



**UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA**

**A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE
MORAL DISTRESS AMONG CRITICAL CARE NURSES IN ABU DHABI**

by

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DECLARATION

I declare that the thesis titled: **“A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE MORAL DISTRESS AMONG CRITICAL CARE NURSES IN ABU DHABI”** which I hereby submit for the degree Doctor of Philosophy in Nursing Science at the University of Pretoria is my own work and has not previously been submitted by me for a degree to any other university.

All the sources that have been used or quoted have been indicated and acknowledged by complete references in the text and bibliography.

A handwritten signature in black ink, appearing to read 'Mohannad AlJabery', written over a horizontal line.

Mohannad AlJabery

30 September 2024

Signature of Student

Date

ABSTRACT

Background: In the profession of nursing, moral distress becomes a recurrent unavoidable problem with a high prevalence. Moral distress is described as a psychological disequilibrium and painful feeling that results when the individual is constrained from doing the right moral action. The complex nature of moral distress requires continuous development and improvement for the currently utilized interventions. Despite the availability of research that addressed moral distress among nurses in the literature, there is a debate about the effectiveness of the applied interventions in reducing moral distress.

Aim of the study: to measure the outcome of the development and implementation of a multifaceted educational intervention on the impact of moral distress among critical nurses in Abu Dhabi. The objectives were divided into three phases:

Phase 1: Measured the magnitude of moral distress among nurses working in critical care units in two tertiary hospitals in Abu Dhabi.

Phase 2: Implemented the developed multifaceted educational intervention to reduce moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi.

Phase 3: Evaluated the outcomes of the implemented multifaceted educational intervention in reducing moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi.

Methodology: The study followed a quantitative quasi-experimental pretest-posttest control group design in three consecutive phases. Phase one administered the pre-test of the quasi-experimental design. Phase two implemented the developed multifaceted educational interventions that combined four educational sessions and three booster sessions for the experimental group with no intervention implemented in the control group. Phase three administered the post-test of the quasi-experimental design. The pre-test and post-test data were collected using the socio-demographic questionnaire, the Measure of Moral Distress for Health Care Professionals, and the Moral Distress Thermometer. A convenient sampling approach was used to recruit participants who volunteered for the study. The study was implemented in two tertiary hospitals located in the Emirate of Abu Dhabi. The study had a potential population of 124 critical care nurses. In phase one, a total of 218 nurses (108 control group, and 110 experimental group) responded to the pre-test. In phase two, 80 participants attended the four educational sessions and three booster sessions. In phase three, 76 participants from the experimental group and 82 from the control group (total=158) responded to the post-test and constituted the total sample of the study.

Results: Pre-intervention, the critical care nurses reported a composite moral distress score of 146.4 ± 82.62 , a frequency score was 51.02 ± 22.2 , and an intensity score was 59.71 ± 22.1 . The top-ranked cause contributing to moral distress was “following the family's insistence to continue aggressive treatment.” The independent t-test revealed a significant difference concerning participants’ gender, marital status, educational level, receiving ethics education, and intention to leave their position. Approximately 57% of the CCNs considered leaving their position due to moral distress. A moderate positive correlation was found between participants’ experience in critical care and moral distress composite, frequency, and intensity scores. Post-intervention, the multifaceted educational intervention exhibited statistically significant reductions in the experimental group frequency, intensity, and composite moral distress scores. Conversely, moral distress scores were increased among the control group. Moreover, the intervention significantly reduced the number of nurses who intended to leave their positions from 58 to 47 in the experimental group.

Conclusion: Compared with other international studies, critical care nurses had higher moral distress scores in this study. The participant's gender, marital status, educational level, ethics education, intention to leave, age, and years of experience were associated with moral distress. The multifaceted educational intervention exerts positive outcomes in reducing moral distress across all the dimensions and improving the nurses' retention.

Keywords: Moral distress, critical care nurses, intervention, moral judgment, moral competency, empowerment, United Arab Emirates.

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DEDICATION

"To care for those who once cared for us is one of the highest honors."

(Tia Walker)

This dissertation is dedicated to the critical care nurses whose unwavering compassion and resilience inspire me every day. To those on the frontlines, who care for the most vulnerable with grace and strength, your commitment to patient care amid immense challenges motivates this work.

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LIST OF ABBREVIATIONS	
ABBREVIATION	DEFINITION
AACN	American Association Of Critical-Care Nursing
ANOVA	One-Way Analysis Of Variance
CCNs	Critical Care Nurses
DHA	Dubai Health Authority
DOH	Department Of Health Abu Dhabi
e-learning	Electronic Learning
MDP	Moral Distress Pathway
MDS	Moral Distress Scale
MDS-R	Moral Distress Scale-Revised
MD-SRF	Moral Distress-Self Reflection Form
MFEI	Multifaceted Educational Intervention
MMD-HP	The Measure Of Moral Distress For Healthcare Professionals
MOHAP	Ministry Of Health And Prevention
RAK	Ras Al Khaimah
SEHA	Abu Dhabi Health Services Company
SGICs	Self-Generated Identification Codes
SKMC	Sheikh Khalifa Medical City
SSMC	Sheikh Shakhbout Medical City
UAE	United Arab Emirates
UAQ	Umm Al Qaiwain

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Chapter 1 provides an overview of the study, background, and rationale, study objectives, significance of the study, definition of concepts, and design and methods.

1.2 BACKGROUND AND RATIONAL

Nurses in different roles and from different specialties face ethical dilemmas, challenges, distress, and uncertainty in their daily work (American Nurses Association, 2017: 4). Ethical dilemmas require professional ethical skills and knowledge to make a moral decision and may place nurses under the burden of moral distress (Abbasi et al., 2019: 2). Moral distress is considered one of the most prevalent phenomena that may cause psychosocial problems in nurses (Bayat, Shahriari & Keshvari, 2019: 2, Nikbakht Nasrabadi et al., 2021a: 1).

Among the nursing profession, critical care nurses (CCNs) were identified as the group most affected by moral distress (De Villers & DeVon, 2013: 590, Atashzadeh-Shoorideh et al., 2021: 34). CCNs are required to provide continuous advanced nursing care for critically ill patients. They experience stressful and emotional situations, make or follow tough decisions, and are confronted with daily ethical conflicts. As a result, they are at higher risk of developing moral distress (Amos & Epstein, 2022, Atashzadeh-Shoorideh et al., 2021).

Moral distress is described as a psychological disequilibrium and painful feeling that results when the individual knows the right moral action to take but is unable to carry it out due to internal or external constraints (Leggett et al., 2013: 521). Jameton (1984) first defined moral distress as arising “when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action” (Jameton, 1984: 6).

The defining characteristics of moral distress could be deduced from its definitions. Firstly, knowing the right ethical action, moral distress arises when the nurses’ ethical knowledge that is relevant to the situation is not heard or taken seriously (Epstein et al., 2019: 2). Secondly, the presence of constraints, that hinder the nurses' ability to take the right course of action (Rushton, 2006: 164, AACN, 2021: 3). Thirdly, when the nurses are forced to act against their professional ethical beliefs, the perceived pressure to do that is a core characteristic of moral distress (Epstein

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et al., 2019: 2). Finally, as a response to moral distress, nurses may experience a range of symptoms and feelings that impact their physical, emotional, and psychological well-being. Working against one's own beliefs threatens the individual's integrity (Hamric, Borchers & Epstein, 2012: 2, Imbulana, Davis & Prentice, 2021: 10).

In the literature, three root causes were identified as factors/sources that hinder the nurses' ability to make the right course of action and contribute to moral distress (Epstein et al., 2019: 2). Epstein et al. (2019) identified three different levels that may cause moral distress. The patient level includes the patient or his/her family and might be related to family or patient demands for unnecessary or aggressive treatment. The team/unit level includes improper communication, an unhealthy work environment, and/or lack of collaboration as examples of causes that triggered moral distress. The last level is the system level, which includes causes that happen outside the unit boundaries, such as inadequate staffing, cost reductions by omitting some procedures, and a lack of supplies and resources.

The experience of moral distress might be influenced by the nurses' work-related and sociodemographic characteristics (Ramos et al., 2019: 407). For example, years of experience (Berhie, Tezera & Azagew, 2020: 164, Sannino et al., 2019: 5, Larson et al., 2017: 338); gender (Emmamally & Chiyangwa, 2020: 106, Sannino et al., 2019: 5); age (Sannino et al., 2019: 5); workplace (Qalawa & Hassan, 2017: 23); and ethnicity (Ramos et al., 2019: 407) were found to be factors associated with variances in moral distress experienced among nurses. These factors should be considered in planning and implementing an intervention to reduce moral distress.

The consequences of moral distress may affect the healthcare system at different levels. The impact may start at the individual level (nurse/patient) followed by the unit and then extend to the entire institution (Borhani et al., 2014: 3, Corley, 2002: 641). At the individual level, nurses may start developing negative self-worth, self-criticism, self-doubt, and self-blame (McCarthy & Deady, 2008: 257). These feelings may increase the distance between nurses and their patients, nurses may feel as if they are letting patients down and may question their duties toward patients' rights (Corley, 2002: 641, Morley, Bradbury-Jones & Ives, 2021: 12).

Moral distress influences the team dynamics, creating an unethical work environment. Within this unhealthy environment, nurses may lose their moral judgment capacity and feel powerless. As a response, the CCNs may ask to change to another unit to protect their integrity and self-respect (Bayat, Shahriari & Keshvari, 2019: 3). Furthermore, at the organizational level, moral distress increases the turnover rate affecting the organization's ability to retain the expertise, leading to

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staff shortage, adding more stress on the remaining staff, and disrupting the organization's overall image. The scarcity of skilled nurses can affect the organization's ability to achieve and maintain safety goals. It may place the organization under legal and financial burden (Corley, 2002: 644, Atashzadeh-Shoorideh et al., 2021: 28).

Accordingly, to retain the expert staff and maintain a safe career progression, it is important to reduce the impact of moral distress on the nursing profession (Dacar, Covell & Papathanassoglou, 2019: 71). The complex nature of moral distress requires continuous development and improvement of currently utilized interventions (Morley et al., 2021: 12). A systematic review of interventions to reduce moral distress conducted by Morley et al (2021) reported that developing an intervention to reduce moral distress is a challenging task, as the intervention should be sensitive and flexible to individuals' needs and differences. Due to the diffuse nature of moral distress, a single intervention is unlikely to be effective, hence, a multifaceted intervention that covers the components of moral distress is recommended.

The literature identified three major components of moral distress; moral judgment, perceived constraints, and moral resilience (Imbulana, Davis & Prentice, 2021: 2). The type of interventions utilized to mitigate moral distress can be classified according to the characteristics of the intervention or according to the targeted components of moral distress. The individual approach targets one health professional group, and the collaborative approach provides multidisciplinary interventions (Morley et al., 2021: 8, Imbulana, Davis & Prentice, 2021: 2).

Among the different interventions, ethically based educational interventions yielded a significantly better result compared to other interventions (Fantus et al., 2024: 2). They provided promising evidence for reducing moral distress (Morley et al., 2021: 12, Abbasi et al., 2019, Monteverde, 2016, Robinson et al., 2014). In a randomized controlled trial conducted by Molazem et al. (2013), the educational interventions reported a significant decrease in moral distress scores among the experimental group compared to the control group. Monteverde (2016) provided an educational intervention for 166 nursing students to differentiate between morally wrong and morally complex situations intervention yielded a moderately significant reduction in moral distress among the participants. Fantus et al., (2024), mentioned that ethics education is the facilitating key to the decision-making process and provides the best aid to understand moral distress.

Despite research that addresses the phenomena of moral distress among nurses, there is debate about the effectiveness of interventions in reducing moral distress. A systematic review conducted by Imbulana, Davis, and Prentice (2021) concluded that most of the interventions produced weak

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evidence about their effectiveness in reducing moral distress among healthcare providers. Accordingly, research to address moral distress is crucial to develop more effective interventions to reduce moral distress.

The context of the study adds more challenges to the nurses. The United Arab Emirates (UAE) is a developing country with a high income. The discovery of oil was a turning point in the country's history. Expatriates have been attracted to the UAE because of the high standard of living and earning potential compared to their home countries. The expatriates encompass approximately 88% of the UAE's population from 200 different countries (GMI, 2023). This has significantly resulted in a diverse community with diverse cultural values and beliefs among the patients and the healthcare providers themselves (DoH, 2022a: 21).

The variations in cultural values and beliefs among different healthcare providers, as well as between them and the patients, can result in intricate ethical scenarios. These differences may give rise to conflicts and disagreements, leading to moral distress. A moral framework from one culture may not always be directly applicable or dependable in another culture without adjustments, underscoring the significance of taking cultural diversity into account in ethical decision-making processes (Johnstone, 2012: 182-183).

This research aimed to develop an evidence-based Multifaceted Educational Intervention (MFEI) aligned with the United Arab Emirates (UAE) cultural, and economic characteristics.

1.3 PROBLEM STATEMENT

Moral distress is a recurrent unavoidable problem with a high prevalence among nurses (Pauly, Varcoe & Storch, 2012: 2, Morley et al., 2019: 1298, Prompahakul et al., 2021: 2). Nurses are constantly exposed to ethical dilemmas that include inadequate end of life discussions and pain management, and arguments with physicians regarding optimal patient treatments (De Brasi et al., 2021: 9, Kim, Shelton & Applewhite, 2023: 47). In addition, the complexities of critical care settings and patients' critical health status place CCNs in a position where they have to make decisions or follow instructions against their moral beliefs (Thorne et al., 2018: 687, Fontenot & White, 2019: 2).

Moral distress increases nurses' feelings of anger, guilt, and powerlessness (De Brasi et al., 2021: 9). Prolonged exposure to moral distress affects the emotional, physical, and psychological domains that result in symptoms that vary and may include insomnia, anxiety, tiredness,

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headache, palpitation, and emotional exhaustion (Altman, 2020: 1, AACN, 2020: 2) which can lead to CCNs leaving the unit or institution (Burton et al., 2020: 3).

During the time of the COVID-19 pandemic, nurses encountered distressing ethical situations that accumulated over time forming a residual distress. The pandemic has brought to light some of the challenges that nurses face such as uncertainty about the effectiveness of treatment, given the novelty of the virus. Additionally, the strict isolation precautions may have made communication difficult, leading to feelings of isolation and fear. The ethical and moral dilemmas that arose during that time may have resulted in lingering feelings (moral residue). Epstein and Hamric (2009) described moral residue as a long-lasting painful feeling that remains after the moral situation ends and results in losing moral integrity.

Ignoring or not addressing the moral distress among CCNs will exacerbate the issue leading to the crescendo effect. The crescendo effect is defined as damage caused by multiple exposures to moral distress situations in the presence of moral residue (Hamric, 2014: 460). Accordingly, it became necessary to work towards finding solutions that prioritize the health and safety of both patients and healthcare workers. (Delgado et al., 2021: 375). The American Association of Critical-Care Nursing (AACN) (AACN, 2020) mentioned that the COVID-19 pandemic escalated the impact of moral distress.

Most of the developed and applied interventions targeted a single component of moral distress or followed one approach. Due to the different etiologies, that may underlie the phenomenon of moral distress these interventions have reported inconsistent results and produced weak evidence (Imbulana, Davis & Prentice, 2021: 8). The complexity of moral distress requires a multifaceted intervention that can recognize the presence and causes of moral distress, identify the constraints, enhance the moral knowledge & skills, and empower the ability to act.

Over the past 10-20 years, the majority of the interventional studies were developed and implemented in Western countries such as Europe, North America, Canada, and Australia. Therefore, most of the reported results were predominately based on Western culture, beliefs, experience, and settings. Cultural differences, healthcare technology, the healthcare system, and many more factors might influence the nurses' response, perception, and experience of moral distress (Prompahakul & Epstein, 2020: 779).

The prevalence of moral distress among CCNs in Abu Dhabi has not been extensively investigated. To date, only one study has explored this phenomenon within a single hospital in Abu Dhabi. This study reported that nurses working in critical care units (both adult and pediatric)

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experienced higher moral distress scores compared to their counterparts in non-critical care units. Additionally, the study found that 25% of the participants expressed an intention to leave their current positions due to moral distress (Wanigasekara & Freeborn, 2023: 46,49).

Among the non-western countries, there is a scarcity of research that investigates moral distress among CCNs and the interventions used to reduce it in the Arab World and strictly in the UAE. According to the researcher's knowledge, this study is considered pioneering as it is the first conducted among the Arabic population in the UAE and the Middle East. In addition, The health system in the UAE provides care to a diverse society through a diverse workforce of health providers from different cultural perspectives, beliefs, values, and morals. This heterogeneity might produce a different moral sensitivity and awareness and might influence the individual's moral judgment leading to moral conflict.

1.4 AIM, OBJECTIVES, RESEARCH QUESTIONS, RESEARCH HYPOTHESES

1.4.1 Aim of the Study

This study aimed to measure the outcome of developing and implementing an MFEI on the impact of moral distress among critical care nurses in Abu Dhabi.

1.4.2 OBJECTIVES OF THE STUDY

The below objectives were set in phases approach to guide the study:

Phase 1:

- To measure the frequency, intensity, and total moral distress among nurses working in critical care units in two tertiary hospitals in Abu Dhabi.

Phase 2:

- To develop an MFEI to reduce the frequency, intensity, and total moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi.
- To implement an MFEI to reduce the frequency, intensity, and total moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi.

Phase 3:

- To evaluate the outcomes of the MFEI on reducing the moral distress among CCNs in one tertiary hospital in Abu Dhabi.

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1.5 RESEARCH QUESTIONS

The below research question is formulated based on the problem statement and the reviewed literature:

What is the outcome of implementing an MFEI on moral distress among CCNs working in Abu Dhabi?

1.6 RESEARCH HYPOTHESES

H1: Nurses working in critical care units in Abu Dhabi Hospital report significant moral distress levels.

H2: Nurses who completed the MFEI report a decrease in total moral distress, compared to nurses who didn't enroll in the intervention.

H3: Nurses who completed the MFEI report a decrease in moral distress frequency, compared to nurses who didn't enroll in the intervention.

H4: Nurses who completed the MFEI report a decrease in moral distress intensity, compared to nurses who didn't enroll in the intervention.

1.7 CONCEPT CLARIFICATIONS

1.7.1 Critical care nurses

CCNs are nurses working in units that provide specialized care to medical or traumatic patients with life-threatening, serious, or unstable conditions, that require accurate assessment, continuous monitoring, intensive care, life support, and advanced treatments and interventions (Sole, Klein & Moseley, 2020: 2). This study defined CCNs as registered nurses holding at least a bachelor's degree, with a minimum of six months of experience in critical care units in Abu Dhabi hospitals.

1.7.2 Moral distress

The concept was first defined by Andrew Jameton (1984) as: "moral distress arises when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action" (Jameton, 1984: 6). The AACN defined moral distress as present "When one knows the right thing to do, but constraints, conflict, dilemmas or uncertainty make it nearly impossible to pursue the right course of action." (AACN, 2020: 2). The current study adopted the

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AACN definition of moral distress, according to its worldwide credibility and validity in CCNs' specialty.

1.7.3 Moral distress frequency

Moral distress frequency is defined by how often the moral situation is experienced (Epstein et al., 2019: 3). The researcher defined moral distress frequency as the number of exposures to moral situations, which is measured by the total frequency score of the Measure of Moral Distress for Healthcare Professionals tool (MMD-HP), ranging from none (0) to very frequently (4) as rated by the study's participants, using 27 items (Epstein et al., 2019: 3).

1.7.4 Moral distress intensity

Moral distress intensity is defined by how distressing the moral situation is when experienced (Epstein et al., 2019: 3). The researcher defined moral distress intensity as the degree of perceived distress of the experienced moral situations, which is measured by the total intensity score of the MMD-HP tool, ranging from none (0) to very distressing (4) as rated by the study's participants using 27 items (Epstein et al., 2019: 3).

1.7.5 Multifaceted educational interventions

Gross et al (2020) defined multifaceted educational interventions as a set of educational interventions that “address two or more individual (changing something about the person, including enhancing skills/knowledge, changing behavior, changing perceptions/attitudes) or environmental characteristics (changing something about the people, places, or things in the environments in which the person interacts) in different domains” (Gross et al., 2020: 3).

The current study defined an MFEI as a four-session intervention that addresses the major components of moral distress and utilizes different educational approaches (ethics education, role-playing, and self-reflection) to enhance nurses' moral competency and moral judgment as well as teach them a strategy to reduce their moral distress.

1.8 CONTEXT/SETTING

The study setting refers to the physical location where the data will be collected (Polit & Beck, 2018: 569). The UAE consists of seven federal emirates; Abu Dhabi the capital of UAE, Dubai the second largest emirate, and the Northern Emirates (Sharjah, Fujairah, Ajman, Ras al-Khaimah, and Umm al-Qaiwain) (Annual Book, 2018: 9). Three separate authorities are regulating and governing the public and private healthcare sector in the UAE; the Ministry of Health and

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Prevention (MOHAP) the federal authority that governs the Northern Emirates, Department of Health Abu Dhabi (DOH) which governs the Abu Dhabi emirate, and Dubai Health Authority (DHA) which governs Dubai emirate (Koornneef, Robben & Blair, 2017: 6).

In Abu Dhabi, there are 60 public and private hospitals distributed over three main regions (Abu Dhabi, Al Ain, and Al Dhafra). Among these hospitals, 13 hospitals are public and operated by Abu Dhabi Health Services Company (SEHA). Four public hospitals covered Abu Dhabi city, two public hospitals covered the Al Ain region, and six public hospitals covered the Al Dhafra region. The current study took place in Abu Dhabi City, the center of the Abu Dhabi Emirate. The study was conducted in the two largest hospitals in Abu Dhabi and UAE (DOH, 2017, SEHA, 2023).

The chosen hospitals, hospital A and hospital B are considered tertiary hospitals with approximately 500 beds each. Both hospitals are considered leading hospitals in the UAE. They include adult and pediatric critical care units. Both hospitals are operated by SEHA which governs the healthcare standards and policies (SEHA, 2023) (Table 1.1).

Table 1.1: Statistics of the hospitals in the study setting.

Hospital	Hospital Bed Capacity	Total Hospital staff Nurses	Critical care units												Total Critical care beds	Total critical care staff nurses
			Adult						Pediatric							
			Intensive Care Unit (SCU)		Cardiac Care Unit (CCU)		Burn Intensive care unit		High Dependency Unit HDU		Pediatric Intensive Care Unit (PICU)		Neonatal Intensive Care Unit (NICU)			
			BED	Nurses	BED	Nurses	BED	Nurses	BED	Nurses	BED	Nurses	BED	Nurses		
Hospital B	655	1200	29	97	20	42	NA	NA	20	41	20	59	17	47	106	286
Hospital A	724	1320	36	100	26	64	15	58	10	21	16	42	10	50	113	335

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1.9 ASSUMPTIONS

Assumptions are defined as a set of principles or ideas that are held to be true without proof (Polit & Beck, 2021: 39). The positivists' essential assumptions build on the belief that reality is out there and can be known and studied. Additionally, positivist researchers perceived the occurrence of phenomena based on former causes not random or haphazard events (Polit & Beck, 2021: 39). The current study proposed the following assumptions:

1. Participants voluntarily agreed to participate in the study.
2. Nurses were truthful in filling out the MMD-HP questionnaire.
3. The experimental group was comparable to the control group.
4. Nurses should have access to the internet connection through an internet-enabled device.
5. Nurses were committed to attending the online educational sessions by logging in to the shared meeting link.
6. Nurses had minimal technical issues while attending the online intervention.
7. CCNs desire not to experience moral distress while managing patients.

1.10 DELINEATION

The focus of the current study was to provide a baseline perspective on the moral distress status among the CCNs working in two Abu Dhabi hospitals. The study developed and implemented an MFEI that aimed to address and reduce moral distress. To accomplish that, the researcher enrolled CCNs working in two different hospitals in Abu Dhabi.

1.11 SIGNIFICANCE OF THE STUDY

The current study aimed to enhance the profession of nurses, their continuous education, patient care, administration, and research roles.

1.11.1 Critical care nurses' level

The developed MFEI enhanced the nurses' knowledge, skills, and awareness of moral distress and its related concepts. Introducing and fostering these concepts helped the nurses to focus more on acquiring the needed skills and knowledge to advocate for patients' rights, make the best ethical judgment, and provide optimal healthcare.

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Consequently, the intervention provided guidance that helped the nurses to identify, communicate, and mitigate their moral distress anonymously to the administrators. It trained the nurses with a step-by-step pathway and form to express and report any moral conflict without being afraid of the consequences and thus became morally encouraged. It aided the nurses in proposing an action plan to solve existing moral conflict and become a part of the decision-making process.

1.11.2 Unit and institutional levels

At the managerial level, the intervention facilitated proper communication between the staff and the managers, creating and maintaining a healthy work environment. It helped the administrators to timely assess the moral distress among the staff and discuss and intervene to support the team in maintaining the best quality of patient care which increases patient satisfaction and safety.

The developed moral distress self-reflection form provided an alternative method to act against a morally distressing situation. The form can be adopted by the health institution and added to their portal to facilitate anonymous reporting and solving of moral conflicts scientifically. The form is easy to use and provides clear instructions that guide the reporting process and action plan.

1.11.3 Continuous medical education

The results of the study gained the attention of the stakeholders, decision-makers, and educators in the study setting about moral distress. It revealed the importance of including moral distress training in undergraduate nursing courses, nursing competency interventions, and continuing nursing education programs.

The developed educational materials provided comprehensive coverage of the major components of moral distress combining theoretical moral knowledge and practice. The first session was designed to enhance moral knowledge and presented the main characteristics of moral distress. The second session was framed to improve the moral judgment capacity and included tools to assess the moral intention and guide the ethical decision-making process. The third and fourth sessions were designed to empower the nurses to recognize and address moral distress.

1.11.4 Research

This study was among the very few studies to investigate the topic in the UAE where several economic, societal, and cultural factors are present. The findings of this study provided baseline data about moral distress levels, highlighting this issue among a specific population in a specific

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setting. This may encourage other researchers to investigate moral distress in different populations and settings. The efficacy of the MFEI in reducing moral distress might motivate other researchers to adapt and apply it to other settings and countries and stimulate research in this area.

1.12 THEORETICAL FRAMEWORK

1.12.1 Nurse moral distress theory

Corley's theory (2002) of Nurse Moral Distress was used as the theoretical background that guided the development of this study. Corley's theory enriched and extended the understanding of the moral distress phenomena from a nursing perspective. As illustrated in Figure 1.1, the theory identified nursing as a moral profession and nurses as moral agents, suggesting a negative effect of moral distress on nurses and the organization. At the individual level, several consequences span from psychological disequilibria, such as burnout, resignation, and/or leaving the profession. At the organizational level, moral distress increases the turnover rate and decreases the quality of care and patient satisfaction.

The model identified two different responses to a moral distress situation. The first response is the intention to act which results in moral comfort, the nurses have to take action against the moral situation, and this action requires a level of courage decided by the nurses' willingness to advocate for the patients' rights. The second response is the inability to act which results in moral distress. When the nurses do not dare to act or advocate for the patient's rights it may precipitate moral suffering and moral residue.

The theory introduced a set of six concepts that uniquely identify, explicate, and predict the moral distress phenomena, namely, commitment, sensitivity, autonomy, sensemaking, judgment, conflict, competency, and certainty. These concepts formed a solid background to develop an intervention that aimed to enhance the nurses' moral sensitivity, competency, moral judgment, and moral courage. The model identified the relationship between these concepts and how they are co-related to each other. Within these concepts, Corley listed systematic and scientific propositions applicable for both levels (individual and organizational) to mitigate the impact of moral distress.

At the individual level, the theory proposed that the enhancement of nurses' moral sensitivity facilitates meaningful input in the ethical decision-making process, developing their moral competency, with less exposure to moral distress. Morally competent nurses showed a high level

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of commitment and moral sensitivity, owned strong moral integrity, and experienced less moral distress.

At the organizational level, the theory signified the importance of building a mutually respectful relationship among the members of the health organization, engaging the nurses in the decision and policy-making process, providing a supportive healthy environment, and encouraging collaboration and trust between nurses and physicians.

Finally, the moral distress theory guided the development of the most utilized instruments that measure moral distress frequency and intensity (Giannetta et al., 2020: 3). The Moral Distress Scale (MDS) was the first instrument derived from Corley's theory. In 2007, Hamric et al. revised the MDS to the Moral Distress Scale-Revised (MDS-R) which was recently revised into the MMD-HP instrument by Epstein et al (Giannetta et al., 2020: 29). According to the systematic review conducted by Giannetta et al (2020: 1), instruments derived from Corley's theory were the most useful tools for research and practice.

Corley's theory (2002) was used as the theoretical background that guided the development of the educational intervention. The instrument that was used to measure the moral distress frequency and intensity is the MMD-HP which is derived from Corley's theory.

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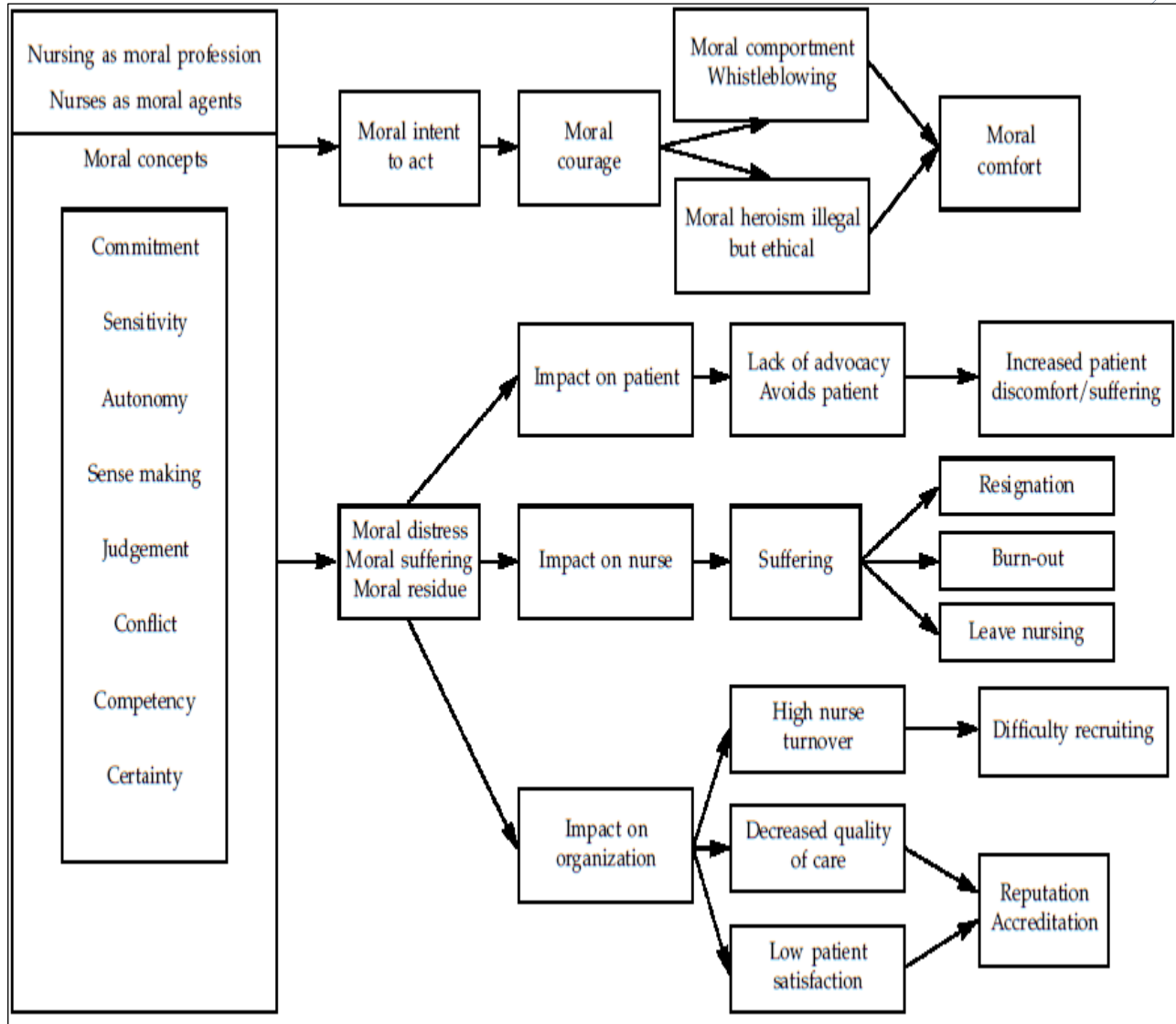


Figure 1.1: Corley’s Model for a theory of moral distress (Corley, 2002: 644).

1.12.2 A model for electronic learning based on constructivism in nursing education

Electronic learning (e-learning) has greatly increased and developed with the evolution of information technology. The advantages of e-learning provides a convenient environment that facilitates learning and makes it reachable to everyone everywhere. Incorporating technology into education advances the learners' engagement by utilizing different learning activities and methods (Deschênes et al., 2019: 1). Shifting the learner from traditional teaching methods toward more interactive and learner-centered methods is the aim of digital learning (Kala, Isaramalai & Pohthong, 2010: 61, Männistö et al., 2020: 2). Despite that, e-learning still needs a framework to

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guide the development and implementation of these technologies within the education aspect (Männistö et al., 2020: 2).

Learning theories provide a framework that guides the development and implementation of digital learning. It enhanced the quality and structured the activities and adopted strategies, for example, teacher-centered or student-centered strategies (Kala, Isaramalai & Pohthong, 2010: 61). Constructivism is a learner-centered approach where learners construct their knowledge from their interactions with others, actively engage with learning materials, and generate meaning from various experiences (Chambers, Thiekotter & Chambers, 2013: 108). The constructivist approach has proved its applicability in framing and developing e-learning interventions. It became a dominant theory that guides technology-improved learning in nursing education (Kala, Isaramalai & Pohthong, 2010: 66, O'Connor et al., 2022: 9).

Kala et al. (2010) developed an e-learning model based on the constructivism learning theory to be used in nursing education (Figure 1.2). The current study adopted this model to guide and frame the development and implementation of the multifaceted educational intervention.

The author described the model under three main categories:

1.12.2.1 Integrating constructivism with e-learning

The constructivist approach builds on the learners' interaction and active engagement with the learning environment. E-learning provides the needed technology activities that support and advance learners' engagement to construct their knowledge (Kala, Isaramalai & Pohthong, 2010: 64). The current study utilized a virtual classroom through Microsoft Teams software to implement the multifaceted education intervention.

1.12.2.2 Educator's role

From the constructivist view, the author described the educator's role as a facilitator, that facilitates the learning process and the utilized activities. The model highlights three major factors to provide effective education and generate effective outcomes; enriching active learning; enabling social interaction; and, developing high-quality materials (Kala, Isaramalai & Pohthong, 2010: 64).

To achieve that, the current study used Scenario-Based Learning as a strategy of teaching that aimed to advance and improve active learning. It's a type of group learning working together to solve practical issues (Kala, Isaramalai & Pohthong, 2010: 64). In addition, the researcher

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analyzed the data that were collected from phase one, to identify the most frequent distressing situations, and used a case study that simulates these situations. Scenario-based learning is an effective technique that enhances the learners' decision-making abilities and judgment by utilizing a realistic case or scenario (Oliver, 2001: 6).

Moreover, the researcher used the scaffolding learning technique. Scaffolding is a metaphor used to describe the level of assistance provided by the instructor to support learners in capturing a concept. It is a process of bridging between what they know and what they don't know (Lombardi, 2019: 185). The researcher activated the learners' background knowledge by open-ended questions (what they know) to recognize what they don't know, then continued with concrete prompts from the data collected in phase 1.

To enable social interaction, the researcher developed an online moral distress self-reflection form. The form guided the nurses to communicate any distressing situation through a systematic approach. It helped the nurses to do self-reflection and propose an action plan (Dudzinski, 2016, Burston & Tuckett, 2013: 320, Morley et al., 2021). The researcher divided the participants into groups and asked them to practice the uses of the form and present for group discussion. The synchronous approach of the virtual online class permitted the learners to interact with the instructor and other learners.

Moreover, to enhance the quality of the educational materials, the researcher used various valid and reliable resources to build the contents of the material. The first resource is Corley's moral distress theory (Corley, 2002) which provides a theoretical background that positively enriches and enhances moral distress knowledge. The effectiveness of this theory is described in the above section. The second resource is the AACN updated tool for recognizing and addressing moral distress (2021), which provides a systematic approach that guides the nurses to Distinguish moral distress; identify the constraints and related causes; gauge moral distress severity; and, take action (AACN, 2021). On-going assessment, assessing the learners' pre- and post-knowledge is a useful method to measure learners' gained knowledge (Shivaraju et al., 2017). The researcher developed an online-based assessment link that was shared with learners to assess their pre- and post-knowledge for the four conducted sessions.

1.12.2.3 The effectiveness of the course

The model proposed that the effectiveness of the course should be measured from two dimensions; the quality of the educational materials; and, the learning outcomes (Kala, Isaramalai & Pohthong, 2010: 65). First of all, the researcher conducted a pilot study to test the feasibility,

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usability, and suitability of the contents and the e-learning as an educational approach. At the end of the course, the researcher conducted an online summative assessment and satisfaction survey, to assess the overall gained knowledge (learning outcomes) and evaluate the learners' satisfaction with the content of the course and the implementation method. Finally, phase three of the study was to collect the post-intervention data. The researcher compared the baseline data (phase 1) with post-intervention data (phase 3) to measure the outcomes of the multifaceted educational intervention. Figure 1.2 illustrates the application of the model to the current study.

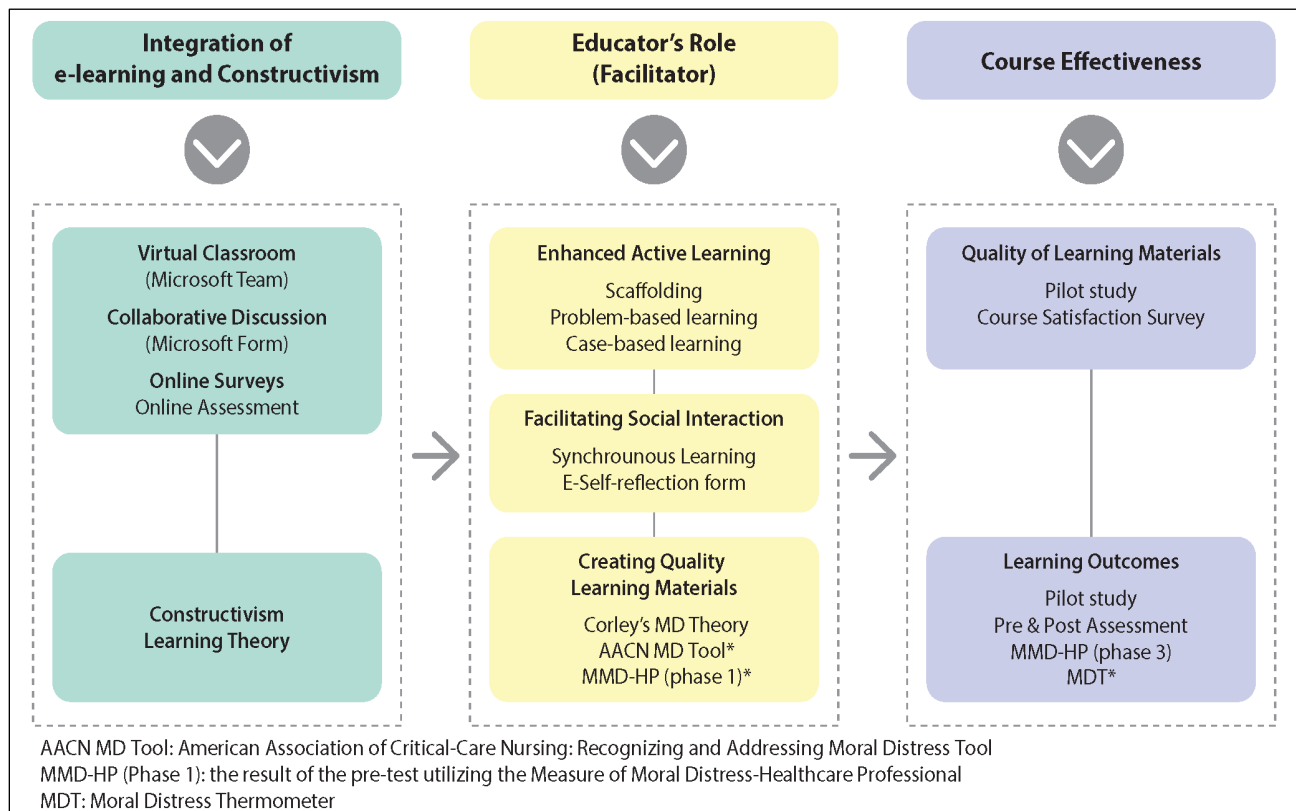


Figure 1.2: Multifaceted Educational Intervention Development & Implementation Model (phase 2).

1.13 RESEARCH DESIGN AND METHODS

The research design is defined as a systematic process that aims to generate meaningful, interpretable, and valid evidence (Polit & Beck, 2021: 210, Creswell & Creswell, 2023: 6). The research methodology is the overall plan for collecting, analyzing, and interpreting the study data (Polit & Beck, 2021: 15).

According to Creswell (2023), the quantitative approach is the best approach to be utilized for a study aimed to test the outcomes of an intervention, determine the associated factors, and/or

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identify the predictors of the outcome. The current study aimed to develop and implement a multifaceted educational intervention, and evaluate the intervention outcomes in moral distress frequency, intensity, and total score among the CCNs in Abu Dhabi. Moreover, the current study intended to generate measurable numerical data on the moral distress frequency, intensity, and total score. These data were used for comparison and provided a baseline for future research.

The quantitative approach is classified into; experimental and non-experimental research. In experimental research, the researcher implements treatment or interventions to address interventional questions. In non-experimental research, the researcher collects data without implementing an intervention (Polit & Beck, 2021: 94). The current study is an implementation study aimed to develop, implement, and evaluate an intervention to mitigate moral distress, thus, a quantitative experimental approach was followed. Experimental research tests a causal relationship and offers a great possibility to control extraneous variables. In experimental research, the researcher implements the intervention for one group and withholds it from the other group, which produces valid and reliable evidence about the intervention outcomes (Creswell & Creswell, 2023: 207, Polit & Beck, 2021: 214).

A quasi-experimental design is an experimental design that lacks randomization. This design is typical for pre-test and post-test experimental design. Despite lacking randomization, this design allows controlling the extraneous variables, provides a comparison between pre- and post-intervention data, and produces valid evidence about the outcomes of the intervention (Polit & Beck, 2021: 219). A quantitative quasi-experimental pretest-posttest control group design guided this study following three consecutive phases (Table 1.2) and (Annexure B:1).

Table 1.2: Quasi-experimental pretest-posttest control group design.

Group	Phase one	Phase 2	Phase 3
Experimental group (A)	O a,b	X	O a,b
Control group (B)	O a,b		O a,b
a: Moral distress intensity b: Moral distress frequency			

1.13.1 Phase one (Pre-test)

1.13.1.1 Research design

As shown in Table 2 and Annexure B:1, phase 1 administered the pretest to the experimental and control group. The two chosen hospitals (Table 1.1), were assigned to either the experimental or control group according to the independent t-test result. If there is a statistically significant

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difference ($P < 0.05$) in their moral distress score, the hospital with the highest moral distress score will be assigned to the experimental group and the other hospital will be the control group. If there is no statistically significant difference in their moral distress score, both hospitals will be randomly assigned to either the experimental or control group using a flip coin. The pretest data served as baseline data that identified the current moral distress status among the participants (pre-intervention), compared the moral distress score between both groups (experimental and control), and provided comparison data to evaluate the outcomes of the intervention. The more comparable baseline data between the two groups, the more confident inferring that the differences in the post-test data were related to the intervention (Polit & Beck, 2021: 219).

The result of the independent t-test showed a statistically significant difference in moral distress scores between the two chosen hospitals. Hospital A scored a higher moral distress score compared to hospital B. Accordingly, hospital A was selected to constitute the experimental group while hospital B represented the control group.

1.13.1.2 Population

The population refers to a group of individuals that share common characteristics (Polit & Beck, 2021: 561). The population is divided into; the target population and the accessible population. The target population includes the whole population, while the accessible population includes the group of the population that is reachable by the researcher (Grove, Burns & Gray, 2021: 411). The target population of the current study included all the registered nurses working in critical care units in Abu Dhabi hospitals. The accessible population represents all registered nurses working in critical care units in hospitals A and B.

1.13.1.3 Sampling method and sample size

The sampling method refers to the adopted technique used to select a group of elements or study participants to represent the population of interest (Polit & Beck, 2021: 243). A non-probability or convenience sampling method was used to select the study participants from the two chosen hospitals. Convenience sampling is considered the weakest sampling technique, nevertheless, it is considered the most common sampling technique in use (Polit & Beck, 2021: 224). Besides, convenience sampling is considered the sampling method of choice for studies with control or comparison groups (Grove, Burns & Gray, 2021: 233). The current study adopted the convenience sampling approach to select the study participants.

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The inclusion and exclusion criteria refer to the eligibility of the study participants to be enrolled in the study (Polit & Beck, 2021: 266). See Table 1.3.

Table 1.3: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Registered nurse with a basic bachelor's degree.	Nurses holding diploma degree or below.
Minimum of six months experience in critical care units in the same hospital.	Nurses with less than 6 months of experience in critical care units.
Employed in one of the chosen hospitals (hospitals A or B)	Nurses who do not understand English.
Able to read and write English	

The sample size was calculated through the G power software 3.1. a power analysis free program that calculates the sample size according to the utilized statistical test (Faul et al., 2009). The current study aimed to utilize an independent t-test, at α level of 0.05, assuming 80% power, with a medium effect size (0.5). Accordingly, a total of 102 nurses was enough to determine the presence of a statistically significant difference in the baseline data (pretest data) among the two groups. Anticipating a 20% attrition rate, a sample of 62 nurses from each group (experimental and control) is required. A total of 218 nurses (108 control group, and 110 experimental group) responded to the pre-intervention survey constituting the total sample of phase one (Refer to Article 1).

1.13.1.4 Data collection instrument

The data was collected using three self-administered questionnaires (Annexures B2, B3, and B5)

1.13.1.4.a The sociodemographic characteristics

The sociodemographic characteristics instrument was developed by the researcher (Annexure B2). The instrument consisted of 16 multiple-choice questions with approximately 10 minutes of completion time. The instrument collected the participants' social and demographic characteristics, educational level, years of experience, specialty, and information about ethical knowledge, training, and resources. The socio-demographic characteristics identified factors associated with variances in moral distress status. In addition, the Self-Generated Identification Code (SGIC) was introduced at the beginning of the questionnaire to match the participants' pre and post-responses.

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1.13.1.4.b The Measure of Moral Distress for Health Care Professionals

The MMD-HP is the latest revised instrument derived from Corley's theory that assesses moral distress in terms of frequency and intensity (Annexure B3) (Giannetta et al., 2020: 30). The instrument was revised to suit all healthcare providers, to apply to different hospital settings, and to cover both adult and pediatric providers. The MMD-HP serves as a diagnostic tool that highlights the highest-rank root causes of moral distress among the target group. The revised version reflects the most currently identified root causes of moral distress that covers the three levels of root causes (individual, unit, and system) (Epstein et al., 2019: 3). The collected data helped the researcher to modify the intervention to focus on the most common causes of moral distress, that are specific to the study respondents.

The instrument consists of 27 items, and each item evaluates two dimensions; frequency (how often the situation arises), and intensity (how distressing is the situation). A five-level Likert scale ranging from never (0) to very frequent/distressing (4) is used to score each item. The composite (total) score is calculated by multiplying the frequency score (0-4) by the distress score (0-4) which ranges from (0-16) per item, then the item-composed scores are summed to produce the total score (range 0-432), higher score indicated higher moral distress frequency and intensity (Epstein et al., 2019: 3).

The instrument includes two additional write-in items, to give the participant an option to write any additional root causes that were not addressed by the instrument. The participant can write and rate the frequency and intensity of the added item, but the score was not calculated within the composite score (Epstein et al., 2019: 3). The instrument includes two multiple-choice questions that investigate the participant's intention to leave the clinical position. These questions aimed to link the moral distress score to leaving the clinical position, proposing that a participant who intended to leave would score a higher moral distress score (Epstein et al., 2019: 5). The permission to use the MMD-HP instrument was obtained from the author (Annexure B4).

1.13.1.4.c Moral Distress Thermometer

The Moral Distress Thermometer (MDT) was developed in 2013 by Wocial and Weaver (Annexure B5). The instrument is presented as a visual analog scale that ranges from 0 to 10, similar to the pain scale, where 0 means no distress and 10 represents the worst experienced moral distress. The tool was developed to capture the acute phase of moral distress with the ability to track any changes over time and provide a numeric comparison for follow-up. The tool might be used as a fast screening tool to detect the presence of moral distress, before

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implementing the longer tool that aimed to identify the root causes of moral distress (Wocial & Weaver, 2013: 6). The current study utilized the MDT alongside the MMD-HP instrument. The MDT was implemented in phases one and three of the study to track the acute changes in moral distress scores pre and post-intervention and within pre and post-sessions. The permission to use the MDT instrument was obtained from the author (Annexure B6).

1.13.1.5 Data collection method

The method of data collection determines the technique adopted by the researcher to collect the required data to answer research questions, test the research hypothesis, and meet the study's aim and objectives (Grove, Burns & Gray, 2021: 507). The data was collected via online-based surveys using Microsoft Forms. The researcher approached the managing director of each hospital (A and B) to introduce himself and provide the required information and documents about the study's aim and objectives. Then, the researcher asked permission from the director to assign a key person who is authorized to access and communicate with the target population in each hospital. The researcher sent the key person an email that includes; the link to access the information sheet & informed consent (Annexure B7), invitation letter (Annexure B8), sociodemographic instrument including the SGIC (Annexure B2), the MMD-HP instrument (Annexure B3), and the MDT (Annexure B5). The key persons forwarded that email to the target population asking them to participate in the study. For two weeks, the researcher frequently checked the response rate and sent a reminder to the key persons through email and phone calls. This process ensured the anonymity of the participants, as the researcher had no direct contact with the study participants, and those participants could be only reached by the key person of each hospital.

1.13.1.6 Data analysis

Data analysis refers to the systematic approach of organizing, cleaning, categorizing, preparing, and analyzing the raw data to answer the research questions or test the research hypothesis (Polit & Beck, 2021: 254). The collected data was cleaned and entered by the researcher into the Statistical Package for Social Science (SPSS) version 24 for analysis (IBM Corp, 2016). The raw data were sent to the statistician for statistical analysis (Annexure E1).

The statistician checked the reliability of the MMD-HP instrument (Cronbach α). Descriptive statistics; frequency, percentages, mean, and standard deviations were used to describe the participants' sociodemographic characteristics and the pretest moral distress frequency, intensity,

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and total score. Inferential statistics; independent sample t-test and Pearson's correlation coefficient were used to compare the pretest moral distress score between the two groups and identify the participants' characteristics that are associated with variances in moral distress score.

1.13.1.7 Validity

Validity defines to which degree the instrument accurately measures the concept under study (Heale & Twycross, 2015: 1). Heale and Twycross (2015) identified three major types of validity; content validity, construct validity, and criterion validity.

1.13.1.7.a Content validity

The content validity assesses the instrument adequately to capture the concept under study and the related domains (Heale & Twycross, 2015: 1). In other words, does the MMD-HP adequately cover and measure the components of moral distress? The MMD-HP instrument addressed the five key components of moral distress; wrongdoing complicity, the three root causes levels (individual, unit, and system), violation of ethical practice, being unheard, and repeated exposure (Epstein et al., 2019: 3).

Content validity has a subset called face validity, which is obtained by asking an expert opinion about the ability of the instrument to measure what designed to measure (Heale & Twycross, 2015: 1). The MMD-HP was reviewed by an expert panel for face validity, the expert panel reported that the instrument applicable to different hospital settings, suitable for different HCPs, and feasible (Epstein et al., 2019: 3).

1.13.1.7.b Construct validity

The construct validity represents whether the test score inferences can support the concept under study (Heale & Twycross, 2015: 1). The construct validity could be verified through hypothesis testing. (Polit & Beck, 2021: 261). Epstein et al. (2019) tested the MMD-HP construct validity using four hypotheses supported by previous studies. The results of the four hypotheses were supported by the findings of the previous studies which reflect the instrument's ability to capture the concept under study (Epstein et al., 2019: 5).

1.13.1.7.c Criterion validity

The criterion refers to the availability of another instrument that measures the same concept (Heale & Twycross, 2015: 1). To test the criterion validity, the researcher uses an ideal instrument along with a developed instrument to identify to which extent the scores can be correlated. A

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golden standard criterion is not always available, and because of that, some instruments cannot obtain criterion validity (Polit & Beck, 2021: 261). Epstein et al. (2019) compared the MMD-HP with the previous version of MDS-R and reported that the MMD-HP is highly correlated and performed similarly to the MDS-R. The MDS-R was developed in 2010 and has been used until the middle of 2018, the tool has been used by 515 researchers from 53 different countries and is considered valid and reliable (Epstein et al., 2019: 8).

The author of MDT tested the tool criterion validity using concurrent and convergent validity in comparison with the MDS. To test the concurrent validity, the author compared the mean of the MDT with (1) nurses who had never considered quitting a position; (2) those who had left a position; and (3) those who had contemplated but did not leave. The result showed that the MDT main score increased with the nurses' intention to leave or with those who already left compared with nurses who didn't consider leaving the profession (Wocial & Weaver, 2013: 6).

To test the convergent validity, the author compared the MDT with the MDS using the correlation coefficient criterion. The result showed a low to moderate correlation. The author justified the lack of a strong correlation due to the nature of the concept under study, the time frame, and the single item (Wocial & Weaver, 2013: 5).

1.13.1.8 Reliability

Reliability is the instrument's repeatability to produce the same outcomes when introduced to the same population. Reliability refers to the instrument's consistency, it shows to what extent the score is free from random error (Grove, Burns & Gray, 2021: 389).

1.13.1.8.a Internal consistency

Internal consistency or instrument homogeneity is a test that examines the correlation of the items within the instrument. Among the different existing methods to test internal consistency, Cronbach α is the most commonly used method (Heale & Twycross, 2015: 2). Cronbach α is a procedure that statistically computes the consistency of the items for ratio and interval data (Grove, Burns & Gray, 2021: 391). The Cronbach α coefficients range from 0.0 to 1.0, where desirable coefficients are 0.80 and higher (Polit & Beck, 2021: 260).

The original instrument reported good reliability, with Cronbach α of 0.93 overall and 0.931 among the nurses' group (Epstein et al., 2019: 4). Several studies utilized the MMD-HP and supported the reliability of the instrument; in the study of Malliarou et al. (2021), the MMD-HP reliability reported a Cronbach α of 0.921 (Malliarou et al., 2021: 90), Plouffe et al. (2021) reported a

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Cronbach α of 0.95 (Plouffe et al., 2021: 24), and Siswoyo, Nur & Ulya (2021) reported a Cronbach α of 0.949 in their study (Siswoyo, Nur & Ulya, 2021: 274). To check the instrument's reliability for this study, the researcher asked the biostatistician to check the instrument's internal consistency using Cronbach α .

The reliability of the MDT was not tested by the author. The author justified that the moral distress phenomenon is dynamic where test re-test is not amenable (Wocial & Weaver, 2013: 4). The current study utilized the MDT as a secondary tool to measure the acute changes in moral distress score, while the MMD-HP was considered the primary tool to evaluate the outcomes of the developed and implemented intervention.

1.13.2 Phase two (Development and implementation)

1.13.2.1 Research process

Phase two is the development and implementation phase.

1.13.2.2 Development of the multifaceted educational intervention

The researcher developed the MFEI which consists of four educational sessions and three booster follow-up sessions (Figure 1.3). The development process followed the integration of the Corley Moral distress theory with the model of e-learning based on the constructivism learning theory. The content of each session was developed based on the published research evidence and relevant theory adopting evidence that is suitable to the session's outcomes. In addition, the researcher utilized the collected data from phase one to identify the most frequent and distressing situations from the participants' perspective to be included in the educational materials. Moreover, the intervention included different activities to support the active learning process and increase the participants' engagement.

1.13.2.3 Implementation of the multifaceted education intervention

The study implemented a weekly two-hour virtual online session over four weeks for the experimental group over Microsoft Team. The virtual online sessions utilized the synchronous approach. After that, a monthly follow-up for three months was offered to boost the participants' acquired moral knowledge and skills (Figure 1.3). The chosen hospitals have free WIFI internet and a computer lab that could be used by the participants to attend the sessions. The flexibility was given to the participants on whether to attend the session from their home using their own device and internet or to attend it using the hospital device and internet.

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The researcher discussed the suitable dates, times, and regulations with the key person of the experimental hospital. Agreed dates and times were announced to the participants. Each week, the session was conducted twice, allowing participants to attend either the primary or repeated session, resulting in higher enrollment rates due to scheduling flexibility. The link to access the educational intervention sessions was sent to the key person of the experimental hospital. The key person forwarded the intervention link to the participants. The researcher created a Microsoft Team group to include the participants according to their total number. Annexure C1 illustrates the sessions' plan and time. The details of the development and implementation of the intervention were provided below as per each session.

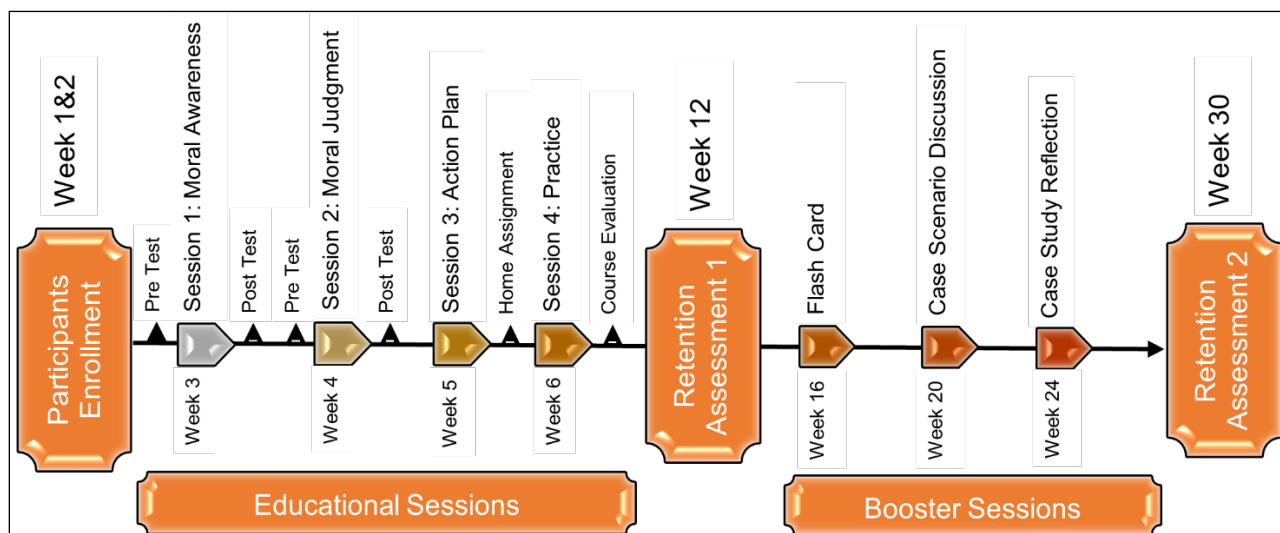


Figure 1.3: Multifaceted educational intervention plan.

1.13.2.4 Population

The population of the current phase was the experimental group of phase one.

1.13.2.5 Sampling method and sample size

All the participants who responded to the survey in phase one from the experimental hospital were invited to participate in the intervention utilized in the current phase. The link that includes the invitation letter (Annexure C2), information sheet & informed consent (Annexure C3), and the intervention timelines (Annexure C1) were sent to the key person to be forwarded to the participants. All voluntarily agreed participants constituted the sample of the experimental group. Accordingly, among the participants who responded to phase one ($n=110$), 90 participants agreed to participate in phase two. Among them, 80 have completed the four educational sessions and the three booster sessions.

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1.13.2.6 Pilot study

A pilot study is defined as a trial version of the planned study conducted on a smaller group to modify, refine, and test the planned intervention before applying it to the target group (Grove, Burns & Gray, 2021: 583). The pilot study provides an estimation of the dropout which helped the researcher to consider and calculate the attrition rate in the main sample calculation (Bell, Whitehead & Julious, 2018: 154).

The researcher piloted the intervention before applying it to the experimental group of this study. The pilot group comprised CCNs working in a different hospital that was not included in the main study plan. The inclusion and exclusion criteria were applied. A convenience sampling approach was utilized to enroll the participants. The pilot study sample size was estimated based on the stepped rule of thumb according to the main study's proposed effect size of medium effect 0.5 and power of 80%. Accordingly, 10 participants per group were estimated as the pilot study sample size (total of 20 participants) (Whitehead et al., 2016: 1071).

From the selected hospital, two units were chosen to participate in the study. The selection of the units was based on the shared characteristics between the units in terms of; patient-to-nurse ratio and the acuity level. The units were assigned to either the experimental or control group according to the independent t-test result. If there is a statistically significant difference ($P < 0.05$) in their moral distress score, the unit with the highest moral distress score will be assigned to the experimental group and the other unit will be the control group. If there is no statistically significant difference in their moral distress score, both units will be randomly assigned to either the experimental or control group using a flip coin. The pre-test revealed no statistical difference between the two units. Accordingly, a flip coin was used to allocate the units into the experimental and control groups. The experimental group was informed to not share any information regarding the intervention with the control group. There was no intervention applied or materials shared with the control group.

A total of 43 CCNs (23 experimental group and 20 control group) responded to the pre-test. Among the experimental group, 21 CCNs attended all the sessions, among them 19 responded to the post-test. Among the control group, 17 responded to the post-test. A total of 36 CCNs (19 experimental and 17 control) constituted the sample of the pilot study.

The researcher collected the data using the socio-demographic, MMD-HP, and MDT questionnaire pre- and post-intervention and then implemented the four educational sessions. Ethical considerations were applied and followed throughout the pilot study. The date and time

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were identified according to a convenient time for the participants and the hospital regulations. The pilot study informed the feasibility and acceptability of the study for the target population, determined the need for any refinement, and identified the potential benefits and outcomes of the study. The researcher interviewed the participants utilizing a structured questionnaire to collect their feedback. The obtained data were excluded from the main study result.

The pilot study indicated that the MMD-HP and MDT instruments are useful and appropriate tools for CCNs in Abu Dhabi to measure the frequency, intensity, and total moral distress. The measured Cronbach's alpha for the MMD-HP was 0.95. The MFEI showed the capacity to reduce the moral distress scores (frequency, intensity, and total), improve participants' moral knowledge and skills, enhance their moral judgment capacity, and empower them to address their moral distress. Based on feedback from participants, adjustments were made to the intervention. These modifications included adding communication techniques for courageous behavior, addressing the root causes contributing to moral distress, and using scenarios to differentiate between moral conflict and moral dilemma.

1.13.2.7 Multifaceted educational intervention session 1: moral awareness

The first session (Figure 1.4) was based on the latest AACN updated tool for recognizing and addressing moral distress. The open-access tool consisted of four components: keys; distinguish moral distress, identify the constraints and related causes, gauge the moral distress severity, and take action (AACN, 2021). The session outcome was to enhance moral distress awareness and perceived constraints. The session covered the definition of moral distress, the defining characteristics, the moral distress constraints, the associated signs and symptoms, the impact of moral distress, and the consequences of not addressing moral distress.

The session incorporated scaffolding learning as an activity to avoid knowledge overlap and build on the participants' pre-existing knowledge. The researcher assessed the participants' gained knowledge and achieved outcomes, by implementing online pre- and post-knowledge assessments. The researcher prepared and asked the participants to respond to six multiple-choice questions at the beginning and the end of the session (Annexure C4). Moreover, the researcher utilized the MDT pre and post-session for the four implemented sessions to track the acute changes in moral distress among the participants (Annexure B5).

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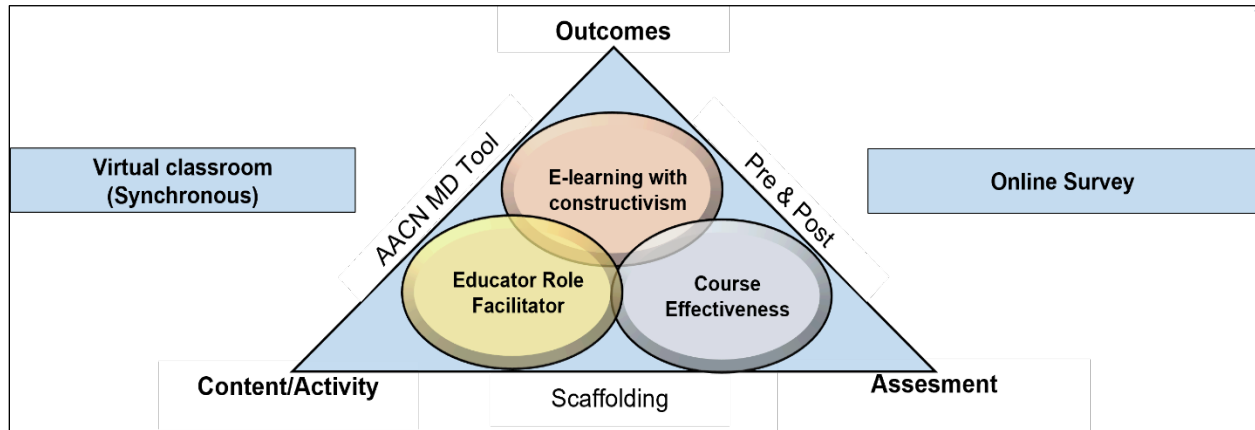


Figure 1.4: Session-1 moral awareness implementation plan.

1.13.2.8 Multifaceted educational intervention session-2: moral judgment

The second session (Figure 1.5) was based on Corley’s nurse moral distress theory (Corley, 2002). The outcome of the session was to address moral judgment and enhance moral competency. The content of this session included; the definition of moral sensitivity, moral competency, and moral judgment; identifying the relationship between these terms and their contribution to the moral decision-making process; and, the application of different methods and strategies (e.g, moral commitment, self-esteem, and moral assessment) to enhance the participants' moral assessment, moral competency, and moral judgment capacity.

Scaffolding and problem-based learning were the learning and practice activities guiding this session. The problem-based learning approach might have enhanced participants’ moral decision-making capacity. The researcher introduced a moral situation and asked the participants to work in groups to assess, analyze, and make a moral judgment. The researcher assessed the participants’ gained knowledge and achieved outcomes by implementing online pre & post-knowledge assessments. The researcher prepared and asked the participants to respond to six multiple-choice questions pre and post-session (Annexure C5).

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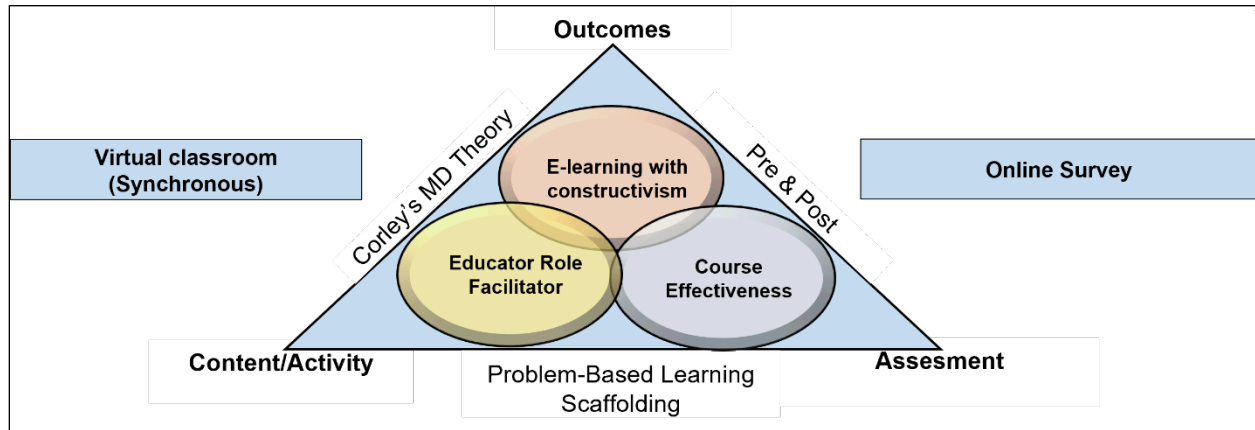


Figure 1.5: Session-2 moral judgment implementation plan.

1.13.2.9 Multifaceted educational intervention session-3: action plan

The third session (Figure 1.6) was an empowerment session. The outcome of the session was to empower the participants' ability to take action and enhance their coping mechanisms. This session empowered the participants with different strategies to act against moral distress, introduced the newly developed form to act anonymously, and enhanced ethical communication skills. The form was developed based on relevant studies that had been successfully utilized to reduce moral distress and facilitate reflection (Dudzinski, 2016, Wocial & Weaver, 2013, Rushton, 2006, Johns, 2006).

The researcher developed a moral distress self-reflection form (MD-SRF) (Annexure C6) to help the participants act anonymously against morally distressing situations when they are unable to voice out, enhance their coping, and improve their communication skills (Browning & Cruz, 2018: 22, Dudzinski, 2016). The researcher utilized case-based learning to guide the practice and application of this form. The researcher introduced a morally distressing situation with a moral dilemma that simulates the most frequent distressing situation extracted from Phase 1 data.

Similarly, the researcher prepared and asked the participants to respond to five multiple-choice questions pre and post-session to assess the participants' knowledge (Annexure C7). Additionally, two questions were added to evaluate the participants' willingness to act against the moral situation (Annexure C7). At the end of the session, the researcher asked the participants to write about morally distressing situations from what they experienced using the online version of Moral Distress self-reflection form as a home assignment (Annexure C8). These scenarios were used for practice and further discussion in the fourth session.

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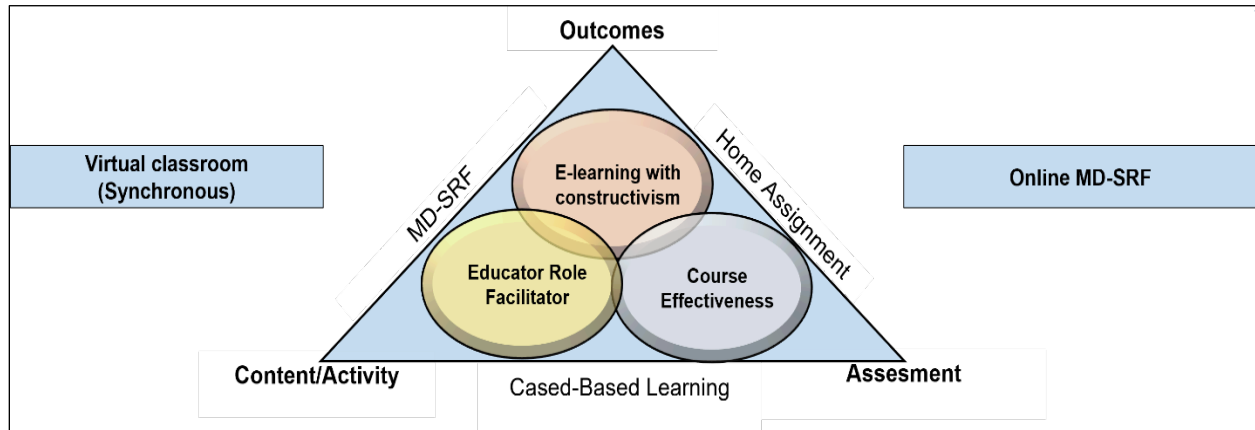


Figure 1.6: Session-3 action plan implementation plan.

1.13.2.10 Multifaceted educational intervention session-4: moral empowerment

Session four (Figure 1.7) introduced the developed Moral Distress Pathway (MDP). The MDP guided the nurses through a series of questions to self-screen moral distress. The MDP empowered nurses to promptly recognize moral distress, take proactive measures to seek proper support, and determine the appropriate action to take (Annexure C9).

In addition, the session enhanced the nurses' competency in utilizing the MD-SRF. The researcher used some scenarios posted by the participants in the third session (home assignment). The participants demonstrated how to use the moral distress self-reflection form. Role-playing, self-reflection, and group presentation were utilized to enhance and summarise the learned knowledge and skills. The researcher divided the participants into groups and then assigned a role to each member throughout the scenario. Role-playing was considered a useful learning tool for ethical education. It improved the affective learning domain, hence participants' attitudes and beliefs (Jasemi et al., 2022: 127).

At the end of the session, the researcher prepared and asked the participants to respond to five multiple-choice questions to assess the participants' knowledge (Annexure C10). Moreover, the researcher developed and asked the participants to respond to the course satisfaction survey to evaluate the participant's satisfaction with the learning methods and materials (Annexure C11).

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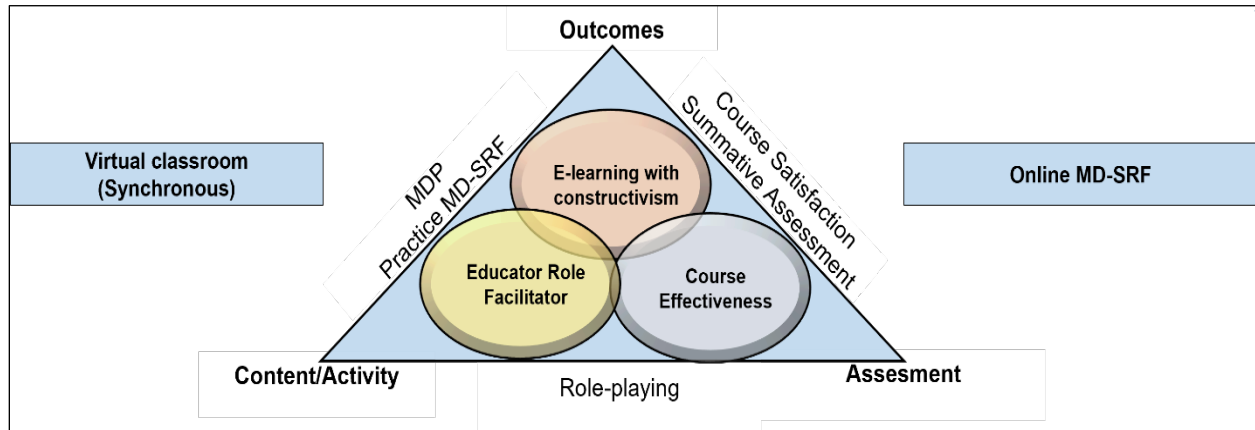


Figure 1.7: Session-4 moral empowerment implementation plan

1.13.2.11 Booster sessions

The forgetting curve or Ebbinghaus curve theorized that knowledge retention is reduced over time. It suggested that learned knowledge would be lost if there was no retention plan set (Shail, 2019: 2). Re-introducing the knowledge and skills to the participants over time using spaced intervals resulted in more effective retention and storage compared to a single time (Versteeg et al., 2020: 205). Accordingly, the researcher provided booster sessions over three months to enhance the participants' retention of the acquired knowledge and skills from the educational sessions.

In addition, the researcher assessed the participants' retention in two different time sets. The first assessment was conducted six weeks after the last educational session (Annexure C12), and the second assessment was conducted six weeks after the booster sessions (Annexure D1), hence week 30 (see Figure 1.3).

1.13.2.12 Data collection

The data was collected at different times; the pre-and-post knowledge assessment data was collected pre and post-sessions one, two, three, and four; the participants' intervention evaluation and satisfaction was collected at the end of the last educational session (Session 4); finally, the first knowledge retention assessment was collected at week 12.

1.13.2.13 Data analysis

Descriptive statistics (mean, frequency, and percentages) were used to describe and analyze the participants' responses to pre- and post-session knowledge assessment. Inferential statistics Repeated measure one-way ANOVA was used to track the changes in experimental group MDT

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scores and their knowledge assessments. The researcher requested the statistician's help to proceed with the analysis process and followed his recommendations. The result helped the researcher to identify the participants' awareness regarding moral distress and related concepts and how the intervention enhances their knowledge. The result identified the participants' ability to retain the learned skills and knowledge over time.

1.13.3 Phase three (post-test)

1.13.3.1 Research design

As shown in Table 1.2 and Annexure B1, phase three administered the post-test of the quasi-experimental pretest-posttest control group design to the experimental and control groups on week 30. This phase aimed to evaluate the outcomes of the applied intervention in phase two.

1.13.3.2 Population

The population of the current phase was the same population of phase one.

1.13.3.3 Sampling method and sample size

The participants who completed the pre-test in phase one and the post-test in phase three from the control group, and the participants who completed the pre-test in phase one and attended the intervention (4 educational sessions and 3 booster sessions) from the experimental group were eligible to be the sample of this phase. Accordingly, A total of 218 CCNs (110 experimental group and 108 control group) responded to the pre-test. Among the experimental group, 80 CCNs attended all the sessions, among them 76 responded to the post-test. Among the control group, 82 responded to the post-test. A total of 158 CCNs (76 experimental and 82 control) constituted the sample of this study (See Figure 1.8).

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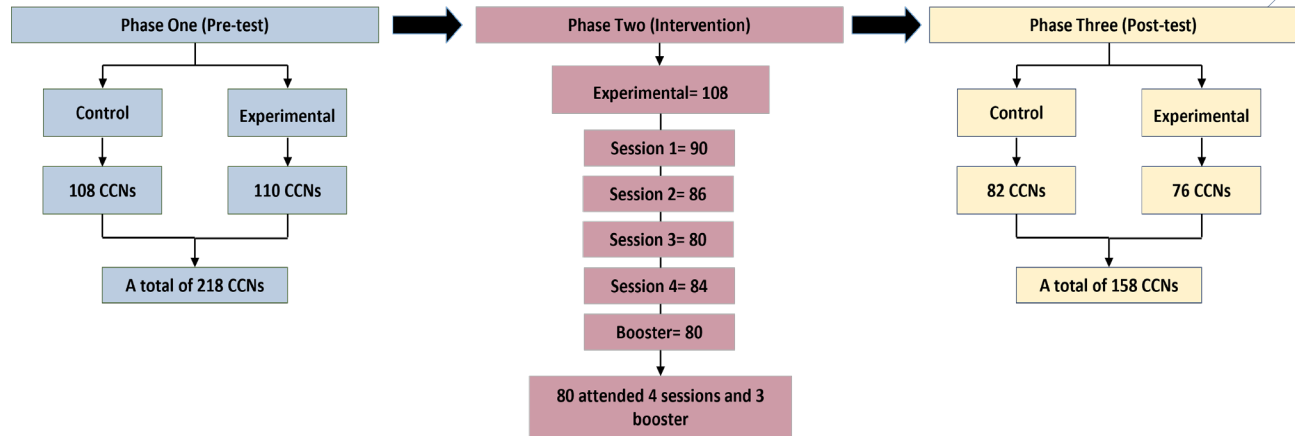


Figure 1.8: Enrollment process of the CCNs over the three phases of the study.

1.13.3.4 Data collection instrument

The data was collected using the self-administered MMD-HP instrument (Annexure B3), the MDT instrument (Annexure B5), and the second knowledge retention assessment (Annexure D1). In addition, the SGIC was used to match the participants' pre and post-responses (Annexure D2).

1.13.3.5 Data collection method

The researcher collected the post-test data in week 30. The data collection approach used in phase one was applied to the current phase.

1.13.3.6 Data analysis

The collected data were cleaned and entered into the Statistical Package for Social Science (SPSS) version 24 for analysis (IBM Corp, 2016). The raw data was sent to the statistician for statistical analysis. Descriptive statistics; frequency, percentages, mean, and standard deviations were used to describe the participants' post-test moral distress frequency, intensity, and total score.

Inferential statistics; An independent sample t-test was used to compare the post-test moral distress scores between the experimental and control groups. Paired sample t-test was used to evaluate the outcomes of the intervention, it identified any statistically significant differences between the pretest and post-test MMD-HP and MDT main scores within the experimental and control group.

Chapter 1: Orientation to the study

1.14 ETHICAL CONSIDERATIONS

Participants' rights were protected, and the research procedures ensured that they were protected (Polit & Beck, 2021: 141). These procedures or considerations were considered throughout the research process. Accordingly, the researcher gained written ethical approvals and permissions to proceed with the study from the University of Pretoria, the Faculty of Health Science's Research Ethics Committee (Annexure A:1), the SEHA Ethics Committee (Annexure A:2), and the hospital A Ethics Committee (Annexure A:3). Moreover, the ethical considerations of the current study followed the Belmont report considering the three essential ethical principles; beneficence, justice, and human dignity respect (Polit & Beck, 2021: 133).

1.14.1 Beneficence

The ethical principle of beneficence reflects the researcher's obligation to maximize the study participants' benefit and minimize harm. Two subprinciples are listed under beneficence; freedom from harm and protection from exploitation (Polit & Beck, 2021: 134).

1.14.1.1 Freedom from harm

In the current study, the information sheet for Phase One (Annexure B7) and the Information sheet for Phase Two (Annexure C3) were the first pages of the survey along with the invitation letter. This sheet included detailed information about the aim of the study, procedures and what is expected from the participants, the role of the investigator, the risks and benefits of enrolment, and how data will be utilized and protected. In addition, the researcher made the needed arrangement with a psychologist that was approved by the experimental hospital as a referral for any participants who experienced distress related to participation in the study. All the participants were informed to communicate with the key person if they experienced any psychological adverse effects as a result of participating in this study. Fortunately, none of the participants experienced any psychological issues.

1.14.1.2 Protection from exploitation

In the current study, all the participants were informed about the research, their rights, and their role in participating in the study. The participants were assured that they could withdraw from the study at any point in time without any consequences. The usage of the study data was clarified to them, and they were assured that their responses would be for research purposes only and would not jeopardize their jobs or their work responsibilities.

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1.14.2 Justice

Justice is the second ethical principle that is protected by two rights; fair treatment and privacy (Polit & Beck, 2021: 137).

1.14.2.1 Right to fair treatment

In the current study, all the participants were equally treated with no discrimination. The researcher respected the participants' decision to decline their participation in the study. The researcher respected the participants' beliefs and opinions whether in agreement or disagreement with the researcher's thoughts and beliefs.

1.14.2.2 Right to privacy

In the current study, the researcher had no direct contact with the participants. All the participants received the survey link from the assigned key persons of each hospital. The current study collected the participants' responses two times (pre and post), the researcher used the SGIC, as an approach to match the participants' pre and post-responses (Annexure B2).

The SGICs are a truly anonymous approach that avoids participants' identification and protects their identity (Audette, Hammond & Rochester, 2020: 172). The SGICs questions were presented at the beginning of the sociodemographic questionnaire. The SGICs were used to replace the experimental participants' names to maintain their confidentiality during the intervention sessions. At the beginning of each session, the researcher asked the participants to respect and keep all the information about other participants confidential.

The online survey was collected using an anonymous Microsoft Form link. The researcher protected the participants' identity by not selecting the option of collecting the respondent's name or email. In addition, Microsoft Forms doesn't place cookies on the respondents' devices or collect the respondents' IP addresses (Shepherd University, University, 2021: 1).

The received responses and the information obtained during the intervention will be stored for 15 years on the University of Pretoria's cloud-based storage system. Only the researcher and the research team will have access to these data.

1.14.3 Respect for human dignity

In this research, the participants' dignity was respected through self-determination and full disclosure rights (Polit & Beck, 2021: 135).

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1.14.3.1 Informed consent

Informed consent is organized based on two major rights, the right to self-determination and the right to full disclosure (Polit & Beck, 2021: 136). Informed consent is a guarantee that participants have sufficient information related to the study, with the proviso that they can read and understand the included information and make their own decisions, allowing them to decline or consent to participate freely, without any pressure (Polit & Beck, 2021: 139).

In the current study, informed consent forms for phase one (Annexure B:7) and informed consent for phase two (Annexure C:3) were included in the invitation letter. Informed consent included sufficient information that oriented the participants about the study before they decided on their participation in the study. The participants were informed that selecting the agree button would confirm that they had read and agreed to the terms of participation in this study.

1.15 DISSEMINATION OF RESULTS

The study findings; moral distress frequency and intensity, the developed educational intervention, and the factors associated with high moral distress scores were shared with the Department of Health in Abu Dhabi and the hospitals that participated in the study. The findings were shared through publications in accredited nursing journals and might be presented at nursing conferences. The thesis is accessible in the Faculty of Health Sciences Library repository at the University of Pretoria.

1.16 CONCLUSION

The current chapter framed the flow of the study by providing an overview of the study's background, purpose, and methodology. The study aimed to measure the outcomes of the developed and implemented multifaceted intervention on moral distress levels among the CCNs working in Abu Dhabi hospitals. The next chapter discussed the context of the study.

CHAPTER 2**CONTEXT OF THE STUDY****2.1 INTRODUCTION**

The previous chapter introduced an overview of the study, including the background, aim, objectives, study design, research methodology, and ethical considerations. Chapter 2 clarifies the study setting and context, which is defined as the physical location where the study will be implemented (Polit & Beck, 2021: 569). The current chapter aims to familiarize the readers with the general context, population, health profiles, healthcare system, and the nursing profession of the study context.

2.2 GENERAL CONTEXT

The United Arab Emirates (UAE) is a developing country with a high income that covers an area of about 83,600 square kilometers. It's located in the Arabian Peninsula's eastern part and shares its border on the north with the Arabian Gulf, Qatar on the west, Oman on the east, and Saudi Arabia on the west and south (Al-Yateem et al., 2020: 1).

The UAE encompasses seven emirates, namely Abu Dhabi (capital), Dubai (the second largest emirate), and the Northern Emirates (Sharjah, Fujairah, Ajman, Ras Al Khaimah [RAK], and Umm Al Qaiwain [UAQ]) (Figure 2.1) (Annual Book, 2018: 9). Each emirate retains significant autonomy while participating in federal frameworks (WorldAtlas, 2023).

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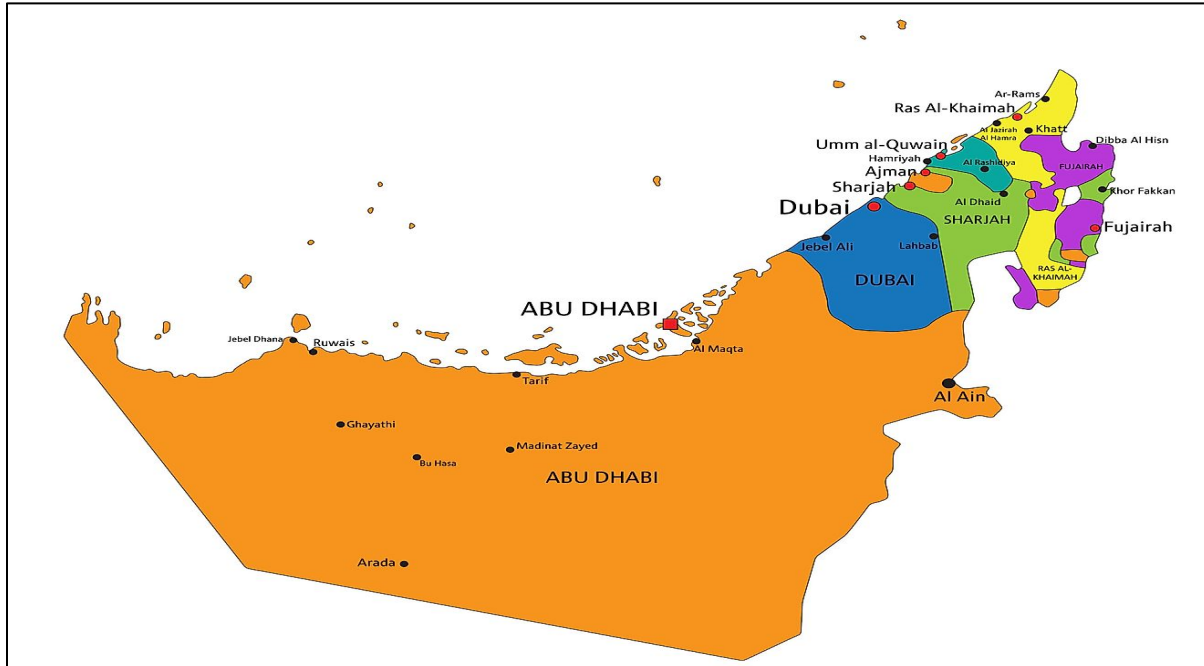


Figure 2.1: Map of the United Arab Emirates. Source: World Atlas

The UAE's official language is Arabic while the most common internationally spoken language is English. The UAE's official religion is Islam, but the country supports and protects full freedom for other denominations' members to practice their faith. The country has constructed places of worship for other religions like churches and mandirs (temples). The UAE established a Ministry of Tolerance in 2016, to point up the nation's dedication to multicultural and international harmony and diversity (Ayish, 2021: 110).

The UAE government is a constitutionally based federal system led by Sheikh Mohammed bin Zayed. It has four interrelated bodies that govern the country: the Supreme Council, the Federal Council, the Ministers' Council, and the Federal Judiciary. The Supreme Council is the highest policy-maker in the country and is composed of rulers of the seven emirates. The Federal Council has a supervisory and legislative role, consisting of 40 elected members from the seven emirates. The Ministers' Council (cabinet) is the federation's executive authority led by the prime minister. Finally, the Federal Judiciary is an independent body that is protected by the constitution and divided into the First Instance and Supreme Courts (MOCCA, 2018: 2).

At the local level, each emirate has an independent socio-economic planning agenda and functions. It has local institutions and policies like media, urban planning, education, health, industry, and socio-economic development.

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These institutions and policies are still aligned with federal strategies and policies. On the other hand, foreign relations and national defense are shared at the federal level (Ayish, 2021: 110).

The political system of the UAE provides equal chances and supports all the UAE's citizens' rights. It guarantees the residents' security, safety, and social justice. The system is supported by cultural and socio-economic policies and strategies that enhance intercultural and international engagement, women empowerment, and outstanding levels of health services and education (Ayish, 2021: 110).

The UAE is a major producer of natural gas and oil, ranking seventh globally for natural gas reserves and seventh for oil in terms of proven reserves (OPEC, 2022: 1). Despite the decline in oil prices, the UAE was able to maintain economic development due to the diversification strategy, which was put in place to improve its non-oil economy. The country adopted and applied policies that provided a competitive and highly attractive environment to support economic development and increase foreign investment. In 2018, 69% of the total revenue was attributed to the non-oil sector compared to 31% for the oil industry (MOCCAE, 2018: 13).

2.2.1 Emirate of Abu Dhabi

The current study was conducted in the emirate of Abu Dhabi. Abu Dhabi is the capital of the UAE and the largest emirate. It covers 67,340 square kilometers (26,000 square miles) and contributes 87% of the UAE's entire landmass (Figure 2.1). It shares borders with the Sultanate of Oman, Saudi Arabia, and the Arabian Gulf. Abu Dhabi is divided into three major regions, namely the city of Abu Dhabi (center), the Al Dhafra region (west), and Al Ain city (east) (ADRO, 2023).

The economy of Abu Dhabi has continued to prosper as the emphasis changed to economic diversification and holistic economic development. As the region's most dynamic economy, it has evolved away from considerable reliance on public sector spending and reliance on oil industry earnings toward a more diverse economy spanning a wide range of fundamental sectors. In 2022, the gross domestic product (GDP) of Abu Dhabi was 75.77 billion U.S. dollars, achieving 5.9% growth compared to 5.9% in 2021, placing the emirate as the region's fastest-growing economy in the Middle East and North Africa (ADDED, 2023).

2.3 UNITED ARAB EMIRATES POPULATION

The UAE's total population is 9,520,350. The majority of the population (94%) is living in urban areas with a population density of 114 persons per square kilometer (Worldometer, 2023). Citizens account for only 11.8% of the total population, with the remainder constituting of expats

Chapter 2: Context of the study

from around 200 countries (GMI, 2023) (See Figure 2.2). The reason for this is the UAE's attractiveness as a migration destination for expats from all over the world. The UAE is considered a popular destination for immigrants due to the abundance of work possibilities, the absence of income tax, the high standard of life, and other factors (GMI, 2023: 1).

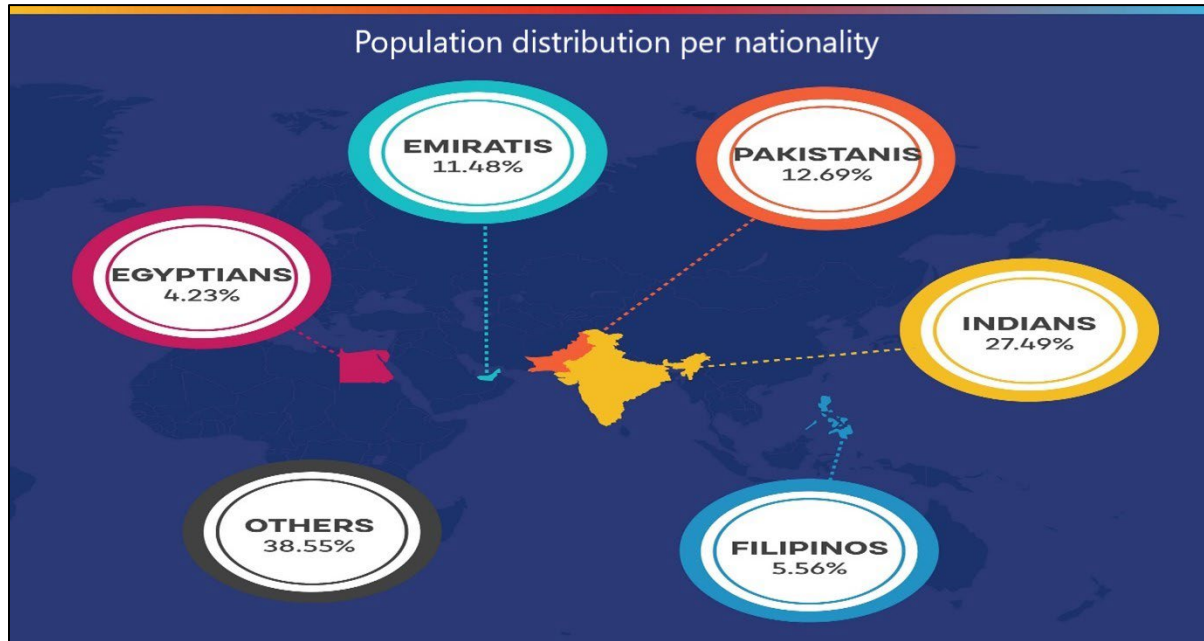


Figure 2.2: Population distribution per nationality. Source: (GMI, 2023).

The UAE has served as a shelter for foreign settlers because of its multicultural society and expat-friendly laws (GMI, Global Media Insight, 2023: 1). Moreover, the country's economic wealth enabled it to achieve advanced levels of human, social, and economic development and equity: oil earnings enable the federal government to provide free education, health care, and housing (Al Orami, 2020: 837).

As shown in Figures 2.3 and 2.4 the population split as per gender is 69% male and 31% female. The estimated population distribution as per age group is: 0-14 years makes up 15%, 15-24 years 12.36%, 25-54 years 64%, 55-64 years 6.6%, and 65 years and above 2%, with a median age of 33.5 years (GMI, 2023, Worldometer, 2023).

The median life expectancy for both sexes at birth is 80.5 years (females 82.6 years and males 79 years). The mortality rate among infants is 4.9 per 1000 live births, and the death rate among children under five years is 5.9 per 1000 live births. The total fertility rate per woman is 1.4 for live births (Worldometer, 2023).

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The majority of the UAE's population is distributed between three emirates, namely Abu Dhabi, Dubai, and Sharjah. The emirate of Dubai has the highest-clustered population of around three million (Worldometer, 2023).



Figure 2.3: Population split per gender. Source: (GMI, 2023).

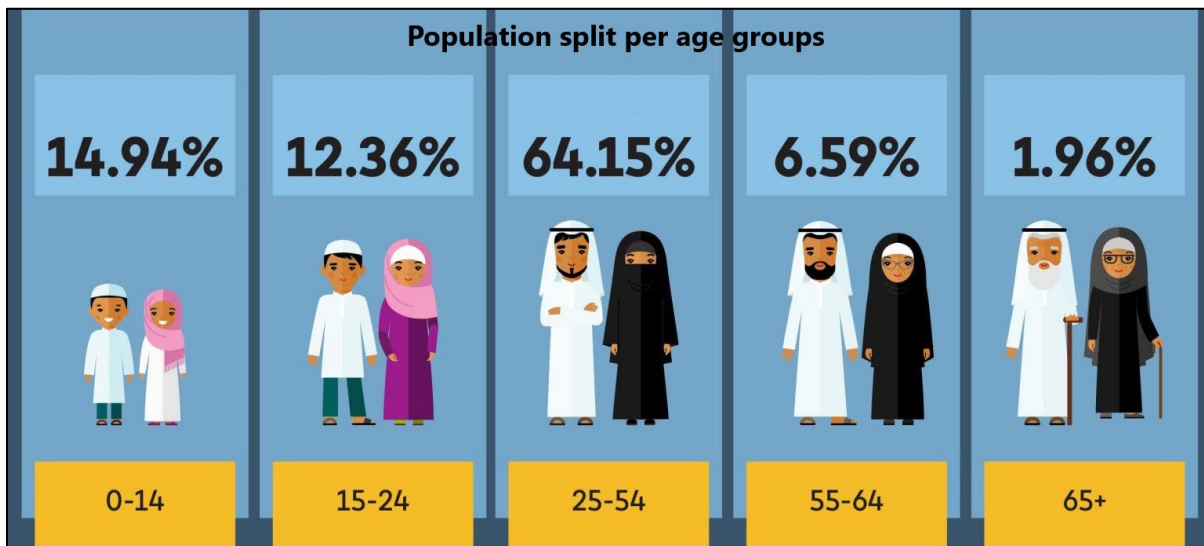


Figure 2.4: Population split per age group. Source: (GMI, 2023).

2.3.1 Abu Dhabi population

Over the last two decades, Abu Dhabi's population has grown at a rate of 5.2% per year on average. The city's overall population has increased by 1000% in the last 42 years. The overall population of Abu Dhabi was 120,000 in 1975, according to the first census, and climbed to more than 2.9 million in 2016. In terms of the annual population growth rate, this increase places Abu Dhabi among the cities with the fastest rate of population growth (Elessawy, 2021: 245).

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The latest available population statistics for Abu Dhabi date from a 2016 survey conducted by the Abu Dhabi Statistics Department. This survey recorded a total population of 2,908,173 people, distributed over the regions of Abu Dhabi as follows: 1.81 million in Abu Dhabi city (62.1%), 770,000 in Al Ain city (26.4%), and 33,000 in Al Dhafra region (Figure 2.5) (Abu Dhabi Statistical Year Book, 2020: 92).

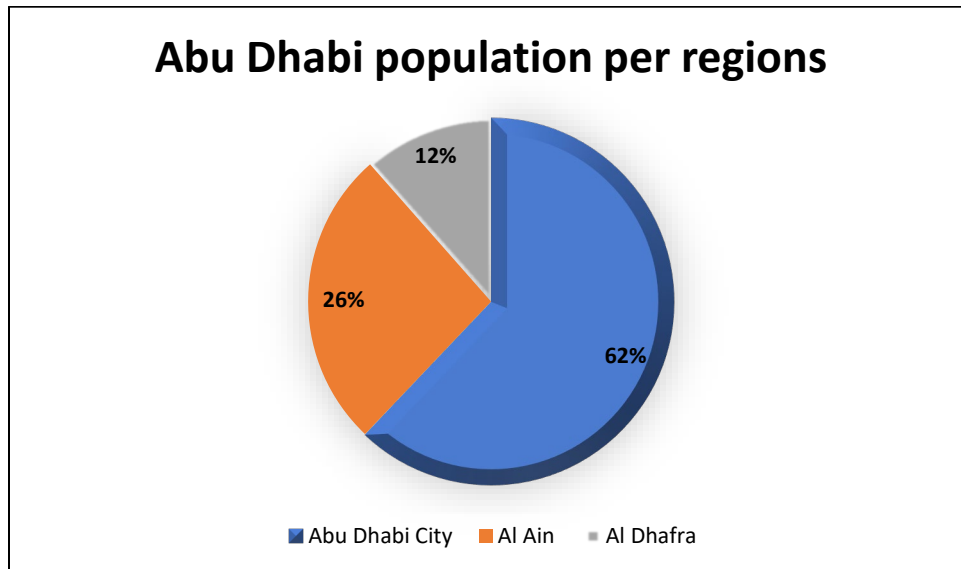


Figure 2.5: Abu Dhabi population distribution per region, 2016.

Expatriates comprise 81% of the total population and 64% of them are residing in Abu Dhabi city. Due to the nature of migration to the emirate, 64% of the population are males. The density of the population living in Abu Dhabi city is 164.2 people per square kilometer, in Al Ain city it is 57.3 people per square kilometer, and in the Al Dhafra region, it is 9.5 people per square kilometer (Abu Dhabi Statistical Year Book, 2020: 93).

In Abu Dhabi, the crude death rate is 1.3 deaths per 1000 population, the mortality rate among infants is 6.4 per 1000 live births, and the mortality rate for children under five years is 8.6 per 1000 deaths. The crude birth rate is 14.5 per 1000 population, the life expectancy at birth for the male population is 76 years, and the life expectancy at birth for females is 81.5 years. (Abu Dhabi Statistical Year Book, 2020: 93).

2.4 THE UNITED ARAB EMIRATES HEALTH PROFILES

In the UAE the major leading cause of death is non-communicable diseases, which are responsible for 65.2% of the total deaths. Among the non-communicable diseases, cardiovascular diseases contribute to 30.2%, followed by cancer at 13%, diabetes mellitus at 3%, and respiratory diseases also at 3% (WHO, 2016: 12).

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Figure 2.6 shows the leading causes of death in the UAE, positioning coronary artery disease in the first place (84 deaths per 100,000 population), followed by road traffic injuries as the second leading cause, accounting for 13.5% of the total deaths (Bhagavathula & Shehab, 2021: 2).

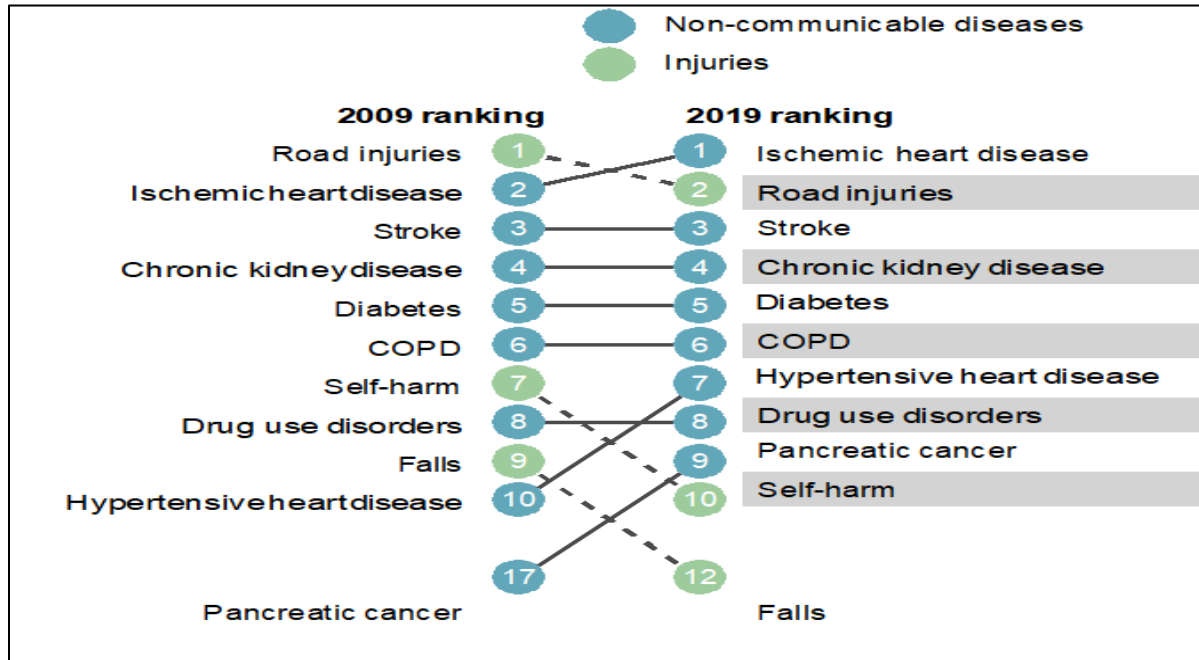


Figure 2.6: Top ten causes of the total number of deaths in the UAE in 2019. Source: (Bhagavathula & Shehab, 2021: 2).

The national effort to develop and implement a strategic plan has successfully reduced the incidence of deaths due to communicable diseases. The UAE has implemented an immunization program that significantly controls and prevents the transmission of infectious diseases. In addition to this, the country is implementing routine testing, blood screening, and many health educational programs to increase community awareness of these diseases (WHO, 2016: 8).

The Department of Preventive Medicine and the associated centers in the UAE have also implemented 36 different educational programs and preventive activities for infectious diseases, such as an acquired immunodeficiency syndrome program, disease control programs for immigrants, the expanded immunization program, the measles eradication program, and the polio eradication program.

As a result of these efforts, the World Health Organization (WHO) reported in 2022 that for the UAE the number of new HIV cases is 0.13 per 1000 uninfected population, the incidence of tuberculosis is one per 100,000 population, the incidence of malaria is zero cases per 1000 population at risk, and hepatitis B prevalence is 0.02% among children under five years. In

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In addition, the WHO statistics reported the percentage of vaccinated cases: 90% of the population among one-year-olds had been vaccinated against DTP3, 92% of the recommended age group had received MCV2 immunization, and 84% of the population aged one year had received the PCV3 immunization (P 81).

Four risk factors were identified in the UAE community and contributed to more than half of the total deaths. These risk factors were high low-density lipoprotein cholesterol, increased systolic blood pressure, increased body mass index, and increased fasting blood sugar (Bhagavathula & Shehab, 2021: 4). The prevalence of physical inactivity among the adolescent community (eleven to seventeen years) was found to be very high at 82.6%. Moreover, obesity affected 34.5% of the total population, and 24.3% of adults aged eighteen years and above were found to have high blood pressure (WHO, 2016: 12).

2.5 THE UAE HEALTHCARE SYSTEM

The UAE offers a robust, government-funded health service, as well as a fast-rising private health industry that provides high-quality healthcare services. In recent years, the UAE's healthcare system has grown significantly, supported by major investments in medical facilities, healthcare technology, and healthcare experts.

2.5.1 The regulatory authorities

In the UAE there are a variety of regulators of the healthcare system at both local and federal levels, each with distinct geographic or functional responsibilities. Recently, two regulatory bodies have reshaped and are now leading the regulation of the healthcare system in the country.

The Ministry of Health and Prevention is governing the healthcare system on a federal level, while certain regulatory authorities are overseeing the healthcare system on a local level. (US-UAE, Business Council, 2021: 12).

2.5.1.1 Federal level

The federal authority was established to govern the healthcare system over the seven emirates with the responsibilities of developing, regulating, and supervising the implementation of healthcare policies (US-UAE, Business Council, 2021: 13).

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2.5.1.1.a The Ministry of Health and Prevention

The Ministry of Health and Prevention (MOHAP), previously known as the Ministry of Health, is responsible for directing the implementation of governmental policies pertaining to the provision of healthcare to all residents and citizens of the country. It has a supervisory role to organize healthcare professional practices, manage and establish health facilities, prepare programs for health promotion and disease prevention, and license healthcare providers in the Northern Emirates (US-UAE, Business Council, 2021: 13).

The MOHAP's role mainly applies to the Northern Emirates (as the other emirates like Abu Dhabi and Dubai have their own regulatory body). Despite that, the MOHAP has the authority to control and approve the prices of medical devices and drugs across the seven emirates (US-UAE, Business Council, 2021: 13).

2.5.1.1.b The Nursing and Midwifery Council

The Nursing and Midwifery Council was established in 2009 by Cabinet Decree No.10/2009. The council is regulating the profession of nursing and midwifery in the UAE. It is organized by several task forces and committees at the national level. The council has several responsibilities that include identifying the scope of nursing and midwifery practices, licensure and registration, the continuous education of those involved in nursing and midwifery, research, and Emiratization (increasing the number of Emirati nurses and Midwives) (UAENMC, 2023).

The members of the council represent the educational and healthcare entities in the UAE. That includes members from MOHAP, the Ministry of Education and Higher Education, the Ministry of Interior, the Abu Dhabi Department of Health (DOH), the Dubai Health Authority (DHA), Abu Dhabi Health Services Company (SEHA), the Higher College of Technology, Fatima College for Health Sciences, the University of Sharjah, the private healthcare sector, Emirate Nursing & Medical Association, and the military health services (UAENMC, 2023).

2.5.1.2 Local level (emirate level)

While the MOHAP regulates healthcare provision in its totality in some emirates, other emirates or free zones have their regulating bodies, most notably Abu Dhabi and Dubai emirates (US-UAE Business Council, 2021: 14).

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2.5.1.2.a The Department of Health-Abu Dhabi

The Department of Health-Abu Dhabi (DOH), previously known as Health Authority Abu Dhabi (HAAD), is the governing organization for the healthcare industry in the emirate of Abu Dhabi. It oversees the quality of healthcare provided to the community by keeping track of its health. The DOH formulates the health system's plan of action, keeps track of it, and evaluates its effectiveness. It is also responsible for registering, issuing, and managing healthcare providers' licenses (DoH, 2023).

Moreover, the DOH develops health-related regulations, monitors compliance with local and international standards, and promotes the adoption of best international health practices and goals performance. The DOH has several legislative roles at the emirate level, which include health sector legislation, legislation of health insurance, legislation regulating healthcare providers' practices, legislation regulating organ transplantation, legislation of medical liabilities, and many more (DoH, 2023).

2.5.1.2.b The Dubai Health Authority

The Dubai Health Authority (DHA) was created in 2007 as the main authority of health in the emirate of Dubai. The DHA is the regulatory body responsible for licensing healthcare providers and healthcare facilities in Dubai. The DHA provides a high-quality healthcare system by establishing and ensuring healthcare policies and strategies at Dubai's public and private hospitals and clinics (DHA, 2023).

The DHA aims to improve the quality of life, protect public health, and develop strategies to meet international standards. It also aims to increase accountability and transparency of the healthcare services in the emirate. It has a regulatory role to monitor and enhance the cooperation between private and public health facilities. Moreover, the DHA is responsible for developing regulations in terms of health policies, laws, circulars, and local standards to shape the healthcare system and provide a framework for healthcare facilities (DHA, 2023).

In 2019, the DHA developed policies and measurement indicators that rate the performance of healthcare facilities, based on their expertise and the quality of provided care.

This was done in order to provide patients with information about the quality of care at each healthcare facility. In addition to this, it encouraged healthcare facilities to improve their performance (US-UAE, 2021: 15).

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2.5.2 Healthcare provision

In the provision of healthcare in the UAE, public sector institutions occupy a largely peripheral position. However, in line with a determined government goal to promote public-private partnerships and private-sector investment, the private sector is adopting a more significant role (US-UAE, 2021: 15).

2.5.2.1 The public sector

The provision of healthcare services in the public sector in the UAE is operated by three major entities, namely MOHAP (operates the public sector in the Northern Emirates), SEHA (operates the public sector in Abu Dhabi emirate), and the DHA (operates the public sector in the emirate of Dubai). There are also other entities participating in operating healthcare facilities in the public sector (US-UAE, 2021: 15).

2.5.2.1.a The Ministry of Health and Prevention

MOHAP oversees directly the provision of public healthcare services in several parts of the UAE. It operates around seventeen hospitals and 80 primary health clinics mostly in the Northern Emirates. It has recently made a significant effort to improve healthcare in the Northern Emirates by building new specialty clinics and health centers, as well as expanding existing hospitals (like Fujairah Hospital) (US-UAE Business Council, 2021: 18).

2.5.2.1.b The Abu Dhabi Health Services Company

SEHA is an independent public company that operates public hospitals and clinics in the emirate of Abu Dhabi. SEHA is considered the largest healthcare operator in the UAE. It operates 3000 beds, fourteen hospitals, and 34 clinics. In addition to that, SEHA operates fifteen screening and disease prevention centers, three blood banks, two vaccination centers, three mobile clinics, four dental centers, one mammography mobile unit, and one center for occupational health. The company annually treats 100,000 inpatients, performs more than 42,000 different surgeries, and treats around 5.1 million outpatients (SEHA, 2023).

SEHA employs more than 14,000 people in the Abu Dhabi Emirate, making it a significant employer in Abu Dhabi. The company has partnerships with several international institutions. The company successfully signed an agreement with John Hopkins Medicine International in 2006, successfully signed a partnership with Cleveland Clinic in 2007, a joint-venture partnership with Mayo Clinic, and the Children's Hospital of Philadelphia (US-UAE, 2021: 17).

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2.5.2.1.c The Dubai Health Authority

Besides its regulatory role, the DHA operates the public healthcare sector in Dubai. It manages four hospitals that cover the major specialties, namely medical, trauma center, children, and maternal health. It operates thirteen primary healthcare centers that are equally distributed across the emirate with a ratio of 30,000 people per center (DHA, 2023).

In addition, the DHA runs nine specialized centers, namely the Center for Genetic Diseases, Diabetes Center, Rehabilitation and Physiotherapy Center, Fertility Center, Center for Complementary Medicine, Senior's Happiness Center, Thalassemia Center, Blood Donation Center, and the Research Center for Cord Blood (DHA, 2023).

2.5.2.1.d The Ministry of Defense

The Ministry of Defense is responsible for providing healthcare services for military employees and their families. It operates a tertiary hospital with a 365-bed capacity in the emirate of Abu Dhabi. It also runs two satellite hospitals with a 240-bed capacity in Al Ain city and Sharjah emirate (US-UAE, Business Council, 2021: 20).

2.5.2.2 The UAE's private sector

In the United Arab Emirates, the private sector is becoming more and more important in the delivery of healthcare services. It includes different operating companies across the seven emirates (US-UAE, Business Council, 2021: 22). Below are the biggest healthcare provider companies across the UAE.

2.5.2.2.a New Medical Center Healthcare

The New Medical Center (NMC) Healthcare was founded in 1974, and as a healthcare provider, it has always played an important role in supporting the UAE's healthcare system, as well as its ongoing growth and improvement. With over 13,000 employees and approximately 5.5 million patient interactions per year through 85 operating facilities that include medical centers, long-term care facilities, day surgery centers, fertility clinics, and home health services, the NMC is the largest integrated private healthcare platform in the UAE (NMC, 2023).

2.5.2.2.b Mediclinic Middle East

The Middle East Mediclinic is a branch of the international Mediclinic which worldwide operates 72 hospitals, eighteen day-case centers, eight specialized and subacute hospitals, and eighteen

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primary care clinics. In the UAE, the company serves 900 inpatients in its seven hospitals and runs nineteen clinics (Mediclinic Middle East, 2023).

2.5.2.2.c Other private healthcare facilities

Aster DM Healthcare runs eight hospitals, 54 clinics, and 257 pharmacies. Emirate Healthcare Company operates two hospitals, one cosmetic surgery facility, and one rehabilitation center. VPS Healthcare operates the largest day-case surgery center in the Middle East Burjeel Medical City. In addition, it owns a pharmaceutical company along with many pharmacies and clinics (US-UAE, Business Council, 2021: 24).

2.5.3 Healthcare workforce

The healthcare sector in the UAE is continuously evolving to meet the growth and development of the country. The number of the health workforce is continuously increasing, and it reached around 125,887 employees at the end of 2019. As shown in Table 2.1, the UAE healthcare system has 25,414 physicians from different specialties, 6,576 dentists, 11,827 pharmacists, 25,928 technicians, and 56,142 nurses working in healthcare facilities across the UAE. In addition, Table 2.2 shows the distribution of the health workforce per specialty between the public and private sectors in the UAE (MOHAP, 2023).

Table 2.1: Health workforce distribution per emirate, 2019

Emirate	Physicians	Dentists	Pharmacists	Nurses	Technicians	Total
Abu Dhabi	10,169	2,348	4,241	27,520	10,148	54,426
Dubai	10,011	2,597	4,570	18,741	10,171	46,090
Sharjah	2,757	889	1,621	4,861	2,780	12,908
Ajman	878	307	643	1,593	800	4,221
UAQ	260	53	108	608	383	1,412
RAK	785	219	405	1,727	967	4,103
Fujairah	554	163	239	1,092	679	5,454
Total	25,414	6,576	11,827	56,142	25,928	125,887

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Table 2.2: Health workforce distribution per sector (public/private), 2019.

Sector	Physicians	Dentists	Pharmacists	Nurses	Technicians	Total
Government	8,879	885	1,862	21,048	10,324	42,998
Private	16,535	5,691	9,965	35,094	15,604	82,889
Total	25,414	6,576	11,827	56,142	25,928	125,887

2.5.3.1 Abu Dhabi’s healthcare workforce

In 2021, the emirate of Abu Dhabi had a total of 59,288 healthcare providers, growing from 54,426 in 2019, with approximately 2,112 new healthcare providers annually joining between 2018 and 2021 (Figure 2.7). The healthcare providers were unequally distributed among the three regions of the emirate, with 74% of the providers working in Abu Dhabi city (the central region), 23% working in Al Ain (the eastern region), and 3% working in Al Dhafra (the western region) (Figure 2.8) (DoH, 2022a: 14).

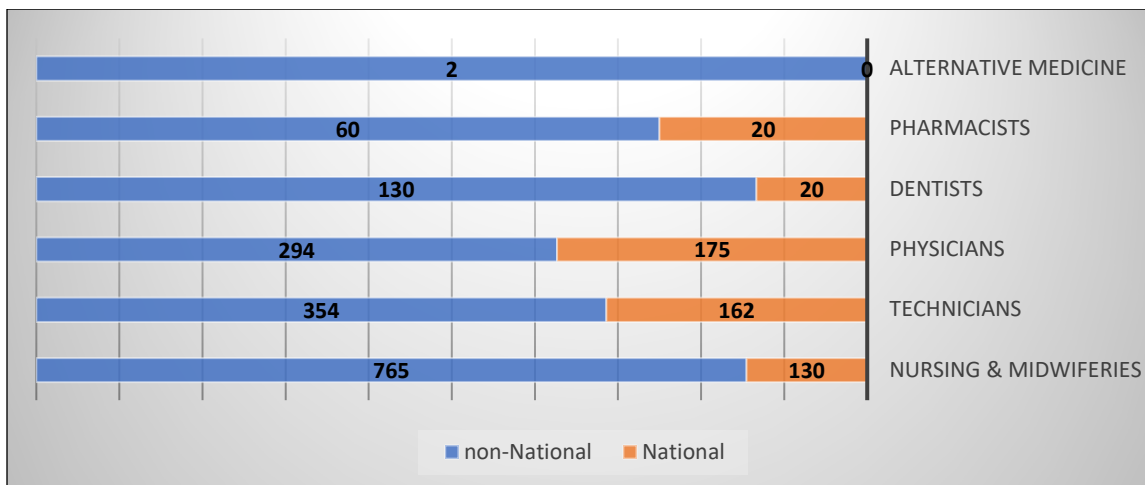


Figure 2.7: Number of clinicians joining the workforce between 2018-2021.

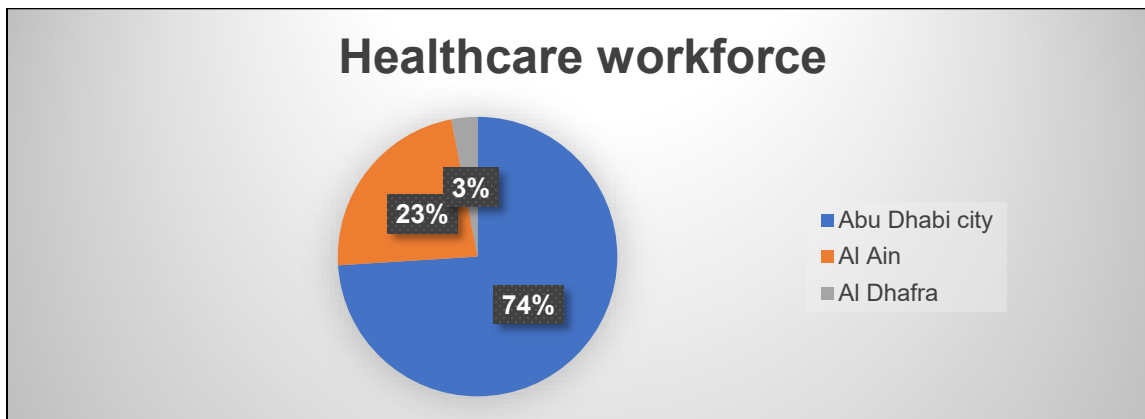


Figure 2.8: Abu Dhabi healthcare workforce distribution per region, 2021.

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More than half of the healthcare providers (51.2%) were nurses, 18.8% were physicians, 18.8% were technicians, 7% were pharmacists, 4.4% were dentists, and only 0.1% were alternative medicine practitioners (Table 2.3). 60% of the healthcare workforce was female and 40% male. The age average of the healthcare providers was 39 (DoH, 2022a: 14).

The largest proportion of healthcare providers in the emirate of Abu Dhabi are expatriates, where only 6.2% of the total healthcare providers are UAE nationals. Among the healthcare category, physicians have the highest proportion of UAE nationals accounting for 14.6% of total physicians, followed by technicians at 28%, nurses and midwives at 17%, dentists at 6%, pharmacists at 5%, and finally, no UAE nationals are alternative medicine practitioners (Table 2.3) (DoH, 2022a: 21).

Table 2.3: Abu Dhabi health workforce (national vs. non-national), 2021.

Healthcare providers	Non-national	National (%)	Total
Nurses & Midwives	29,726	608 (2%)	30,334
Physicians	9,531	1,628 (14.6%)	11,159
Technicians	9,920	1,033 (9.4%)	10,953
Dentists	2,380	219 (8.4%)	2,599
Pharmacists	3995	173 (4.2%)	4,168
Alternative medicine practitioners	73	0 (0%)	73
Total	55,627	3,661	59,288

2.5.4 Healthcare facilities

The UAE has been committed to providing the best and highest quality health services as per international standards, including preventive, curative, and promotional care, as well as implementing strategic policies to mitigate chronic and communicable diseases. Moreover, it utilized the latest modern technology in health within its implemented strategies to improve public health.

By the end of 2020, the UAE had a total of 5,369 healthcare facilities distributed between the public and government sectors with the majority located within the private sector and the emirate of Abu Dhabi (Table 2.4) (MOHAP, 2023).

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Table 2.4: Healthcare facilities distribution per emirates and sectors.

Emirate	Sector		Total facilities
	Government	Private	
Abu Dhabi	556	1,189	1,745
Dubai	79	1,906	1,985
Sharjah	62	835	897
Ajman	14	241	255
UAQ	9	42	51
RAK	31	239	270
Fujairah	21	145	166
Total	772	4,597	5,369

These facilities include a total of 157 public and private hospitals, with the public sector having the lowest number of hospitals (53 hospitals) (Table 2.5). Despite the lower number of hospitals in the public sector compared to the private sector, these public hospitals still accommodate 9,649 beds, which is more than the 8,356 beds in the private sector (Table 2.5) (MOHAP, 2023).

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Table 2.5: Number of hospitals and beds by sector and emirate, 2020.

Emirate	Sector	No. of Hospitals	No. of Beds
Abu Dhabi	Governmental	24	4,185
	Private	40	3,504
	Total	64	7,689
Dubai	Governmental	6	2,336
	Private	39	3,592
	Total	45	5,928
Sharjah	Governmental	8	1,089
	Private	16	526
	Total	24	1,615
Ajman	Governmental	4	274
	Private	4	512
	Total	8	786
UAQ	Governmental	2	348
	Private	0	0
	Total	2	348
RAK	Governmental	6	1,036
	Private	3	84
	Total	9	1,120
Fujairah	Governmental	3	381
	Private	2	138
	Total	5	519
Total	Governmental	53	9,649
	Private	104	8,356
	Total	157	18,005

2.5.5 Healthcare services

The healthcare sector in the UAE provides a range of outpatient and inpatient health services. In 2020, it provided a total of fifteen million health services for patients visiting outpatient clinics across the country, where 40% of these services were provided by the emirate of Abu Dhabi, and 65% of the services were rendered by the private sector (Figure 2.9) (MOHAP, 2020: 21).

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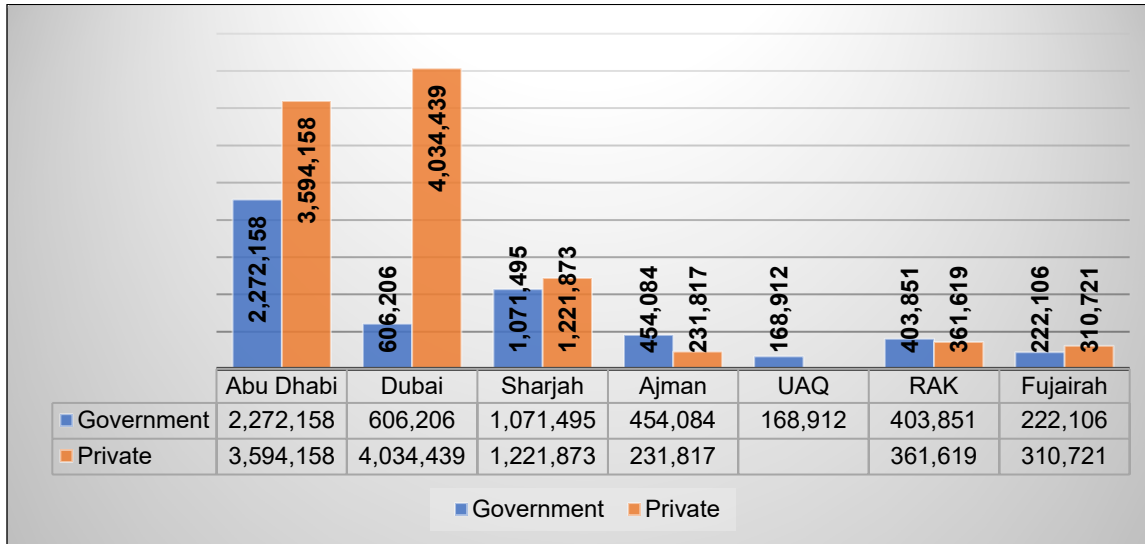


Figure 2.9: Total number of outpatient visitors to hospitals by emirate and sector: 2020.

In addition to the outpatients, the hospitals in the UAE managed a total of 69,1521 inpatients and performed a total of 2,609,088 day-case surgeries. Dubai Emirate had the highest share of hospital services, followed by Abu Dhabi, and then Sharjah (Figure 2.10). The private sector managed 61% of the total admitted cases, while the public sector performed 57% of the total day-case surgeries (MOHAP, 2020: 22).

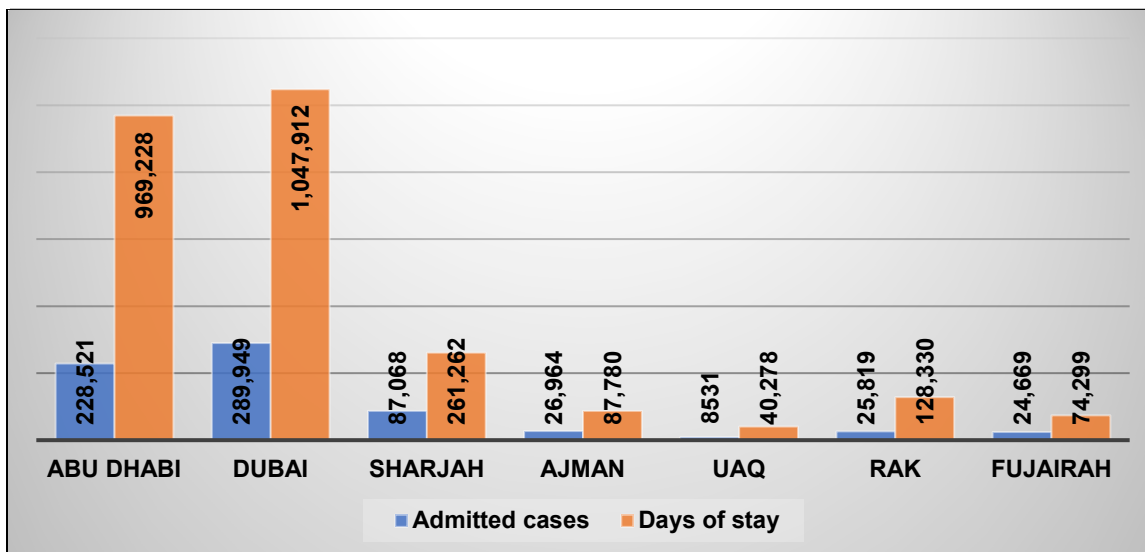


Figure 2.10: Inpatient visitors to hospitals by emirate: 2020.

2.6 THE NURSING PROFESSION IN THE UAE

The UAE's strategic vision is to develop a world-class system of healthcare services that meet international standards. The nursing profession plays an important role in this approach and is a vital contributor to its development. That places nursing in an outstanding position as a leader in

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the healthcare system, as well as a significant driver in reforming healthcare in the UAE (Al-Yateem et al., 2020: 1).

Nursing is the largest division of the healthcare sector in the UAE making up around 45% of the total healthcare providers. The nature of the nursing workforce in the UAE is diverse: the workforce includes nurses from different linguistic, cultural, economic, religious, educational, and clinical backgrounds (Al-Yateem et al., 2020: 4). Expatriate nurses form the majority of the nursing workforce, while only 8% of the nurses are Emirati (local) (MOHAP, 2023). The predominant nationalities within the nursing population in the UAE are Filipino, Indian, and Pakistani with lesser proportions from Arab and Western countries (Al-Yateem et al., 2019: 2).

The NMC, as the regulatory body of nursing in the UAE, has announced a set of rules and responsibilities to regulate the nursing practice in the country and identified the competency level of registered nurses. The NMC organized nursing competencies under three major domains: domain one includes the ethical, professional, and legal practice, domain two includes care management and provision, while domain three covers personal, professional, and quality development (UAE-NMC, 2015: 8).

2.6.1 Registration and licensure requirements

The regulatory bodies of the nursing profession in the UAE have published unified requirements for nurses to guide the registration and licensure process in the UAE.

2.6.1.1 Qualifications requirements

The nurses must be graduates of an accredited nursing college or university on both a national and international level. Qualifications obtained through correspondence, distance learning, or honorary nature are not accredited. Bachelor degree applicants must have completed a full-time study with a minimum of three years' duration.

The medium of instruction of the college/university where the qualification was obtained, must be English, otherwise, the applicant should furnish proof of English proficiency by submitting one of the following: International English Language Testing System (IELTS) scores of five and more, Test of English as a Foreign Language (TOFEL) with a minimum score of 500, or an occupational English test with a score of C or higher.

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2.6.1.2 Clinical experience requirements

UAE nationals who graduated from universities in the UAE or elsewhere are exempt from the applicable title's experience and clinical training requirements. Graduates from UAE universities who are not citizens of the UAE are required to satisfactorily complete six months of clinical training after graduation at the UAE's approved practice health facility. Expat applicants must hold a valid registration/license to practice in their country of origin or the country where they last worked.

2.6.1.3 Examination

The expat nurses have to pass the licensure exam provided by the regulatory authorities. Nurses applying to work in Abu Dhabi must prepare for the DOH exam, those applying to work in Dubai must prepare for the DHA exam, and those applying to work in the Northern Emirates must prepare for the MOH exam.

Nurses with UAE nationality are exempt from this requirement. In addition, nurses from specific countries with valid home licenses with no gap in practice are exempt as well. The countries include nurses from Austria, Luxembourg, Australia, the Netherlands, Belgium, New Zealand, Canada, Norway, Denmark, Singapore, Finland, South Africa, France, Sweden, Germany, Switzerland, Iceland, the United Kingdom, Ireland, and the USA.

2.6.2 Levels of nursing degrees and credentials

The educational pathway of the nursing profession has different credentials and degrees that produce different levels of knowledge and skills that contribute to patient care. According to their educational level and training, nurses are categorized into different levels that range from nurse assistants who engage in the basic aspects of patient care to advanced nurse practitioners who are authorized to provide an advanced level of patient care with more clinical privileges (DoH, 2022b: 6).

2.6.2.1 Assistant nurse

The assistant nurse (AN) should complete a diploma in nursing with a minimum of 18 months course duration (Ministry of Health and Prevention, 2022: 67). ANs are not permitted to practice nursing independently; they provide delegated nursing care under the supervision of the registered nurse. Despite that, they remain liable for their actions. ANs can perform numerous interventions, including assisting patients in their daily living activities, providing

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nonpharmacological pain management and comfort, monitoring patients and reporting significant findings, as well as measuring the patient's fluid intake and output (DoH, 2022b: 7).

Moreover, the AN is allowed to provide health education regarding risk factors, health determinants, and healthy lifestyles to patients and their families. An AN may participate in health promotion and disease prevention programs. On the other hand, ANs are not responsible for medication preparation, administration, and documentation (DoH, 2022b: 8).

2.6.2.2 Registered nurse

The registered nurse (RN) should have completed a Bachelor's degree in nursing with a minimum of three years' duration (Ministry of Health and Prevention, 2022: 67). The DOH identifies a set of responsibilities for the RN that starts with the ability to provide and organize nursing care, health education, and emotional support for the patient and the patient's family. Alongside other healthcare providers, the RN is responsible for identifying and assessing the patient's needs, implementing the treatment plan, and evaluating the effectiveness of the treatment.

RNs should possess the knowledge and skills to conduct systematic health assessments, analyze the collected data, identify the actual and potential health issues, plan patient care, set up treatment goals, and evaluate patient healthcare outcomes (DoH, 2022b: 8).

2.6.2.3 Nurse specialist

The NMC recognizes and encourages specialty nursing to satisfy the expanding healthcare demands and needs. The NMC believes that creating different specialization roles will increase the overall quality of the nursing workforce by enhancing the nurse's knowledge and skill. Furthermore, expanding the nursing specialist roles will create a path for career progression for nurses in the UAE (UAE-NMC, 2018: 8).

Accordingly, the NMC developed a model for nursing specialization that identified the licensure, educational, and registration requirements (UAE-NMC, 2018: 10). The NMC defines a nurse specialist (NS) as a registered nurse who completed at least one year of a post-graduate nursing specialized program that is licensed for additional nursing practices besides the RN scope of practice (UAE-NMC, 2018: 12).

The NSs should possess advanced knowledge and clinical experience in the specialized field. They must work in the area of specialized practice that is relevant to their specialties. They may act as unit managers or resource nurses. They have the responsibility for advocating their

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specialty and developing and implementing learning and teaching programs that improve and support the nursing practice in the specialized field (UAE-NMC, 2018: 12).

The NMC and DOH announced different specialties the nurse could specialize in, including critical care, mental health, community, pediatrics, oncology, emergency, and dialysis nurse specialist (DoH, 2022b: 10, UAE-NMC, 2018: 8).

2.6.2.4 Critical care nurse

Critical care nurses (CCNs) are registered nurses who possess specialized knowledge and skills that qualify them to manage patients with life-threatening or unstable health conditions. They have more sensitive and distressing responsibilities compared to other nurses (DoH, 2022b: 11). The NMC identifies the general scope of CCN practice as listed below:

- Mitigating the associated risks with hemodynamic invasive monitoring devices.
- Demonstrating competency in utilizing different invasive medical equipment like mechanical ventilators, cardiac monitors, dialysis machines, etc.
- Possessing critical thinking and problem-solving skills to manage complicated cases.
- Prioritizing patient care in life-threatening situations.
- Handling multiple therapies in the setting of constantly changing patient demands.
- Demonstrating flexibility and the capacity to stay patient-focused in a fast-changing, complex environment,
- Early recognition of changes in patient's health status and reporting to the team.
- Early recognition of adverse reactions to medications or treatment and reporting to the team.

2.6.3 Advanced practice nurse

Advanced practice nurses (APNs) are highly skilled registered nurses who have received advanced education and training in a specific area of nursing practice and work in a range of healthcare settings. They are educated and certified to examine, diagnose, and handle patient problems (DoH, 2022b: 16). APNs should possess a specialized clinical Master's or Doctoral degree (UAE-NMC, 2018: 13).

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APNs act in different role dimensions as consultants, coordinators, advocates, researchers, coaches, leaders, and most importantly role models. APNs are eligible to provide medical care to patients under the supervision of specialized physicians and with written permission from the employer`s clinical privileging committee (DoH, 2022b: 16).

2.7 NURSING IN ABU DHABI EMIRATE

With nurses making up more than 50% of the total healthcare professionals, nursing is the dominant profession in the Abu Dhabi Emirate health sector. Nursing is the fastest-growing healthcare profession in Abu Dhabi. The nursing profession had significantly increased from 16,577 nurses in 2014 to 30,334 in 2021 (Figure 2.11) (DoH, 2022a: 14).

Among the total licensed nurses and midwives, 89% were licensed as registered nurses, 8.5% were nurse assistants, 1.3% were school nurses, 1.2% were midwives, and only eight were nurse practitioners. The nurse and midwife population ratio in Abu Dhabi is 11.8 per 1000 population, which is considered higher than in most high-income countries (DoH, 2022a: 25).

In Abu Dhabi, the nursing profession poses the largest threat to the healthcare workforce's stability, with non-national nurses comprising over 98% of the workforce. As shown in Figure 2.11, the percentage of UAE national nurses has only increased by 1% in the last five years from 130 in 2014 to 608 in 2021 (DoH, 2022a: 25).

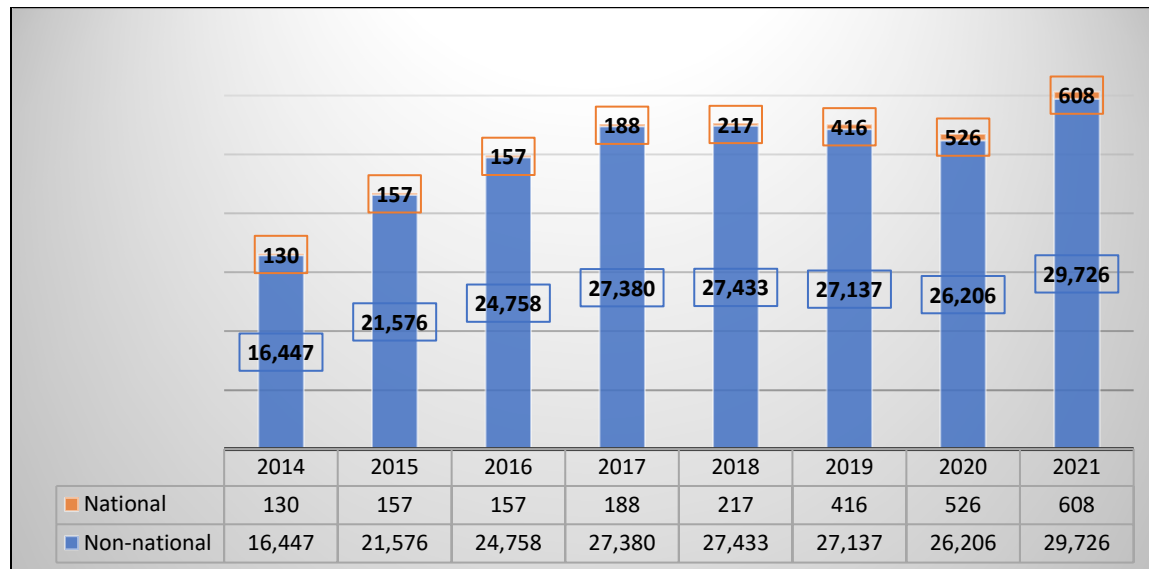


Figure 2.11: Nursing and midwifery workforce in Abu Dhabi Emirate, 2014-2021.

The DoH conducted a gap analysis to analyze the current nursing situation in Abu Dhabi. The report identified gaps, challenges, and recommendations to overcome these gaps and

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challenges. The current gap in the nursing profession is related to the demand for registered nurses, especially in three major areas, namely emergency, pediatric, and critical care.

The nursing educational gap is related to the lower number of male students enrolling in nursing academic programs. Moreover, absence of programs for practitioner nurses, and a scarcity of graduates from specialized nursing post-graduate programs. Nursing work requirements, namely extended working hours, night shift, and dealing with male patients are considered as the major challenges the nursing profession poses to national female nurses.

Consequently, the DoH announced a set of recommendations related to increasing the investment in nursing educational programs by increasing the funds to open more programs for specialized nursing education and increasing the nursing bridging programs to promote more assistant nurses to registered nurses.

To motivate national males to choose the nursing profession, the DoH recommended increasing the capacity of male seats in nursing colleges, enhancing the current salary scale with more incentives, and developing evolved recruitment strategies (DoH, 2022a: 37).

The nursing profession currently is witnessing significant changes in its structure and regulation. The changes are aimed at increasing the autonomy of the nursing profession, and include the licensing of nurse specialists and nurse practitioners, giving nurses more authority regarding community care and patient case management (DoH, 2022a: 25).

2.8 CRITICAL CARE IN THE UNITED ARAB EMIRATES

Critical care is a specialized unit that provides close monitoring, continuous, and advanced care to ill patients with life-threatening conditions or at risk (Marshall et al., 2017: 1). It requires complex medical and nursing care with invasive life support (DHA, 2019: 2). The golden goal of critical care is to support the function of vital organs, prevent complications, and treat the underlying causes (Losonczy et al., 2021: 3).

2.8.1 Critical care models

The Department of Health in Abu Dhabi identified different models for critical care units. The role of each model depends on the type of facility (primary, secondary, or tertiary), the supported services, staffing number and specialties, and the condition/number of the patients (DHA, Dubai Health Authority, 2019: 5).

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2.8.1.1 Combined critical care model

Combined critical care includes a cardiac care unit (CCU), high dependency unit (HDU), and/or intensive care unit (ICU), usually available in rural areas that are underresourced with a low staff-patient ratio. Combined critical care units manage short to midterm intensive care cases. These units have fewer medical specialties and lower clinician numbers with a nurse-patient ratio of 1:1 (DHA, Dubai Health Authority, 2019: 5).

2.8.1.2 Combined general intensive care model

This model combines all the ICU specialties in one unit. For example, it may combine patients with cardiothoracic surgery, neuro surgeries, orthopedics, and general medical. Usually, these units combine HDU and ICU beds. This model is suggested for hospitals with inadequate critical care sub-specialty (DHA, Dubai Health Authority, 2019: 6).

2.8.1.3 Hot floor model

This model refers to the presence of one or more types of intensive care units, such as surgical ICU, medical ICU, cardiac unit, and HDU, on the same floor and adjacent to an emergency unit or an operating unit. The model allows for equipment standardization throughout the available units on the same floor, which minimizes duplication and reduces expenses for the provided services. Moreover, it aids practitioners, particularly those in medicine and nursing, in developing knowledge in different fields instead of in one field.

A disadvantage of this model is the possibility of an increased burden of managing a high number of physicians and nurses on the same floor. It may also increase the risk of cross-infection among the patients on the hot floor (DHA, Dubai Health Authority, 2019: 6).

2.8.1.4 Separate intensive care unit model

This model encompasses a variety of specialty intensive care units forming discrete, self-contained units in various locations, each with its own management structure. Usually, this model is implemented in the tertiary hospital. The model allows multiple groups to control the resources of the intensive care units, which may help to avoid bed blocks. In addition, it enhances the progress of the nursing profession toward specialization as it will advance the nursing knowledge and skills in a specialized area. This model does, however, require more resources, different policies and guidelines, more staffing, and more infrastructure (DHA, Dubai Health Authority, 2019: 7).

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2.9 STUDY SETTING, PURPOSE OF SELECTION

The study setting refers to the physical location where the study will be implemented and the data will be collected (Polit & Beck, 2018: 569). The current study was conducted in the emirate of Abu Dhabi in the UAE. The emirate of Abu Dhabi was selected as it is the capital of the UAE and comprises 87% of the UAE land area (ADRO, 2023). Abu Dhabi is the emirate with the second largest population with an estimated three million people (Abu Dhabi Statistical Yearbook 2020: 92).

Abu Dhabi has the highest number of healthcare facilities in the UAE with more than 65 hospitals accommodating more than 8,900 beds, with more than 59,288 healthcare providers managing the healthcare facilities (DoH 2023). In comparison to the other emirates, Abu Dhabi has the highest number of nurses (exceeding 30,000 nurses) making up more than 50% of the total nurses in the UAE (DoH, 2022a: 14).

The study was conducted in Abu Dhabi city (central region) in two public tertiary hospitals. The central region of Abu Dhabi has 62% of the total population of Abu Dhabi and 74% of the total healthcare providers. The healthcare public sector in Abu Dhabi is operated by SEHA company. SEHA is the largest healthcare service provider in the UAE. SEHA employs more than 6,000 nurses and it operates fourteen hospitals that accommodate 3,000 beds, which comprise 33% of the total hospital beds in Abu Dhabi (SEHA, 2023).

Hospitals A and B are tertiary hospitals operated by SEHA. Both hospitals were selected to constitute the experimental and control groups of the current study. The hospitals were selected because they share similar geographical, demographical, and clinical characteristics, both hospitals are located in the central region of Abu Dhabi emirate, both are governed by SEHA, both manage acute cases, and both are considered tertiary and educational hospitals (Table 2.6).

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Table 2.6: Comparison of the selected hospitals

Comparison criteria	A	B
Location	Central Region, Abu Dhabi	Central Region, Abu Dhabi
Governing body	SEHA	SEHA
Classification	Tertiary and educational	Tertiary and educational
Accreditation	Joint Commission International Accreditation.	Joint Commission International Accreditation.
Bed capacity	724	655
Critical care beds	113	106
Nurses	1,320	1,200
Critical care nurses	335	286

2.10 CONCLUSION

The UAE has a mixed culture and diverse population, where 88% of the population are expatriates from around 200 countries. Different linguistic, cultural, economic, religious, educational, and clinical backgrounds shape the moral values and beliefs of healthcare providers as well as the UAE's population.

Moral distress arises when moral conflict or constraints exist. The psychological impact of moral distress starts when nurses fail to take the right action or act against their beliefs and values that are derived from their culture and professional practices. These cultural differences among the healthcare providers, organizations, and/or patients, require preparation and good training to build a professional culture amongst the clinicians who serve the diverse population. Nursing is the most affected profession since nurses are intimately involved with the patients and are in direct contact with them. Nurses need to understand other cultural perspectives, and they have to separate their own cultural beliefs and values from their professional beliefs and values.

The MFEI was developed and implemented to help those nurses acquire the needed moral knowledge and skills, enhance their moral sensitivity and competency, and make the right moral judgment that respects cultural differences.

The current chapter identified the context of the study and aimed to familiarize the readers with the general context, population, health profiles, healthcare system, and the nursing profession of the study context. The coming chapter (chapter 3) presents the literature review of moral distress and related topics.

CHAPTER 3

LITERATURE REVIEW

3.1 INTRODUCTION

Chapter 2 oriented the reader about the context of the study, and highlighted the geographical and general information, population and disease profiles, and healthcare system of the context where the study took place. Chapter 3 introduces the literature search strategy and the review of the literature related to the evolution of the moral distress definition, moral distress defining characteristics, the associated characteristics of moral distress, moral distress frequency and intensity, moral distress measurement tools, and interventions that reduce moral distress.

3.2 LITERATURE SEARCH STRATEGY

This review was carried out following the traditional review procedure to analyze the existing literature to develop an argument about the problem and the need for this study (Sutton et al., 2019). The primary characteristic of this review is the use of a purposeful strategy to identify and choose the necessary literature. Comprehensive and rigorous searches were conducted using the following databases: MEDLINE, PubMed, Google Scholar, and EBSCO. The following keywords and medical subject headings (MeSH) terms were used in various combinations: "moral distress", "moral conflict", "ethical conflict", "nurses", "nursing", "critical care nurses", "healthcare professionals", "intervention", "related factors", "defining characteristics", and "measurement". Additionally, Boolean operators (AND, OR) were employed to refine the search and capture relevant studies.

3.3 MORAL DISTRESS AND DEFINITION EVOLUTION

In the late 1970s, ethical principles that guided healthcare delivery were not being scrutinised. This inspired Andrew Jameton to write about moral distress in his book *Nursing Ethics* for the first time. Jameton's work inspired other philosophers such as Wilkinson, Fry, Harvey, Corely, and Hamric who explored this phenomenon and achieved practical and conceptual changes. These changes informed the current evolving knowledge and skills of the moral distress phenomenon. Moral distress helps healthcare providers recognize how moral experiences can affect them and the quality of patient care (Ulrich & Grady, 2018: 9).

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Jameton (1984) first defined moral distress as arising “when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action” (Jameton, 1984: 6). Jameton described the experience of moral distress as a conflict that placed nurses in the challenging situation between their moral obligation toward the patient and toward their institutions (Ulrich & Grady, 2018: 10).

In 1987, Wilkinson redirected the source of moral distress from institutional to individual constraints. He defined moral distress as a "psychological disequilibrium and the negative feeling state experienced when a person makes a moral decision but does not follow through by performing the moral behavior indicated by that decision" (Wilkinson, 1987: 16). Wilkinson described moral distress as an experience with cognitive, situational, feeling, and action dimensions. Wilkinson summarized the moral distress experience and effect in a moral distress equation (Figure 3.1) (Wilkinson, 1987: 17).

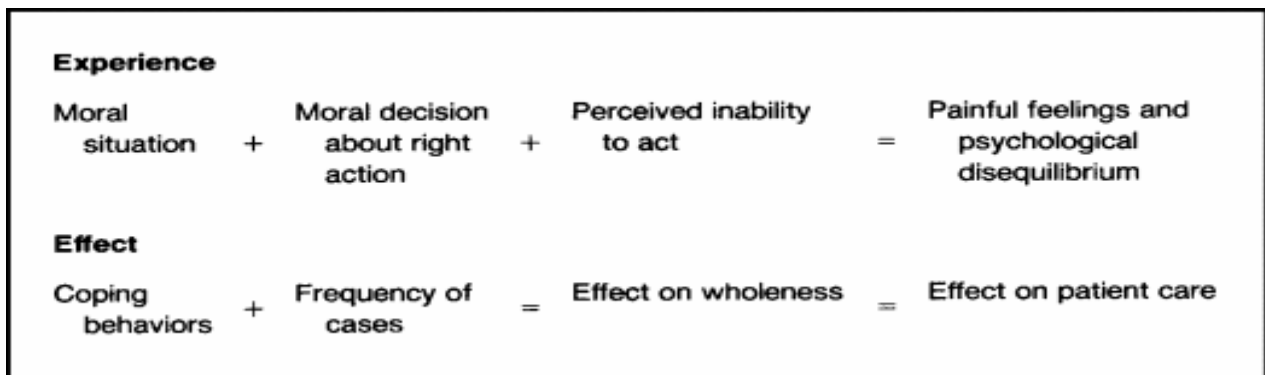


Figure 3.1: Moral distress equation (adopted from Wilkinson, 1987: 17)

In 1993, Jameton revised his definition to include "when the nurse makes a moral judgment about a case in which he or she is involved and the institution or co-workers make it difficult or impossible for the nurse to act on that judgment" (Jameton, 1993: 542). In addition, he divided moral distress into two distresses, namely initial distress, which is defined as "the feelings of frustration, anger, and anxiety people experience when faced with institutional obstacles and conflict with others about values", and reactive distress, which is defined as "distress that people feel when they do not act upon their initial distress" (Jameton, 1993: 544).

The work of Jameton and Wilkinson (yr) drew the attention of other researchers to this phenomenon. Researchers from nursing and different disciplines started to operationalize the moral distress definition, which showed some gaps in the previous work and the need to make further modifications and add enhancements. Ulrich and Grady (2018) identified a need to distinguish between moral distress and emotional or psychological distress; focus on the ethical

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component of moral distress; recognize moral distress as a linear process and see moral distress as a building-up process. They wrote about the subjectivity of identifying the right and the wrong course of action; the constraints and their location in relation to the individual as internal or external, and individual differences in perceiving the moral situation (Ulrich & Grady, 2018: 11). Table 3.1 illustrates the evolution of the moral distress definition to provide an understanding of the concept which remains under development.

Table 3.1: Evolution of moral distress definition

Author	Year	Definition
Jameton	1984	"Moral distress arises when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action" (Jameton, 1984: 6).
Wilkinson	1987	"Psychological disequilibrium and negative feeling state experienced when a person makes a moral decision but does not follow through by performing the moral behavior indicated by that decision" (Wilkinson, 1987: 16).
Jameton	1993	"when the nurse makes a moral judgment about a case in which he or she is involved and the institution or co-workers make it difficult or impossible for the nurse to act on that judgment" (Jameton, 1993: 542).
Jameton	1993	Initial moral distress involves "the feelings of frustration, anger and anxiety people experience when faced with institutional obstacles and conflict with others about values". Reactive moral distress is "the distress people feel when they do not act upon their initial distress" (Jameton, 1993: 544).
Corley	2002	"Moral distress is the psychological disequilibrium, negative feeling state, and suffering experienced when nurses make a moral decision and then either do not or feel that they cannot follow through with the chosen action because of institutional constraints" (Corley, 2002: 643).
Austin et al.	2003	"The state experienced when moral choices and actions are thwarted by constraints" (Austin, Bergum & Goldberg, 2003: 177, 178).
Kälvemark et al.	2004	"Traditional negative stress symptoms that occur due to situations that involve ethical dimensions and where the healthcare provider feels she/he is not able to preserve all interests and values at stake" (Kälvemark et al., 2004: 1082, 1083).
Nathaniel	2006	"Moral distress is pain affecting the mind, the body, or relationships that results from a patient care situation in which the nurse is aware of a moral problem, acknowledges moral responsibility, and makes a moral judgment about the correct action, yet, as a result of real or perceived constraints, participates, either by act or omission, in a manner he or she perceives to be morally wrong" (Nathaniel, 2006: 421).
McCarthy	2013	"Moral distress is an umbrella concept that describes the psychological, emotional and physiological suffering that may be experienced when we act in ways that are inconsistent with deeply held ethical values, principles or moral commitments" (McCarthy, 2013: 1).

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Jameton	2013	“Moral distress — a common experience in complex societies — arises when individuals have clear moral judgments about societal practices, but have difficulty in finding a venue in which to express concerns” (Jameton, 2013: 297).
Hamric	2014	“Moral distress occurs when an individual’s moral integrity is seriously compromised, either because one feels unable to act in accordance with core values and obligations, or attempted actions fail to achieve the desired outcome” (Hamric, 2014: 457).
Campbell et al.	2016	“One or more negative self-directed emotions or attitudes that arise in response to one’s perceived involvement in a situation that one perceives to be morally undesirable” (Campbell, Ulrich & Grady, 2016: 6).
AACN	2020	Moral distress is present “when one knows the right thing to do, but constraints, conflict, dilemmas or uncertainty make it nearly impossible to pursue the right course of action” (AACN, 2020: 2).
Kim, Shelton, and Applewhite	2023	“moral distress as an experience of the moral emotion agent-regret, as it fittingly arises in response to one’s participation in a tragic or potentially unjust care-related circumstance in which one is unable to act otherwise due to factors beyond one’s immediate control” (Kim, Shelton & Applewhite, 2023: 47).

3.4 MORAL DISTRESS DEFINING CHARACTERISTICS

From the above-mentioned definitions of moral distress, one can summarize four main assumptions that predict moral distress: making a moral judgment or knowing the right course of action; the presence of constraints; the inability to act based on those judgments or taking the wrong ethical action; and the associated feeling or moral suffering (Figure 3.2).

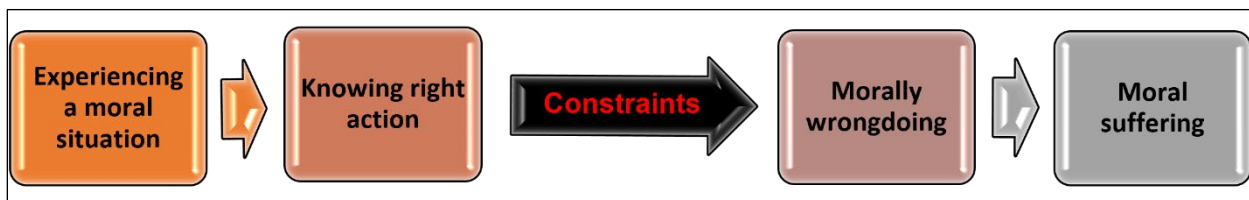


Figure 3.2: Moral distress Process

3.4.1 Experience of a Moral Situation

Jameton (1993: 542) underlines that moral distress results from a moral situation in which individuals refrain from taking the right course of action. He emphasized the importance of distinguishing the experience of moral dilemmas from the experience of moral distress.

Corley (2002: 643) identified that moral distress results from a moral conflict and defined moral conflict as a clash between moral values about what is the ethically correct course of action to choose. In agreement with Corley, Fourie (2015: 96,97) introduced moral conflict as a moral

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distress-related situation. Fourie stated that moral conflict underscored any situation where moral duties, values, or ethical principles clashed, which required prioritizing one principle over the other. Fourie divided moral distress according to the moral situation into “moral constraint distress” and “moral conflict distress”. In 2017, Fourie suggested adding moral uncertainty as a moral situation that led to moral distress. She proposed to call this type of moral distress “moral uncertainty distress”.

Campbell, Ulrich, and Grady (2016: 6) identified a moral situation as any situation in which an individual finds himself in a “morally undesirable situation”. They presented six cases that resulted from different distressing situations and led to moral distress, namely moral uncertainty, moral dilemma, moral bad luck, distress by association, mild distress, and delayed distress. Thorne et al., (2018: 684) proposed the complex nature of certain clinical contexts (e.g. a neonatal intensive care unit) and the related complex clinical and ethical practices.

Morley, Bradbury-Jones, and Ives (2020: 1310,1311) defined a “moral event” as any event that “could be any/combination of the following: moral tension, moral conflict, moral dilemma, moral uncertainty or moral constraint”:1310. They distinguished these moral events as follows: Moral tension (the moral agent may know/feel/believe which moral need to fulfill, but is constrained and refrains from engaging in actual conflict). Moral conflict (the moral agent may know/feel/believe which moral need to fulfill, replacing one option with another, but is constrained to practice their moral agency). Moral constraint (the moral agent may know/feel/believe which moral need to fulfill, but is unable to carry out due to internal or external constraints). Moral dilemma (the moral agent is unable to make a decision/is unable to satisfy two or more non-negotiable moral standards that cannot be interchanged). Moral uncertainty (the moral agent is unable to decide due to uncertainty about which moral need to fulfill for non-negotiable requirement).

In disagreement with uncertainty as a moral distress-related event, Dorman and Raffin Bouchal (2020: 326) compared moral uncertainty with moral distress not within the phenomenon of moral distress as an independent concept. They mentioned that both concepts shared similar and different characteristics. The main difference is related to the outcomes, where in moral distress, the desired and known outcomes are not achieved due to constraints, while in moral uncertainty outcomes lack probability or preferability. To elaborate further, they developed a validity matrix to compare the two concepts in terms of powerlessness, conflict, action, suffering, and outcomes. The validity matrix showed that both concepts are responsible for poor patient care, resulting in moral residue and shared internal, external, and institutional constraints.

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On the other hand, moral distress is the result of the inability to act and take the right action, and the conflict is related to self-judgment, while uncertainty is the result of the inability to decide and uncertainty as to what course of action to take, and the conflict is related to self-questioning. Finally, Kim, Shelton, and Applewhite (2023: 47,48) described the moral event that led to moral distress as “a tragic or potentially unjust care-related circumstance”: 47. They claimed that the individual’s experience in a given moral situation is evaluative and circumstantial, where moral distress arises according to the individual’s perceived role in that situation.

3.4.2 Knowing the right moral action (moral judgment)

Moral distress arises when the nurses’ ethical knowledge that is relevant to the situation is not heard or taken seriously (Epstein et al., 2019: 2). Moral judgment is an integral part of moral distress. Nurses will experience moral distress when they cannot act according to their moral judgment (the perceived right course of action) (Ulrich & Grady, 2018: 1). Moral judgment is considered a complex process, where different people can make valid different judgments about a particular moral situation which produced a conflicted decision (Johnstone & Hutchinson, 2015: 9).

Moral judgment is the process of determining the right or wrong course of action for a given moral situation (Abou Hashish & Ali Awad, 2019: 3). Corley (2002: 646) defined moral judgment in terms of moral distress as the ability to make a moral decision in a specific moral situation considering the ethical principles that are against or count for that situation. In other words, it reflects the nurses’ ability to decide what is the best action to be taken for a particular moral situation while considering both sides (right and wrong) of the moral situation. Moral judgment should build on ethical principles to produce the right judgment.

Epstein et al. (2019: 2) emphasized that the right course of action should not be related to personal beliefs but is related to professional beliefs about the right action. Moral distress does not reflect the feeling or judgment that a healthcare provider has when providing care for a patient undergoing a surgical procedure to which he/she may be morally opposed, like abortion, or transgender surgery. Moral distress occurs when ethical principles or professional standards are compromised, such as in the case of inappropriate treatment, being truthful, or dealing with incompetent staff.

Johnstone & Hutchinson (2015: 8) identified that moral judgment might be compromised when healthcare providers prioritize their moral intention according to their ethical values and personal intuition instead of professional ethical values. Even when they are faced with facts, they rarely

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accept them, and instead, they start looking for justification and a rationale that is consistent with their intuition.

Nurses might have false moral distress when they perceive their moral judgment as the right course of action when it is not. Or they might have moral distress when others perceive their judgment as valid while it is not (Johnstone & Hutchinson, 2015: 9). Some moral situations may have more than one valid moral judgment that is supported by valid ethical principles, like situations with an ethical dilemma. In this scenario, the nurses should weigh their judgment according to the benefit-risk ratio more than according to rightness and wrongness (Burkhardt & Nathaniel, 2024: 71).

It can be concluded that it is not easy for nurses to separate their personal from professional values when they make a moral judgment. To enhance the nurses' ability to make or accept the right moral judgment, nurses need to enhance their moral knowledge and skills. This could be done through training and ethical education that equip the nurses with the needed skills and knowledge to empower their moral judgment (Imbulana, Davis & Prentice, 2021: 9).

3.4.3 Presence of Constraints

The presence of constraints that prevent individuals from taking the right course of action is assumed to be a necessary condition of moral distress. Exploring, identifying, and recognizing the constraints that lead to moral distress and the individual's response to it, become the way of measuring the moral distress frequency and intensity (Morley et al., 2019: 656).

As the definition of moral distress has evolved, the concept of constraints has evolved as well. Jameton (1993), described the constraints in his first definition as institutional constraints and then expanded it to include the healthcare team members (co-workers) as a source of moral distress. Jameton clarified that physicians may form a source of moral distress since the power of decision-making is mostly retained by them, not by nurses. Jameton used two examples to justify his point: nurses being forced to follow the physician's order to provide unnecessary or aggressive treatment; and witnessing the physician providing insufficient information to obtain the patient's consent (Jameton, 1993: 548).

In addition, Jameton mentioned some situations that may contribute to moral distress which are not related to the previously mentioned constraints. He referred to the situation when the nurse feels torn between doing the right thing or following the patient's wishes. In this situation, the nurse stands between patient autonomy and beneficence/nonmaleficence (Jameton, 1993: 542).

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It can be concluded that the clinical situation may act as a source of moral distress besides the institutional constraints and members of the healthcare team.

Hamric et al. (2012) described the constraints as root causes that fall under three categories, namely clinical situations, internal constraints, and external constraints. The root causes have been identified in the literature as the most common and frequent situations that cause moral distress among healthcare providers. These root causes were used as a tool to measure the moral distress frequency and intensity (Hamric, Borchers & Epstein, 2012: 2). Table 3.2 presents an example of three root causes.

Table 3.2: Major root causes of moral distress (adopted from Hamric, Borchers & Epstein, 2012: 2)

Clinical situation	Internal constraints	External constraints
Providing unnecessary/futile treatment	Perceived powerlessness	Inadequate communication among team members
Inadequate informed consent	Inability to identify the ethical issues	Differing inter- (ex. RN to physician) or intra-professional (ex: RN to RN) perspectives
Working with incompetent colleagues	Lack of understanding of the full situation	Inadequate staffing and increased turnover
Lack of consensus regarding treatment plan	Self-doubt	Lack of administrative support
Lack of continuity of care Lack of being truthful	Lack of assertiveness	Hierarchies within the healthcare system
Conflicting duties	Socialization to follow others	Nurses not involved in decision-making

Epstein et al. (2019) identified three different levels that may cause moral distress. The patient level includes the patient or his/her family, and might be related to family or patient demands for unnecessary or aggressive treatment. The team/unit level includes improper communication, an unhealthy work environment, and/or lack of collaboration. The last level is the system level, which includes causes that happened outside the unit boundaries, such as inadequate staffing, reduced costs by omitting some procedures, and a lack of supplies and resources. These factors were used to revise the previous tool developed by Hamric et al. and included in the most updated tool that aimed to measure moral distress based on the frequency and intensity of the experienced situations (Epstein et al., 2019: 2).

Prompahakul and Epstein (2020) conducted an integrative review that explored the moral distress among non-Western nurses and reported that three main categories triggered moral distress:

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end-of-life-related care, team/unit, and institutional factors. Unnecessary aggressive treatments, giving false hope, and providing futile care were the most reported situations in the end-of-life category. Within the team/unit category, moral distress was most frequently triggered by poor team communication and collaboration, working with incompetent colleagues, and power of hierarchy. Under the institutional category, inadequate resources (lack of medical supplies, staffing shortage), administrative work, disagreement with institutional policies, and lack of administrative support were the most contributing moral distress factors (Prompahakul & Epstein, 2020: 788, 789).

Finally, the AACN (2021) defined elements or situations that constrain nurses to act upon their judgment. The organization linked these constraints to three factors, namely, self, unit, and organization. The AACN incorporated the previous work of Hameric and Epstein to identify these levels. Table 3.3 shows examples that fall under each category (AACN, 2021: 3).

Table 3.3: Moral distress causes and constraints adopted from the AACN addressing recognizing moral distress, 2021.

Self	Unit	Organization
Performing care is perceived as futile.	Inadequate staffing	Pressures to decrease cost
Implementing unnecessary treatments	Ineffective communication	Hospital policies
Providing end-of-life care	Working with an incompetent colleague(s)	Hierarchy of power
Witnessing needless patient suffering/inadequate pain relief	Bullying	Ineffective communication
Providing false hope to patients	Lack of a healthy work environment	Financial limitations

3.4.4 Taking the wrong ethical action (moral wrongdoing)

Epstein et al., (2019) stated that moral distress occurs when the nurses' voices are not heard and when they are forced to act against their professional ethical beliefs. The perceived pressure to take the wrong action is the core definition of moral distress (Epstein et al., 2019). This component mainly depends on knowing the right action. Acting against one's moral beliefs and values threatened the nurses' moral integrity, authenticity, moral sensitivity, self-worth, self-confidence, and engagement with patient care (Morley et al., 2019: 658, Rahnama, Mardani-Hamooleh & Kouhnavard, 2017: 2, Mealer & Moss, 2016: 1615).

Moral sensitivity is the lens that enables nurses to assess, interpret, and recognize the ethical situation and take the necessary decisions and action, examining the impact of that action on

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patient care (Rahnama, Mardani-Hamooleh & Kouhnavard, 2017: 2). It became difficult for nurses to follow decisions that went against their moral value and ignored their moral sensitivity, or where nurses were directly involved in implementing these decisions and witnessed the patient's suffering. In their study, Arends et al. (2022) provided an example from one of the participants who stated, "Sometimes the symptoms and side effects can be very serious and eventually we [nurses] are the ones that are cleaning up the mess." Moral distress arises when healthcare providers are compelled to follow a plan that is not in the best interest of patients and implement futile care (Arends et al., 2022: 2533).

3.4.5 Moral suffering or associated feelings

The last component to be covered in this section is moral suffering. Moral suffering represents the consequences, the related signs and symptoms, and/or the impact of moral distress. In the above-mentioned definition, Wilkinson (1987) described the experience of moral distress as a negative feeling and psychological disequilibrium (Wilkinson, 1987: 16). Corley (2002) agreed with Wilkinson and added a suffering experience to his definition (Corley, 2002: 64). Nathaniel (2006) described it as pain affecting the body and mind (Nathaniel, 2006: 421). McCarthy (2013) labeled it as an emotional, psychological, and physical suffering experience (McCarthy, 2013: 1). Campbell et al. (2016) described it as a negative self-directed attitude or emotion (Campbell, Ulrich & Grady, 2016: 6).

The consequences of moral distress may affect the entire healthcare system at different levels. The impact may be started at the individual level (nurse/patient), followed by the unit and extended to the institution (Gehrke et al., 2024: 12, Borhani et al., 2014: 2). Consequently, if the nurses fail to address the perceived moral distress, they will be exposed to other consequences, called the crescendo effect (Gehrke et al., 2024: 12, Arnold, 2020: 2).

3.4.5.1 Individual level

Moral distress is an internal feeling of suffering that threatens the individual's integrity (Mealer & Moss, 2016). Not only does moral distress negatively impact the nurses' professional and personal lives, but it also affects the patients and their families. Nurses who experience moral distress adopt avoidance behavior by keeping a distance between themselves and their patients, they tend to work fewer hours, pretend to be sick, and accept fewer responsibilities in their work (Gehrke et al., 2024: 9, Ghazanfari et al., 2022: 4, McAndrew, Leske & Schroeter, 2018: 7).

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3.4.5.1.a Physical, psychological, and emotional impact

The AACN (2021) summarised the most common physical, psychological, and emotional signs and symptoms associated with the experience of moral distress in the literature. The physical impact includes the feeling of headache, muscle ache, neck pain, nausea, vomiting, and heart palpitation. The psychological impact includes depression, loss of self-worth, nightmares, job dissatisfaction, and depersonalization of the patient. Emotional impact includes frustration, anger, anxiety, guilt, sadness, powerlessness, and withdrawal (AACN, 2021: 2). That increased the sick days reported among nurses with higher moral distress (Petersen & Melzer, 2023: 1211).

Arnold (2020) conducted a meta-ethnography study that included ten qualitative studies exploring moral distress in emergency and critical care nurses. The study reported that nurses experience anger, stress, depression, despair, guilt, sadness, and frustration, with the most commonly reported physical symptoms being nausea and high blood pressure (Arnold, 2020: 10). Finally, The experience of moral distress has also led to career changes, not only for nurses but for other healthcare professionals as well. (Petersen & Melzer, 2023: 1211).

3.4.5.1.b Patient and family impact

A phenomenological study conducted by Choe, Kang, and Park (2015) revealed that nurses developed a negative attitude toward their patients. The study identified that nurses tend to show less motivation to advocate for their patients' rights and they choose to not expose themselves to ethical conflict with others. The nurses perceived themselves as information receivers rather than decision-makers. The nurses felt guilt and powerlessness when they communicated with patients and families, as they could not offer help, protect their patients' dignity, or participate in patient care decisions. These feelings explained why they developed negative attitudes (Choe, Kang & Park, 2015: 1690).

Nurses with compromised moral sensitivity are unable to acknowledge the moral problem from the patient's viewpoint. They have less courage to defend their patients' rights and take action on behalf of their patients (Zhang et al., 2020: 9).

3.4.5.1.c Quality of patient care

Moral distress results in poor quality of care. The nurses reported that the most common factors of moral distress associated with poor quality of care are inadequate staffing, workload, pressure to reduce cost, and extensive documentation (McAndrew, Leske & Schroeter, 2018: 8).

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Another factor related to poor quality of patient care is decreased moral sensitivity. Reduction in moral sensitivity makes the nurses blind and deaf to a morally conflicting situation. This may harm the patient, increase the patient's hospital stays, and incur more cost for the patient and their family (Ghazanfari et al., 2022: 4). Regarding nursing practice, moral sensitivity helps nurses to demonstrate a better understanding of their patient's needs, as well as to provide nursing care that extends beyond their job descriptions or role assignments (Zhang et al., 2020: 9).

3.4.5.1.d Impact on the nursing profession

The moral distress impact on the nursing profession is widely investigated. Moral distress is linked to the intention to leave the profession and burnout (Gehrke et al., 2024: 10). Epstein et al. (2020) reported that 10-26% of healthcare providers, including nurses, are considering leaving their careers due to moral distress (Epstein et al., 2020: 150). Neuman et al. (2018) found that moral distress is a significant contributing predictor of job burnout and associated imbalance of work-life and low work satisfaction (Neumann et al., 2018: 849). Whitehead et al. (2015) revealed in their comparative study that nurses who considered leaving or left their profession reported higher moral distress scores compared to those who did not leave or considered leaving (Whitehead et al., 2015: 121).

3.4.5.2 Unit or team-level

The impact of moral distress at the unit/team level is closely related to ineffective communication, inadequate staffing, and/or working with incompetent colleagues as major causes (Dodek et al., 2019: 123, McAndrew, Leske & Schroeter, 2018: 6).

Berhie, Tezera, and Azagew (2020) linked the impact of moral distress to staff relationships, dissatisfaction with the team, and poor patient care outcomes. The study connected the limited collaboration among the team with nurses' perception of being powerless. Nurses perceived that their experience and knowledge were not respected, which may negatively impact on their desire to share opinions or interfere in decision-making (Berhie, Tezera & Azagew, 2020: 165).

High-quality patient care mainly depends on collaboration between team members, mutual respect, and appreciation of the expertise of the team (Kondrat, 2016: 22). In addition, moral distress may increase absenteeism among team members adding extra workload on others, affecting patient care (Borhani et al., 2014: 2).

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3.4.5.3 Institutional level

All the above-mentioned consequences or impacts negatively impact the healthcare institution. Moral distress increases the turnover rate, affecting the organization's ability to retain expertise, leading to staff shortage, adding more stress on the remaining staff, and damaging the organization's image. The scarcity of skilled nurses can affect the organization's ability to achieve and maintain patient safety goals. It may place the organization under legal and financial burden (Prompahakul & Epstein, 2020: 792, Borhani et al., 2014: 6).

3.4.5.4 Crescendo effect

Jameton (1993) identified two types of responses to moral distress. Initial distress arises when nurses experience a morally distressing situation and cannot act in accordance with their moral judgment, and reactive distress arises when they fail to act upon their initial distress. (Jameton, 1993: 544). Initial distress ends when exposure to the moral situation ends, while reactive distress remains as a residual feeling that is activated with exposure to other moral situations (Nofziger, 2020: 1). Recently, the term "reactive distress" has been replaced with the term "moral residue" in the literature (Rushton, Caldwell & Kurtz, 2016: 41, Pauly, Varcoe & Storch, 2012: 4). It is described as a long-lasting painful feeling that remains existing after the moral situation ends and results in losing the individual's moral identity. Repeated exposure to moral distress without acting upon it can lead to long-lasting consequences (Rushton, Caldwell & Kurtz, 2016: 4, Epstein & Hamric, 2009).

One of these consequences is the crescendo effect. This term was introduced by Epstein and Hamric in 2009. The crescendo effect is defined as damage caused by multiple or prolonged exposures to moral distress situations that result from the building up of moral residue (Epstein & Hamric, 2009). In the presence of the crescendo effect, the healthcare providers' reaction to the new morally distressing situation is more devastating.

In other words, the degree of moral distress does not return to its initial level with each new moral distress encounter, but instead leaves a residue. When the subsequent morally distressing situation re-occurs, there is even greater moral distress felt. The likelihood of burnout, resignation, and unhappiness with the nursing profession rises as a result of this compounding effect over time (Rushton, Caldwell & Kurtz, 2016: 43, Pauly, Varcoe & Storch, 2012: 4). Figure 3.3 illustrates the occurrence of crescendo effect.

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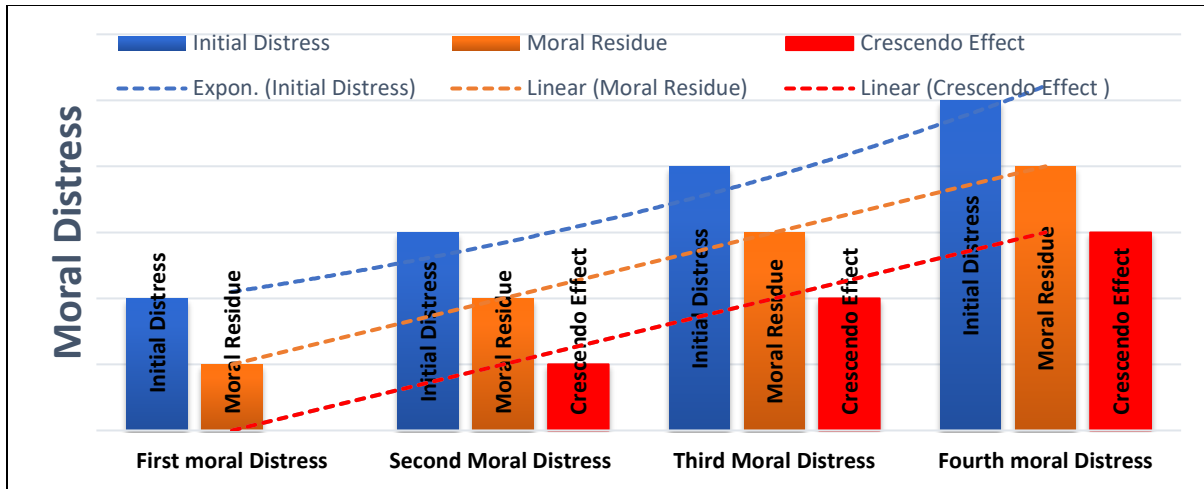


Figure 3.3: Crescendo effect of repeated exposure to moral distress.

3.5 THE INFLUENCE OF WORK-RELATED AND SOCIODEMOGRAPHIC CHARACTERISTICS ON MORAL DISTRESS

Moral distress has been linked to the individual's perception of the moral situation. The experience of moral distress may vary according to the individual's work-related and sociodemographic characteristics (Ramos et al., 2019: 407, Burston & Tuckett, 2013: 315) (see Table 3.4).

3.5.1 Work-Related characteristics

The relationship between work experience and moral distress seems to be contradictory. Several studies reported a significant correlation between the years of experience and moral distress level (Berhie, Tezera & Azagew, 2020: 164, Sannino et al., 2019: 5, Larson et al., 2017: 338), while other studies denied this correlation (AlQahtani et al., 2021: 199, Almutairi et al., 2019: 111). Among the healthcare providers, nursing as a profession scored higher in moral distress compared to other healthcare professions. The literature interpreted these differences in the light of nurse-physician relationships and relationships with other professions. The perceived power of hierarchy, being an information recipient, spending more time with patients and their families, and being a direct care provider are major factors that contributed to these differences (Epstein et al., 2019: 5, Dodek et al., 2016: 180, Whitehead et al., 2015: 120).

Significant differences in moral distress levels were reported for different clinical settings. The higher moral distress among critical care nurses compared to the moral distress among non-critical care nurses was linked to the complex nature of care in the critical care units, dealing with critically ill patients which results in more morally challenging situations, witnessing futile care, and life-sustaining treatments. All of these factors added more burden on critical care nurses and

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resulted in more intense and frequent moral distress experiences (Emmamally & Chiyangwa, 2020: 106, Epstein et al., 2019: 7, Wenwen et al., 2016: 7, Whitehead et al., 2015: 120, Borhani et al., 2014: 6) (see Table 3.4).

3.5.2 Demographic characteristics

Literature yielded incongruent results regarding the association between moral distress and demographic characteristics (Ramos et al., 2019: 411). Among the demographic characteristics, gender (Emmamally & Chiyangwa, 2020: 106, Sannino et al., 2019: 5); age (Sannino et al., 2019: 5), and ethnicity (Ramos et al., 2019: 407) were found to be factors associated with variances in moral distress experience among nurses.

Several studies linked age with years of working experience to moral distress intensity and frequency, identifying those older nurses were more exposed to moral distress compared to younger nurses (Berhie, Tezera & Azagew, 2020: 164, Wenwen et al., 2016: 4, Borhani et al., 2017: 5, Shoorideh et al., 2015: 1). In contrast, other studies found that younger nurses showed higher intensity and frequency of moral distress compared to older nurses (Suleman, 2021: 30, Prompahakul & Epstein, 2020: 788, Almutairi et al., 2019: 110, Sannino et al., 2019, Borhani, Mohammadi & Roshanzadeh, 2015: 5).

Gender was found to be a demographic factor associated with variances in moral distress experience. Female nurses experienced more moral distress than male nurses. That may be related to the higher proportion of female than male nurses participating in the studies (Prompahakul & Epstein, 2020: 5, Sannino et al., 2019: 5, Wenwen et al., 2016: 5).

A higher level of education was also found to be a significant factor associated with moral distress experience. Nurses with higher education acquired more ethical knowledge and competency. They have a better ability to identify moral dilemmas, recognize morally conflicting situations, and make appropriate moral judgments. These nurses are in all likelihood filling higher positions and have more responsibilities toward patient care and safety, which places them in a different position than other nurses (Ramos et al., 2019: 412, Wenwen et al., 2016: 7) (see Table 3.4).

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Table 3.4: Characteristics associated with moral distress

#	Author and year	Country	Aim of the study	Settings and population	Research design	Sample size	Utilized MD* Tool	Results
1	Berhie, Tezera & Azagew, 2020.	Ethiopia	Assessing the proportion of moral distress and associated factors	Nurses working in referral hospitals	A cross-sectional study	412	MDS-R	<p>MD total, frequency, and intensity:</p> <ul style="list-style-type: none"> - 83.7% (n=412) experienced MD - 30% reported very frequent MD - MD total, frequency, and intensity scores were not mentioned <p>Associated factors:</p> <ul style="list-style-type: none"> - Years of experience (positive correlation) - Lack of communication - Perceived powerlessness - Inadequate staffing - Implementing inappropriate care
2	Sannino et al., 2019.	Italy	Assessing the frequency, intensity, and level of moral distress	Pediatric intensive care nurses	A cross-sectional study	136	MDSNPV*	<p>MD total, frequency, and intensity:</p> <ul style="list-style-type: none"> - Total: 24.1 ± 10.4 - Frequency: 36.2 ± 18.6 - Intensity: 57.7 ± 37.1 - Low-moderate MD level <p>Associated factors:</p> <ul style="list-style-type: none"> - Years of experience and age (negative correlation) - Gender (female higher than male) - Working with incompetent colleagues (highest MD total score) - Providing futile care (highest frequency and intensity scores) <p>Participants:</p>

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								- 80.9% of the participants were female
3	Shoorideh et al., 2015.	Iran	Determining an association between moral distress with burnout and anticipated turnover	Intensive care unit nurses	Descriptive-association research	159	IMDS/ Iranian version*	<ul style="list-style-type: none"> - Moral distress score 2.08 ± 0.98 - Moderate to high MD Associated factors: <ul style="list-style-type: none"> - Age, years of experience, and nurse-to-patient ratio (positive correlation) - No association with anticipated turnover - Significant association with burnout
4	Wenwen et al., 2016.	China	Describing the current state of moral distress and exploring its influencing factors	Clinical nurses with different specialties	Exploratory, descriptive design	465	MDS-R*	MD total, frequency, and intensity: <ul style="list-style-type: none"> - Low MD level 36.01 ± 24.02 - Low to moderate MD frequency: 1.13 ± 0.49 and intensity: 1.09 ± 0.58 Associated factors: <ul style="list-style-type: none"> - Age, level of education, and years of experience (positive correlation) - Clinical setting (ICU) - Title (more responsibility higher MD) Root causes of MD: <ul style="list-style-type: none"> - Prolonged end-of-life care - Power of hierarchy - The family's wish to hide the diagnosis from the patient - Working with incompetent colleagues - Following the family's wishes to provide futile care
5	Borhani et al., 2017.	Iran	Determining the relationship between moral sensitivity and moral distress	ICU nurses	Descriptive-association research	153	MDS	MD total, frequency, and intensity: <ul style="list-style-type: none"> - Moderate level of MD was 44.8 ± 16.6, frequency $46.6 \pm$

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								<p>16.4, and severity of exposure was 44.8 ± 16.4</p> <p>Associated factors:</p> <ul style="list-style-type: none"> - Age, years of experience, and intention to leave (positive correlation) <p>Root causes of MD:</p> <ul style="list-style-type: none"> - Staff shortage - Lack of resources
6	Prompahakul et al., 2021.	Thailand	Describing the experience of moral distress and related factors	Acute and critical care nurses	Mixed method study	462	MMD-HP* Interview guide	<p>The sum of the total score of 104.80</p> <p>MD frequency and intensity were not mentioned</p> <p>Associated factors:</p> <ul style="list-style-type: none"> - Working unit (acute reported higher MD score than critical settings) - Patient age (adult nurses obtained higher MD scores than pediatric nurses) - Intention to leave (positive correlation) <p>Age, years of working, and end-of-life training were not significant with MD</p> <p>Root causes of MD:</p> <ul style="list-style-type: none"> - Overemphasis on quality measures at the expense of patient care - Excessive documentation - Following of the family's insistence to continue aggressive treatment - Nurse-patient-ratio - Lack of resources - Provision of aggressive treatment - Implementation of unnecessary tests and treatment

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7	Larson et al., 2017	Canada	Measuring the level of moral distress and describing the relationship of moral distress with demographic factors, burnout, and uncertainty	Neonatal ICU and PICU nurses, physicians, and respiratory therapists	Cross-sectional survey	206	MDS-R Pediatric version.	<ul style="list-style-type: none"> - Median MDS-R score was 96.5 (IQR, 69–133) - 58% reported work-related moral distress Associated factors: <ul style="list-style-type: none"> - Nurses reported higher MD compared to physicians - Years of experience (positive correlation) Root causes of MD: <ul style="list-style-type: none"> - Yielding to the family's insistence to continue life support treatment - Inadequate resources - Power of hierarchy - Lack of decision-making involvement - Witnessing unethical behavior - No significant association between MD and age and gender
8	Almutairi et al., 2019.	Saudia Arabia	Examining moral distress among healthcare providers and evaluating the level of moral distress and its association with turnover rate.	Nurses, physicians, fellows/consultants	Cross-sectional study	342	MDS-R	<ul style="list-style-type: none"> 23% of the participants reported severe MD Associated factors: <ul style="list-style-type: none"> - Intention to leave (positive correlation) - Age (negative correlation) Root causes of MD: <ul style="list-style-type: none"> - Implementation of unnecessary tests and treatment - Following of the family's wishes to continue life support treatment - Prolonged death treatment. - Lack of communication within the team

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								- No significant association between MD and participants' education, units, and nationality
9	Dodek et al., 2016	Canada	Determining demographic characteristics associated with moral distress	ICU healthcare professionals	Cross-sectional study	669	MDS-R	<p>Associated factors:</p> <ul style="list-style-type: none"> - Nurses scored higher on MD compared to physicians - Years of experience (positive correlation) - Intention to leave (positive correlation) <p>Root causes of MD:</p> <ul style="list-style-type: none"> - Pressure to reduce the treatment cost - Witnessing of HCPs giving false hope to patients or families - Following the family's wishes to continue life support treatment - Prolonged death treatment. - No significant association between MD and participants' age and gender
10	Whitehead et al., 2015	USA	Assessing compared MD differences among professions and settings	Healthcare providers	Descriptive, comparative design	592	MDS-R	<p>MD mean score 82.9±51.2</p> <p>Associated factors:</p> <ul style="list-style-type: none"> - Nurses scored higher on MD compared to physicians - Patient age (adult nurses scored higher MD scores than pediatric nurses) - Clinical setting (ICU) - Healthy climate (negative correlation) - Intention to leave (positive correlation) - Nurses who received EOL training reported higher MD

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								<p>compared to those who had not received such training</p> <p>Root causes of MD:</p> <ul style="list-style-type: none"> - Lack of continuity of care - Following the family's wishes to continue life support treatment - Lack of communication within the team - Prolonged death treatment. - Working with incompetent colleagues
11	Emmamally & Chiyangwa, 2020.	South Africa	Determining the frequency, intensity, and overall severity of moral distress among critical care nurses.	Critical care nurses	Descriptive survey	74	MDS-R	<p>MD composite score was 112.12±73.21 reflecting a moderate level</p> <p>Associated factors:</p> <ul style="list-style-type: none"> - Gender (female nurses obtained a higher MD score) - Age and years of experience (negative association) <p>Root causes of MD:</p> <ul style="list-style-type: none"> - Continuing implementing futile care - No significant association between MD and participants' education and marital status
<p>Note:</p> <p>Moral distress (MD)</p> <p>ICU moral distress scale (IMDS)</p> <p>Moral distress scale neonatal–pediatric version (MDSNPV)</p> <p>Moral distress scale-revised (MDS-R)</p> <p>The measure of moral distress for healthcare professionals (MMD-HP)</p> <p>End of life (EOL)</p>								

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3.6 MORAL DISTRESS MEASUREMENT TOOLS

The first step in addressing moral distress and its impact on healthcare providers is recognizing or identifying it. The appropriate detection of moral distress as early as possible is one of the most important steps to mitigate this issue among healthcare professionals (AACN, 2021: 1). Utilizing a valid and reliable tool is an effective approach to detecting the presence of moral distress and provides a blueprint for intervention development (Tian et al., 2021: 9) (see Table 3.5).

The continuous evolution of the moral distress phenomenon in nursing literature and curricula, the changes in health status, and the expanding healthcare environment are reflected in the evolution of the development of the instruments. The evolution extended across 20 years of research work in this field. The first instrument to measure moral distress was developed in 2001 by Corley et al. (Corley et al., 2001), while the most recent one was revised in 2019 by Epstein et al. (Giannetta et al., 2020: 31, Epstein et al., 2019).

The moral distress instruments were classified under two categories: moral distress instruments based on Corley's moral distress scale, and instruments that are not directly derived from Corley's scale. The first category aimed to assess the frequency and intensity of moral distress among healthcare providers. The second category includes instruments developed to measure the actual degree of moral distress experienced beyond the frequency and intensity of the moral distress situations, measure moral distress for a specific population/setting, or the personal risk associated with moral distress (Giannetta et al., 2020: 3, Tian et al., 2021).

The languages used to administer the instruments are English, Farsi, Portuguese/Brazilian, Italian, Greek, Chinese, Japanese, German, Finnish, and Turkish. Most of the developed instruments collected the participants' responses using a 5-6 point Likert scale.

3.6.1 Instruments derived from Corley's moral distress scale

The Moral Distress Scale (MDS) was the first developed instrument by Corley et al. in 2001. The instrument was developed based on data generated from a literature review and interviews that aimed to measure the intensity and frequency of moral distress. The MDS was able to capture factors that contributed to moral distress such as deception, individual responsibilities, and doubts about patient autonomy. The tool consisted of 32 items using a 1-7 point Likert scale (Corley et al., 2001: 252).

With the extensive application of the instrument, Corley and colleagues identified some defects regarding pain management and patient management care. Accordingly, six items were added

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to the modified version in 2005 to have a total of 38 items scored from 0-6 points on the Likert scale (Corley et al., 2005: 385). The MDS was essentially developed to measure moral distress among critical care nurses (Hamric, Borchers & Epstein, 2012: 3).

In 2007, Hamric and Blackhall revised the MDS and reduced the item number to nineteen items to increase the feasibility of its application in multivariate studies with a 0-4 point Likert scale. The revised tool was successfully applied in the critical care setting for physicians and nurses with more focus on end-of-life care (Hamric & Blackhall, 2007: 423). Later, in 2012, Hamric and colleagues noticed that the tool narrowly focused on one aspect with limited application to one setting (Hamric, Borchers & Epstein, 2012: 3). The Moral Distress Scale-Revised (MDS-R), revised the moral distress measures to include more root causes, expand the applicability to non-critical care settings, and include healthcare providers from different disciplines. The MDS-R consisted of 21 items using a 5-point Likert scale (0-4) with six different parallel versions. The versions included nurses, physicians, and other healthcare providers working in adult and pediatric settings. The authors aimed to provide a comprehensive and feasible tool to be used across healthcare providers with coverage of more root causes (Hamric, Borchers & Epstein, 2012: 3).

The MDS-R has been extensively used and validated in different languages and in different countries such as Turkey (Karagozoglu et al., 2017), Italy (Lamiani et al., 2017, Lazzarin, Biondi & Di Mauro, 2012), Korea (Chae et al., 2016), and Iran (Sharif Nia et al., 2019). In addition, the tool was applied in different healthcare settings such as community and residential care environments (Burston et al., 2017), a psychiatric facility in Japan (Ohnishi et al., 2010), and a primary healthcare facility (Barth et al., 2018).

Recently, Epstein et al. (2019) identified necessary root causes to capture the moral distress at the team and system level, where these causes were not covered in the MDS-R tool (Epstein et al., 2019: 2, 3). The Measure of Moral Distress for Healthcare Professionals (MMD-HP) is the latest revised version based on Corley's instrument (Giannetta et al., 2020: 32). The instrument consisted of 27 items with a 5 point Likert scale applicable to all healthcare providers in all settings (Epstein et al., 2019: 3). The MMD-HP captured the major key components of moral distress and covered the three levels of moral distress root causes. The authors recommended replacing the MDS-R with MMD-HP as the tool has psychometric properties similar to MDS-R and is more feasible to be used (Epstein et al., 2019: 9). Further details of the tool will be provided in the next chapter as the MMD-HP has been utilized by the current study (see Table 3.5).

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3.6.2 Instruments not derived from Corley's moral distress scale

Giannetta et al. (2020) conducted a systematic review of the instruments that measured moral distress among healthcare providers. The review identified four instruments that were not derived from the MDS tool (Giannetta et al., 2020: 30). The Moral Distress Thermometer (MDT) was Developed in 2013 by Wocial and Weaver. The instrument is presented as a visual analog scale that ranges from zero to ten, similar to the pain scale, where zero means no distress and ten represents the worst experienced moral distress. The tool was developed to capture the acute phase of moral distress with the ability to track any changes over time and provide a numeric comparison for follow-up. The tool might be used as a fast screening tool to detect the presence of moral distress, before implementing the longer tool that aimed to identify the root causes of moral distress (Wocial & Weaver, 2013: 6).

The cultural-sensitive moral distress questionnaire was developed in 2008 by Eizenberg et al.. The questionnaire was developed to measure moral distress from a cultural and religious perspective. The questionnaire included three major factors, namely issues related to workplace relationships, inadequate resources, and workload (Eizenberg, Desivilya & Hirschfeld, 2009: 890). The tool has not been utilized by other studies so far to evaluate the psychometric properties in other cultures (Tian et al., 2021: 8).

The Moral Distress in Dementia Care Survey (MDDCS) was developed by Awosoga et al. in 2018 to measure moral distress in the dementia care setting. The tool measures the intensity, frequency, and effect of moral distress using 55 items with a 5 point Likert scale. The items were generated from nurses working in 23 dementia sites using an exploratory sequential mixed method. The authors revealed that the tool is valid, reliable, and specific to measuring moral distress among nurses managing patients with dementia and evaluating the effectiveness of interventions aimed at reducing moral distress (Awosoga et al., 2018: 1).

Bender et al. (2019) developed an instrument to be used in palliative care to measure healthcare providers' moral distress concerning the comfort care procedures and their application timing for in-patients. The instrument is designed for physicians, physician assistants, palliative nurse practitioners, and nurses. The instrument consists of two items with a 5-point Likert scale (Giannetta et al., 2020: 30).

The literature review revealed other instruments that were developed to measure moral distress in healthcare providers with none or limited implementation or not closely related to moral distress. They were the Ethics Stress Scale, which measures the stress caused by a moral

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dilemma (Raines, 2000); the Moral Distress Assessment Questionnaire developed by Hanna in 2002 to measure the intensity, type, frequency, and duration of moral distress (Hanna, 2002: 9, Tian et al., 2021); the Stress of Conscience Questionnaire, that measures stress stemming from poor conscience (Glasberg et al., 2006); and the Instrument of Moral Distress using nine items to measure moral distress in pharmacy and clinical practice (Sporrong, Höglund & Arnetz, 2006: 416) (see Table 3.5).

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Table 3.5: Summary of moral distress measurement properties

No.	Author and year	Instrument name	Number of items	Response rate	Targeted population/setting	Cronbach alpha
1	Corley et al., 2001	Moral Distress Scale (MDS)	32	1-7 point Likert scale	HCP critical care settings	Factor 1: individual responsibility 0.97 Factor 2: not in the patient's interest 0.82 Factor 3: deception 0.84
2	Corley et al., 2005	Moral Distress Scale (MDS)	38	0-6 point Likert scale	RN working in medical surgical units	Frequency scale: Cronbach alpha 0.90 Intensity scale: Cronbach's alpha 0.98
3	Hamric & Blackhall, 2007	Moral Distress Scale-Revised (MDS-R)	19	0-4 point Likert scale	Critical care nurses and physicians	Cronbach alpha 0.83 Physicians: 0.81 Nurses: 0.85
4	Hamric, Borchers & Epstein, 2012	Moral Distress Scale-Revised (MDS-R) Six parallel versions: - Adult and pediatric patients: ▪ Nurses ▪ Physicians ▪ Other HCPs	21	0-4 point Likert scale	Adult and pediatric nurses, physicians, and other HCPs	Overall Cronbach alpha 0.88 Nurses: 0.89 Physicians: 0.67
5	Karagozoglu et al., 2017	MDS-R Turkish version	21	0-4 point Likert scale	ICU nurses	Cronbach alpha 0.85
6	Lamiani et al., 2017	MDS-R Italian version	14	0-4 point Likert scale	Adult medical-surgical ICU nurses and physicians	Cronbach alpha 0.81
7	Sharif Nia et al., 2019	MDS-R Iranian version	21	0-4 point Likert scale	ICU nurses	Cronbach alpha 0.79
8	Burston et al., 2017	MDS-R Aged Care	20	0-4 point Likert scale	Residential aged care and community care nurses and co-workers	Frequency scale: 0.89 Intensity scale: 0.95 Composite scale: 0.94
9	Ohnishi et al., 2010	Moral Distress Scale for Psychiatric Nurses (MDS- P)	15	0-6 point Likert scale	Psychiatric hospital nurses	Cronbach alpha 0.90

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10	Barth et al., 2018	Brazilian Scale of Moral Distress, Primary Health Care Nurses	46	0–6 point Likert scale	Primary health care nurses	Cronbach alpha 0.98
11	Epstein et al., 2019	The Measure of Moral Distress for Healthcare Professionals (MMD-HP)	27	0-4 point Likert scale	Acute care, ICU, operation room, emergency department, LTACH, and primary healthcare nurses, physicians, and other HCPs	Cronbach alpha 0.93
12	Wocial & Weaver, 2013	The Moral Distress Thermometer (MDT)	Single item	Visual analog scale (0-10)	Nurses	NA
13	Awosoga et al., 2018	Moral Distress in Dementia Care Survey (MDDCS)	47	1–5 point Likert scale	Long-term care facility (dementia) nurses and co-workers	Cronbach alpha: Frequency 0.94 Severity 0.92 Effects 0.93 Relieving factors 0.83
14	Bender et al., 2019	Survey Instrument (Bender, 2019)	2	5 options	Palliative care nurses and physicians	NA
Healthcare providers (HCP) Registered nurses (RN)						

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3.7 INTERVENTIONS TO REDUCE MORAL DISTRESS

Identifying the major root causes that constrain nurses' abilities to act based on their moral judgment, and developing and utilizing instruments to detect and measure the frequency and intensity of moral distress, are the essential requirements for developing an intervention to mitigate moral distress prevalences in the nursing profession (AACN, 2021: 1). It is essential to provide the maximum support to alleviate any impact that may adversely be reflected on nurses' progress and patients' outcomes (Dacar, Covell & Papathanassoglou, 2019: 71). The impact of moral distress threatens the retention, stability, and development of expert nurses and the entire healthcare system (Epstein et al., 2020: 150). Enrolment and retention of skilled, proficient nurses positively reflect on patients' care outcomes and are considered a major role for nursing leaders and administration (Dacar, Covell & Papathanassoglou, 2019: 71, 72).

Different interventions were developed, modified, and implemented to address moral distress among healthcare providers and more specifically among nurses, to reduce the frequency and intensity of moral distress. The interventions were conducted through pilot studies, program evaluation, initiatives for quality improvement, single-group design, quasi-experimental, randomized trials, and mixed methods studies (Morley et al., 2021: 4).

3.7.1 Interventions characteristics

A recent systematic review conducted by Imbulana, Davis, and Prentice (2021), reviewed the literature for interventions that reduced moral distress among healthcare providers in intensive care units. The study identified three major outcomes based on key components of moral distress: interventions directed at moral judgment, interventions focused on root causes and perceived constraints. It categorized the interventions into several types, including end-of-life educational programs, moral distress empowerment, individual and group reflective debriefing, multidisciplinary reflective debriefing, and moral resilience training (Imbulana, Davis & Prentice, 2021: 3).

Similarly, Morley et al. (2021) conducted another systematic review of interventions that reduced moral distress. The study categorized the interventions as the following: facilitated discussion, self-reflection, narrative writing, bundle intervention, multidisciplinary rounds, a program of specialist consultation services, and educational intervention (Morley et al., 2021: 8-10) (see Table 3.6).

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3.7.1.1 Facilitated discussion

The facilitated discussion interventions were designed and implemented based on educational and theoretical models. The interventions include discussions based on morally distressing situations recently experienced (Morley et al., 2021: 8). Essentially, this approach targeted moral judgment and perceived constraints. Reflective practice is considered one approach that facilitates discussion between the members of the healthcare team.

Browning and Cruz (2018) developed a social work-facilitated debriefing intervention implemented with critical care nurses. The intervention was designed based on reviewing moral distress studies and reflective debriefing literature (Browning & Cruz, 2018: 10). The intervention integrated the social worker field and the nursing field. The study reported that facilitated reflective debriefing opens the opportunity for team members to express their feelings (e.g. powerlessness), enhances proper communication among the team members, and opens a professional and healthy dialogue to present opinions (Browning & Cruz, 2018: 22).

Other studies built their interventions based on a nursing model, framework, or theory. Rhodes and Alfandre (2007) designed the moral clinical reasoning model and implemented it as a systematic approach and navigating tool. The model aimed to enhance the members of the ethics committee's and healthcare providers' moral reasoning and their capacity for making moral judgments when facing moral dilemmas (Rhodes & Alfandre, 2007: 70). Later this model was utilized along with Nathaniels' Theory of Moral Reckoning by Chiafery et al. (2018) to develop the Nursing Ethics Huddles Intervention. The intervention aimed to facilitate discussion among nurses working in the same unit through an ethicist nurse. The discussion included debriefing, values, and clarification of the interrelated ethical principles related to a specific morally troubling situation (Chiafery et al., 2018: 7, 8).

The facilitated discussion approach involved recent morally distressing situations experienced in a specific place for further discussion and clarification. The approach depends on expressing different opinions and perceptions, sharing ethical knowledge, and making a resonant moral judgment. The discussion is mainly facilitated by a specialist with ethical knowledge and skills to facilitate discussion among the members of a healthcare group (Morley et al., 2021) (see Table 3.6).

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3.7.1.2 Self-reflection and narrative writing

Self-reflection includes an individual reflective practice that is described as an activity for looking back on one's experience, paying attention to the challenges encountered there, the discrepancies between the ideal quality of care and the reality of practice, as well as for taking action and learning from one's actions to achieve ideal practice (Meziane, Ramirez-Garcia & Fortin, 2018: 114, Johns, 2006).

Meziane et al. (2018) developed an intervention based on Watson's concept of the human being and Johns' structured reflective model. The intervention targeted moral judgment and focused on moral distress related to end-of-life care experienced by critical care nurses. The authors implemented the intervention in three consecutive sessions: session one included education and training about moral distress and Johns' reflective practice model with application of the model; session two comprised the self-reflective writing and the needed instructions; the last session included discussion about different strategies to reduce moral distress (Meziane, Ramirez-Garcia & Fortin, 2018: 114). The study reported that self-reflection enhances individual professional confidence and offers opportunities for positive change, although the interventions were not enough to reduce the moral distress among the participants (Meziane, Ramirez-Garcia & Fortin, 2018: 117).

Saeedi et al. (2018) targeted moral judgment to reduce moral distress through a narrative writing approach. The study used a randomized clinical trial - single-blinded design - on critical care nurses from two different hospitals. The participants were taught the narrative writing technique, instructions were given, and a moral distress definition was provided. The instructions were in a notebook (handed over by the research team) and participants had to write about their morally distressing experiences, feelings associated with that moment, and inappropriate behavior witnessed by the healthcare team, patient, or patient's family. The participants were instructed to write weekly for eight weeks. The notebooks were checked regularly by one of the research team members to review the participants' writing (Saeedi et al., 2019: 4). Unfortunately, the study revealed no positive outcomes or changes in moral distress among the participants. The study suggested that increasing the frequency and duration of this approach might contribute to positive outcomes (Saeedi et al., 2019: 7) (see Table 3.6).

According to the above-mentioned studies, self-reflection and narrative writing were not significant or suitable interventions to address moral distress among the nurses working in critical

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care units. It seems that more investigation, modification, and implementation are needed to evaluate the effectiveness of this approach in mitigating moral distress.

3.7.1.3 Intervention bundle

Bundle interventions included different approaches combined in one intervention. Vaclavik et al. (2018) developed a bundle intervention that integrated mindfulness as a stress-release technique, twice-a-week in-unit yoga classes, wall art of the tree of life placed in the staff lounge, as well as a grieving counseling session following a distressing event led by a specialist and establishment of a work-life balance committee.

The bundle intervention was designed based on Felgen's change model which combined inspiration, infrastructure, education, and evidence. The intervention targeted moral resilience as a method to counter moral distress among nurses working with cancer patients in oncology units (Vaclavik, Staffileno & Carlson, 2018). The study detected a significant change in the most frequent and distressing root causes experienced by the participants (giving false hope to the patient or patient's family), but no clear or significant reduction in moral distress score was reported (Vaclavik, Staffileno & Carlson, 2018: 329, 331) (see Table 3.6).

3.7.1.4 Multidisciplinary rounds and specialist consultation service programs

A multidisciplinary round is a collaborative approach that brings together healthcare professionals from different disciplines to participate in a semi-structured discussion. The purpose of this discussion is to analyze and address issues related to moral distress that arise in the healthcare setting. By leveraging the expertise of diverse professionals, this intervention aims to foster constructive dialogue and develop effective strategies for managing complex ethical dilemmas (Morley et al., 2021: 10).

Wocial et al. (2017) developed a multidisciplinary round called Pediatric Ethics and Communication Excellence (PEACE) Rounds. The intervention was implemented over twelve months and aimed to reduce moral distress among clinicians working in a pediatric intensive care unit and enhance the quality of care. The PEACE was designed as a process-oriented structure for defining decision-making and reaching agreement on general treatment objectives for children in the pediatric intensive care unit who had life-threatening illnesses. A discussion led by an ethicist who assisted in resolving care-related disagreements as they arose and provided education and coaching on communication techniques for challenging conversations was held

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after a summary of the care plan for a case in which the healthcare team felt that there may be inconsistency between family and team member expectations (Wocial et al., 2017: 78).

The intervention achieved an overall reduction in moral distress score post-intervention, but was not statistically significant. A statistically significant reduction in moral distress was found partially in some items included in the MDS-R instrument among nurses and physicians (Wocial et al., 2017: 82). The program of specialist consultation services was utilized as an approach to reduce moral distress in two studies, namely Pediatric Quality of Life Program (Brandon et al., 2014), and a health system-wide moral distress consultation service (Hamric & Epstein, 2017).

Brandon et al. (2014) developed a pediatric quality-of-life program to reduce moral distress among healthcare providers working in a pediatric palliative setting. The program was designed based on the pediatric standard of care of the National Hospice and Palliative Care Organization. The program involved one practitioner nurse of pediatric care and two attending physicians to provide consultation services for the healthcare providers working with in-patients and out-patients.

The consultation services covered the coordination of care, planning, end-of-life care, symptoms management, education, and spiritual support. The program conducted a weekly meeting for the healthcare team to discuss a real-time moral issue related to patient care. The intervention results revealed a significant reduction in moral distress intensity among two items, namely: “when the care given was not in the patient’s best interest,” and “work quality of life,”. No overall significant reduction in moral distress frequency and intensity score had been reported (Brandon et al., 2014: 195).

Hamric and Epstein (2017) established a moral distress consulting service that is operated by members of their ethics consultation service (ECS). The ECS enrolled eleven members; four senior experts in moral distress and seven members who received moral distress training. The authors described the consultation process as a group process in which one facilitator set ground rules for a secure setting where participants may express their thoughts and feelings while the other served as a transcriber. To create an action plan, the facilitator clarifies and discusses with the participants the values and constraints underlying the cases or the experienced moral situations. The discussion ended by reaching an agreement about the right action based on ethical principles and professional values (Hamric & Epstein, 2017: 4).

The program study reported themes that emerged from the participants' interviews. More than two-thirds of the participants indicated that the consultation services are beneficial in different

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aspects: staff empowerment, staff concern acknowledgment, increased staff engagement, enhanced team communication and collaboration, and changes in team behavior. Despite these changes, the study reported different challenges and limitations that may affect the adoption of this approach, such as the cost, time, commitment, administration support, continuous training, and effective evaluation tool (Hamric & Epstein, 2017: 13) (see Table 3.6).

3.7.1.5 Educational interventions

Educational interventions adopt a framework, theory, or model to guide and farm out the intervention where mostly the author takes the educator role in the intervention (Morley et al., 2021: 10). The American Association of Critical Care Nurses (2004) developed a model to address moral distress among critical care providers. The 4A's Rise Above Moral Distress Model (AACN, 2004) has been adopted by different studies to guide the development and implementation of their interventions (Molazem et al., 2013, Beumer, 2008, Carole McCue, 2010). The model is presented as four consecutive processes starting with *ask*, *affirm*, *assess*, and ending with *act*. These steps aim to help healthcare providers recognize the presence of moral distress, confirm their feelings with others, identify the main causes or triggers, and set or follow an action plan to resolve these issues (AACN, 2004: 2).

Molazem et al. (2013) combine the 4A's with scenario-based practice, and role-playing to implement an educational intervention over two weeks. The study was implemented with critical care nurses as a randomized control trial. The study reported a significant decrease in moral distress scores in the intervention group post-intervention. The score of moral distress (post-intervention among the interventional group) was measured twice, at one and two months. Further significant reduction in moral distress was noticed in the second month as well (Molazem et al., 2013: 4).

Recently, in 2021, the AACN revised the model and replaced it with a systematic tool named the Recognise and Address Moral Distress tool (AACN, 2021). The tool was developed to guide the nurses through a systematic approach. The first step is to differentiate moral distress from other distress like burnout and compassion fatigue. The second step assesses moral distress levels by identifying the intensity of moral distress and the associated signs and symptoms. The third step identifies the causes and constraints that triggered the experience of moral distress. The fourth step identifies and selects a resource that can provide help and support. The tool suggested three resources, namely self, unit, and organization. The last step includes using a worksheet to fill out the available resources and strategies at the workplace (AACN, 2021).

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One of the most robust educational interventions was developed by Robinson et al. (2014). The authors developed a residency program of clinical ethics for nurses. The program is educationally based with ten months of mentorship. The curriculum was constructed based on bioethics principles, standards of practice, and moral theory. Over 98 contact hours, the program aimed to enhance the nurses' ability to recognize ethical challenges, work as an ethics resource nurse, establish preventive strategies, and facilitate the ethics round. The program utilized different educational techniques, such as simulation, role-playing, communication strategies, and reflection. The intervention result revealed a significant reduction in moral distress scores over the three times measured. Moreover, a slight increase in ethical knowledge and self-efficacy was reported (Robinson et al., 2014: 18).

Overall, the developed interventions reported inconsistent results and weak evidence of the effectiveness of these interventions in reducing the frequency and intensity of moral distress. The most promising interventions were educationally based interventions. These interventions reported a significant reduction in moral distress using a different approach that includes: ethics education, role-playing, communication skills, and systematic reflection (Rushton et al., 2021, Robinson et al., 2014, Abbasi et al., 2019, Molazem et al., 2013, Monteverde, 2016).

Despite the reduction in moral distress, these interventions reported other positive outcomes, such as acknowledgment of the existence of the problem, its impact on healthcare professionals, and developing interventions to mitigate and preserve their integrity that were appreciated by the participants (Beumer, 2008). The interventions give a safe place for the healthcare members to express their feelings and raise their concerns, as well as the chance to present themselves and their perceptions (Reilly & Jurchak, 2017). Self-awareness, self-confidence, improved communication, and increased team collaboration were positive outcomes reported (Fontenot & White, 2019) (see Table 3.6).

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Table 3.6: Summary of interventions addressing moral distress

No	Author and year	Country	Intervention type	Moral distress component	Characteristics	Target population	Sample size	Instrument	Results
1	(Browning & Cruz, 2018)	USA	Facilitated discussion	Moral judgment	A reflective debriefing intervention by integrating moral distress and educational debriefing literature.	ICU nurses	43	MDS-R	<ul style="list-style-type: none"> - Low to moderate MD. - A small reduction in MD pre- and post-scores among the interventional group with no statistically significant difference. - 63% reported the intervention as helpful.
2	Chiafery et al., 2018	NA	Facilitated discussion	Perceived constraints	<p>The intervention was developed based on:</p> <ul style="list-style-type: none"> - Nathaniel's theory of moral reckoning; - Rhodes and Alfandre's moral clinical reasoning model. 	ICU nurses	32	MDT	<ul style="list-style-type: none"> - Statistically significant reduction in MD pre- and post-intervention scores. - 68% of the participants reported a reduction in MD pre- and post-intervention scores.
3	Meziane, Ramirez-Garcia & Fortin, 2018	Canada	Reflective practice and self-reflection	Moral judgement	<p>Encompasses three phases:</p> <p>Phase 1:</p> <ul style="list-style-type: none"> - Participants received in-person education on identifying moral distress and used Johns' reflective 	Nurses working in ICU and providing palliative care	12	MDS-R	<ul style="list-style-type: none"> - No statistically significant reduction in MD pre- and post-intervention scores. - A quarter of the participants reported that journaling was tedious.

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					<p>practice model (Johns, 2006) to write a structured self-reflection.</p> <p>Phase 2: - Involved instructions guiding the written self-reflection and reflective practice.</p> <p>- Phase 3: - Covered strategies to manage moral distress situations.</p>				
4	Saeedi et al., 2019	Iran	Narrative writing	Moral judgment	The intervention provided a notebook with written instructions. The instructions included a brief definition of MD, examples of narrative writing, and how to report morally distressing situations.	ICU and NICU nurses	106	MDS	<ul style="list-style-type: none"> - No statistically significant reduction in MD pre- and post-intervention scores. - The study recommended to increase the duration and frequency of the narration.
5	Vaclavik, Staffileno & Carlson, 2018	USA	Intervention bundle	<ul style="list-style-type: none"> - Moral resilience - Moral judgment 	The bundle included: - Critical debriefing led by a licensed grief	Oncology nurses	56	MDS-R	<ul style="list-style-type: none"> - Pre-intervention and three-months post reduction of MD related to one item only: How

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					<p>counselor following a critical event;</p> <ul style="list-style-type: none"> - A bag containing a lavender sachet, chocolate bar, and tissues; - A tree of life wall art installation in the unit break room on which names of patients who had died were displayed; - Establishment of a work-life balance committee; - Yoga classes offered in the unit on both shifts twice a week; - Training in mindfulness-based stress reduction techniques. 				<p>frequently does the “witnessing healthcare providers giving false hope to a patient or family) occur”? The MD lowered from 81% to 44%.</p> <ul style="list-style-type: none"> - The mindfulness techniques were successful in decreasing the nurses’ perception of distress.
6	Wocial et al., 2017	USA	Facilitated discussion of multidisciplinary rounds	<ul style="list-style-type: none"> - Moral judgment - Perceived constraints 	<p>Pediatrics Ethics and Communication Excellence (PEACE) rounds:</p> <ul style="list-style-type: none"> - Pilot formal clinical ethics support program for the PICU team. - Formal weekly discussions of 	PICU physicians, nurses, and other HCPs	220	MDS-R MDT	<ul style="list-style-type: none"> - Overall moral distress decreased post-intervention. - 86% of nurses, 95% of physicians, and 96% of other clinical care providers indicated improvement in communication with patients/family.

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					<p>patients with prolonged PICU stays.</p> <ul style="list-style-type: none"> - Discussion involved clarifying goals of treatment and ethical issues. - Ethicist provided education and effective communication techniques. 				<ul style="list-style-type: none"> - 88% of nurses, 90% of physicians, and 98% of other clinical care providers indicated improvement in communication with other team members.
7	Brandon et al., 2014	NA	Specialist consultation service programs	<ul style="list-style-type: none"> - Moral judgment - Perceived constraints 	<ul style="list-style-type: none"> - Consultation services that included two physicians and one pediatric nurse practitioner in palliative care. - Consultations were available to clinicians throughout the healthcare system for patient care planning and coordination needs, as well as educational offerings, debriefings, and weekly unit-based interdisciplinary meetings to discuss specific patient care issues in real-time. 	Pediatric in-patient and out-patient HCPs	364	MDS	<p>Scale administered pre- and 20 months post-intervention.</p> <ul style="list-style-type: none"> - No statistically significant differences in the intensity or frequency of pre- and post-intervention scores in terms of individual responsibility, and patient's benefit. - Statistically significant reduction in MD frequency pre- and post-intervention scores in terms of interventions to postpone death.

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8	Hamric & Epstein, 2017	NA	Specialist consultation service programs	<ul style="list-style-type: none"> - Moral judgment - Perceived constraints 	<ul style="list-style-type: none"> - Ethics consultation services. - Included one facilitator (ethics specialist), one scribe, and the attendees. - Provided a safe environment for open discussion about value differences and constraints. - Setting an action plan based on the right professional values and standards. 	ICU and acute care nurse	56	NA	83% of interview respondents indicated the consultation led to the resolution of key problems, changes in staff or team behavior, or improved organizational processes.
9	Molazem et al., 2013	Iran	Educational intervention	Perceived constraints	<ul style="list-style-type: none"> - Used the AACN 4A's to Rise Above the Moral Distress Model. - Provided two four-hour educational workshops delivered over two consecutive weeks. - Content: defining and discussing moral distress. - Developing individual and system strategies to address moral distress. 	CCU nurses	60	MDS	<p>Completed pre-, one and two months post-intervention. A significant difference between mean MD scores at one and two months.</p> <ul style="list-style-type: none"> - Control group: increased, 4.712 ±1.048 to 5.275 ±0.946 (one month) and 5.183 ±1.153 (two months). - Intervention group: decreased, 4.44.24 to 3.36 ±0.996 (one month) and 3.048 ±1.25 (two months).

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					<ul style="list-style-type: none"> - Applying the 4A's framework, and role-playing. - Practicing responses to moral distress scenarios. 				
10	Beumer, 2008	NA	Educational intervention	Perceived constraints	<ul style="list-style-type: none"> - Used AACN 4A's to Rise Above the Moral Distress Model. - Provided five workshops over four weeks totaling ten hours. - Participants received instruction on how to recognize, cope with, and address moral distress. 	ICU nurses	34	<ul style="list-style-type: none"> Modified version of MDS eight questions 5 point Likert scale Four true/false statements 	<ul style="list-style-type: none"> The workshop and follow-up education decreased nurses' moral distress. Advocacy for patients is a nursing obligation, and the workshop reinforced its importance. Initial anger and frustration reduced over time. - No statistical data was provided. - The validity and reliability of the tool were not tested.
11	Robinson et al., 2014	USA	Educational intervention (residency program)	<ul style="list-style-type: none"> - Moral judgment - Perceived constraints 	<ul style="list-style-type: none"> - Clinical Ethics Residency for Nurses (CERN) consisted of 98 hours of education and mentorship over ten months. - The curriculum was developed from moral philosophy, US professional standards for bioethics, and ethics consultation. 	The hospital provided medically aggressive end-of-life care nurses	67	MDS-R	<ul style="list-style-type: none"> Pre- and two weeks post-last classroom day. Paired t-tests were conducted to evaluate the impact on MD. Statistically significant reduction in MD from time 1 [M = 72.04; SD = 33.59] to time 2 [M = 56.82; SD = 29.29] (p < .000). Increased knowledge (p < .005) and self-efficacy (p < .000).

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12	Reilly & Jurchak, 2017	NA	Reflective practice	<ul style="list-style-type: none"> - Moral judgment - Perceived constraints 	<p>Reflective practice intervention:</p> <ul style="list-style-type: none"> - Group case study discussions led by the hospital nurse ethicist. - 40–50 minute sessions, twice a month, over nine months. 	CCU	30	<ul style="list-style-type: none"> - Data collected qualitatively - Focus group 	<ul style="list-style-type: none"> - Participants reported intervention decreased moral distress, allowed an opportunity to identify emotions and debrief, thus improving the ethical practice environment. - Structured ethical group discussion allowed for a new perspective on colleagues, patients, and families viewpoints. - Highlighted the importance of the ethical facilitator role and nursing leadership presence. - Inconsistent attendance among the 30 participants: <ul style="list-style-type: none"> ▪ 30 attended one session. ▪ 21 attended two sessions. ▪ 12 attended three or more sessions..
13	Davis & Batcheller, 2020	NA	Bundle intervention	<ul style="list-style-type: none"> - Moral resilience 	<p>The PICU Resiliency Bundle:</p> <ul style="list-style-type: none"> - Ethical issue resolution process. - Mindfulness reminders through cell 	PICU nurses, physicians, and a respiratory therapist	47	Connor-Davidson Resilience Scale (CD-RISC-25)	<ul style="list-style-type: none"> - Significant increase in group resilience from 79.9 to 83.4 within six months of bundle implementation ($p < 0.0001$). - Increase in participant

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					<ul style="list-style-type: none"> phone applications. - Patient death process outline. - Case conference discussions. - Structured debriefings with pastoral care. - Discussions with colleagues and supportive staff. - Leadership notification. - Social events. - Host site educational courses aimed at improved clinician wellbeing. - Employee assistance program. 				<p>acknowledgment of training on moral distress (51% to 83%), acknowledgment of training on personal resilience (53% to 83%), and awareness of resources available to them (62% to 92%) pre- and post-project implementation.</p>
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3.8 CONCLUSION

This chapter reviewed the literature on the moral distress phenomenon and related components. The chapter outlined the evolution of moral distress, its defining characteristics, the impact of moral distress at different levels, the available instruments that measure moral distress, the interventions to reduce moral distress, and its effectiveness.

Chapter 4 will be presented in an article format and discuss the findings of phase one which measured the moral distress frequency, intensity, and total score. In addition, it presented the variances in moral distress scores according to the CCNs' sociodemographic and work-related characteristics. Finally, it presented the CCNs intention to leave the profession secondary to moral distress.

CHAPTER 4

THE MAGNITUDE OF MORAL DISTRESS AMONG CRITICAL CARE NURSES IN ABU DHABI

4.1 INTRODUCTION

Chapter 3, presented the review of the literature on the moral distress phenomenon and related components. The current chapter illustrated the findings of phase one in article format. Phase one aimed to measure the frequency, intensity, and total moral distress among nurses working in critical care units in two tertiary hospitals in Abu Dhabi.

The article highlighted the magnitude of moral distress among the CCNs presented in terms of frequency, intensity, and total score. In addition, it compared the obtained results with international studies to reflect the current status of moral distress among the e CCNs in Abu Dhabi. The obtained results formed the pre-test data of the quasi-experimental design. These data will be compared with the result of the post-test.

The manuscript with the title: The Magnitude of Moral Distress Among Critical Care Nurses in Two Public Hospitals: A Cross-sectional Study, was submitted to Nursing in Critical Care journal on 7 July 2024, see the attached proof of submission at the end of this chapter. This chapter will be presented according to the headings of the author's guidelines as specified by the journal.

Chapter 4: Article 1 The magnitude of moral distress among CCNs

THE MAGNITUDE OF MORAL DISTRESS AMONG CRITICAL CARE NURSES IN TWO PUBLIC HOSPITALS: A CROSS-SECTIONAL STUDY

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Abstract

Background: Moral distress is an important ethical issue in the nursing profession. Critical care nurses (CCNs) have been identified as the group most affected by moral distress. Identifying the triggers of moral distress and how frequently and intensely it is experienced is an essential step in mitigating this process.

Objective: This study assessed moral distress among nurses working in critical care units in two tertiary public hospitals in the Emirate of Abu Dhabi, United Arab Emirates.

Research design: A descriptive, cross-sectional design was used to collect data from 218 CCNs via the Measure of Moral Distress-Healthcare Professionals (MMD-HP) scale.

Results: The composite moral distress score among the CCNs was 146.4 ± 82.62 , the frequency score was 51.02 ± 22.2 , and the intensity score was 59.71 ± 22.1 . The top-ranked cause contributing to moral distress was “following the family’s insistence to continue aggressive treatment.” The independent t-test revealed a significant difference concerning participants’ gender, marital status, educational level, receiving ethics education, and intention to leave their position. Approximately 57% of the CCNs considered leaving their position due to moral distress. A moderate positive correlation was found between participants’ experience in critical care and moral distress composite, frequency, and intensity scores.

Conclusion: Compared with other international studies, CCNs had higher moral distress scores in this study. The participants’ gender, marital status, educational level, ethics education, intention to leave, age, and years of experience were associated with moral distress.

Keywords: Moral distress, MMD-HP, critical care, nurses, United Arab Emirates

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4.2 INTRODUCTION

Moral distress is an important ethical issue in nursing [1,2]. The concept of moral distress was first introduced by Andrew Jameton as “when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action” [3]. The concept has expanded to include other moral situations, such as dilemmas and uncertainties [4,5]. As dedicated healthcare providers, nurses face various ethical quandaries and uncertainties during their daily practice [6]. The intensity and frequency of these ethical challenges may vary depending on the nursing role and specialty [7]. Among specializations, critical care nurses (CCNs) represent the most affected group and experience moral distress most frequently and intensely [8,9].

The complexities of critical care settings and patients’ health status place CCNs in positions where they may have to make decisions or follow instructions against their moral beliefs [9–11]. Additionally, nurses are exposed to moral distress when there is a lack of engagement in decisions to implement, withhold, or withdraw life [12]. Moral suffering affects the entire healthcare system, from the individual to the organizational level [13]. Nathaniel [14] described moral suffering as pain affecting the body and mind, whereas McCarthy [15] defined it as an emotional, psychological, and physical suffering experience. Nurses who experience moral distress have reported physical symptoms such as headaches, malaise, heart palpitation, nausea, and vomiting related to moral distress [16].

Nurses who experience moral distress adopt avoidance behavior by maintaining a distance between themselves and their patients; they tend to work fewer hours, pretend to be sick, and accept fewer responsibilities in their work [17,18]. Neuman et al. [19] reported that moral distress significantly predicts occupational burnout and is associated with work-life imbalance and low work satisfaction. Berhie et al. [20] highlighted the impact of moral distress on staff relationships, dissatisfaction with the team, and poor patient care outcomes. Consequently, moral distress increases turnover rates, affecting the organization's ability to retain expertise, leading to staff shortages, adding more stress to the remaining staff, and disrupting the organization's image [13,21].

Moral distress is caused by a variety of factors. Hamric et al. [22] described three categories of constraints: clinical situations, internal constraints, and external constraints. These root causes are the most common and frequent situations that cause moral distress among healthcare providers. These root causes were used to revise Corly’s Moral Distress Scale (MDS-R) to incorporate additional root causes and expand its applicability to other healthcare providers [22].

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Epstein et al. [23] revised and combined the six versions of the MDS-R into one comprehensive version, the Measure of Moral Distress-Healthcare Providers (MMD-HP). The authors redefined the root causes of moral distress and identified three different levels of moral distress. The patient level is triggered by the patient's or the patient's family's demands (e.g., request unnecessary or aggressive life-sustaining measures that may be futile). At the team or unit level, moral distress is generated by an impaired ethical climate, improper communication, or lack of collaboration. The third level is linked to the system (e.g., inadequate staffing, lack of supplies and resources, and policies to reduce costs) [23].

Identifying the triggers of moral distress and the frequency and intensity of moral distress in specific settings are essential for mitigating moral distress [16]. Few studies have investigated moral distress among CCNs in Arab nations, especially in the United Arab Emirates (UAE). Only one study described the intensity and frequency of moral distress in the UAE and its associations with demographic variables and care speciality [24]. The health system in the UAE provides care to diverse societies through a diverse workforce of health providers from different cultural perspectives, beliefs, values, and morals [25]. The variations in cultural values and beliefs among healthcare providers and between them and patients can result in complex ethical scenarios. These differences may lead to conflicts and disagreements, leading to moral distress [26].

Therefore, this study aimed to examine the frequency and intensity of moral distress among nurses working in critical care units in two tertiary public hospitals in the Emirate of Abu Dhabi, UAE. Specifically, this study investigated variances in moral distress experience according to demographic and professional characteristics.

4.3 MATERIALS AND METHODS

4.3.1 Study design and setting

This descriptive, cross-sectional study was implemented between November 2023 and February 2024 at two tertiary public hospitals in the Emirate of Abu Dhabi, the capital of the UAE, following the STROBE guidelines (see Supplementary File 1).

4.3.2 Population, sampling, and sample size

The population included all registered nurses working in critical care units in the selected hospitals. A convenience sampling approach was used to recruit the CCNs. The inclusion criteria were (a) having a minimum bachelor's degree in nursing science, (b) being employed in one of

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the chosen hospitals, and (c) having at least six months of experience in critical care units in the same hospital.

The sample size was calculated with G*Power software 3.1 [27]. Considering the statistical tests used (i.e., independent t-test) assuming a power of 95%, an alpha (α) of 0.05, and a medium effect size of 0.25, a sample of 176 CCNs was considered sufficient to detect significant variation in the moral distress score.

4.3.3 Instruments

4.3.3.1 Sociodemographic characteristics

The following sociodemographic characteristics were recorded: sex, age, marital status, educational level, overall nursing experience, overall critical care experience, assigned unit, and ethical training about moral distress.

4.3.3.2 The Measure of Moral Distress-Healthcare Professionals

The MMD-HP consists of 27 items, and each item is evaluated in two dimensions, namely, frequency and intensity. A five-level Likert scale ranging from 0 (never) to 4 (very frequently/distressively) is used to score each item. The MMD-HP produces three scores: a frequency score (range 0–108), an intensity score (range 0–108), and a composite (total) score, which is calculated by multiplying the frequency score (0–4) by the intensity score (0–4) and ranges (from 0–16) per item. After that, the item scores were summed to produce the total score (ranging from 0–432). A higher score indicates greater moral distress frequency and intensity.

The instrument includes two multiple-choice questions investigating the participant's intention to leave the profession. These questions link the moral distress score to leaving the clinical position, suggesting that participants who intend to leave would have a higher moral distress score [23]. The reliability of the MMD-HP was measured using Cronbach's alpha coefficient and ranged from 0.93 [23] to 0.95 [29]. In the current study, the reliability of the MMD-HP was 0.95.

4.3.4 Ethical considerations

This study was approved by the Research Ethics Committee, Faculty of Health Science, University of Pretoria (Ethics Reference No. 121.2023) and the SEHA Research Ethics Committee (SEHA-IRB-350). Participants' right to voluntary participation and withdrawal at any time without stating any reason was explained and guaranteed to all participants. The participants' anonymity was protected by the use of a self-generated identification code (SGIC) presented at

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the beginning of the online questionnaire. The SGIC is an anonymous approach that blocks participants' identification and protects their identity [30]. The participants answered three questions (the first two letters of the mother's name, her age, and the first two letters of her hometown) to generate a 6-digit SGIC (i.e., FA43AD).

4.3.5 Data collection process

The data were collected using online questionnaires and an anonymous Microsoft Forms link. The researcher protected the participants' identities by not selecting the option of collecting respondents' names or emails [31]. In addition, Microsoft Forms do not place cookies on the respondents' devices or collect the respondents' IP addresses. The email containing the link to access the invitation letter, information sheet, informed consent, sociodemographic instrument, and MMD-HP instrument was sent to the key persons assigned from the two hospitals. The key persons forwarded that email to the target population, asking them to participate. The participants who agreed to participate had to click the agree buttons to view and respond to the questionnaire.

4.3.6 Data analysis

The Statistical Package for Social Sciences (SPSS) version 25 was used to analyze the data. P values <0.05 were interpreted as significant. Descriptive statistics (frequency, percentages, means, and standard deviations) were used to describe the participants' sociodemographic characteristics and moral distress frequency, intensity, and composite score. Inferential statistics (independent sample t-test and Pearson's correlation coefficient) were used to identify any variation in moral distress scores according to the participants' characteristics.

4.4 RESULT

4.4.1 Sociodemographic and professional characteristics

An invitation email with an online-based questionnaire was sent to 480 CCNs through the key person of each hospital, and 247 responded to the questionnaire (response rate 51.6%). A response rate between 46% and 51% for web-based surveys is considered adequate [28]. After data cleaning, 218 questionnaires were found to be completed and eligible for analysis. Table 1 displays the CCNs' sociodemographic and professional characteristics. Among the 218 CCNs, the mean age of the participants was 35.5 years (SD=8.24, range: 22–57). Most of the participants were female (64%), approximately two-thirds were married (66.5%), and most held a bachelor's degree in nursing (76%). Most of the participants were of Indian nationality (39.4%), followed by Arabic (22.5%) and Filipino (21.6%) participants. The remaining 16.5% comprised other

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nationalities, including South African, Australian, Canadian, American, and British. The overall experience in nursing ranged from 1–33 years (12.8 ± 7.61), the participants had a mean of 10 years ($SD= 6.52$) of experience in critical care units (range: 1–30), and approximately 71% of the participants were working in adult critical care units, whereas 29% were working in pediatric or neonatal units. Regarding ethics education, most participants (70%) had not received any moral distress-related education or training.

4.4.2 Critical care nurses' perceptions of moral distress

As shown in Table 2, the MMD-HP mean composite score was 146.4 ($SD=82.62$, range: 26–371). The frequency score ranged between 12 and 100, with a mean score of 51.02 ($SD= 22.2$). The mean intensity score was 59.71 ($SD=22.1$, range: 12–104). The data were normally distributed [32].

As illustrated in Table 3, the top five ranking root causes contributing to moral distress were the same for the composite MMD-HP score, frequency, and intensity. “Follow the family’s insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient” scored the highest composite, frequency, and intensity scores (9.68 ± 4.98 , 2.79 ± 1.02 , and 3.23 ± 0.94 , respectively), followed by “Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it” (8.54 ± 5.16 , 2.77 ± 1.03 , 3.03 ± 1.03 , respectively); “Have excessive documentation requirements that compromise patient care” (8.08 ± 5.43 , 2.56 ± 1.12 , 2.82 ± 1.10 , respectively); “Feel pressured to order or carry out orders for what I consider to be unnecessary or inappropriate tests and treatments” (6.90 ± 4.11 , 2.52 ± 1.21 , 2.71 ± 0.89 , respectively); and “Witness healthcare providers giving “false hope” to a patient or family” (6.64 ± 4.24 , 2.56 ± 1.12 , 2.82 ± 1.10 , respectively).

4.4.3 Critical care nurses' intentions to leave positions due to moral distress

In response to the question, “Are you considering leaving your position now due to moral distress?” this study revealed that over half of the CCNs (56.4%) expressed their intention to leave their position due to moral distress. Among the CCNs surveyed, 58.4% of those working in adult units and 51.6% working in pediatric or neonatal units were considering leaving their position (Table 4).

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4.4.4 Factors associated with moral distress

As shown in Table 5, the independent t-tests revealed significant differences concerning participants' gender, marital status, educational level, receiving ethics education, and intention to leave. Compared with male CCNs, female CCNs reported higher moral distress composite scores (mean 162.44 [85.45] vs. 117.62 [68.86], $t=-3.97$, $P<0.00$), frequency scores (mean 54.69 [22.29] vs. 44.44 [20.60], $t=-3.346$, $P<0.01$), and intensity scores (mean 64.54 [22.31] vs. 51.04 [21.71], $t=-4.325$, $P<0.00$).

Furthermore, married CCNs presented higher moral distress composite scores (mean 163.24 [85.20] vs. 112 [65.95], $t= -4.802$, $P<0.001$) and frequency scores (mean 55.06 [22.75] vs. 43.01 [18.76], $t= -3.902$, $P<0.00$) than single CCNs, with no significant differences in intensity scores (mean 61.11 [23.25] vs. 56.93 [22.35], $P = 0.206$). Additionally, having a postgraduate degree was associated with higher moral distress composite scores (mean 208.23 [91.37] vs. 127.04 [69.39], $t=-5.90$, $P<0.001$), frequency scores (mean 65.64 [23.26] vs. 46.45 [19.81], $t=-5.840$, $P<0.00$), and intensity scores (mean 72.75 [22.60] vs. 55.63 [21.60], $t=-4.934$, $P<0.001$). Receiving moral distress-related education or training was associated with a lower moral distress composite score (mean 125.46 [72.21] vs. 155.30 [85.33], $t= -2.468$, $P<0.05$), frequency score (mean 45.94 [21.19] vs. 53.18 [22.33], $t= -2.224$, $P<0.05$), and intensity score (mean 53.80 [23.28] vs. 62.22 [22.46], $t= -2.505$, $P<0.05$).

Moreover, CCNs who intended to leave their position scored higher moral distress composite scores (mean 199.50 [67.83] vs. 77.66 [36.35], $t= 17.0$, $P<0.001$), frequency scores (mean 65.02 [17.16] vs. 32.91 [12.94], $t= 15.751$, $P<0.001$), and intensity scores (mean 71.75 [16.44] vs. 44.13 [20.83], $t= 10.622$, $P<0.001$) than those who did not intend to leave. The participants working in adult critical care units presented higher but not significantly different moral distress composite, frequency, and intensity scores than CCNs working in pediatric or neonatal units (mean 147.32 [81.97] vs. 144.19 [84.78], $t = 0.255$, $P = 0.799$; mean 51.54 [21.67] vs. 49.78 [23.56], $t = 0.532$, $P = 0.596$; and mean 60.33 [21.97] vs. 58.22 [25.36], $t = 0.617$, $P = 0.538$, respectively).

Bivariate analysis (Pearson's r) revealed a weak positive correlation between participants' age and overall experience with moral distress composite scores ($r= 0.220$, $P<0.01$, $r= 0.218$, $P<0.01$, respectively) and frequency scores ($r= 0.222$, $P<0.01$, $r= 0.226$, $P<0.01$, respectively) with no correlation with intensity scores ($r= 0.037$, $P= 0.584$, $r= 0.055$, $P= 0.415$, respectively) (Table 5).

Participants' experience in critical care revealed a moderate positive correlation with moral distress composite scores ($r= 0.468$, $P<0.001$), frequency scores ($r= 0.478$, $P<0.001$), and

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intensity scores ($r= 0.307$, $P <0.001$). Composite MMD-HP scores were strongly and positively correlated with frequency scores ($r= 0.961$, $P <0.001$) and intensity scores ($r= 0.845$, $P <0.001$). Similarly, the frequency and intensity scores were strongly positively correlated ($r= 0.797$, $P <0.001$). Finally, the ANOVA results revealed no significant differences in participants' moral distress frequency, intensity, or composite scores based on their nationalities (Table 5).

4.5 DISCUSSION

The findings of this study shed light on the complicated relationship between moral distress and CCNs, revealing the nuanced triggers that impact their daily practices and contribute to their intention to leave their work position. This study is the first in Abu Dhabi, UAE, to investigate the current moral distress among CCNs, identifying associated factors and the intention to leave.

In alignment with other studies, the moral distress intensity score was higher than the moral distress frequency score [33-36]. The mean composite score of the MMD-HP was 146.4 (SD= 82.62), and a higher score indicates greater moral distress. This finding is consistent with previous studies that reported a higher moral distress score among CCNs than among other healthcare providers and clinical settings [23,37,38]. This result could be attributed to the nature of nursing practices in critical care settings, the complexity and understanding of patients' conditions, and the implementation of aggressive life-sustaining measures [39,40].

In addition, the UAE context may explain the perceived level of moral distress. In the UAE, CCNs interact with diverse colleagues and patients with various cultural backgrounds, ethical beliefs, and expectations [25]. CCNs struggle to address patients' cultural or religious preferences, expressions, language barriers, and treatment approaches. CCNs must manage these cultural differences and adapt how they care for patients. Cultural preferences may conflict with CCNs' clinical judgment and threaten their moral integrity, resulting in moral distress [41,42].

This study identified the root causes of moral distress frequency, intensity, and composite score. Conflicts between the professional judgment of CCNs and the family's wishes underscore the complex ethical environment navigated by CCNs [43,44]. Similar to Hally et al. [37] and Bleicher et al. [35], aggressive treatment without benefit or a decision to withdraw was the second leading cause of moral distress in this study. Moreover, excessive documentation contributes to moral distress, a finding not frequently documented in the literature, although recent research has reported it within the top five leading causes of moral distress [35,45]. In this study, inappropriate or unnecessary tests and treatment and false hope were ranked as the fourth and fifth root causes of moral distress, respectively. These findings are consistent with other studies conducted in

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Japan and Oman [43-45]. These findings align with the literature [40,46-48], emphasizing the continual impact of futile care, improper communication, lack of nursing autonomy, and limited decision-making capacity in critical care environments and their contribution to moral distress frequency and intensity.

Moral distress is linked to the intention to leave the nursing profession. Epstein et al. [23] reported that 10–26% of healthcare providers, including nurses, are considering leaving their careers because of moral distress. Whitehead et al. [49] revealed in their comparative study that nurses who considered or left their profession reported higher moral distress scores than their counterparts. More than half of the CCNs in our study considered leaving their position secondary to moral distress, which was associated with higher composite, frequency, and intensity moral distress scores. This finding was consistent with other studies [45,50].

Several factors were associated with heightened moral distress among CCNs, including gender, educational level, marital status, ethics education, intention to leave the position, age, overall nursing experience, and nursing experience in critical care. Like other studies [43,51], female CCNs reported higher moral distress composite, frequency, and intensity scores. Research has suggested that women tend to approach ethical situations with a more emotional perspective than men [52], which might affect their coping mechanisms, communication styles, and ethical decision-making processes.

Similar to other studies [52,53], a higher level of education was significantly associated with moral distress in this study. CCNs with higher education acquired more ethical knowledge and competency. They can identify moral dilemmas, recognize morally conflicting situations, and make appropriate moral judgments. They are more prone to moral distress if they cannot apply their moral knowledge and skills to patient care [47,54]. Moreover, the moral distress composite and frequency scores differed significantly according to CCNs' marital status. In contrast, Malliarou et al. [34] reported no association between moral distress and marital status, whereas Berhie et al. [20] reported greater moral distress among single nurses than among married nurses.

Finally, participants' characteristics were correlated with moral distress scores. In line with studies conducted in Ethiopia, Iran, and Japan [20,43,53], age and years of nursing experience were weakly positively correlated with moral distress scores. In contrast, studies conducted in Italy and Saudi Arabia reported negative correlations [55,56]. In our study, participants with more experience in critical care units reported higher moral distress scores. This is consistent with the

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cumulative effects of continued exposure to morally distressing situations in critical care. Epstein et al. [23] introduced the crescendo effect, which is defined as damage caused by multiple or prolonged exposures to moral distress and the accumulation of moral residue. Given the crescendo effect, healthcare providers' reactions to new morally distressing situations are more devastating. These factors illustrate the complex ways that personal attributes and professional circumstances interconnect to shape nurses' moral distress experiences.

4.6 CONCLUSION

This study highlights the complexity of moral distress for CCNs in Abu Dhabi, UAE, by revealing the dynamic interplay of triggers that facilitate, threaten, and potentially lead to staff attrition. It also offers several valuable insights. First, the intensity of moral distress exceeds its frequency. Specifically, high moral distress results from the high demands in critical care nursing, compounded by cultural diversity and ethical dilemmas inherent in CCNs' practices in a multicultural context such as the UAE. Second, moral distress was associated with the intention to leave the profession. Several demographic variables, including being female, holding a higher degree, and being married, were predictors of moral distress. Finally, prolonged exposure to morally disturbing situations increases moral distress. These issues should be addressed to enhance CCNs' well-being and preserve high-quality care in critical care settings.

4.7 IMPLICATIONS

This study paves the way for CCNs in Abu Dhabi, UAE, to inform strategic decisions and establish policies. The results were shared with stakeholders, decision-makers, and educators in the setting and illuminated the need for moral integrity training in undergraduate nursing curricula, intervention programs on nursing skills, and continuous nursing education.

This research is among the first studies to identify multilayered factors, such as social and cultural factors, contributing to moral distress in the UAE. Researchers should investigate moral distress in different populations and situations. Healthcare leaders and policymakers should advocate for psychological care for CCNs to ensure their well-being. Healthcare organizations can address the causes of moral distress and create support systems, thus developing resilience in nurses.

4.8 LIMITATIONS

This study has limitations. One limitation is linked to the cross-sectional design, thereby measuring moral distress only at one point in time. This hinders our capacity to track how moral distress changes over time or to establish cause-and-effect relationships between it and other

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factors. In addition, the reported measure might be triggered by certain situations that arose at that time which may not be valid for the continuing state of moral distress in critical care nurses. The other limitation is the use of an online survey which limits the nurses' ability to clarify questions resulting in response bias. The final limitation is the focus solely on critical care nurses, excluding other nursing specialties and healthcare providers.

Funding

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Conflict of interest

The authors declare no potential conflicts of interest concerning this study's research, authorship, or publication.

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Tables:
Table 4.1: Sociodemographic and professional characteristics of the participants (n=218).

Characteristic	n (%)	Mean \pm SD	Range
Age		35.5 \pm 8.24	22–57
Sex			
Male	78 (35.8)		
Female	140 (64.2)		
Marital status			
Single	73 (33.5)		
Married	145 (66.5)		
Nationality			
Arabic	49 (22.5)		
Indian	86 (39.4)		
Philippine	47 (21.6)		
Other	36 (16.5)		
Education			
Bachelor	166 (76.1)		
Postgraduate	52 (23.9)		
Nursing experience			
Overall		12.8 \pm 7.61	1–33
Critical care		10.13 \pm 6.52	1–30
Critical care unit			
Adult	154 (70.6)		
Pediatric or neonatal	64 (29.4)		
Ethics education*			
Yes	65 (29.8)		
No	153 (70.2)		

SD: Standard deviation
 Ethics education: receiving ethical education related to moral distress

Table 4.2: Moral distress MMD-HP* scale scores (n=218)

MMD-HP scale	Mean \pm SD*	Range	Skewness	Kurtosis
Frequency score	51.02 \pm 22.2	12–100	0.542	-0.508
Intensity score	59.71 \pm 22.1	12–104	0.169	-0.954
Composite score	146.4 \pm 82.62	26–371	-0.159	-0.957

MMD-HP: the Measure of Moral Distress-Healthcare Professionals
 SD: Standard deviation

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Table 4.3: Top five ranking causes associated with the highest moral distress frequency, intensity, and composite score, as determined by responses to the MMD-HP* (n=218).

Rank	Question	Frequency (0-4) Mean ± SD*	Intensity (0-4) Mean ± SD*	Composite (0-16) Mean ± SD*
1	Follow the family's insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient.	2.79 ± 1.02	3.23 ± 0.94	9.68 ± 4.98
2	Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.	2.77 ± 1.03	3.03 ± 1.03	8.54 ± 5.16
3	Have excessive documentation requirements that compromise patient care.	2.56 ± 1.12	2.82 ± 1.10	8.08 ± 5.43
4	Feel pressured to order or carry out orders for what I consider to be unnecessary or inappropriate tests and treatments.	2.52 ± 1.21	2.71 ± 0.89	6.90 ± 4.11
5	Witness healthcare providers giving "false hope" to a patient or family.	2.36 ± 0.97	2.66 ± 1	6.64 ± 4.24
MMD-HP: the Measure of Moral Distress-Healthcare Professionals SD: Standard deviation				

Table 4.4: Critical care nurses' intentions to leave their position due to moral distress

Critical Care Units	Intention to leave position*		
	Yes n (%)	No n (%)	Total n (%)
Adult	90 (58.4)	64 (41.6)	154 (70.6)
Pediatric or neonatal	33 (51.6)	31 (48.4)	64 (29.4)
Total n (%)	123 (56.4)	95 (43.6)	218
*Intention to leave position due to moral distress			

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Table 4.5: Independent t test to identify significant differences in MMD-HP scores according to participants' sociodemographic and professional characteristics (n=218).

Variable	Frequency		Intensity		Composite	
	Mean ± SD (0–108)	t value P value	Mean ± SD (0–108)	t value P value	Mean ± SD (0–432)	t value P value
Gender						
Male	44.44 ± 20.60	-3.346	51.04 ± 21.71	-4.325	117.62 ± 68.86	-3.97
Female	54.69 ± 22.29	<0.001	64.54 ± 22.31	<0.001	162.44 ± 85.45	<0.001
Marital status						
Single	43.01 ± 18.76	-3.902	56.93 ± 22.35	-1.269	112.96 ± 65.95	-4.802
Married	55.06 ± 22.75	<0.001	61.11 ± 23.25	0.206	163.24 ± 85.20	<0.001*
Education						
Bachelor	46.45 ± 19.81	-5.840	55.63 ± 21.60	-4.934	127.04 ± 69.39	-5.90
Postgraduate	65.64 ± 23.26	<0.001	72.75 ± 22.60	<0.001	208.23 ± 91.37	<0.001
Critical care unit						
Adult	51.54 ± 21.67	0.532	60.33 ± 21.97	0.617	147.32 ± 81.97	0.255
Pediatric/Neonatal	49.78 ± 23.56	0.596	58.22 ± 25.36	0.538	144.19 ± 84.78	0.799
Ethics education						
Yes	45.94 ± 21.19	-2.224	53.80 ± 23.28	-2.505	125.46 ± 72.21	-2.468
No	53.18 ± 22.33	<0.05	62.22 ± 22.46	<0.05	155.30 ± 85.33	<0.05
Intention to leave						
Yes	65.02 ± 17.16	15.751	71.75 ± 16.44	10.622	199.50 ± 67.83	17.01
No	32.91 ± 12.94	<0.001	44.13 ± 20.83	<0.001	77.66 ± 36.35	<0.001
Nationality						
Arabic	49.38 ± 20.64	0.843	63.12 ± 21.65	0.767	136.96 ± 81.68	1.462
Indian	53.15 ± 23.58	0.472	58.02 ± 23.85	0.514	156.33 ± 87.48	0.226
Philippine	52.14 ± 21.79		61.36 ± 22.12		153.49 ± 80.60	
Other	46.72 ± 21.46		56.94 ± 23.94		126.31 ± 72.10	

* Equal variance not assumed

Table 4.6: Pearson's r correlation coefficients within and between MMD-HP scores and participants' demographic and professional characteristics (n=218).

Variable	Frequency		Intensity		Composite	
	r	P value	r	P value	r	P value
Age	0.222	<0.01	0.037	0.584	0.220	<0.01
Overall experience in nursing	0.226	<0.01	0.055	0.415	0.218	<0.01
Overall experience in critical care	0.478	<0.001	0.307	<0.001	0.468	<0.001
MMD-HP frequency score			0.797	<0.001	0.961	<0.001
MMD-HP intensity score	0.797	<0.001			0.845	<0.001
MMD-HP composite score.	0.961	<0.001	0.845	<0.001		

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Supplementary File:

STROBE Statement

THE MAGNITUDE OF MORAL DISTRESS AMONG CRITICAL CARE NURSES IN TWO PUBLIC HOSPITALS IN ABU DHABI, UNITED ARAB EMIRATES: A CROSS-SECTIONAL STUDY

	Item No	Recommendation	
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	<input checked="" type="checkbox"/>
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	<input checked="" type="checkbox"/>
Introduction			<input checked="" type="checkbox"/>
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	<input checked="" type="checkbox"/>
Objectives	3	State-specific objectives, including any prespecified hypotheses	<input checked="" type="checkbox"/>
Methods			
Study design	4	Present key elements of study design early in the paper	<input checked="" type="checkbox"/>
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	<input checked="" type="checkbox"/>
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	<input checked="" type="checkbox"/>
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	<input checked="" type="checkbox"/>
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	<input checked="" type="checkbox"/>
Bias	9	Describe any efforts to address potential sources of bias	<input checked="" type="checkbox"/>
Study size	10	Explain how the study size was arrived at	<input checked="" type="checkbox"/>
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	<input checked="" type="checkbox"/>
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	<input checked="" type="checkbox"/>
		(b) Describe any methods used to examine subgroups and interactions	<input checked="" type="checkbox"/>
		(c) Explain how missing data were addressed	
		(d) If applicable, describe analytical methods taking account of sampling strategy	<input checked="" type="checkbox"/>
		(e) Describe any sensitivity analyses	<input checked="" type="checkbox"/>

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Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	<input checked="" type="checkbox"/>
		(b) Give reasons for non-participation at each stage	<input checked="" type="checkbox"/>
		(c) Consider use of a flow diagram	<input checked="" type="checkbox"/>
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	<input checked="" type="checkbox"/>
		(b) Indicate number of participants with missing data for each variable of interest	<input checked="" type="checkbox"/>
Outcome data	15*	Report numbers of outcome events or summary measures	<input checked="" type="checkbox"/>
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	
		(b) Report category boundaries when continuous variables were categorized	
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	<input checked="" type="checkbox"/>
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	<input checked="" type="checkbox"/>
Discussion			
Key results	18	Summarise key results with reference to study objectives	<input checked="" type="checkbox"/>
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	<input checked="" type="checkbox"/>
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	<input checked="" type="checkbox"/>
Generalisability	21	Discuss the generalisability (external validity) of the study results	<input checked="" type="checkbox"/>
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	<input checked="" type="checkbox"/>

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Proof of submission

The screenshot shows an email interface with the following details:

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CHAPTER 5**CHARACTERISTICS OF MORAL DISTRESS FROM NURSES'
PERSPECTIVES: AN INTEGRATIVE REVIEW****5.1 INTRODUCTION**

In Chapter 4 the findings of phase one were presented in article format as an article one. In the current chapter, the findings of phase two will be presented in article format as an article two. Phase two aimed to develop and implement a MFEI to reduce the frequency, intensity, and total moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi. Article two presented the integrative review of the moral distress characteristics from the nurses' perspectives. The findings of the integrative review guided the development of the MFEI.

The manuscript with the title: Characteristics of Moral Distress from Nurses' Perspectives: An Integrative Review, was submitted to the International Journal of Nursing Sciences on 17 May 2024 and currently it's under review process. This chapter will be presented according to the headings of the author's guidelines as specified by the journal.

Chapter 5: Article 2 characteristics of moral distress integrative review

Characteristics of Moral Distress from Nurses' Perspectives: An Integrative Review

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Abstract

Objective: This integrative review aims to identify the common characteristics of moral distress in nursing, distinguishing it from other types of distress, by examining nurses' perspectives in the literature. These insights will help update existing tools and create new ones to better capture moral distress, guiding the development and implementation of strategies to support nurses in addressing this challenge.

Methods: The updated methodology of Whitemore and Knafl guided the PRISMA systematic search across three databases: EBSCO MEDLINE, CINAHL, and PubMed. Additionally, two journals, Bioethics and Nursing Ethics, were manually searched to reduce search bias. The included studies were primary resources published in English between 2018-2023, utilizing quantitative, qualitative, or mixed methods to examine the characteristics, components, and definitions of moral distress.

Result: Nineteen studies were included. The results were grouped into five themes shaping the main characteristics of moral distress: (1) experiencing a moral situation, with five ethically conflicted situations identified, including treatment plans, professional and personal moral values, team dynamics, complex contexts, clinical practices, and patient-centered care; (2) making a moral judgment, where nurses experience moral distress when they cannot act consistently with their values, ethical principles, and moral duties; (3) the presence of constraints, categorized at three levels: individual factors related to the nurse, patient, and patient's family; team factors related to the team or unit involved; and system factors, including institutional and policy elements; (4) moral wrongdoing, which occurs when nurses are unable to perform the right moral action; and (5) moral suffering, with studies showing that moral distress impacts physical, emotional, and psychological well-being.

Conclusion: The findings enhance the understanding of moral distress characteristics among nursing staff, highlighting the concept of the crescendo effect, which underscores the cumulative and escalating nature of unresolved moral distress, emphasizing the need to address

Chapter 5: Article 2 characteristics of moral distress integrative review

moral conflicts proactively to prevent the erosion of moral integrity and professional satisfaction.

Keywords: Characteristics, Definition, Ethical Conflict, Moral Conflict, Moral Distress, and Nursing

What is known?

- Moral distress arises when nurses know the right action to take but are prevented from doing so by constraints, leading to negative self-worth, self-doubt, and physical and emotional suffering.
- Moral distress disrupts team dynamics, weakens the ethical climate, and contributes to higher turnover rates, staff shortages, and compromised patient safety.

What is New?

- Understanding the contributing factors to mitigate the effects of moral distress, promote professional satisfaction, and maintain the integrity of healthcare workers.
- Moral distress encompasses five key themes: experiencing a moral situation, making a moral judgment, facing constraints, moral wrongdoing, and moral suffering. Constraints are analyzed at individual, team, and system levels.

Chapter 5: Article 2 characteristics of moral distress integrative review

5.2 INTRODUCTION

In the late 1970s, ethical principles that guided healthcare delivery were still evolving. Much attention was given to implementing ethical principles in the healthcare system at the time. The importance of ethics inspired Andrew Jameton (1984) to write about moral distress in his book *Nursing Practice: the ethical issues* for the first time [1]. Jameton (1984) first defined *moral distress* as arising “when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action.”[P 6]. Jameton’s work inspired other philosophers who explored this phenomenon and contributed to practical and conceptual changes. Most recently, Kim, Shelton [2] redefined “moral distress as an experience of the moral emotion agent-regret, as it fittingly arises in response to one’s participation in a tragic or potentially unjust care-related circumstance in which one is unable to act otherwise due to factors beyond one’s immediate control.”

Moral distress is a complex blend of ethical challenges that can affect the well-being of healthcare professionals [3]. As the healthcare industry continues to evolve, practitioners often find themselves in situations where their moral values conflict with their obligations. This conflict between what is considered ethically correct and the realities of practice leads to distress [4].

Moral distress may affect healthcare systems at different levels, starting at the individual level, affecting the unit, and then extending to the entire institution [5,6]. At the individual level, nurses who experience moral distress may develop negative self-worth, self-criticism, self-doubt, and self-blame [7]. These experiences may increase the distance between nurses and patients, causing nurses to feel as if they are disappointing patients and questioning their duties toward patients’ rights [6,8].

Moral distress influences team dynamics, compromising the ethical climate. Nurses may lose their moral judgment capacity within this nonconductive environment and feel powerless. In response, Critical Care Nurses (CCNs) may ask to change to another unit to protect their integrity and self-respect [9]. At the organizational level, moral distress is associated with an increased turnover rate, affecting the organization’s ability to retain healthcare expertise, leading to staff shortages, increasing the stress on remaining staff, and disrupting the organization’s overall image. Consequently, the scarcity of skilled nurses can affect the achievement of safety goals and may place the organization under legal and financial burdens [6,10].

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The prevalence of moral distress and its consequences encouraged researchers to expand the definition of moral distress as an umbrella term that covers different morally distressing events and proposes leading causes [11-13]. Efforts to expand the definition of moral distress have led to ambiguous and contradictory views [12-15]. Therefore, identifying the characteristics that differentiate between moral distress and other forms of distress is essential. Different moral situations may lead to feelings of distress, but not all of these situations may classify as moral distress [16]. The characteristics of a phenomenon include its distinguishable components, features, elements, attributes, or properties that describe a particular concept. These characteristics could help to differentiate between related phenomena.

Recent research on moral distress among nurses has focused on several key areas: its prevalence, the development and use of measurement tools, the identification of underlying causes and constraints, the consequences of moral distress on healthcare professionals, its relationship with related ethical concepts, and the effectiveness of interventions aimed at mitigating its impact [3,4,5,8,9,10,11]. Accordingly, This critical review aimed to identify the characteristics of moral distress. This integrative review aimed to identify the common characteristics of moral distress from nurses' perspectives in the literature.

5.3 METHODS

An integrative review incorporates diverse methodologies to understand the phenomena being studied. Moral distress is a complex phenomenon, so an integrative review will help identify its characteristics using diverse methodological approaches [17].

The updated methodology of Whitemore and Knafl guided the literature review [17]. The updated methodology is widely used in nursing research and was deemed suitable for the topic under study. The review process included five sequential steps, starting with identifying the phenomenon of interest, namely, the defining characteristics of moral distress among nurses.

In the next step, electronic databases were comprehensively searched, and eligible studies were retrieved from the literature. The third step evaluated the quality of the identified publications according to the sampling frame. The publications were analyzed to extract the data. To formulate a unified and integrated conclusion, we coded the moral distress characteristics described in each article, all of the codes were grouped under themes and subthemes, then all defining characteristics were reordered, compared, summarized (Table-

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1), and linked according to the review's aim [17]. Finally, the implications and limitations are presented.

5.3.1 PROBLEM IDENTIFICATION

The identification of the problem in this integrative review focused on understanding the characteristics of moral distress from nurses' perspectives. The primary goal was to distinguish moral distress from other types of distress by examining relevant literature and synthesizing findings. This section aimed to address two main questions: What are the defining characteristics of moral distress among nurses? How do these characteristics differentiate moral distress from other forms of distress?

5.3.2 LITERATURE SEARCH

The literature search was conducted based on Whittemore and Knaf's methodology (2005), which emphasizes the use of multiple databases to ensure a comprehensive review. We utilized EBSCO MEDLINE, CINAHL, and PubMed for electronic searches. Additionally, to minimize potential search bias and ensure depth in our findings, we manually searched two key journals, *Bioethics* and *Nursing Ethics*, due to their specific relevance to the topic under study. To further enhance the rigor of the review, an ancestry search was performed to identify and include seminal articles referenced within selected studies.

The search strategy was guided by the PICOT framework. For the Problem (P), we focused on terms such as moral distress, moral conflict, and ethical conflict, as well as their definitions, characteristics, and components. The Population (P) was restricted to the nursing profession, encompassing all available specialties and using keywords like "nurse," "nurses," and "nursing." The Intervention (I) involved examining the characteristics, components, and definitions of moral distress. The Time (T) parameter included primary resources published in English over the past five years, incorporating quantitative, qualitative, and mixed-methods research.

The inclusion criteria for the review consisted of primary studies published in English that conceptually or empirically examined moral distress among nurses within the specified time frame. Studies that did not directly explore moral distress, unpublished doctoral theses or dissertations, systematic reviews, integrative reviews, meta-analyses, gray literature, or commentaries were excluded. To validate the reliability of the findings, content experts were consulted during the evaluation process.

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The initial search yielded 540 articles from the selected databases, with an additional eight studies manually sourced from Bioethics and Nursing Ethics. RefWorks (<http://www.refworks.com/>) was used to manage references and streamline the process, resulting in the removal of 254 duplicates. After applying the inclusion and exclusion criteria to the remaining titles, 72 articles were selected for abstract screening, which further narrowed the selection to 25 studies for full-text evaluation. Following this detailed evaluation, 19 studies were included in the final review (Figure 1). The PRISMA guidelines were used to structure the integrative review report effectively [18].

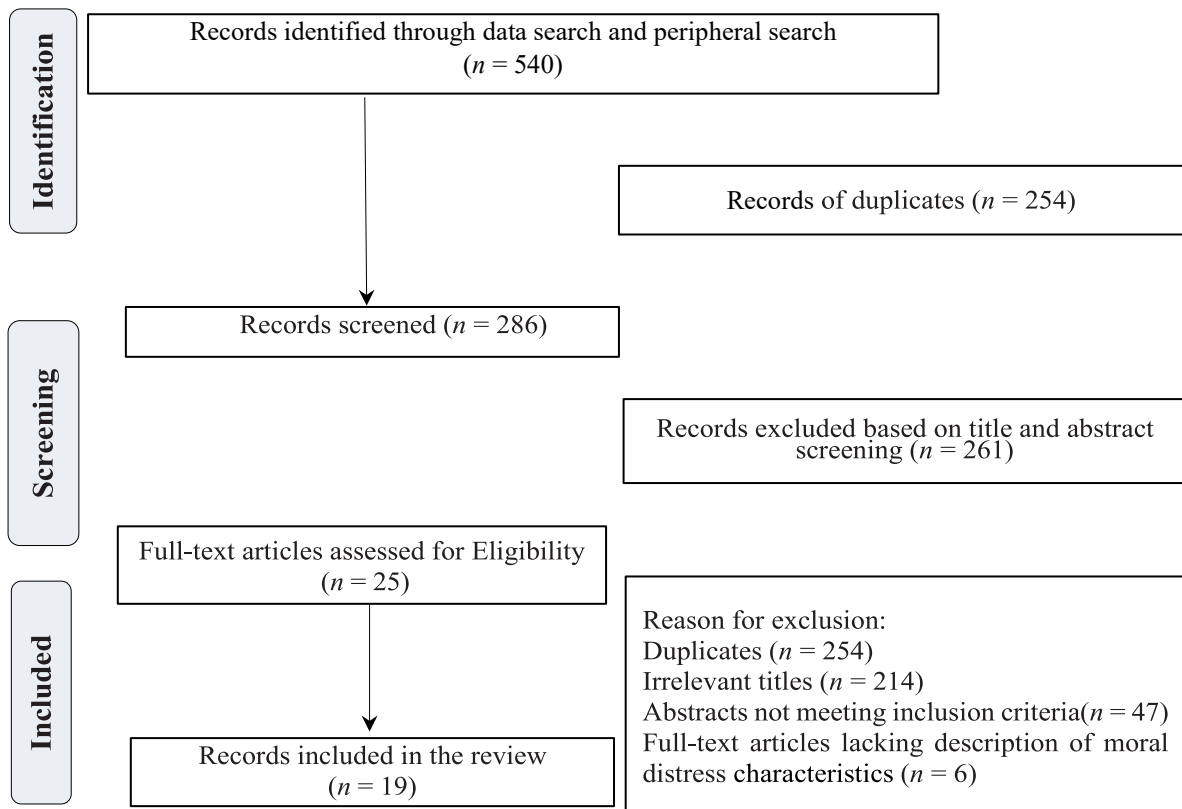


Figure 5.1: PRISMA flow diagram illustrating the study selection process.

5.3.3 Quality Appraisal

In this review, we utilized the Johns Hopkins Evidence-Based Practice Model [19] to evaluate the quality of studies, rather than employing different instruments for various types of research, as originally suggested by Whittmore and Knafel (2005). The Johns Hopkins model was chosen because it provides a comprehensive scoring system that includes both quality and strength assessments. Each study was evaluated based on a quality score, ranging from A (high quality) to C (low quality), and a strength score, from 1 (highest) to 5 (lowest). This dual

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evaluation allows for a robust integration of evidence quality and strength, offering a clear indication of the reliability of each study.

The evaluation considered different types of research, including qualitative studies, quantitative studies, and mixed-methods research. The quality assessment involved evaluating study design, data collection integrity, confounding factors, and interpretation of findings. Scores for the selected studies were then discussed with a content expert to ensure an objective evaluation (Appendix B). The quality assessment was conducted independently by two authors (Aljabery, M. and Al-Hmamat, N.). In instances where discrepancies occurred, discussions were held with the third author (Coetzee-Prinsloo, I.) to reach a consensus.

5.3.4 DATA ANALYSIS

Considering the diversity of the studies included, thematic analysis was employed for this integrative review. The data analysis process involved sequential steps of data reduction, display, comparison, conclusion drawing, and verification. All 19 articles were analyzed to extract elements such as definitions of moral distress and the shared characteristics or components that define it (Appendix A).

The findings were organized into a data matrix that categorized information based on elements like research location, study aims, methods, sample, key findings, and quality score. Theoretical sources were compared to understand different frameworks of moral distress and significant arguments within them. After the initial data extraction, sources were coded according to frameworks of ethical sensitivity and clustered into groups using this coding scheme. Data were then sorted and assembled into subgroups aligned with the research questions to integrate the results from all included studies effectively.

Two authors (A, M. and A, N.) conducted the data analysis independently, ensuring objectivity and consistency throughout the process. Any discrepancies were discussed with the third author (C, I.) to reach a consensus. Similar data were compared and categorized until final themes emerged and were refined.

5.4 RESULTS

5.4.1 STUDY CHARACTERISTICS

The review included 19 studies conducted worldwide, including 11 qualitative studies [13,22,24,25,26,29,28,31,30,32,35] 3 quantitative studies [21,27,34], 1 mixed method study

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[20], 3 studies focused on the concept analysis or definitions of moral distress [2,7,33], and 1 study described the development and testing of a revised version of the Moral Distress Scale-Revised (MDS-R), a tool frequently used to measure moral distress [23] (Appendix B).

5.4.2 IDENTIFIED THEMES

From the 19 included studies, five themes were identified to represent the main characteristics of moral distress: (1) experiencing a moral situation, (2) making a moral judgment or knowing the right course of action, (3) the presence of constraints, (4) taking the wrong ethical action (moral wrongdoing), and (5) moral suffering or associated feelings (Figure 2).

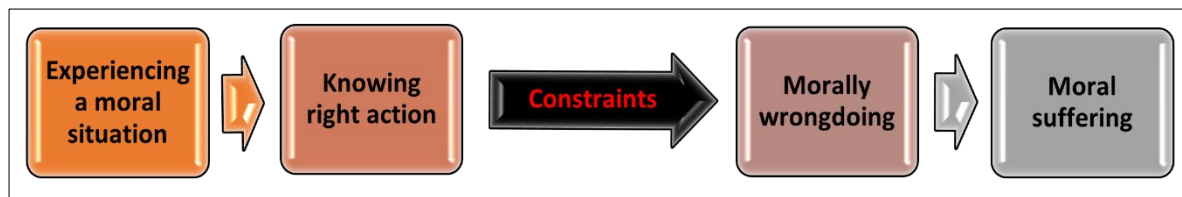


Figure 5.2: Moral distress process

5.4.2.1 Experiencing a moral situation

Morally distressing situations may vary according to the type of conflict. From the literature, we identified different sources of ethically conflicted situations, including treatment plans [20-23], professional and personal moral values [25-26], team dynamics [22,26,27], complex contexts [20,28-30], clinical practices [28-30], and patient-centered care [13,23,25,28,30,31]. Thorne, and Konikoff [28] concluded that moral situations arose from the complex nature of clinical contexts. The complexity of care and variety of ethical challenges make these contexts a warzone where nurses' emotional, physical, and psychological states are charged and tense [20].

Clinical practice is a frequent source of moral conflict. A mixed-method study with a large sample size (n = 462) conducted by Prompahakul, Keim-Malpass [20] reported that end-of-life-related clinical practices constituted 80% of the moral situations experienced by nurses. Several studies have reported that clinical practices such as providing futile care [20,26,29,32], giving false hope [20,22], inappropriate treatment plans [21,22,29,32], and palliative care [22,29,32] are the most common practices that contribute to morally distressing situations. Ko, Chin [25] emphasized that morally distressing situations occur when nurses witness patients

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not receiving adequate information about the progression of their sickness, medical decisions failing to optimize patient benefit, and terminally ill patients being denied a dignified death.

Regarding treatment plans, Kim, Shelton [2] described morally distressing situations as “a tragic or potentially unjust care-related circumstance.” They claimed that the individual’s experience in a given moral situation is evaluative and circumstantial, where moral distress arises according to the individual’s perceived role in that situation. In some moral events, the perception of moral conflicts might be individualized based on personal experiences and perspectives. Variations in moral values, beliefs, and duties between nurses and other healthcare providers (HCPs) can lead to morally contradictory situations, leading to moral anguish when nurses clash and require prioritizing one over another. In contrast, the conflict in moral values might be false if not constructed based on moral knowledge and skills [2,23,24].

Morley, Bradbury-Jones [13] defined a moral situation as “...any combination of the following: moral tension, moral conflict, moral dilemma, moral uncertainty or moral constraint.” They presented moral events contributing to moral distress in such a way that broadens the concept of moral distress. Including moral dilemmas and uncertainty as events that lead to moral distress is debatable. For example, Dorman and Raffin Bouchal [33] conducted a concept analysis to differentiate moral distress from moral uncertainty. They used a matrix to compare the differences and similarities between moral uncertainty and moral distress. The main difference was related to the outcomes, where in moral distress, the desired and known outcomes are not achieved due to constraints. In contrast, in moral uncertainty, the outcomes lack probability or preferability. The validity matrix showed that both concepts may lead to poor patient care, resulting in moral residue and sharing some internal, external, and institutional constraints. Moral distress occurs when the right action cannot be performed, and conflict is related to self-judgment. In contrast, uncertainty occurs when the agent cannot decide and is unsure of the course of action, and conflict is related to self-questioning.

We need to be careful of confusing moral dilemmas and moral uncertainty with moral distress. Moral dilemmas are not related to the conflict between right or wrong action, as in moral distress. Dilemmas are associated with choosing between two options equally supported by ethical principles but may have varying degrees of desirability. In contrast, moral uncertainty occurs when the right course of action is unclear. McCarthy and Monteverde [14] emphasized differentiating moral distress from other moral events and acknowledging the epistemological and normative variances between these moral situations.

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5.4.2.2 Making a moral judgment or knowing the right course of action

Knowing the right course of action is an integral part of moral distress. Nurses need to be able to determine the best action for a particular moral situation while considering both the right and wrong sides. Nurses experience moral distress when they cannot act consistently with their values, ethical principles, and moral duties [14]. Thorne, Konikoff [28] associated moral distress with HCPs' inability to translate their professional and personal knowledge when providing appropriate moral care.

As an independent profession, nurses have moral values derived from their education, clinical experience, culture, and personal beliefs. Ko, Chin [31] suggested that moral values guide nurses in making the right decisions in managing morally distressing situations. They highlighted two core values, "accountability" and "patient-centered care." In a qualitative study, onco-hematological nurses experienced moral distress when required to treat a patient in a way that contradicted their moral knowledge and judgment [13].

Nurses may struggle to follow decisions that conflict with their moral values and ignore their moral sensitivity when directly involved in implementing these decisions and witnessing the patient's suffering [26]. In a qualitative study, Arends, Steenbergen [26] provided an example from one of the participants who stated, "Sometimes the symptoms and side effects can be very serious and eventually we [nurses] are the ones that are cleaning up the mess." Moral distress arises when HCPs are compelled to follow a plan that is not in the best interest of patients and implement futile care [22,26].

Wachholz, Dalmolin [34] stated that nurses attributed moral distress to impediments in the moral deliberation process, their inability to act according to their professional judgment, their denial to practice as patient advocates, and their lack of consideration of moral competency in the decision-making process. Dorman and Raffin Bouchal [33] considered knowing the right moral action as an antecedent to moral distress and the inability to perform the right moral action as an attribute of moral distress.

Much debate surrounds nurses' abilities to recognize the right moral action. Knowing the right ethical action is not easy. We do not know all the choices available to us, let alone the implications of each one. As a result, we do not always know the right course of action. For example, Morley, Bradbury-Jones [13] suggested avoiding referring to knowing the right course of action or using moral judgment as a necessary condition because it excludes uncertainty. Ko, Chin [31] reasoned that self-doubt reflects a lack of confidence and may be

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labeled an internal constraint; nurses may become reluctant or uncertain about participating and sharing their opinions even if they know the right action. In contrast, confident and competent nurses are more specific and willing to share, participate, and act according to the correct moral judgment.

The moral judgment process has also been widely debated. Moral conflict may occur when professional and personal moral values are clashed. Epstein, Whitehead [23] emphasized that the right course of action should not be related to personal beliefs but to professional ones.

In contrast, should nurses' personal experiences and feelings be ignored? Isolating nurses' emotions, feelings, experiences, personal values, and beliefs is challenging. Ko, Chin [25] argue that moral distress should not only be related to judgments based on professional beliefs, as moral distress also occurs when one cannot act according to personal moral goodness.

Moral judgment is constructed from moral character, sympathy, kindness, compassion, honesty altruistic actions, and internal standards of right and wrong. These moral traits help nurses deal with conflicting situations, build trustful and respectful relationships with patients and team members, and increase acceptance from colleagues and patients. Similarly, Burton, Caswell [24] identified personal values and beliefs as a source of moral judgment, where nurses experience moral distress if they are prevented from working according to their values and beliefs.

Moral judgment is also linked to nurses' autonomy in making decisions or participating in decision-making. Abdolmaleki [27] explored the relationship between moral distress and professional autonomy in the emergency department. They revealed that less professional autonomy was associated with greater intensity and frequency of moral distress. Restricting nurses' professional autonomy may impair their moral reasoning and decision-making skills. Similarly, oncology nurses also experienced moral distress due to a lack of professional autonomy. Özbaş, Kovanci [29] further reported that nurses not involved in the decision-making process due to institutional regulations limiting their autonomy were more likely to find themselves in morally distressing situations. Nurses may be unable to apply their moral knowledge and skills to advocate for patients.

Moreover, nurses may construct their moral knowledge from the patient's wishes and care preferences, especially regarding end-of-life care. Nikbakht Nasrabadi, Wibisono [32] conducted a phenomenological study to explore nurses' experience of moral distress in a long-

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term care facility. Nurses frequently experienced moral distress when their competence in patient care was dismissed, their patients' preferences were neglected, and they felt intimidated while advocating for patients. Ko, Chin [31], using a grounded theory study, highlighted two essential values—accountability and patient-centered care—that nurses use to build their moral judgment when encountering an ethical situation.

In conclusion, moral judgments can lead to valid or invalid judgments about a situation that produces conflicting decisions. Nonetheless, moral judgment is necessary in most morally distressing situations. This raises a significant question: do nurses possess the necessary moral knowledge, skills, and expertise to effectively engage in the decision-making process related to ethical issues in healthcare? We cannot generalize and claim that all nurses possess moral competency and moral judgment capacity, but as direct HCPs, nurses are responsible for implementing decisions and experiencing outcomes. Therefore, their moral knowledge should be respected and considered in ethical decision-making.

5.4.2.3 Presence of constraints

Constraints may prevent individuals from implementing ethical actions and are a critical element of moral distress [14,22,23]. Exploring the constraints that lead to moral distress and individuals' responses have become ways of measuring the frequency and intensity of moral distress [13,23]. Several studies have described constraints [23,26] or barriers [31,35] associated with moral distress. Constraints were grouped according to their root causes at three levels: the individual level [20,23,29,31,32] which includes factors related to the nurse, patient, and patient's family; the team level [20,23,31,34,35] which includes factors related to the team or unit involved in the morally distressing situation; and the system level [20,23,34,35] which includes institutional and policy factors.

At the individual level, nurse-related constraints include a lack of competency, training, and preparedness [21,29,32,34]; role ambiguity [24,26,34]; lack of professional autonomy [26,27,29,34]; role conflict [24,30,34]; and compromised integrity [24]. Regarding patient and patient family-related constraints, studies have reported that patients and their family's lack cooperation [28,31], hold cultural values and beliefs [20,31] follow patient and family wishes [20,28,32], and have religious beliefs that may lead to moral distress [20,30].

Ko, Chin [31] highlighted several constraints related to the patient and the patient's family. In the home care setting, lack of family cooperation and not following care instructions can worsen the patient's condition and increase the burden of care on home care nurses, which

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results in moral distress. When the patient or patient's family shares cultural values that contradict professional moral practices and increase the patient's suffering, nurses are restrained from taking the right course of action because of these cultural beliefs and values. Prompahakul, Keim-Malpass [20] highlighted that nurses experienced moral distress when adhering to the family's wishes and implementing unnecessary or inappropriate treatment. Questioning the capacity of parents to make valid or correct decisions regarding their child is another source of moral distress, especially when their decision contradicts the healthcare team's recommendation and is not made in the child's best interest but rather to meet the parent's interest [24,28].

At the team level, constraints included improper communication [22,26], unhealthy work environments, lack of collaboration [20, 28], working with incompetent colleagues [20,31,34,35], obstinacy in treatment planning [21,26], bullying [35], powerlessness [20], lack of professional autonomy [20,27,29], and lack of involvement in the decision-making process [21,26]. De Brasi, Villa [22] reported that nurses encountered moral distress due to poor communication with physicians as they were not involved in the decision-making process.

Regarding working with incompetent colleagues, nurses are frequently challenged with the dilemma of either remaining silent to protect their coworkers to maintain team unity or reporting them and becoming labeled whistleblowers. Woods [35] reported that 36.4% of the nurses (n=412) considered working with incompetent colleagues a source of moral distress. Petersen and Melzer [21] conducted a quantitative study in Germany and reported that half of the enrolled nurses reported moral distress related to witnessing patient suffering due to inadequate physician orders. One-third reported moral distress secondary to working with incompetent colleagues, and one-third of the participants reported moral distress because of inadequate staffing [21].

At the system level, Woods [35] identified the healthcare system and the healthcare delivery system as potential constraints. Wachholz, Dalmolin [34] reported that the power of hierarchy may limit nurses' autonomy in the decision-making process and create an unhealthy working environment. Moreover, other studies reported a lack of resources [30,31,34], increased workload [21,30,31] a shortage of staff [21,29,30,32], and a lack of administration and manager support [20,35] as constraints to moral decision-making. Thorne, Konikoff [28] identified different relational dynamics, institutional cultures, and powers of hierarchy as barriers that significantly affect the moral decision-making process during challenging clinical scenarios that trigger moral distress among HCPs.

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Powerlessness as a constraint was evident at the three levels. Nurses might be disempowered to adhere to standard nursing practice because of families' wishes, physicians' orders, incompetent colleagues, or organizational policies or instructions [20,26,32]. In the decision-making process, nurses perceive themselves as less important than others (patients, patient's families, physicians, and administrators). In contrast, Burton, Caswell [24] stated that most nurses perceived themselves as valuable participants in team meetings and patient care planning conversations, despite their opinions not always being appreciated: "You have a voice, but sometimes it is a matter of if it is going to be received well or not."

Morley, Bradbury-Jones [13] argue that moral distress can exist even without constraints. They provide two examples to illustrate this: first, when faced with a dilemma, nurses may experience distress because they must choose between two equally undesirable actions, both of which are supported by ethical principles. Second, nurses may experience distress when dealing with uncertainty because they are unsure about the best course of action. In both cases, no internal or external factors prevent nurses from taking action.

McCarthy and Monteverde [14] disagreed with the expanded definition of moral distress, which suggested that moral distress can occur in the absence of constraints. They suggest that constraints are necessary and that moral distress can only occur if moral agents are prevented from ethical action due to organizational or other constraints. Consistently, Kim, Shelton [2] incorporated constraints in their definition of moral distress and linked these constraints to factors beyond HCPs' direct control.

In conclusion, constraints are necessary conditions that contribute to moral distress among nurses. The constraints can be individual-related, team-related, and institutional-related.

5.4.2.4 Taking the wrong ethical action (Moral Wrongdoing)

Morally, wrongdoing mainly depends on knowing the right action but acting in a contradictory manner. Ko, Chin [25] presented nurses' view of wrongdoing in terms of medical decisions failing to meet the optimum benefit of patients in two situations. The first situation relates to patients' wishes not meeting the optimum benefit. The second situation relates to healthcare agents' wishes not aligning with the patients' best interests from a nursing perspective. In both situations, nurses are restricted as they have to respect patient autonomy and professional duty.

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Epstein, Whitehead [23] stated that moral distress occurs when nurses' voices are not heard, and they are forced to act against their professional, ethical beliefs. Perceived pressure to perform the wrong action is the core definition of moral distress. McCarthy and Monteverde [14] supported Epstein, Whitehead [23] in considering moral wrongdoing a necessary condition for moral distress.

As moral agents, nurses may find themselves in situations where they are compelled to violate their moral standards. Wachholz, Dalmolin [34] revealed that approximately half of the participants were compelled to perform morally wrong actions against their professional judgment. Consequently, wrong moral action may lead to feelings of fury and reduced moral agency [13].

Therefore, moral distress, usually associated with moral wrongdoing, may not be applicable in dilemmas or uncertainty. This is because there is no explicit wrong action in such cases. To present another view, Dorman and Raffin Bouchal [33] argued that uncertainty created an internal conflict that arose from nurses' feelings of following the wrong moral action. The uncertainty of the outcomes produced a 50:50 chance of wrongdoing and initiated an internal conflict. Once the nurses confirmed that the provided care was not to the best of the patient's benefit, the internal conflict changed to moral distress.

In conclusion, morally wrong actions are contradictory to the right moral action. Nurses who can identify the correct moral action will also be able to identify morally wrong actions. Moral wrongdoing occurs when nurses are unable to perform the right moral action due to external constraints or limitations, which results in moral distress.

5.4.2.5 Moral suffering or associated feelings

Moral suffering represents the consequences, the related signs and symptoms, or the impact of moral distress. McCarthy and Monteverde [14] described emotional suffering as an essential characteristic of moral distress. Moral distress is caused by the experience of psychological distress following a moral event [13]. Dorman and Raffin Bouchal [33] consider perceived suffering an attribute of moral distress.

Studies have shown that moral distress may impact physical [24,30,33], emotional [2,13,24,28,30,31,33,35], and psychological well-being [13,28]. Burton, Caswell [24] reported that nurses who were initially motivated felt physically, cognitively, and emotionally depleted due to moral distress. Moral distress may thus threaten the retention of expert nurses in the

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nursing profession [21,33,35]. Physically, nurses who experience moral distress have reported experiencing sleep deprivation [35], poor health status [21], and increased sick leave [21,28]. Afoko, Hewison [30] conducted a qualitative study and reported that nurses experienced a loss of appetite, headache, fatigue, and sleep disturbances due to moral distress.

Different emotional and psychological responses to moral distress were reported among the included studies. Ko, Chin [31] reported that nurses' emotional responses can be explicit and implicit. Nurses respond explicitly to morally distressing situations by threatening and scolding, but in other situations, they respond implicitly by keeping their feelings of self-blame and tears to themselves. Other studies have described experiences of frustration [13,26], inadequacy [35], demoralization [35], sadness [13,30], fear [13,22], powerlessness [13,20,26,32], anger [22,30,31], guilt [22], and blunted emotions [28]. Kim, Shelton [2] reported that moral agents experienced feelings of regret. Their definition denotes distress as a distinct moral feeling compared to painful feelings such as guilt.

Moral distress is considered a threat to the nursing profession. Woods [35] reported that because of moral distress, 48% of nurses in their study considered leaving the profession. In agreement, several studies reported high levels of burnout [25,33], reduced job satisfaction [33], unhealthy work environments [33], career change [21], and poor team dynamics [33] as consequences of morally distressing experiences.

5.5 DISCUSSION

The experience of moral distress often begins with facing morally conflicting situations, which arise from various sources such as treatment plans, professional and personal values, team dynamics, complex clinical contexts, and patient-centered care. For instance, Thorne and Konikoff (2018) highlighted that moral conflicts in a neonatal intensive care unit often stem from the complexity of the clinical environment, which creates a tense atmosphere emotionally, physically, and psychologically [28]. Furthermore, Prompahakul and Keim-Malpass (2018) identified that issues surrounding end-of-life care are a major source of moral conflict, contributing to about 80% of moral situations experienced by nurses [20].

Moral distress is closely linked to a clash between personal and professional values within the healthcare environment, particularly when nurses feel that patients are denied dignified care or adequate information [25]. The individualized nature of moral distress further complicates these experiences, as it is shaped by personal experiences and perspectives [2, 13]. Dorman and Raffin Bouchal (2020) made a crucial distinction between moral distress and other moral

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challenges such as moral dilemmas and moral uncertainty. They argued that moral distress occurs when a nurse knows the correct action but cannot achieve it due to external constraints, unlike moral uncertainty where outcomes are either uncertain or not clearly preferable [33].

The key element of moral distress, as identified by many studies, is knowing the right action but being unable to execute it. Thorne and Konikoff (2018) discussed how this inability to act in accordance with one's ethical beliefs leads to moral distress, particularly when healthcare professionals cannot integrate their knowledge into practice effectively [28]. Ko and Chin (2018) further explored how moral judgment in these scenarios is guided by values like accountability and patient-centered care, while emphasizing that conflicts between professional and personal values complicate moral judgment [31]. Moreover, Epstein and Whitehead (2019) argued that moral distress must be based on professional standards rather than personal beliefs, yet they acknowledged that it is challenging to fully separate personal emotions from the moral judgment process [23, 25, 24].

Professional autonomy is another critical factor influencing moral judgment. Research indicates that limited autonomy exacerbates moral distress, particularly when nurses are excluded from decision-making or forced to adhere to treatment plans that conflict with their professional judgment [27, 29]. This lack of autonomy hampers moral reasoning and limits the ability of nurses to advocate effectively for their patients, thus contributing to increased moral distress.

Constraints play a fundamental role in moral distress by preventing nurses from taking ethical actions. These constraints exist at individual, team, and system levels. On an individual level, factors such as insufficient competency, role ambiguity, and compromised integrity contribute to moral distress, while patients' cultural values or lack of cooperation can also pose significant challenges [21, 29, 32, 34]. At the team level, moral distress often stems from poor communication, lack of collaboration, and working alongside incompetent colleagues. For example, De Brasi and Villa (2020) identified that poor communication with physicians and limited involvement in decision-making are significant contributors to moral distress among nurses [22]. Power dynamics within healthcare teams also play a role, limiting autonomy and contributing to feelings of being undervalued [21, 26, 35].

At a broader, systemic level, institutional constraints, such as resource limitations, high workloads, and insufficient administrative support, are critical contributors to moral distress. Afoko and Hewison (2022) highlighted that limited resources often force nurses to use

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alternative and sometimes unsafe equipment, leading to moral distress [30]. Additionally, hierarchical structures within institutions often restrict nurses' participation in ethical decision-making, thus exacerbating moral distress [20, 28, 34]. Some researchers, like Morley and Bradbury-Jones (2020), argue that moral distress can occur even without such constraints, while others maintain that these constraints are necessary conditions for moral distress to manifest [13, 14].

The concept of moral wrongdoing is central to moral distress, particularly when nurses know the correct action but are forced to act against their ethical beliefs. Epstein and Whitehead (2019) pointed out that moral distress frequently results from nurses being silenced or compelled to act contrary to their professional judgment, which creates a profound sense of powerlessness [23]. This distress can also occur when nurses face decisions between two morally acceptable options, and the outcome of their choice is later viewed as morally wrong or detrimental to the patient, as suggested by Dorman and Raffin Bouchal (2020) [33].

Moral suffering, a significant outcome of moral distress, represents the emotional and psychological toll it takes on healthcare workers. Studies indicate that moral distress can negatively impact nurses' physical, emotional, and psychological health, resulting in issues such as sleep deprivation, deteriorating health, and increased sick leave [24]. Emotional responses include feelings of helplessness, powerlessness, frustration, and demoralization [13, 20, 28, 30, 31, 35]. The cumulative nature of moral distress, referred to as the "crescendo effect," suggests that repeated exposure without resolution escalates distress, thus impacting long-term professional satisfaction and integrity.

The emotional toll associated with moral distress can threaten nurse retention, with studies showing that nearly half of surveyed nurses considered leaving the profession due to moral distress [35]. Such findings are consistent with evidence linking moral distress to burnout, decreased job satisfaction, and poor team dynamics, all of which contribute to an unhealthy work environment and increase the likelihood of career change among nurses [21, 33, 35]. Consequently, addressing moral distress is crucial to enhancing nurses' well-being and ensuring the sustainability of the profession.

In conclusion, moral distress originates from the inability to act according to one's ethical beliefs, influenced by individual, team, and systemic constraints. Understanding these contributing factors is essential to mitigate the effects of moral distress, promote professional satisfaction, and maintain the integrity of healthcare workers. Addressing these challenges

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proactively can reduce moral suffering and improve the overall work environment for nurses, ultimately enhancing patient care quality.

5.6 STRENGTH AND LIMITATIONS

Moral distress in healthcare represents a significant challenge, influencing HCPs, their practices, patient outcomes, and organizational cultures. Moral distress is a complex construct, emphasizing that heightened awareness and understanding among healthcare workers can lead to better recognition and management of such situations. Professionals should be empowered through ethical training to help alleviate moral distress. Healthcare organizations should foster ethical environments and establish clear policies to encourage open discussion and provide crucial support.

The limitations arise from diverse methodologies used in moral distress studies, making comparing and synthesizing findings challenging. Variations in study design, measurement tools, and populations constrained the formation of broad conclusions. Despite these challenges, diverse studies have offered valuable insights into the characteristics of moral distress.

While this study specifically focused on nurses, the exclusion of other healthcare practitioners such as pharmacists, social workers, and therapists was noted. This focus on nursing may limit the generalizability of the findings across the entire healthcare profession, and future research should aim to include a broader range of healthcare providers to gain a more holistic understanding of moral distress in the healthcare setting. Moreover, as moral distress research evolves, this review might not encompass all recent theories or developments related to moral distress.

5.7 CONCLUSION

This study revealed that moral distress is a complex phenomenon, lacking agreement on a specific definition. The description and definition of moral distress are highly debated, making it challenging to identify the defining characteristics. However, the review revealed the main characteristics of moral distress. Moral events are necessary for moral distress, with differences underlining the types of these events. Most of the included studies proposed moral judgment or knowing the right ethical action as a necessary condition for moral distress, with some reservations from other studies due to cases of uncertainty and dilemmas. Most studies suggested that constraints were necessary conditions for moral distress. A few studies posited that moral distress may occur without constraints. Similarly, moral wrongdoing is the mirror of

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knowing the right ethical action. Finally, all the studies in this review agreed that moral suffering is the central figure of moral distress despite the underlying constraints, dilemmas, or uncertainties.

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Table 5.1: Appendix A: Summary of the included studies (n = 19).

Study and location	Aim of the study	Design, method, and sample	Key findings	Quality Rating	Cluster
(Thorne et al., 2018)[28] Canada	A critical exploration of the dynamics of moral distress experience	Qualitative, interpretive description methodology, 28 NICU practitioners	Organizational and Relational Contexts created a dynamic and complex environment that signifies the experience of moral distress in various moral situations.	LVL II	a,b,c,d,e
(Ko, Chin & Hsu, 2018) [31] China	Reconstruct the model of moral distress using the grounded theory.	Qualitative, Grounded theory 25 Registered Nurses work units that attend to the needs of adult, pediatric, acute, and critical disease or end-of-life-care patients	<ul style="list-style-type: none"> Clinical moral events are influenced by the nurses' moral values. Nurses' moral values constitute a constraint that leads to moral distress. Heterodox skills and self-confidence promote moral efficacy and moral actions. Moral efficacy enhances moral judgment. 	LVL II	a,b,c,e
(McCarthy & Monteverde, 2018) [14] (NA)	Defend the standard account of moral distress	Qualitative Historical Moral distress definition	The moral distress concept underlines social, political, and contextual determinants and highlights the emotional dimension of the moral realm. Moral distress puts pressure on healthcare providers and compromises patient care safety and quality.	LVL III	a,b,c,d,e
(Epstein et al., 2019) [23] (NA)	Describes the development And testing of a revision of the widely used Moral Distress Scale–Revised (MDS-R) To measure moral distress.	Quantitative Tool development 653 combined data from 22 previous studies, assessing 301 write-in items and 209 root causes identified through moral distress consultation, and reviewing 14 recent publications from various professions	The Measure of Moral Distress for Healthcare Professionals (MMD-HP) is considered a comprehensive tool to measure moral distress, encompassing the latest insights into the causes of moral distress. The tool captured five components of moral distress: <ul style="list-style-type: none"> Complicity in wrongdoing. Lack of voice. Wrongdoing associated with professional (not personal) values. Repeated experiences. Three levels of root causes (patient, unit,system). 	LVL II	a,b,c,d,e

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(Ko et al., 2019)[25] China	To analyze the main causes for moral distress with interpretive interactionism	Qualitative; interpretive interactionism. 32 nurses; 12 different departments Oncology Ward, Palliative Ward, Emergency Room, Operation Room, Intensive Care Unit, and Children	Clinical situations led to moral distress: <ul style="list-style-type: none"> • Patients lack knowledge regarding their medical conditions. • Medical decisions do not reach the optimal benefit for patients. • Lack of dignified death for terminally ill patients. Nurses trapped in moral distress due to: <ul style="list-style-type: none"> • Lack of moral goodness. • Lack of confidence. • Power of hierarchy (nurses-physicians). • Oriental culture. 	LVL II	a,b,c,d,e
(Woods, 2020) [35] New Zealand	Present and discuss the main themes that were revealed following an analysis of the qualitative Research findings that were extracted from a national survey regarding the causes and effects of moral Distress amongst New Zealand nurses.	Qualitative Thematic analysis 412 Nurses working in general area in healthcare system	Nurses suffered issues and moral residue due to: <ul style="list-style-type: none"> • Lack of healthcare system support. • Bullying by their managers. • Witnessing poor care practices. • Working with incompetent colleagues. • Poor ethical climate. Nurses are struggling to maintain their ethical standard.	LVL II	a,b,c,d,e
(Burton et al., 2020)[24] USA	Define moral distress based on the Perceptions and experiences of neonatal and pediatric critical care nurses.	Qualitative descriptive study using focus group methodology 15 focus groups Nurses working in neonatal and pediatric intensive care units	Two principles emerged: <ul style="list-style-type: none"> - Patient-focused factors in terms of: <ul style="list-style-type: none"> • Quality of Life • Advocacy • Communication Challenges - Nurse-focused factors in terms of: <ul style="list-style-type: none"> • Voice/No Voice. • Role Ambiguity. • Role Conflict. • Compromised Integrity. 	LVL I	a,b,c,d,e
(Morley, Bradbury-Jones & Ives, 2020) [13]	Explore the concept of moral distress in nursing both empirically and conceptually	Qualitative Feminist interpretive phenomenology	Broadening the definition of moral distress to include a range of moral situations. <ul style="list-style-type: none"> • Moral Event • Moral constraints. 	LVL II	

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UK		21 Critical care nurses	<ul style="list-style-type: none"> • Moral tension. • Moral conflict. • Moral dilemma. • Moral uncertainty. 		
(Abdolmaleki et al., 2018) [27] Iran	Investigates the relationship Between professional autonomy and moral distress	Quantitative descriptive correlation study 173 Emergency Nurses	A statistically significant negative relationship was reported between professional independence and the frequency of moral distress. Lack of autonomy hinders nurses from functioning effectively and efficiently in practice and even can lead to moral distress.	LVL II	a,b,c,d
(Afoko et al., 2022) [30] Ghana	Investigate how moral distress is experienced by nurses working in neonatal intensive Care and paediatric wards	Qualitative Phenomenology descriptive method 40 nurses 14 nurse manager Neonatal intensive Care Nurses. Nurse Managers	Six themes were identified: nurses experience morally distressing situations due to a variety of causes; the impact of morally distressing situations on nurses; coping mechanisms of nurses who experienced morally distressing situations; recommendations made by the nurses to reduce the incidence of moral distress; inadequate support measures available to nurse managers and nurse managers experience moral distress too.	LVL II	a,b,c,d,e
(Özbaş, Kovanci & Köken, 2021) [29] Turkish	Explore the sources of moral distress in oncology nurses	qualitative phenomenological study 14 oncology nurses	Four main themes were identified in the study. The first theme, related to the failure of quality of care, includes the failure to provide holistic care and competence problems (not feeling competent in oncology practice). The second theme includes biomedical ethical issues commonly observed in the field of oncology. The third theme includes treatment and care practices, consisting of futile treatments, lack of regulation for 'do not resuscitate' orders and decisions to limit life-prolonging treatment, limited informational authority of nurses, and problems related to educational practices on the patient. The final theme includes problems arising from the health care system and institution's management and the need for regulation to support ethical decisions.	LVL II	a,b,c,d,e
(De Brasi et al., 2021) [22] Italy	Explore the causes of morally distressing Events, feelings experienced by nurses and coping strategies utilised	Qualitative hermeneutic-phenomenological qualitative 28 Onco-haematological Nurses	Six main themes emerged from the interview analyses: 1) the causes of moral distress; 2) feelings and emotions experienced during morally distressing events; 3) factors that affect the experience	LVL II	a,b,c,d,e

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<p>(Nikbakht Nasrabadi et al., 2021) [32] Iran</p>	<p>by a nursing population at an Italian teaching hospital. A secondary outcome of this qualitative study was to analyse whether palliative care or end-of-life care education may reduce morally distressing events. Explore the experiences of nurses' moral distress in the long-term care of older adults via a phenomenological study.</p>	<p>Qualitative phenomenological study 9 ICU nurses</p>	<p>of moral distress; 4) strategies for coping with moral distress; 5) recovering from morally distressing events; and 6) end-of-life accompaniment. Varying opinions regarding the usefulness of palliative care education existed. Some nurses stated that participation in end-of-life courses did not help them cope with morally distressing events in the ward, and they believe that existing courses should be strengthened and better structured.</p> <p>Five major themes are identified from the interviews: advocating, defense mechanisms, burden of care, relationships, and organizational issues. In addition, several subthemes emerged including respectful end of life care, symptom management, coping, spirituality, futile care, emotional work, powerlessness, relationships between patients and families, relationships with healthcare teams, relationships with institutions, inadequate staffing, inadequate training, preparedness, education/mentoring, workload, and support.</p>	<p>LVL III a,b,c,d,e</p>
<p>(Petersen & Melzer, 2023) [21] Germany</p>	<p>Explore the phenomenon of moral distress and describe its work-related predictors and individual consequences.</p>	<p>Quantitative Cross-sectional design 976 home-care nurses</p>	<p>Job characteristics, such as high emotional demands, frequent work-life-conflicts, low influence at work, and low social support, were associated with higher disturbance caused by moral distress in home-care nurses. Organizational characteristics of home-care services, such as time margin with patients, predicted moral distress. High disturbance levels due to moral distress predicted higher burnout, worse state of health, and the intention to leave the job and the profession, but did not predict sickness absence.</p>	<p>LVL II a,b,c,d,e</p>
<p>(Prompahakul et al., 2021) [20] Thailand</p>	<p>Describe the experience of moral distress and related factors among Thai nurses.</p>	<p>Mixed methods, a convergent parallel mixed-methods design. 462 registered nurses acute care and critical care</p>	<p>The top 7 causes of moral distress were related to system-level root causes and end-of-life care situations. Hierarchical multiple regression showed that work units, considering leaving position, and number of moral distress episodes in the past year were significant predictors of moral distress. Twenty interviews demonstrated three main themes of distressing causes: 1) powerlessness (at patients/family-, team-, and organizational-levels), 2) end-of-life issues, and 3) poor team function (poor</p>	<p>LVL II a,b,c,d,e</p>

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(Dorman & Raffin Bouchal, 2020) [33] (Canada)	Develop a simultaneous, evolutionary concept analysis of moral distress and moral uncertainty in the context of medical assistance in dying (maid). Reconstructed definition of moral distress and assess its implications for the institutional Response and the clinician's Self-reflective response to the experience, that is, in terms of an ethics of agent-regret.	Simultaneous concept analysis. 44 documents published from 1984 to 2019. Nursing research on moral distress and moral uncertainty Conceptual insight Clinicians	communication and collaboration, incompetent healthcare providers, and inappropriate behavior of colleagues). The integration of data from both components indicated that the qualitative interviews enrich the quantitative findings, especially as related to the top 7 causes of moral distress. Despite the significant overlap, moral distress and moral uncertainty have subtle distinguishing differences. Attributes of moral distress in the context of MaiD focus on knowing the right course of action but being unable to act, especially when conflict or suffering occurs. Attributes of moral uncertainty center on an inability to decide on which course of action to take or knowing what outcome is preferable. <i>"Moral distress is an experience of the moral emotion agent-regret, as it fittingly arises in response to one's participation in a tragic or potentially unjust care-related circumstance in which one is unable to act otherwise due to factors beyond one's immediate control"</i> (P. 47)	LVL II	a,b,c,d,e
(Kim, Shelton & Applewhite, 2023)[2] (NA)	Verify relations between moral distress and work satisfaction in nursing work in the hospital context.	Quantitative cross-sectional 141 Nurses	"Autonomy" was the component of greater work satisfaction, appearing as fragile in the greater intensity issues of moral distress. Autonomy was followed by "interaction" and "remuneration" as components of satisfaction, and "lack of competence in the team" and "insufficient working conditions" as having greater intensity and frequency of moral distress, respectively. Conclusion: Comparing these two constructs denoted inverse relationships between them, especially while autonomy, a component of greater satisfaction, also appears as a trigger of moral distress when insufficiently exercised. Thus, it is considered necessary to strengthen nursing work environments for ethical and satisfactory performance.	LVL III	a,c,e
(Wachholz et al., 2019)[34] Brazile				LVL II	a,b,c,d

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(Arends et al., 2022) [26] Netherlands	Explore whether nurses in hospital settings experience moral distress when involved in potentially life-prolonging treatments in adults with a short life expectancy.	Qualitative, semi-structured interviews. 23 registered nurses working in inpatient or outpatient hospital.	The nurses stated they were often not involved in decisions regarding life-prolonging treatments. They reported signs of moral distress such as feeling powerless when they when they were not being listened to in the decision-making process and when confronted with negative treatment outcomes. Nurses felt frustrated when their own values were not reflected in the decision-making or when physicians created unrealistic expectations.	LVL III	a,b,c,d,e
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Note: Studies were Clustered under five themes which are: a = Moral situation, b = Knowing the right action (Moral judgment), c = Presence of constraints, d = Doing the wrong action, e = Moral suffering.

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Table 5.2: Appendix B: Data evaluation

Authors	LR known/unknown	Purpose	LR timeframe	Sample sufficient	Data collection method	Cronbach $\alpha \geq 0.70$	Instrument validity disc	Response rate $\geq 25\%$	Result clear	Narrative consistent with table	Limitation identified	Conclusion based on the result	Quality rating	Level of evidence
(Abdolmaleki Et Al., 2018)[27]	Yes	Yes	Classic	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	LVL II	LVL III
(Thorne Et Al., 2018)[28]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	NO	Yes	LVL II	LVL III
(Ko, Chin & Hsu, 2018) [31]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	NO	Yes	LVL II	LVL III
(Mccarthy & Monteverde, 2018) [14]	Yes	Yes	Classic		NO	NA	NA	NA	Yes	NA	NO	Yes	LVL III	LVL III
(Epstein Et Al., 2019) [23]	Yes	Yes	Classic	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	LVL II	LVL III
(Ko Et Al., 2019)[25]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	Yes	Yes	LVL II	LVL III
(Wachholz Et Al., 2019)[34]	Yes	Yes	Classic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	LVL II	LVL III
(Burton Et Al., 2020)[24]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	Yes	Yes	LVL I	LVL III
(Morley, Bradbury-Jones & Ives, 2020) [13]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	Yes	Yes	LVL II	LVL III
(Dorman & Raffin Bouchal, 2020) [33]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	Yes	Yes	LVL II	LVL III
(Woods, 2020) [35]	Yes	Yes	Yes	Classic	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	LVLII	LVL III
(De Brasi Et Al., 2021) [22]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	No	Yes	Yes	LVL II	LVL III
(Nikbakht Nasrabadi Et Al., 2021)	Yes	Yes	Classic	No	Yes	NA	NA	NA	Yes	NA	NO	Yes	LVL III	LVL III
(Özbaş, Kovanci & Köken, 2021) [29]	Yes		Classic	Yes	Yes	NA	NA	NA	Yes	Yes	Yes	Yes	LVL II	LVL III

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(Prompahakul Et Al., 2021) [20]	Yes	Yes	Classic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	LVL II	LVL III
(Afoko Et Al., 2022) [30]	No	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	NO	Yes	LVL II	LVL III
(Arends Et Al., 2022) [26]	Yes	Yes	Classic	Yes	Yes	NA	NA	NA	Yes	NA	NO	Yes	LVL III	LVL III
(Kim, Shelton & Applewhite, 2023)[2]	Yes	Yes	Classic		NO	NA	NA	NA	Yes	NA	NO	No	LVL III	LVL III
(Petersen & Melzer, 2023) [21]	Yes	Yes	Classic	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	LVL II	LVL III

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CHAPTER 6

THE OUTCOMES OF A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE MORAL DISTRESS AMONG CRITICAL CARE NURSES

6.1 INTRODUCTION

In Chapter 5 the findings of phase two were presented in article format as an article two. In the current chapter, the findings of phase three will be presented in article format as an article three. Phase three aimed to evaluate the outcomes of the implemented MFEI on nurses working in critical care units in one tertiary hospital in Abu Dhabi. Article three showed the effectiveness of the MFEI in reducing the moral distress frequency, intensity, and total score.

The manuscript with the title: The outcomes of a multifaceted educational intervention to reduce moral distress among critical care nurses, was submitted to the Journal of Clinical Nursing on 31 August 2024 and currently it's under review process. This chapter will be presented according to the headings of the author's guidelines as specified by the journal.

THE OUTCOMES OF A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE MORAL DISTRESS AMONG CRITICAL CARE NURSES

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Abstract

Aim: to measure the outcome of the implementation of a multifaceted educational intervention on the impact of moral distress among critical nurses.

Background: The complex nature of critical care settings exaggerates different morally distressing situations that require ongoing development of interventions to mitigate the impact of moral distress. Despite the availability of research that addressed moral distress among nurses in the literature, there is a debate about the effectiveness of the applied interventions in reducing moral distress.

Design: A quasi-experimental pretest-posttest control group study design.

Methods: Critical care nurses in two public hospitals in the Emirate of Abu Dhabi, UAE enrolled in a study extended over six months. Hospital A was assigned as an experimental group (n= 76) and received four educational sessions and three booster sessions. Hospital B was assigned as a control group (n= 82) and didn't receive any moral distress-related education. The Measure of Moral Distress for Health Care Professionals questionnaire and the Moral Distress Thermometer were utilized to measure the participants' moral distress frequency, intensity, and composite scores pre- and post-intervention and identify the outcomes.

Results: The multifaceted educational intervention exhibited statistically significant reductions in the experimental group frequency, intensity, and composite moral distress scores post-test. Conversely, moral distress scores were increased among the control group. Moreover, the intervention significantly reduced the number of nurses who intended to leave their positions from 58 to 47 in the experimental group.

Conclusion: the multifaceted educational intervention exerts positive outcomes in reducing moral distress across all the dimensions and improving the nurses' retention.

Relevance to clinical practice: The intervention provides materials that could enhance the nurses' moral knowledge and skills. It provides different tools, techniques, and strategies to help the nurses to address and manage their moral distress.

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Keywords: Moral Distress, Critical Care, Nurses, Intervention, Moral Judgment, Empowerment.

What does this paper contribute to the wider global clinical community?

- The effectiveness of the multifaceted educational intervention in mitigating the moral distress of critical care nurses in a diverse setting like the United Arab Emirates, makes it suitable to be adopted and implemented in other countries with diverse healthcare settings.
- Hospitals could adopt the developed intervention to be a part of their continuous education to enhance the moral knowledge and skills among nurses in other disciplines.
- The developed moral distress self-reflection form provided an alternative method to act against a morally distressing situation. The form can be adopted by healthcare institutions and added to their portal to facilitate anonymous reporting and solving of morally distressing situations.
- The developed self-screening Moral Distress Pathway guides the nurses in the field step-by-step to promptly recognize their moral distress, take proactive measures to seek proper support, and determine the appropriate action to take.

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6.2 INTRODUCTION

Critical care settings constantly expose nurses to morally distressing situations that include for example lack of end-of-life discussions, ideal pain management, and arguments with physicians regarding optimal patient treatments (Henrich et al., 2016, Qalawa & Hassan, 2017, Amos & Epstein, 2022). The magnitude of experienced moral distress was higher among the Critical Care Nurses (CCNs) compared to other nurses or other healthcare providers (Atashzadeh-Shoorideh et al., 2021, Giannetta et al., 2022). The complex nature of critical care settings exaggerates different morally distressing situations that require ongoing development of interventions to mitigate the impact of moral distress (Morley et al., 2021). A systematic review of interventions to reduce moral distress conducted by Morley et al (2021) reported that developing an intervention to reduce moral distress is a challenging task, as the intervention should be sensitive and flexible to individuals' needs and cultural differences.

6.3 BACKGROUND

Since 1984 when the phenomenon of moral distress was defined for the first time by Andrew Jameton, the concept of moral distress has been extensively reviewed and studied in different contexts (Browning & Cruz, 2018, Morley, Bradbury-Jones & Ives, 2020, Grammatis et al., 2024, Fantus et al., 2024). In the beginning, the concept was linked to the presence of institutional constraints that restrained the nurses' ability to take the right course of action (Jameton, 1984). The constraints were further defined to include external and internal constraints instead of limiting them to institutional constraints (Hamric, Borchers & Epstein, 2012). Then moral distress became an umbrella term that covers the experience of emotional, physiological, and psychological suffering that resulted from working against one's ethical principles and values (McCarthy & Monteverde, 2018). Furthermore, the definition of moral distress was broadened to include other situations such as moral uncertainty, moral dilemma, moral tension, moral conflict, and emotional distress (Campbell, Ulrich & Grady, 2016, Fourie, 2017, Morley, Bradbury-Jones & Ives, 2021). Moral distress is a complex phenomenon in nature and broadening its definition will make it difficult to address and mitigate moral distress (Browning & Cruz, 2018).

Several components of moral distress were identified in the literature. Firstly, knowing the right ethical action (moral judgment), moral distress arises when the nurses' ethical knowledge that is relevant to the situation is not heard or taken seriously (Epstein et al., 2019). Secondly, constraints, the presence of internal and external constraints that hinder the nurses' ability to take the right course of action (Hamric, Borchers & Epstein, 2012, Rushton, 2006, AACN,

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2021). Thirdly, moral wrongdoing when the nurses are forced to act against their professional ethical beliefs (Epstein et al., 2019: 2). Finally, as a response to moral distress, nurses may experience a range of symptoms and feelings that impact their physical, emotional, and psychological well-being (McCarthy & Monteverde, 2018, Burton et al., 2020, Afoko et al., 2022).

Among the different applied interventions, ethically based educational interventions reported a significantly better result in reducing moral distress compared to other interventions. (Morley et al., 2021: 12, Abbasi et al., 2019, Monteverde, 2016, Robinson et al., 2014). In a randomized controlled trial conducted by Molazem et al. (2013), the educational interventions reported a significant decrease in moral distress scores among the experimental group compared to the control group. In addition, Fantus et al., (2024), mentioned that ethics education is the facilitating key to the decision-making process and provides the best aid to understand moral distress.

Despite research that addresses the phenomena of moral distress among nurses, there is debate about the effectiveness of interventions in reducing moral distress. Morley et al., (2021) systematic review concluded that most single interventions produced weak evidence about their effectiveness in reducing moral distress among healthcare providers. Therefore, Imbulana, Davis, and Prentice (2021) suggested that a multifaceted intervention that covers the components of moral distress is recommended. Accordingly, the current study developed and implemented a Multifaceted Educational Intervention (MFEI) that addressed the major components of moral distress to reduce its impact on CCNs.

6.4 AIM

This study aimed to measure the outcome of the implementation of the developed MFEI on moral distress among CCNs.

6.5 METHOD

6.5.1 Design

A quasi-experimental pretest-posttest control group design guided this study following three consecutive phases, involving two groups of CCNs: experimental and control groups. The study was conducted between November 2023 and June 2024. Phase one administered the pretest to measure the baseline moral distress score among both groups in week one. Phase two involved the development and implementation of the MFEI (week 3-24) for the

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experimental group and nothing was implemented for the control group. Phase three administered the post-test to the experimental and control groups two weeks after the completion of phase two (week 26). This phase aimed to evaluate the outcomes of the developed and implemented MFEI. The two chosen hospitals were assigned to the experimental and control groups according to the moral distress score. Hospital A scored a higher moral distress score compared to hospital B. Accordingly, hospital A was selected to constitute the experimental group while hospital B represented the control group. Transparent Reporting of Evaluations with Nonrandomised Designs (TREND) guided this study (Des Jarlais et al., 2004) (See Supplementary File 1).

6.5.2 Ethical Considerations

This study was approved by the institutional review board at the University of Pretoria (Ethics Reference No. 121.2023) and the ethics committee of the two chosen hospitals SEHA Research Ethics Committee (SEHA-IRB-350). The ethical considerations of the current study followed the Belmont report considering the three essential ethical principles; beneficence, justice, and human dignity and respect (Polit & Beck, 2018: 133). The study utilized the Self Generated Identification Code (SGIC) to maintain the participants' anonymity. There was no direct communication between the research team and the participants, all the communications were conducted through the key person of each hospital. The participants were informed that they have the right to terminate participation at any time with no consequences. The participants who agreed to participate provided electronic consent by clicking the agree button at the bottom of the electronic information sheet and informed consent.

6.5.3 Settings

The study was conducted in two tertiary public hospitals in the Emirate of Abu Dhabi the capital of the United Arab Emirates (UAE) including all the critical care units (Adult, Pediatric, and Neonatal) with a bed capacity of approximately 1379 beds. These hospitals were selected because they share similar geographical, demographical, and clinical characteristics. Both hospitals were located in the central region of Abu Dhabi Emirate, both hospitals manage acute cases, both hospitals have approximately similar bed capacity, and both hospitals are considered referral and academic hospitals.

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6.5.4 Participants

A convenience sample of registered nurses holding a bachelor's degree in nursing, who were permanent staff and working in critical care units for at least six months in the same hospital. The G* Power Software 3.1 was used to calculate the sample size (Faul et al., 2009). Considering the statistical tests utilized in this study (Independent t-test) assuming a power of 80%, alpha (α) of 0.05, and medium effect size of 0.5, a total of 102 CCNs was considered sufficient to find any statistically significant variation in moral distress score. Anticipating a 20% attrition rate, a sample of 62 CCNs from each group (experimental and control) is required.

A total of 218 CCNs (110 experimental group and 108 control group) responded to the pre-test. Among the experimental group, 80 CCNs attended all the sessions, among them 76 responded to the post-test. Among the control group, 82 responded to the post-test. A total of 158 CCNs (76 experimental and 82 control) constituted the sample of this study (See Figure 1).

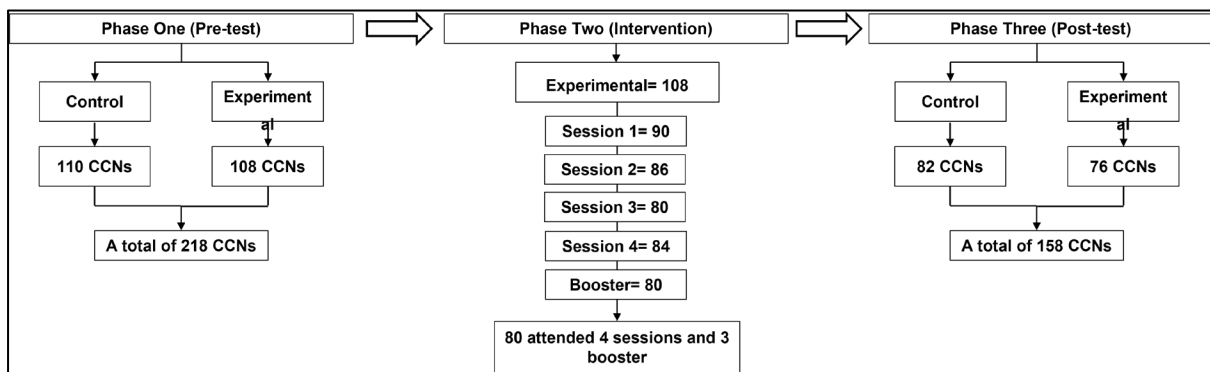


Figure 6.1: Enrollment process of the CCNs over the three phases of the study.

6.6 MEASURES

The data were collected across the three phases of the study utilizing a sociodemographic questionnaire and two assessment tools. The permission to utilize the tools was obtained from the authors via email.

6.6.1 The Measure of Moral Distress-Healthcare Professionals

The Measure of Moral Distress-Healthcare Professional (MMD-HP) is 27 items based on a five-Likert-like scale ranging from never (0) to very frequent/distressing (4). The tool produced three scores; the intensity score (how distressing the situation was) ranged from 0-108; the frequency score (how often the situation arises) ranged from 0-108; and the composite score

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which is the multiplication of the intensity and frequency score that range from 0-423. The higher the calculated scores the higher the experienced moral distress. Furthermore, the tool examines the participants' intention to leave their current clinical position (Epstein et al., 2019). The two multiple-choice questions linked the participants' intention to leave with the moral distress experience, proposing that participants with higher moral distress most likely intended to leave their position (Epstein et al., 2019). The MMD-HP is a valid and reliable tool with a Cronbach's alpha coefficient ranging from 0.93 (Epstein et al., 2019) to 0.95 (Plouffe et al., 2021). In this study, the measured Cronbach's alpha is 0.95.

6.6.2 The Moral Distress Thermometer

The Moral Distress Thermometer (MDT) measured the moral distress intensity using a visual analogue scale that ranges from 0 to 10, where 0 means no distress and 10 represents the worst experienced moral distress. This tool was used to capture the acute phase of moral distress with the ability to track any changes over time (Wocial & Weaver, 2013).

6.7 DATA COLLECTION

The pre-test and post-test data were collected via online-based surveys using Microsoft Forms. The managing director of each hospital was assigned the key person to access and communicate with the participants in each hospital. The research team forwarded a link that included the invitation, information sheet, informed consent, the MMD-HP, and the MDT to key persons via email. The key persons forwarded the email to the CCNs in their hospitals inviting them to participate. The survey links were set in a manner not to collect any personal information like the participants' names, email, or IP addresses. The participants' identities were coded using the SGIC to ensure confidentiality.

6.8 INTERVENTION

6.8.1 Development of the multifaceted educational intervention

The researcher developed an MFEI that consists of four educational sessions and three booster follow-up sessions (Figure 2). The development process followed the integration of "*Corley's Moral distress theory*" (Corley, 2002) with "*electronic learning and constructivism: A model for nursing education*" (Kala, Isaramalai & Pohthong, 2010) (Figure 2).

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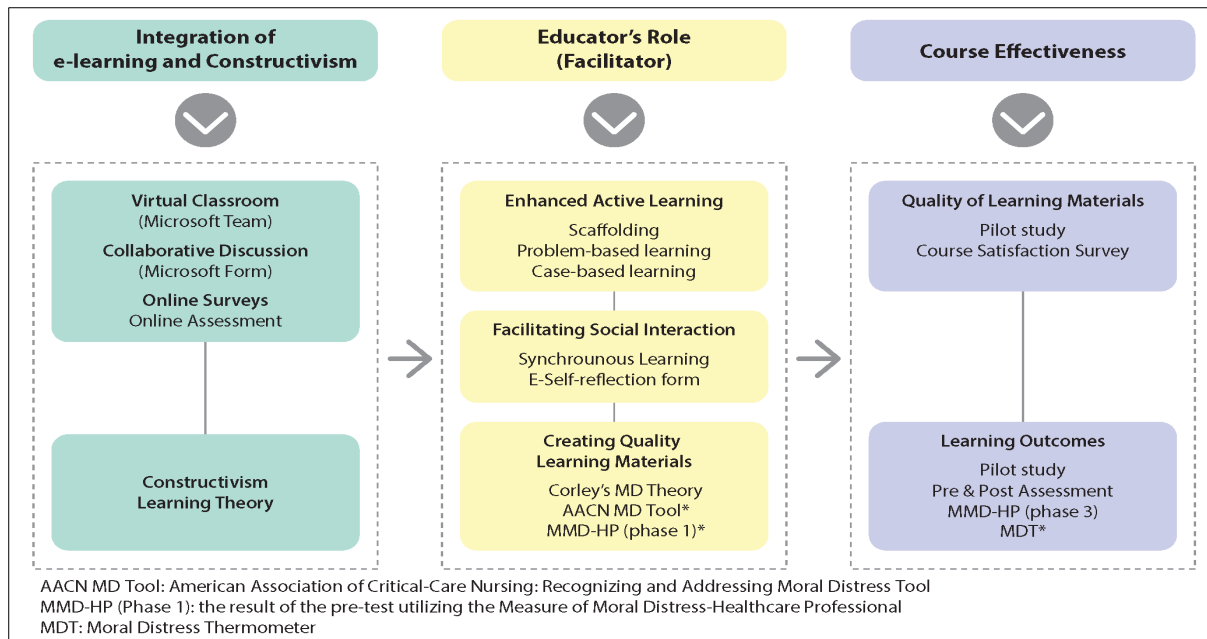


Figure 6.2: Multifaceted Educational Intervention Development & Implementation Model (phase 2).

6.8.1.1 Session One: Moral Awareness

The first session was developed based on the latest American Association of Critical-Care Nursing (AACN) updated tool for recognizing and addressing moral distress (AACN, 2021). The open-access tool consisted of four components: recognizing moral distress, identifying constraints and related causes, gauging the moral distress severity, and taking action. The session aimed to increase awareness of moral distress, including its perceived constraints, associated symptoms, and potential consequences. The session covered the definition of moral distress, the defining characteristics, different types of moral distress constraints, associated signs and symptoms, the impact of moral distress, and the consequences of not addressing moral distress.

The session incorporated scaffolding learning as an activity to avoid knowledge overlap and build on the participants' pre-existing knowledge.

6.8.1.2 Session Two: Moral Judgment

The second session was developed based on Corley's nurse moral distress theory (Corley, 2002). The session aimed to address moral judgment and enhance moral competency. The content of this session covered; the definition of moral sensitivity, moral competency, and moral judgment; identifying the relationship between these terms and their contribution to the

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moral decision-making process; and, the application of different methods and strategies (e.g, moral commitment, self-esteem, and moral assessment) to enhance the participants' moral assessment, moral competency, and moral judgment capacity. Scaffolding and problem-based learning were the learning and practice activities guiding this session.

6.8.1.3 Session Three: Action Plan

The third session introduced the action plan to mitigate moral distress. The outcome of the session was to empower the participants' ability to take action and enhance their coping mechanisms. This session empowered the participants with different strategies to act against moral distress, introduced the newly developed form to act anonymously, and enhanced ethical communication skills.

The researcher developed a Moral Distress Self-reflection Form (MD-SRF) (Figure 3) to help the participants act anonymously against morally distressing situations when they are unable to voice out, enhance their coping, and improve their communication skills (Browning & Cruz, 2018: 22, Dudzinski, 2016). The form was developed based on relevant studies that had been successfully utilized to reduce moral distress and facilitate reflection (AACN, 2021, Epstein et al., 2019, Dudzinski, 2016, Wocial & Weaver, 2013, Johns, 2011).

The researcher utilized case-based learning to guide the practice and application of this form. The researcher introduced a morally distressing situation with a moral dilemma that simulates the most frequent distressing situation extracted from Phase 1 data. At the end of the session, the research team including the researcher and the research assistants asked the participants to write about morally distressing situations from what they experienced using the online version of MD-SRF as a home assignment.

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Moral Distress Self-Reflection Tool (MD-SRF)				
Situation	Provide a brief description of the morally distressing situation that you have experienced			
Conflict	What is your concern with the situation?			
Source of conflict	Can you identify the source of your conflict? Or barriers that constrained your action?			
Feeling	How does that situation make you feel? (Detailed)			
Shared feeling	Do others share the same feeling or concern with the situation as you? If yes, are they from the same nursing discipline or other healthcare disciplines?			
Related symptoms	Can you write down the impact of the situation on your well-being state using the below domains? (In words)			
	Physical	Emotional	Psychological	Other
Distress severity*	Using the below moral distress thermometer, how severe is your moral distress?			
	On a scale from 0 to 10 (where 0 is no distress and 10 indicates the most severe), how do you rate the severity of your moral distress?			
	None	Mild	Uncomfortable	Distressing
	<input type="checkbox"/> 0	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 6 <input type="checkbox"/> 7
				Intense
				<input type="checkbox"/> 8 <input type="checkbox"/> 9
				Worst Possible
				<input type="checkbox"/> 10
Conflict justification	If you were on the opposite side, how would you justify the action causing the conflict?			
Action plan	What is your action plan to solve that situation?			
	Advantages		Disadvantages	
	What are the advantages of your action plan?		What are the disadvantages of your action plan?	
Evidence	Is your action plan supported by an evidence-based or clinical-based experience or both? If both, which is greater in percentage?			

Figure 6.3: Moral distress Self-Reflection Form. *Distress severity scale adapted with permission from (Wocial & Weaver, 2013).

6.8.1.4 Session Four: Empowerment

Session four introduced the developed Moral Distress Pathway (MDP) (Figure 4). The MDP guided the CCNs through a series of questions to self-screen and address moral distress. The MDP empowered nurses to promptly recognize moral distress, take proactive measures to seek proper support, and determine the appropriate action to take. In addition, the session enhanced the nurses' competency in utilizing the MD-SRF. The researcher used some scenarios posted by the participants in the third session (home assignment). The participants demonstrated how to use the moral distress self-reflection form. Role-playing, self-reflection,

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and group presentation were utilized to enhance and summarise the learned knowledge and skills.

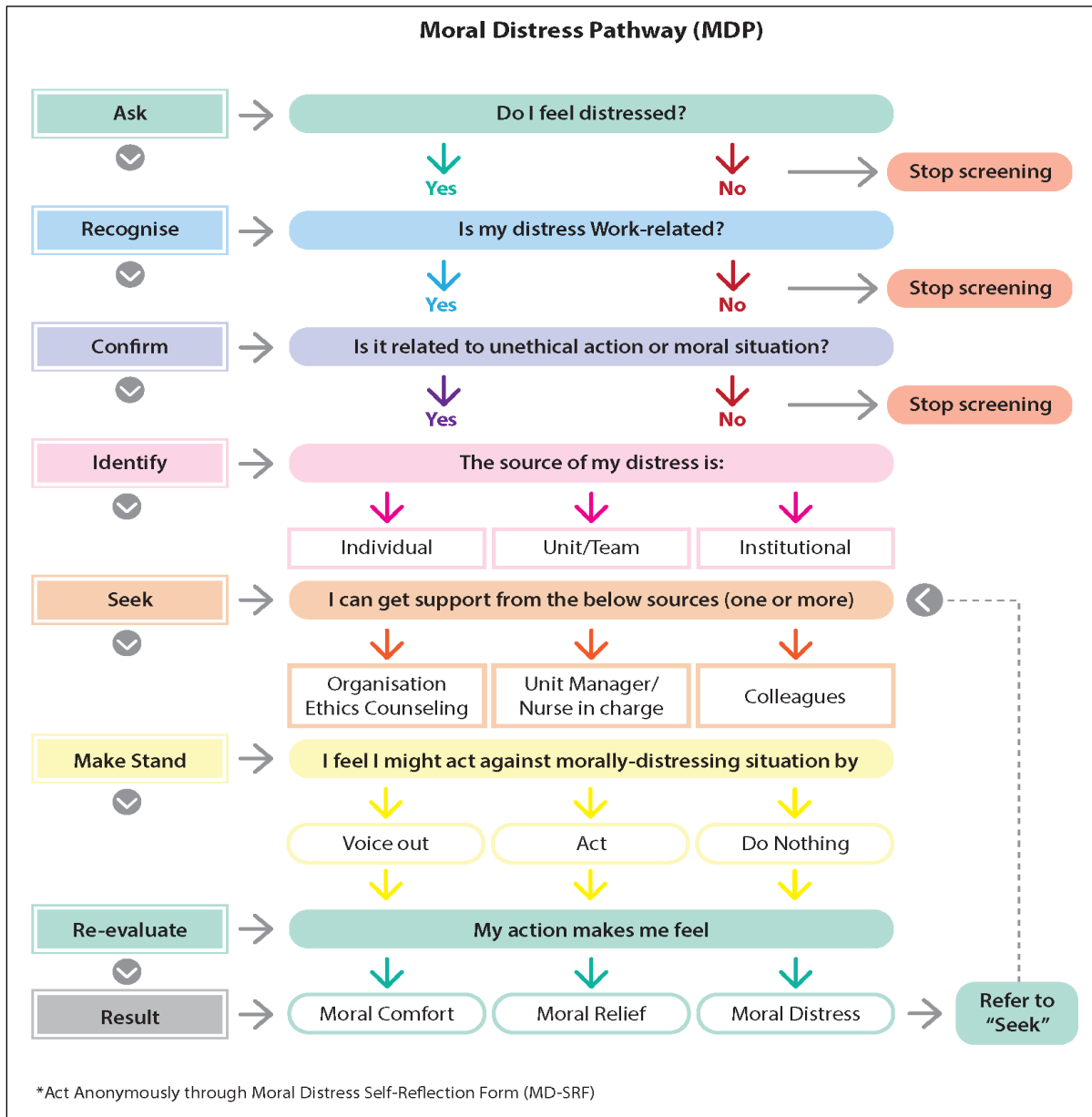


Figure 6.4: Moral Distress Pathway (MDP)

6.8.1.5 Booster Sessions

The forgetting curve or Ebbinghaus curve theorized that knowledge retention is reduced over time. It suggested that learned knowledge would be lost if there was no retention plan (Shail, 2019). Re-introducing the knowledge and skills to the participants over time using spaced intervals resulted in more effective retention and storage compared to a single time (Versteeg

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et al., 2020). Accordingly, the researcher provided booster sessions over three months to enhance the participants' retention of the acquired knowledge and skills from the educational sessions. The booster sessions included flashcards that summarized the learned moral knowledge and morally distressing cases reflections and discussions with the application of The MD-SRF and the MDP.

6.8.2 Implementation of the Multifaceted Educational Intervention

The implementation of the MFEI extended over six months. The study implemented a weekly two-hour synchronous online session over four weeks for the experimental group via Microsoft Team. An email that included the invitation letter, information sheet, informed consent, and the four-session links was sent to the key person of the experimental hospital. The key person forwarded the link to the CCNs inviting them to attend the intervention. To increase the enrolment rate, each session was repeated in the same week, giving the participants flexibility to attend either the primary or repeated session. The date and time of each session were scheduled after discussion with the key persons considering the participants' duty rota. Which significantly increased the enrolment and resulted in a high enrolment rate. After that, a monthly booster session for three months was offered to boost the participants' acquired moral knowledge and skills.

The research team utilized the MDT pre and post-session for the four implemented sessions to track the acute changes in moral distress among the participants. Finally, The post-test utilizing the MMD-HP and the MDT was administered on week 30 for both the experimental and control groups (phase three).

6.9 PILOT STUDY

A pilot study was undertaken, involving CCNs working in another hospital that was not included in the main study plan. The inclusion and exclusion criteria were applied. A convenience sampling approach was utilized to enroll the participants. The pilot study sample size was estimated based on the stepped rule of thumb according to the main study's proposed effect size of medium effect 0.5 and power of 80%. Accordingly, 10 participants per group were estimated as the pilot study sample size (total of 20 participants) (Whitehead et al., 2016). A total of 43 CCNs (23 experimental group and 20 control group) responded to the pre-test. Among the experimental group, 21 CCNs attended all the sessions, among them 19 responded to the post-test. Among the control group, 17 responded to the post-test. A total of 36 CCNs (19 experimental and 17 control) constituted the sample of the pilot study.

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The researcher collected the data using the socio-demographic, MMD-HP, and MDT pre- and post-intervention and then implemented the four educational sessions and the three booster sessions. Ethical considerations were applied and followed throughout the pilot study. The date and time were identified according to a convenient time for the participants and the hospital regulations. The pilot study informed the feasibility and acceptability of the study for the target population, determined the need for any refinement, and identified the potential benefits and outcomes of the study. The researcher interviewed the participants utilizing a structured questionnaire to collect their feedback.

The pilot study indicated that the MMD-HP and MDT instruments are useful and appropriate tools for CCNs in Abu Dhabi to measure the frequency, intensity, and total moral distress. The measured Cronbach's alpha for the MMD-HP was 0.95. The MFEI showed the capacity to reduce the moral distress scores (frequency, intensity, and total), improve participants' moral knowledge and skills, enhance their moral judgment capacity, and empower them to address their moral distress. Based on feedback from participants, adjustments were made to the intervention. These modifications included adding communication techniques for courageous behavior, addressing the root causes contributing to moral distress, and using scenarios to differentiate between moral conflict and moral dilemma. Notably, CCNs in the pilot study (n = 36) were thereafter excluded from the final analysis of this study.

6.10 DATA ANALYSIS

The collected data were cleaned and entered into the Statistical Package for Social Science (SPSS) version 24 for analysis (IBM Corp, 2016). Descriptive statistics: frequency, percentages, mean, and standard deviations were used to describe the participants' demographic characteristics, and Pre-Post moral distress frequency, intensity, and composite score. Inferential statistics: An independent sample t-test was used to compare the post-test moral distress scores between the experimental and control groups. Paired sample t-test was used to evaluate the outcomes of the intervention, it identified any statistically significant differences between the pre-test and post-test MMD-HP and MDT main scores within the experimental and control group. Repeated measure one-way ANOVA was used to track the changes in experimental group MDT scores.

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6.11 RESULT

6.11.1 Participants' Demographic and professional Characteristics

As illustrated in Table 1, out of the 158 CCNs participated in this study, 107 (67.7 %) were female, 68.4 % (108) were married, most of them (75.9%) were bachelor's degree holders, and the participants' age ranged between 22 and 56 with an average of 36 years (SD=7.45). Most of the participants were of Indian nationality (40.5%), followed by Filipino (23.4%) and Arabic (19%) participants. The remaining 17% comprised other nationalities, including South African, Australian, Canadian, American, and British. The participants' overall nursing experience ranged between 1 and 33 years (mean: 13.3 ± 7.01), overall experience in critical care units ranged from 1-30 years (mean: 11.02 ± 6.34), were 69% of them working in adult critical care units and the remaining were working in pediatric and neonatal critical care units. By asking the participants to rate their knowledge about moral distress, 61.4% rated between poor and fair, 30.4 % rated as good, and only 8.2 rated their knowledge between very good and excellent.

6.11.2 Moral distress baseline status (Pre-test)

As shown in Table 2, the independent t-test revealed statistically significant differences in moral distress scores between the control and the experimental groups in the pre-test. The MMD-HP frequency, intensity, composite scores, and MDT scores were higher among the experimental groups versus the control group (mean 61.68 [11.59] v.s. 50.5 [15.06], $t= 5.252$, $P < 0.001$), (mean 63.89 [12.93] v.s. 54.55 [18.45], $t= 3.708$, $P < 0.001$), (mean 153.47 [62.26] v.s. 127.32 [61.01], $t= 2.666$, $P < 0.01$), and (mean 6.3 [2.2] v.s. 4.94 [2.16], $t= 3.930$, $P < 0.001$) respectively.

6.11.3 Multifaceted Educational Intervention Outcomes (Post-test)

The paired sample t-test presented a statistically significant reduction in post-test moral distress MMD-HP frequency, intensity, composite, and MDT scores among the experimental group after six months interventions (mean 61.68 [11.59] v.s. 55.97 [10.36], $t= 10.008$, $P < 0.001$), (mean 63.89 [12.93] v.s. 54.21 [17.25], $t= 12.451$, $P < 0.001$), (mean 153.47 [62.26] v.s. 123.82 [59.45], $t= 29.66$, $P < 0.01$), and (mean 6.3 [2.2] v.s. 2.82 [0.482], $t= 13.487$, $P < 0.001$) respectively. In contrast, the control group showed a statistically significant increased in the post-test moral distress MMD-HP frequency, intensity, composite, and MDT scores (mean 50.5 [15.06] v.s. 52.45 [16.11], $t= -5.075$, $P < 0.001$), (mean 54.55 [18.46] v.s. 61.07

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[18.66], $t = -7.415$, $P < 0.001$), (mean 127.32 [61.01] v.s. 145.84 [64.58], $t = -8.594$, $P < 0.001$), and (mean 4.94 [2.16] v.s. 5.22 [1.2], $t = -5.619$, $P < 0.001$) respectively (Table 3).

Moreover, repeated measure ANOVA was conducted to track the changes in MDT score across the four educational sessions one week apart over 4 weeks. Tables 4 and 5 showed a statistically significant reduction in MDT scores across the four sessions Wilks' Lambda = 0.083, $F(3, 73) = 269.48$, $p < .001$, partial eta squared = 0.9

6.11.4 Moral Distress and Intention to Leave Position

The MMD-HP assessed the participants' intention to leave by asking the question "Are you considering leaving your position now due to moral distress?", the pre-test and post-test revealed that among the experimental group, 58 (76.3%) participants intended to leave pre-intervention while the count reduced to 47 (61.8%) after attending the intervention. Compared to the control group, the number of participants who intended to leave was increased from 44 pre-test to 49 post-test (Table 7).

6.12 DISCUSSION

This study aimed to develop and implement an MFEI to mitigate moral distress among CCNs. It's the first study conducted in the UAE and among the very few international studies that address the major components of moral distress (Hickey, 2022). The outcomes of this study revealed that the MFEI is an effective intervention that reduced the moral distress scores among the experimental group over six-month periods.

At the baseline, the moral distress scores were higher among the experimental group compared to the control group. The MMD-HP composite score was 153.47 (SD= 62.26) suggesting that the higher score the higher the experience of moral distress (Epstein et al., 2019). In addition, the moral distress intensity score was higher than the frequency score. This finding was in line with other international studies (Kovanci & Atli Özbaş, 2023, Malliarou et al., 2021, Bleicher et al., 2021) and inconsistent with another study (HARORANI et al., 2019). The MDT score (6.3 out of 10) also was high consistent with the higher composite MMD-HP score. The differences between the experimental and control groups could be attributed to a variation in the work environment or personal perception of the morally distressing situations. Despite that, both groups demonstrated increased moral distress scores, similar to other studies reported higher moral distress scores among the context of critical care (Prompahakul

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et al., 2021, Grammatis et al., 2024, Hally, Settle & Nelson, 2021). This reflected the urgency for a targeted interventions to address the moral distress in critical care settings.

Among the experimental group, the MFEI led to a significant reduction in their moral distress scores across all the measured dimensions. The MDT scale which is used to capture and track acute changes in moral distress scores continuously decreased with the sessions' progress over time. The one-week gap between each session gave the participants extra time to process and practice what they learned and acquired in the sessions. This finding was in line with another study conducted by (Leggett et al., 2013).

In addition, the reduction in MMD-HP composite score is reflected by the reduction in frequency and intensity scores, with more reduction observed in the intensity score. Nurses might have false moral distress when they perceive their moral judgment as the right action when it's not. Or they might have moral distress when others perceive their judgment as valid while it's not (Ulrich & Grady, 2018). The MFEI incorporated techniques and strategies to enhance moral sensitivity, competency, intention, and moral judgment capacity. The MFEI introduced several tools that guided CCNs through the ethical decision-making process to make the right moral judgment. A morally competent nurse perceives the ethical issue from a reasonable perspective, develops moral judgment capacity, and demonstrates effective problem-solving techniques (Wilson, 2018, Johnstone & Hutchinson, 2015). Moreover, the less significant reduction in the moral distress frequency score compared to the intensity score could be attributed and linked to the improvement of CCNs' moral sensitivity. Enhancing nurses' moral sensitivity will help construct meaningful input in the ethical decision-making process, develop their moral competency, and less exposure to moral distress (Corley, 2002). On the other hand, Moral sensitivity is the ability to recognize a moral conflict, it's a lens that enables nurses to see and discover the moral challenges in the work site (Khodaveisi et al., 2021), which may improve the CCNs' ability to recognize other morally distressing situations.

The significant reduction in moral distress intensity score (Mean difference 9.68) in addition to what was mentioned above, could be linked to the MFEI focus on empowering the participants with different action plans to act against moral distress. The MFEI introduced different communication skills and techniques to support the nurses to act courageously and safely against morally distressing situations. Nursing courageous behavior creates and maintains a safe environment that promotes the quality of patient care and patient safety (Pajakoski et al., 2021). Overcoming fear and acting against an unethical situation brought an inner feeling of

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self-satisfaction and self-worth (Numminen, Repo & Leino-Kilpi, 2017) which in turn reduced moral distress.

We cannot ignore that some workplaces lack a safe moral reflective space. They may lack ethics counseling, effective communication, or effective team collaboration as well (Donkers Moniek et al., 2021). Which maximizes the consequences of voicing out or making a stand against morally conflicting situations (Morley, Bradbury-Jones & Ives, 2022). In these environments, nurses will be more reluctant to act and risk their jobs (Dudzinski, 2016, Giannetta et al., 2021). Accordingly, the MFEI addresses these concerns by offering two alternative methods. Firstly, for healthcare settings that lack ethical counseling, the MFEI introduced to the participants the newly developed MDP.

The MDP is a pathway that enables the nurses to do self-screening for the presence of moral distress. It guided the CCNs on how to seek proper support and choose the proper action through a series of questions. Secondly, the MFEI developed the MD-SRF to be used in healthcare settings that lack ethical counseling services or lack safe ethical reflective spaces. The MD-SRF enables CCNs to act anonymously against morally distressing situations. Within the implementation of the MFEI, the participants practiced how to utilize the MDP and the MD-SRF, and they were able to apply them to address previously distressing situations. According to the collected feedback from the participants, both the MDP and the MD-SRF helped them to overcome morally distressing situations effectively and safely with no fear. More specifically, the MD-SRF allowed them to express their feeling, address the moral conflict, identify the perceived constraints, and propose an action plan to address these situations.

Conversely, the control group displayed an elevation in moral distress scores over the same period, which may reflect the intensifying pressures and challenges within critical care settings. Epstein & Hamric, 2009, introduced the concept of the crescendo effect which is defined as damage caused by multiple or prolonged exposures to moral distress situations. When the CCNs fail to address moral distress situations, these situations will build up forming a moral residue making the reaction to the new morally distressing situation more devastating (Epstein & Hamric, 2009). These findings were supported by other studies utilizing an educational-based intervention to reduce moral distress (Abbasi et al., 2019, Monteverde, 2016, Molazem et al., 2013, Robinson et al., 2014).

Finally, the reduction in the number of CCNs considering leaving their positions due to moral distress in the experimental group is another positive outcome of the MFEI. On the other hand,

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the control group demonstrated an increase in intention to leave, further highlighting the MFEI's effectiveness. Retaining CCNs is vital for upholding high standards of patient care, and interventions that reduce turnover intention can have comprehensive benefits for healthcare services (Alsubhi et al., 2020).

6.13 STUDY STRENGTHS AND LIMITATIONS

Despite these promising outcomes, several limitations must be acknowledged. The quasi-experimental design, while robust, cannot disregard possible confounding variables. Future studies could validate these findings utilizing randomized controlled trials. In addition, long-term follow-up is suggested to examine the retention of the intervention's impact on moral distress over time. Finally, the current study focused on CCNs, further studies are recommended to assess the effectiveness of the MFEI on other populations or a multidisciplinary team.

The strength of this study could be related to the unique features of the UAE context. As a high-income country, the UAE attracts people from across the world forming a diverse community (Global Media Insight, 2023). Implementing an intervention to reduce moral distress among CCNs in the UAE has the potential to provide significant benefits locally and worldwide. The UAE, with its diverse population, serves as a small sample that represents the international health dynamics with a diverse healthcare workforce and patients. That exposed the CCNs in the UAE to managing patients or working with a healthcare team from different ethical beliefs and cultural backgrounds, making it an ideal setting for testing an intervention aimed at mitigating moral distress. With the current effectiveness of the MFEI in mitigating the moral distress of CCNs in such a diverse setting, the intervention can be adopted and implemented in other countries with diverse healthcare environments.

6.14 CONCLUSIONS

In conclusion, this study provides persuasive evidence that the MFEI can significantly address and reduce moral distress. The findings underline the importance of providing continuous education and support for healthcare professionals working in complex settings like critical care areas. The MDT is a valid tool that could track and detect acute changes in moral distress status within one week. The MMD-HP is a valid tool that could be used to measure the effectiveness of the intervention pre- and post-implementation. Future studies should continue to examine and enhance these interventions to ensure the well-being and retention of CCNs, eventually enhancing patient care and outcomes.

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6.15 RELEVANCE TO CLINICAL PRACTICE

The developed MFEI provides ready-to-use educational materials that could enhance the nurses' moral knowledge and skills. The intervention provides different tools, techniques, and strategies to help the nurses in the field to address their moral distress. The developed sessions could be used as a bundle or separately according to the needs of the nurses. The MD-SRF can be adopted by the hospitals to encourage the nurses to address any conflicting or morally distressing situations anonymously and propose an action plan. The MDP is a self-screening pathway that guides the nurses in the field step-by-step to empower nurses to promptly recognize moral distress, take proactive measures to seek proper support, and determine the appropriate action to take.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

All authors listed meet the authorship criteria according to the latest guidelines of the International Committee of Medical Journal Editors, and all authors have reviewed and approved the manuscript.

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Tables
Table 6.1: Sociodemographic and professional characteristics of the sample (n=158).

Character	Experimental group	Control group	Total
Participants	n (%)		
	76 (48.1)	82 (51.9)	158 (100)
Gender			
Male	25 (32.9)	26 (31.7)	51 (32.3)
Female	51 (67.1)	56 (68.3)	107 (67.7)
Marital Status			
Single	13 (17.1)	37 (45.1)	50 (31.6)
Married	63 (82.9)	45 (54.9)	108 (68.4)
Education			
Bachelor	57 (75)	63 (76.8)	120 (75.9)
Post-graduate	19 (25)	19 (23.2)	38 (24.1)
Critical Care Unit			
Adult	58 (76.3)	51 (62.2)	109 (69)
Pediatric/Neonatal	18 (23.7)	31 (37.8)	49 (31)
Moral Distress Knowledge*			
Poor	17 (22.4)	15 (18.3)	32 (20.3)
Fair	25 (32.9)	40 (48.8)	65 (41.1)
Good	29 (38.2)	19 (23.2)	48 (30.4)
Very Good	2 (2.6)	8 (9.8)	10 (6.3)
Excellent	3 (3.9)	0 (0)	3 (1.9)
Nationality			
Arabic	13 (17.1)	17 (20.7)	30 (19)
Indian	35 (46.1)	29 (35.4)	64 (40.5)
Philippine	15 (19.7)	22 (26.8)	37 (23.4)
Other	13 (17.1)	14 (17.1)	27 (17.1)
Mean ± SD* (Range)			
Age	36.2 ± 6.88 (22-56)	35.8 ± 7.98 (22-54)	36 ± 7.45 (22-56)
Total Nursing Experience	13.7 ± 6.12 (1-30)	12.9 ± 7.76 (1-33)	13.3 ± 7.01 (1-33)
Total CCNs Experience	11.7 ± 5.63 (1-29)	10.4 ± 6.91 (1-30)	11.02 ± 6.34 (1-30)
Moral Distress Knowledge: Participants' self-perception of their moral distress knowledge.			

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Table 6.2: Independent t-test for experimental and control group Pre-test (Phase 1).

Scale	Pre-test (Phase 1) (n=158)			
	Experimental group (n=76)	Control group (n=82)	t-value P-value	Cohen's d
	Mean ± SD			
Frequency	61.68 ± 11.59	50.5 ± 15.06	5.252 <0.001*	0.83
Intensity	63.89 ± 12.93	54.55 ± 18.45	3.708 <0.001*	0.59
Composite	153.47 ± 62.26	127.32 ± 61.01	2.666 <0.01	0.22
MDT	6.3 ± 2.2	4.94 ± 2.16	3.930 <0.001	0.32

SD: Standard Deviation
 MMD-HP: Measure of Moral Distress-Healthcare Providers Frequency, Intensity, and Composite scale.
 MDT: Moral Distress Thermometer (Visual analog scale ranged from minimum (0) and Maximum (10))
 *Equal variances not assumed

Table 6.3: Moral distress scores pre-test vs post-test within and between groups.

Scale	Experimental group (n=76)					Control group (n=82)				
	Pre-test	Post-test	t-value P-value	Mean differences*	Cohen's d	Pre-test	Post-test	t-value P-value	Mean differences*	Cohen's d
	Mean ± SD	Mean ± SD				Mean ± SD	Mean ± SD			
Frequency	61.68 ± 11.59	55.97 ± 10.36	10.008 <0.001	5.71	1.15	50.5 ± 15.06	52.45 ± 16.11	-5.075 <0.001	-1.95	-0.560
Intensity	63.89 ± 12.93	54.21 ± 17.25	12.451 <0.001	9.68	1.43	54.55 ± 18.46	61.07 ± 18.66	-7.415 <0.001	-6.52	-0.819
Composite	153.47 ± 62.26	123.82 ± 59.45	21.643 <0.001	29.66	2.48	127.32 ± 61.01	145.84 ± 64.58	-8.594 <0.001	-18.52	-0.949
MDT	6.3 ± 2.2	2.82 ± 0.482	13.487 <0.001	3.49	1.55	4.94 ± 2.16	5.22 ± 1.2	-5.619 <0.001	-0.28	-0.621

*Mean differences at confidence value 95%

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Table 6.4: Repeated measure ANOVA of the MDT scores changes over the 4 educational sessions

Intervention	MDT* Mean ± SD	Wilks' Lambda P-value	F	Partial Eta squared
Session 1	7 ± 0.88	0.083 <0.001	269.48	0.917
Session 2	6.3 ± 0.633			
Session 3	4.38 ± 0.73			
Session 4	3.11 ± 0.76			

Table 6.5: Post Hoc comparisons of the MDT score over the 4 educational sessions

Sessions		Mean Difference	SE	t	Cohen's d
Session 1	Session 2	0.697*	0.121	5.768	0.923
	Session 3	2.618*	0.121	21.658	3.467
	Session 4	3.895*	0.121	32.215	5.157
Session 2	Session 3	1.921*	0.121	15.890	2.544
	Session 4	3.197*	0.121	26.446	4.233
Session 3	Session 4	1.276*	0.121	10.557	1.690

Note. P-value adjusted for comparing a family of 6

Table 6.6: Differences in CCNs' intention to leave position pre and post-intervention

Intention to leave position*	Experimental group (n=76)						Control group (n=82)					
	Yes			No			Yes			No		
	n (%)	Compisite Score	MDT Score	n (%)	Compisite Score	MDT Score	n (%)	Compisite Score	MDT Score	n (%)	Compisite Score	MDT Score
Pre-Intervention	58 (76.3)	167 ± 64.13	7.26 ± 1.43	18 (23.7)	107 ± 19.52	3.22 ± 1.11	44 (53.7)	163.84 ± 57.6	6.57 ± 1.21	38 (46.3)	85.03 ± 29.51	3.05 ± 1.31
Post-intervention	47 (61.8)	149.28 ± 62.52	3.28 ± 0.85	29 (38.2)	82.55 ± 13.91	2.83 ± 0.47	49 (59.8)	164.25 ± 52.51	6.47 ± 1.14	33 (40.2)	79.3 ± 18.56	3.36 ± 1.34

*Intention to leave the current position due to moral distress

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Supplementary File 1: TREND Statement Checklist

Paper Section/ Topic	Item No	Descriptor	Reported?	
			✓	Pg #
Title and Abstract				
Title and Abstract	1	• Information on how unit were allocated to interventions	✓	1
		• Structured abstract recommended	✓	1
		• Information on target population or study sample	✓	1
Introduction				
Background	2	• Scientific background and explanation of rationale	✓	3-4
		• Theories used in designing behavioral interventions		
Methods				
Participants	3	• Eligibility criteria for participants, including criteria at different levels in recruitment/sampling plan (e.g., cities, clinics, subjects)	✓	5
		• Method of recruitment (e.g., referral, self-selection), including the sampling method if a systematic sampling plan was implemented	✓	5
		• Recruitment setting	✓	5
		• Settings and locations where the data were collected	✓	5
Interventions	4	• Details of the interventions intended for each study condition and how and when they were actually administered, specifically including:	✓	7-10
		○ Content: what was given?	✓	7
		○ Delivery method: how was the content given?	✓	10
		○ Unit of delivery: how were the subjects grouped during delivery?	✓	10
		○ Deliverer: who delivered the intervention?	✓	10
		○ Setting: where was the intervention delivered?	✓	7-10
		○ Exposure quantity and duration: how many sessions or episodes or events were intended to be delivered? How long were they intended to last?	✓	7-10
		○ Time span: how long was it intended to take to deliver the intervention to each unit?	✓	10
○ Activities to increase compliance or adherence (e.g., incentives)	✓	10		
Objectives	5	• Specific objectives and hypotheses	✓	4
Outcomes	6	• Clearly defined primary and secondary outcome measures	✓	4

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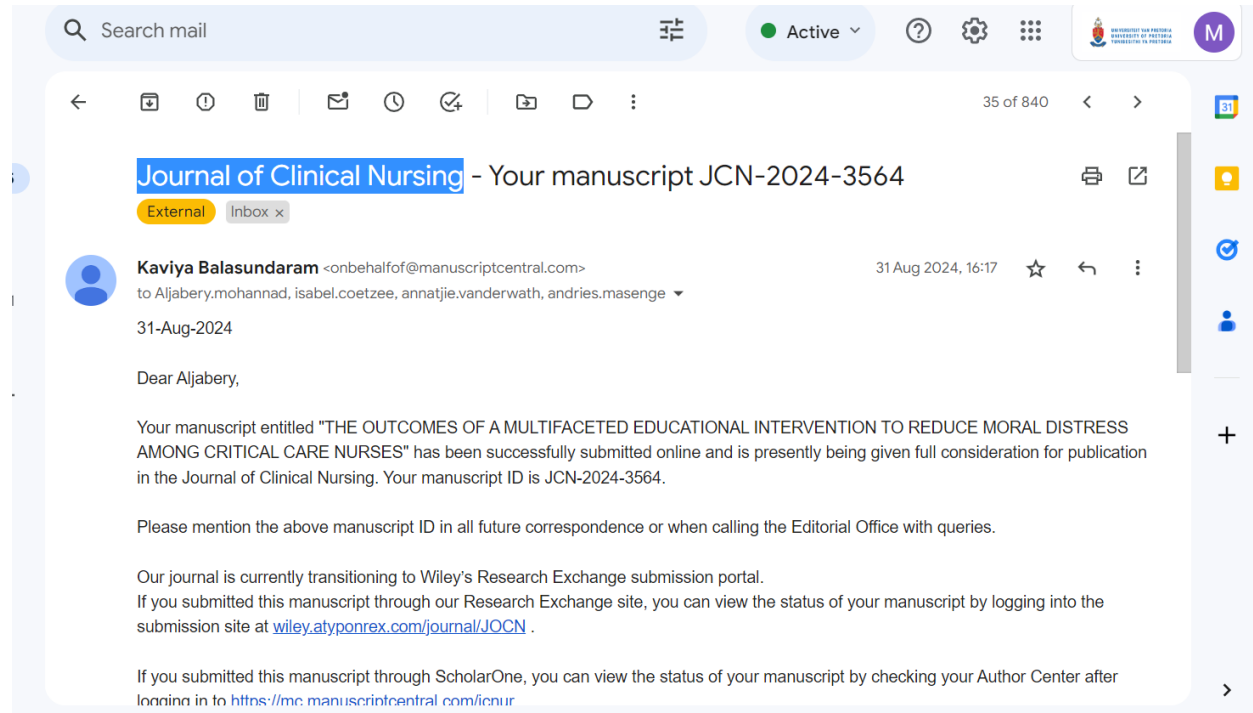
Mohannad Alyabery

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		<ul style="list-style-type: none"> • Methods used to collect data and any methods used to enhance the quality of measurements 	✓	7-11
		<ul style="list-style-type: none"> • Information on validated instruments such as psychometric and biometric properties 	✓	6
Sample Size	7	<ul style="list-style-type: none"> • How sample size was determined and, when applicable, explanation of any interim analyses and stopping rules 	✓	5
Assignment Method	8	<ul style="list-style-type: none"> • Unit of assignment (the unit being assigned to study condition, e.g., individual, group, community) 	✓	5
		<ul style="list-style-type: none"> • Method used to assign units to study conditions, including details of any restriction (e.g., blocking, stratification, minimization) 	✓	4
		<ul style="list-style-type: none"> • Inclusion of aspects employed to help minimize potential bias induced due to non-randomization (e.g., matching) 		5

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Proof of submission



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CHAPTER 7

**CONCLUSIONS, CONTRIBUTIONS, IMPLICATIONS, AND
LIMITATIONS**

7.1 INTRODUCTION

Chapter 6 presented the findings of phase three regarding the outcomes of the MFEI. The current study has resulted in several important findings that contribute to the nursing practice locally in the UAE, as well as globally. This chapter focuses on the conclusions of the three conducted phases, their contributions, implications for the nursing profession, and the observed limitations.

7.2 CONCLUSION

The overall aim of this study was to develop and implement an MFEI to reduce moral distress among the critical care nurses working in two tertiary hospitals in Abu Dhabi, UAE, and subsequently evaluate the outcomes of this intervention. Overall, the MFEI is an effective intervention that statistically and significantly reduced the moral distress frequency, intensity, and composite scores among the experimental group over six-month periods. In addition, the MFEI successfully and significantly reduced the number of CCNs considering leaving their positions due to moral distress. A discussion related to the objective and findings of each phase is presented below.

7.2.1 Phase one

The objective of phase one was to measure the frequency, intensity, and total moral distress among nurses working in critical care units in two tertiary hospitals in Abu Dhabi. This objective identified the status of moral distress at the baseline level. The study results reported moderate to high moral distress levels among the study participants. The MMD-HP intensity score was found to be higher than the frequency score. In comparison with other studies, the MMD-HP composite score was found to be higher, suggesting that the higher the score, the higher the moral distress experienced.

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The obtained results could be attributed to the nature of nursing practices implemented in critical care settings, the complexity and acuity of patients' conditions, and the implementation of aggressive life-sustaining measures.

The top five root causes that contributed to moral distress intensity, frequency, and composite score were:

- 1) "Follow the family's insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient";
- 2) "Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it";
- 3) "Have excessive documentation requirements that compromise patient care";
- 4) "Feel pressured to order or carry out orders for what I consider to be unnecessary or inappropriate tests and treatments";
- 5) "Witness healthcare providers giving 'false hope' to a patient or family".

The study found several important sociodemographic and professional traits associated with heightened moral distress among CCNs. These traits included being female, having a higher nursing degree (post-graduate), being married, lacking ethical education, and having the intention to leave the position of CCN. In addition, a positive correlation was found between the moral distress frequency, intensity, and composite score with participants' age, overall experience in the nursing profession, and experience in critical care.

In addition, the study explored the impact of moral distress on nursing retention. The study found a significant positive correlation between the moral distress scores and the CCNs' intention to leave their position. The study found that 56.4% of CCNs who participated in this study intended to leave their positions due to moral distress.

This study brings to light the complexity of moral distress for CCNs in Abu Dhabi, UAE, by revealing the dynamic interplay of dimensions and triggers that facilitate, threaten, and potentially lead to staff attrition. The UAE context may explain the perceived level of moral distress. In the UAE context, CCNs interact with diverse colleagues and patients who have various cultural backgrounds, moral beliefs, and expectations. The CCNs are struggling to address these cultural or religious preferences, expressions, language barriers, and different treatment approaches.

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These cultural and preference variations may conflict with CCNs' clinical judgment and ethical principles, which in turn may threaten their moral integrity resulting in moral distress.

The finding of phase one supported the first hypothesis which hypothesized that nurses working in critical care units in Abu Dhabi Hospital report significant moral distress levels.

7.2.2 Phase two

This phase involved two objectives. The first objective was to develop a MFEI to reduce the frequency, intensity, and total moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi. The author's decision to develop an intervention instead of adapting one is related to the existing knowledge about the effectiveness of the implemented intervention. There was a call for a new multifaceted intervention to address the different components of moral distress (Imbulana, Davis & Prentice, 2021: 2).

To do so, the author conducted an integrative review to identify the major components and characteristics of moral distress. The study identified five different characteristics that shaped the moral distress phenomenon from the nursing perspective: (1) experiencing a moral situation, (2) making a moral judgment or knowing the right course of action, (3) the presence of constraints, (4) taking the wrong ethical action (moral wrongdoing), and (5) moral suffering or associated feelings.

Accordingly, the current study developed four educational sessions and three booster sessions. The sessions covered the major characteristics of moral distress following different educational approaches such as scaffolding learning, problem-based learning, role-play, self-reflection, and group presentation. The educational-based intervention is considered an effective approach to addressing moral distress (Morley, Bradbury-Jones & Ives, 2021: 12, Abbasi et al., 2019). Fantus et al., (2024), mentioned that ethics education is the facilitating key to the decision-making process and provides the best aid to understand moral distress.

The second objective of phase two was to implement the MFEI to reduce the frequency, intensity, and total moral distress among nurses working in critical care units in one tertiary hospital in Abu Dhabi. Before implementing the main study, the author conducted a pilot study on thirteen CCNs working in hospitals other than the selected hospitals for the main study. The pilot study informed the feasibility, usability, and suitability of the planned study.

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The pilot study indicated that the MMD-HP and MDT instruments are useful and appropriate tools for CCNs in Abu Dhabi, UAE, to measure the frequency and intensity of moral distress. The MFEI showed a statistically significant decrease in participants' moral distress scores. The MFEI demonstrated the potential to improve participants' moral knowledge and skills, enhancing their moral judgment capacity, and empowering them to address their moral distress. Based on feedback from participants, adjustments were made to the intervention. These modifications included adding communication techniques for courageous behavior, addressing the root causes contributing to moral distress, and using scenarios to differentiate between moral conflict and moral dilemma. Notably, CCNs in the pilot study (n = 13) were thereafter excluded from the final analysis of this study.

7.2.3 Phase three

The last phase objective was to evaluate the outcomes of the implemented MFEI on nurses working in critical care units in one tertiary hospital in Abu Dhabi. Among the experimental group, only participants who responded to the pre-test and post-test, and attended all the intervention sessions (seven sessions) were included. Among the control group, only participants who responded to the pre-test and the post-test were included. Accordingly, a total of 218 CCNs (110 experimental group and 108 control group) responded to the pre-test. Among the experimental group, 80 CCNs attended all the sessions and 76 responded to the post-test. Among the control group, 82 responded to the post-test. A total of 158 CCNs (76 experimental group and 82 control group) constituted the sample of this study from two tertiary hospitals in Abu Dhabi.

The outcomes of this study revealed that the MFEI is an effective intervention that reduced the moral distress scores among the experimental group over six-month periods. At the baseline, the moral distress scores were higher among the experimental group compared to the control group. The differences between the experimental and control groups could be attributed to a variation in the work environment or personal perception of the morally distressing situations.

Among the experimental group, the MFEI led to a significant reduction in their moral distress scores across all the measured dimensions. The MDT scale which is used to capture and track acute changes in moral distress scores continuously decreased with the sessions' progress over time. In addition, the reduction in MMD-HP composite score is reflected by the reduction in frequency and intensity scores, with more reduction observed in the intensity score.

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The great reduction in moral distress intensity score (mean difference 9.68) could be linked to the MFEI focus on empowering the participants with different action plans to implement when acting against moral distress. The MFEI introduced different communication skills and techniques to support the nurses to act courageously and safely against morally distressing situations. The courageous behavior of nurses creates and maintains a safe environment that promotes the quality of patient care and patient safety (Pajakoski et al., 2021). Overcoming fear and acting against an unethical situation brought an inner feeling of self-satisfaction and self-worth (Numminen, Repo & Leino-Kilpi, 2017) which in turn reduced moral distress.

On the other hand, the reduction in moral distress frequency was statistically significant, but scored less difference compared to the intensity score (mean difference 5.71). This could be attributed and linked to the improvement of CCNs' moral sensitivity. Enhancing nurses' moral sensitivity will promote meaningful input in the ethical decision-making process, develop their moral competency, and lessen exposure to moral distress (Corley, 2002). Moral sensitivity is the ability to recognize a moral conflict, it is a lens that enables nurses to see and discover the moral challenges in the work site (Khodaveisi et al., 2021), which may improve the CCNs' ability to recognize newly arisen moral distressing situations.

Conversely, the control group displayed an elevation in moral distress scores over the same period, which may reflect the intensifying pressures and challenges within critical care settings. Epstein & Hamric, 2009, introduced the concept of the crescendo effect which is defined as damage caused by multiple or prolonged exposures to moral distress situations. When the CCNs fail to address moral distress situations, these situations will build up forming a moral residue making the reaction to the new morally distressing situation more devastating (Epstein & Hamric, 2009).

Finally, the reduction in the number of CCNs considering leaving their positions due to moral distress in the experimental group is another positive outcome of the MFEI. On the other hand, the control group demonstrated an increase in intention to leave, further highlighting the MFEI's effectiveness. Retaining CCNs is vital for upholding high standards of patient care, and interventions that reduce turnover intention can have comprehensive benefits for healthcare services (Alsubhi et al., 2020).

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The finding of phase three supported the second, third, and fourth hypotheses which hypothesized that nurses who completed the MFEI reported a decrease in total moral distress, compared to nurses who did not enroll in the intervention; that nurses who completed the MFEI reported a decrease in moral distress frequency, compared to nurses who did not enroll in the intervention; and that nurses who completed the MFEI reported a decrease in moral distress intensity, compared to nurses who did not enroll in the intervention.

7.3 CONTRIBUTIONS

The theoretical and methodologic contributions of this study, as well as the contributions to the nursing profession, are discussed in the section that follows.

7.3.1 Theoretical contribution

By integrating Corley's moral distress theory with the constructivism learning theory embedded in the electronic learning model for nursing education, this theoretical framework helped the researcher understand the phenomenon of moral distress from a nursing perspective. This strengthened the quality of the gathered evidence and helped the researcher to develop and frame the MFEI which consists of four educational and three booster follow-up sessions.

Corley's moral distress theory provides a framework for recognizing and measuring moral distress, predominantly in healthcare settings where ethical conflicts are widespread. By combining this with constructivism learning theory, which emphasizes active, experiential learning, the study contributes a novel tactic to reduce moral distress.

This integration of Corley's moral distress theory and constructivism learning theory suggests that educational interventions can be more effective when they not only impart knowledge, but also involve participants in reflective and interactive learning processes. This approach empowers nurses to shape their understanding and coping mechanisms for moral distress, grounded in their experiences.

Theoretically, this integration enhances the application of moral distress theory by providing practical, learning-based strategies for intervention, and materializes the constructivism learning theory by relating it to a critical, and emotionally distressed context. This dual contribution has the

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potential to inspire both educational practices in healthcare and future research on moral distress interventions.

In addition, the application of the constructivism philosophy through utilizing the electronic learning model designed for nursing education encouraged the nurses to actively engage with the learning materials during virtual teaching sessions (using Microsoft Teams software), to generate meaning through the sharing of experiences and to widen their knowledge.

7.3.2 Methodological contribution

This pioneer study is considered amongst the first of its kind conducted in an Arabic context in the UAE and the Middle East to develop and implement an MFEI to address and mitigate moral distress among CCNs. Since there is a scarcity of research on this topic in the Arab world in general and in the UAE in particular, this study is a cornerstone for further research to tackle the gap in knowledge and practice regarding this topic. Furthermore, it will inspire other researchers who are interested in studying this topic. This uniqueness adds value to the methodology by adapting and applying it to a new cultural and geographical setting, addressing a significant gap in the literature.

The study introduces a specific educational intervention tailored to address moral distress among CCNs. The development and implementation of this intervention, which covers multiple components of moral distress and utilizes various approaches, makes it a methodological advancement not only at the local level, but also globally. It is not just an application of existing approaches, but an innovative approach to confronting the problem. Besides, the effectiveness of this intervention in a diverse community like the UAE, as mentioned before in the context of the study (chapter 2), facilitates its application to other contexts.

The MFEI helped the CCNs to improve their moral knowledge, enhanced their moral judgment skills, and encouraged them to act courageously and safely against morally distressing situations. The effectiveness of the intervention, as demonstrated in the study, suggests that it can be adapted and applied to different populations and settings. This potential for replication and adaptation is a key feature of methodological contributions, as it inspires future research and practice.

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The study's pioneering role in the region and its effectiveness encourage other researchers to explore similar interventions. By providing a robust foundation, the study paves the way for further methodological innovations in the field.

7.3.3 Nursing profession

Nurses in different roles and from different specialties face ethical dilemmas, challenges, distress, and uncertainty in their daily work (American Nurses Association, 2017: 4). These could lead to moral distress, that impacts the nurses' physical, emotional, and psychological well-being. Ethical dilemmas require professional ethical skills and knowledge to make a moral decision, therefore, implementing the MFEI introduced different communication skills and techniques that help nurses to overcome fear, act against unethical situations, and decrease feelings of anger, guilt, and powerlessness. This will create and maintain a safe environment, promote the quality of patient care, patient safety, and increase the inner feeling of self-satisfaction and self-worth.

The current study contributed to the clinical practice. The interventions not only help nurses recognizing and coping with their moral distress, but also strengthen their moral judgment skills and empower them to act courageously in ethically challenging situations. This can enhance the overall quality of patient care, as nurses become more confident in making difficult decisions that align with ethical standards and patient safety.

Finally, the study contributed to the professional empowerment of nursing. By equipping nurses with tools to handle moral distress, the study contributes to their professional empowerment. Nurses who feel supported and capable of managing ethical dilemmas are more likely to experience professional growth, take on leadership roles, and advocate for healthcare system development and better patient' outcomes.

7.4 IMPLICATIONS

The implications of this study are reflected as presented in articles one, two, and three. The findings have implications for the nursing profession, nursing practice, nursing education, policymakers, and future research.

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7.4.1 Nursing profession and practice

The findings of this study reinforced existing knowledge that CCNs experience high levels of moral distress, both in frequency and intensity. The complex and high-stakes nature of critical care settings often exacerbates morally distressing situations, placing CCNs in particularly vulnerable positions. The effectiveness of the MFEI in reducing the frequency and intensity of moral distress among the experimental group in comparison with elevation among the control group over the same period, emphasizes the need for targeted interventions and support systems specifically designed for critical care environments. By addressing these challenges, the nurses, specially the CCNs, can feel more supported, experience increased work satisfaction, and ultimately enhance their patient care and outcomes.

The findings of this study stipulate compelling evidence of the significant effect of moral distress on nurses' intention to leave their profession. Nurses experiencing higher levels of moral distress are more likely to consider leaving. Addressing moral distress successfully not only increases nurse retention, but also empowers nurses with the resilience needed to manage future morally distressing situations. Failure to address moral distress, particularly among CCNs, can lead to an accumulation of distress, known as moral residue, which can further escalate into the crescendo effect. This effect makes responses to new morally distressing situations more severe and potentially more devastating.

The MDP proposes a structured approach for nurses in clinical settings to promptly recognize their moral distress, seek appropriate support, and determine the appropriate action. Integrating the MDP into daily nursing practice enables the early detection and management of moral distress. This proactive approach can reduce the residual effects of moral distress, improve nurses' emotional well-being, and enhance overall work satisfaction. By regularly using the MDP, nurses can develop more awareness and resilience, empowering them to address moral distress before it escalates.

7.4.2 Implications for policymakers

The implications for policymakers could lead to revising policies to address the root causes of moral distress in nursing. This includes managing family demands for aggressive treatment, reducing excessive documentation requirements, preventing the implementation of aggressive

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treatments without benefit or appropriate decisions to withdraw, eliminating unnecessary tests and treatments, and avoiding the practice of giving false hope to patients and families. Such policy changes can significantly improve the work environment for nurses, enhance their professional autonomy, and protect their moral integrity. Engaging nurses more deeply in the ethical decision-making process will ultimately reduce their moral distress and lead to better retention and work satisfaction.

Maintaining an ethical climate and safe moral reflective space are other implications for policymakers. Lack of ethics counseling, effective communication, or effective team collaboration maximizes the consequences of speaking out or taking a stand against morally conflicting situations. The MFEI addresses these concerns by offering two alternative methods. Firstly, for healthcare settings that lack ethical counseling, the MFEI introduced to the participants the newly developed MDP. The MDP is a pathway or algorithm that enables the nurses to do self-screening for the presence of moral distress. It guided the CCNs on how to seek proper support and choose the proper course of action through a series of questions.

Secondly, the MFEI developed the MD-SRF to be used in healthcare settings that lack ethical counseling services or lack safe ethical reflective spaces. The MD-SRF enables CCNs to act anonymously against morally distressing situations, express their feelings and the impact of the situation on their well-being, list the sources of constraints that prevent them from pursuing their ethical beliefs, identify the intensity of their moral distress using a visual analog scale, and allow the nurses to propose an action plan that might help to solve this kind of conflict using the advantages-disadvantages side-by-side comparison. Both tools can be adopted by policymakers to be added to the hospital portal to facilitate anonymous reporting and address morally distressing situations.

7.4.3 Implications for nursing education

Incorporating comprehensive ethics education, with a particular focus on moral distress, moral conflict, and moral dilemmas, into nursing curricula can better prepare undergraduate nurses to manage morally challenging situations. Additionally, emphasizing culturally competent care to address cultural and religious diversity can enhance nurses' abilities to provide culturally sensitive care, thereby reducing moral distress related to cultural conflicts. This dual approach will equip

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future nurses with the ethical framework and cultural awareness needed to navigate the complexities of modern healthcare environments effectively.

The developed intervention should be adopted by hospitals as part of their continuous education programs to enhance nurses' moral knowledge and skills. The MFEI provides ready-to-use educational materials that offer ongoing training to improve nurses' moral awareness, sensitivity, competency, and judgment capacity. It incorporates a variety of methods, techniques, strategies, and tools to ensure nurses remain updated and capable of managing evolving challenges. Incorporating moral distress knowledge and skills within nursing competency frameworks is essential, and should receive the same attention as and be taught just as other nursing competencies. This integration will better equip nurses to handle ethically distressing situations and reduce moral distress, ultimately improving patient care and nurse retention.

7.4.4 Implication for future research

The effectiveness of the MFEI in reducing moral distress among CCNs in a diverse setting like the UAE suggests its suitability for adoption and implementation in other countries with similarly diverse healthcare environments. As a high-income country, the UAE attracts a global population, creating a representative sample of international health dynamics. Implementing an intervention to reduce moral distress among CCNs in the UAE provides valuable insights that can benefit healthcare settings worldwide. The UAE's diverse healthcare workforce and patient population expose CCNs to a range of ethical beliefs and cultural backgrounds, making it an ideal setting for testing and refining interventions aimed at mitigating moral distress. Future research should focus on replicating and adapting the MFEI in various international contexts to validate its effectiveness and identify best practices for managing moral distress globally.

The developed MD-SRF and MDP can be adopted and tested in different populations to assess their effectiveness in recognizing and addressing moral distress. Future studies can examine these components as standalone interventions to evaluate their potential to reduce moral distress without the need for additional sessions. This approach could provide insights into the specific contributions of the MD-SRF and MDP, offering more flexible and targeted strategies for managing moral distress across various healthcare settings.

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The current study utilized two measurement tools, namely the MMD-HP and the MDT. The findings of this study supported the suitability of these tools in the UAE context. Furthermore, the study supported the validity and reliability of these tools to assess the effectiveness of the intervention by comparing pre-and post-intervention findings. The MDT is a valid tool that could track and detect acute changes in moral distress status within one week. The MMD-HP is a valid tool that could be used to measure the effectiveness of the implemented intervention by comparing the pre- and post-intervention findings. This will encourage future researchers to explore the application of these tools in various settings and populations to further validate their efficacy and adaptability for assessing moral distress and evaluating interventions globally.

Moreover, the current study's identification of common characteristics of moral distress from nurses' perspectives contributes valuable insights to the existing literature. These findings enhance our understanding of moral distress and can inform the refinement and development of strategies, tools, and interventions designed to address it. Future research should build on these insights to further explore and validate effective approaches for managing moral distress, ensuring that new strategies are evidence-based and tailored to the specific needs and experiences of nurses.

This study was among the very few studies to investigate the topic in the UAE where several economic, societal, and cultural factors are present. The findings of this study provided baseline data about moral distress status, highlighting this issue among a specific population in a specific setting. This may encourage other researchers to investigate moral distress in different populations within the UAE context.

7.5 LIMITATIONS OF THE STUDY

Despite these promising outcomes, several limitations must be acknowledged.

The fact that the study was done in only one emirate, namely Abu Dhabi, might be considered a limitation. It should, however, be kept in mind that Abu Dhabi is the capital of the UAE, comprises 87% of the UAE land area, and is the emirate with the second-largest population (three million). It has the highest number of healthcare facilities in the UAE with more than 65 hospitals accommodating more than 8900 beds, with more than 59 288 healthcare providers managing the

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healthcare facilities. In comparison to the other emirates, Abu Dhabi has the highest number of nurses, exceeding 30,000 nurses, making up more than 50% of the total nurses in the UAE.

The second limitation is related to the methodology of the study. This is a quasi-experimental study aimed to measure the outcomes of the developed and implemented intervention. The study used a quantitative design, which is known to be reductionist. In other words, using surveys limits the ability of researchers to get rich and deep information about the phenomenon under investigation. However, the selected design fits the aim and the objectives of this study. Two tools that measured chronic and acute moral distress were adopted in this study. The MMD-HP was recently revised (2019) to include the latest frequent clinical situations reported in the literature. Therefore, it was expected that this tool would result in rich information about the subject and could be used as a basis for other studies in the future. The current findings provide numerical data to be used as a basis for developing other research strategies in the future, such as using a qualitative design.

The third limitation of this quasi-experimental study is the lack of a follow-up test to assess the long-term impact of the intervention. The study included pre- and post-test assessment. This limitation primarily arose due to time constraints and the extended duration of the intervention itself, which was conducted over eight months (including the enrollment process). Given the considerable time commitment required from participants, adding a follow-up test was not feasible. However, the post-test was measured 30 weeks after the first session conducted, and six weeks after the last booster session conducted. Furthermore, to capture more immediate changes in moral distress, the study utilized the MDT tool to track acute changes in moral distress after each of the conducted sessions. This provided valuable insights into the short-term effectiveness of the intervention. Despite the lack of a follow-up test, the use of the MDT tool allowed for a detailed understanding of how the intervention impacted participants' moral distress throughout the study. Future research should aim to include follow-up assessments to better capture the long-term sustainability of intervention outcomes.

The final limitation of this study is its focus solely on critical care nurses, excluding other nursing specialties and healthcare providers. While the literature suggests that interventions targeting moral distress may be more effective when including the entire multidisciplinary team within the same clinical setting, this study was limited to critical care nurses due to several practical

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considerations. Primarily, the focus on critical care nurses was driven by the immediate and pressing need to address moral distress within this particular group, who are often exposed to highly acute and ethically challenging situations and considered the most affected group with higher moral distress scores. Additionally, logistical constraints, such as coordinating schedules and obtaining consent across various specialties, posed significant challenges. These constraints made it impractical to extend the study to a broader range of healthcare providers within the given timeframe. Despite this limitation, the findings provide valuable insights into the specific needs and experiences of critical care nurses. Future research should aim to include a more diverse range of nursing specialties and other healthcare providers to evaluate the broader applicability and effectiveness of the intervention. This inclusive approach could further enhance team dynamics and communication, ultimately improving the overall quality of patient care.

7.6 LESSON LEARNED

The Ph.D. journey has been both an enriching and challenging experience, offering valuable lessons that have sculpted my approach to research and professional development. As I reflect on this process, I acknowledge key insights that would guide me differently if I were to embark on a similar path again. Here are some lessons learned:

The first lesson: initially, I was rigid and thought success could only be attained through a detailed and fixed action plan. However, research is an unpredictable process, and the capacity to adapt to new findings or unexpected challenges is vital. I acknowledge that flexibility in the research design and development and implementation of an intervention, allows for the natural evolution of a project and often leads to more meaningful outcomes.

The second lesson: the required intense and continuous focus over the last three years of my life working on my Ph.D, led to me neglecting my personal well-being. In hindsight, maintaining a balance between academic obligations and personal health would have boosted my overall efficiency and productivity. Future endeavors will benefit from a more balanced approach to time management.

The third lesson: at the outset, I approached my work with a firm desire for independence, trusting that solitary work was the key to success. Later, I learned that connecting with peers and mentors

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not only grants new perspectives but also improves the quality of research. Collaboration is not an indicator of weakness, but a fundamental part of scholarly advancement.

The fourth lesson: as a quantitative-oriented person, I was dedicated to a specific methodological framework, believing that deviating from it may expose me to failure. However, I have since realized that being open to other frameworks based on the nature of the study data or variables can considerably improve research outcomes. The ability to pivot is a strength, not a shortcoming.

The final lesson: periods of uncertainty and doubt are to be expected during a Ph.D., particularly when setbacks occur or progress appears to be slow. One of the greatest lessons has been learning to have faith in the research process. Each challenge, whether theoretical or practical, contributes to a deeper understanding and eventually strengthens the final work.

7.7 CONCLUSION

This study set out to evaluate the outcomes of the development and implementation of MFEI on the impact of moral distress on CCNs in Abu Dhabi. The study led to a significant reduction in moral distress frequency and intensity scores and the participants' intention to leave their positions as critical care nurses.

The study underlines the heightened level of moral distress frequency and intensity among the CCNs in Abu Dhabi. The findings shed light on the top root causes that triggered the experience of moral distress and identified the participants' demographic and professional characteristics that contributed to more frequent and intense moral distress experiences.

The study highlighted the effectiveness of educational-based intervention in reducing moral distress frequency, intensity, and overall scores. In addition, it emphasized the importance of addressing moral distress to reduce the residual distress and its crescendo effect over time, which in turn reduces the nurses' intention to leave their positions due to moral distress.

The MFEI enhanced the nurses' knowledge, skills, and awareness of moral distress and its related concepts. Introducing and fostering these concepts helped the nurses to focus more on acquiring the needed skills and knowledge to advocate for patients' rights, make the best ethical judgment, and provide optimal healthcare.

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I end this thesis with a quote from Albert Einstein who said:

“The world is a dangerous place, not because of those who do evil, but because of those who look on and do nothing.”

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Annexures

Annexure A1: University of Pretoria ethics clearance



Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 18 March 2022 and Expires 18 March 2027.
- IORG #: IORG0001762 OMB No. 0990-0278 Approved for use through August 31, 2023.

Faculty of Health Sciences **Research Ethics Committee**

31 March 2023

**Approval Certificate
New Application**

Dear Mr MAF Aljabery

Ethics Reference No.: 121/2023

Title: A multifaceted educational intervention to reduce moral distress among critical care nurses in Abu Dhabi

The **New Application** as supported by documents received between 2023-03-07 and 2023-03-29 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2023-03-29 as resolved by its quorate meeting.

Please note the following about your ethics approval:

- Ethics Approval is valid for 1 year and needs to be renewed annually by 2024-03-31.
- Please remember to use your protocol number (121/2023) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:

- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

On behalf of the FHS REC, Professor C Kotzé

MBChB, DMH, MMed(Psych), FCPsych, PhD

Acting Chairperson: Faculty of Health Sciences Research Ethics Committee

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)

Research Ethics Committee
Room 4-80, Level 4, Tswelopele Building
University of Pretoria, Private Bag x323
Gazina 0031, South Africa
Tel +27 (0)12 356 3084
Email: depeka.behan@up.ac.za
www.up.ac.za

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense Sa Maphelo

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Mohannad Aljabery

Annexures

Annexure A2: SEHA Research Ethics Committee



SEHA Research Ethics Committee - SEHA Research Oversight Committee

Date: 13/09/ 2023 **Ref. No.:** SEHA-IRB-350
Attachment(s): 0

Principal Investigator(s): Dr. Mohannad Aljabery
Department: Fatima college of health sciences
Institute: Fatima college of health sciences

Subject:	<input checked="" type="checkbox"/> New Research Study <input type="checkbox"/> Amendment <input type="checkbox"/> Extension <input type="checkbox"/> Revision	
Research Title:	A multifaceted educational intervention to reduce moral distress among critical care nurses in Abu Dhabi	
Decision:	<input checked="" type="checkbox"/> Favorable <input type="checkbox"/> Unfavorable	<input type="checkbox"/> Favorable with Conditions
Progress Report Submission Requirement:	<input type="checkbox"/> 6 months	<input checked="" type="checkbox"/> Annual

Dear Dr. Mohannad,

Thank you for submitting your research proposal. Your application documents (REC application, research proposal, CV and other related forms) were reviewed by SEHA Human Research Ethics Committee members and since the research project met the standards from an ethical point of view, the committee has voted towards approval.

Any ethical concern arising from the study in due course, should be informed. Annual report plus a terminal report are necessary and the Committee would appreciate receiving copies of abstracts and publications.

Studies approved can't be continued beyond the expiry date. In case continuation of study is anticipated, extension request in the prescribed form should be submitted to the committee prior to 60 days of expiry date.

The Research Committee has been organized and operates according to the Good Clinical Practice (GCP) guidelines and the Department of Health, Abu Dhabi (DOH).

It is the Principal Researcher's responsibility to ensure that all researchers associated with this project are aware of the conditions of approval and which documents have been approved.

The Principal Researcher is required to notify the Ethics Committee, via amendment or progress report, of:

- Any significant change to the project and the reason for that change, including an indication of ethical implications (if any)
- Serious adverse effects on participants and the action taken to address those effects
- Any other unforeseen events or unexpected developments that merit notification
- The inability of the Principal Researcher to continue in that role, or any other change in research personnel involved in the project

Email: research@seha.ae

Tel: +971 2 4102000

PO Box: 109090 Abu Dhabi

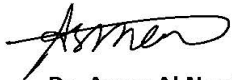
Mohannad Aljabery

Annexures

- Any expiry of the insurance coverage provided with respect to sponsored clinical trials and proof of re-insurance
- A delay of more than 12 months in the commencement of the project
- Termination or closure of the project. Additionally, the Principal Researcher is required to submit
- A Progress Report on the anniversary of approval and on completion of the project (forms to be provided); The Ethics Committee may conduct an audit at any time

It's mandatory to be compliant with the regulatory requirements of SEHA research standards whenever required.

Yours sincerely,



Dr. Asma Al Nuaimi
Chair, SEHA Research Oversight Committee

Note: primary investigator using data collectors from outside SEHA facilities are required to obtain HR department approval as visitors.

Mohannad Aljabery

Annexures

Annexure A3: SSMC Research Ethics Committee



Reference No:	SSMCREC-405	Approval Date:	12/06/2023
To: Principal Investigator: Mohannad Aljabery Sheikh Shakhbout Medical City Abu Dhabi, UAE			

Study Title:

“A Multifaceted Educational Intervention to Reduce Moral Distress Among Critical Care Nurses in Abu Dhabi.”

Mohannad Aljabery,

On behalf of **Research Ethics Committee**, please be informed that your proposal was reviewed and approved as there are no ethical concerns of the project.

Please note that the Principal Investigator should report the Research Ethics Committee of the following:

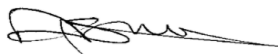
1. Any adverse events
2. Protocol amendments
3. Informed Consent Form amendments
4. Annual progress reports
5. End of study reports

Sheikh Shakhbout Medical City Research Ethics Committee (REC) has been organized and operates according to the Good Clinical Practice (ICH-GCP) Guidelines.

Please note that this approval is valid for one year from the date of issuing this letter. It is your responsibility to ensure that an application for continuing review has been submitted at the required time.

Regards,

Dr. Asma Deeb
 Chairman of Research Ethics Committee
 Chief of Pediatric Endocrinology Division
 Sheikh Shakhbout Medical City



Dr. Asma Deeb
 Division Chief
 3D5807

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Mohannad Aljabery

Annexures

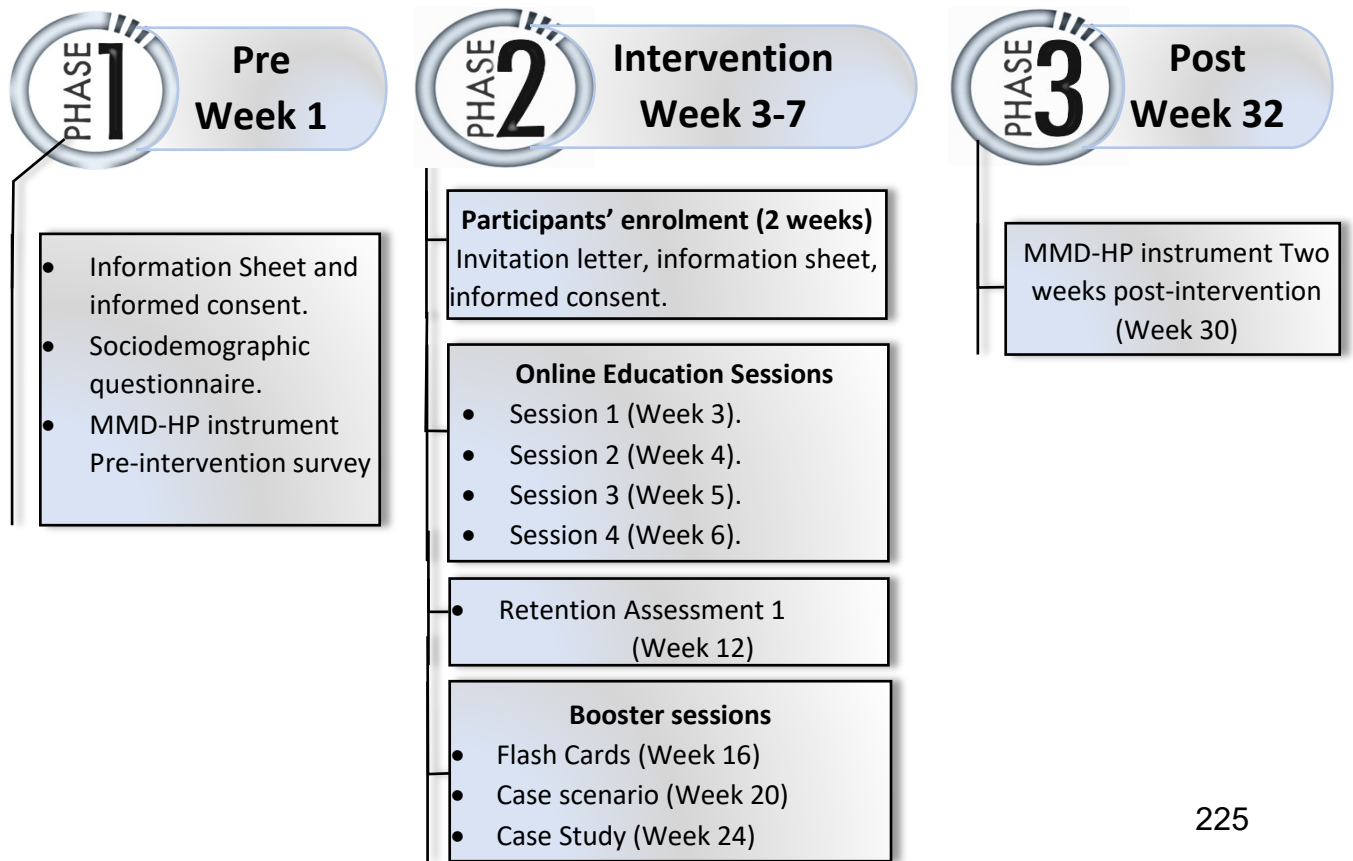
Annexure B1: Study Design

Study Design

Control Group



Experimental Group



Mohannad Alyabery

Annexures

Annexure B2: Sociodemographic questionnaire

Sociodemographic Questionnaire

Section 1: Self-Generated Identification Code

The following questions aim to generate a self-identification code to protect your identity. Kindly **memorize** your answers to be used during the whole study.

- 1- What are the first 2 letters of your mother's name? e.g. **N**ancy (NA)

--	--

- 2- What is your age? e.g. (25)

--	--

- 3- What are the first 2 letters of your hometown? e.g. Abu Dhabi (AB)

--	--

Section 2: Sociodemographic Characteristics

In the current section, investigate your demographic and clinical characteristics. This information is very valuable to us. The information you provide is completely voluntary and anonymous. We value any information you will be able to provide for us.

- 1- What is your gender?

Male Female

- 2- What is your age?

()

- 3- What is your marital status?

- Single
 Married
 Divorced/Separated
 Widowed

Annexures

4- What is your highest level of education?

- Diploma Degree
- Bachelor's Degree
- Postgraduate Degree (Master/higher diploma)
- Terminal Degree

5- Is your highest degree in the nursing specialty?

- Yes
- No

6- The overall years of experience as a registered nurse do you have?

()

7- The total years of experience in critical care units do you have?

()

8- Are you currently working in critical care units?

- Yes
- No

9- If yes, are you working in adult or pediatric critical units?

- Adult
- Pediatric
- NA

10- If you are working in adult critical care units, please specify.

- Cardiac Care Unit (CCU)
- Cardio-Thoracic (ICU)
- Medical/ Surgical ICU
- Surgical Intensive Care Unit
- Medical Intensive Care Unit
- Burn Intensive care unit

11- If you are working in Pediatric critical care units, please specify.

- Neonatal Intensive Care Unit (NICU)
- Pediatric Intensive Care Unit (PICU)

Annexures

12- What is your nationality?

- Local (UAE citizen)
- Arabic
- Indian
- Philippines
- American
- South African
- Other, please specify: _____

13- Do you have an ethical counselor in your hospital?

- Yes
- No

14- Did you receive any ethical-related education about moral distress in the current working hospital?

- Yes
- No

15- Does your organization engage in any current practices to address moral distress cases and situations?

- Yes
- No

16- How do you rate your knowledge of the moral distress concept?

- Poor
- Fair
- Good
- Very good
- Excellent

Annexures

Annexure B3: The Measure of Moral Distress-Healthcare professionals**The Measure of Moral Distress – Healthcare Professionals (MMD-HP)**

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of constraints or barriers. This survey lists situations that occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you have experienced each item. Also, rank how distressing these situations are for you. If you have never experienced a particular situation, select “0” (never) for frequency. Even if you have not experienced a situation, please indicate how distressed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Distress*.

	Frequency					Level of Distress				
	Never		Very frequently			None		Very distressing		
	0	1	2	3	4	0	1	2	3	4
1. Witness healthcare providers giving “false hope” to a patient or family.										
2. Follow the family’s insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient.										
3. Feel pressured to order or carry out orders for what I consider to be unnecessary or inappropriate tests and treatments.										
4. Be unable to provide optimal care due to pressures from administrators or insurers to reduce costs.										
5. Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.										
6. Be pressured to avoid taking action when I learn that a physician, nurse, or other team colleague has made a medical error and does not report it.										
7. Be required to care for patients whom I do not feel qualified to care for.										
8. Participate in care that causes unnecessary suffering or does not adequately relieve pain or symptoms.										
9. Watch patient care suffer because of a lack of provider continuity.										
10. Follow a physician’s or family member’s request not to discuss the patient’s prognosis with the patient/family.										
11. Witness a violation of a standard of practice or a code of ethics and not feel sufficiently supported to report the violation.										

Annexures

Have you ever left or considered leaving a clinical position due to moral distress?

- No, I have never considered leaving or left a position.
- Yes, I considered leaving but did not leave.
- Yes, I left a position.

Are you considering leaving your position now due to moral distress?

- Yes
- No

Annexures

Annexure B4: Permission letter to use the MMD-HP tool



Mohannad Aljabery <u22678655@tuks.co.za>

Asking permission to use MMD-HP tool

Epstein, Beth (meg4u) <meg4u@virginia.edu>
To: Mohannad Aljabery <u22678655@tuks.co.za>

9 June 2022 at 15:33

Hello Mohannad,

Thanks very much for your email. I've attached the MMD-HP for you. Please feel free to reach out with questions as your study progresses.

Good luck!

Beth

Beth Epstein

Associate Professor

Associate Dean for Academic Programs

Associate Professor, UVA Center for Health Humanities and Ethics

E meg4u@virginia.edu

P 434.924.0106

M 434.242.5927

University of Virginia

School of Nursing

CMNEB 3107

225 Jeanette Lancaster Way

Charlottesville, VA 22903



[Quoted text hidden]

This message and attachments are subject to a disclaimer. Please refer to <http://www.it.up.ac.za/documentation/governance/disclaimer/> for full details.

 MMD-HP.doc
91K

Mohannad Aljabery

Annexures

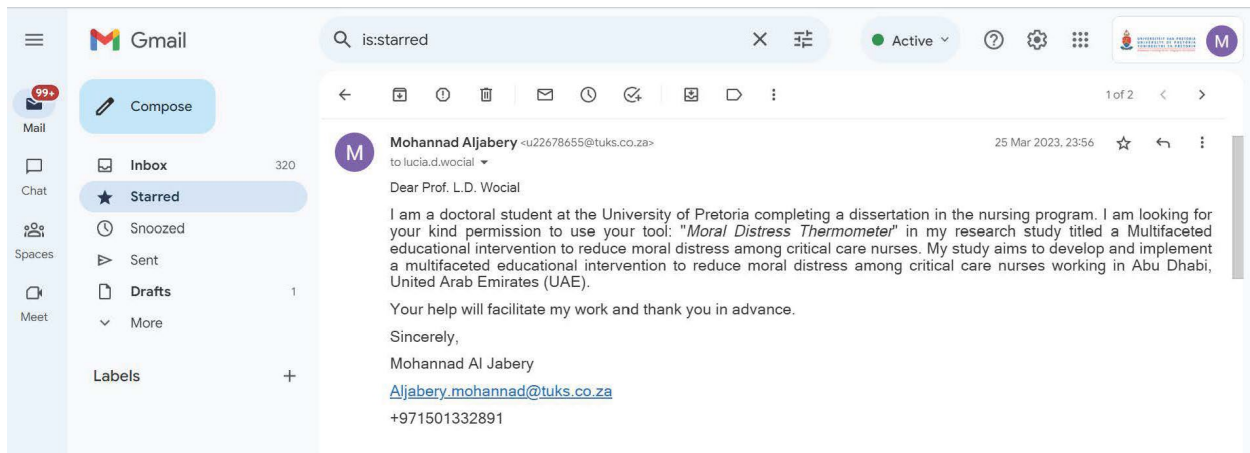
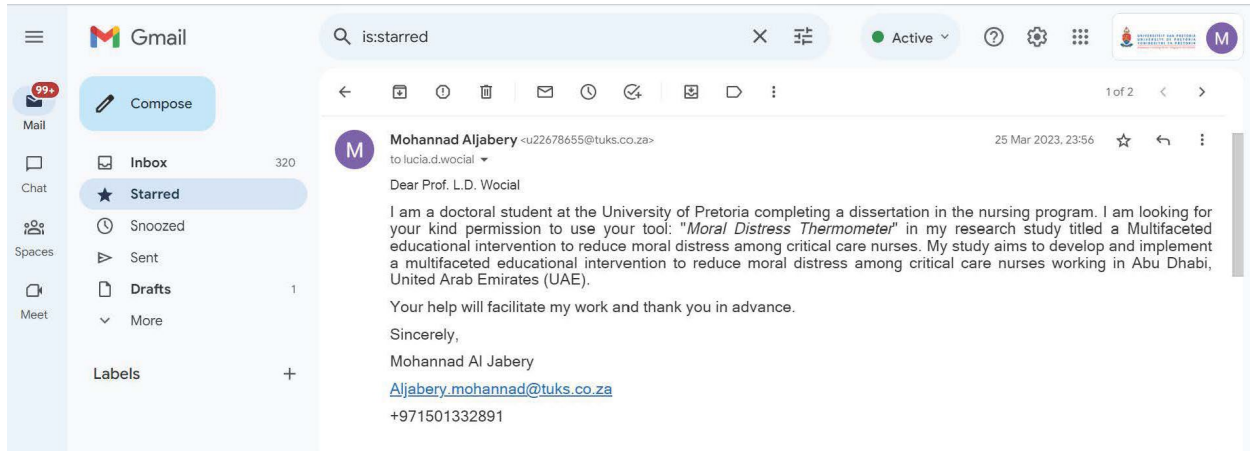
Annexure B5: Moral Distress Thermometer
Moral Distress Thermometer (MDT)

On a scale from 0 to 10 (where 0 is no distress and 10 indicates the most severe), how do you rate the severity of your moral distress?

None	Mild			Uncomfortable		Distressing		Intense		Worst Possible
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10

Annexures

Annexure B6: Permission to use the MDT



Mohannad Aljabery

Annexures

Annexure B7: Participant’s information & informed consent

ICD 1A

**PARTICIPANT’S INFORMATION & INFORMED
CONSENT DOCUMENT**

STUDY TITLE: DEVELOPING, IMPLEMENTING, AND EVALUATING A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE MORAL DISTRESS AMONG CRITICAL CARE NURSES IN ABU DHABI.

Sponsor: No sponsor

Principal Investigators: Mohannad Aljabery

Supervisor: Prof. Isabel Coetzee

Co-supervisor: Prof. Annatjie Vanderwath

Institution: The University of Pretoria, School of Health Care Sciences/Nursing department.

DAYTIME AND AFTER-HOURS TELEPHONE NUMBER(S):

Daytime number/s: +971501332891

Afterhours number: +971501332891

DATE AND TIME OF FIRST INFORMED CONSENT DISCUSSION:

Date	month	year

:
Time

Mohannad Aljabery

Annexures

Dear Prospective Participant

Dear Mr. / Mrs.

1) INTRODUCTION

You are invited to volunteer for a research study. I am doing research for a Doctoral Degree purpose at the University of Pretoria. The information in this document is to help you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, that are not fully explained in this document, do not hesitate to ask the researcher. You should not agree to take part unless you are completely happy about all the procedures involved.

2) THE NATURE AND PURPOSE OF THIS STUDY

The current study aims to develop, implement, and evaluate the outcomes of the Multifaceted Educational Intervention on reducing the intensity and frequency of moral distress among the CCNs in Abu Dhabi. By doing so we wish to learn more about the most frequent and distressful moral situations you have experienced to apply the best methods to reduce them.

3) EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM PARTICIPANTS.

To respond to the attached survey.

4) POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is no foreseeable physical discomfort or risk involved. If there are questions that are too sensitive for you to answer, you do not need to answer them.

Some questions related to moral distress situations could remind you about some events in the past that might cause some sadness. In case you felt sad or anxious, the researcher can refer you for counseling.

5) POSSIBLE BENEFITS OF THIS STUDY

This study will provide baseline data about the moral distress severity and intensity among the critical care nurses in Abu Dhabi. The study will identify the most frequent and distressing moral situations experienced by critical care nurses in Abu Dhabi. The study will enhance the participants' knowledge

Mohannad Alyabery

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about moral distress, empower them with different strategies to act against moral distress, introduces strategies to enhance moral resilience, and improve their ethical communication skills

6) COMPENSATION

You will not be paid to take part in the study. There are no costs involved for you to be part of the study.

7) YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this trial is entirely voluntary and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect your work status.

8) ETHICS APPROVAL

This Protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, Medical Campus, Tswelopele Building, Level 4-59, Telephone numbers 012 356 3084 / 012 356 3085 and written approval has been granted by that committee. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding doctors in biomedical research involving humans. A copy of the Declaration may be obtained from the investigator should you wish to review it.

9) INFORMATION

If I have any questions concerning this study, I should contact:

Dr. Mohannad Al Jabery Cell: +971501332891

10) CONFIDENTIALITY

All information obtained during the course of this study will be regarded as confidential. Each participant that is taking part will generate a self-identification code e.g. AB03. This will ensure the confidentiality of the collected information. Results will be published or presented in such a fashion that participants remain unidentifiable. The hard copies of all your records will be kept in a locked facility at the nursing department, The University of Pretoria.

Mohannad Aljabery

Annexures

Annexure B8: Invitation letter

Invitation letter

My name is Mohannad Al Jabery and I am a doctoral candidate in the School of Healthcare Science/Nursing Science at the University of Pretoria. I am conducting a Ph.D. study that aims to develop, implement, and evaluate the effect of a multifaceted educational intervention on reducing the intensity and frequency of moral distress in Abu Dhabi.

Moral distress is the physical, psychological, or/and emotional suffering experienced when internal or external constraints render the nurses unable to act in a manner the nurses perceive as ethically or morally appropriate.

a critical care nurse at the selected hospital, I am pleased to invite you to participate in this research study that helps critical care nurses to recognize moral distress, identify moral distress sources, discuss case studies, and acquire strategies to reduce moral distress. If you agree to participate in this study, you have to complete the pre-course survey and the post-course survey. Your participation is strictly voluntary.

All the participants will be using a self-generated identification code to represent their identity. The collected data will be confidential, no data will be shared with people outside the research team, and the data will be used for research purposes only. The benefits of this research may serve to help nursing students; faculty, clinical educators, nursing administrations, and most importantly the bedside nurse reduce the incidence and consequences of moral distress.

There is a minimal risk that some participants may experience emotional or social discomfort relating to some questions in the survey. If you experience distress as a result of participating in this project, you should contact the researcher to refer you to counseling. Please note that you are free to withdraw from the study at any time. If you have any questions regarding this study, please contact the principal investigator directly and I will be happy to answer or clarify any questions. I can be reached by mobile number 0501332891 or by email at m_algapry1980@yahoo.com.

If you are willing and choose to participate in this study, please press the Agree button below.

Thank you for taking the time to help me with my academic endeavors.

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Mohannad Aljabery

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Annexure C1: Intervention agenda and timeline

Intervention Agenda & Timeline

Session	Content	Expected time frame
Session 1	Moral Distress Awareness	Total: 120 minutes
Intervention CHCH: Educational Moral distress target: Moral Awareness & Perceived constraints	Welcoming	5 minutes
	Pre-session moral distress knowledge assessment	10 minutes
	Introduction	5 minutes
	Moral distress definition	5 minutes
	Moral distress defining characteristics.	20 minutes
	Sources of moral distress (Constraints)	20 minutes
	Moral distress symptoms and suffering signs	20 minutes
	Moral distress multi-level Impact.	20 minutes
	Failure to address moral distress	10 minutes
Post-session moral distress knowledge assessment	5 minutes	
Session 2:	Moral judgment	Total: 120 minutes
Intervention CHCH: Educational Moral distress target: Moral sensitivity Moral Competency Moral Judgment	Pre-session knowledge assessment	10 minutes
	Moral sensitivity and methods to enhance	20 minutes
	Moral competency and methods to enhance	20 minutes
	Moral Judgement and methods to enhance	25 minutes
	Moral events: Moral Conflict vs Ethical dilemma	20 minutes
	Moral events scenario discussion	20 minutes
	Post-session knowledge assessment	5 minutes
Session 3	Action plan	Total: 120 minutes
Intervention CHCH: Educational Moral distress target: Action plan	Pre-session willingness to make stand survey	5 minutes
	Intention to act	5 minutes
	Moral Courage: Voice out	30 minutes
	Ethical communication skills	10 minutes
	Introducing the Moral Distress Self-Reflection Form (MD-SRF)	60 minutes
	Doing nothing: benefit and consequences	10 minutes
	Participants' written assignment about a morally distressing situation using the MD-SRF.	Home assignment

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Session 4	Application and practice	Total: 120 minutes
Intervention CHCH: Roleplaying & Debriefing Moral distress target: Empowerment	Introducing the Moral Distress Pathway (MDP)	20 minutes
	Application of the MD-SRT using participants' real-life experienced moral situations.	90 minutes
	Course evaluation survey	10 minutes

Annexures

Annexure C2: Invitation letter for the experimental group

Invitation Letter for Experimental Group

My name is Mohannad Al Jabery and I am a doctoral candidate in the School of Healthcare Science/Nursing science at Pretoria University. I am evaluating the effect of an educational intervention on reducing the intensity and frequency of moral distress in the workplace. Moral distress is the physical, psychological, or/and emotional suffering experienced when internal or external constraints render the nurses unable to act in a manner the nurses perceive as ethically or morally appropriate.

Because you are a critical care nurse at the selected hospital, I am pleased to invite you to participate in this research study by attending a free class developed to help critical care nurses to recognize moral distress, identify moral distress sources, discuss case studies, and acquire strategies to reduce moral distress. If you agree to participate in this study, you have to complete the pre-course survey, attend four educational sessions for two hours each over four weeks, and complete the post-course survey. Your participation is strictly voluntary.

All the participants will be using a self-generated identification code to represent their identity. The collected data will be confidential, no data will be shared with people outside the research team, and the data will be used for research purposes only.

The benefits of this research may serve to help nursing students; faculty, clinical educators, nursing administrations, and most importantly the bedside nurse reduce the incidence and consequences of moral distress. The intervention will enhance your knowledge about the moral distress phenomena, will empower you with the required knowledge and skills to address and manage morally distressing situations, and will enhance your self-esteem, self-satisfaction, and decrease burnout.

There is a minimal risk that some participants may experience emotional or social discomfort relating to case-based scenarios, discussions. If you experience distress as a result of participating in this project, you should contact the researcher to refer you to counseling. Please note that you are free to withdraw from the study at any time. have any questions regarding this study, please contact the principal investigator directly and I will be happy to answer or clarify any

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questions. I can be reached by mobile number 0501332891 or by email at m_algapry1980@yahoo.com.

If you are willing and choose to participate in this study, please press the Agree button below.

Thank you for taking the time to help me with my academic endeavors.

Mohannad Aljabery

Annexures

Annexure C3: Particepant’s information & informed consent (experimental group)

**PARTICIPANT’S INFORMATION & INFORMED
CONSENT DOCUMENT (Experimental Group)**

STUDY TITLE: DEVELOPING, IMPLEMENTING, AND EVALUATING A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE MORAL DISTRESS AMONG CRITICAL CARE NURSES IN ABU DHABI.

Sponsor: No sponsor

Principal Investigators: Mohannad Aljabery

Supervisor: Prof. Isabel Coetzee

Co-supervisor: Prof. Annatjie Vanderwath

Institution: The University of Pretoria, School of Health Care Sciences/Nursing department.

DAYTIME AND AFTER-HOURS TELEPHONE NUMBER(S):

Daytime number/s: +971501332891

Afterhours number: +971501332891

DATE AND TIME OF FIRST INFORMED CONSENT DISCUSSION:

Date	month	year

:
Time

Mohannad Aljabery

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Dear Prospective Participant

Dear Mr. / Mrs.

1) INTRODUCTION

You are invited to volunteer for a research study. I am doing research for a Doctoral Degree purpose at the University of Pretoria. The information in this document is to help you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully explained in this document, do not hesitate to ask the researcher. You should not agree to take part unless you are completely happy about all the procedures involved.

2) THE NATURE AND PURPOSE OF THIS STUDY

The current study aims to develop, implement, and evaluate the outcomes of a multifaceted educational intervention on reducing the intensity and frequency of moral distress among CCNs in Abu Dhabi. By doing so we wish to learn more about the most frequent and distressful moral situations you have experienced to apply the best methods to reduce them.

3) EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM PARTICIPANTS.

This study involves attending four educational sessions for two hours each over four weeks, doing two assessments for knowledge retention, participating in booster sessions, and filling out the post-intervention survey. The educational sessions will be conducted online through Microsoft Team at your convenience date & time.

4) POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is no foreseeable physical discomfort or risk involved. If there are questions that are too sensitive for you to answer, you do not need to answer them.

Some questions related to moral distress situations could remind you about some events in the past that might cause some sadness. In case you felt sad or anxious, the researcher can refer you for counseling.

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5) POSSIBLE BENEFITS OF THIS STUDY

This study will provide baseline data about the moral distress severity and intensity among the critical care nurses in Abu Dhabi. The study will identify the most frequent and distressing moral situations experienced by critical care nurses in Abu Dhabi. The study will enhance the participants' knowledge about moral distress, empower them with different strategies to act against moral distress, introduces strategies to enhance moral resilience, and improve their ethical communication skills

6) COMPENSATION

You will not be paid to take part in the study. There are no costs involved for you to be part of the study.

7) YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this trial is entirely voluntary and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect your work status.

8) ETHICS APPROVAL

This Protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, Medical Campus, Tswelopele Building, Level 4-59, Telephone numbers 012 356 3084 / 012 356 3085 and written approval has been granted by that committee. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding doctors in biomedical research involving humans. A copy of the Declaration may be obtained from the investigator should you wish to review it.

9) INFORMATION

If I have any questions concerning this study, I should contact: Dr. Mohannad Al Jabery Cell: +971501332891.

10) CONFIDENTIALITY

All information obtained during the course of this study will be regarded as confidential. Each participant that is taking part will generate a self-identification code e.g. AB03. This will ensure the confidentiality of the collected information. Results will be published or presented in such a fashion

Mohannad Aljabery

Annexures

Annexure C4: Session-1 pre & post-session knowledge assessment

Session-1 Pre & Post-Session Knowledge Assessment

1- Which of the below statements best defines moral distress?

- A. Physical, psychological, and emotional exhaustion is caused by workplace stress which leads to disengagement and depersonalization.
- B. Physical, psychological, and emotional fatigue is related to caring for those in significant pain or emotional distress.
- C. Physical, psychological, and emotional suffering results when you are unable to pursue the right course of action because of constraints.
- D. I don't know.

2- Moral distress arises when the nurse _____

- A. act against his/her personal beliefs
- B. act against a morally distressing situation
- C. doing the wrong course of action
- D. I Don't Know

3- Which of the following are an example of common physical, psychological, and emotional symptoms of moral distress?

- A. **Physical:** Chest pain and Tremors, **Psychological:** hopelessness, and **emotional:** Anger and Guilt.
- B. **Physical:** Impaired sleep and Palpitation, **Psychological:** Depression and Mind conscience, and **Emotional:** Anger and Guilt.
- C. **Physical:** Fatigue and exhaustion, **Psychological:** Depression, and **Emotional:** feeling enthusiasm.
- D. I don't know.

4- Which of the following situations does NOT contribute to moral distress?

- A. Working with an incompetent colleague(s)
- B. Providing a futile care
- C. Providing necessary care against the patient's wishes.
- D. I don't know.

5- Failure to act against moral distress may exacerbate the issue leading to a moral residue that might be extended to the _____:

- A. Initial Distress
- B. Crescendo effect
- C. Reactive Distress
- D. I don't know.

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- 6- In how many forms (ways) do nurses respond to moral distress?
- A. One form (Initial response)
 - B. Two forms (Initial and Reactive responses)
 - C. Three forms (Initial-Reactive-Residual Responses)
 - D. I Don't Know



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Annexures

Annexure C5: Session-2 pre & post-session knowledge assessment

Session-2 Pre & Post-Session Knowledge Assessment

1. What is moral sensitivity?

- A. The ability to make quick moral judgments without considering consequences.
- B. The capacity to recognize moral issues and dilemmas in various situations.
- C. The ability to make morally correct decisions
- D. I Don't Know

2. Moral competency involves:

- A. Ignoring the impact of cultural differences on moral values.
- B. The capacity to consistently make morally right decisions.
- C. Exclusively relying on moral Knowledge and skills.
- D. I don't know

3. Moral judgment might be influenced by:

- A. Adopting a rigid and inflexible moral framework.
- B. Moral Intention.
- C. Ignoring the consequences of one's actions.
- D. I don't know.

4. Moral competency can be described as:

- A. Having an absolute and unchanging moral code.
- B. The ability to adapt one's moral principles based on convenience.
- C. Integration of moral knowledge, moral skills, and moral character.
- D. I don't know

5. What is the key difference between a moral conflict and a moral dilemma?

- A. A moral conflict involves a choice between two or more equally appealing options, while a moral dilemma is a situation where both available options have potential ethical issues.
- B. A moral conflict is a situation where there are clear moral rules to follow, while a moral dilemma is often a gray area with no clear right or wrong.
- C. A moral conflict is a situation where there is a right or wrong choice, while a moral dilemma involves a choice between two or more morally challenging options.
- D. I Don't Know

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6. Which one of the following tools is useful in guiding the process of ethical decision-making?

- A. Five I's
- B. Five M's
- C. Five P's
- D. I don't know



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Annexures

Annexure C6: Moral Distress Self-Reflection Form

Moral Distress Self-Reflection Form (MD-SRF)											
Situation	Provide a brief description of the morally distressing situation that you have experienced.										
Conflict	What is your concern with the situation?										
Source of conflict	Can you identify the source of your conflict? Or, barriers that constrained your action?										
Feeling	How does that situation make you feel? (Detailed)										
Shared feeling	Do others share the same feeling or concern with the situation as you? If yes, are they from the same nursing discipline or other healthcare disciplines?										
Related symptoms	Can you write down the impact of the situation on your well-being state using the below domains? (In words)										
	Physical			Emotional			Psychological			Other	
Distress severity	Using the below moral distress thermometer, how severe is your moral distress? On a scale from 0 to 10 (where 0 is no distress and 10 indicates the most severe), how do you rate the severity of your moral distress?										
	None	Mild		Uncomfortable		Distressing		Intense		Worst Possible	
	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10

Mohannad Alyabery

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Conflict justification	If you were on the opposite side, how would you justify the action causing the conflict?	
Action plan	What is your action plan to solve that situation?	
	Advantages	Disadvantages
	What are the advantages of your Action plan?	What are the disadvantages of your action plan?
Evidence	Is your action plan supported by an evidence-based or clinical-based experience or both? If both, Which is greater in percentage?	

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Annexure C7: Session 3 pre and post-knowledge assessment

Session 3 Pre and Post knowledge assessment

- 1- How many different ways can one respond to a morally distressing situation?
 - A. One way: voicing out.
 - B. Two ways: voicing out or doing nothing.
 - C. Three ways: Voving out, acting anonymously, or doing nothing.
 - D. I don't know.

- 2- What is the most effective way to communicate when exhibiting courageous behavior?
 - A. Open-ended communication.
 - B. Close-ended communication.
 - C. Assertive communication.
 - D. I don't know

- 3- Moral courage required:
 - A. Moral sensitivity and moral competency.
 - B. Moral competency and moral judgment capacity.
 - C. Moral sensitivity, moral competency, and moral judgment.
 - D. I don't know.

- 4- "CODE" is considered the acronym for moral courage, which stands for:
 - A. Courage, Obligation, Danger management, Expression.
 - B. Care, Observation, Defend, Elevating.
 - C. Courage, Omiting, Duty, Enforcement.
 - D. I don't know.

- 5- Which of the following is considered an advantage of courageous behavior in managing a moral distress situation:
 - A. Preserve the moral integrity.
 - B. Improve the self-image.
 - C. Increase personal vulnerability.
 - D. I don't know.

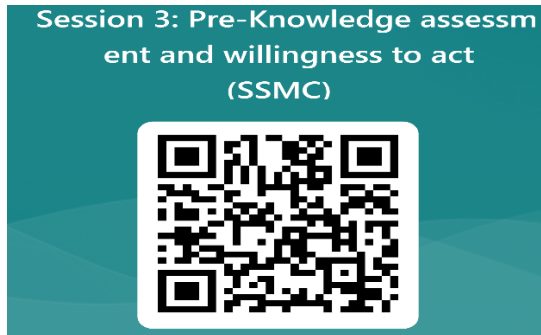
- 6- Are you willing to act against the morally distressing situation despite the consequences of your action?

Yes No

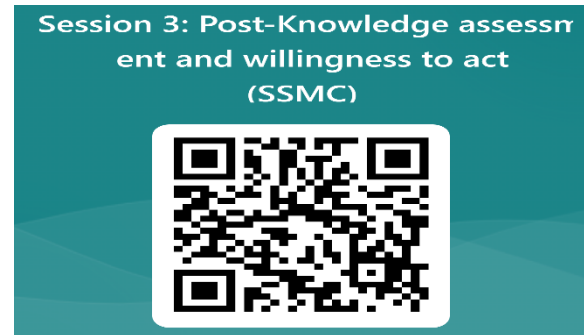
Annexures

7- If yes, how would you prefer to act against the morally distressing situation?

- Voice Out
- Anonymously through the Moral Distress Self-Reflection Form



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Annexures

Annexure C8: Moral Distress-Self Reflection Form online version

MORAL DISTRESS SELF-REFLECTION FORM (MD-SRF)
Online Version

Link:

<https://forms.office.com/r/YVKw5f9JHh>

QR Code:



Mohannad Alyabery

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Annexure C9: Moral Distress Pathway

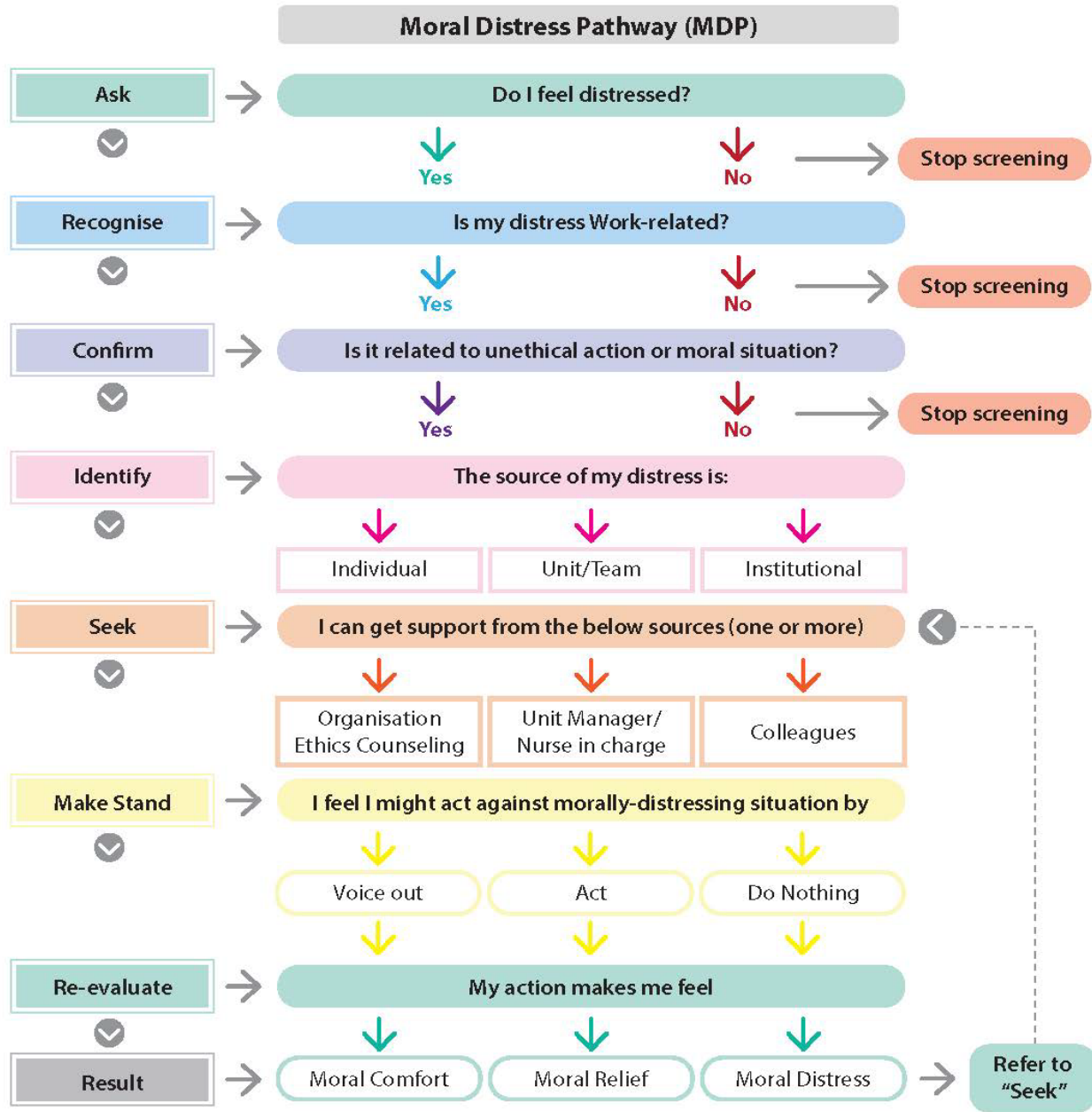
Self-Screening Moral Distress Pathway (MDP)

Do you feel distressed? Do you have an internal feeling that bothers you? Do you experience signs and symptoms that impact your physical, psychological, and emotional well-being? Do you know moral distress?

Moral distress is an internal painful feeling that results from the inability to take the right action in a morally conflicting situation. Moral distress impacts the internal and external state leading to physical, psychological, and emotional disequilibrium. Do you want to know whether you have moral distress or not?

The MDP represents a self-screening pathway that empowers nurses to promptly recognize moral distress, take proactive measures to seek proper support and determine the appropriate action to take.

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*Act Anonymously through Moral Distress Self-Reflection Form (MD-SRF)

Annexures

Annexure C10: Session 4: Pre and Post knowledge assessment

Session 4: Pre and Post knowledge assessment

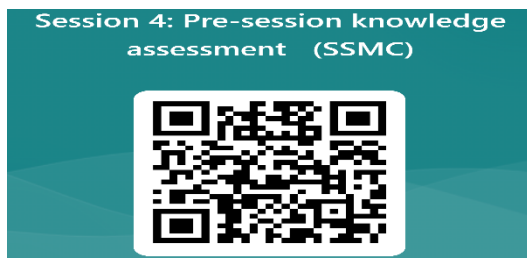
1. What is the key distinguishing factor between moral distress and other types of distress?
 - A. Emotional exhaustion
 - B. Lack of empathy
 - C. **Conflict between moral values and actions.**
 - D. Reduced job satisfaction

2. What are the major sources of moral distress?
 - A. Individual sources.
 - B. Team sources.
 - C. Institutional sources
 - D. **All of the above.**

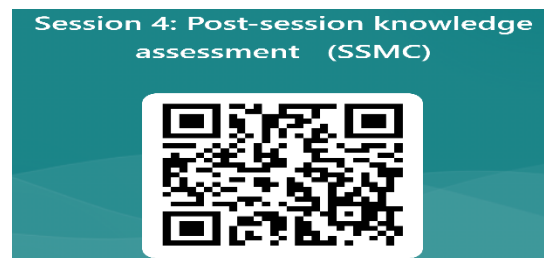
3. What is the order for seeking support against moral distress from most to least?
 - A. Colleagues, ethics counselor, unit manager/nurse in charge.
 - B. Ethics counselor, colleagues, unit manager/nurse in charge.
 - C. **Ethics counselor, unit manager/nurse in-charge, colleagues.**
 - D. Unit manager/nurse in-charge, ethics counselor, colleagues

4. Making a stand against moral distress may result in:
 - A. **Moral comfort.**
 - B. Moral distress
 - C. Moral relief
 - D. I don't know

5. Acting anonymously against moral distress may result in:
 - A. Moral comfort.
 - B. Moral distress
 - C. **Moral relief**
 - D. I don't know



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Annexures

Annexure C11: Course evaluation survey

Course Evaluation Survey

- 1- The educational training enhanced my ability to recognize moral distress situations.
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
- 2- The educational training improved my ability to make sound moral judgments and enhanced my moral competence.
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
- 3- The educational training emphasized the importance of acting in situations that challenge our moral integrity.
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
- 4- The moral distress self-reflection is a useful tool that helps critical care nurses take anonymous action against moral distress situations
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
- 5- Moral distress Guiding is a useful tool that enables critical care nurses to do self-screening for moral distress and seek proper help & support.
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
- 6- Overall, this course met my expectations for the quality of the course content

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- Strongly agree
- Agree
- Neutral
- Disagree

7- Which sessions of the educational intervention did you find to be the most impactful toward reducing your moral distress? select all that apply

- Session One
- Session Two
- Session Three
- Session Four

8- I would highly recommend this course to all nurses

- Strongly agree
- Agree
- Neutral
- Disagree

Session 4: End of Course
Participants' Evaluation (SSMC)



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Annexures

Annexure C12: Knowledge Retention 1

Knowledge Retention 1

1- Which of the below statements best defines moral distress?

- A. Physical, psychological, and emotional exhaustion is caused by workplace stress which leads to disengagement and depersonalization.
- B. Physical, psychological, and emotional fatigue is related to caring for those in significant pain or emotional distress.
- C. Physical, psychological, and emotional suffering results when you are unable to pursue the right course of action because of constraints.
- D. I don't know.

2- Moral distress arises when the nurse _____

- A. act against his/her personal beliefs
- B. act against a morally distressing situation
- C. doing the wrong course of action
- D. I Don't Know

3- Which of the following are an example of common physical, psychological, and emotional symptoms of moral distress?

- A. **Physical:** Chest pain and Tremors, **Psychological:** hopelessness, and **emotional:** Anger and Guilt.
- B. **Physical:** Impaired sleep and Palpitation, **Psychological:** Depression and Mind conscience, and **Emotional:** Anger and Guilt.
- C. **Physical:** Fatigue and exhaustion, **Psychological:** Depression, and **Emotional:** feeling enthusiasm.
- D. I don't know.

4- Which of the following situations does NOT contribute to moral distress?

- A. Working with an incompetent colleague(s)
- B. Providing a futile care
- C. Providing necessary care against the patient's wishes.
- D. I don't know.

Annexures

5- Failure to act against moral distress may exacerbate the issue leading to a moral residue that might be extended to the _____:

- A. Initial Distress
- B. Crescendo effect
- C. Reactive Distress
- D. I don't know.

6- In how many forms (ways) do nurses respond to moral distress?

- A. One form (Initial response)
- B. Two forms (Initial and Reactive responses)
- C. Three forms (Initial-Reactive-Residual Responses)
- D. I Don't Know

7- What is moral sensitivity?

- A. The ability to make quick moral judgments without considering consequences.
- B. The capacity to recognize moral issues and dilemmas in various situations.
- C. The ability to make morally correct decisions
- D. I Don't Know

8- Moral competency involves:

- A. Ignoring the impact of cultural differences on moral values.
- B. The capacity to consistently make morally right decisions.
- C. Exclusively relying on moral Knowledge and skills.
- D. I don't know

9- Moral judgment might be influenced by:

- A. Adopting a rigid and inflexible moral framework.
- B. Moral Intention.
- C. Ignoring the consequences of one's actions.
- D. I don't know.

10- Moral competency can be described as:

- A. Having an absolute and unchanging moral code.
- B. The ability to adapt one's moral principles based on convenience.
- C. Integration of moral knowledge, moral skills, and moral character.
- D. I don't know

Annexures

11-What is the key difference between a moral conflict and a moral dilemma?

- A. A moral conflict involves a choice between two or more equally appealing options, while a moral dilemma is a situation where both available options have potential ethical issues.
- B. A moral conflict is a situation where there are clear moral rules to follow, while a moral dilemma is often a gray area with no clear right or wrong.
- C. A moral conflict is a situation where there is a right or wrong choice, while a moral dilemma involves a choice between two or more morally challenging options.
- D. I Don't Know

12-Which one of the following tools is useful in guiding the process of ethical decision-making?

- A. Five I's
- B. Five M's
- C. Five P's
- D. I don't know

13-How many different ways can one respond to a morally distressing situation?

- A. One way: voicing out.
- B. Two ways: voicing out or doing nothing.
- C. Three ways: Voving out, acting anonymously, or doing nothing.
- D. I don't know.

14-What is the most effective way to communicate when exhibiting courageous behavior?

- A. Open-ended communication.
- B. Close-ended communication.
- C. Assertive communication.
- D. I don't know

15-Moral courage required:

- A. Moral sensitivity and moral competency.
- B. Moral competency and moral judgment capacity.
- C. Moral sensitivity, moral competency, and moral judgment.
- D. I don't know.

Annexures

16- “CODE” is considered the acronym for moral courage, which stands for:

- A. Courage, Obligation, Danger management, Expression.**
- B. Care, Observation, Defend, Elevating.
- C. Courage, Omitting, Duty, Enforcement.
- D. I don't know.

17- Which of the following is considered an advantage of courageous behavior in managing a moral distress situation:

- A. Preserve the moral integrity.**
- B. Improve the self-image.
- C. Increase personal vulnerability.
- D. I don't know.

18- What is the key distinguishing factor between moral distress and other types of distress?

- A. Emotional exhaustion
- B. Lack of empathy
- C. Conflict between moral values and actions.**
- D. Reduced job satisfaction

19- What are the major sources of moral distress?

- A. Individual sources.
- B. Team sources.
- C. Institutional sources
- D. All of the above.**

20- What is the order for seeking support against moral distress from most to least?

- A. Colleagues, ethics counselor, unit manager/nurse in charge.
- B. Ethics counselor, colleagues, unit manager/nurse in charge.
- C. Ethics counselor, unit manager/nurse in-charge, colleagues.**
- D. Unit manager/nurse in-charge, ethics counselor, colleagues

21- Making a stand against moral distress may result in:

- A. Moral comfort.**
- B. Moral distress
- C. Moral relief
- D. I don't know

Annexures

22- Acting anonymously against moral distress may result in:

- A. Moral comfort.
- B. Moral distress
- C. Moral relief**
- D. I don't know

Annexures

Annexure D1: Knowledge retention 2

Knowledge Retention 2

1- Which of the below statements best defines moral distress?

- E. Physical, psychological, and emotional exhaustion is caused by workplace stress which leads to disengagement and depersonalization.
- F. Physical, psychological, and emotional fatigue is related to caring for those in significant pain or emotional distress.
- G. Physical, psychological, and emotional suffering results when you are unable to pursue the right course of action because of constraints.
- H. I don't know.

2- Moral distress arises when the nurse _____

- E. act against his/her personal beliefs
- F. act against a morally distressing situation
- G. doing the wrong course of action
- H. I Don't Know

3- Which of the following are an example of common physical, psychological, and emotional symptoms of moral distress?

- E. **Physical:** Chest pain and Tremors, **Psychological:** hopelessness, and **emotional:** Anger and Guilt.
- F. **Physical:** Impaired sleep and Palpitation, **Psychological:** Depression and Mind conscience, and **Emotional:** Anger and Guilt.
- G. **Physical:** Fatigue and exhaustion, **Psychological:** Depression, and **Emotional:** feeling enthusiasm.
- H. I don't know.

4- Which of the following situations does NOT contribute to moral distress?

- E. Working with an incompetent colleague(s)
- F. Providing a futile care
- G. Providing necessary care against the patient's wishes.
- H. I don't know.

Annexures

5- Failure to act against moral distress may exacerbate the issue leading to a moral residue that might be extended to the _____:

- E. Initial Distress
- F. Crescendo effect
- G. Reactive Distress
- H. I don't know.

6- In how many forms (ways) do nurses respond to moral distress?

- E. One form (Initial response)
- F. Two forms (Initial and Reactive responses)
- G. Three forms (Initial-Reactive-Residual Responses)
- H. I Don't Know

7- What is moral sensitivity?

- E. The ability to make quick moral judgments without considering consequences.
- F. The capacity to recognize moral issues and dilemmas in various situations.
- G. The ability to make morally correct decisions
- H. I Don't Know

8- Moral competency involves:

- E. Ignoring the impact of cultural differences on moral values.
- F. The capacity to consistently make morally right decisions.
- G. Exclusively relying on moral Knowledge and skills.
- H. I don't know

9- Moral judgment might be influenced by:

- E. Adopting a rigid and inflexible moral framework.
- F. Moral Intention.
- G. Ignoring the consequences of one's actions.
- H. I don't know.

10- Moral competency can be described as:

- E. Having an absolute and unchanging moral code.
- F. The ability to adapt one's moral principles based on convenience.
- G. Integration of moral knowledge, moral skills, and moral character.
- H. I don't know

Annexures

11-What is the key difference between a moral conflict and a moral dilemma?

- E. A moral conflict involves a choice between two or more equally appealing options, while a moral dilemma is a situation where both available options have potential ethical issues.
- F. A moral conflict is a situation where there are clear moral rules to follow, while a moral dilemma is often a gray area with no clear right or wrong.
- G. A moral conflict is a situation where there is a right or wrong choice, while a moral dilemma involves a choice between two or more morally challenging options.
- H. I Don't Know

12-Which one of the following tools is useful in guiding the process of ethical decision-making?

- E. Five I's
- F. Five M's
- G. Five P's
- H. I don't know

13-How many different ways can one respond to a morally distressing situation?

- E. One way: voicing out.
- F. Two ways: voicing out or doing nothing.
- G. Three ways: Voving out, acting anonymously, or doing nothing.
- H. I don't know.

14-What is the most effective way to communicate when exhibiting courageous behavior?

- E. Open-ended communication.
- F. Close-ended communication.
- G. Assertive communication.
- H. I don't know

15-Moral courage required:

- E. Moral sensitivity and moral competency.
- F. Moral competency and moral judgment capacity.
- G. Moral sensitivity, moral competency, and moral judgment.
- H. I don't know.

Annexures

16- “CODE” is considered the acronym for moral courage, which stands for:

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- F. Ethics counselor, colleagues, unit manager/nurse in charge.
- G. Ethics counselor, unit manager/nurse in-charge, colleagues.**
- H. Unit manager/nurse in-charge, ethics counselor, colleagues

21- Making a stand against moral distress may result in:

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- F. Moral distress
- G. Moral relief
- H. I don't know

Annexures

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- E. Moral comfort.
- F. Moral distress
- G. Moral relief**
- H. I don't know

Annexures

Annexure D2

Self-Generated Identification Code

The following questions aim to generate a self-identification code to protect your identity. Kindly **memorize** your answers to be used during the whole study.

- 1- What are the first 2 letters of your mother's name? e.g. **N**ancy (NA)

--	--

- 2- What is your age? e.g. (25)

--	--

- 3- What are the first 2 letters of your hometown? e.g. Abu Dhabi (AB)

--	--

Annexures

Annexure E1: Statistical support letter



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Genetelen • Leadiho Minds • Dikocooa tsa Dikiceli

DEPARTMENT OF STATISTICS

LETTER OF STATISTICAL SUPPORT

Date: *07/09/2022*

This letter is to confirm that Mr. M. Aljabery studying at the University of Pretoria discussed the project with the title "A MULTIFACETED EDUCATIONAL INTERVENTION TO REDUCE MORAL DISTRESS AMONG CRITICAL CARE NURSES" with me.

I hereby confirm that I am aware of the project and undertake to assist with the statistical analysis of the data generated from the project.

The IBM SPSS Statistics version 28 software will be used to perform the analysis. The data analysis will consist of descriptive statistics: frequencies tables for categorical variables, for continuous data, means and standard deviations will be calculated. If the data is skewed, the median and the interquartile range will be presented.

The independent sample student t-test , paired t-test and the ANOVA will be performed to compare the Experimental and the Control group pre and post-test moral distress scores.

Sample size,

- Phase 1 – Total sampling method will be applied where all the nurses who meets the inclusion criteria will be recruited to participate in the study.
- Phase 2 – The sample size was determined using the G*Power 3.1.9.4 software, based on a medium effect size of 0.5 and 80% power, an estimated sample size of 51 is needed for each group, making a total sample size of 102.

NAME :

Mr. Andries Masenge
Senior Research Consultant
Department of Statistics
Internal Consultation Service

Tel 012 420 3645

Mohannad Aljabery

Annexures

Annexure E2: Declaration letter from the editor for dissertation chapters

Ester Goede Editing Services

4 Eastwood Avenue

Randpark Ridge

2169

082 808 3061

estergoede65@gmail.com

To whom it may concern

I, Ester Goede, hereby confirm that I have edited the Doctor of Philosophy dissertation (chapters 1, 2, 3, and 7) titled *Multifaceted educational intervention to reduce moral distress among critical care nurses in Abu Dhabi* by Mohannad Abdel Fattah M Aljabery.

Date: 2 October 2024

Signed:

E. Goede

"And every phrase
And sentence that is right (where every word is at home,
Taking its place to support the others,
The word neither diffident nor ostentatious ...
The common word exact without vulgarity,
The formal word precise but not pedantic,
The complete consort dancing together) ..."
T.S. Eliot

Mohannad Aljabery

Annexures

Annexure E3: Declaration letter from the editor for Article 1



Faculty of Health Sciences

1 October 2024

To whom it may concern

I confirm that I, the English Language Science Editor at the Faculty of Health Sciences, University of Pretoria, edited the manuscript titled "**The magnitude of moral distress among critical care nurses in two public hospitals in Abu Dhabi, United Arab Emirates: A cross-sectional study**" submitted by Mohannad Aljabery, Isabel Coetzee-Prinsloo, and Annatijie van der Wath. A copy of the edited manuscript is directly available from me. I consent to being acknowledged for my contribution.

Sincerely,



Dr Cheryl Tosh

Email: cheryl.tosh@up.ac.za

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

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Mohannad Aljabery

Annexures

Annexure E4: Declaration letter from the editor for Article 2



Faculty of Health Sciences

19 August 2024

To whom it may concern

I confirm that I, the English Language Science Editor at the Faculty of Health Sciences, University of Pretoria, edited the manuscript titled "Characteristics of Moral Distress from Nurses' Perspectives: An Integrative Review" submitted by Mohannad Aljabery, Isabel Coetzee Prinsloo, Annatjie van der Wath, and Nathira Al Hmaimat. A copy of the edited manuscript is directly available from me. I consent to being acknowledged for my contribution.

Sincerely,



Dr Cheryl Tosh

Email: cheryl.tosh@up.ac.za

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

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www.up.ac.za

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Mohannad Aljabery

Annexures

Annexure E5: Declaration letter from the editor for Article 3



Faculty of Health Sciences

October 22, 2024

To whom it may concern

I confirm that I, the English Language Science Editor at the Faculty of Health Sciences, University of Pretoria, edited the manuscript titled "**The Outcomes of a Multifaceted Educational Intervention to Reduce Moral Distress Among Critical Care Nurses**" submitted by Mohannad Aljabery, Isabel Coetzee-Prinsloo, Annatijie van der Wath, and Andries Masenge. A copy of the edited manuscript is directly available from me. I consent to being acknowledged for my contribution.

Sincerely,



Dr Cheryl Tosh

Email: cheryl.tosh@up.ac.za

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Mohannad Aljabery