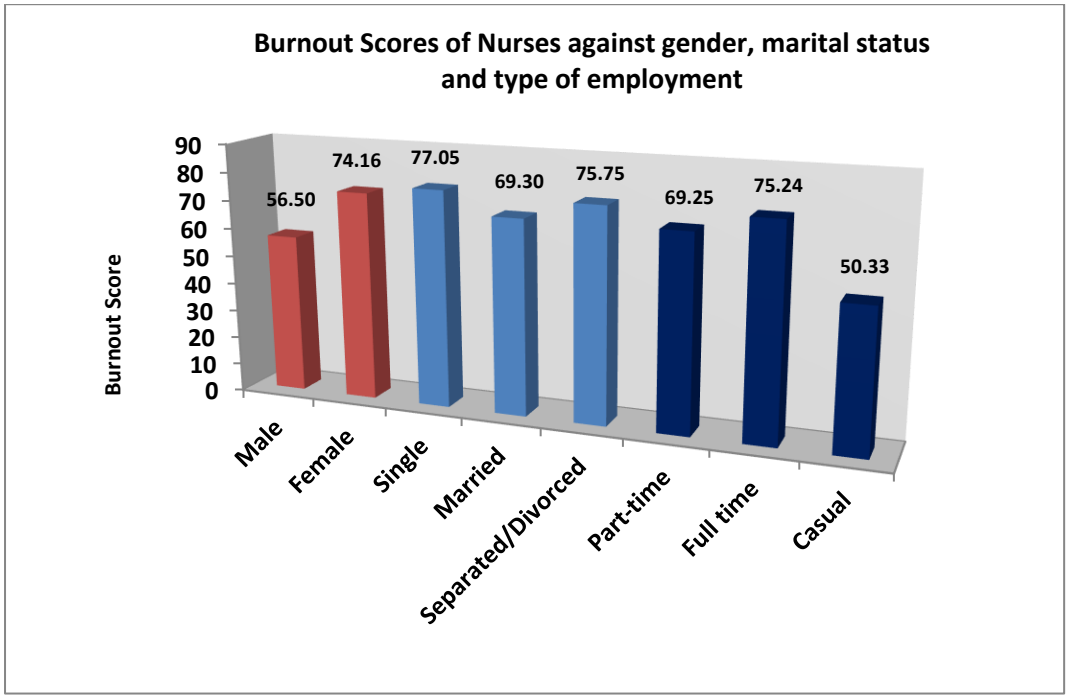

Figure 4.12. Burnout Scores of Nurses against gender, marital status and type of employment.

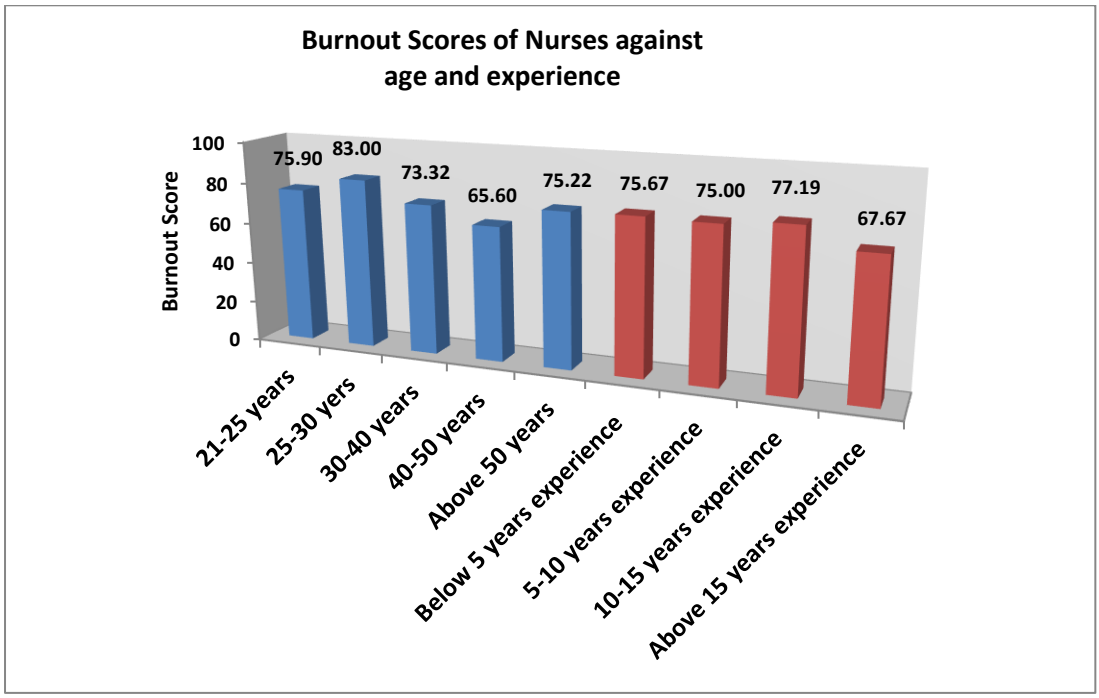

Figure 4.13. Burnout Scores of Nurses against age and experience

This means that nearly half of ICU nurses in this hospital are experiencing a universal phenomenon of burnout syndrome. Females have high burnout, and married people have high as well compared to singles. Regarding employment, full-time staff have high burnout compared to part-time and casual staff. The age group affected by high burnout is 25–30 years, 21-35years and above 50 years, respectively. With regards to years of experience 10-15 years of age experience high burnout, then below 5 years and then 5-10 years of experience.

4.9 Analysis of the Personal Wellbeing Scores

The personal wellbeing scores of nurses are assessed based on a set of 13 questions, each with 3 choices. The scores on all these questions are added to obtain a personal wellbeing score. The participants are classified into good, average and poor levels of wellbeing based on these scores. A score greater than 21 is considered good, and between 0 and 21 is considered average. The mean and SD of these personal wellbeing scores are 20.54 and 3.41, respectively. The histogram of these scores is given in Figure 4.14.

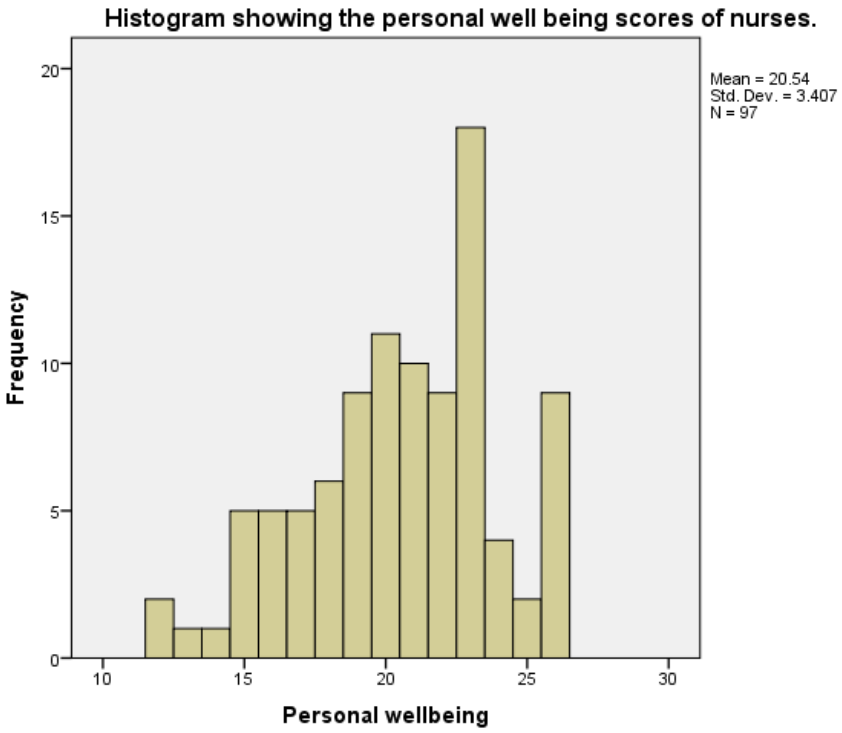

Figure 4.14. Personal wellbeing Score of ICU nurses.

An independent sample t test was used to explore whether personal wellbeing scores differ with gender. The mean and SD for 10 males were 19.80 and 3.71, respectively, whereas the mean and SD for 74 females were 20.78 and 3.28, respectively. The value of the t statistic was 0.877 (P = 0.383), which was not significant at the 5% level for 82 degrees of freedom. Hence, we conclude that male and female nurses' personal wellbeing does not differ significantly.

In the case of factor age, the mean and SD of the personal wellbeing scores for various groups are as follows: 21–25 (19.30, 2.71), 25–30 (20.13, 3.60), 30–40 (20.38, 3.58), 40–50 (20.64, 3.33) and above 50 (22.67, 3.16). Results of ANOVA showed that F = 1.279 with P = 0.285 indicates that personal wellbeing scores do not differ with age. When the marital status is considered, the mean and SD of the personal wellbeing scores for various groups are as follows: married (20.75, 3.63), single (19.59, 3.00) and separated (22.25, 2.87). Here the ANOVA gave F = 1.432 with P = 0.245, indicating that personal wellbeing scores do not differ with marital status. When professional qualification is considered, the mean and SD of the personal wellbeing scores for various groups are as follows: RNs (20.64, 3.09), clinical nurses (20.53, 4.70) and others (19.80, 3.56) and the ANOVA produced F = 0.139 with P = 0.871

and this indicates that personal wellbeing scores do not differ with a professional qualification. In the case of the type of employment, the results are as follows: part-time (20.59, 2.94), full-time (20.43, 3.81) and casual (23.33, 0.58) with F = 0.987 and P = 0.373 showing that personal wellbeing scores do not differ with the type of employment. In the case of experience, the results are: below 5 years (20.58, 3.07), 5-10 years (19.54, 3.76) 10-15 years (19.69, 3.36) and above 15 years (21.83, 3.15) with F = 2.587 and P = 0.058 showing that personal wellbeing scores do not differ with experience.

The results show that the differences in the personal wellbeing scores are not significant in the case of all these factors. This study reveals that43% of ICU nurses have good personal wellbeing and 57% have average wellbeing. No respondents had poor wellbeing. This explains the majority of the nurses have good personal wellbeing (Figure 4.15, 4.16, 4.17; Table 4.12).

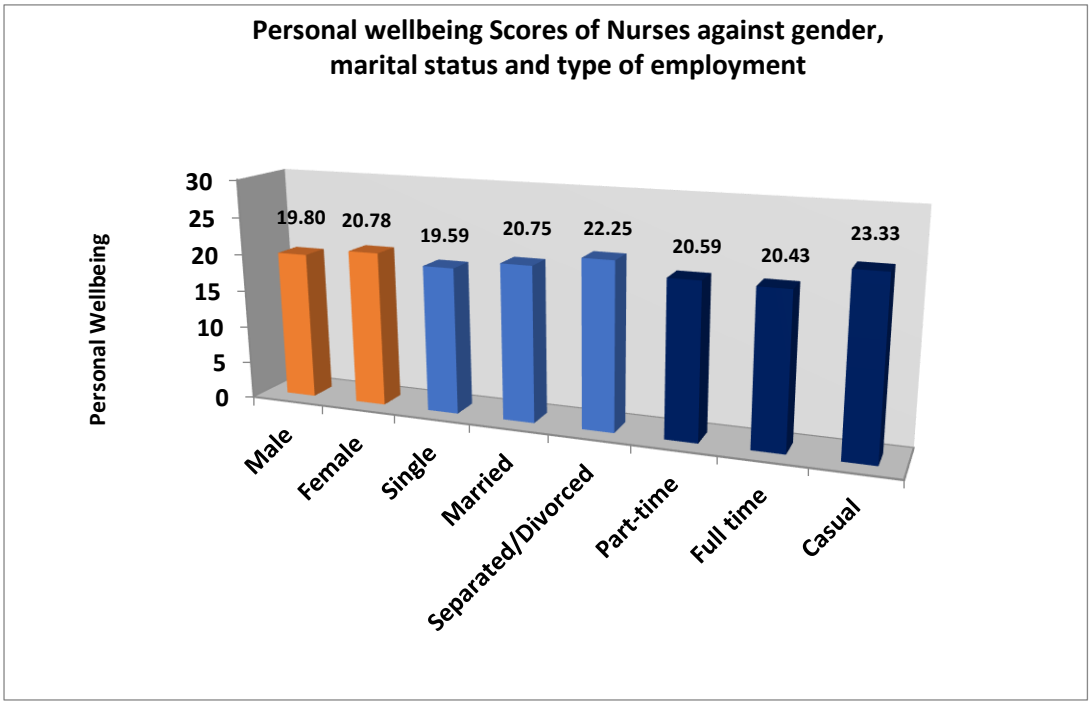

Figure 4.15. Personal wellbeing Scores of Nurses against gender, marital status and type of employment.

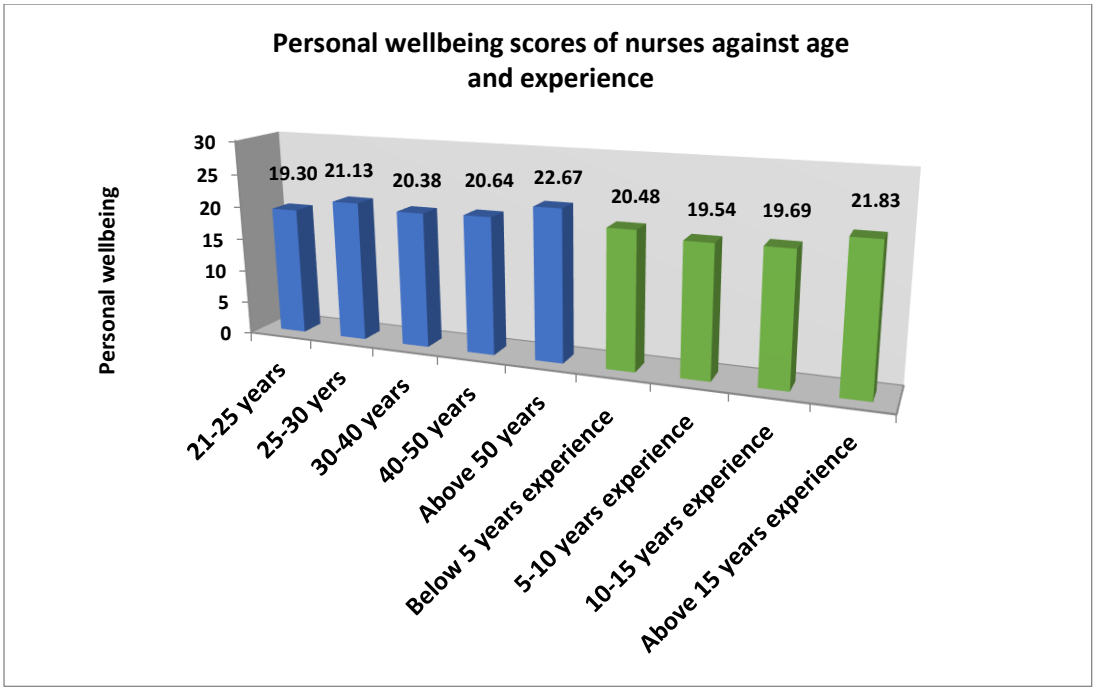

Figure 4.16. Personal wellbeing scores of nurses against age and experience.

Table 4.12

Personal wellbeing category

(n = 97)	*n*	*%*
Good	42	43.3
Average	55	56.7
Poor	0	0
Total	97	100

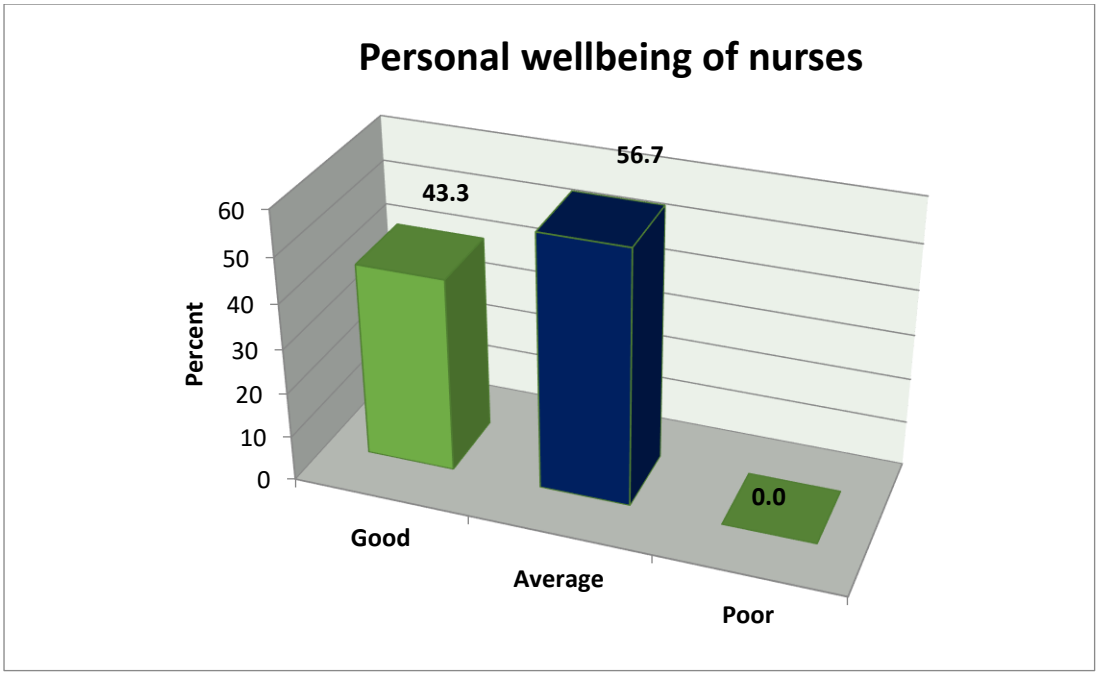

Figure 4.17. Personal wellbeing of nurses.

4.10 Analysis of the Organisational Wellbeing Scores

The organisational wellbeing scores of nurses are assessed based on a set of 16 questions, each with 3 choices. The scores on all these questions are added to obtain the organisational wellbeing score. The participants are classified into good, average and poor levels of organisational wellbeing based on these scores. A score greater than 24 is taken to be good, between 13 and 24 taken to be average, and below 13 to be poor. The mean and SD of these organisational wellbeing scores are 13.09 and 9.36, respectively. The histogram of these scores is given in Figure 4.18.

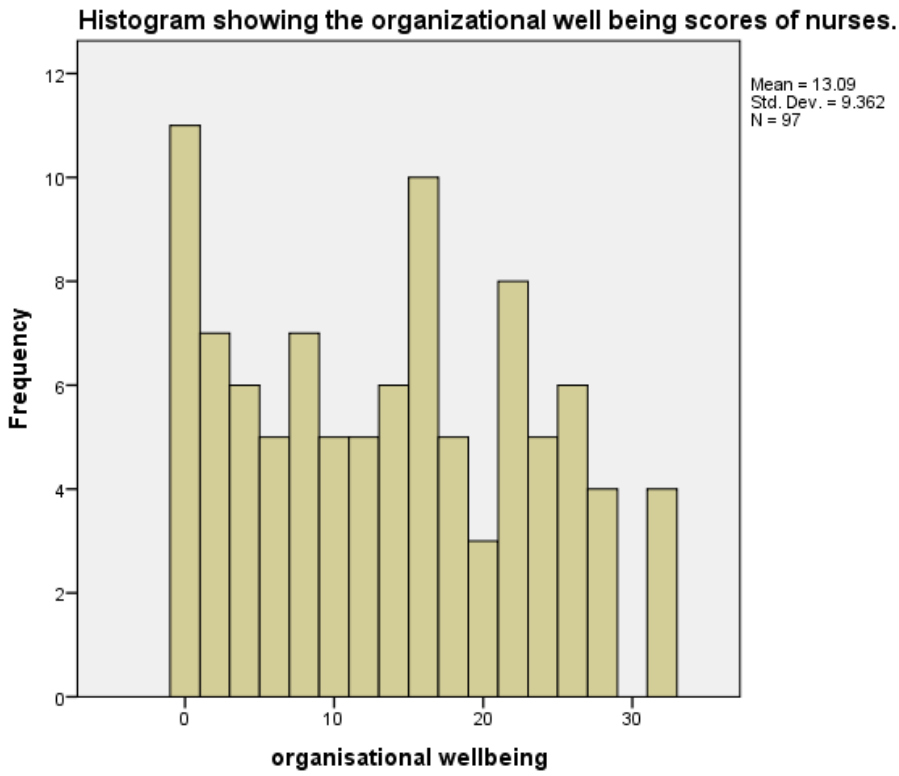

Figure 4.18. Organisational Wellbeing Scores of nurses.

An independent sample t test was used to test whether organisational wellbeing differs with gender. The mean and SD for 10 males were 12.10 and 7.48, respectively, whereas the mean and SD for 74 females were 12.86 and 9.44, respectively. The value of the t statistic was 0.246 (P = 0.807), which was not significant at the 5% level for 82 degrees of freedom. Hence, we conclude that male and female nurses' organisational wellbeing does not differ significantly. In the case of factor age, the mean and SD of the organisational wellbeing scores for various groups are as follows: 21–25 (13.10, 7.94), 25–30 (14.88, 10.79), 30–40 (12.65, 9.21), 40–50 (12.64, 10.23) and above 50 (12.44, 10.15). ANOVA showed that F = 0.101 with P = 0.982, indicating that organisational wellbeing does not differ with age. When the marital status is considered, the mean and SD of the organisational wellbeing scores for various groups are married (211.74, 9.32), single (13.14, 9.03) and separated (15.50. 4.20). Here, the ANOVA gave the results F = 0.449 with P = 0.640, and this indicates that organisational wellbeing does not differ with marital status. When professional qualification is considered, the mean and SD of the organisational wellbeing scores for various groups are: registered nurse (12.72, 9.32), clinical nurse (12.40, 7.51) and others (10.20, 12.05), and the ANOVA gave F = 0.175 with P = 0.839, and this

indicates that organisational wellbeing does not differ with a professional qualification. In the case of the type of employment, the results are: part-time (11.25, 9.17), full-time (14.10, 8.99), and casual (8.00, 6.00), with F = 1.431 and P = 0.245 showing that organisational wellbeing do not differ with the type of employment. In the case of experience, the results are below 5 years (11.81. 8.71), 5-10 years (14.00, 10.95) 10-15 years (15.13, 8.52) and above 15 years (12.43, 9.13) with F = 0.536 and P = 0.659 showing that organisational wellbeing do not differ with experience. The results show that the differences in organisational wellbeing are insignificant in all these factors (Figure 4.19, 4.20, 4.21; Table 4.13).

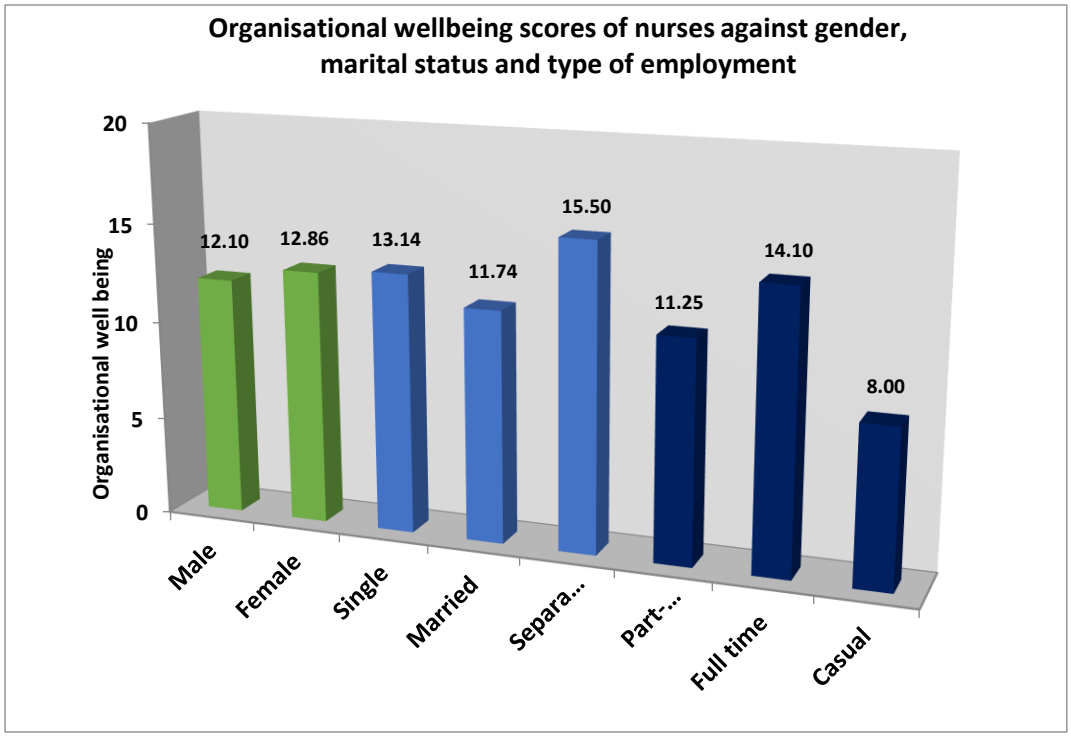

Figure 4.19. Organisational wellbeing scores of nurses against gender, marital status and type of employment.

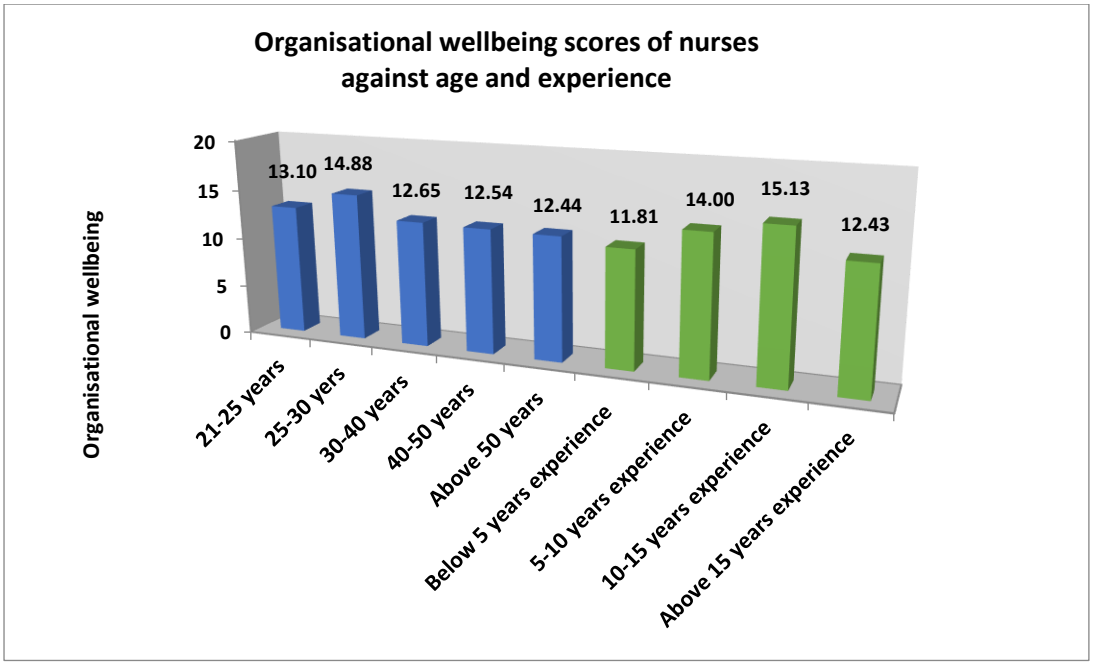

Figure 4.20. Organisational wellbeing scores of nurses against age and experience.

Table 4.13

Organisational wellbeing

(n = 97)	*n*	*%*
Good	14	14.4
Average	37	38.1
Poor	46	47.4
Total	97	100.0

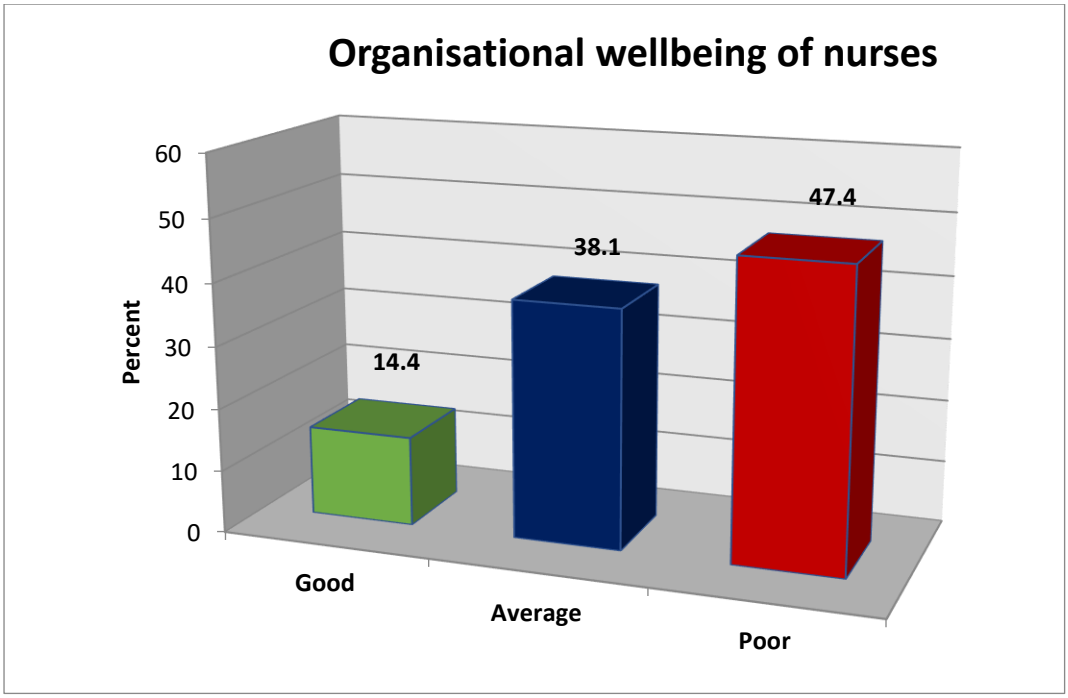

Figure 4.21. Organisational wellbeing of Nurses.

Figure 4.21 displays the organisational wellbeing of nurses, which is 14% of ICU nurses reported good wellbeing, 38% reported average wellbeing, and 47% of ICU nurses' organisational wellbeing is poor.

4.11 Stressors in Workplaces

The factors that can lead to burnout in the ICU nurses are considered stressors at work. There were two open-ended questions in the survey related to stressors. The first question was regarding the factors contributing to stress at work. Respondent nurses were asked to list the workplace practices they could identify as major stressors, and here only 61 respondents out of 97 (62.8%) answered this question. This was a multiple response question, and the answers given by the respondents varied to a great extent. The answers are shown in Table 4.14.

Table 4.14

Workplace practices identified as stressors

Response		
(n = 61)	*n*	*% of respondents*
Staff shortage	45	73.7
Lack of support from seniors	26	42.6
Heavy workload	18	29.5

Poor staff morale	17	27.8
Bullying	12	19.7
Lack of support from management	11	18.0
High level of acuity of patients	5	8.2
Decreased skill mix	5	8.2
Aggressive patients	3	4.9
Time constraints	2	3.3
Unsafe double allocations	2	3.3
Lack of leave	2	3.3
Long working hours	2	3.3
Lack of respect from junior nurses	2	3.3
Other*	16	26.2

Note. Other* includes the turnover of staff, over documentation, lack of professionalism in nursing staff, unsafe doubles, co-workers having a negative attitude, lack of teamwork from colleagues, lack of help when needed, being isolated in a room, lack of education, laziness, sick patients, sleep disturbances, difficulty in communication at stressful times with some strong personalities]

It can be observed that a large number of respondents (about 74%) thought that staff shortage was a stressor in the workplace. The next important stressor identified was lack of support from senior staff (about 43%), followed by heavy workload (about 30%) and poor staff morale (about 29%).

The large majority of respondents in the current study expressed similar examples of stressors in the workplace, with slight, individual variations of verbatim between them. One participant responded:

'*I feel that we are under sourced (beds/staff) and always on bed state black and cannot safely manage patients the way we believe they should be. We are all working harder and longer than ever before and at some point, something has to give. A lot of us are jaded and because of a dog-eat-dog culture exists*'

Many participants reported instances when they could feel frustration. For example,

'*High acuity workload and lots of praise for high functioning in that environment and no feedback when not high functioning. High emphasis on coping with the workload/stressors and poor support when not coping. Mistakes and near*

misses are considered lack of competency here and label the staff negatively, rather than identifying the root cause.'

Respondents also mentioned unapproachable senior nursing staff and medical staff, along with intimidation of inexperienced staff also added stress in the workplace.

Another participant below describes '*Isolated single rooms allow ongoing bullying, and some strong personalities make the workplace difficult*.'

4.11.1 Strategies Recommended for Overcoming Occupational Stress

The second open-ended question was related to the strategies for alleviating stress. Respondent nurses were asked to recommend strategies they think apt for overcoming OS and only 56 of them gave recommendations. This was a multiple response questions and various answers were given by the respondents. The answers are tabulated and given in the Table 4.15.

Table 4.15

Strategies recommended for overcoming occupational stress

Response		
(n = 56)	*n*	*% of respondents*
Having enough staff	38	67.8
Regular debriefing Exercise	16	28.6
Staff support system	8	14.3
Fair allocation of patients	7	12.5
Regular breaks	6	10.7
Self-care: Exercise	6	10.7
Family friendly roster	5	8.9
Providing leave	5	8.9
Proper communication with colleagues and manager	5	8.9
Hobbies	3	5.3
Support from management	2	3.6
Lesser workload	2	3.6
Other*	16	28.6

Note. Other* includes social games, bush camping, having monthly staff meetings, having a feedback box which is checked, promotion of team environment, emotional support, effective

team building, avoiding favouritism, regular wellbeing check, better education for staff, split days off, work-life balance, having extra staff and not mixing work and home life.

The prominent recommendation had adequate staff (about 68%). This was followed by regular briefing exercises (about 29%) and a staff support system (about 14%). The other strategies stated by some are the fair allocation of patients (about 13%), having regular breaks (about 11%) and exercise (about 11%).

Respondents constituting (10%) indicated that their supervisors were never supportive in work-related conflicts, (27.5%) highlighted that their supervisors were less frequently supportive in work-related conflicts and (62.5%) indicated that their supervisors were more frequently supportive in work-related conflicts.

Some respondents in the current study clearly expressed their remedies to mitigate OS impact but also outlined which effective strategies they had learned to use at different times, like regular exercises, bush walk and family time.

Many participants expressed promotion of a fair working environment. One of the participants mentioned to '*change the habit of helping each other based on need, not on who you are or if you're a 'mate' The focus should be on achieving amazing patient care together. How the shift goes, either smoothly or stressfully, is determined by the pod leader and the department pod leader*.'

Many participants commented on improving staff morale, not '*fault-finding attitudes; instead, we can help each other attitudes*' would help the unit. Mutual respect between colleagues and support for each other in all the situations were considered the popular response from participants.

4.12 Chapter Summary

The demographic aspects of the respondent nurses showed that 42% were in the age group 30-39 years, 88% were married, 76% were RNs, and the majority were employed on a full-time basis. When EE of nurses was considered, it was observed that about 63% of them had high EE. EE showed a significant difference in gender, with females showing greater EE. However, EE did not show a significant difference regarding age, marital status, type of qualification and employment.

Depersonalisation did not differ with respect to the factors like marital status, experience and professional qualification. However, depersonalisation showed significant differences with respect to age and experience. The depersonalisation scores were lowest for the 40–50 age group, and there was a significant difference

between this age group and the groups 25–30 and 30–40. There was a significant difference for the category ‘above 15 years’ experience with all other categories. The levels of depersonalisation were as follows: high (39%), moderate (32%) and low (29%). Nurses facing high burnout was about 46%, moderate 36%, and the rest, about 18%, had low burnout.

Considering personal accomplishments, male nurses had greater personal accomplishments. Regarding other factors, only the type of employment shows a significant difference with respect to personal accomplishment. Full-time nurses had greater personal accomplishments, and there was a significant difference between part-time and full-time nurses. All other factors showed no significant difference with respect to personal accomplishment. Around 40% of the nurses had high personal accomplishments, 28% moderate, and 32% had low personal accomplishments.

Personal wellbeing, as well as organisational wellbeing, did not differ with respect to factors such as gender: age, marital status, experience, professional qualification and type of employment. Most nurses (57%) have average personal wellbeing, and the rest have good personal wellbeing. In the case of organisational wellbeing, the percentage of nurses having good wellbeing is only about 14%, and those having poor wellbeing is around 47%.

Levels of EE of nurses are as follows: high (63%), moderate (12%) and low (25%). It is observed that nurses who have high burnout have greater EE and depersonalisation (means are 41.02 and 11.89, respectively) compared to nurses who have moderate burnout (means are 22.43 and 7.09, respectively) and nurses who have low burnout (means are 11.06 and 4.00 respectively). However, personal accomplishments do not show much variation regarding the nurses' three categories of burnout. The mean personal accomplishment for the burnout categories are high (35.07), moderate (36.20) and low (34.88)

Staff shortage was the stressor pointed out by the majority of respondents. Other prominent stressors were lack of support from seniors, heavy workload and poor staff morale. Regarding strategies recommended, most respondents (68%) opined ‘having enough staff’. Others were regular debriefing exercises (29%) and a staff support system (14%). The quantitative findings demonstrated the burnout of ICU nurses (46%) and highlighted the importance of implementing effective strategies for ICU nurses. The personal wellbeing survey indicated that staff wellbeing is good despite burnout compared to organisational wellbeing.

These key findings were utilised to follow up qualitative in phase 2 using a semi structured interview approach.

Chapter 5: Qualitative Data Analysis and Findings

5.1 Introduction

This chapter presents the findings of the qualitative phase of the study. Perspectives gathered from the ICU nurses using semi-structured interview techniques relate to the nurse perceived factors that cause OS among ICU nurses and the potential strategies they used to overcome the ordeal. The responses are based on the individual participant's understandings, beliefs, attitudes and experiences. A table of key findings in each section in the chapter is summarised in a dot-point format according to the participants' perceptions.

The qualitative research interview is a powerful data collection tool providing opportunities to explore little-known areas of practice or those for which there is scant information (Cormac McGrath, Per J. Palmgren & Matilda Liljedahl, 2019). Further, qualitative research can explore topics in greater depth that cannot be otherwise adequately understood using quantitative research designs (Busetto, Wick & Gumbinger, 2020). The qualitative data analyses for this study were conducted using two data sources: an online questionnaire with free text entry responses to two questions and data from the individual semi-structured interviews.

The qualitative findings of this study are based on analyses of the responses from the interview transcriptions and their subsequent coding as well as the responses from the open-ended questions from the survey and interviews.

The researcher used the survey results to inform the qualitative interview. The quantitative questionnaire consisted of questions on demographic details and measured the burnout level of ICU nurses. According to the results, 46% of ICU nurses at the study site are burnt out. Personal wellbeing results and organisational wellbeing results indicated that nurses had good personal wellbeing despite poor organisational wellbeing. After collecting the quantitative data, the interesting results emerged from the quantitative research, to guide the formulation of the questions for interviews.

5.2 Thematic Analysis

Thematic analyses of the three qualitative data sets were conducted using the Braun and Clarke (2006) six-step method. A foundation for working with data was created through the creation of codes, categories, and themes (Braun & Clarke, 2006) that followed a prescribed process:

- being familiar with the data
- generating initial codes
- searching for themes
- reviewing themes
- defining and naming themes
- producing the final analysis.

The first phase of the thematic analysis process was the familiarisation with the data, which occurred through reading the transcribed text of the questionnaire text entry responses and the subgroup interviews. The process allowed for a better understanding of the process, profundity, and scope of the content (Braun & Clarke, 2006). Active data analysis to assist with initial ideas for coding included reviewing the subgroup interviews for accuracy in transcription, re-reading the transcribed texts to search for meanings and patterns, and considering the field notes for context.

Following the familiarisation process, initial codes were identified. Data were organised systematically into groups of interesting and similar codes occurring across the datasets using a hierarchical strategy. During this phase, several potential themes were created while ensuring that the coded extracts remained contextually intact. In this way, as the codes were grouped, the overarching key themes emerged. The researcher highlighted initial extracts of data that identified a feature of the phenomenon under study. The steps shown in Figure 5.1 were followed in conducting the analysis.

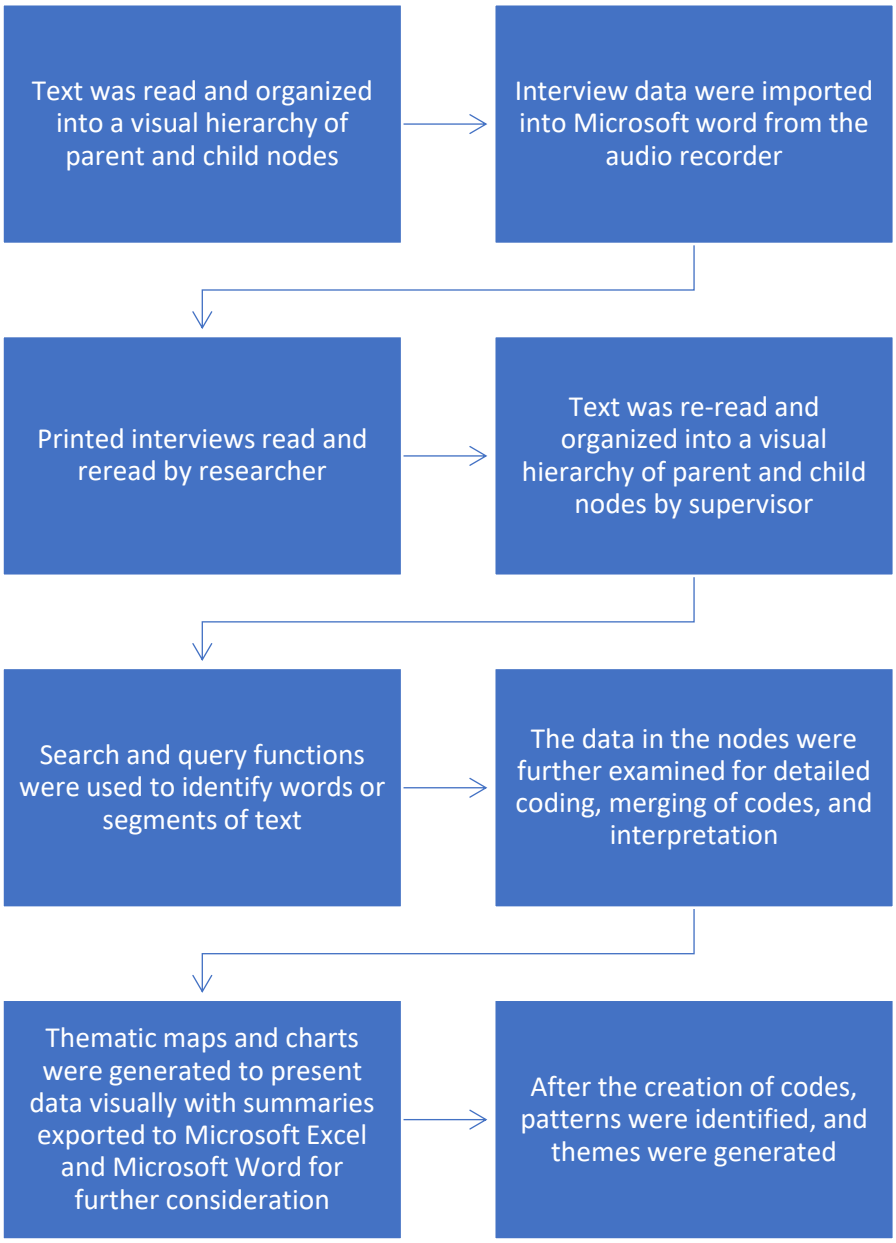

Figure 5.1. Thematic analysis-steps.

An example of a key theme based on sub-themes of coded text is presented below. An initial theme of professional components of nursing and perceptions of wellbeing were identified.

Example 1:

*'Staff shortage is the core issue to all other problem, which not only leads to staff burnout but also compromise patient safety.' (*PP4*)*

Codes are as follows:

Staff burnout: *'Staff shortage is the core issue to all other problems, which not only leads to staff burnout'*

Compromising patient safety: *'but also compromise patient safety'*

A deeper review of the themes derived from open coding allowed for a collapsing of themes, generating several main themes and underlying sub-themes. The refinement of themes and sub-themes involved constant cross-checking of the overarching research questions. Appendix N presents the key themes, sub-themes, codes and exemplary quotes from the interviews. Figure 5.2 presents a summary of themes and subthemes.

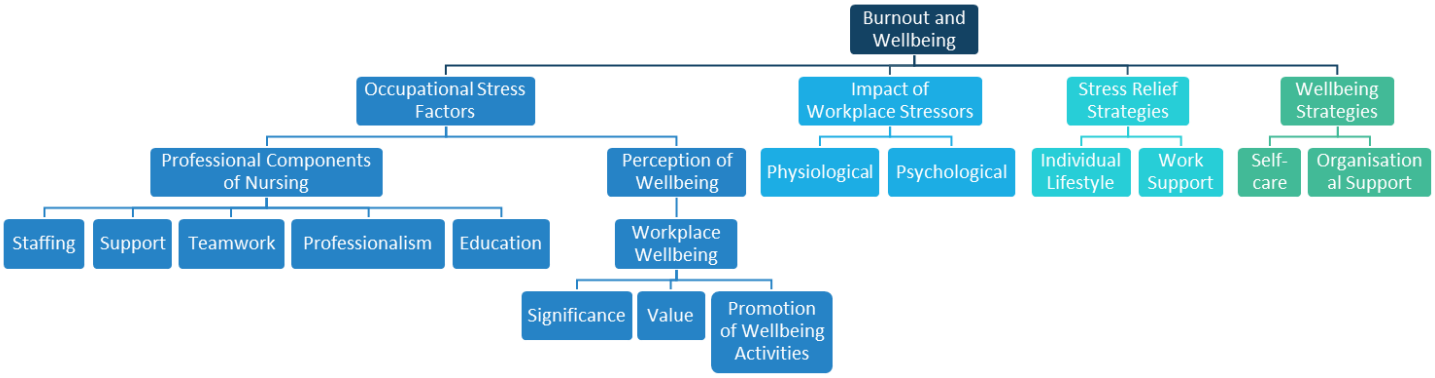

Figure 5.2. Themes and subthemes of burnout and wellbeing

5.3 Exploring the Factors That Cause Occupational Stress in the ICU Nurses

Key findings: Occupational stress factors

- Staff shortage can lead to burnout
- Staff education benefits nurses' growth and leads to more job satisfaction which would help to retain staff
- Inadequate support system can contribute to burnout in nursing
- Wellbeing strategies are perceived as important in supporting ICU nurses

ICU is potentially a stressful environment not only for patients and families but also for nurses. The researcher interviewed seven ICU nurses focusing on their stress and wellbeing. When participants were asked to explain the factors causing stress in the workplace, most of them had several factors to describe. The responses

were categorised into themes and sub-themes. The researcher identified and categorised statements and assigned codes such as **'**workload', 'shortage of staff', 'unsafe allocations', 'teamwork', 'patient safety, 'lack of peer support', 'ineffective teamwork', 'insufficient educational support', 'organisational behaviour', 'absence of professional communication', 'maintaining confidentiality', 'code of conduct, 'facilitating career development opportunities, 'insufficient support for the wellbeing of staff' and 'insufficient debriefing activities'**.**

Two key themes of **'Professional components of nursing' and 'perceptions of wellbeing** were categorised and further divided into sub-themes.

5.3.1 Theme 1: Professional Components of Nursing

The main purpose of the interviews was to gather information relating to okay personal exploring the factors that cause occupational stress in ICU nurses. Among the identified key themes, the first one was the professional components of nursing.

During the interview it was apparent most of the participants agreed that "Professional components of nursing" has effects on occupational stress and affects the wellbeing of ICU nurses. This theme was further divided into 5 sub themes. **Staffing, support, teamwork, professionalism and education** were formed part of the sub-theme. These sub-themes will now be discussed. Compared with the enormous tasks and the responsibility intertwined with the job, staffing proved to merit the first element for discussion.

5.3.1.1 Staffing

During the interviews participants noted that staff shortages and unskilled staff within the ICU could potentially cause serious problems, including adverse patient outcomes, drug errors, and employee /patient dissatisfaction. Some perceived that the increased workload resulted from poor staffing and theoretically may result in higher stress levels among the nurses in the ICU. Further, this could affect their mental health, and some highlighted that they perceived that increasing work pressure and workload will naturally impact patient care much more.

The participants highlighted that one of the main causes of stress among ICU nurses is a shortage of staff as well as a lack of skill mix in the ICU. Other prominent issues that emerged from the staffing theme were a **shortage of staff, excessive workload, more junior staff** on the floor than the senior nurses, **unsafe allocation** of critical patients, and **lack of support** from pod leaders and deputy pod leaders. This was summed up by PP1 who stated, *'When you have two heavy doubles, that gives you*

stress because you are unable to do proper care and compromise care, it did hurt me mentally.' Another participant stated, *'When there is no DPL, junior nurses are stuck in the single room, with the sick patient is quite scary.'* (PP3)

The important domains identified as understaffing is the **shortage of staff**, which is one of the major staffing issues. One participant highlighted the issue of **staff shortages** in the ICU becoming a critical factor that ultimately affects the quality of service of ICU nurses and leads to burnout.

One participant (PP7) commented: *'I get stressed when I see the short staff messages like the unit is short-staffed and needed staff; you don't know what you are walking into.'* PP6 also noted: *'Working night shift and getting the messages before shift on short staff is stressful.'* (PP6)

Participants suggested that everyday stresses result in accumulated stress levels. The **acuity of the patients** was one of the main concerns, along with the **lack of skill** mix in most cases. Another participant said, *'Lots of Junior staff in an area where the unit is very acute with critically ill patients.'* (PP4)

5.3.1.2 Support

Another sub-theme of staffing was the perceived **lack of support from management and colleagues**, demonstrating the lack of support created exasperation in times of dire need among participants. Participants highlighted that organisational support is very important and recommended that the administration of the hospital provides engaging support groups in the hospital facility so that the ICU nurses take part and discuss the level and the kind of stress they face during the work. 'It is nice to have a support system in place where staff can freely talk without being (sic) stigmatised.' (PP3)

Participants explained during the interview that they had observed clear improvements in their motivation level when they felt supported by the hospital management.

'It was nice to see the staff was supported with goodies and regular break relief during the COVID-19 pandemic.' (PP6)

One participant spoke of the need for trust and leadership among coordinating nursing staff: '*I didn't have any support when I started if you've got a good coordinator or a pod leader that you can trust, that makes a difference. But the attitude of some of them is like 'Suck it up. This is what an ICU nurse is like …So I knew it's a norm here*.'

Another respondent also confirmed: '*It's kind of a bit of scary to just have your sick patient, no one there to help you when you need help'.* (PP3)

Participants express distress about missing mouth care, pressure injury prevention and mobilisation due to a shortage of staff and lack of support from colleagues. One participant with 20 years of experience in the ICU, was concerned about the compromised **quality of care**.

'It's saddened to see sometimes when basic nursing care lacks.' (PP4)

5.3.1.3 Teamwork

In the responses to the question, participants demonstrated the **importance of teamwork** and explained how the **lack of teamwork** stresses nursing staff. '*There is no teamwork,'* one responded*, 'I think lack of teamwork is a big issue. It's kind of a bit scary to just have your sick patient, and if the deputy leader is too busy over there to help you when you need her!' (*PP3*)* Another said: *'When you are busy, asks for medications, they just bring it, check it and leave it for you to prepare it, which freaks me out'.* PP2) Another participant had the same experience and said: '*There is no teamwork most of the time. There are times you are stuck with no help!*' (PP5)

5.3.1.4 Professionalism

Another sub-theme was that of **professionalism**. The need for professional ethics and relationship together with the absence of the same at the management levels, proved to create anxiety, tension and desolation in some nurses. Sense of respect and esteem would be at risk in cases of bullying and the absence of proper communication.

The professionalism and the feeling of being disrespected in the workplace generate un motivational impacts. As one participant noted: *'Nurses should be professional, but here sometimes if one or two doesn't like you or you have not been clicked in the group, then you been talked about and easy to get defamed'* (PP1), or as another remarked *'*Senior *nurses or doctor should communicate professionally with their staff'.* (PP3)

Another participant perceived that nurses were 'disrespected' and undervalued by doctors, *'I can't believe that doctors still devalue and disrespect us. But not all do. I felt humiliated by the way a particular doctor spoke to me. He made my self-esteem go down and I hated to work when he is on.'*

Another participant gave an example of this and highlighted that she has also considered leaving the profession by saying,

'While working, at one point I wanted to leave the job, but I just stayed back for my family's sake. I feel it was quite stressful to have the blaming culture, and fear of making mistakes, I was threatened that it would go to HR if I made any more mistakes.' (PP1)

It was emphasised by some participants that ICU nursing is physically and mentally draining which hinders professional behaviour at times.

The sense of pressure was explained by one participant: *'I always feel like I am being watched; people have been rude to me. I was quite frustrated and was much stressed. Bullying should not be accepted as part of ICU culture'.* (PP1)

5.3.1.5 Education

Education is another sub-theme. Participants expressed their belief that the organisations' support for continuing professional education will influence nurses' practice and ultimately impact patient care.

One-to-one education for RNs is vital and will bring more positivity to their learning experience and effectiveness in their output. As a response underscore: *'One-to-one education at the bedside is lacking and adding to the stress. Learning dialysis from the next-door neighbour doesn't always happen when both patients are busy. You need a dedicated person working with you for most of the shift'* (PP6). Remnants of old education seem to linger on and demand repetition, as feels another participant: *'It would be nice to have old fashion education as educators on the floor'* (PP4).

For continuous education there is also a motivational position-taking by the staff:

'All staff has got the right to get careers development opportunities, upskilling and education are paramount' (PP1). PP3 has a similar opinion: *'Organisations should invest more in staff training and the wellbeing of the staff'* (PP3).

5.3.2 Theme 2: Perceptions of Wellbeing

The second key theme was the perceived **wellbeing** of ICU nurses. The participants in this study were not aware of the wellbeing activities offered by the organisation. Nurses stated that they had never participated, nor were they aware of the activities run by the hospital. Some participants agreed Staff wellbeing activities to promote wellbeing will be an important factor for the nurses. Participants requested to have the debriefing sessions either on a monthly or on an as-needed basis. This was summed up by PP1 who stated, '*We never had a monthly team meeting at regular intervals or debriefing, it would be beneficial to have them.'*

The response to the need emphasised the importance of interprofessional collaboration to successfully combat distress among colleagues and may protect them from burnout, detachment and even leaving intensive care. Three themes related to perceptions of wellbeing identified(i) significance (ii) value (iii) promotion of wellbeing.

Two participants emphasise this. *'There should be a structured pathway to support mental health and wellbeing of nurses'* (PP6); *'Organisations should invest more in staff training and the wellbeing of staff'.* (PP3)

5.4 Impact of Workplace Stressors on Wellbeing

Key findings: The impact of workplace stressors on wellbeing

- Physiological - Hypertension, palpitation, obesity, diabetes, shoulder pain. fibromyalgia, sleep disturbances, headache, and binge eating.
- Psychological - Anxiety, fear, depression, disappointment, frustration, increased emotional stress and low self-esteem.

The themes that emerged on the impact of workplace stressors on wellbeing were '**physiological reactions to stress'** and '**psychological reactions to stress'**. The sub-themes that emerged were namely, '**shoulder pain', 'fibromyalgia', 'hypertension', 'sleep disturbances', 'headache', 'binge eating',** '**symptoms of anxiety, 'symptoms of depression, and 'COVID-19 increased emotional stress'**. Appendix O presents the key themes, sub-themes and exemplary quotes from the interviews concerning the impact of workplace stressors on wellbeing.

Most of the participants noted that stress is directly associated with the onset of illness and adversely affects their health. After discussing the impact of experiencing prolonged stress on health, we found that it caused physical and mental symptoms, such as tense muscles, body ache, diabetes, palpitations, high blood pressure, anxiety, fear, sleep deprivation, social withdrawal and identity crisis and low self-esteem.

Workplace stressors can weaken nurses' wellbeing, increase work-related stress and lead to burnout syndrome.

All participants expressed a great deal of concern about the impact of OS in their lives: *'I do get shoulder pain when I am stressed'.* (PP6).

Another participant noted: '*It was hard to cover my feelings and suppress the frustration, after a particular incident, I couldn't sleep for two days, I had mixed feelings, of sadness, anger and frustration and I had almost lost my appetite*'. (PP2)

When the nursing staff were asked about the effect of these stressors recognised in the above phase such as staffing, lack of education, lack of communication, lack of teamwork and lack of wellbeing activities they expressed **feelings of stress and frustration**.

The participants reported two kinds of effects: physiological, and psychological. Participants spoke of stress, anxiety, depression and job insecurity resulting from emotional imbalances and high levels of stress. Most of the participants expressed how it affected their personal and family life, with anxiety and sleepless nights and going on medications and private counselling. The participants also reported that they experience physiological reactions such as sleeplessness, headache, palpitations, diabetes due to stress, body aches, high blood pressure and poor mental health.

> *'I am good at keeping work at work and never carry that to home but sometimes I chat with my husband about how busy the shift was and what went on in the ICU; I feel relaxed after that little chat,' said PP7.*

PP2 also added: '*Not only that everyone knows how cortisol affects the immune system, blood pressure and sugar levels, headaches, sleep disturbances and memory and concentration. I got hypertension and get headaches.'*

'When I am stressed, I eat more and put on weight and my sugar levels also go high' (PP1).

Participant three spoke of the mental stress:

'It's happened a couple of times when I started, when you are burned out, you naturally have anxiety, you doubt yourself, you get PTSD, you even feel the depression, sometimes you don't feel like eating, so just like the shift work disturbs your body clock, you're eating pattern disrupts you and causes indigestion and other problems associated with that. So, I think it's all interconnected'

The extent of stress and resultant mental status is highlighted by most participants with one saying: *'All these factors at work make your mental health go down. You feel you are isolated, and you don't belong to the team, which makes you sad, depressed affecting your physical health'* (PP1).

Participants shared their experiences regarding the effects of COVID-19 both emotionally and physically as well as different health problems caused by the prolonged mask-wearing periods, such as pimples on the face, breathing difficulties and headaches.

'Even though we are used with N95 masks, still it is hard to put it on N95 masks on a regular basis for a long period, I had redness and pimples on my face' (PP4)

Another participant reported:

*'I had a headache after a long shift on with N95 masks' (*PP6*)*

According to a participant working in critical care during COVID-19was made less stressful with adequate staffing in the COVID-19 area, adequate supplies and regular breaks.

5.5 Stress Relief Strategies

Key findings- stress relief strategies:

- Yoga reverses the impacts of stress on our mind and body.
- Mindfulness training is a growing tool for wellness.
- Staff self-care plan is important as a patient care plan.
- Staying connected with others can help to manage stress better.
- Prayer has same/similar effect as mindfulness.

The participants were also asked about the stress-relieving strategies that benefited them individually and organisation-wide. Two key themes emerged in the responses to this question: ' **individual lifestyle'** and **'work support'**. The sub-themes in the individual category, include 'practising **yoga**', '**prayer supports'**, '**engaging in physical activities**' '**self-reflection** and '**connecting with others**. The sub-themes in work categories include '**monthly counselling**', '**debriefing**', '**support from colleagues**, and '**teamwork**'.

Appendix P presents the key themes, sub-themes and exemplary quotes from the interviews concerning stress relief strategies.

Although all seven participants said they were unaware of any stress relief strategies within the organisation, all participants-maintained wellbeing with personal self-care and activities.

There was little use of organisation-based activities to help them in coping with stress. In addition, participants were not aware of any free activities on the part

of organisations. The participants used strategies like **prayers**, a **healthy diet**, **exercises, yoga and debriefing** with friends and families. *'Yoga; -Yoga was the best thing I ever did, it helped me a lot'* (PP6).

A participant expressed: *'Over the years I learned to leave work at work; however, venting out with my husband, going out with friends and walking always helped me* (PP5).

The seventh participant said happily: ***'****Regular exercises helped me a lot, I felt confident, energetic and able to deal with problems in a better way'.*

Two participants found comfort and strength in God. For example, respondent five commented: '*Prayer helps me a lot, I find comfort in praying after dealing with difficult people or after a difficult day' 'When I am stressed after work, I spend some time praying and I feel better. I get a sort of strength after prayer'* (PP1).

Participants differ in their opinion about how to tackle the issue of stress. Yet, all of them seem to pursue one or another method for stress relief.

An interviewee calmly said: '*I meditate in the morning before I set out to work. It has helped me a lot regulate my life in the middle of my hectic schedule in the ICU'* (PP7).

Participants noted that friends are always solaced in our frets and fevers. Further to this, connecting with friends and sharing the daily frets with him/ helps diminish our stresses and strains; *'Being with my friends helps me in overcoming my work stress'* (PP3).

It was an obvious and repeated opinion from participants (PP3, PP4 and PP7) practices of **meditation** and **yoga** helped them out in moments of stress and constraints of life. They thought that such practices helped to relax the mind and body. An interviewee narrated the experience: *'By practising the mindfulness, and prayers I feel relaxed, and stress reduced'* (PP4).

It helps the nurses to regulate emotions and can have a longer-lasting effect on reducing stress and promoting health.

An interviewee said: *'I find time in solitude to find the true essence of myself after a prolonged period of hectic work in the ICU'* (PP1).

5.6 Wellbeing Strategies

Key findings-: Suggestions for improvement

- Monthly staff meeting
- Wellbeing support groups/Wellbeing clinics
- Education on recognising and responding to Burn out
- Self-care plan

During the interview, participants were asked to reflect on their perceptions and suggestions for improving wellbeing from their perspectives. All participants expressed their views. The themes that emerged on strategies to improve wellbeing were '**self-care** and **'organisational support'**. The sub-themes that emerged with regard to '**self-care'** were '**regular breaks** and '**early recognition of burnout'**.

Several sub-themes emerged from the key theme of '**support from the organisation',** including **'monthly staff meetings', 'debriefings',** and **'assistance from the support group'**.

The perceptions of '**support groups** were considered a potential strategy.

Appendix Q resents the key themes, sub-themes and exemplary quotes from the interviews regarding wellbeing strategies.

The participants highlighted the need for a new culture to be developed in the workplace, which would cater to the stress release of the ICU nurses. While one respondent mentioned '**self-care activities**' and '**resilience training**' should be included as part of the organisational training to reinforce wellbeing, another respondent voiced that personal wellbeing is an individual responsibility.

In response to concerns about nurses' stress levels in the ICU, some participants suggested creating a wellness clinic. As a result of this program nurses will be able to release the burden of workplace stress and disconnect from their daily stressors in the ICU. This will help them to achieve the desired balance between body and mind to have an optimal quality of life.

Another interviewee opined that *'It's a good idea to have monthly ward meetings or debrief from a wellbeing counsellor; therefore, staff gets a chance to express their feelings, EAP is a hit and miss. If you get a good person, it's all good. I went private when I needed to'.* (PP4).

Participants expressed the fear of stigma as one participant described *'Physical/ Emotional breakdown should not be observed as part of weakness. Nurses should be able to disclose it without fear'.* (PP3)

A combination of two methodologies was used in this study to gain insights into specific questions. In addition, quantitative data was collected to address the same questions.

A comparison of the two data types helped to identify potential anomalies between them. Answering research questions and dealing with the study's purpose can be accomplished by summarising the findings.

There were two open-ended questions in the survey related to stressors and wellbeing. The first question was regarding the workplace practice nurses identify as stressors. The answers given by the respondents were **staff shortage, lack of support from seniors, heavy workload, poor staff morale, Bullying, decreased skill mix, lack of support from managers, unsafe allocations** and **lack of respect from junior staff**.

One participant expressed that:

> *'I feel that we are under sourced (beds/staff) and always on bed state black and cannot safely manage patients the way we believe they should be. We are all working harder and longer than ever before and at some point, something has to give. A lot of us are jaded and because of burning out and a dog-eat-dog culture exists'*

Many participants reported instances when they could feel frustration, For example,

> *'High acuity workload and lots of praise for high functioning in that environment and no feedback when not high functioning. High emphasis on coping with the workload/stressors and poor support when not coping. Mistakes and near misses are considered as lack of competency here and label the staff negatively'.*

Respondents also mentioned unapproachable senior nursing staff and medical staff, along with intimidation of inexperienced staff also added stress in the workplace.

Another participant describes '*isolated single rooms are not a good idea, and some difficult personalities make the workplace difficult*'

In the second open-ended question, the nurses were asked to respond to strategies they recommend and use to alleviate OS and improve wellbeing.

Many participants expressed a need for **adequate staffing** as well as promotion of a fair working environment with mutual respect. One of the participants mentioned '*change the habit of helping each other based on need, not to be based on who you are or if you're a "mate*" '. The participants believe that the focus should be on achieving amazing patient care together.

As per one respondent, '*basically how the shift goes, either smoothly or stressfully, is determined by the pod leader and department pod leader.'* Many participants commented on improving **staff morale**, not 'fault-finding attitudes instead, we can help each other attitudes' would help the unit. Mutual respect between colleagues and support for each other in all the situations were considered the popular response from participants. The prominent recommendation had adequate staff. This was followed by regular briefing exercises and a staff support system. The other strategies are a fair allocation of patients, having regular breaks and exercising. Some nursing staff participants in the current study clearly commented on their remedies to mitigate OS impact. They also outlined which effective strategies they had learned to use at different times like regular exercises, bushwalks and family time.

5.7 Chapter Summary

This study used qualitative methods to capture the views of ICU nurses on stress factors, the impact of workplace stressors on their wellbeing, the stress-relieving strategies they use and their recommendations to improve wellbeing.

The interview provided an account of ICU nurses' experiences through their individual lens. The thematic analysis emphasised the findings of the quantitative study that ICU nurses face a wide range of stressors including **shortage of staffing, lack of support, lack of professionalism, lack of education** and **lack of wellbeing activities** which they attempt to manage with numerous coping strategies like **yoga, meditation, prayer, exercises** and **engaging with friends**.

According to the participants of this study, staff shortage and inadequate support can lead to burnout. Further, it discusses some of the impacts of OS on nurses' life. This study points out the physiological and psychological impacts on ICU nurses. Hypertension, palpitation, diabetes and shoulder pain are the main sub-themes found in the qualitative data. Also, anxiety, fear, depression, disappointment and low self-esteem are the consequences of psychological areas.

Stress management begins with understanding stress, educating staff on early recognition and responding to burnout, and developing self-care plans. According to participants, exercise, family time, healthy eating, prayer and mindfulness are important strategies to prevent burnout and improve wellbeing. Through the survey and interviews, participants offered suggestions for improvement. The important points were establishing a regular staff meeting, creating monthly wellbeing support groups, educating staff on recognising and responding to burnout, and developing a self-care plan. Burnout at work can affect nurses' health and family relationships. Based on the findings of this mixed method study, OS places ICU nurses at a high risk of burnout, and it impacts their wellbeing. It is important to take into consideration participants' suggestions for improvement in an effective way to provide effective and relevant support to ICU nurses.

Chapter 6: Mixed Methods Analysis, Discussion and Recommendations

The final chapter will have a detailed discussion from the findings of this research. Firstly, a synthesis of meta-inferences drawn from a combination of findings generated during the quantitative and qualitative phases of the study will be discussed. Secondly, the meta-inferences are presented to answer the research questions will be linked to existing literature to provide relevant comparisons. Finally, this chapter concludes with a discussion on the limitations and key recommendations from the study.

6.1 Study Aims and Research Questions

This study employed an MMR design to gather and analyse both quantitative and qualitative data on self-assessed burnout and self-perceived wellbeing of ICU nurses on a personal and organisational level. The study sheds light on the factors causing stress among ICU nurses and the effects of stressors alongside stress-reduction strategies from the nurses' point of view. Irrespective of the risk of generalisability, this study provides substantial subjective data regarding the risk of burnout, exhaustion, life and career-damaging implications in ICU nurses. A mixed-methods approach was required to answer the practical research questions of the study, reflecting the overarching pragmatic philosophy of nursing practice.

The following research objectives guided the research:

1. to assess the levels of burnout of ICU nurses
2. to identify the factors that can lead to burnout in the ICU nurses
3. to identify the impact of workplace stressors on the wellbeing of ICU nurses
4. to identify the strategies employed by ICU nurses to overcome stress
5. to explore the factors that would help to minimise stress and improve the wellbeing of nurses from a nurses' perspective
6. to identify the relationship between burnout and wellbeing, and the impact of COVID-19 on ICU nurses.

6.2 Level of Burnout

To assess the respondents' burnout levels, the MBI-HSS Score tool was considered in the quantitative phase of the study. This included closed questions and open-ended questions.

This research study aimed to identify the impact of burnout on the wellbeing of ICU nurses. It was hypothesised that there would be a negative correlation between and burnout and wellbeing. Qualitative study findings reveal there is negative correlation between burnout and wellbeing. The observed relationships between variables are consistent with previous findings on nursing populations (Kelly et al., 2021, Poncet et al., 2007).

6.3 Study 1 Quantitative Phase

The participants: This study recruited seven ICU nurses working at a metropolitan hospital in Perth. Demographic information collected from the participants indicated that there was diverse representation within the group with respect to gender, age group, years of experience and marital status. The majority of participants were female, aged between 21 and 60 years.

6.3.1 Quantitative Findings

The quantitative findings demonstrate that nearly half of the ICU nurses experienced burnout. The findings support the previous studies and underline the need for effective strategies to prevent burnout in ICU nurses.

According to Vincent et al. (2019) approximately one-third of ICU team members undergo ‘high risk’ of burnout syndrome of which nurses experience higher burnout compared to doctors. Similarly, though the same sort of burnout symptomatology is displayed by doctors and nurses in ICU it has been noted that nurses exhibit higher rates of EE in comparison to ICU physicians who exhibit excessive rates of depersonalisation and reduction in professional satisfaction. (Teixeira et al., 2013)

When EE was assessed in the ICU nurses in this study, it was found that about 63% of the nurses had been through severe EE. EE was noted to be exhibited exclusively in female nurses compared to male nurses indicating significant gender differences with respect to other symptoms.

A total of 39% of ICU nurses demonstrated high levels of depersonalisation with female nurses showing greater degree of depersonalisation. Factors like marital status, years of experience and professional qualifications had no bearing whatsoever on the degree of depersonalisation. Considering personal accomplishments, around 40% of the nurses had high personal accomplishment whereas male nurses had greater personal accomplishments, and full-time nurses had more personal accomplishments.

The research published by Simpson and Knott (2017) supports continuing burnout trends in intensive care medicine in Australia. According to this study, ICU nurses reported higher EE rates, depersonalisation rates and a reduction in professional achievement. It was observed that nurses with high burnout have greater EE and depersonalisation. Nurses facing high burnout were about 46%, moderate 36%, and the rest, about 18%, had low burnout.

The quantitative study revealed that 46% of ICU nurses have high burnout. The indication that 46% of ICU nurses have high burnout levels highlights the importance of implementing effective strategies. The wellbeing survey indicated good personal wellbeing and poor organisational wellbeing. The personal wellbeing survey indicated that staff wellbeing is good despite burnout, in comparison to organisational wellbeing. Before COVID-19, research suggested that one-third of ICU nurses experienced severe burnout, with 86% experiencing one of its three classic symptoms of exhaustion, depersonalisation and reduced personal accomplishment (Moss et al., 2016).

Furthermore, it was evident that women and married people are more likely to experience burnout. With regards to employment, full-time staff had higher chances of burnout compared to part-time staff. The age group range affected by high burnout is 25–30 years, 21–35 years, above 50 years, respectively. This is consistent to past research which highlights a significantly higher prevalence of burnout for younger nursing staff under 30 years of age (Garrosa et al., 2008). A meta-analysis by (Brewer & Shapard, 2004) showed a strong positive correlation between age and burnout which is evident in our current results.

In this study women and married people are more likely to experience burnout in contrast to the other gender and differing relationship status. This study supports similar studies which identified Burnout syndrome can have a significant impact on the health and well-being of intensive care nurses (Mealer, 2016, Seaman et al., 2018)

Quantitative Findings on Wellbeing

Exploring the ICU nurse's wellbeing, this study reflects poor organisational wellbeing evidenced by survey data. Intensive care nurses' wellbeing requires further research due to limited research and data available. Moreover, the complexity and unavoidable pressure of critical care nursing provides a unique opportunity to address the need of wellbeing (Jarden et al., 2020). Previous research on wellbeing is supported by this study. Personal wellbeing as well as organisational wellbeing did not differ with respect to factors such as gender: age, marital status, experience, professional qualification and type of employment. Most nurses (57%) have average personal wellbeing, and the rest have good personal wellbeing. In the case of organisational wellbeing, nurses rated as having good wellbeing are only about 14%, while nurses rated as having poor wellbeing are approximately 47%. Therefore, it can be said that ratings for personal wellbeing were significantly better than the rates for organisational well-being as evident from the results.

6.3.2 Factors That Can Lead to Burnout in the ICU Nurses

In the survey, the first open-ended question was about factors contributing to stress at work. About 74% of the respondents voiced that staff shortage was a stressor in the workplace. The next important stressor identified was lack of support from senior staff (about 43%), followed by heavy workload (about 30%), poor staff morale (about 29%), bullying (20%), lack of support from management (18%).

The survey analysed all the minor factors that contribute to stress at work, which comprised a total 26%, such as a lack of support from colleagues, a heavy workload, poor staff morale, bullying, high acuity of patients, decreased skill mix, aggressive patients, time constraints, long working hours, lack of respect from juniors, turnover of staff, over documentation, lack of professionalism in nursing staff, unsafe doubles, co-workers having a negative attitude, lack of teamwork from colleagues, lack of help when needed, being isolated in a room, lack of education, sick patients, sleep disturbances, difficulty in communication at stressful times with some strong personalities.

The findings revealed that diverse factors are regarded by ICU nursing staff as the cause of workplace stress. Moreover, a shortage of staff leads to burnout of nurses working in the ICU, coercing them to work more than their assigned work, creating potentially high-stress levels. The findings of this study supported the

literature suggesting that increasing workload has the strongest link with emotional exhaustion which in turn feeds into the development of the other burnout characteristics (Dall'Ora et al., 2020). This study results also found that staff had intention to leave due to work environment which supports the previous research. Staff attrition is triggered by a variety of work pressures including high intensity environments and heavy workloads, inadequate staffing (Fassier & Azoulay, 2010, Oliveira et al., 2017, Salem, 2015).

These concerns are driven by a growing awareness of burnout's adverse consequences on nurses, health care organisations and patients. Garrouste-Orgeas et al. (2012) study suggest an association between burnout and patient care outcomes such as poor patient satisfaction, infection rates and medical errors. According to Liu and Aungsuroch (2018), negative work environments affect burnout. The current study supports several other studies, which identified organisational stress factors influencing burnout (Batran, 2019, Alzailai et al., 2021).

6.3.3 Strategies Recommended for Overcoming OS and Burnout

The second open-ended question was related to the strategies for alleviating stress. Respondent nurses were asked to recommend strategies they think are apt for overcoming OS, and only 56 of them gave recommendations. There were multiple response questions, and various answers were given by the respondents The respondents were also asked to suggest strategies for overcoming OS and their recommendations included adequate staffing, regular debriefing, fair patient allocations and self-care activities.

This study supports the previous Research that Yoga and mindfulness trainings helps to reduce burnout and improve the Quality of Life of Nurses Working in Intensive Care Units (Vincent, 2021). In this study, quantitative and qualitative approaches are used to identify factors that can lead to burnout syndrome in intensive care nurses. A supporting system that affects the organisational and individual levels is mandatory to decrease stress and minimise burnout among nurses working during shift hours (Ryu & Shim, 2021). Simpson and Knott (2017) imply that interprofessional practices are affected physically and emotionally by dint of the effects of burnout in the unique ICU environment.

6.4 Study 2 Qualitative Phase

This study recruited ICU nurses working within a metropolitan hospital in Perth. Demographic information collected from the participants indicated that there was diverse representation from the group across gender, age groups, years of experience and marital status. The majority of participants were female, aged from 21 to 60 years old.

6.4.1 The Impact of Workplace Stressors on the Wellbeing of ICU Nurses

Participants discussed the impact of stressors on the wellbeing in the interview. Participants believed that workplace stressors lead to burnout, and burnout affects their wellbeing. According to participants, there is a relationship between burnout and wellbeing. Six of the seven respondents reported experiencing negative effects on their health due to stress. Burnout can potentially affect nurses' health both in and out of work. Further, it can compromise patient care, associated with increased absenteeism and staff turnover, less innovation, reduced safety, decreased efficiency, and greater costs to the organisation (Fumis et al., 2017). Studies emphasised that nurses with burnout have a greater chance of depression (Vasconcelos et al., 2018). All these effects can lead to serious health concerns. A study by Ledingham (2015) explained that even highly competent and committed nurses experience burnout. Health and well-being of the NHS workforce survey reported that 85% of staff self-identified that their own health and wellbeing impacted on patient experience & outcomes (Boorman, 2010).

Most of the participants expressed how stress affected their personal and family lives were, with anxiety and sleepless nights, going on medications and private counselling. The participants also reported that they experience physiological reactions such as sleeplessness, headache, palpitations, diabetes, body aches, shoulder pain high blood pressure, and poor mental health. Nursing staff can suffer from stress, diabetes, palpitation, anxiety, depression, fear of losing the job, headaches, body aches, poor mental health, and frustration (Lewis, 2018). Further, the qualitative part of this study supports the earlier findings of the impact of workplace stressors that nurses suffer from anxiety, fear, depression, disappointment and low self-confidence (Maslach, C, 1976).

6.4.2 Perspective Strategies Recommended for Overcoming OS and improve wellbeing

The researcher examined strategies that would help to minimise stress and improve the wellbeing of intensive care nurses from their perspectives. The open-ended question in the survey received good responses, and the same questions were answered in interviews. Respondent nurses were asked to recommend strategies they think are apt for overcoming OS, and only 56(%) of them gave recommendations by answering the open-ended questions in survey. The prominent recommendation was having adequate staff (about 68%). This was followed by regular briefing exercises (about 29%) and a staff support system (about 14%). The other strategies stated by some are the fair allocation of patients (about 13%), having regular breaks (about 11%) and regular exercise (about 11%). The participants were also asked about the stress-relieving strategies that benefited them individually and organisation-wide.

According to participants, exercise, family time, healthy eating, prayer and mindfulness are important strategies that helped them to prevent burnout and improve wellbeing. Both prayer and mindfulness are regarded as coping strategies which can ameliorate the effects of stress and burnout amongst nurses. However, it is also important to identify the diversity of coping styles in order to understand which styles are positive and effective and other which are ineffective in creating a sense of wellbeing. This study supports the previous studies that identified spirituality as a strengthener of nurses' wellbeing in New Zealand and Australia (Jarden et al., 2020). According to Azarsa et al. (2015) showing spiritual concern for both colleagues and patients can significantly help in creating job satisfaction and reducing work burnout.

Monthly team meetings, debriefing, support groups and early recognition of burnout were considered popular strategies by nurses. (Zhang et al., 2020) suggest that the hospital organisation introduce debriefing activities, teamwork activities and team exercises to motivate nurses and provide the information and knowledge they need. Some participants commented on the need to set up wellness clinics to alleviate the stress that nurses in the ICU experience. Support groups are very important in alleviating the stress of the ICU nurses and have found to boost morale and motivate ICU nursing staff working (Weiner & Caldwell, 1981). The participants of this study suggest that by implementing support programs, an organisation could foster a supportive environment that reduces stress through resilience training and team-building exercises.

Prevention of bullying and a positive working environment were also pointed out by participants as recommended strategies for overcoming OS. In the systematic review, Lever et al. (2019) found that burnout and stress are associated with bullying. In fact, in the reviewed studies, employees that reported being bullied were noted to take more sick leave and had experienced other mental health problems, including psychological distress and depression. As a result, researchers have studied different approaches to creating a positive workplace environment, including introducing a zero-tolerance policy for bullying (Adams et al., 2018). Adams et al. (2018) explained that the nurses experience stress due to different forms of bullying, such as being treated unfairly by senior nurses or management, being over monitored and being discriminated against for raising concerns at work.

Some participants view teaching in the clinical setting, particularly, bedside teaching, as an invaluable teaching method. The long-held tradition of teaching with the involvement of real patients, seems to be still valued. Bedside teaching remains a primary teaching modality in the clinical setting, where many aspects of clinical practice can be taught and modelled (Burgess et al., 2020). Educating the nurses at bedside and providing them with training may increase their capabilities and effectiveness. Dam, Ramani and Cate (2021) suggested that standardised bedside teaching practices might improve patient satisfaction, learner satisfaction and the overall efficiency of clinical care.

A holistic approach is an early strategy to prevent and address nursing burnout and to promote employee wellbeing, can also indicate to the employee that the organisation cares about their wellbeing (Kelly, Baker & Horton, 2021). This study highlighted the participants' views about the importance of organisational support for their wellbeing. Organisation-based wellbeing strategies can potentially decrease healthcare costs, turnover rates and provide a nurturing environment for employees that help them be the best version of themselves (Boerger, Bland, Meyer, Ruble & Ehinger, 2019). According to Mealer et al., (2014) providing training and resources to build resiliency could improve the ability of ICU nurses to cope with the stressful ICU environment. The most popular and effective resources for employees are cognitive-behavioural therapy, support groups, and stress-reduction training (Kerlin, McPeake & Mikkelsen, 2020).

Some participants also expressed the positive learning experience, and confidence gained in the ICU was invaluable, and some nurses with excellent

knowledge and support highly benefited them. From the nurse's point of view, regular debriefing, a supportive environment and wellbeing clinics are a few strategies to improve wellbeing in intensive care. In terms of the relationship between burnout and wellbeing and the impact of stress on ICU nurses' life, participants agreed that there is a relation between burnout and wellbeing. Dall'Ora et al. (2020) analysed quantitative primary empirical studies which investigated associations between burnout and work-related factors in the nursing workforce and reported that there is an association between work-related factors and nursing burnout and nurses' intention to leave current job. This current study findings supports this research.

6.4.3 The Relationship Between Burnout and Wellbeing

Six out of seven participants agreed there is a relationship between burnout and wellbeing. Six participants agreed that stress adversely affected their health. The burnout of ICU nurses is significantly higher and of concern even before the pandemic (Moss et al., 2016). The effect of burnout on wellbeing has always been a cause for serious concern given the nursing skills shortages in critical care areas that already exist (Shah et al., 2021). The research by Vincent et al. (2019) indicates that at least 30% of intensive care staff experience burnout and post-traumatic stress. In 2016, the Critical Care Societies Collaborative Statement called for action on the management of burnout in critical care professionals (Moss et al., 2016) According to Hall et al. (2016) the workplace stressors have an impact on clinical outcomes and patient safety.

6.4.4 The Impact of COVID-19 on ICU Nurses

COVID-19 had taken a heavy emotional toll on healthcare workers, many developing PTSD, depression and anxiety at exponential rates compared to the pre-pandemic time. In a survey of critical care health care workers in the early phase of the COVID-19 pandemic, between 22% and 29% of respondents reported moderate to extremely severe depression, anxiety, and stress symptoms (Hammond et al., 2020). ICU nurses reported experiencing stress and burnout during COVID-19 pandemic. According to a systematic review by da Silva and Barbosa (2021), 21 studies report an urgent need for interventions to prevent or reduce the devastating effects of COVID-19 on the mental health of health professionals working in the ICUs. A survey by the Nursing Times in NHS England revealed nine in 10 nurses are feeling more stressed and anxious than usual (Griffiths K (2022). Nurses feared transmission of COVID-19 to themselves and subsequently infecting their families and loved ones. Difficulties arising from access to and the uncomfortable nature of personal protective

equipment (PPE), working long shifts, and uncertainty about managing COVID-19 patients in the intensive care unit increased the stress (Ford, 2020).

However, in this study, nurses expressed good support and additional staffing arrangements during the pandemic, which helped the staff get through the pandemic. Strategic steps and psychological support were highly helpful in alleviating the consequences of the outbreak of the COVID-19 pandemic. Therefore, the study participants experienced no additional psychological or physical stress during the pandemic.

Further, during the discussion about the impact of COVID-19 on nurses' life, nurses reported that care was never compromised, and it felt great to see all patients leave the ICU safe and sound. Nurses said they left work, feeling happy and satisfied, that they had done a good job and could sleep well, even though it was physically draining. Management excelled at that time by increasing the workforce by upskilling staff from other areas to support ICU nurses. These staff were seconded from wards and were willing to undertake training. Clinical educators worked hard and ensured proper training was provided to prepare them.

According to participants, increased nurses' sick leave and unavailability of nurses' readiness to care for COVID-19 patients added pressure on ICU nurses, who looked after COVID-19 patients at times. There were physical challenges like headaches after wearing an N95 mask and feeling hot and exhausted while in the gown. According to Hill, Smith and Mills (2021), Australia's healthcare workers were being pushed to their physical and emotional limits by COVID-19. However, COVID-19 did not have much of an impact on Western Australian ICU nurses, according to this study. Based on the results of this study, we conclude that Western Australian nurses were not as affected by COVID-19 as nurses in other parts of the world, as nurses work with full PPE and N95 masks, and the workload was manageable since adequate staffing was available.

6.5 Conclusion of discussion

This chapter provided a discussion of the findings on exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses. This study was undertaken in an ICU located in a hospital in Western Australia. In this ICU, the patient-to-nurse ratio is 1:1, with 24-hour support from the unit's multidisciplinary team. This environment provided the opportunity for nurses to achieve the best care

for both patients and families. Working in an ICU can be physically and emotionally draining, yet nurses enjoy working in the ICU, as the reward of job satisfaction is higher. The results of this study, which examined the relationship between burnout and wellbeing among ICU nurses, concluded that burnout had an impact on wellbeing. The ICU nurses who are an integral part of the entire health ecosystem need to be retained in the system with support from health authorities to mitigate symptoms of burnout. This was an exploratory sequential study, and both surveys and interviews were used in the framework of this study. The survey measured the burnout level of ICU nurses, and their wellbeing at a personal level and organisational level.

The findings of this study reveal that nearly half of the intensive care nurses identify themselves as burnt out. Nonetheless, this study found that nurses maintained good personal wellbeing, regardless of poor organisational wellbeing. Chapter Four confirms that nearly half of ICU nurses in this particular hospital are experiencing a universal phenomenon of burnout syndrome. The study findings indicated that females have higher burnout than males, and, similarly, married persons have high burnout compared to singles. With regards to years of experience, 10–15 years and below 5 years of experience have high burnout. The burnout is higher in female, full-time nurses with 10 to 15 years of experience. This explains highly skilled and experienced nurses also can be affected by burnout.

According to this study, staff shortage and inadequate support can lead to burnout. Further, it discusses some of the impacts of OS on nurses' life. This study points out the physiological and psychological impacts on ICU nurses. Hypertension, palpitation, diabetes and shoulder pain are the main sub-themes found in the qualitative data. Also, anxiety, fear, depression, disappointment and low self-esteem are the consequences of burnout.

This study identifies stress management begins with understanding stress, educating staff on early recognition, responding to burnout, and developing self-care plans. According to this study, exercise, family time, healthy eating, prayer and mindfulness are important strategies to prevent burnout and improve wellbeing. According to this study, strategies to reduce burnout and improve wellbeing were establishing a regular staff meeting, creating monthly wellbeing support groups, educating staff on recognising and responding to burnout, and developing a self-care plan. Burnout at work can affect nurses' health and family relationships. Based on the findings of this mixed method study, OS places ICU nurses at a high risk of burnout,

and it impacts their wellbeing. It is important to take into consideration the suggestions for improvement in an effective way to provide effective and relevant support to ICU nurses.

This study reveals that participants are unaware of interventions to prevent burnout and improve wellbeing in the ICU. This study also established that ICU nurses needed wellbeing support groups and informal debriefings. Nurses sought to strengthen relationships through support systems and regular team-building activities. Nurses also valued teamwork and enjoyed specialised skills using advanced clinical and critical thinking skills.

This research suggests that interventions focused on recognising burnout in the ICU nurses, establishing and maintaining healthy collaborative work environments, and providing flexibility and resources to nurses experiencing burnout should be developed and tested with the same rigour as patient-targeted therapeutic interventions in critical care. The recent US burnout survey found that among nurses who reported, 31.5% reported leaving their current employment because of burnout in 2018 (Shah et al., 2021).

If organisations take initiatives to improve nurses' safety similarly to patient safety, a healthier and more effective workforce can be generated and maintained. This becomes mandatory to improve patient safety along with retaining experienced ICU nurses. Raising awareness of burnout and self-care in meetings and performance reviews would play a critical role in reducing the effects of stress. Teaching nurses a basic introduction to physiology of stress, recognising their vulnerability to stress, and warning signs of stress, would result in a more realistic approach.

In addition to organisational accountability, nurses should have individual accountability for maintaining their own emotional and physical health and for building resiliency. As a process nurses must first learn how to identify burnout symptoms in themselves and their colleagues. They must develop healthy strategies to ensure self-care and mitigate fatigue such as getting adequate sleep, exercise or engaging in mindfulness and meditation practices. Summing up various considerations here are a few suggestions that can mitigate the struggle of the ICU nurses and can bring health care institutions to work in a better growth environment. This study highlights promotion of wellbeing and prevention of burnout'.

To prevent burnout, organisations should prioritise developing and maintaining healthy work environments by incorporating wellbeing training. Monthly

team debriefings and opportunities to raise concerns would be beneficial for nurses while acknowledging and applauding the team's valuable efforts. It is essential to intervene with steps to address the issues around burnout and nurses' wellbeing by providing training and resources to build resilience. Training on self-care activities and promoting resilience can also improve the ICU environment and mitigate distress.

At this point, organisations must retain the skilled ICU nurses that they employ. Post COVID-19, there has been an exodus of the healthcare workforce, re-evaluating their priorities, resulting in an increase of staff reduction within the disciplines of acute care services. Therefore, NHS England commenced RCS for nurses in England to improve nurses' wellbeing and retention (NHS England, 2017). RCS is focused on providing emotional support, to professionals working in an emotionally demanding workplace. The professional's anxiety and stress are reduced by using a process of discussion, reflection and supportive challenge (Bradbury, Bunce, Jones, Lake & Sutherland, 2016). Each ICU should have a PNA to support the health and wellbeing of nurses. The PNA facilitates professional resilience and aids in the improvement of individual wellbeing to reduce burnout which will increase job satisfaction and improve team dynamics. Other resources that organisations could provide include access to cognitive-behavioural therapy, the establishment of support groups, and mindfulness training.

Failure to address burnout is detrimental to community. Researchers have estimated that workplace anxiety makes up 8% of the national accounts in healthcare (Pendell, 2022). Therefore, investing in nurses' health and wellbeing is more important than ever. Enhancing the wellbeing and sustainability of staff through wellbeing clinics is a necessity at this point. Equipping PNA in each critical care area also facilitates wellbeing in nurses by bridging the gap between employer and employee. Burnout is a real phenomenon, and this data encourages empathy at a personal and organisational level along with a 'call to action'. With the belief that employee safety and patient safety go hand in hand, nurses feel privileged working for an organisation that advocates staff wellbeing.

6.6 Limitations

This study was undertaken with a group of Australian ICU nurses in one clinical setting. The data source was restricted to a large hospital, with different settings and atmosphere, compare to traditional ICUs in WA and may have been

strengthened with exploration in other work settings. Therefore, the study has limitations that reduce generalisability. A limitation of this study was the sudden emergence of the COVID-19 pandemic during the course of the study. Compared with small hospitals, the study was conducted in a hospital where COVID-19 patients are admitted, and the nurses are in a different mental, emotional, and physical state.

Even though MBI is a validated tool, responses may be biased by recent workload and physical environment. During work hours, nurses had a limited amount of time to complete the survey, which resulted in a low response rate. The interviews were conducted in a private place away from work as per the ethical principles of beneficence and nonmaleficence, but nurses were concerned about whether the results would affect their job.

6.7 Summary of Findings

Intensive care nurses' wellbeing is currently understudied in Australia (Jarden et al., 2019). This study reveals that nearly half of intensive care nurses consider themselves burnt out. It was found that nurses maintained good personal wellbeing despite poor organisational wellbeing. Participants in this study are unaware of any interventions to prevent burnout and improve wellbeing in the ICUs. This study was conducted after the first wave of the pandemic. The pandemic has placed enormous pressure on all ICU nurses across the world. However, Western Australian nurses' stress levels were not affected to a significant extent. Even though nurses had anxiety, working in an environment with rapidly changing rules, participants felt supported by management and were also provided with adequate PPE. Additionally, these results also demonstrate nurses' resiliency in this context.

6.8 Recommendations

The findings of the study indicate that majority of the ICU nurses affected by Burnout and Burnout has significant impact on wellbeing of ICU Nurses. Based on this research findings, the recommendations will include improvement in clinical practice, organisational culture, research and education as stated below:

Clinical practice

- The findings of the study clearly identify the importance of positive work environments that prevent and reduce burnout, foster professional well-being, and support quality care.

- Clinical practice area to establish and sustain a healthy work culture that supports psychological safety and facilitates nurses' wellbeing.
- A peer support group and regular debriefing is essential in critical areas to promote wellbeing. Conduct an annual wellbeing assessment at unit level.
- Encourage the connectedness with others, self and the environment to foster a sense of purpose and feelings of peace.

Organisational culture

- Though Burnout is an inevitable syndrome it can be averted by organisational input by controlling the factors like work overload, staff shortage, adequate support to staff, and regular well-being check-ups of the staff members.
- This can be implemented with RCS model with the PNA within the hospital setting. Each ICU should have a PNA to support the health and wellbeing of nurses. The PNA facilitates professional resilience and aids in the improvement of individual wellbeing to reduce burnout which will increase job satisfaction and improve team dynamics.
- Organisations could provide other resources that include access to cognitive-behavioural therapy, the establishment of support groups, and mindfulness training.
- To protect the wellbeing of nurses, support groups, debriefing and counselling are needed as interventions at organisational level.

Research

- The compelling evidence of the alarmingly high rates of burnout and its negative effects on the nurses and health care system requires the expansion and support of research and innovation in this area.
- The collected data can be used as a baseline for future research into this area. Future research goals in the context of the current study might suggest a unique measure of the work well-being of ICU nurses as well as a research programme of implementing intervention and promoting ICU nurses' wellbeing.

Education

- Education plays a significant role in every aspect to preventing burnout and facilitating wellbeing. It is important to educate nurses on identifying signs and symptoms of burnout and implement preventive measures.
- Nurse education includes promotion of self-caring activities such as exercise, meditation and other relaxation techniques to promote wellbeing.
- Provide dedicated training for resilience on nurses' professional well-being.
- Provide resources for nurses to promote and support their own personal and professional well-being.
- It is imperative to develop a wellness culture and providing evidence-based wellness support and programming will ultimately reduce burn out.

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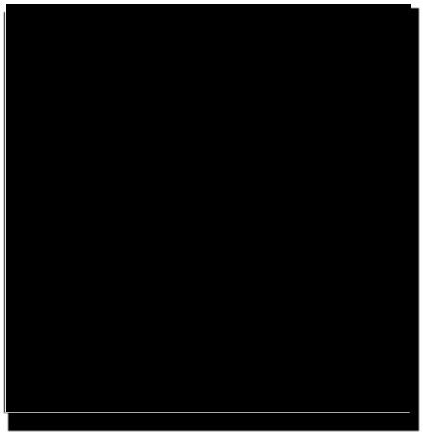
Zhang, Y., Wei, L., Li, H., Pan, Y., Wang, J., Li, Q., Wei, H. (2020). The psychological change process of frontline nurses caring for patients with COVID-19 during its outbreak. *Issues in Mental Health Nursing*, 41(6), 1–6. https://doi.org/10.1080/01612840.2020.1752865.

Appendix A. Survey Link

[redacted]

Or use the camera on your smart phone to scan this code:



Appendix B. Recruitment Emails

Recruitment Email 1

From, Swapna Mathew, RN, ICU, (Principal study coordinator)

Approved Human Research Ethics Committee (HREC)

South Metropolitan Health Service (SMHS), RGS0000004238

Supervisors: Professor. Caroline Bulsara and Dr Marieke Ledingham

Subject: Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses

Date: 16th March 2021

I am writing to ask for your participation in a survey which is phase 1 of this research project that I am conducting through the University of Notre Dame, Australia. I am seeking participation from registered ICU nurses to complete an online survey which consists of two sets of questions.

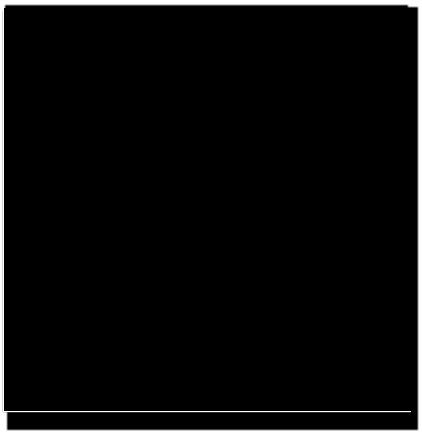
The first set of questions would be measuring burnout and the second set of questions would be about personal and organisational wellbeing.

Your participation in this survey would be greatly appreciated, as the de-identified, collated responses will be used to help shape the future for ICU nursing staff with an insight into understanding the workplaces stressors ICU nurses experience and how it affects their wellbeing. Your participation in the survey is completely voluntary and all responses will remain anonymous.

If you would like to participate in the short online survey (phase 1 of this research project), this should take no longer than 15 minutes in total to complete. If you are willing to be involved, please follow this link to the survey:

[redacted]

Or use the camera on your smart phone to scan this code:



At the end of your survey, you will be asked if you would be willing to participate in the next phase of the research (phase 2) which would involve a face-to-face interview. This interview is also voluntary, and your details will be de-identified from your survey responses. If you would like to participate in the interview (phase 2 of this research), please contact me via email– Swapna- swapna.mathew@my.nd.edu.au.

I appreciate your time and consideration in completing this survey and/ interview as it is only through your guidance and feedback that we can improve the wellbeing of ICU nursing staff. I am extremely grateful for your valuable time, your honest opinion and suggestions.

Many thanks,

Swapna Mathew

Master of Philosophy Student

University of Notre Dame, Australia

Swapna.mathew@my.nd.edu.au

Recruitment Email 2

From, Swapna Mathew, RN, ICU, (Principal study coordinator)

Approved Human Research Ethics Committee (HREC)- RGS0000004238

South Metropolitan Health Service (SMHS)

Supervisors: Professor. Caroline Bulsara and Dr Marieke Ledingham

Sent: Day/month/year/time

To: Nursing Staff, ICU Fiona Stanley

Subject: Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses

Date: 30th March 2021

Dear Colleague,

I would like to take this opportunity to thank everyone who has participated in this study so far. For those of you who have not completed the survey yet do not worry, the link is still available. I just wanted to send you a friendly reminder that I am conducting this study for my Master of Philosophy through the University of Notre Dame, Australia. I am requesting all registered nurses to complete the online survey to get your perspectives on nurses' burnout and wellbeing. This survey consists of two sets of questionnaires. The first survey would be measuring burnout and second survey would be about personal and organisational wellbeing. Please do not miss the opportunity to have your say. We really value your opinion.

The survey should take15- 20 minutes to complete. Once your responses are saved and submitted, they are de-identified and cannot be withdrawn. However, if you have opened the survey and decide not to participate, simply close the survey window without saving the responses and all information will be deleted.

At the end of the survey, you will be invited to participate in a follow-up interview with me to explore your understanding of occupational stress and burnout.

The survey will be available for 4 weeks from 30/03/2021 to 30/04/2021so there is still time to participate. If you would like to be involved in this study, please read the attached participant information sheet and then provide consent by clicking on the link below to complete the survey.

[redacted]

If you have any questions regarding the study, my contact details are below.

Thank you for your participation.

Swapna Mathew
Master of Philosophy Student
University of Notre Dame, Australia
Swapna.mathew@my.nd.edu.au
[redacted]

From, Swapna Mathew, RN, ICU, (Principal study coordinator)

Approved Human Research Ethics Committee (HREC)

South Metropolitan Health Service (SMHS), RGS0000004238

Supervisors: Professor. Caroline Bulsara and Dr Marieke Ledingham

Subject: Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses

Dear Colleague,

I would like to take this opportunity to thank everyone who has participated in this study so far. I am looking for your perspectives on occupational stress and wellbeing. I would love to have your valuable opinion. Please complete the survey if you have not done yet. The survey closes at 4:00 pm on 30th April 2021. So please click the link below to complete the survey.

Please follow this link to the survey

[redacted]

or scan the following QR code:

[redacted]

If you have any questions regarding the study, my contact details are below.

Thank you for your participation.

Swapna Mathew

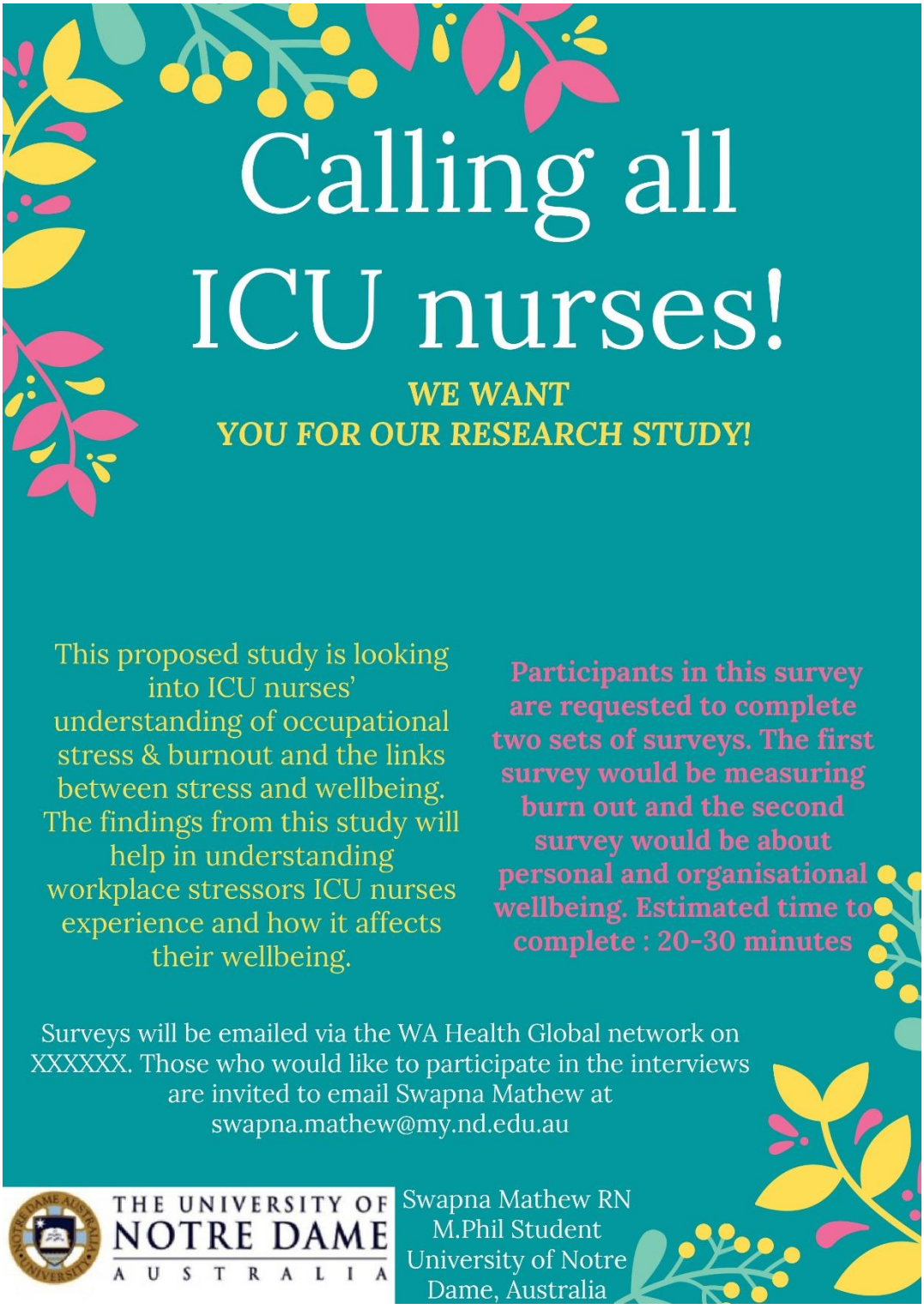
Master of Philosophy Student

University of Notre Dame, Australia

Swapna.mathew@my.nd.edu.au

[redacted]

Appendix C. Research Flyer



Appendix D. Demographic Data

Principal study coordinator- Swapna Mathew, RN, ICU

(Swapna.mathew@my.nd.edu.au)

Approved Human Research Ethics Committee (HREC)- South Metropolitan Health Service (SMHS) RGS 0000004238

Instruction: You are requested to provide information and select the most appropriate choice by placing a tick mark (✓) in the space provided.

Age in years

21–25	[ ]
25–30	[ ]
30–40	[ ]
40–50	[ ]
50-60	[ ]
>65	[ ]
Prefer not to say	[ ]

Gender

Male	[ ]
Female	[ ]
Other	[ ]
Prefer not to say	[ ]

Marital Status

Single	[ ]
Married / de facto	[ ]
Widowed	[ ]
Separated/Divorced	[ ]
Prefer not to say	[ ]

Professional Qualification

Registered Nurse	[ ]
Clinical Nurse	[ ]
Any other	[ ]
Prefer not to say	[ ]

Mode of employment

Part-time	[ ]
Full-time	[ ]
Casual	[ ]
Prefer not to say	[ ]

Years of working experience

<1 year	[ ]
1-5 years	[ ]
5-10 years	[ ]
10-15 years	[ ]
>15 years	[ ]

Appendix E. Participant Information Sheet (Survey)

'Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses'

You are invited to participate in the research project described below.

What is the project about?

The research project will investigate the factors contributing to occupational stress among ICU nurses, to identify the link between wellbeing and occupational stress, and to identify strategies, from nurses' point of view which can be implemented to reduce OS.

Who is undertaking the project?

This project is being conducted by Swapna Mathew RN, ICU, under the supervision of Professor Caroline Bulsara and Dr Marieke Ledingham

What will I be asked to do?

You are asked to complete two online surveys, which will ask you questions about burnout and wellbeing. It should take you about 15 minutes each to complete and will be completely anonymous.

Are there any risks associated with participating in this project?

We do not anticipate any risk to you in participating in this research project. However, if you find that the questions asked in this survey brings up difficult feelings/ you are becoming distressed, we recommend that you seek support from a counsellor / EAP (Employee assistant Program)

What are the benefits of the research project?

The findings of the study would help to understand the baseline of burnout level and wellbeing of ICU nurses. The potential benefits of this research are that the results become a point of reference for organisations to promote wellbeing and facilitate support strategies for ICU nurses to enhance positive work environment if needed.

What if I change my mind?

Participation in this study is completely voluntary. Even if you begin the survey, you are free to withdraw by simply not completing it. However, once you complete the survey and submit it back to us, you will not be able to withdraw it because we will have no way of knowing which one is yours.

Will anyone else know the results of the project?

Completed surveys will be stored securely on a password-protected computer and only the researchers will have access to this information during the project.

Once the study is completed, the survey information will be stored securely in the WA health department for at least a period of five years. The data may be used in future research, but you will remain completely anonymous. The results of the research project will be published as a journal article.

Will I be able to find out the results of the project?

Once we have analysed the information from surveys, we will provide a summary of the findings at the following link. You can expect to receive this feedback in six months.

Who do I contact if I have questions about the project?

If you have any questions about this project, please feel free to contact Swapna Mathew at swapna.mathew@my.nd.edu.au. Alternatively, you can contact Professor. Caroline Bulsara at caroline.bulsara@nd.edu.au. We are happy to discuss with you any concerns you may have about this study.

What if I have a concern or complaint?

The study has been approved by the Human Research Ethics Committee at The University of Notre Dame Australia (approval number 2021-013F). If you have a concern or complaint regarding the ethical conduct of this research project and would like to speak to an independent person, please contact Notre Dame's Research Ethics Officer at (+61 8) 9433 0943 or research@nd.edu.au. Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

How do I sign up to participate?

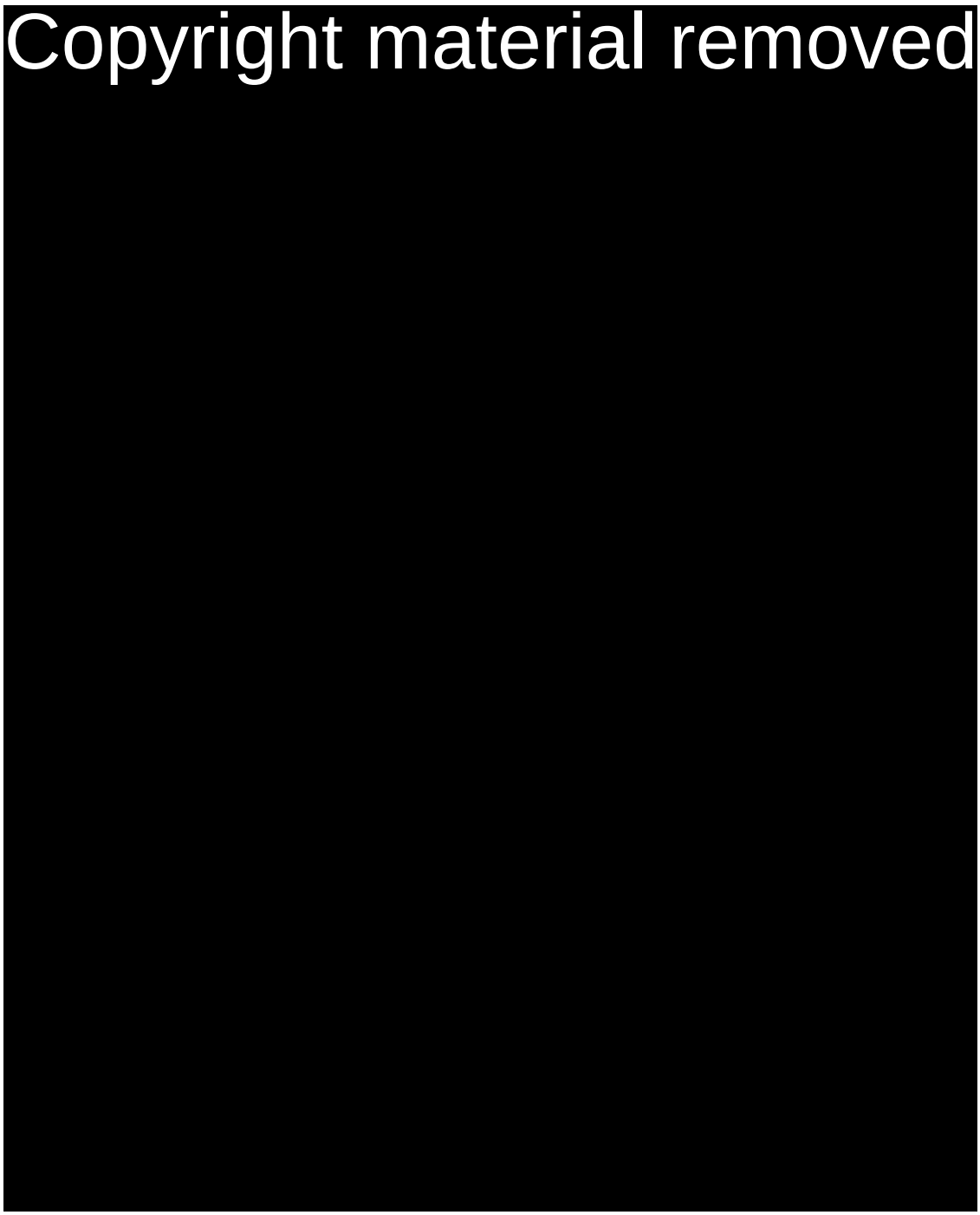
If you are happy to participate, please click on the following link to the survey and complete the attached survey and submit it or complete the hard copy of survey and submit it in the box provided in the staff room.

Thank you for your time. This sheet is for you to keep.

Yours sincerely,

Swapna Mathew

Appendix F. Maslach Burnout Inventory – Human Services



Appendix G. Personal and Organisational Wellbeing Tool

Table G.1

Personal self-care audit

Area	Doing ok	Needs more attention	Needs urgent attention
Do you ….			
feel happy in your life			
Have a healthy diet			
Sleep well and get enough sleep			
Avoid overeating, drinking excess coffee or smoking			
Get along with colleagues			
Need to consider working part-time in the job			
Set personal, achievable goals			
Have fun and laugh regularly			
Spend time with family and friends			
Do nice things for others			
Say no when you need and ask for help when needed			
Delegate as needed			
Aim to learn and grow			

Table G.2

Organisational Wellbeing Audit

Area	Doing ok	Needs more attention	Needs urgent attention
Workplace culture is respectful, supportive and encourages self-care			
Regular checks and audits on wellbeing			
Regular formal and informal debriefing encouraged			
Peer support is encouraged			
The work environment is comfortable and safe			
There is positive relationship between workers			
There is early identification &support is offered when workers are dealing with stress			
There are opportunities for workers to openly raise issues and these are dealt with constructively and effectively			
Communication is open and clear			
There is a feeling of fairness and equity in how nurses are treated			
Stress and burnout are monitored and prevented on a regular basis			
Professional networks are encouraged			
‘Zero-tolerance of Bullying’ encouraged			
Mutual respect encouraged from nurses			
Difficulties in coping and needing help are not seen as weakness			
The organisation actively promotes nurse’s wellbeing			

Appendix H. Interview Questions

1. What do you think are the factors that cause stress among ICU nurses?
2. Do you think occupational stress affects ICU nurse's wellbeing?
3. How does occupational stress affect ICU nurse's wellbeing?
4. Is it impacting your personal life? How?
5. Is it impacting you emotionally? How?
6. Is it impacting you professionally? How?
7. Do you know about the workplace wellbeing activities for ICU nurses?
8. Do you know who you can reach out to in case of work-related stress?
9. What wellbeing assessments and activities the organisation has in place?
10. Have you ever experienced extreme stress and how did you overcome it?
11. What strategies would you like to see in the unit to alleviate the stress?

Appendix I. Consent Form for Interviews

'Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses'

By Swapna Mathew
Master of Philosophy Student, The University of Notre Dame, Australia
Supervisors: Professor. Caroline Bulsara and Dr Marieke Ledingham)

- I agree to take part in this research project.
- I have read the information sheet provided and been given a full explanation of the purpose of this research project and what is involved.
- I understand that I will be interviewed and that the interview will be audio-recorded.
- The researcher has answered all my questions and has explained possible risks that may arise as a result of the interview and how these risks will be managed.
- I understand that I do not have to answer specific questions if do not want to and may withdraw from participating in the project at any time without prejudice.
- I understand that all information provided by me is treated as confidential and will not be released by the researcher to a third party unless required to do so by law.
- I agree that any research data gathered for the study may be published provided my name or other identifying information is not disclosed.
- I understand that research data gathered may be used for future research, but my name and other identifying information will be removed.
- I confirm that I have provided the information sheet concerning this research project to the above participant, explained what participating involves and have answered all questions asked of me.

Name of participant			
Signature of participant		Date	
Signature of researcher		Date	

Appendix J. Participant Information Sheet (Interview)

‘Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses’

You are invited to participate in the research project described below.

What is the project about?

The research project will investigate the factors contributing to occupational stress among ICU nurses, to identify the link between wellbeing and occupational stress, and to identify strategies, used by nurses to reduce OS.

Who is undertaking the project?

This project is being conducted by Swapna Mathew, RN, ICU, under the supervision of Professor Caroline Bulsara and Dr Marieke Ledingham

What will I be asked to do?

You are asked to participate in an individual, face-to-face interview about your views on occupational stress and wellbeing and on reducing the occupational stress. The interview will take about 60 minutes and will be audio-recorded using an audio recorder. The interview will take place in at a mutually convenient private location.

Are there any risks associated with participating in this project?

It is possible that you may experience some level of anxiety or stress during the session as a result of some of the questions you will be asked. You will be monitored closely during the interview session, and you are free to withdraw at any time during the session. We can arrange for you to access support from a counsellor / EAP (Employee Assistance program)

What are the benefits of the research project?

The findings of the study would help to understand the baseline of burnout level and wellbeing of ICU nurses. The potential benefits of this research are that the results become a point of reference for organisations to promote wellbeing and facilitate support strategies for ICU nurses to enhance positive work environment if needed.

What if I change my mind?

Participation in this study is completely voluntary. Even if you agree to participate, you are free to withdraw from further participation at any time without giving a reason and with no negative consequences. You are also free to ask for any information which identifies you to be withdrawn from the study.

Will anyone else know the results of the project?

Information gathered about you will be held in strict confidence. This confidence will only be broken if required by law. The audio recording from the interview will be transcribed and stored on a password-protected computer and the audio-recordings will be deleted. Only the researchers will have access to this information during the project.

Once the study is completed, the data collected from you will be de-identified and stored securely in the WA health department for at least a period of five years. The data may be used in future research, but you will not be able to be identified. The results of the study will be published as a journal article.

Once we have analysed the information from surveys, we will provide a summary of the findings at the following link. You can expect to receive this feedback in six months.

Who do I contact if I have questions about the project?

If you have any questions about this project, please feel free to contact Swapna Mathew at swapna.mathew@my.nd.edu.au. Alternatively, you can contact Professor. Caroline Bulsara at caroline.bulsara@nd.edu.au. We are happy to discuss with you any concerns you may have about this study.

What if I have a concern or complaint?

The study has been approved by the Human Research Ethics Committee at The University of Notre Dame Australia (approval number 2021-013F). If you have a concern or complaint regarding the ethical conduct of this research project and would like to speak to an independent person, please contact Notre Dame's Research Ethics Officer at (+61 8) 9433 0943 or research@nd.edu.au. Any complaint or

concern will be treated in confidence and fully investigated. You will be informed of the outcome.

How do I sign up to participate?

If you are happy to participate, please sign both copies of the consent form, keep one for yourself and mail the other to me in the envelope provided / contact the researchers. Thank you for your time. This sheet is for you to keep.

Yours sincerely,

Swapna Mathew

Appendix K. Withdrawal of Participation Form

Title of Project: Exploring the impact of occupational stress and burnout on the wellbeing of intensive care nurses

Name of Researcher: Swapna Mathew

Declaration by Participant

I wish to withdraw from participation in the above research project and understand that such withdrawal will not affect my work, my relationship with those working with me or my relationship with Fiona Stanley Hospital

Name of participant			
Signature of participant		Date	

If the participant's decision to withdraw is communicated verbally, the researcher must describe the circumstances:

Declaration by Researcher†

Name of researcher			
Signature of researcher		Date	

I have given a verbal explanation of the implications of withdrawal from the research project and I believe that the participant has understood that explanation.

Appendix L. Approval letter HREC, UNDA

THE UNIVERSITY OF NOTRE DAME AUSTRALIA

19 Mouat St (PO Box 1225) Fremantle WA 6959
+61 8 **9433 0555** | enquiries@nd.edu.au

25 February 2021

Professor Caroline Bulsara & Ms Swapna Mathew
School of Nursing & Midwifery
The University of Notre Dame Australia
Fremantle Campus

Dear Caroline and Swapna,

Reference Number: 2021-013F

Project title: "Exploring the impact of occupational stress and burnout on the wellbeing of Intensive Care Nurses."

Your response to the conditions imposed by the University of Notre Dame Human Research Ethics Committee (HREC) has been reviewed in accordance with the *National Statement on Ethical Conduct in Human Research* (2007, updated 2018). I am pleased to advise that ethics approval has been granted for this proposed study.

Other researchers identified as working on this project are:

Name	School/Centre	Role
Dr Marieke Ledingham	School of Arts & Sciences	Co-Supervisor

All research projects are approved subject to standard conditions of approval.
Please read the attached document for details of these conditions.

On behalf of the Human Research Ethics Committee, I wish you well with your study.

Yours sincerely,

[redacted]

Dr Natalie Giles
Research Ethics Officer
Research Office

cc: Dr Cathryn Josif, Acting SRC Chair, School of Nursing & Midwifery

Appendix M. Approval letter-RGS for WA health

24 March 2021

Mrs Swapna Mathew
Fiona Stanley Hospital
Murdoch, 11 Robin Warren Drive
MURDOCH Western Australia 6150

Dear Mrs Mathew

PRN:	RGS0000004238
Project Title:	**Exploring the impact of occupational stress and burnout on the wellbeing of Intensive Care Nurses**

Thank you for submitting the Amendment Form 19/03/2021 for the above project. The submission was reviewed and approved on behalf of the HREC on 24 March 2021.

This approval covers the following documents:

Document	Version	Version Date
Recruitment email 1 V3 dated 4/03/2021	V3	04/03/2021

Approval has been provided in accordance with the HREC Terms of Reference and Standard Operating Procedures which are available on the HREC's website. The submission will be tabled for information at the next HREC meeting on 13 April 2021.

As the CPI you must ensure that the project is conducted at all sites under the conditions of approval for this project. **The next progress report for this project is due on 03 December 2021.**

This letter constitutes ethical approval only. If this project is conducted at multiple sites utilising this HREC's approval, a copy of this letter must be made available to all site PIs to maintain authorisation from their site. **Please ensure this amendment is submitted to the Research Governance Office for site authorisation.**

If you require further information, please contact the HREC Office on 08 6152 2064 or SMHS.HREC@health.wa.gov.au. To find the original letter, click here when logged into RGS.

Yours sincerely
Deborah Matthews
Delegate of the Chair
South Metropolitan Health Service Human Research Ethics Committee

Appendix N. Key Themes, Sub-themes and Exemplary Quotes from the Interviews Concerning the Factors That Cause Occupational Stress in the ICU Nurses

Overarching theme	Sub-theme	Codes	Exemplar quotes
Professional components of nursing	Staff shortage	Staff shortage leads to Staff burnout, Workload Patient safety Lack of skill mix Staff shortage increases the level of anxiety	'*Staff shortage is the core issue to all other problem, which not only leads to staff burnout but also compromise patient safety.'* *'When you have two heavy doubles, that gives you stress because you are unable to do proper care and compromise care, it did hurt me mentally.'* *'I get stressed when I receive staff shortage messages, you don't know what you are walking into.'* *'When there is no DPL, junior nurses are stuck in the single room, with the sick patient is quite scary.'* *'I think the core issue is staff shortage due to staff turnover.'*

Overarching theme	Sub-theme	Codes	Exemplar quotes
	Staff Support	Lack of peer Support, Ineffective Teamwork Insufficient educational support	*'There is no teamwork, I think lack of teamwork is a big issue. I am not saying they are all same. It is only a couple of them, but if they are the pod leaders or deputy pod leaders, then you are stuck with no help.'*
			'Sometimes you don't get support like, leave for study days we have to do it in our own time.'
		Organisational behaviour	*'A lot of the time, you know what kind of day you are going to have* to depend *on* your pod leader.*'*
			'*You don't get the right help at the right time. which I find quite stressful.'*
			'It would be nice to have old fashion education style as educators on the floor.'

Overarching theme	Sub-theme	Codes	Exemplar quotes
	Professionalism	Absence of professional communication	'*I can't believe that even in twenty-first-century doctors still devalue and disrespect nurses. It is only one or two, I felt humiliated by the way he speaks. He made my self-esteem go down and I hated to work when he is on.'*
		Maintaining confidentiality and code of conduct	'*I feel like there are so many junior nurses in Clinical nurses' positions, I feel like they should have more experience in training to address the issue, not the people.'*
			'*Workplace should be free from stigma.' 'I didn't like the way he spoke to me; after that, my confidence plummeted.'*
		Bullying	*'Staff should be communicated professionally by senior nurses and doctors.'*
			'*I always feel like I am being watched.'*
			'Bullying should not be accepted as part of ICU culture.'

Overarching theme	Sub-theme	Codes	Exemplar quotes
	Education	Insufficient Training in professional development Facilitating Career development opportunities	'*It's nice to have a one-to-one training at the bedside.'* '*It would have been nice to have old fashion education style as educators on the floor.'* *'I guess all Staff have the right to get careers development opportunities even if you are not in any groups.'*
Perceptions of Wellbeing	workplace wellbeing	Significance Value Promotion of wellbeing activities	'*I know it's a big unit, but still, it's nice to have monthly debriefing or meetings.'* '*I am not super-resilient.'* *'It would have been better if someone mentioned to me or there was a support for mental health.'* *'Organisations should invest more in staff training and the wellbeing of staff.'*

Appendix O. Key Themes, Sub-themes and Exemplary Quotes from the Interviews Concerning the Impact of Workplace Stressors on Wellbeing

Overarching theme	Sub-theme	Exemplar quotes
Physiological reactions to stress	Shoulder pain	*'I do get shoulder pain when I am stressed.'*
	Fibromyalgia	*'I have fibromyalgia which is stress-related, and I get severe pain.'*
	Binge eating	*'I try to eat more and more when I am stressed.'*
	Hypertension, Sleep disturbances, Headache	*'Not only that everyone knows how cortisol affects the immune system, blood pressure and sugar levels, headaches, sleep disturbances and loss of memory and lack of concentration. I got hypertension and get headaches.'*
		'When I am stressed, I eat more and gain.'
	Diabetes,	*weight and my sugar levels go high rocket,'*
	Palpitations	*'I get palpitations when I am stressed.'*
	Symptoms of anxiety	*'It's happened a couple of times with me, when I started burning out, I didn't know, but it increased my anxiety, and I started doubting myself and triggered my PTSD'.*
		'Not Everyone can completely forget everything, that happens in your life a few hours ago, wipe it out and put on a smiley face, and enter the home.'

Overarching theme	Sub-theme	Exemplar quotes
Psychological Reactions to stress	Symptoms of Depression	*'I had lost my sleep, not had food Properly when that happened to me'*
		'I even felt the depression, sometimes I don't feel like eating, so just like the shift work disturbs your body clock, my eating pattern disrupted and caused indigestion and other problems associated with that. So, I think it's all interconnected'
	Sleep deprivation	*'Sometimes it affects my sleep when I am physically tired'*
		'All these factors at work make your mental health go down, you feel you are isolated, feel like you don't belong to the team, which makes you sad, depressed'
	COVID-19 increases emotional stress	*'COVID-19 increased my stress and anxiety, it was kind of hard to wear the mask and be in the room for a whole shift. The biggest scary thing was thought of carrying the virus to home*'
		'*Yes, it increased the anxiety and worry along with trauma we are lucky that there were enough resources*'

Appendix P. The Key Themes, Sub-themes and Exemplary Quotes from the Interviews Concerning Stress Relief Strategies

Overarching theme	Sub-theme	Exemplar quotes
Individual lifestyle	Practising yoga	*'Yoga: -Yoga was the best thing I ever did, it helped me a lot'*
	Prayer supports	*'Prayer helps me a lot, I find comfort in praying after dealing with difficult people or after a difficult day' 'When I am stressed after work, I spend some time praying and I feel better. I get a sort of strength after prayer'* *'By practising the mindfulness, and prayers I feel relaxed, and stress reduced'*
	Engaging in physical activities	*'Regular exercises helped me a lot, I felt confident, energetic and able to deal with problems in a better way'*
	Self-reflection	'*I find time in solitude to find the true essence of myself after a prolonged period of hectic work in the ICU'*

Overarching theme	Sub-theme	Exemplar quotes
	Connecting with others	'*Over the years I learned to leave work at work; however, venting out with my husband, going out with friends and walking always helped me'* *'Being with my friends helps me in overcoming my work stress'* *'I love Coffee with friends'*
Work Support	Monthly counselling Debriefing	*'In my previous hospital we used to get a visit from a Councillor, once in a month, which was good'* *'It would have been nice to talk to someone freely'*
	Support from colleagues	'*I felt supported, and the shift was so smooth when good pod Leaders are on*'
	Teamwork	*'There were times that you go to bed, before a morning shift thinking, oh my …Gosh ... what kind of a day is going to be like tomorrow*'.

Appendix Q. The Key Themes, Sub-themes and Exemplary Quotes from the Interviews Regarding Wellbeing Strategies

Overarching theme	Sub-theme	Exemplar quotes
Support from organisation	Monthly staff meetings	*'It's a good idea to have monthly ward meetings or debrief from a wellbeing counsellor; therefore, staff gets a chance to express their feelings, EAP is a hit and miss. If you get a good person, it's all good. I went private when I needed to.'*
	Debriefing	*'Physical/ Emotional breakdown should not be seen as part of weakness. Nurses should be able to disclose it without fear'*
	Assistance from 'support group'	*'A support group for the wellbeing of staff is a good idea to retain staff'*
Self-care	Regular breaks	*I think if you have friends at work and if you regularly go out with them that makes you feel you are part of the team'*
	Early recognition of burnout	*'Look, I take regular breaks from work, which helps me to rejuvenate'*
		'I wish someone would have told me'