NPICU Nurses' Perspectives of Family Centred Neonatal Care in Malta: A Qualitative Study

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DECLARATIONS

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ABSTRACT

Background: The role of neonatal nurses entails a very challenging yet rewarding experience. Family Centred Care (FCC) is a concept applied in the Neonatal and Paediatric Intensive Care Unit (NPICU) so as to improve the infant's and family care. The implementation of FCC differs in different healthcare systems, cultures, and circumstances in which it is used, while also being known to pose certain challenges on nurses implementing it.

Aim: The overall purpose of this study is to promote and enhance better neonatal and family care and outcomes in a NPICU setting as a result of gathering an insight into the perceptions of the NPICU nurses.

Design and Method: An exploratory descriptive qualitative approach through a phenomenological design was adopted. 9 participants were selected through purposive sampling and from a Maltese NPICU. In-depth semi structured interviews were carried out. Interviews were transcribed *verbatim* and data was analysed through thematic analysis. Rodgers' Family Centred Theory and Roy's Adaptation Model has guided the researcher in exploring and understanding the perspectives of NPICU nurses regarding FCC.

Findings: Five emergent themes were identified: 'Approaches to FCC', 'Challenges in FCC implementation', 'Factors facilitating FCC', 'Adaptation Strategies for FCC delivery' and 'Positive Outcomes of FCC'. Findings indicate that many participants perceive FCC positively despite the multiple challenges that they encounter.

Conclusions: Although participants are well aware of FCC and its benefits, its' implementation requires further improvement. Recommendations arising from this study address multiple challenges encountered including environmental layout adjustments and staffing levels. Recommendations for education and practice suggest to invest in further staff and parental training. Researching the phenomenon of FCC with diverse participants and in other paediatric settings is also recommended.

Keywords: NICU, Nurses, Perspectives, FCC.

DEDICATION

I would like to dedicate this dissertation to all infants and families who have lived, are living and will live the NPICU experience.

Furthermore, I dedicate this dissertation to all the devoted nurses who contributed their time into this research study. Without your participation, this would not have been possible.

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On a more personal note, I would like to thank my parents, Michael, and Patricia, who have continuously supported me throughout my studies over the years. Your encouragement has inspired me to keep striving, both in my studies and in my nursing career.

Last but not least, I profoundly thank my boyfriend, Kurt, who was always there for me. Your love and support kept me going during challenging times I encountered throughout this journey.

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ABBREVIATIONS

BLS	Basic Life Support
CASP	Critical Appraisal Skill Programme
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CPR	Cardiopulmonary Resuscitation
FCC	Family-Centred Care
FCT	Family Centred Theory
FIC/FiCare	Family Implemented Care
FINE	Family and Neurodevelopmental Education
FREC	Faculty of Health Sciences Research Committee
GARDE	Grading of Recommendations, Assessment, Development and Education
GDPR	General Data Protection Regulator
HCP	Healthcare Professional
HCW	Healthcare Worker
IPFCC	Institute for Patient and Family-Centred Care
JBI	Joanna Briggs Institute
LR	Literature Review
MDT	Multidisciplinary Team
NCBI	National Centre for Biotechnology Information
NGT	Nasogastric Tube
NICU	Neonatal Intensive Care Unit
NPICU	Neonatal & Paediatric Intensive Care Unit
OAR	Open Access Repository
PFCC	Patient and Family-Centred Care
PICO	Participants, Phenomenon of Interest, Content, Outcome
PICU	Paediatric Intensive Care Unit
PPAS	Parent Participation Attitude Scale
QOC	Quality of Care
RAM	Roy's Adaptation Model
SIDS	Sudden Infant Death Syndrome
SPSS	Statistical Package for Social Sciences
SR	Systematic Review
TA	Thematic Analysis
UREC	University Research and Ethics Committee

CHAPTER 1

INTRODUCTION

1.1 Introduction

In the realm of paediatric healthcare, the delivery of comprehensive and holistic care to infants in Neonatal Paediatric Intensive Care Units (NPICU) has evolved significantly over the years. These changes are a result of improvements in healthcare philosophies that prioritise family-centred care (FCC) together with improvements in medical technology and treatment techniques (Jansen, 2023). At the heart of these evolutionary changes, is the acknowledgement that the family plays an integral role in the holistic care approach and well-being of the infant, therefore extending beyond the limitations of traditional medical practices (Ramezani et al., 2014). In order to get the best outcomes for the vulnerable infants, FCC aims to create a trustworthy collaboration between healthcare professionals (HCP) and their respective families (Coyne, 2015).

The implementation of FCC differs in various healthcare systems, cultures, and circumstances in which it is used (Kokorelias et al., 2019). In the setting of the Maltese NPICU, one should recognise that nurses are central links in the daily care of infants. This dissertation explores the complex and varied perspectives of nurses about FCC, which might have been affected by their experiences, encountered barriers and their positive outcomes. Implementing FCC in the nursing role not only facilitates the infants' care, but also encompasses a compassionate helping hand to the families who would be going through such a tough experience (Albayrak & Büyükgönenç, 2022).

When considering the sensitivity of the patient population and the complexity of the required treatment and medical care required, the NPICU setting creates potential

challenges for the employment of FCC (Mirlashari et al., 2020). Consequently, this research may potentially contribute to the ongoing global discussions and research concerning FCC. Ultimately, this study aims to help to improve healthcare practises for the benefit of infant patients in Malta together with their families.

1.2 Background Information of Family Centred Care

A transformation in neonatal care management began when the FCC model was firstly implemented during the 1970s. Over the next years, FCC gradually became recognised as an optimal approach to care in various health settings, including neonatal care (Gómez-Cantarino et al., 2020). As presented by Smith et al. (2020), the FCC approach goes beyond parental presence and involvement to a collaborative partnership with the family. While understanding that the infants' family plays an essential role in the infants' life, HCPs are urged to educate and inform, empower, and make informed decisions together with the parents (Mackley, 2016). Thus, FCC emphasises on the relationship between HCPs and the patient's family to ultimately provide inclusive, compassionate, and holistic infant-centred care (Schwartz et al., 2022).

Ding et al., (2019) show several effects in relation to the infants' family. FCC was found to reduce family related stress and anxiety while aiding in the adaptation process to the parental role. The latter authors state that FCC also helps in the development of parent-infant attachments. Moreover, FCC also helps to simplify the transition from

hospital to home, which is known to be quite a challenging process for most preterm infants (Ramezani et al., 2014).

On the other hand, Coats et al., (2018) has reportedly concluded that nurses and midwives found it hard to implement FCC in their practice. This is because certain HCPs have not understood the modern concept of FCC, whilst others feel that FCC implementation might potentially threaten their role as HCPs. Moreover, Benzies et al., (2019) states that due to logistical problems, such as lack of time and personnel, the implementation of FCC during neonatal nursing might be prohibited.

1.3 Importance of Family-Centred Care

As stated by Abraham et al. (2012), a family-centred model of care is considered the gold standard in the NPICU. In paediatric and neonatal care, evidence supports the positive impact of FCC in many aspects, including parental satisfaction, cost reduction, and reducing negative impacts after hospitalisation for both the infants and their parents or caregivers (Larocque et al., 2021).

Incorporating FCC into daily professional neonatal nursing is a factor that help HCPs in order to effectively aid the progression of the emotional and physical well-being of the families that they encounter (Maureen et al., 2018). The latter authors also state that FCC is necessary as it broadens the scope of practice by encouraging communication while focusing on the families' relationships. This consequently leads to improved health for both the infants and their families. The execution and

accomplishment of successful implementation of FCC are said to greatly enhance the general experiences of families with infants being taken care for in the NPICU (Gómez-Cantarino et al., 2020). Moreover, supportive family members and a calm environment is known to help reduce stress for the infant, since when parents actively participate in their infants' care, the infant is more likely to feel secure (Pineda et al., 2018). This may consequently have a positive effect on the infants' physical health, well-being, and development (Soni & Tscherning, 2021).

Craig et al. (2015), state that developmental care is also a positive outcome of FCC's implementation as it is composed of a range of medical and nursing interventions, that consequently aid in reducing the stress of preterm infants in neonatal units. Research suggests that infants who receive a FCC approach throughout their NPICU admission, are most likely to have improved long term developmental outcomes such as neurodevelopmental and improved cognitive outcomes (Soni & Tscherning, 2021). FCC practises also enable the collaboration of the healthcare worker (HCW) with the parents in the care of their infant, whilst also recognizing them as fundamental members of the care team. This is due to them being the infants' primary decision-makers throughout their admission in the NPICU (De Bernardo et al., 2017).

1.4 Local Scenario

Across the Maltese Islands, the NPICU acts as an intensive care unit for neonates and paediatric patients up to the age of three years. Pace Parascandolo (2016) states that the local NPICU is not guided by a FCC policy. However, it was noted that most of

the midwives and nurses working within the unit were aware of the principles correlated to FCC (Pace Parascandolo, 2016). Moreover, the latter states that most often, HCPs would try to adopt such care approaches when caring for preterm infants and their families in the NPICU.

Literature obtained through the literature search regarding the implementation of FCC in Malta is scarce. However, existing literature suggests that parental experiences in a Maltese NPICU aligns with international norms. Pace Parascandolo (2006) identified and assessed stressors faced by parents before, during and after their infants' NPICU admission. The latter study also assessed the impact of FCC implementation in the local NPICU.

1.5 Problem Statement & Rationale of the Study

The author's work who is personally interested towards neonatal nursing brings her close to the infants and their families who are cared for in the NPICU. Thus, this led to the author's reflection on the caregivers' daily work experiences and the approaches taken while practicing neonatal nursing, despite all the challenges encountered.

Despite FCC's global significance in neonatal care, its application and significance in a Maltese NPICU remains unknown. To address this gap, this qualitative project aims to gather perspectives from NPICU nursing staff, thus following up on recommendations from Pace Parascandolo's (2016) study, while making this study as the next step in local research. This current study assesses perspectives of FCC while identifying current improvements and recommendations for FCC's enhanced

implementation. Moreover, this study explores the evolution of NPICU nurses' perspectives over time.

1.6 Overall Purpose, The Research Question & Aims

1.6.1 The Overall Purpose

The higher purpose of this study is:

> To promote and enhance better neonatal and family care and outcomes in a NPICU setting as a result of gathering an insight into the perceptions of the NPICU nurses.

1.6.2 Research Question

The research question for this study is:

> What perspectives do nurses working in a Maltese Neonatal & Paediatric Intensive Care Unit (NPICU) hold regarding the implementation of family centred neonatal care?

1.6.3 Aims

The aims of the current study are:

1. To explore the nurses' perspectives regarding their role in FCC implementation.
2. To explore facilitating factors and possible barriers in implementing FCC in the NPICU.
3. To explore the importance of effective communication in FCC.
4. To identify recommendations for enhancing the implementation of FCC.

1.7 Conclusion

This chapter introduced and provided general information on FCC and its importance for the nursing staff, the infants, and their families. Furthermore, it was highlighted that local studies or statistics are very limited, thus, the benefits of conducting this study were highlighted. Moreover, the overall purpose, the research question and the aims were presented. Objectives of this study will be presented in the third chapter, following the literature review (LR).

The following chapter presents a LR of previous studies which explore NPICU nurses' perspectives of FCC, while also focusing on the conceptual framework implemented throughout this study. Chapter 3 then outlines the methodology utilised in this research study. The fourth chapter presents findings categorised according to emergent themes from the collected data, followed by a discussion of these findings in Chapter 5. Chapter 6 provides a comprehensive summary of the study, highlighting its strengths and limitations. It also offers recommendations for future clinical practice policies, management, education, and research in the field.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

High-quality medical education research begins with a thorough literature assessment, maximizing relevance, originality, generalisability, and impact (Maggio et al., 2016). The latter author states that the literature review (LR) provides context, guides methodology, and ensures professional principles are met. It helps structure the study, identify gaps, and establish points for investigation (Paré & Kitsiou, 2017). This chapter outlines the conceptual framework and literature search strategy for investigating Neonatal and Paediatric Intensive Care Unit (NPICU) nurses' perspectives on Family Centred Care (FCC). It summarises and appraises selected studies to synthesise evidence presented from previous studies.

2.2 Conceptual Framework

When conducting a study, a conceptual framework helps to explain a phenomenon through a particular lens and challenges, while extending existing knowledge within the limitations of that lens (Luft et al., 2022). Grant & Osanloo (2014) state that the conceptual framework guides the research method by which data is collected and analysed, shapes the questions asked and also informs the discussion of the results of the study. Moreover, it can help the researcher to be more selective on which aspects are most important while identifying missing gaps in literature (Müller-Bloch & Kranz, 2015). Consequently, this process helps in refining the research question, while determining what information needs to be collected and explored further (Grant & Osanloo, 2014).

NPICU nurses provide support both to the infants and their families throughout the entire process, thus experiencing a variety of emotions (Orr et al., 2023). Moreover, Fortney et al. (2020) state that NPICU nurses' experiences may influence their perspectives of nursing care approaches.

The Patient- and Family-Centred Care (PFCC) core concepts forwarded from the Institute for Patient and Family Centred Care (IPFCC), were chosen to guide this study due to their relevance in addressing both patients' and family needs. (Hsu et al., 2019). For the purpose of this dissertation, wherever the term 'patient' is used, it should be read and understood as the 'infant', which refers to any patients under one year of age being cared for in the NPICU.

2.2.1 The Concept of Patient and Family-Centred Care

PFCC signifies the partnership between the patients, their families, and the healthcare professional (HCP) (IPFCC, 2017). Hsu et al. (2019) state that PFCC ensures that the dignity, information and support for the patients and their families are guaranteed. PFCC also ensures that the participation of the infants' family within the holistic care provided is being facilitated. Family members in the NPICU are considered as essential team members, particularly due to their role as primary decision makers (Soni & Tscherning, 2021).

Hsu et al., (2019) highlights barriers for PFCC in research, including the lack of consensus on how to measure and define PFCC while understanding concepts into

applying these concepts into practice. The PFCC core-concepts presented by the IPFCC are relatable to the current study and thus, an explanation of each concept in reference to the NPICU context has been presented in table 2.1 below.

Table 2.1 – PFCC Core-Concepts

Core-Concepts of PFCC	***Concept Explanation***
Dignity & Respect	When the HCP actively pays attention to both the patient and the family, both dignity and respect are regarded to be met. In the NPICU, individual attention should be paid to the family's values and beliefs, which can ultimately help with overall care delivery (Ramezani et al., 2014).
Information Sharing	Information should be delivered by the healthcare worker (HCW) to the infants' family openly while also obtaining consent prior to any nursing intervention or treatment administration. This should be objective and tailored to the family's specific needs. Moreover, this can assist the neonates' family in playing an active role in the administration of care throughout the entire journey, from diagnosis to post-discharge care (Aurich et al., 2020).
Participation	The family and HCW are given the opportunity to engage in the patients' care to the extent that they are comfortable with. This should be done with both encouragement and assistance, which can aid in the transition to going home and giving both parties trust in care (Purdy et al., 2015).
Collaboration	Collaboration entails the input of the HCW and the neonates' family on a more recognizable and institutional level, which can aid in the development and implementation of care plans (Barbosa, 2013).

These core-concepts outline the necessary factors for fostering partnerships during the infants' admission in the NPICU. The implementation of these core-concepts can consequently aid with care and treatment plans, improving relationships and aid in the

overall contact between the family and the HCP. The ultimate aim of these core-concepts is to improve the quality of care (QOC) of the infant (Miller et al., 2021).

2.2.2 The Family Centred Theory

The concept of FCC views family as a system, while addressing the needs of all members even when care is only directed at one individual (Heidari & Mardani-Hamooleh, 2020). The Family-Centred Theory (FCT), introduced by Carl Rogers in the 1940s, provides an alternative approach to healthcare delivery compared to the biomedical model (Bamm & Rosenbaum, 2008).

The FCT emphasises equal dignity and respect for all patients and their families, regardless of cultural background, promoting diversity and individual choices (Agtarap, 2018). Professionals using this theory assess problems, recommend interventions, and coordinate treatment (Bamm & Rosenbaum, 2008). Over time, this medical model has increasingly recognised the importance of family in the infants' well-being (Bamm & Rosenbaum, 2008). Families and research have led HCPs to a realisation that parents have tremendous insights into their children's abilities (Seniwati et al., 2023). Throughout this dissertation, the term 'parents' will refer and can be read as any parent or guardian who is caring for the infant.

After reviewing various theories, the FCT is deemed the most suitable conceptual framework for this study. Throughout this study, the FCT relates to NPICU nurses who collaborate with the infants' parents. Furthermore, the FCT provides a patient-focused framework that aligns with the dynamics and the unique challenges encountered within the NPICU setting.

2.2.3 The Roy Adaptation Model

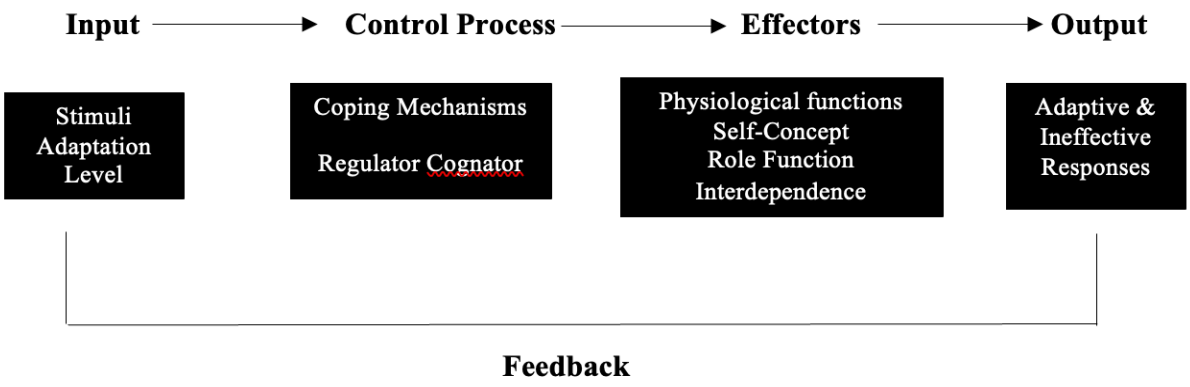
Nurses who adopt FCC principles play a vital role in meeting the needs of both the parents and their infants, thus fostering parental involvement in the NPICU (Albayrak & Büyükgönenç, 2022).

Although FCC is beneficial to both families and the infants, implementation can be challenging. Many healthcare professionals (HCP) emphasize that FCC requires viewing parents as primary caregivers for the infant and for active care involvement. (Maatman et al., 2020). Thus, Sister Callista Roy's adaptation theory serves as a secondary conceptual framework, guiding the researcher in understanding how NPICU nurses adapt their daily nursing practice to successfully implement FCC. Furthermore, Roy's Adaptation Model (RAM) is suitable for this study due to its emphasis on individualised care, assessment of adaptive methods and fostering collaboration. Consequently, applying this model may help NPICU nurses in supporting the adaptive processes of infants and their families to ultimately enhance the overall well-being and outcomes of this vulnerable patient population.

The RAM metaparadigm concepts are person, health, environment, and nursing (Ursavaş et al., 2014). It offers a holistic framework to understand how individuals adapt in healthcare settings. The RAM views individuals as adaptive systems including four key components namely: input, control process, effectors, and outcomes (Nursing Theory, n.d). Furthermore, Roy's model emphasizes the importance of assessing these components to comprehend an individual's adaptation while providing tailored nursing interventions for promoting health and well-being

(Ursavaş et al., 2014). An adapted diagram of Roy's adaptation model can be found in figure 2.1 below.

Figure 2.1- Adapted Diagram of the Roy's Adaptation Model



Focal & Contextual Stimuli in the NPICU

Roy (1981) defines a focal stimulus as the interaction which immediately confronts the person. In neonatal nursing, focal stimuli include the infant's health, physiological condition, developmental stage, and immediate care needs. These stimuli guide nursing interventions to maintain or enhance the infant's health during the adaptation process. (Ursavaş et al., 2014).

The contextual stimuli encompass the broader environmental and social factors that influence the infant's adaptation through contribution to the focal stimuli, affecting a current situation (Jennings, 2017). Such factors include family dynamics, cultural beliefs, and the healthcare setting. Recognizing and addressing contextual stimuli is crucial for neonatal nurses since they significantly impact the infant's overall well-

being and family support. This aligns with the study's second aim, which explores the facilitating factors and barriers of FCC in the NPICU.

Lastly, the residual stimuli, such as behaviours and personal experiences, are closed factors originating from the past which recurrently affect the current situation, and on treatment response (Ursavaş et al., 2014).

By thoroughly assessing and managing both focal and contextual stimuli, neonatal nurses can deliver more effective, patient-centered care (Hosseini & Soltanian, 2022). Ultimately, this process can promote the successful adaptation of infants and their families to the challenges of this vulnerable period.

Control Process in the NPICU

Coping mechanisms, such as seeking social and phsychological support and using relaxation techniques, are employed by parents and HCPs in the NPICU (Ursavaş et al., 2014). These mechanisms address the emotional and psychological challenges encountered while caring for the infants.

In the NPICU, HCWs and the infants' families often communicate and engage in regulator cognation so as to interpret complex medical information (Sullivan & Cummings, 2020). The regulator cognator, incorporates cognitive and emotional processes that aids in the decision-making processes (Nursing Theory, n.d). Ultimately, this allows the parents to make informed decisions (Sullivan & Cummings, 2020). Recognising and promoting coping mechanisms and regulator

cognator processes is vital in the NPICU, since they lead to better outcomes for the infants under care (Browning Callis, 2020).

Effectors in the NPICU

Several effectors are necessary for the understanding of the adaptation process of both the infants and their families in the NPICU. Psychological functions, including both emotional and cognitive processes, are key effectors in guiding parents and HCWs through stressful situations, uncertainty, and emotional challenges encountered during neonatal nursing (Jones & Bartlett, n.d).

Another effector, known as self-concept, reflects how parents undertake their roles and self-identity as parents of a medically ill infant (Philips, 2017). Nhemachena et al. (2023) highlights that HCWs grapple with feelings of frustration, doubt, and inadequacy when they encounter high-risk situations. The combination of self-confidence and resilience potentially leads to a positive self-concept, which is a powerful effector in guiding parents and HCPs to conform to the NPICU environment (Han et al., 2023).

The role function serves as a significant category of effectors in RAM. Philips (2017) states that role function entails diverse obligations and tasks, such as being the patients' advocate, caregiver, and decision-maker, which both parents and HCWs undertake when caring for a critically ill infant. Bry & Wigert (2019) argues that parents tend to face emotionally challenging situations while undertaking their new caregiving role. Identifying and assisting the role functions of both the parents and HCPs is fundamental for the successful adaptation of the infant and the well-being of

the entire family (Simsek et al., 2022). HCWs can support parents to successfully accomplish their roles as effectors, thus contributing to optimistic outcomes for both the infant and their family (Health Carousel Nursing & Allied Health, n.d).

Lastly, interdependence amongst family members and HCWs is a crucial effector, thus accentuating the need for collaborative teamwork and reciprocated support (West et al., 2022). As presented by Orzalesi & Aite (2011), interactions between HCPs and the parents in the NPICU are highly interdependent due to the multifaceted and complex care required. HCPs collaborate with parents in order to create care plans meeting the infant's medical and emotional needs. Effective communication, shared decision-making and thorough support are necessary for achieving interdependence (Toivonen et al., 2020).

Adaptive and Ineffective responses in the NPICU

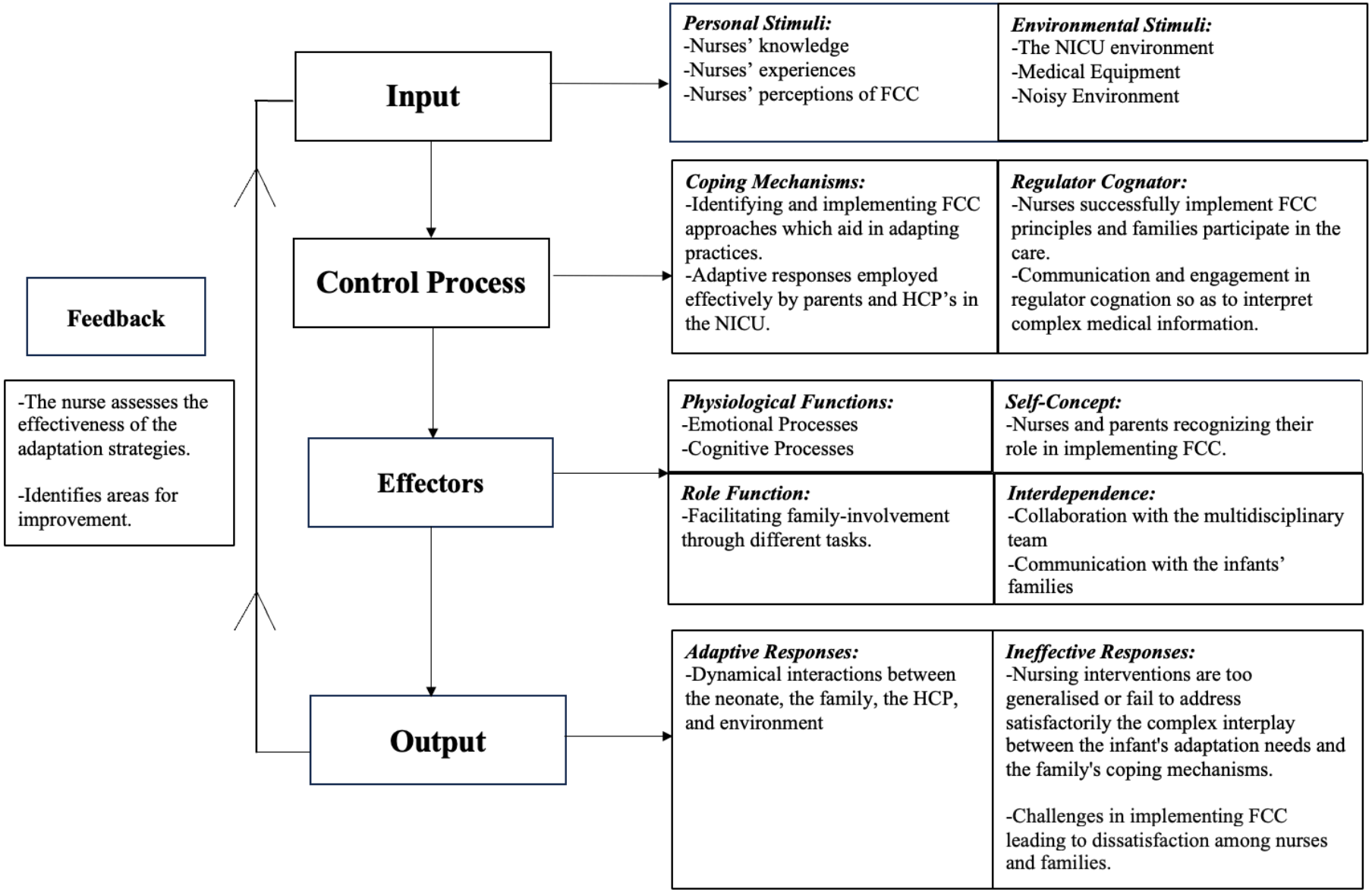
Adaptive response within the RAM involves dynamic interactions between the infant, the family, the HCP, and the environment (Jennings, 2017). Adaptive responses in the NPICU accentuate a holistic approach, integrating physiological, psychological, and social dimensions of care. NPICU nurses implementing the RAM focus on supporting the adaptive responses of infants through individualised care tailored to their unique physiological and developmental needs. Interventions, including kangaroo care, enhance the parent-infant bond while facilitating medical issues (Brashear, 2022). Moreover, Lee et al., (2022) highlights that developmental supportive care practices minimise stress and promote optimal infant growth.

Ineffective responses may occur if nursing interventions overlook the complex interplay between the infant's adaptation needs and the family's coping mechanisms (Philips, 2017). Moreover, the latter states that environmental stressors overwhelming the infants' adaptive capacity can induce distress, thus highlighting the necessity of tailored nursing interventions (Williams et al., 2018). Collaborative efforts among the whole multidisciplinary team (MDT) of professionals are essential to ultimately deliver comprehensive care that addresses the complex needs of infants being cared for in the NPICU, while also supporting their unique adaptive processes towards optimal health and developmental care (Gómez-Cantarino et al., 2019).

Implementation of the Roy's Adaptation Model in the NPICU context

In the NPICU, infants face numerous stressors (Williams et al., 2018). RAM can help nurses by guiding them when providing individualised care that promotes adaptation and well-being (West et al., 2022). The first step in implementing this model into neonatal nursing care is the assessment of the infants' needs. Moreover, Bry & Wigert (2019) state that the parents' concerns and emotional states should be addressed. NPICU nurses can create a care plan that addresses all the needs required, while aiming to prioritise interventions that support the infants' adaptive process (Negarandeh et al., 2021). Throughout this process, NPICU nurses should also consider the parents' involvement in care decisions (Heidari et al., 2013). This collaboration fosters a family-centered approach that supports the family's ability to adapt to the unique circumstances of NPICU care. Figure 2.2 below presents how RAM can be applied to FCC in the NPICU.

Figure 2.2 Roy's Adaptation Model Application to FCC



By implementing RAM in the NPICU, nurses can support the fragile neonates and their families while coping with the unit's challenges. This model optimises adaptation processes, consequently improving the overall well-being of these vulnerable infants (West et al., 2022). University of Tulsa (2023), state that RAM aligns with a patient-centered approach, recognising the interconnectedness of physical, psychological, and social well-being. Achieving a balance amongst these aspects leads to optimal adaptation throughout the care (Bry & Wigert, 2019).

2.3 Literature Search Strategy

Selecting literature based on the most reliable evidence possible in regards to the subject guarantees the development of a clear and complete LR (Maggio et al., 2016). Ultimately this helps to reveal any possible research gaps within the area being researched (Snyder, 2019). The keywords and synonyms, search tools, the databases and the eligibility criteria will be presented throughout this section.

2.3.1 Keywords and Synonyms

Before conducting the search strategy, the research question was broken down to identify alternative keywords and concepts, along with inclusion and exclusion criteria. Databases including PubMed and Medline Complete were used. MeSH terms aided the search and the Mosby-Medical Dictionary aided in identifying additional medical terms. This process expanded the literature search, as presented in Table 2.2.

Table 2.2 Keywords and Alternative Terms

Index Key Terms	***Alternate Terms***
NPICU	NICU (Neonatal Intensive Care Unit)
	Neonatal Intensive Care Unit
	Neonatal & Paediatric Intensive Care Unit
Nurses	Staff Nurses
	Qualified Nurses
	Registered Nurses
	Neonatal Nurses
Perspectives	Views/Viewpoints
	Thoughts
	Opinions
Family Centred Care	Family Integrated Care
	Family Centred Approach
	Family Centred Nursing
	FiCare

2.3.2 Search Tools

To decrease search results and to have a more focused search, various search tools can be utilised. Boolean Operators are essential tools used to reduce irrelevant hits, while focusing on the relevant literature through combining the keywords and the alternative terms (Grewal et al., 2016). The Boolean Operator "AND" was used in order to narrow down the search through the combination on the keywords presented above. On the other hand, the Boolean operator "OR" was applied to include all key terms and alternate terms, thus broadening the search to more potentially relevant studies. Inputting these terms in both the title and the abstract option of the search aided in refining the process. This was necessary since the initial search resulted in a large

number of irrelevant hits and literature. The Boolean Operator 'NOT" was not utilised throughout this search.

Wildcards and truncation symbols, such as the asterisk "*", were utilised to include a variety of keywords with the same initial spelling but different endings to the keyword. This approach expanded the search to gather all relevant literature. The keyword 'nurses' was truncated with the asterisk symbol to capture different variations, such as the words "Nurse", "Nurses" and "Nursing". Wildcards such as the hash "'#" or a question mark "?", are advanced search techniques used to increase the relevance of the literature but were not utilised throughout this search (University College London, 2023).

2.3.3 Databases

The literature search was conducted between July and November 2023 using several search engines, including databases accessible through the HYDI platform, provided by the University of Malta. The 'Health Sciences' category was selected to access databases which were suitable for this study. The databases utilised for the literature search included PubMED, Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete, PsychInfo, Medline Complete and Scopus. Moreover, a search was conducted through the open access repository (OAR) database, accessible through the HyDI platform, to locate any local dissertations relevant to the research question. Table 2.3 presents the five databases utilised for the completion of this search strategy.

Table 2.3- Full explanation of the databases utilised for the conduct of this search.

Databases	***Full Explanation***
PubMed	PubMed is a free database that is developed and maintained by the National Centre for Biotechnology Information (NCBI). It contains more than 36 million citations and abstracts which fall under the categories of biomedical literature (NCBI, 2023).
CINAHL COMPLETE	The Cumulative Index to Nursing and Allied Health Literature (CINAHL) database covers nursing, physical therapy, occupational therapy, nutrition and dietetics, and other health-related professions. It provides indexing of articles from top nursing and allied health literature and includes topics such as general nursing patient care, consumer health, alternative medicine, and other health disciplines (Science Direct, n.d).
PsychInfo	PsychInfo is the world's largest resource devoted to peer-reviewed literature in behavioural science and mental health. It provides authored and edited books and chapters, publications, and journals coverage of the psychological literature dated from 1800s to the present. Literature available include publications from more than 50 countries and 29 different languages (EBSCO, n.d).
Medline Complete	MEDLINE Complete is the leading full text database of biomedical and health journals to the MEDLINE index, as it provides over 2,500 medical journals. Its unique feature is that it offers the full text of many popular MEDLINE-indexed journals that would not be available in other databases (Kaste, 2015).
Scopus	Scopus is a large, multidisciplinary database of peer-reviewed literature including scientific journals, books, and conference proceedings. While delivering a thorough overview of the world's research output in a variety of fields including science, medicine and social sciences, Scopus includes smart features to track, analyse and research (Belmont Libguides, 2023).

Additionally, grey literature was obtained through a search on google scholar. The snowballing technique was utilised to search reference lists of relevant articles or further identification of potentially relevant studies. The whole search strategy process within the different databases can be referred to in Appendix A.

2.3.4 Eligibility Criteria

Before starting the literature search, a set of criteria was established to guide the selection process, ensuring unbiased critical analysis (Capili, 2021). Although the LR includes various interventions for implementing FCC in the same setting, specific aspects related to the research question and study aims aided in the selection process.

Table 2.4 – The inclusion and exclusion criteria applied to the literature search.

Inclusion Criteria	***Exclusion Criteria***	***Rationale***
-English Language.	-Studies not in the English Language.	-To include studies that were performed in the language that the researcher is able to understand.
-Studies published in different research publication types.	N/A	-Inclusion of all publication types helps the researcher to collect all available data which is relevant to the research question, thus eliminating publication bias.
-Full Text Articles.	-Abstracts alone.	- This allows the researcher to analyse the study thoroughly.
-Studies published from 2013 to date.	-Published literature before 2013 were considered outdated.	- A good rule of thumb is to use sources published in the past 10 years for research. Through the use of 10 years of research articles, studies conducted have proven that this improves the accuracy while the outcomes tend to have a higher impact (van der Zwaard et al., 2020)
-Studies performed in the NICU or NPICU.	- Studies not conducted in acute	- Perspectives of nurses not working within an intensive care setting might

	neonatal care settings, thus other areas excluding the NICU and NPICU.	differ from the perspectives of those nurses who work within the NICU.
-Studies focusing on nurses' perspectives regarding the implementation of FCC within the NPICU.	-Studies focusing on parents or other HCPs perspectives of FCC.	-Other HCPs may have different perspectives due to the different roles within the job itself. Parental perspectives are not to be analysed as these are not included within the higher purpose of the study.

2.4 Results of Literature Search

2.4.1 Study Selection

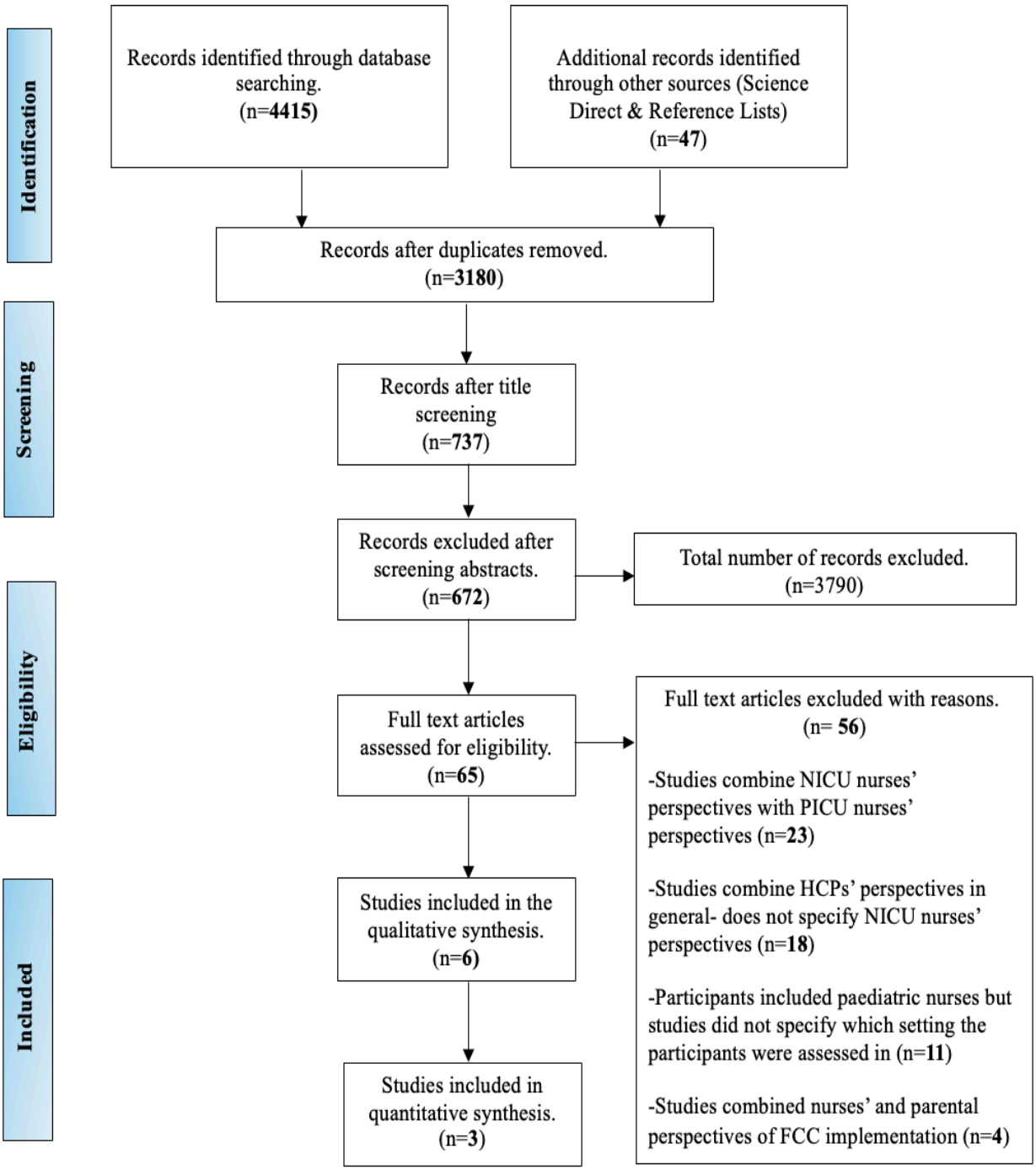
Following the conduct of the literature search through the key terms presented above, a total of 4415 hits were obtained. After removing duplicates, the literature selection was refined by screening the abstracts, yielding 65 relevant articles saved for further analysis. These articles were scrutinised against the inclusion and exclusion criteria. Final study exclusions were due to combining NICU and paediatric intensive care unit (PICU) nurses' perspectives (n=23). Balasundaram & Avulakunta (2023), states that a neonate or an infant is considered as a baby from new-born age up to one year old. Therefore, NPICU nurses in this study should be caring for infants under one year old. Studies without separate specification of nurses' and physicians' perspectives (n=18) and the nurses' and parental perspectives (n=4) were excluded. Studies recruiting paediatric nurses without identifying the assessment setting (n=11) were excluded.

9 key articles meeting the inclusion criteria were identified, while reference lists from relevant articles were manually screened to avoid missing any potentially relevant data. The four-stage Prisma flow diagram (Figure 2.3) recaps the search strategy incorporating identification, screening, eligibility, and inclusion of the final articles selected with the total number of hits at each phase (Moher et al., 2009).

2.4.2 Data Extraction Process

Schmidt et al. (2021) defines data extraction as a process of capturing key study characteristics in a structured and standardised manner. Table 2.5 presented below provides an overview of these characteristics, including the author, year, country, aim, sample size, technique, design, and the main findings of each selected article.

Figure 2.3 Prisma Flow Chart



Moher *et al*. (2009)

Table 2.5 Overview of Key Characteristics of Relevant Studies

Author/year/country	Aim/s	Research Design and Sample Size	Main Findings
Kubicka et al., (2023) **United States of America**	Assess effects of a modified Family Integrated Care (FIC) model on U.S. Neonatal Intensive Care Unit (NICU) parents. Evaluate NICU nurses' perspectives.	This study adopted a case-control design with parental stress assessed before and after NICU-wide FIC implementation using Parent Stressor Scale: NICU (PSS: NICU) questionnaire. On the other hand, questionnaires captured nursing perspectives on FIC. A total of 169 parents and 51 bedside nurses were recruited throughout this study.	This study concluded that parental stress was lower when FICare was implemented. On the other hand, nurses reported multiple positive effects of FICare implementation in the NICU for both parents and staff with no reported negative effects.
Heidari & Mardani-Hamooleh (2020) **Iran**	This study was performed with the purpose of understanding nurses' perception of FCC in NICUs.	This study adopted a qualitative approach. 18 nurses participated in the study. All nurses were females aged 23 to 42 years and had a bachelor's degree in nursing with 4 to 12 years of work experience.	This study revealed that in some countries including Iran, FCC is not being ideally implemented. This is due to lack of facilities, Including physical space and shortage of nurses.

Mirlashari et al., (2019) **Iran**	The purpose of this study was to investigate physicians' and nurses' perspectives on the challenges of implementing the FCC in the NICU.	This study employed a qualitative design to conduct five focus groups. 25 nurses and 15 physicians participated in the focus groups . All of the nurse participants were female. Moreover, 73% held a bachelor's degree in nursing and 59% had been working as a neonatal nurse for 10 years. On the other hand, 55% of the physicians identified as male, 43% held positions as neonatologists and 39% had a minimum of 3 years of experience in neonatal intensive care.	This study revealed that the implementation of FCC in an Iran NICU is shaped by the HCW's, cultural, legal and operational factors. Thus, for further implementation and improvement of FCC within the NICU in Iran, these factors should be addressed and challenged.
Fonseca et al., (2020) **Brazil**	To understand the experience of nurses in the development of the FCC of newborns hospitalized in the NICU.	This is a cross-sectional research study with a qualitative and interpretive approach. 10 nurses who work in the NICU took part in the research. The nurses	This study concluded that nurses are able to understand the importance of family presence both for the recovery of the new-born and for the development of parenthood. On the other hand, proper understanding of

	To describe the nursing care offered to families during the hospitalization of a newborn in the NICU To describe the nurses' perception on the care developed with families during the hospitalisation of newborns in the NICU.	recruited had more than one year of experience in the institution.	FCC and how to establish this approach into practice lacked.
Alemdar et al., (2017) **Turkey**	To evaluate and determine attitudes and views of NICU nurses about FCC.	A quantitative study with a descriptive, cross-sectional design was used to conduct this study. 53 nurses working in the NICU were recruited.	This study revealed that who worked in the most important position in providing FCC in the NICU, increased both the implementation and their knowledge about the issue, thus having their attitudes being advanced positively.
Gomes da Silva et al., (2016) **Brazil**	To describe the challenges and strategies used for implementation of FCC in new-borns admitted to a NICU.	This study adopted a qualitative approach. 14 clinical nurses who worked within the NICU were recruited.	This study concluded that the recruited nurses did not entirely understand the importance of FCC, as they thought that family is a companion to the child and should only help when it suited them. However, a few participants revealed

			that they are trying to adapt ways to improve this scenario within the conditions presented.
Xiang et al., (2020) China	To assess current attitudes and concerns of neonatologists and nurses towards the implementation of FICare in Chinese NICUs.	A qualitative analysis with a before and after study design was utilised for this study. A total of 34 neonatologists and 94 NICU nurses from 5 tertiary NICUs volunteered to participate in this study.	Both NICU neonatologists and nurses have similar worries about FICare including higher risks infections, lack of human resources and non-cooperation of parents. Moreover, the need of obtaining buy-in activities, such as improved staff education and training courses, for promoting FICare in China was highlighted.
Brødsgaard et al., (2019) **Australia, USA, Canada, Sweden, Denmark, Norway, UK, Mexico**	To explore how parents and nurses experience partnership in NICUs and to identify existing barriers and facilitators to a successful partnership.	A qualitative review and meta-synthesis were done for the purpose of this study.	This study revealed that a successful relationship between nurses and parents can be achieved through the mutual knowledge and development of competencies and delegation of roles.

Sarin & Maria (2019) **India**	To achieve a better understanding of the acceptability of FCC implementation from HCWs and family members perspectives. To assess the integration of HCWs and parental activities in the neonatal unit. To examine continuity of care competencies of parents after discharge from the NICU.	A qualitative study was conducted throughout this research. A total of 12 family members which included 5 mothers, 5 fathers, 1 grandfather and 1 grandmother and together with 6 HCPs (including 3 physicians and 3 nurses) were recruited and interviewed for the purpose of this study to be reached.	HCWs perceived FCC as a good strategy despite the challenges encountered within the NICU. These concerns included sharing of nursery space with parents, the need for constant vigilance of parents' practices in handling of their newborns, and the need for separate, designated nursing staff for the successful implementation of FCC. On the other hand, family members were found to be satisfied with the overall health care experience, due to the transparency of care while also allowing them to be by their baby's bedside throughout their admission.

2.5 Critical Appraisal

Literature presents numerous international studies regarding nursing perspectives of FCC within the NICU. The critical appraisal process is necessary to assess the clinical applicability of the study while recognising its trustworthiness and any potential biases (Al-Jundi & Sakka, 2017).

2.5.1 Critical Appraisal Checklist Tools

The Critical Appraisal Skill Programme (CASP) tools for the qualitative and quantitative designs were utilised to review and analyse the selected studies. The CASP tool assesses the selected studies' quality through ensuring reliability, validity preservation and bias minimization (Critical Appraisal Skills Programme, 2017).

2.5.2 Quality Appraisal

The selected studies underwent quality assessment using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE). The GRADE quality assessment scale is a tool which developed to improve evidence evaluation for future clinical guidelines through rating the quality of evidence based on bias risks. (Harrison et al., 2017)

2.5.3 Tools Used for Critical Appraisal

The CASP tool was used to evaluate the quality of the two qualitative studies (Appendix B). The CASP tool was selected due to its user-friendly characteristics. On the other hand, quantitative studies were evaluated using the Joanna Briggs Institute (JBI) critical evaluation checklists (Appendix D, F, H and J). Quality assessment across studies can be found in Appendix C, E, G, I and K.

2.5.4 Critical Appraisal of the Qualitative Studies

The five qualitative studies included in this LR included the studies by Heidari & Mardani-Hamooleh (2020), Mirlashari et al. (2019), Fonseca et al. (2020), Gomes da Silva et al. (2016) and Sarin & Maria (2019). All studies were conducted in a NICU, and sample sizes ranged from 3 nurses to 25 nurses. All studies adopted different qualitative research approaches thus including various study designs including open, in-depth, and semi-structured interviews and focus groups.

All selected studies presented a clear aim of their research, however only Fonseca et al. (2020) provided a clearly focused research question. For the purpose of this review, it was ensured that all studies had the common aim of exploring nursing perspectives of FCC within an NICU.

Fonseca et al. (2020) utilised a cross-sectional research study with a qualitative and interpretative approach. Other selected qualitative studies only mentioned that a qualitative approach was employed without presenting further details. One can note

that the reasons for the decision of utilising a qualitative methodology through the use of the mentioned approaches was justified due to the need of gaining a deeper and thorough understanding of the participants' perspectives within the research topic.

Sarin & Maria (2019), Fonseca et al. (2020) and Heidari & Mardani-Hamooleh (2020) utilised the purposive sampling technique. Purposeful sampling is common in qualitative research for identifying and selecting participants with similar characteristics and have the adequate knowledge regarding the research topic (Palinkas et al., 2015). A purposive heterogenous sampling technique was employed by Mirlashari et al., (2019). Palinkas et al. (2015), states that this technique is used in studies which aim to capture a wide range of perspectives, thus gaining a deeper insight into a phenomenon. Sarin & Maria (2019) recruited nurses with a minimum of 3 months experience working within the NICU, while Gomes da Silva et al. (2016) and Fonseca et al. (2020) required their participants to have at least one year of working experience within the unit. Heidari & Mardani-Hamooleh (2020) recruited nurses with direct involvement in the NICU. The remaining studies did not mention any specific inclusion criteria.

Different approaches to data analysis were utilised between the selected studies. Gomes de Silva et al., (2016) and Mirlashari et al. (2019) utilised the thematic analysis (TA) approach while Sarin & Maria (2019) and Heidari & Mardani-Hamooleh (2020), made use of the content analysis approach. TA and qualitative content analysis are two popular approaches used to analyse qualitative data. TA emphasises on identifying and understanding qualitative data patterns while extracting high-level themes and focusing on the co-relation between these themes (Delve & Limpaecher, 2023). The

latter argues that content analysis focuses on the recurrence of concepts or keywords at a surface-level of analysis. Lastly, Fonseca et al. (2016) utilised narrative analysis to understand the context of participants' experiences.

Gomes de Silva et al. (2016) noted limitations in the study including the absence of internal reliability information, such as triangulation data and its restriction due to it being conducted in one institution, thus limiting the findings' relevance to other settings. Additionally, Sarin & Maria (2019) presents that the hospital setting where the study was conducted in, had already been working on FCC, thus potentially effecting the studies' findings. No inter-rating coding or interpretation was included in the study. Fonseca et al. (2020) and Heidari & Mardani-Hamooleh (2020), noted that the sample size was only that of 10 nurses due to it being a small-sized unit, thus limiting the exposure of perspectives of nurses working in larger NICUs. Moreover, Heidari & Mardani-Hamooleh (2020) states that male nurses' perspectives were missed since male nurses cannot be employed in Iranian NICUs due to their obligatory nursing system rules.

All selected studies except Gomes de Silva et al. (2016) indicated ethical committee approval. Written consent prior to the initiation of the study was acquired by Heidari & Mardani-Hamooleh (2020) and Fonseca et al. (2020), whereas Sarin & Maria (2019) obtained verbal consent from their recruited participants.

2.5.5 Critical Appraisal of the Quantitative Studies

The three quantitative studies selected for this study included research conducted by Alendar et al. (2017), Kubicka et al. (2023) and Xiang et al. (2020). Alendar et al. (2017) utilised a cross-sectional research design across four hospitals in Turkey to evaluate the attitudes of NICU nurses towards parental roles in their infants' care. Although the main purpose of the study was identified, a clearly focused research question was not provided. Since this study had cross-sectional findings, Polit & Beck (2017) argue that they may be only applicable to the sample at the time of data collection. Despite this limitation, the study was reviewed as it provides relevant literature regarding nurses' views of FCC in the NICU. On the other hand, Kubicka et al. (2023) had a case-control design whereas Xiang et al. (2020) utilised a prospective cohort design. A clear aim was stated in both studies; however, no research question was presented by either of the researchers.

Both Alemdar et al. (2017) and Xiang et al. (2020) obtained ethical approval from relevant institutions to conduct the study while noting that informed consent was fulfilled as part of the ethical regulations in both studies. On the contrary, Kubicka et al. (2023) did not mention whether any ethical permissions were gained.

Alemdar et al. (2017) and Xiang et al. (2020) lacked the presentation or justification of inclusion or exclusion criteria for the sample population. Although these criteria were not mentioned, Alemdar et al. (2017) mentioned that the sample population was said to be limited to NICU nurses in specific provinces in Turkey, thus potentially decreasing generalisability. Furthermore, the latter specified that no sample selection method was utilised, and all nurses who agreed to participate voluntarily were included

in this research. Kubicka et al. (2023) determined exclusion criteria for the parent population, while including all nurses working in the NICU.

Alemdar et al., (2017) sampled 53 nurses. Bujang (2021) emphasized the necessity of calculating the sample size prior to conducting a study, as it may directly influence the research findings and their validity. Kubicka et al. (2023)'s tested sample sizes using a two-sided Mann Whitney test to achieve a power analysis. Power analysis aims to determine the required population to be recruited for a clinical study (Kemal, 2020). Xiang et al. (2020) sampled 34 neonatologists and 94 NICU nurses, totalling 128 participants. Alemdar et al. (2017) and Xiang et al. (2020) did not provide any rationale for their small sample sizes. As stated by Andrade (2020), a smaller sample size may increase the possibility of sampling error and coincidental findings.

Alemdar et al. (2017) utilised an information form and the Parent Participation Attitude Scale (PPAS) as data collection tools. The information form was utilised to obtain demographic data followed by the PPAS which determined the nurses' attitudes towards parents' participation. Since the latter author relied on the validity and reliability testing that was conducted by previous researchers, the absence of internal consistency testing raises questions about the reliability of the utilised tool and consequently, the studies' outcomes (Andrade, 2020). Kubicka et al. (2023) utilised the Parent Stressor Scale in order to measure parental stress since it has a good predictive validity and is internally consistent with Cronbach alpha.

Content validity indicates the measurement of how precise the instrument or tool applied in research measures the interested topic (Zamanzadeh et al., 2015). The study by Alemdar et al. (2017) did not indicate the utilisation of any tools which measure

the reliability of the applied tests. On the contrary, the resulting surveys in the study by Kubicka et al. (2023) were tested for content validity and cognitive validity.

Identification and testing for confounding variables is fundamental as they may consequently influence variables undergoing the study, leading to inaccurate results. Possible confounding factors in Alemdar et al. (2017)'s study included the working years, educational level, marital status, and the state of being parent. However, the study concluded that only the marital and parental status did not affect parent participation. A factor which could have potentially contributed to a difference in attitudes noted by Xiang et al. (2020) includes that physicians may be more accustomed with family integration. Kubicka et al. (2020) notes that a potential confounding variable included the COVID-19 Pandemic and restricted visiting hours.

Both Alemdar et al. (2017) and Xiang et al. (2020) conducted data analysis using SPSS (Statistical Package for Social Sciences), while Kubicka et al. (2023) utilised the Fishers exact test for the contingency table analysis. All three studies had an acceptable significance level of $p<0.05$. While P-values determines statistical significance, Nahm (2017) argues that the reliability is not only reflected through the P value, but it is also reflected through the correct study design, measurements' quality, and the logical assumptions.

2.5.6 Critical Appraisal of the Systematic Review

The SR (Systematic Review) by Brødsgaard et al. (2019) primarily aimed at exploring how parents and NICU nurses experience partnerships and existing barriers and

facilitators to an efficient and successful partnerships. A secondary aim was to identify existing barriers and facilitators to an efficient and successful partnership.

The inclusion and exclusion criteria were clearly identified and were appropriate for the review question. Moreover, the studies gathered were sorted in accordance with the PRISMA statement. This SR conducted a three-step search strategy where the initial step involved a preliminary search through the PubMed (MEDLINE) and CINAHL databases. Oermann et al. (2021), highlights that such a search strategy approach is appropriate since these databases are known to be used in healthcare research, thus increasing the probability of capturing significant studies.

The research methodology encompasses identifying keywords, applying the PICO (Participants, phenomena of interest, Context & Outcome) framework, and conducting a thorough database search, adhering to predefined eligibility criteria and study selection criteria. Mathley (2014) highlights the importance of clearly establishing PICO elements, consequently aiding researchers to determine a focused framework for the study selection.

Brødsgaard et al. (2019) does not provide a specific criteria or tools for quality assessment, however, three independent reviewers were employed to critically appraise the studies included, thus minimizing bias, and increasing the reliability. Concerns regarding lacked heterogeneity arose due to different reviewers' interpretations of the quality criteria, however, disagreements among the reviewers were resolved through discussions.

Brødsgaard et al. (2019) conducted data extraction on populations, context, study methods, phenomena of interest, and main result, however lacked information on the data extraction tools. A qualitative analysis was performed during which findings were aggregated into categories based on similarity, yet no information regarding the criteria applied for this process. Despite the researcher conducting the literature search in ten high quality databases to minimise selection bias, the likelihood of publication bias was not assessed, leading to reduced reliability.

Lastly, Brødsgaard et al. (2019) recommended that future studies should adhere to development and evaluation guidelines to ensure supported findings. Language bias was addressed, thus potentially reducing generalisability of the findings. It was noted that original studies' limitations utilised for this review were overlooked, impacting overall quality and reliability. Despite justified limitations, improvements and consideration in future research were recommended.

2.6 Synthesis of the Critical Appraisal

The results from the 9 studies included in this review were extracted and mapped in order to find common categories discussed. Important aspects of FCC from the nurses' point of view have been identified and placed into the categories presented below.

2.6.1 Generalised Nurses' Views of FCC and Job Satisfaction

Understanding and looking into the nurses' views and job satisfaction was emphasised in the reviewed studies. Kubicka et al. (2023) resulted, that nurses reported multiple

positive effects when FIC was implemented in the NICU. Sarin & Maria (2019) reported nurses' favourable attitude towards FCC, acknowledging the importance in building attachments between the infants and their parents. Nurses noted that FCC duties changed their role as their duties involved separate tasks from their regular clinical work, due to them also having to observe, educate and monitor the parents too. On the contrary, Kubicka et al. (2023) presented that FCC did not increase nursing work-related stress, but increased nursing job satisfaction. Fonseca et al. (2020) also reported nurses' acknowledgment of the importance of welcoming the families. Consequently, establishing bonds, better understanding of the families' pain and vulnerability was noted. Fonseca et al. (2020) findings' also recognised an increased level of job satisfaction.

Furthermore, Mirlashari et al. (2019) reported that nurse participants understood the concept and advantages of FCC, while acknowledging the need to address encountered challenges.

2.6.2 Parents' Participation

Parental participation in the NICU is vital for the health and development of preterm or severely ill infants. Despite the nerve-racking setting, ongoing parental participation develops a sense of empowerment and connection to the fragile infants' (Pineda et al., 2018).

Kubicka et al. (2023) and Fonseca et al. (2020) noted that nurses reported that FIC facilitated parental participation while also improving parental competency and confidence for their infants' discharge. Fonseca et al. (2020) emphasised that parental

participation is essential, while stating that without it, FCC implementation would be futile. Moreover, nurses outlined the importance of parental participation being focused on empowerment. Parental participation also emerged as a theme by Heidari & Mardani-Hamooleh (2020), encompassing both parents-neonate attachment and parents training. Nurses viewed parental participation as a facilitator to decrease parental stress and to enhance the parental to neonate attachment. Additionally, parental presence allows nurses to provide education and training, thus facilitating FCC participation. Occasionally, it was noted that the stressful NICU environment leads to parents being unwilling to stay longer, thus prohibiting education and participation opportunities. Argumentatively, Gomes de Silva et al. (2016) findings' outlined that nurses stated that parental presence and participation may create a challenge to the HCP, especially when it is prolonged.

Brødsgaard et al. (2019) noted that while nurses recognised the importance of parental participation, lack of guidelines and supervision led to the nurses being misled of how to facilitate such participation. The findings concluded that nurses implemented parental participation enthusiastically in the NICU, however, parents felt that they disrupted the nursing team and occasionally felt unwelcome.

Social judgement and guilt amongst parents of preterm babies was another issue discussed by Mirlashari et al. (2019). Nurses indicated that some parents fear social judgement, consequently leading to distance themselves from their baby's care. Despite these barriers, nurses agreed that family collaboration and participation is vital at all care levels, especially since informed decision-making is fundamental within the NICU (Mirlashari et al., 2019).

2.6.3 Sharing Knowledge & Shared Decision Making

Reviewed studies addressed the topic of knowledge sharing and shared decision making. A study based in Iran, concluded that nurses noted that parents believe in the decision-making power within the MDT, due to their limited medical knowledge (Mirlashari et al., 2019). The historical context of physician dominance in the NICU was noted, while highlighting that physicians exclude parents in the decision-making process, due to their authority in the Iranian healthcare system.

Gomes de Silva et al. (2016) reported that participants understood the importance of sharing knowledge to facilitate decision-making processes. Nurses suggested strategies such as implementing family meetings to foster closer relationships, while providing a better insight into their infants' care. Moreover, Fonseca et al. (2020) reported that nurses include families into their infants' care plans, to create bonds while empowering parents through education.

Nurses stated that knowledge sharing results in enhanced FCC participation (Heidari & Mardani-Hamooleh, 2020). The latter states that lack of clarity in the nurses' training, both in the theoretical and clinical aspects was highlighted, leading to limited knowledge transmission to the parents throughout FCC implementation.

2.6.4 Transition towards discharge

Research has highlighted importance of providing information and guidance to the parents as they prepare to return home (Aydon et al., 2018). Transition support encompasses interventions and programmes designed to prepare both the infant and

their family for the shift from the NICU to home (Smith et al., 2022). Purdy et al. (2015) states that transition support should be well-coordinated and suited to the family's particular needs to ensure discharge readiness.

Kubicka et al. (2023) reported that FIC improved nurses' perceptions of parental readiness and confidence for discharge ($p<0.001$), while concluding that the utilisation of a pre discharge checklist was associated with parental readiness ($p<0.001$). Xiang et al. (2020) supported Kubicka et al. (2023) since FIC was noted to decrease parental stress, while increasing parental confidence on discharge. Moreover, Gomes de Silva et al. (2016) highlighted that social support during discharge should be expanded, thus potentially improving the families' knowledge while having ongoing support.

Brødsgaard et al. (2019) argued that parental absence and lack of engagement with the nursing staff leads to parents having an incomplete sense of parenting role post discharge. Moreover, excellent nursing competencies provided support during parental education, preparing them for discharge by encouraging parental involvement. Fonseca et al. (2020) highlights that for hospital discharge, a good clinical condition and a well-structured and emotionally prepared family is necessary. Sarin & Maria (2019) reported that parents had a greater capability of caring for their new-borns, while mothers reported increased empowerment in continuity of care.

2.6.5 Challenges of Family-Centred Care Implementation

Various reviewed studies have highlighted enablers and inhibitors which could influence implementation of FCC. Alemdar et al. (2017) resulted that 60% of nurse

participants stated that FCC implementation was neglected due to the excessive workload in the NICU, thus showing that the majority face this specific challenge. Gomes de Silva et al. (2016) and Heidari & Mardani-Hamooleh (2020), reported that participants also highlighted that this challenge is encountered. Heidari & Mardani-Hamooleh (2020) emphasised the need for an adequate number of nurses due to the additional work load that FCC may pose on the nurse.

Sarin & Maria (2019) argued that although nurses felt that parents taking over certain duties reduced their workload, inattentive or negligent parents increased their workload due to close supervision. Xiang et al. (2020) participants addressed concerns regarding non-cooperative parents during FIC implementation. Moreover, shortage of staff leads to nurses feeling overloaded since implementing FCC requires other duties beyond their clinical duties.

Kubicka et al. (2023) noted that since the study was conducted during the COVID-19 pandemic, visiting hours were limited. Since the study included 2 study groups, differences were noted when comparing the pre-pandemic to the pandemic parental group. Although this might have been considered as a limitation, differences in visiting policies may have potentially enhanced results while suggesting that visiting hours in the NICU may hinder FCC.

Xiang et al. (2020), Heidari & Mardani-Hamooleh (2020), Gomes de Silva et al. (2016), Mirlashari et al. (2019), Brødsgaard et al. (2019), and Sarin and Maria (2019) all stated that equipment deficiency and limited space hinders FCC. Heidari & Mardani-Hamooleh (2020), reported how participants expressed parental discomfort with several neonates in one room due to different cultural beliefs, especially in this

Iranian context. Mirlashari et al. (2019) highlights the lack of facilities for fathers, thus reducing the chances of implementing FCC with both parents.

Lastly, Fonseca et al. (2020) and Gomes de Silva et al. (2016) highlight that the parents' insecurities put on a challenge for the nurses to implement FCC effectively. Although Fonseca et al. (2020) noted nurses' efforts to share information about the infants' condition, the lack of knowledge and the emotional condition of the family members tends to hinder FCC. Moreover, Mirlashari et al. (2019) concluded that parental fear potentially results in families feeling incompetent to participate in their baby's care, inhibiting FCC further.

2.7 Gaps Identified in the Current Knowledge

This LR highlights gaps in the current existing knowledge regarding nurses' perspectives of FCC. In light of the aims of this study, the objectives follow up on existing to address gaps and advance current knowledge. The objectives of this study are presented in the following chapter. Furthermore, an evident lack of local studies regarding the perspectives of NPICU nurses regarding FCC can be noted. Therefore, as recommended by Pace Parsacandolo (2016), this current study may be a first within the Maltese sector which may potentially address any missing gaps within the local scenario.

2.8 Conclusion

This chapter explored the conceptual framework guiding the study. A literature search was conducted and retrieved 9 relevant articles on the nurses' perspectives on FCC in the NICU, followed by an appraisal. Despite the various locations and cultural contexts, 5 themes were identified from the findings of these studies. The next chapter will outline the methodology utilised in this research study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter will outline the methodological process utilised throughout this study. The aims and objectives based on the literature review (LR) of this study will be highlighted through the research question that this study aims to address. Furthermore, this chapter will present the selection, data collection and analysis processes, while addressing ethical issues.

3.2 Overall Purpose, The Research Question, Aims & Objectives

3.2.1 The Overall Purpose

The higher purpose of this study is to promote and enhance better neonatal and family care and outcomes in a NPICU setting as a result of gathering an insight into the perceptions of the NPICU nurses.

3.2.2 Research Question

The identified research question for this study is:

- What perspectives do nurses working in the Maltese NPICU hold regarding the implementation of family centred neonatal care?

3.2.3 Aims & Objectives

Aim 1: To explore the nurses' perspectives regarding their role in FCC implementation.

Objectives: To explore the NPICU nurses' perspectives regarding their:

- Understanding of FCC and the nurses' role throughout this approach.
- Ways of implementing FCC while practicing neonatal nursing.
- Disappointments or rewarding aspects while practicing neonatal care.

Aim 2: To explore facilitating factors and possible barriers in implementing FCC in the NPICU.

- The objective towards the identified facilitators is to explore their efficiency and their positive effect on FCC.

- These barriers which potentially affect the implementation of FCC and are to be explored include:
    - Logistical Factors
    - Cultural Barriers
    - Communication Barriers
    - Spiritual Barriers
    - Social Barriers

- Moreover, another objective towards this aim is to explore the extent of these barriers and how these encountered challenges are or could be addressed.

Aim 3: To explore the importance of effective communication in FCC.

The objectives towards exploring effective communication would be:

- To explore what type of communication strategies are utilised to keep the families updated and engaged in their infants' care.

- To identify which communication strategies are best to implement.

Aim 4: To identify recommendations for enhancing the implementation of FCC.

The objectives towards the fourth aim of this study would be to recommend and promote:

- Practical solutions to aid the implementation of FCC within the NPICU.
- Professional training to improve skills and competencies which help the implementation of FCC.
- Educating both the staff and families about the importance of communication for effective FCC.
- Further research on any identified gaps and new insights from this study to provide evidence-based nursing care.

3.3 Operational Definitions

Operational definitions were clearly established for the purpose of this study. These definitions can be found in table 3.1 below.

Table 3.1 Operational Key Term Definitions

Term	***Definition***
Nurse	A nurse is an individual with formal education and training in nursing, dedicated to promoting health, providing holistic patient-centred care, and collaborating with interdisciplinary teams across diverse healthcare settings while engaging in the general scope of practice (International Council of Nurses, 1987).
Perspective	A perspective can be defined as the proper or accurate point of view of an individual while also being a way of regarding situations and facts through judging their relative importance (Collins Dictionary, n.d).
Family Centred Care (FCC)	FCC is characterized by the professional facilitation of child and family support, involving a structured approach of engagement, active participation, and collaboration, guided by principles of empowerment and negotiation (IPFCC, n.d).
Implementation	Implementation, in a practical sense, refers to the process of putting a plan or system into action, involving the execution of predefined activities, allocation of resources, and adherence to established procedures to achieve specific goals or objectives (Merriam-Webster, n.d).
Neonatal and Paediatric Intensive Care Unit (NPICU)	The Neonatal and Paediatric Intensive Care Unit (NPICU) is a specialised setting equipped with advanced equipment and technology, while staffed by a multidisciplinary team, dedicated to providing intensive nursing care, monitoring, and support for critically ill infants and children up to the age of 3 years (Government of Malta, n.d). Since both the neonatal and paediatric intensive care unit are joined in one setting in Malta, this research study will be focusing on the NICU setting rather than the paediatric intensive care setting.

3.4 The Research Design

Multiple research methods were considered for the selection approach generating relevant information supporting the research question. Sileyew (2019) states that the research design is a significant decision since it determines the best approach for evidence collection.

3.4.1 Quantitative Research Design Considerations

A descriptive quantitative research design in the form of a cross-sectional study was considered to be utilised so as to quantify a broader amount of data which will consequently generalise findings regarding the nurses' perspective of FCC implementation.

Quantitative research was considered since it is known to provide reliable measurements of factors by utilising large and randomly selected samples, while also lowering bias risks (Galway Buisness School, n.d). Furthermore, quantitative descriptive studies involve data interpretation that develops through the variable selections or phenomena being explored (Mertler, 2017). Another consideration was due to increased data relevance through statistical analysis (Dwivedi & Shukla, 2019). However, to gather perspectives of nurses in this study, surveys or questionnaires were considered as relevant (O'Connor, 2022).

Since questionnaires are limited to capturing data through questions asked, the researcher noted that in-depth experiences or perspectives which this study aims to obtain could lack (Lindemann, 2023). Furthermore, respondents may struggle to express themselves accurately on paper, potentially collecting data which lacks certain detail or accuracy to the topic being researched (Lindemann, 2023).

3.4.2 Qualitative Research Design Considerations

Qualitative approaches are known to explore and provide deeper insights into the topics or phenomena being studied (Tenny et al., 2022). Therefore, since this research delves into the nurses' perspectives, in-depth thoughts and information must be given to reach the main purpose of this study. Different qualitative research methods were considered to ensure that the best method is chosen for capturing the nurses' perspectives of FCC implementation in the NPICU. Moreover, finding the most suitable design not only aids the researcher to address the main purpose of this study, but also aids to fill in any missing gaps in literature through in-depth understanding of the given nurses' views.

3.4.3 The Chosen Research Design

The design selected for this study was that of an exploratory descriptive qualitative approach through a phenomenological design. This design was chosen since it allows the researcher to investigate a topic with incomplete exposure within the literature

while acknowledging the information provided by recruited participants, contributing to new knowledge within the research topic (Hunter et al., 2018). Reiners (2012) states that phenomenology is known as an inductive and descriptive research method and therefore, provides a method which can focus directly on the nurses' insights of FCC implementation, while providing insights into how this practice can be improved. Furthermore, a descriptive qualitative design was deemed suitable as it collects data through participants' perspectives regarding the topic, thus addressing the aims of this current study.

Philosophical Underpinnings of Phenomenology

Within the specialised context of the NPICU, a phenomenological approach provides a unique lens through which researchers can delve deep into nurses' perspectives, based on their nursing experiences (Jang et al., 2022). Therefore, this approach allows the researcher to achieve an in-depth understanding of their perspectives of FCC implementation within the unit. As stated by Stewart (2023), when adopting a hermeneutic phenomenological approach, also referred to as interpretative phenomenological research, the researcher is considered as an active participant in the interpretive process rather than just receiving knowledge. Therefore, the data gathered through the recruited participants is then collaboratively incorporated with the researcher's experiential background and knowledge, consequently forming a contextualized synthesis (Stewart, 2023).

A researcher who adopts to the Husserlian phenomenological approach should emphasize the importance of bracketing (Qutoshi, 2018). Bracketing is a process

through which the researcher sets aside preconceived notions and prejudices, to be able to engage directly with the richness of the data being collected (Thomas & Sohn, 2023). Due to the preconceptions mentioned above, bracketing would have been challenging for the researcher to achieve, thus Heidegger's interpretative phenomenological approach was recognised as the most appropriate approach to answer the research question of this study. Since the researcher's prejudices are fundamental to the research process, the LR conducted prior to the commencement of this study, acts as a base to the interview guides utilised in the semi-structured interviews for this study.

3.5 Population and Sampling

3.5.1. The Target Population

The population of the study are nurses working in a Maltese NPICU with a minimum of one year experience while caring for infants under the age of one year.

3.5.2 Sample and Sampling Technique

A sample population is defined as a subject of the target population, and thus sampling is the method of selecting a portion of the population which consequently represents the entire population (Bhattacherjee, 2012).

The sampling took place by a purposive sampling technique. This sampling method was undertaken since it allows the researcher to specifically target individuals who have experience in the field being studied (Robinson, 2014). In this study, selecting participants based on their expertise, experiences, and roles within the NPICU through purposive sampling ensures that the researcher captures nuanced insights from those nurses who are actively engaged in the delivery of neonatal care. Additionally, purposive sampling was selected since it aligns with the qualitative nature of the research, facilitating the exploration of diverse viewpoints and ensuring that the collected data directly addresses the study's objectives (Ghosal, n.d).

Prior to commencing the recruitment process, an intermediary was consented to assist in recruiting potential participants who met the inclusion criteria. This measure was implemented to minimise potential bias throughout the recruitment phase. Moreover, inclusion and exclusion criteria, were established and explained to the intermediary prior to the recruitment process to gain a clearer picture for the participant selection.

3.5.3 Inclusion Criteria

Recruited participants in this study had common characteristics since they were all nurses working in a Maltese NPICU and who cared for patients who are under the age of one year. Moreover, all recruited participants were required to have had at least one year of experience working within the NPICU. Having at least one year of experience working as a nurse in the NPICU, enhances the data collection process as participants would have possibly established relationships with parents, while experiencing diverse

cultures (Castillo et al., 2012). Moreover, understanding the unique barriers and dynamics in the NPICU allows the participant to understand and respond to the interview guides precisely, thus guaranteeing reliable and valuable data.

3.5.4 Recruitment Process

Eligible participants were approached and recruited by the intermediary gatekeeper. A brief explanation of the study's purpose was given to the nurses, while an information letter (Appendix L) was handed to provide them with a clearer picture of the studies' aims and process. The intermediary obtained verbal consent of those participants who were interested in participating in the study, while their contact details were requested and given to the researcher by the intermediary.

3.5.5 Justification for Not Collecting Participant Demographics

Due to the limited number of nurses in a Maltese NPICU, the researcher refrained from collecting participant demographics in this study to minimise risk of identification, supporting ethical principles (Central Connecticut State University, 2019). Moreover, the researcher refrained from identifying gender due to the predominance of female nurses within the unit, thus concealing the identity while protecting the anonymity of any potential male participants.

3.6 Methods of Data Collection

The chosen method for data collection was that of an in-depth face-to-face semi-structured interview. This method was chosen since semi-structured interviews are more effective and is the most ideal method for researchers, to acquire in-depth information and evidence from interviewees also considering the focus of the study (Ruslin et al., 2022). Additionally, the latter author states that semi-structured interviews allow the researcher and the participant to explore the topic in-depth while also holding track to the research topic. The interview guides (Appendix N), which formulated the interview were based on the selected conceptual framework and the literature found relating to the research question.

3.7 Ethical Issues

3.7.1 Approvals

All ethical considerations were considered while conducting this study. For the interviews to be carried out, a variety of consents were required and gained. An application to the University Research and Ethics Committee (UREC) was submitted and endorsed by the supervisors of this dissertation. This application was then reviewed and endorsed by the Faculty of Health Science Research Ethics Committee (FREC) and UREC board (Appendix M). Moreover, the research code of practice presented by the University of Malta (2017) was abided throughout this dissertation.

3.7.2 Informed Consent

Ethical consideration was considered throughout the participant recruitment process. Primarily, consent was gained from an intermediary gatekeeper. Participants received a comprehensive information and consent letter detailing the studies' significance, the purpose of the interviews, and the ethical considerations and rights posed to each participant. The researcher respected the participants' right for autonomy by explaining their right to terminate interviews at any stage of the interview without any repercussions.

3.7.3 Privacy and Confidentiality

Given that the interviews were conducted individually, the maintenance of privacy and confidentiality was ensured consistently throughout the entire process. Participants' identities and gender were shielded by allocating participant numbers. Subjects were informed of the implementation of participant numbers as a safeguard mechanism to preserve their anonymity. Moreover, the investigator handled all gathered data through interviews with utmost confidentiality, particularly in instances involving the disclosure of personal details pertaining to the participant's life or experiences. No supplementary information was disclosed to any external sources under any circumstances, while the researcher responsibly mitigated any potential psychological harm to the participants. Participants were also informed about the availability of a psychologist if required. These ethical strategies collectively safeguard and establish a secure environment for the recruited participants. All these

precautions align with the principles outlined in the General Data Protection Regulation (GDPR).

3.8 Role of the Researcher

Being an insider researcher might potentially give rise to ethical challenges. Insider research is associated with a set of particular benefits and dilemmas (Fleming, 2018). To reinforce reliability, researchers must explicitly recognise and delineate their role as an insider researcher within the studies' concept (Fleming, 2018). Nevertheless, the inverse scenario is possible as the insider researcher may potentially derive additional insights by establishing a connection with the participant, consequently fostering an environment where they feel at ease to share more information openly during the interview. Thus, this will thereby lead to enriching the depth of the collected data.

Despite these aspects, difficulties may arise post-interviews and throughout the study implementation. Particularly, if the insider is affiliated with an organisation or community that possesses insights into professional experiences, the participant's relationship may be impacted beyond the designated interview period.

Furthermore, the researcher is tasked with collecting data from the participant's perspective, while exhibiting empathy and mindfulness throughout the data collection process. The researcher's capacity for empathic engagement contributes to a more profound understanding, therefore aiding the data analysis process and producing more reliable results (Troncoso et al., 2023). However, when a potentially harmful situation is identified, the need to assist the participant and provide support overweighs

the researchers' role. The researcher should also keep in mind that any physical or psychological support provided to the participant during the interview process may introduce bias into the results (Gray et al., 2017).

3.9 The Pilot Study

The purpose of conducting a pilot study is to serve as a preliminary investigation aimed at assessing the viability of the interview guides, thereby enhancing the reliability of subsequent results (Malmqvist et al., 2019). The primary objective of the conducted pilot study was to ensure the interview guides' clarity, consequently facilitating meaningful responses. Additionally, the pilot study played a crucial role in further assessing the validity of the questions while also gauging the approximate time required for the interview process.

The pilot study was conducted on the first nurse participant who accepted to participate in this study. A diary (Appendix O) was kept by the researcher and narrated the experience of the pilot study. The post-interview analysis revealed that the questions asked, comprehensively addressed all relevant aspects, with the respondent articulating both the study's aims and objectives. It was noted that at certain instances throughout the interview, the participant occasionally pre-emptively addressed certain prompts while recounting her experiences. Nonetheless, the researcher revisited these questions as outlined in the interview guide to ensure that all crucial details are mentioned by the participant. Despite this interview having the intended role as a pilot

study, the researcher incorporated this interview into the current studies' data analysis due to the pertinent and essential information gathered from the nurses' experiences.

3.10 Conducting the Interviews

Interviews were conducted during the period of November 2023 and January 2024. Participants were contacted via phone to schedule a date and time which was most convenient for the respondent to conduct the interview. The researcher ensured to accommodate the participants' preferences, consequently enabling them to make any necessary preparations in advance, while maintaining a minimal level of inconvenience. Moreover, interviews were conducted in either English or Maltese, subject upon the linguistic preference of the respective participant.

Upon recruitment of participants, and after consent was signed, interviews were conducted physically within a quiet area at the NPICU itself. Selecting a quiet area to carry out the interviews aided the participant to be able to reflect and discuss the questions with no distractions, thus aiding the data outcome (Bjørvik et al., 2023). Prior to commencing the interviews, the study's purpose, aim, and objectives were clarified, while a thorough delineation of the ethical considerations employed were highlighted. The researcher also ensured that the information letter that had been handed beforehand had been fully understood. Moreover, any queries regarding the information letter were clarified prior to starting the interview. The participants were also informed of their right to discontinue or withdraw from the interview at any stage. Interviews took approximately an hour to be completed and enabled comprehensive

exploration of key topics through open-ended responses. Moreover, prompts were also done with caution to provide a focus for the interview, while ensuring that the participants' views were not influenced in any way.

The interviews were audio-recorded with participants' consent. This approach was adopted to prevent the diversion of focus and attention from the interview by manual notetaking. Consequently, employing this methodology facilitated the transcription of information during the data analysis phase.

A reflexive diary (Appendix O) was maintained by the researcher to document important details such as the interview dates, times, and the researcher's pre-and post-interview thoughts. After completing interview sessions, supplementary notes were meticulously compiled to delineate nuances not captured by audio recordings, including observations pertaining to non-verbal communication such as body language.

3.11 Data Analysis

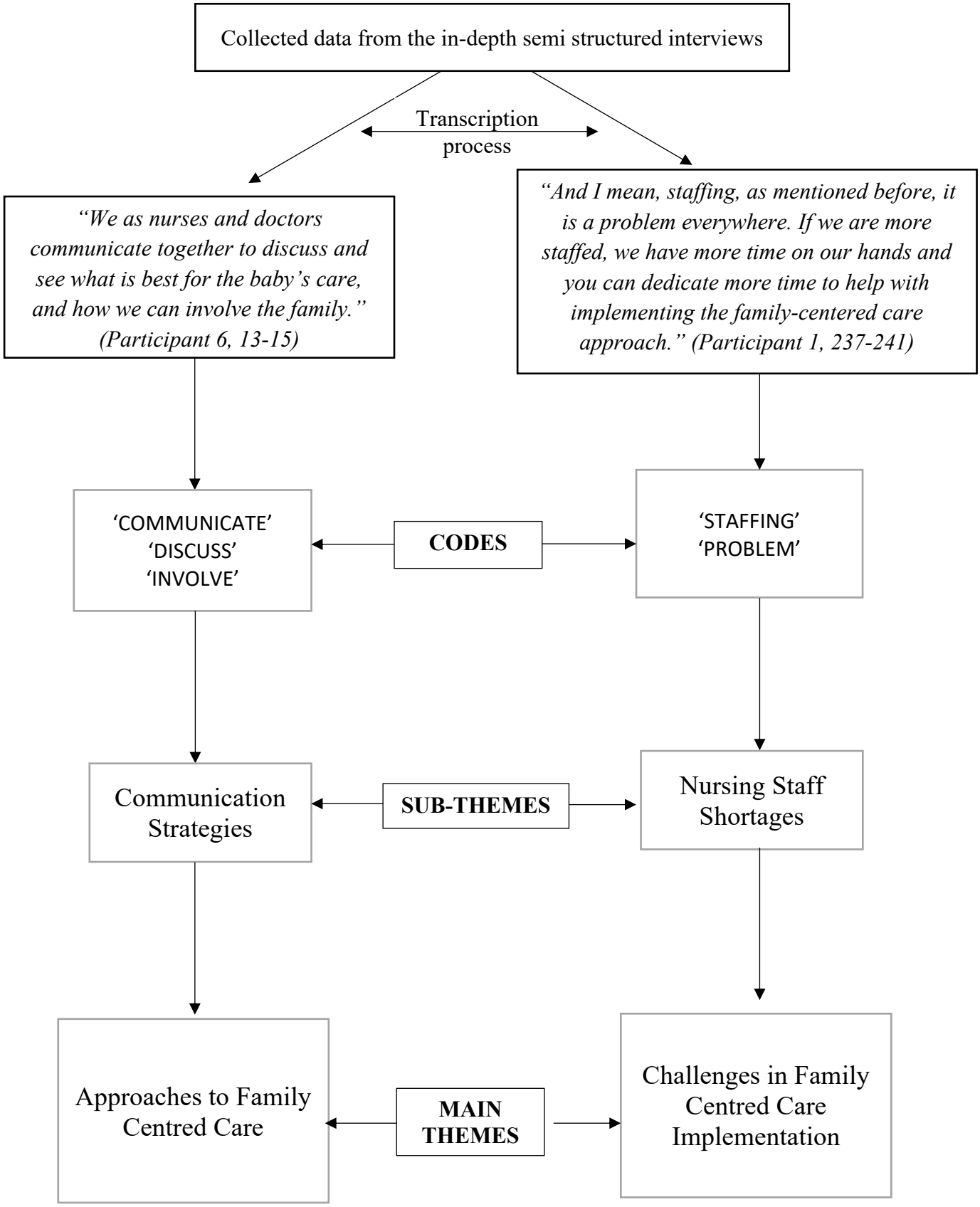
The data analysis stands as a pivotal stage in the research process, facilitating the transformation of acquired data into meaningful interpretations and significant conclusions (Raskind et al., 2019). Throughout the data analysis, deliberate efforts were undertaken to ensure credibility by capturing participants' expressions precisely, elucidating their perspectives, and interpreting their perspectives to enhance overall understanding (Elo et al., 2014).

This study implemented Braun and Clarke's (2017) thematic analysis (TA) framework, which emphasises the identification, analysis, and pattern recognition of qualitative data. Although this method suggests separate analysis of data sets to reach a comprehensive understanding, the researcher avoided interpreting these sets in isolation and instead considered their interconnection with the entire dataset systematically (Braun and Clarke, 2017).

The TA process involved a methodical examination of the data through incorporating familiarity with the dataset while generating initial codes, categorization, and the grouping of information into discernible themes (Braun and Clarke, 2017). Figure 3.1 below presents an example of how codes were generated into themes. This analytical approach was adopted since it illuminates patterns of ideas and aids in data interpretation (Javadi & Zarea, 2016). Following this, the identified themes underwent meticulous scrutiny and refinement to align with the primary objectives and research questions outlined in the study.

The analysis commenced with transcribing each audio recording. This preliminary phase in qualitative analysis, involves converting speech into written text to facilitate convenience for the researcher (Hecker & Kalpokas, 2024). Moreover, verbatim transcriptions were utilised since this allows the researcher to systematically review the content and identify any potentially overlooked valuable information, including behavioural reactions, tone changes and pauses (Hecker & Kalpokas, 2024).

Figure 3.1 A brief process of how codes were generated into themes.



The audio formatted recordings and the participants' responses were manually transcribed into the English language. Given the researcher's proficiency in both the Maltese and English language, transcription was conducted based on the language employed by the participants. Moreover, any direct quotations incorporated into this dissertation, were transcribed into the English language. The researcher's pre-existing knowledge concerning the research topic provides an inherent advantage due to familiarity with the scenarios discussed in interviews. Consequently, this familiarity, facilitates the effortless comprehension of medical terminology, thus simplifying the interpretation process during transcription. (Javadi & Zarea, 2016).

After all transcriptions were completed, the researcher began the process of open coding, during which distinct concepts were identified such as individual words and sequences to compile the data (Williams & Moser, 2019). Once different segments of the text were identified, they are categorised to encapsulate their meaning, with these categories subsequently undergoing further division into emergent themes (Nowell et al., 2017).

In the concluding phase of the analysis, the coded data underwent assessment, and all identified themes were analysed to determine any coherent patterns (Nowell et al., 2017). The aim of this process was to ensure whether the themes generated from the interviews aligned with those determined in the LR. Throughout the TA process, instances of data unrelated to the theme or that displayed excessive diversity were identified. Moreover, certain themes were organized further into additional themes, while themes with a limited value were eliminated. While potential future recommendations were recognised and outlined, a conclusion was articulated through the identified themes, consequently effectively fulfilling the aim of offering an

integrated and significant analysis. Table 3.3 below presents the incorporation of Braun and Clarke's six-step thematic analysis into the methodology of this research.

Table 3.2- The Six Key Steps from Braun and Clarke's Thematic Analysis Process Adopted for this Research Analysis

Braun and Clarkes' thematic analysis method steps	***Actions taken by the researcher to complete the thematic analysis***
Data familiarisation	o The data familiarization process involved playing audio-recorded interviews, typing verbatim transcriptions, and ensuring accuracy through multiple playbacks, particularly for unclear words. o Transcription included noting pauses, tone changes, emphasized words (underlined), and non-verbal cues such as laughter, with alterations in speed and tone documented for nuanced meaning. o The researcher, who conducted the interviews, performed the transcriptions for a detailed account of non-verbal cues and interactions, enhancing knowledge acquisition for the analytic process.
Generating initial codes	o The researcher employed a manual coding strategy since adopting a technological method might inadvertently impact the abstraction of themes from the data. o Since this is the researchers first experience in conducting such a research, concerns regarding the potential risk of being abstracted from certain themes, prompted the implementation of comprehensive measures to mitigate it. o Transcriptions were printed and subjected to thorough review so as to enhance the coding process. o Keywords or phrases encapsulating specific ideas or patterns were systematically highlighted, extracted, and documented in a separate file to facilitate the visualization of the data.
Generating themes	o After conducting multiple readings, comparisons, and reflections on the data, the researcher systematically refined, amalgamated, and categorised the generated codes into central themes. o A manual mind map was utilised to augment the visual representation and structural arrangement of the comprehensive dataset.

Reviewing the themes	○ The initial themes were re-assessed, adjusted, and elaborated as necessary. The data corresponding to each theme underwent a subsequent re-examination and reflection to ascertain the extent of alignment between the data and the evolved thematic constructs.
Defining and naming the themes	○ Themes were systematically arranged to present a cohesive and logical narrative, ensuring that each theme contributes distinct information that harmonizes effectively, while clearly defining and naming each theme. ○ Meticulous attention was given to preventing thematic similarities or overlap, ensuring each theme retains its distinctiveness.
Producing the report	○ The conclusive phase of the thematic analysis involved articulating the presentation of the findings in this dissertation in alignment with the identified themes. ○ While striving for coherence, clarity, and a systematic exposition, the researcher ensured that the findings were reliable and valid.

3.12 Enhancing Research Quality

Characterising a qualitative research study of high quality involves possessing a well-defined and justified research question, a conceptual framework, and a consistent engagement in critical reflection throughout the entire study (Kross & Giust, 2019). Lincoln and Guba's (1986) rigour criteria were followed to achieve trustworthiness within this study.

To ensure the study's credibility, prolonged engagement was employed through time investment in data collection processes, leading to a comprehensive understanding of the participants' perspectives (Nowell et al., 2017). Moreover, as advocated by Colorafi & Evans (2016), findings were linked to the conceptual framework guiding this study.

A clear account of the research process was presented for the judgement of dependability of this study. A pilot interview was done, giving the researcher the opportunity to further hone interviewing skills prior to the main study, thus increasing reliability (Kistin and Silverstein, 2015). Furthermore, audio recording equipment enhanced the interviews' reliability through ensuring precise documentation of interview content.

Confirmability was maintained through meticulous documentation of the entire research process, including recorded interviews. This assured that the findings would be validated or substantiated by additional researchers. (LibGuides, 2024).

Lastly, setting details and descriptions of events were presented, enabling readers to evaluate the potential transferability of this study's findings to other contexts through applicability (Elo et al., 2014). Thus, in-depth explanation of the research process and data analysis, including direct quotations were presented, allowing readers to comprehend and value the experiences and behaviours of the participants (Korstjen & Moser, 2018).

To improve transferability of study results, interviews were conducted until data saturation was reached (Enworo, 2023). Throughout this research study, the researcher believed that data saturation was reached by the seventh interview. However, two additional interviews were conducted to strengthen further data saturation (Saunders et al., 2018).

Ross & Zaidi (2019) states that all studies have limitations which represent weakness within the study, potentially affecting outcomes or conclusions. Therefore, despite the researchers' efforts, limitations regarding the methodology, and the utilised processes persist, nonetheless. These limitations will be addressed in subsequent sections of this dissertation.

3.13 Reflexivity

The researchers' main preconceptions relevant to this study include the major interest which the researcher holds in regards to neonatal nursing. Although the researcher has not had the opportunity to work within a Maltese NPICU as a qualified nurse, the 2-month student placement opportunity has given the researcher an insight into the concept of FCC within a neonatal unit. However, due to the lack of experience within

the unit, the researcher is presented with a challenge of understanding the nurses' perspectives thoroughly. Another concept considered by the researcher prior to this study was that despite knowing that FCC was being implemented in a local NPICU, certain characteristics and the extent to which this approach is being delivered are unclear. Therefore, the researcher believed that exploring nurses' perspectives based on their neonatal nursing care experiences might potentially aid in creating better insights into the reality of such practices.

Reflexivity was adopted to engage the researchers' reflective thinking process while comprehensively understanding the participants' perspectives and reactions in the FCC implementation scenarios. Although all recruited participants had similar characteristics, various perspectives and challenges were perceived and outlined differently. Different approaches and significance of FCC implementation to each individual participant were highlighted. Furthermore, it was noted that different perspectives could have potentially been affected by diverse personal principles, beliefs, and aspirations.

Ultimately, conducting this research helped the researcher in listening and understanding the participants' perspectives thoroughly, through a non-judgemental and compassionate manner. Furthermore, understanding the participants' daily challenges led to appreciate these challenges and efforts made from each nurse, which would not have been recognised without the participants' truthful sharing of their experiences.

3.14 Conclusion

This chapter provided a comprehensive overview of the methodology utilised in this study, delineating the approaches and methods employed from the design phase through data collection to analysis. Additionally, various methodologies applicable to addressing the research question, along with their respective strengths and weaknesses, were considered. Ethical considerations were also addressed while specific actions taken to mitigate ethical concerns were outlined. Furthermore, the data analysis procedures were meticulously clarified with regards to their application to this study, while Lincoln and Guba (1986) trustworthiness criteria were applied to ensure validity and reliability. The subsequent chapter will present findings categorised according to emergent themes from the collected data, followed by a discussion of these findings in Chapter 5.

CHAPTER 4

FINDINGS

4.1 Introduction

This chapter evaluates and presents results derived from the semi-structured interviews. It also seeks a deeper understanding of Neonatal and Paediatric Intensive Care Unit (NPICU) nurses' perspectives of family centred care (FCC) implementation within the unit.

Moreover, this chapter will reveal the primary themes arising from the data analysis. This chapter is structured according to the categories identified through the thematic analysis (TA), also segmented into sub-thematic elements.

Participants' quotations in the original Maltese language are showcased alongside an English translation for clarity. When participants responded directly in English or utilised English terms, only the English version is presented.

4.2 Study Participants

Numbers were assigned to the 9 recruited participants to safeguard their anonymity. In alignment with the eligibility criteria highlighted in the previous chapter, all nurse participants had worked at a Maltese NPICU for one year or more while also having experience in caring for patients who are under the age of one year.

As highlighted in the previous chapter, participants' demographics were not collected to maintain and ensure participant anonymity in the NPICU setting, where

identification could easily occur due to the small number of participants coming from a small NPICU participating in this study. Furthermore, the gender of the participants in this chapter and throughout the dissertation is not being divulged for ethical reasons.

4.3 Main Themes

The data analysis process followed Braun and Clarke's (2006) six-phase TA method for a qualitative approach. This analysis enabled the researcher to thoroughly investigate the perspectives of nurses while implementing FCC throughout neonatal nursing. Five main themes and sixteen subthemes emerged from the transcript analysis and are presented in table 4.1.

The main themes mirror the nurses' perspectives and were demonstrated by their capability to identify the facilitators and challenges during FCC implementation, along their adaptive strategies to surmount these challenges while maintaining a family-centred approach. The data analysis uncovered nurses' fulfilment while providing nursing care with a family-centred approach.

Table 4.1 The five main themes and sixteen subthemes

Theme 1: Approaches to Family-Centered Care	**Subtheme A:** Parental Education **Subtheme B:** Hands-On Practice & Physical Approaches **Subtheme C:** Communication Strategies
Theme 2: Challenges in FCC Implementation	**Subtheme D:** Time Constraints & Excessive Workload **Subtheme E:** Environmental Limitations **Subtheme F:** Nursing Staff Shortages **Subtheme G:** Cultural and Religious Diversity **Subtheme H:** Parental Fear & Anxiety
Theme 3: Factors Facilitating FCC	**Subtheme I:** Discharge Planning **Subtheme J:** Implementation of Rooming-In Room Services **Subtheme K:** Staff & Parental Participation in Training Courses
Theme 4: Adaptation Strategies for FCC Delivery	**Subtheme L:** Cultural and Religious Adaptive Practices **Subtheme M:** Empathising with Difficult Parental Circumstances
Theme 5: Positive Outcomes of FCC	**Subtheme O:** Enhanced Parental Confidence and Competency **Subtheme P:** Enhanced Infant-Parent Bonding **Subtheme Q:** Satisfaction Derived from FCC approaches in Neonatal Nursing Practice

4.4 Theme 1: Approaches to Family-Centered Care

Theme 1 describes the approaches that the NPICU nurses implement throughout neonatal nursing to reach the goal of implementing FCC in the unit. The participants stated that there are many ways and approaches on how to implement FCC effectively. Three subthemes emerged from this theme: 'Parental Education', 'Hands-On Practice & Physical Approaches' and 'Communication Strategies'.

4.4.1 Subtheme A: Parental Education

Subtheme A reflects the approaches employed by NPICU nurses to educate the parents on multiple aspects of the infants' care. Participants emphasised the importance of equipping parents with the necessary skills to care for their infant, not only during their admission but also upon discharge. Participant 3 reported that education starts from the minute parents enter in the unit, covering various aspects of infant care. The importance that parents understand staff correctly and use simple terminology was emphasised. This proactive approach ensures that parents are equipped with the necessary knowledge and skills to care for their child, especially in cases requiring specialised treatments. like feeding tubes or long-term medications are required. According to participants 3 and 5, HCPs strive to promote the well-being and safety of the infants while highlighting the importance of ensuring parental competence and comfort.

> *"On the other hand, you get parents which are interested in learning, and you must explain everything to them, in basic language." (Participant 3, 94-96)*

"When the baby is admitted here, we prepare and educate the parents about how to prepare a feed, how to give a feed to the baby, how to do a baby bath. We also educate on how treatment should be given. SO, we really have to make sure that they are competent to take care of the baby. We sometimes have babies who go back home with feeding tubes, so we have to ensure everything. Some vitamins that are prescribed are usually given for a whole year, so we have to make sure that the parents know how to prepare and administer the treatment."
(Participant 3, 23-31)

"Meta jiġu hawnhekk, we make them feel safe and comfortable kemm jista' jkun, u ntuhom informazzjoni, kemm jista jkun fuq il-baby tagħhom."
(Participant 5, 36-39)

"When they come here, we make them feel as safe and comfortable as possible, and we try to give them as much information as possible about their baby." (Participant 5, 36-39)

Participant 2 emphasised the importance of involving parents in their infants' daily care, even when they may initially feel hesitant. HCPs aim to empower parents to take an active role in practical tasks, thus fostering a stronger bond while instilling confidence in parents, ultimately enhancing the overall care experience.

"Involving them in the care, especially in the daily care, although there might be things which they are not able to do, there are many things that they are able to do, if we teach them and allow them and encourage them. So practical things, like holding the syringe for a nasogastric tube feed, showing them how to hold, how to comfort, giving and allowing them to hold, skin to skin, doing mouthcare, you know, there are many things, practical skills which are quite basic, but they are being educated for. It's a question of like empowering them to do what they are able to do."
(Participant 2, 16-24)

Participant 6 emphasised the importance of educating parents about medical procedures and equipment, since this may be alarming to them at first sight. Through thorough explanations, HCP enable parents to better comprehend and participate in their infants' care.

"Ahna Kull ħaġa li nagħmlu, bħala nurses u bħala tobba, ngħidulhom x'inhu jiġri, ħalli huma ikollhom ideja ukoll ta' x'inhuma l-affarijiet. Eżempju sempliċiment waħħalna ECG leads, ngħidulhom isma dawn ECG leads biex nimmoniterjaw il-heart rate tat-tarbija, u we go through it together." (Participant 6, 32-37)

"Everything we do, as nurses and as doctors, we inform them about the ongoing procedures so they would be able to get a clearer picture of what is going on, and maybe it will help them get an idea of what certain things are. For example, simply if we are going to connect ECG leads, we do inform them that they are ECG leads and they are going to be used to be able to monitor the baby's heart rate, and we go through it together." (Participant 6, 32-37)

Furthermore, participant 6 and 7 highlighted the importance of ensuring that parents are proficient in performing essential caregiving tasks before discharge. Through active involvement and guidance, HCWs empower parents to confidently care for their infant, promoting a smooth transition from hospital to home environment.

"Ġieli ninnutaw li l-parents għadhom ma ħaslux lill-baby, immorru fuqhom u nsaqsuhom "tixtiequ li għada nurukom kif taħsluh?" So nippruvaw indaħħlu FCC hekk. L-ewwel nuruhom aħna, imbagħad l-għada naraw li huma kompetenti biżżejjed li jagħmluha waħidhom. Xorta dejjem inkunu hemm biex nassistuhom. (Participant 6, 88-93)

"Sometimes we notice that the parents have not washed the baby yet, we approach them and ask them, "would you like us to show you how to wash the baby tomorrow?" So, we also try to implement FCC through this. We first show them ourselves, then the day after if we see that they are competent enough, they can try to do it themselves. We are still always there to assist them." (Participant 6, 88-93)

"... educating them is important, both knowledge wise and hands on with the baby, and regarding to the condition and how they will take care of the baby when they go home." (Participant 7, 17-19)

Participants 9, 2, and 7 emphasised the importance of educating parents on Basic Life Support (BLS) before discharge, especially for preterm babies due to a higher risk of sudden infant death syndrome (SIDS). The birth of premature infants results in parents

missing out on antenatal classes, highlighting the need for postnatal education about safety measures, feeding, and cardiopulmonary resuscitation (CPR).

"In the checklist, when we have a baby who is a preterm, or is at a higher risk of SIDS, we have to teach them the BLS prior to discharge. So then the parents are allocated with a nurse or a midwife, and we plan a meeting with the parents." (Participant 9, 85-88)

"Before they go home, I make sure that they are informed and knowledgeable in terms of safety and Basic Life Support. And the thing is that a lot of our patients being born prematurely, so the parents miss out a lot of antenatal informative courses due to the courses being held later during the pregnancy period, they might have started but they won't have had all the sessions." (Participant 2, 44-49)

"Before the babies get discharged, we'll give them a lot of education about feeding, CPR as well. You make sure that they're well educated, that they know how to do CPR, especially for premature babies because they're still at risk. And the leaflets and ballots will be also given to them." (Participant 7, 49-53)

Participant 3 underscored the importance of engaging Speech-Language Pathologists (SLPs) in evaluating infant feeding and offering dietary guidance to parents, particularly in prolonged cases where infants may stay until weaning. This approach aids in further education to parents to ensure adequate dietary intake for their babies.

"The SLP, she comes here and assesses how the baby is drinking, however, she will ask the mother what type of food she is preparing. For example here, with the long-term cases, sometimes they are here until they start weaning. So, they tend to tell the mothers and parents to like include cheese in his food to help with gaining weight. So they give them advise on what food to prepare and which nutrients are best in order to involve them in the care too." (Participant 3, 124-130)

Moreover, participant 8 emphasised providing comprehensive education to parents, ensuring that they are informed and equipped with necessary skills to safely manage their baby's care at home through fostering confidence and competence in caregiving.

"We teach them, even stoma care. So that's in the aspect which we try to get them involved. If the baby is more difficult, even example, for like a difficult feeder, they're pre terms, they might be difficult to feed. So, we try to get them involved where they, they come and they feed the baby, we give them the support. Stoma care, how to change the stoma, how to clean it properly, and NG tubes too. So, we try to teach them as much as possible when they go home with these kind of new skills for them, and how they can safely manage it at home."
(Participant 8, 29-36)

Lastly, participant 8 emphasised the importance of providing support and education to new parents, while acknowledging that routine tasks can be overwhelming. It was expressed that HCPs can mitigate parental anxiety and equip them with essential caregiving skills for their infant, creating a supportive environment which impacts parental competence in their caregiving responsibilities.

"From experience, like, you know, and seeing how it's, it's important to support and educate the parents in this time and helping them as we take it for granted because we know how to wash a baby, change a nappy, and give a feed. It's easy for us because for them, it might be something very difficult, something new, and they feel a bit of anxiety and whatnot."
(Participant 8, 92-96)

4.4.2 Subtheme B: Hands-On Practice & Physical Approaches

Subtheme B presents the importance of involving families in practical nursing care to nurture confidence and foster bonding between parents and their infants. By actively engaging parents in tasks like feeding, diaper changes, and providing comfort, they become empowered in their baby's care journey, leading to potential improvements in long term outcomes.

Participants 1, 3, and 4 all emphasised the importance of enhancing parent-infant contact through the utilisation of breastfeeding and kangaroo care as key physical approaches.

Participant 1 emphasised the importance of promoting parental bonding by encouraging them to hold their babies, except in cases where medical requirements dictate otherwise to ensure the baby's safety. Additionally, Participant 1 advocates for parents to practice kangaroo care, with efforts made to facilitate their participation in these practices. She also noted that nursing staff strive to offer this opportunity even to infants receiving CPAP or Opti Flow.

"We encourage them that they hold their babies unless they don't have any central lines which can be dislodged so as to give them some like private time with their babies." (Participant 1, 38-40)

"When educating, we really encourage the kangaroo care especially since research shows is very very beneficial especially with the preterm babies. Here we give even the opportunity to practice kangaroo care even if they are on CPAP, Opti flow, unless they have a central line due to risks of it being dislodged and then they can bleed" (Participant 1, 48-52)

Additionally, participant 3 highlights the importance of promoting breastfeeding or kangaroo care, with some consultants recommending nurses to actively encourage this practice.

'We try to ask them whether they would like to breastfeed their baby as to create a bond with their baby, however this depends on the requirements of their baby." (Participant 3, 10-12)

"We also tell the parents to do skin to skin with their babies, kangaroo care. Some of the consultants actually suggest to the nurses to encourage the parents to do skin to skin." (Participant 3, 14-16)

On the contrary, participant 4 highlights the necessity of encouraging parents to interact with their infants, suggesting techniques to enhance this bond. Participant 4 also notes the appreciation parents express towards these recommendations.

"We encourage them rather than to hold them and everything, we recommend that they just touch the baby and put their hands on them. Sometimes we also tell them, especially breastfeeding parents to put a cloth next to their chest. Then we recommend that they get it so the baby can get used to the scent of the mother." (Participant 4, 83-88)

"When you tell them to breastfeed, or when you tell them to hold them so the baby can smell them, it's like you're giving them the world. Skin to skin for example, we try to recommend and do it, when possible."
(Participant 4, 112-115)

On a different note, Participants 2 and 8 emphasised the necessity of incorporating parents in their infants' everyday care activities, with nurses and midwives advocating for family involvement to maximise family bonding possibilities through FCC. Participant 8 also highlighted the initiation of parental involvement in small tasks like nappy changes or washings.

"When they are here, we try to involve them, we try to involve them in the feeding, we encourage them to hold them as much as possible, so I think, it has to be that the nurses and midwives are kind of the advocates for the parental involvement, so while they're here to make the most of it and of the time."
(Participant 2, 94-98)

"We try to get the parents kind of involved with them, with the babies, maybe changing their first nappy or you know, having to wash the baby."
(Participant 8, 7-8)

4.4.3 Subtheme C: Communication Strategies

Subtheme C highlights the communication strategies employed by NPICU nurses to facilitate effective communication between the nursing staff and infants' families.

All participants emphasised the significance of communication in the NPICU, stating that without it, infant progress would be hindered. Additionally, participants highlighted that they prioritize maintaining communication among all MDT members and the infants' families.

"I must say that in this place, if there is no communication, both between the staff and also with the parents, there is no way forward. So the key to everything is basically communication." (Participant 9, 32-34).

"Interactions and communication are a very important thing in here" (Participant 3, 41-42)

"Aħna, bħala nurses u tobba nikkomunikaw flimkien biex naraw x'inhu l'aħjar għall-baby u l-kura, u kif nistgħu ninvolvu l-familja." (Participant 6, 13-15)

"We as nurses and doctors communicate together to discuss and see what is best for the baby's care, and how we can involve the family." (Participant 6, 13-15)

Through emphasizing the participation of the family's contribution in their infants' care, participant 2 accentuated the importance of integrating them as essential contributors to the caregiving team, while communicating transparently throughout. The importance of active listening and support was emphasised, allowing families to make informed decisions concerning their infants' care.

"The key principles I think are to get the involvement of the family, input of the family, to make them feel part of the baby's care and to help them and make them feel that their opinion has value towards the care of their child, that they are part of the team." (Participant 2, 6-9)

"I think they have to be listened to and supported and if they want to facilitate their dialogue will all professionals, being nurses, medical team, they have to have open communication with all the MDT".
(Participant 2, 9-12)

Additionally, as highlighted by participants 1, 5, 6, 7, and 8, nurses prioritise consistent and comprehensive communication with parents regarding their infants' care, underscoring the importance adhering to parents' rights by keeping them involved and informed throughout their infants' journey.

"So basically, whenever the parents come, we try to always give them an update on the baby, their weights, if something the feeds were increased, any change in their care plan or something. So, we try to keep them up to date as much as possible. If either the baby has deteriorated or something is going to happen, we will call them if they're not here. And even any questions, we try to answer their questions as best we can, in the knowledge that we have." (Participant 8, 22-27)

"U meta jiġu hawnhekk, nippruvaw nkellmuhom u nagħtuhom informazzjoni kemm nistgħu." (Participant 5, 26-28)

"When they come here, we try to talk to them and provide them with as much information as possible." (Participant 5, 26-28)

"Ovvjament, FCC importanti għax nikkomunikaw u nagħtu updates lill-parents kuljum. Nikkomunikaw magħhom ukoll fuq l-updates li jsiru daily." (Participant 6, 8-11)

"Obviously, FCC is important because we communicatea and keep the parents updated about their baby. We also communicate on a daily basis with the baby's parents with daily updates." (Participant 6, 8-11)

"When the parents come to see the baby, you always have to give the full information, it is very important for them to know what is going on with the baby. Especially regarding their weight, feeds, their condition, obviously, we have to tell the doctors as well to speak to them." (Participant 7, 7-10)

"We keep them really up to date, kind of on the situation of the babies, we, the doctors, the consultants, always keep them updated, they speak to them." (Participant 8, 11-12)

Participant 1 noted that communication takes place both in person during visiting hours and sometimes over the phone, when parents inquire about their baby. While participant 1 acknowledged limitations of giving brief information over the phone due to uncertainty about the caller's identity, it was noted that they get to know the parents. Nonetheless, the need for caution in sharing information remotely and the value of face-to-face communication were stressed.

"Usually, us we always give them the feedback, even if they call, usually we get to know them, so we tell them just the basics and then when they come here, we tell them everything. Even because they can get very worried and also certain information should not be given over the phone. Sometimes we also tell them that when they come the staff will explain further." (Participant 1, 180-185)

Participant 9 added on the emphasis of maintaining confidentiality of information shared through reassuring parents that details remain within the unit to maintain privacy.

"Here the parents can call all the time, so they can have an update quite frequently. So if they are worried about anything they can just call and they can put their mind at rest that everything is fine. We only give information to the parents. So that is another thing, they can put their mind at rest that in terms of information, it will not go anywhere beyond the unit and will be kept private." (Participant 9, 113-118)

Furthermore, participant 6 stated that upon admission, the family is oriented to the NPICU, provided with information about the baby's care plan, while visiting hours and contact details are communicated for parental flexibility.

"Upon admission, as soon as we go for the admission, wieħed mill-parents, li ħafna mid-drabi huwa l-father, jiġi magħna biex nuruh fejn ħa jkun, u nispjegawlu biex daħal il-baby, x'qegħdin nagħmlulu u l-pjan x'inhu. Noħdulu d-dettalji tiegħu ukoll biex aħna nibqgħu in contact magħhom. Apparti min hekk, intuhom l-visiting hours biex jiġu fil-ħin tagħhom u jkunu jistgħu joqgħodu hawn." (Participant 6, 140-146)

"Upon admission, as soon as we go for the admission, one of the parents, which mostly is the father, comes with us to show him where the baby is going to be, while also explaining why the baby has been admitted to the unit and what will the brief care plan be. We also take his necessary details so we can keep in contact with the family. Apart from this, we give them the visiting hours so that they can come at their own timing, so they can stay here." (Participant 6, 140-146).

Parental support was highlighted by participants 1 and 4. Participant 1 highlighted the NPICU staffs' commitment to providing continuous support for critically ill or dying infants, fostering support and trust among relatives. Similarly, participant 4 mentioned the necessity of updating parents and providing emotional support while creating a comforting environment within the NPICU.

"So we offer more support, but obviously, even if there is a critically ill baby or a dying baby, we do not go for our breaks. You feel that you need to stay with them since it's like now you started a process, and you have to stay there as you are engaged to the situation. And you get to be the parents' referral point, they got to know you, they trust you and they would always come back to you." (Participant 1, 196-202)

"You have to update them about their baby, how is he, how is he coping, if he is deteriorating, giving them enough support, offer them support out of NPICU, cause we can offer them psychological support, which is sometimes important but sometimes they refuse as well. So, the interaction is to make them feel at home away from home." (Participant 4, 17-22)

Participant 5 ensures that upon arrival, parents are welcomed by acknowledging their entrance in the unit, even amidst other responsibilities. This gesture helps parents understand that their presence is valued and respected.

"Sabiħ kieku jidħlu l-ġenituri u inti tmur fuqhom mall-ewwel. Imma jekk inti qiegħda għaddejja, trid tipprijoritiżża. Li nħobb nagħmel jien, naf li daħlu l-parents tal-baby tieghi, anke jekk mhux ma jkunux il parents tal-baby tiegħi dakinhar, ngħaddi min ħdejhom u ngħidilhom 'dalwaqt magħkom ta'." (Participant 5, 65-71)

"It would be nice if when parents come in, you can go and greet them in and talk to them immediately, but if you are doing something else you have to prioritise. What I like to do is that if I know that the parents of the baby I am caring for arrived, and even if they are parents who are not the parents of the baby I am caring for on the day, I always try to reach out and tell them "I'll soon be with you"." (Participant 5, 65-71)

*"Dik il-kelma żgħira, huma jarawk li għalkemm busy xorta qed tipprova, huma jindunaw li speċi ta inti tajt kas, u li daħal xi hadd."
(Participant 5, Line 71-73)*

*"That little phrase makes them see that even though you are busy doing something else, you did not disregard or ignore them and that you are aware that someone came in"
(Participant 5, Line 71-73)*

Moreover, participant 6 stressed the importance of providing parents with thorough explanations before or during medical procedures, ensuring understanding, reassurance, and involvement in their infants' care.

"Aħna bħala nurses nagħtu rationale għal kollox kważi, eżempju jekk ħadna blood test bil-yellow cap, ngħidulhom eżempju dan yellow biex niċċekkjaw il-bilirubin levels u biex naraw il-baby għandux bżonn il-phototherapy. Qisek trid tagħtihom ħafna rationales lill-parents biex tagħmel ċert li qed jifhmu, u huma jserrħu moħħhom li hemm pjan." (Participant 6, 169-174).

"As nurses, we usually give a rationale for nearly everything, like for example if we had a blood test with a yellow cap, we usually inform them that this blood test was taken to check for the bilirubin levels and to check whether the baby requires phototherapy. You have to give a lot of rationales to the parents to make sure that they are understanding throughout, and they would put their mind at rest that there is a plan." (Participant 6, 169-174).

Participants 2 and 4 highlighted the importance of parental communication during medical procedures, particularly in emergencies, highlighting the importance of obtaining parental verbal consent while immediately informing parents after emergency interventions, such as intubation.

"So from the onset, we're always communicating throughout. We take their phone numbers. When we have to carry out, for example an emergency intubation, we will make sure that we, if we have enough time, prior to carrying out the procedure, we will call them and obtain verbal consent. Otherwise, if it is an emergency procedure we will call them, and the consultant will give them regular updates."
(Participant 2, 148-153).

"If an emergency or anything happens, during day or night, we do call the parents and tell them. For example, if the baby deteriorated and we needed to intubate, we intubate, we settle the baby and then the doctors call the parents to inform them. Most of the communication or all of it is verbal communication".
(Participant 4 72-76)

communication can be easily missed. Despite this, informing parents prior to interventions is still the recommended practice, underscoring the commitment to keeping parents informed and involved in their infants' care.

"Ideally tipprova tinfurmahom qabel proċeduri, imma l-ħajja tant hija fast hawnhekk u hija ITU, li it can be missed unfortunately. Imma, ideally, they are informed."
(Participant 5, 32-34)

"Ideally, we always inform them prior to any intervention, however, things happen so quickly, and it is an ITU, that it can easily be missed unfortunately. However, ideally they are informed." (Participant 5, 32-34).

On a different note, participants 1 and 2 emphasised the importance of regular communication and parental involvement, stressing the importance of ongoing communication between medical staff and parents. This ensures informed decision-making while adhering to ethical principles.

"And usually, especially two of the consultants, they really make it a point. They make regular appointments especially with the long terms and the critically ill. Sometimes they make sure to see them every day or even if they need to take decisions like not for CPR or other decision, every day, they sit with them, they speak to them, counsel them, they give them regular updates." (Participant 1, 187-193)

"If for example they have discussed a way forward for the child, generally we would have several meetings with consultants, so it would not be the first time that they would have met the consultant, the consultant would have met them very soon after being admitted. They would discuss, discuss the condition, they would discuss the way forward, what progress is going on or what they hope to be, they would discuss with them when they are worried about something, if they notice any deterioration. So, they kind of keep them involved throughout the process, and having that information and being informed all along the way, it keeps them in line with similar ideas." (Participant 2, 122-131)

Lastly, both participants 5 and 9 emphasised the importance of clear communication and information-sharing with parents in the NPICU. Participant 5 highlighted the knowledge gap that often exists between medical professionals and parents, stressing the need for patience in explaining procedures taking place in the unit. Moreover, participant 9 emphasised that despite the potential lack of medical background knowledge, providing understandable information and involving parents in nursing care is of utmost importance.

"Interactions, meta jiġu il-ġenituri communication mainly, biex inti tagħti clear information lill-ġenituri u jekk ma jifhmukx terġa tkellimhom mhux tgħid 'uff" u tgerger li trid terga tfehemom. So, you double check li fehmuk'. (Participant 5, 47-49)

"Tinsiex aħna n-nurses u nafu x-xogħol, huma mgħandomx ideja. Hawn ġenituri li qas ikunu jafu li jeżisti NPICU. So, ma jkollhomx ideja li il-baby tagħhom jista' jispiċċa hawnhekk, għal tul ta' żmien ukoll" (Participant 5, 50-55)

"In terms of interactions we tend to focus on communication and on giving clear information to the parents, and if they do not understand, we try to explain all over again and not complain on having to repeat. So, you should also double check that they understood you." (Participant 5, 47-49)

"We can never disregard the fact that we are nurses, and we know our work while parents would have no idea about anything. There are parents who wouldn't even know that an NPICU exists. So, they wouldn't even have any idea that there is the possibility for their baby to end up within the unit, even for a long period of time." (Participant 5, 50-55)

"Participation is important, I think, from the patient's family end, mainly the parents and also from the staff, nurses and doctors who are present here. We understand that there are many people who come in here without having any medical background and are totally lost. So from our end, it is of utmost importance that we inform them and give them as much information as possible, with simple terminology, while also involving them as much as possible within the nursing care, especially prior to discharge." (Participant 9, 7-13)

4.5 Theme 2: Challenges in FCC Implementation

This section delves into the various obstacles encountered by nurses working in a Maltese NPICU during FCC implementation principles while focusing on the complexities when transitioning towards a more family-centered approach to healthcare delivery. Five subthemes emerged from this theme as follows: 'Time Constraints & Workload', 'Environmental Limitations', 'Nursing Staff Shortages', 'Cultural and Religious Diversity' and 'Parental Fear'.

4.5.1. Subtheme D: Time Constraints & Excessive Workload

Subtheme D represents the challenges nurses encounter when attempting FCC implementation in the NPICU while trying to cope with time constraints and heavy workloads. The collected data showed that time constraints and workload pressures increase challenges posed on nurses to involve families in their infants' care.

In fact, participant 1 expressed the challenges of managing a high workload in a busy ward, where the presence of numerous babies, parental involvement, and ward rounds make it difficult to provide adequate attention to each infant.

"Given the environment of our ward, we're very busy, a lot of sometimes in the room we have 13 babies. I think it's too much, with the parents and the ward round and everything going on, its challenging to manage everything around." (Participant 1, 27- 30)

"And if sometimes you have 3 babies to care for, I mean you give the full attention and you know you try, but you can only do your best." (Participant 1, 75-77)

Participant 1 also emphasised the influence of staffing levels on their capacity to deliver personalised care and education to infants and parents, attributing this difficulty to the increased workload placed on the nurses. In agreement with participant 1, participant 9 mentioned that the challenges stemming from understaffing indicate an unfavourable effect on workload management, consequently affecting the FCC implementation.

"A difference is definitely noted when we are actually staffed better or less busy as if we have only one baby or two to take care of, we can stay with them, show them and educate them about breastfeeding." (Participant 1, 77-80).

"In terms of workload, the worst is when we are understaffed." (Participant 9, 167)

Participant 5 also highlighted the significant challenge posed by a high number of infants and admissions in the unit, leading to a substantial workload. The limitation in time available to effectively communicate with parents due to these workload pressures was also highlighted.

"Challenges, ħafna babies u admissions." (Participant 5, 61-62)

"Having a lot of babies and admissions." (Participant 5, 61-62)

"Big workload, one unit, big work load, ħafna babies, mgħandekx ċans tkellem lill-ġenituri sew." (Participant 5, 64-65)

"A big work load. We only have one unit, big work load, a lot of babies, we do not have the time to talk to parents well." (Participant 5, 64-65)

Participant 6 also addressed the challenge nurses face when caring for multiple infants, especially when one requires urgent attention due to critical condition. The difficulty in conveying this prioritisation to certain parents who may solely focus on their own baby's needs was highlighted.

"Jekk għandek tlett babies u wieħed minnhom aktar critical mill-oħrajn, trid tibda mill-critical. U unfortunately, ċertu parents ma jifmhuwiex hekk, jaraw il-baby tagħhom biss." (Participant 6, 248-251)

"If you have 3 babies to care for and one of them is in a more critical condition than others, you have to commence with the baby who is more critical. And unfortunately, certain parents do not understand this, they just think about their baby." (Participant 6, 248-251)

Another challenge which the participants seemed to have experienced is that of trying to educate the parents, but not having enough time to do so. Particularly, participant 1 highlighted the challenge of dedicating extensive time to educating parents on breastfeeding, when there are multiple infants to care for while stressing the limitations imposed by time constraints. Participant 3 also emphasised the need to prioritise assistance and education amongst multiple parents despite employing FCC approaches throughout.

> *"You can't stay three quarters of an hour helping the mother to breastfeed when you maybe have three or four other babies to care for. You make sure that the mother and the father are educated well, but unfortunately you do not have all that time." (Participant 1, 261-265)*

> *"You might use the FCC approaches, however sometimes you cannot utilise much time with just one parent, because sometimes there are many other parents who need help too, so you need to prioritise." (Participant 3, 52-55)*

While keeping in line with participant 3's concerns, participant 8 discussed opinions of having parents present in the NPICU, noting that while some are capable and can

be trusted to manage their infant independently, others require constant supervision and support.

"Having the parents around, it does have its pros and cons, I would say. Sometimes you have parents that they know how to do things, no problem. And you can, like just leave them, you can trust them alone. But sometimes some parents, they want to do it but you have to be there. And when you're in a busy situation, it's kind of it's not that easy." (Participant 8, 56-61)

Participants 6 and 9 emphasised the obstacles nurses encounter in educating parents about infant care tasks, due to time constraints and higher priority workloads. Despite the constraints imposed by busy settings, both participants stressed the importance of dedicating sufficient time for parental education.

"Xi kultant ikollok bathing, u trid tgħallimhom kif tagħmel bathing lill-parents. Sometimes it takes us 30 minutes, sometimes it takes us 10 minutes, għax ma tistax toħodha easy, bil-Malti. Trid tispjegalhom pass pass, imma trid tkun iktar mgħaġġla sfortunatament, dawn mhumiex affarijiet ta għaġġla, imma xi kultant ikollok tgħaġġel ħabba li diffiċli tlaħħaq ma' kollox." (Participant 6, 53-39)

"Sometimes, we have bathing, and you have to teach the parents how to do bathing. Sometimes, it takes us 30 minutes, sometimes it takes 10 minutes, because you can't take it easy. You have to explain step by step, however, you have to hurry things up. Unfortunately, these things should not be done in a hurry, but sometimes you end up having to hurry since it is difficult to keep up." (Participant 6, 53-59)

"Sometimes unfortunately, we have to tell the parents to postpone certain things, like if we had to show them how to bath a baby today, and we are too busy, we'll have to ask them to postpone it to the day after." (Participant 9, 168-171)

4.5.2 Subtheme E: Environmental Limitations

Subtheme E highlighted a significant challenge identified by the participants: the lack of adequate physical space within the Maltese NPICU. Most participants noted the difficulty of accommodating all parents at the same time, due to the limited space and

overcrowding, consequently hindering the FCC implementation approaches effectively.

Participants 7, 3 and 1 all expressed concerns regarding the challenges raised from the crowded and limited physical environment within the NPICU. They noted the difficulties arising from the lack of space, particularly when accommodating a large number of infants. Participant 1 emphasised the difficulties caused by the absence of single rooms, while participant 3 highlighted the negative impact of overcrowding on FCC implementation.

"Sometimes we are very very busy and and if you have like 14 babies in one room, 1 incubator next to each other, we don't really have space to put the armchairs and sometimes it will be so overcrowded with two parents, the nurses and all the armchairs around, so sometimes it can get very difficult." (Participant 1, 71-75)

"The environment, the way it is, it does challenge us because we don't have small rooms, we have this big room, and you have many patients." (Participant 1, 86-88)

"Having a lot of babies and a small unit is very difficult." (Participant 7, 31-32)

"Other challenges include the environment and lack of space within the unit. For example, in the unit, it caters for many babies at the same time." (Participant 3, 50-52)

"Sometimes it can also get too crowded which makes it more challenging to implement FCC." (Participant 3, 55-56)

Additionally, both participant 4 and 5 pointed out that due to the lack of space, parents are sometimes even prohibited from having a chair to sit beside their baby, therefore diminishing their ability to participate in their infants' care.

"L'inqas ħaġa li nistgħu nagħmlu noffrulhom siġġu, ġieli qas biss ikollna siġġu. U imsieken jkun hawn mill-ġenituri ikunu għadhom kif ġejjin mix- xogħol, but that's that. (Participant 5, 39-41)

"The least we can do is offer them a chair, sometimes we do not even have a chair. Poor parents, sometimes they would come to visit their baby right after work, but that's that" (Participant 5, 39-41).

"Another challenge is lack of space, we don't have space, not even sometimes to put an armchair. So sometimes they cannot even hold a baby properly, and sometimes we have to move them, sometimes we have an emergency which we cannot allow them to sit down next to their child." (Participant 4, 19-32)

Participants 2 and 9 stated that the high noise levels and constant disturbances within NPICUs, pose significant challenges to providing a conducive environment for infant development and FCC implementation. These environmental factors hinder efforts to create a calm and soothing space necessary for the well-being of the infants and their families.

"Since here we are all mostly in one room, the noise level gets a bit high, the physical space, everyone is trying to get round between the space between one incubator and the other, it's not very family friendly." (Participant 2, 64-67)

"I would say that something which is most prominent is the baby's heart rate. When we have a baby with RDS, respiratory distress syndrome, in here this is another thing which I would say is an obstacle. The babies here need a very quiet environment. And here, we are in an ITU setting and unfortunately, the environment here does not provide that. So, the babies are not very calm, not as calm as they should be. The heart rate is the first thing that will show us this. So yes, if there are parents that will come here and spend more time, we can get the baby out of the incubator so they can hold him, you know." (Participant 9, 202-210)

Participant 2 believes that the physical layout of the NPICU is not favourable to implement FCC. It was noted that in facilities abroad, FCC is facilitated by transitioning from open areas towards single room, thus ensuring that parents have the privacy they need with their infants away from the hectic environment.

"Our physical space is not contusive to FCC, so if you had to look at FCC happening in centres abroad, you will see that they have moved away from the main open areas, and they tend to focus more on having single rooms for the patient and their families. So, parents are next to their infant, and it does not hinder any of the other happenings going on in the unit." (Participant 2, 59-64)

Participant 5 also added on by stating that due to the presence of one unit, all admissions have to be accepted despite their working conditions.

"U jkollna ħafna admissions hawnhekk ħabba li hawn NPICU wieħed, we cannot refuse u min jidħol jidħol, irridu naċċettawh." (Participant 5, 75-77)

"Additionally, we get a lot of admissions as in here, since we only have one NPICU, we cannot refuse any admissions and we have to accept all the cases admitted." (Participant 5, 75-77)

4.5.3 - Subtheme F: Nursing Staff Shortages

Subtheme F delves deeper into the challenges which nurses face regarding staff shortages, and how these challenges significantly impede their ability to provide FCC.

Participants 1 and 3 initiated by mentioning their concerns regarding staff shortages. Participant 1 emphasised how staffing deficiencies complicate managing routine tasks. Participant 3 reinforced this by stating that staff shortage leads to the increased responsibility of multiple infants simultaneously, making FCC implementation exceedingly challenging.

"You must prioritise as well, and the environment, and even the number of staff, because if an admission comes, time for treatment, things that come up, the routine in general. The routines have to be done and if you lack staff, I mean that's one of the most challenging." (Participant 1, 82-86)

"For sure one of the major challenges within the unit is staffing. Unfortunately, sometimes we are very short staffed so we do not have only one baby, we tend to have two or more. This causes much more difficulty to implement FCC." (Participant 3, 47-50)

Staffing shortages on the QOC provided in NPICUs was severely noted. Participant 4 voiced that staffing shortages results in nurses being unable to give individual infants the attention they require.

"Short of staff, too many babies. Sometimes we have critical patients, we have the leave and then we have the sick, and then you have to cope with the rest instead of having one nurse to one baby, we are one nurse to two babies or three babies sometimes also one nurse to four babies. You cannot really give the attention that the baby needs." (Participant 4, 125-129).

Furthermore, participant 6 indicated that inadequate nurse-to-patient ratios inhibit FCC implementation since as participant 4 said, nurses cannot dedicate sufficient time to each baby and their family.

"Ġieli,sfortunatament nurse to patient ratio jkun veru ħażin. Aħna suppost hawnhekk fl NPICU ikollna nurse patient ratio ta' one nurse to one baby ideally, imma ġieli nkunu anke allokati one nurse to 3 babies, so that really inhibits completely FCC, għax ma tistax completely tagħti full attention to one baby only" (Participant 6, 49-52).

"Sometimes unfortunately the nurse-to-patient ratio is very bad. Here in the NPICU the nurse patient ratio should be that of one nurse to one baby ideally, however we are even being allocated as one nurse to three babies, so that really inhibits FCC since you cannot completely give full attention to one baby only." (Participant 6, 49-52).

Participant 4 also stated that the nurse-to-patient ratio fluctuates, while acknowledging that this issue extends beyond the NPICU and affects the entire hospital.

"Nurse patient ratio sometimes is what it is, but we are aware that this is within all the hospital." (Participant 4, 129-130)

While relating to the situation on the interview day, participant 7 implied the necessity of adequate staffing levels, to facilitate nurses in caring effectively for multiple infants while accommodating parental involvement.

> *"Today, I was originally going to have three babies, but now they sent a reliever nurse, so I have two. So, I think if the parents came at the same time, it would have been a bit difficult." (Participant 7, 38-40)*

The connection between staffing and the successful FCC implementation was evident. Participant 9 emphasised that timing and staffing are barriers to FCC implementation. Without adequate staffing, nurses are unable to allocate essential time and resources to support FCC initiatives fully due to other priorities.

> *"So I would say that timing and staffing are the biggest barriers to FCC implementation." (Participant 9, 172-173).*

> *"Staffing is also a big problem, a very big problem. Basically when we are less staff it obviously makes it more difficult for us to be able to give time to the parents." (Participant 9, 64-66)*

In light of other participants' statements, participant 1 encouraged the need for additional staff to lessen the burden on nurses, while ensuring that they can dedicate more time to implementing FCC.

> *"And I mean, staffing, as mentioned before, it is a problem everywhere. If we are more staffed, we have more time on our hands and you can dedicate more time to help with implementing the family-centered care approach." (Participant 1, 237-241)*

Participants 6 and 8 emphasised the necessity of expanding facilities and staffing to accommodate the growing demand for neonatal care services. Participant 6

highlighted that adequate staffing is essential for optimal patient care while maintaining sustainability of nursing staff.

"Staffing, għandna bżonn ħafna iktar staff milli qegħdin bħalissa. Staffing qatt mhu biżżejjed, għax bejn sick leave, bejn vacation leave,u ġieli maternity leave, hawnhekk qegħdin ħafna nisa so l-maternity leave huwa użat frekwentament hawnhekk." (Participant 6, 281-284).

"Staffing, we really need a lot of more staff than we are at the moment. Staffing is never enough in here, because with sick leave, with vacation leave and sometimes even maternity leave, in here we are a lot of female nurses, so maternity leave is used quite frequently in here." (Participant 6, 281-284).

"We also need more staff. If we had a bit more staff, we would be less over worked. I mean we need more staff, and a new ward." (Participant 8, 233-234)

4.5.4 Subtheme G: Cultural and Religious Diversity

Subtheme G presents the barriers imposed on nurses throughout FCC implementation due to different cultures and religious beliefs. Participants reflected on the complexity of navigating different beliefs, practices, and language barriers, which impact parental involvement and decision-making processes in the NPICU.

One recurring aspect emphasised by the participants is the influence of cultural beliefs on parental engagement. Participants 1 and 8 shared insights into cultural differences. Participant 1 noted that certain cultural backgrounds influenced parental reluctance to visit or participate in the infants' care due to their condition.

"What we see most, we can mention like, if they're Eritrean, if their baby is very bad, they refuse to come and see them. And sometimes we have serious problems with Syrians. If the baby has a problem, they won't come, they won't visit, they won't allow the mother to come or to visit alone. It may be both a social issue and it may be their culture."
(Participant 1, 134-139).

Participant 8 also recounted instances where cultural beliefs led parents to abstain from visiting their infant with medically complex conditions or impairments. She highlighted how parents struggle with accepting their infants' condition, sometimes resulting in abandonment. Furthermore, Participant 8 emphasised that these cultural barriers hinder FCC implementation. To address these challenges while safeguarding their infants' wellbeing, social workers are involved to understand different cultural beliefs and family dynamics, while creating a plan.

"We've had plenty of, I don't want to name a specific religion, which we've had, where the baby is disabled or they have certain complex complications where the parents don't come and visit the baby, they don't call so it's kind of hard. But it's a cultural thing, because they don't accept the child, so they don't feel good. A social worker comes involved, and either the baby, if we've had cases where they just abandon the baby here and then they're into foster care adoption so it is a bit difficult". (Participant 8, 125-132)

Cultural and religious diversity present ethical dilemmas where parental beliefs conflict with the medical teams' recommendations. Participant 8 noted ethical dilemmas arising from various beliefs. Medical interventions like blood transfusions, caused conflicts between the medical team and parental choices. It was noted that team-interventions are required to ensure the infants' best interests, despite the parental entitlement in medical decision making.

"One time I know we've had one or two cases with a baby needing a blood transfusion, everyone knows the religion in which they are against it so we had a bit of an issue. But obviously since he's a child, they do not accept for the benefit of him, it becomes a police case as you are declining something for the benefit and health wise of the baby. So, then the parents do have the right to decide, but if it's in a life-or-death situation, the consultant comes kind of in the middle of it, it can be decided that this is a police case since if the baby's going to die without a blood transfusion, it's not ethically correct."
(Participant 8, 135-144).

Participant 4 highlighted the multiple religious beliefs amongst NPICU parents, noting that spiritual assistance from their religious leaders may be pursued to pray for their infants' well-being. It was also explored how different beliefs influenced the medical care offered.

"People have different beliefs, sometimes they want to get their priests, or they call them to pray on their child. Sometimes, when we encounter different beliefs, it affects the way we handle things. For example, if we have a child who is quite unwell, we usually baptize ourselves. But like for Muslims, we do not really know their cultural procedures, so we have to ask the parents and you have to think about the way you are going to ask them."
(Participant 4, 50-56)

Additionally, participant 1 emphasised the frustration of considering cultural understanding with parental autonomy through informing and educating the parents for informed decisions.

"Sometimes, it's a real hassle, it's a really big hassle, you explain to them, and you tell them, and you inform them to be able to make an informed decision. At the same time you have to respect their culture, but it can get really frustrating."
(Participant 1, 161-164)

Participant 2 highlighted the importance of HCPs being well knowledgeable about various cultural values and beliefs, ensuring alignment with families' preferences.

Additionally, participant 2 explained efforts in understanding parental concerns, and if necessary, seek legal support to safeguard the infant's health.

"There are various cultural issues, certain cultures might want things to be carried out a certain way, and if we are not knowledgeable about this then we cannot even offer it. Of course, the less they ask, which they might not, we are not catering to it fully, so certain cultures have different values and beliefs which can affect the care." (Participant 2, 118-122)

"If there really is a conflict, they will meet up again and the doctors will do their best to see why the parents are not agreeing. And they will try and get to the bottom of it. If there is no basis, no grounds, then there are certain things, and it's seen as detrimental to go with the parents are going forward, then the doctors will explain again, they will say that this is the way of care that they have to go about, and if necessary, the will get support from the court, so they will get legal advice and backing up for their decision." (Participant 2, 132-138).

Participant 5 reflected about nurses' crucial role in bridging cultural gaps and facilitating effective communication in the NPICU. She emphasised the significance of listening to parents from different cultural backgrounds while corresponding their preferences with the infants' best interests.

"Tipprova tifhem u tisma' x'jixtiequ u x'jgħidulek il- parents, u l-ewwel, number one priority jibqa' l-patient li huwa l-baby. Imma inti ovvja, bħala nurse il-parents trid tagħti kas x'jixtiequ huma." (Participant 5, 104-108)

"You try to listen and understand to what the parents are saying, and the number one priority must always be the patient, who in this case is the baby. But obviously, as a nurse we have to take into consideration what the parents would like to happen." (Participant 5, 104-108)

Participants 2 and 7 discussed how language barriers further compound the challenges of cultural diversity in the NPICU. Participant 2 specifically emphasised the difficulty

of effective communication with parents who may not grasp medical information due to language differences.

> *"Sometimes we have a language barrier cause even though we might think that the parents are understanding, then we go back and communicate again, and we realise that they did not understand, you know, so sometimes it is a bit difficult, language barrier wise." (Participant 2, 114-117).*

Participant 7 also highlighted how language barriers can hinder the provision of culturally sensitive care and consequently, affects FCC.

> *"We have a lot of language barrier sometimes, that something may be cultural that affects the FCC implementation." (Participant 7, 65-66)*

Participant 3 emphasised the importance of noticing gender dynamics, noting that cultural norms in which fathers might hold a dominating role in decision-making require inclusivity. Involving both parents in decisions about their infants' care is necessary, regardless of cultural standards that dictate gender roles.

> *"We also tend to find fathers that ask the nurse to explain to them rather than to the mother as they state that they understand more. But these cases are mostly found in countries where the men are considered to be more dominant. When we get across with these cases, we still talk to both the mother and the father, because after all both of them will be caring for the baby." (Participant 3, 96-101)*

4.5.5 Subtheme H: Parental Fear & Anxiety

Subtheme H represents the participants' opinion regarding how parental fear inhibits FCC implementation. Participant 4 highlighted that FCC implementation can lessen parental fear, potentially creating struggles to understand information or

overwhelming feelings. It was also stated that specific strategies and guidelines are necessary to mitigate this barrier.

> *"Implementing these key principles, leads to reducing the fear of parents when handling their own child." (Participant 4, 9-10)*

> *"A barrier to FCC is the fear of parents, because sometimes they have a fear and they do not recognize what you are telling them." (Participant 4, 26-27)*

Participant 1 emphasised the importance of addressing parental worries and fears through guidance and support. The significance of empowering parents to become more involved in their infants' care was highlighted.

> *"We also clarify any queries, some of the parents they will be a bit concerned and afraid, so we try as much as possible that we help them to be more hands on, in order to help them become more confident and independent in their own ways." (Participant 1, 44-48)*

Moreover, participant 3 noted fluctuating parental comfort levels when handling their infant in the NPICU. While ensuring parental education, participant 3 acknowledged that parents may feel at ease with certain procedures or tasks, while others might still fear handling their infant.

> *"Obviously, we tell the parents, some parents might not feel comfortable, others might do it." (Participant 3, 18-19)*

Participant 8 highlighted that certain medical interventions affect parental fear, while implying that professionals must recognise and address these concerns sensitively. Informing and supporting parents thoroughly aims to promote active involvement in their infants' care.

"One, it's quite a shock for them to have these things and for us it's something maybe normal, an NG tube, but for them and then you have like the parents that are like scared of these things." (Participant 8, 36-38)

Lastly, participant 4 and 5 stressed the significance of parental involvement in the NPICU, highlighting that parental fear can considerably inhibit FCC implementation. Furthermore, both participants discussed how communication and involvement with both parents is ensured.

"Meta nagħti baby fuq il-ġenituri, il -maġġoranza tidħol il-mother l-ewwel. Imbagħad waqt li jkun fuq il-mother, ngħidilha issa xħin tkunu tixtiequ tbiddlu, għidli u ngħinkom. Għax anke ġieli il-papa ma jagħtux dik l-inizjattiva li jkunu jridu jerfgħuh. Qisek jekk ma toffrilhomx inti, jew tagħtihom l-ideja, qishom iduru lejk u jgħidulek "Eh nista nerfgħu jiena?". U jien ngħidilhom "Mela ma tistax terfgħu? tieghek ukoll hu". Imma qed tifhem, hemm drabi fejn trid tagħtihom l- ideja inti. (Participant 5, 202-209)

"When I give a baby to the parents, usually the mother goes in first. Then while the baby is on the mother, I inform the mother to let me know when they would like to switch to help them around. This helps as sometimes the fathers do not take the initiative to hold the baby too. Sometimes, if you don't offer to the father to hold his baby, they look back at you asking, "Oh so I can hold the baby too?'. Obviously, I answer with "Of course you can, the baby is yours too". So, yes, there are instances where you have to give them the idea." (Participant 5, 202-209)

"I believe that every parent should be involved, but as I said, sometimes they are afraid." (Participant 4, 81-81).

4.6 Theme 3: Factors Facilitating FCC

This section presents factors known to facilitate FCC implementation. Three subthemes emerged from this theme as follows: 'Discharge Planning', 'Implementation of Rooming-In Room Services' and 'Staff & Parental Participation in Training Courses'.

4.6.1 Subtheme I: Discharge Planning

Subtheme I delve deeper into approaches taken for discharge planning. Particular focus on the discharge checklist was made. Participants highlighted the importance of ensuring parental competency to care for their infant after discharge.

Participants 3, 4 and 6 emphasised the importance of discharge checklist utilisation, in providing parents with the essential skills and knowledge to care for their infants after being released from the NPICU.

"In regards to FCC, we also have a discharge checklist, basically, we have to make sure that when the babies leave from here, the parents are competent to take care of the baby completely." (Participant 3, 21-23)

"We have the discharge checklist which is helpful and guides us to make sure that parents know how to do all the things on the list before the baby is discharged, so they get acquainted with their child." (Participant 4, 38-40)

"Għandna checklist, li upon discharge, nittekiljawha mal-parents. Eżempju, bathing of the baby. Naraw li l-parents huma kompetenti li once li l-baby sejjer id-dar, il-parents se jaħsluh sew. (Participant 6, 38-40)

"We have a checklist, that upon discharge we tackle directly with the parents. For example, bathing of the baby. We make sure that the parents are competent and that once the baby is going home, the parents are going to wash the baby well." (Participant 6, 38-40)

Additionally, participants stated that throughout discharge preparation, parental competency is assessed. Participant 9 stated that this parental assessment ensures that parents are proficient in all aspects of their infants' care.

"Prior to discharge we make sure that they know how to bath a baby properly, how to administer treatment at home and that they are competent to administer it. There is a whole checklist. Sometimes there are instances where we have to send a baby back home with an NG tube, so we make sure that they are capable of taking care of the tube, while administering feeds and treatment. So, there are quite a lot of things which we need to ensure, there is a whole checklist of things to ensure prior to discharge." (Participant 9, 13-20)

Beyond discharge checklists, participant 4 stated that nurses provide additional resources and support to parents through a discharge booklet, serving as a valuable reference source for parents.

"Our practice nurse just did a booklet which is handed to parents and can eventually help them as a reference source on discharge." (Participant 4, 40-42)

Participant 5 highlighted the importance of assessing parental competency before discharging infants from the NPICU. As noted, when parents are not adequately prepared to care for their infant at home, discussions with social services are initiated. This proactive approach ensures that infants are discharged into safe environments, where their care needs are met effectively.

"Jekk naraw li mhumiex capable li jieħdu t-tfal meta jitilqu minn hawn, inkellmu lis-social services. Iġifieri fuq hekk, dejjem we make sure li jekk it-tarbija sejra id-dar, sejra id-dar safe." (Participant 5, 22-25)

"If we notice that they are not capable of caring for their baby when leaving the NPICU, we discuss with social services. So, I must say that we always make sure that if a baby is going home, she is going home in safe hands." (Participant 5, 22-25).

Participant 9 highlighted that the overarching aim of the nursing and medical team is to guarantee the safety and well-being of the infant upon returning home, through comprehensive education within a family-centred environment.

"In here, we are always aiming that this baby is going home, and we think of what we can teach and show the parents what to do in order for this baby to be comfortable at home." (Participant 9, 90-92)

Lastly, Participant 6 stated that prior to an infants' discharge, a MDT meeting is held. Participant 6 implied that by involving all MDT professionals and parents, a care plan can be tailored to meet the specific needs of the baby and its family, ensuring a smooth transition upon discharge.

"Kull baby li jkun riesaq lejn id-discharge, nagħmlu MDT meeting biex inkunu nistgħu naraw x'inhu l'aħjar għall-baby waqt li jkun hawn il-parents preżenti wkoll. Jkun hawn in-nurse tal-baby, jkun hawn it-tobba li jieħdu ħsieb il-baby, u jkun hawn il-parents involuti wkoll ħalli jekk ikollhom xi mistoqsijiet jiġu tackled dak il-ħin, which is very good in my opinion. Il-parents ġieli jkollhom xi questions, u dan il-meeting jagħtihom reassurance." (Participant 6, 15-22)

"Every baby which would be approaching the discharge period, we organise a MDT meeting in order to see what's best for the baby, while the parents are present too. This meeting would involve the nurses, the firm caring for the baby and also the parents, so if there are any questions which need to be done, these are tackled instantly, which is very good in my opinion. The parents sometimes have questions, and this meeting also helps the parents to get reassurance." (Participant 6, 15-22)

"Jekk il-baby wasal għal discharge, nidħlu ġo din il-kamra, ikun hawn il-parents, in-nurse tal-ġurnata u t-tobba preżenti, u jkun hawn diskussjoni għaddejja u nitkellmu dwar il-pjan tat-tarbija." (Participant 6, 174-177)

"If the baby has come closer to being discharged, we come in this room, usually there are the parents, the caring nurse of the day, and the doctors present, and there is an ongoing discussion, and we talk about the care plan for the baby." (Participant 6, 174-177)

4.6.2. Subtheme J: Implementation of Rooming-In Room Services

Subtheme J explores rooming- in room services and how this service aids in implementing FCC.

Participants 2, 3 and 8 all emphasised the significance of rooming-in rooms in supporting families with babies who have undergone prolonged hospital stays and complex medical procedures.

Participant 2 mentioned that this service facilitates a gradual transition to home care, allowing them to stay overnight comfortably with their baby. By involving parents in the discharge process, the importance of holistic support for families through FCC is emphasised.

> *"What we have as well is what we call the rooming in rooms, so we have the facility that if we have a patient who has been here for a long time and who has had quite a complicated process, we help them and involve them in the discharge to make sure they have the confidence to take care of the baby prior to being discharged, so they would spend the night, or maybe two nights with the baby, they have the room, they have their beds, they have a kitchenette, they have a bathroom. So, like that we are supporting them and making sure that they are comfortable with caring for the child before they are going home, so this is something positive that we do" (Participant 2, 98-106).*

Participant 3 noted that staying overnight in a designated room simulates a home-like environment, promoting familiarity and comfort. Additionally, Participant 3 stated

that parents are informed to communicate any concerns during their stay, revealing the ongoing support through FCC.

> *"We offer rooming in, when a baby is born preterm and spends a lot of time here, we tend to offer rooming in. The babies' parents stay overnight here, we have a room, they sleep there. Basically, we tell them you are like home there, you have to take care and prepare your baby as if you are home. We also tell them to let us know if they have any problems during this rooming in time." (Participant 3, 56-61)*

Participant 2 stated that due to limited resources, rooming-in services are offered to those infants and families with more complex cases, ensuring parents have more time to reach discharge readiness.

> *"We do not offer it to everyone due to limited resources, however we do offer it to those who have complicated cases, maybe for those who are going home, maybe on oxygen or have a feeding tube, those who had complicated surgeries or still have a stoma in situ, you know, those type of discharges" (Participant 2, 106-110).*

Participant 3 highlighted that they try to understand parents who are anxious about returning home and caring for their infant independently, nonetheless.

> *"If we notice that some parents are very anxious and are not fully capable of providing the required needs to their baby, we try to offer this rooming in service. Through this service, we give them reassurance before going home" (Participant 3, 62-65).*

Despite the lack of rooming-in rooms present in the unit, participant 3 and 8 agreed that the rooming in service is a very good approach which allows FCC to be implemented effectively.

> *"This rooming in service is also a very good resource which allows FCC to be implemented" (Participant 3, 73-74).*

"There are also the rooming in services which it's quite good. I mean, for family centred care, I think because the fact that they have their own privacy, but they get chosen to do it in a way they'll have to be particular cases." (Participant 8, 98-101)

4.6.3 Subtheme K: Staff & Parental Participation in Training Courses

Subtheme K accentuates the importance of staff and parental participation in training courses, expanding their knowledge for better delivery of neonatal care. To enhance and share their knowledge through FCC, training courses are invaluable for HCPs. Furthermore, this subtheme explores participants' perspectives on including families in neonatal care courses, contributing to better care on discharge.

Participant 5 mentioned that they recently had an opportunity to go for a course named as FINE (Family and Infant Neurodevelopmental Education) course, while the significance of this course was highly emphasised.

"Ftit mill-istaff għadna kif għamilna kors, jgħidulu l-FINE,u fih tgħallimna ħafna fih li kemm għandna nuqqas fl-attenzjoni li nagħtu lir-relatives u kemm għandna bżonn indaħħlu ir-relatives fil-kura tal-baby tagħhom." (Participant 5, 8-11)

"Some of the staff just attended to a course, known as the FINE course during which we learnt a lot in regards to the lack of attention we give to the relatives and made us more aware on how much it is important to increase the implementation of involving families within their baby's care." (Participant 5, 8-11)

Moreover, Participant 1 reflected on the same course, stating that it aided in increasing knowledge regarding infants' neurodevelopment, while ensuring knowledge sharing and professional development amongst the staff. Ultimately, this approach aims to improve the QOC provided to infants while implementing FCC.

"Recently we had a course, the senior nurses, in regards to the neurodevelopmental of the infants, and it was really really good. There are courses running and now we have to present like a small presentation so we can teach to the others who did not have the opportunity to attend" (Participant 1, 122-126).

In agreement with Participant 1, participant 5 acknowledged efforts put in by the unit's practice nurse, for this course to be successful while enhancing staffs' knowledge to current information.

"Għandna dawn il-korsijiet, bħal FINE li jiġi offrut mill-Gvern, thank God għall- practice nurse tagħna għax ġabitulna b'xejn ukoll, u it was a very good course u għallimna ħafna" (Participant 5, 82-85).

"We have courses, such as the FINE course which is offered by the Government, thank God to our practice nurse, who managed to apply for us free of funds as well, and it was a very good course which we learnt a lot from" (Participant 5, 82-85).

"L-opportunita' għalina li nkomplu dawn il- courses, to keep giving us information u li nżidu l-awareness fuq l-importanza ta' FCC. U dawn il-courses jgħinuna nibqgħu up to date ma' new technologies and information." (Participant 5, 93-96)

"The opportunity for us to keep attending these courses which constantly help us in gaining knowledge and awareness about important practices of FCC. And these courses also help us to keep up to date with new technologies and information." (Participant 5, 93-96)

"Il-FINE affetwana u għamel improvement kbir, minn lejl għal nhar. Anqas temmen kemm għamel improvement (Participant 5, 219-221).

"This FINE course really affected us and really helped us improved overnight. One wouldn't believe how much this course has helped us to improved." (Participant 5, 219-221)

So, dawn huma ir-riżorsi mportanti fil-verita', l'aqwa li dejjem nibqgħu up to date mal-courses, u naraw x'inhu effettiv għalina." (Participant 5, 224-226)

"So, these resources are important in reality, as long as we keep updated with the courses and to see what is effective for us." (Participant 5, 224-226)

Furthermore, Participant 5 emphasised the underestimated value of such courses, while praising their effectiveness. She also stated that nurses shared knowledge between each other, thus enhancing the staff's knowledge.

"Unfortunately tgħidli allura dan l-imbierek FINE li mexxiekom ħafna fuq FCC? Ngħidlek iva. (Participant 5, 214-216).

"Unfortunately, one would tell me is it really this course which really put you forward towards FCC? I would say yes." (Participant 5, 214-216)

"U tieħu gost tara l'kulħadd imexxi l-kelma u fuq id-differenza li għamel fin-knowledge tagħna." (Participant 5, 221-223).

"It really makes me happy to see everyone talking about it and about the difference it's made while increasing our knowledge." (Participant 5, 221-223)

Both participant 1 and 9 highlighted that if more specified courses like the FINE course are offered, it will be beneficial to improve one's knowledge about different aspects.

> *"More knowledge and maybe they can offer more seminars or maybe courses like what we recently did in this course, it will be beneficial. It is very important, and once you listen and you know, you automatically try, and you work more towards the implementation of the approach as you are more aware about it" (Participant 1, 230-234).*

Furthermore, Participant 9 stated that throughout the time working as a nurse, only courses about direct nursing practice were offered.

> *"Maybe we would be provided with more courses about these things like FCC, as specific courses on these things, we never had as we usually have more courses about the nursing practice. Having courses would make you more aware about certain things, and it really does make a difference" (Participant 9, 218-221).*

On another note, Participant 9 mentioned that nursing staff are provided with life support courses, allowing them to educate the families with life-saving information on discharge.

> *"In terms of courses, we are provided with the NLS, which is the neonatal life support, and this is done every 3 years. Also, the paediatric BLS is done every 3 years, these courses are very important as at the end of the day they help us to educate the parents. So without these courses, you cannot really step ahead into educating the families with certain life-saving information".*
> *(Participant 9, 80-84).*

Participant 3 noted that during the induction program, FCC and its' approaches were explained, however, suggested that more courses focused on FCC should be provided.

> *"In the induction programme we also spoke about FCC, however more training in regard to FCC should be done" (Participant 3, 194-196).*

Participant 7 highlighted the lack of formal courses focused on FCC, while emphasising the importance of education for new staff members, ensuring that they are equipped with the necessary knowledge and skills to effectively deliver FCC.

> *"I mean, it's always better, you know, to receive education, even if you're relatively new staff here. I mean, if you ask, okay, they tell us they have to do this and that, but we didn't have any course about the education we need to give, you know and in our nursing course we don't have this, so others have to teach us you know. So maybe the new staff that comes in, they should do a lecture about this, I think it will help as well, while helping to create more awareness as well" (Participant 7, 118-124).*

On another note, Participant 4 emphasised the need of offering BLS courses specifically designed for parents of preterm babies born before 32 weeks gestation. This demonstrates a proactive strategy to educating parents for potential emergency

circumstances with their premature newborns, especially when being discharged back home.

> *"For preterm babies who are less than 32 weeks, we give them BLS courses to educate them well in case emergency situations".*
> *(Participant 4, 42-44).*

4.7 Theme 4: Adaptation Strategies for FCC Delivery

This section presents the adaptation strategies participants utilise to facilitate and implement FCC successfully. Adaptation strategies are necessary to ensure that HCPs and the family are on board, ensuring that the family is satisfied with the care their infant is receiving, while respecting various backgrounds. Two subthemes emerged from this theme as follows: 'Cultural and Religious Adaptive Practices' and 'Empathising with Difficult Parental Circumstances'.

4.7.1 Subtheme L: Cultural and Religious Adaptive Practices

Subtheme L presents the adaptive process nurses undertake to respect and satisfy the family's cultural and religious needs. Participants 5 and 6 recount instances where parents request religious or cultural practices and emphasised the significance of honouring these requests within reasonable boundaries.

"Ġieli eżempju jiġu Indian parents u jkunu iridu jagħmlulhom il-Bindi fuq moħħhom, jew xi ħadd reliġjuż ħafna u jkunu jridu jdaħħlu l-kuruna ġol- incubator. Aħna ngħidulhom il-kuruna ma tistax tagħmilha ġol-incubator, imma jekk trid nagħmluhielek ġo borża barra fuqu biex tikkuntentahom. Darba partikolarment kellna mother trid tagħmel il-Bindi fuq moħħ it-tifla. Bħala nurse, saqsejna it-tobba u ma kellhom l'ebda problema, so why not?" (Participant 5, 111-119).

"For instance, sometimes we do get Indian parents who would like to do the Bindi on their kids forehead, or parents who have strong religious beliefs and would want to place the rosaries in their baby's incubator. We do tell them that the rosary cannot be placed in the incubator, however we try to satisfy them by telling them we will put it in a plastic bag and place it on top of the incubator. In particular, once I remember that there was an Indian mother who wanted to do the Bindi on their daughters' forehead. As a nurse, you cannot disregard the parents' wishes, so we asked the doctors and there were no problems with that, so why not?" (Participant 5, 111-119).

"Sometimes we do have situations where for example, we see some religions that stick certain things onto the baby's clothes, which we think is fair enough and is ok, and that will do no harm to the baby. As long as it makes the parents happy and is satisfying their religious need, its ok for us." (Participant 6, 129-132)

Participant 5 also emphasised the role of cultural adaptation through understanding and meeting parents' needs.

"So, we adapt to their needs and cultures, u nagħmluha, u ssir through effective communication ukoll." (Participant 5, 127-129)

"We have to adapt to their needs and cultures, and I believe that we do it even through effective communication." (Participant 5, 127-129)

Participant 6 expanded on this idea, acknowledging the diversity of religious beliefs among parents and the necessity of adapting care practices accordingly.

"Mhux il-ġenituri kollha Catholic, u meta niġu għall-baptism tal-baby, speċjalment meta jeqilbu ħażin, u jkollna bżonn ngħammduh, u l-familja tal- baby ma jkunx Catholic, ma nistgħux ngħammduh għax mhux parti mir-reliġjon tagħhom" (Participant 6, 108-111).

"Not all parents are Catholic, and when we come to having to do a baby's' baptism, especially due to deterioration, and we have to baptise him but the baby's family is not Catholic, we cannot baptise him since this is not a part of their religion" (Participant 6, 108-111).

"Hawnhekk l-isptar għandna priest tal-Ortodossi, u kemm il'darba nċemplulu u ngħidulu li hawn baby li huwa Orthodox u qed jiddeterjora, u jiġi hu." (Participant 6, 112-114).

"Here in hospital, we have Orthodox priests, and there are many instances when we have to call him and inform him that there is an Orthodox baby who is deteriorating, and then he will come (Participant 6, 112-114).

4.7.2 Subtheme M: Empathising with Difficult Parental Circumstances

Subtheme M describes how nursing staff adapts their nursing practice to understand different parental circumstances, while striving to implement FCC effectively. Participant 6 highlighted the importance of understanding the parents thoroughly through FCC, while keeping parents informed and providing reassurance.

"Nemmen li FCC importanti ħafna. Nipprova nġib is-sitwazzjoni fuqi, kieku jien kelli nkun parent u kelli il-baby hawnhekk, inkun nixtieq li xi ħadd itini updates fuq il-baby u jtini reassurance ukoll, li huwa veru important. Hawnhekk fl- NPICU, reassurance huwa importanti ħafna" (Participant 6, 190-193).

"I believe that FCC, it is very important. I try to put myself into their shoes, if I were a parent, and had my baby being admitted into the NPICU, I would like that someone would keep me updated about my baby while also giving me reassurance as it is very important. In the NPICU reassurance is very important." (Participant 6, 190-193)

Despite encountered challenges, participant 8 emphasised the importance of nurses adapting to parental circumstances by being patient and understanding, while responding to their needs.

"I think sometimes we try to understand the parents and what they're going through and I know it can be a difficult situation for them. But unfortunately, we kind of get the backlash and we're kind of blamed for certain things where some parents are quite difficult with us. So they're very rude. And so you have to be kind of patient with them, and you have to tackle them accordingly" (Participant 8, 44-49)

Lastly, participant 6 demonstrated the importance of adapting nursing care to accommodate parents who are living abroad through technology utilisation, ensuring that parents remain informed and involved in their baby's care throughout. This approach promotes FCC while guaranteeing that parents are not disregarded.

"Għandna tablet, li nikkomunikaw mal-parents bir-ritratti. Eżempju, foreigners li kellhom bżonn isiefru u jerġgħu jiġu lura. Nimmoniterjaw l-baby aħna ovvjament u nikkomunikaw mal-parents meta jkunu msiefrin u nibgħatulhom ritratti ukoll. Għax sfortunatament ġieli jkunu jridu jġibu il-VISA, so xi ħadd mill-parents irid jitlaq. So aħna nibqgħu in contact magħhom bir-ritratti. So, din terġa tmur lura għall-communication, communication hija l'iktar ħaġa mportanti."(Participant 6, 272-278).

"We have a tablet on which we communicate with parents via photos. For example, foreigners who had to go abroad and then come back. We do monitor their baby obviously and we communicate with the parents while abroad, we send photos too. Sometimes unfortunately they need to get their VISA, so one of the parents has to leave. So we try to keep in contact with them via photos. So this all goes back to communication, communication is the most important thing". (Participant 6, 272-278).

4.8 Theme 5: Positive Outcomes of FCC

Lastly, theme 5 presents the positive outcomes which nurses note when implementing FCC effectively. Three subthemes emerged from this theme as follows: 'Enhanced Parental Confidence and Competency', 'Enhanced Infant-Parent Bonding' and 'Satisfaction Derived from Neonatal Nursing Practice'.

4.8.1 Subtheme O: Enhanced Parental Confidence and Competency

Subtheme O highlights how parental confidence and their competencies in neonatal care enhances in the NPICU through the FCC implementation.

Participant 9 initially stated that throughout the admission period, progress is not only evident in the infant, but it is also noted in the parents.

> *"...you can see the baby's progress, and the parents progress as well. One case in particular, we had a baby who was born as a preterm and was admitted here for 11 months. So, this baby spent nearly a whole year here, he is our baby here. You can notice even the progress of the parents, from the first time they stepped their foot in here, they were worried obviously. And then in different phases where they would start giving up. They used to tell us that they wouldn't know what they're going to do any more" (Participant 9, 252-258)*

Furthermore, participant 9 discussed the positive impact of educating families on parental confidence and competency, consequently initiating a sense of ease and comfort to parents.

> *"When you educate the families, you can tell that their mind is more at rest and you can tell that they are more comfortable in what they are doing. One can also note the difference between the first time that they are going to change a nappy, and then another time you see them doing it by themselves" (Participant 9, 26-30).*

Participant 2 emphasised that assertive parent care positively impacts the perception of QOC received from the staff. Additionally, participant 9 stated that increased awareness and hands-on practices enhance families' understanding and ability to care for their infant.

> *"When you see the parents looking after their child with confidence, they feel as if they had good quality of care once they were here" (Participant 2, 232-233).*

"I think that the more they know what is going on around them, the better it is for the families. The more they practice hands on practice, the better it will be." (Participant 9, 142-143)

Participant 2 expressed satisfaction of seeing parents leaving the unit confidently caring for their infant, while participant 9 stated that parents go back to express their appreciation.

"Also, when you see them going home, you know, they're happy they're confident, they can look after their child. Although it's not an easy experience for them, because nobody expects or plans that their child would have to come into intensive care, but also that they have been through this, they can go home with a positive outlook for the future" (Participant 2, 236-241).

"We would have a lot of parents who come back to us when they have follow ups, to tell us how they are doing, or maybe they would come to say thank you for showing them how to do something in particular, because now they are much more comfortable doing it. So, us as nurses, then we say that at least they got something which benefits them from here. In here, there is a lot of information, so at least they gathered something which will benefit them" (Participant 9, 186-192).

4.8.2 Subtheme P: Enhanced Infant-Parent Bonding

Subtheme P explores participants' perspectives of FCC approaches, revealing that family involvement enhances the infant-parent bond.

Firstly, participant 1 highlighted that FCC provides parents an opportunity to bond with their infant through FCC approaches presented previously.

"It gives the parents the opportunity to bond with their baby, and even from the babies side, I think they will benefit a lot from the parents being around to hold them, like having the time to do skin to skin and bonding." (Participant 1, 7-10)

Participant 3 highlighted the importance of parental involvement in nursing care, fostering a stronger bond between parents and babies, particularly in the challenging and hectic NPICU environment.

> *"I believe that when the parents are involved in the care of the newborn, it helps to create a better bond with the baby. The fact that they are involved, it will make the parents feel better since having a newborn at NPICU is not a nice thing, and it makes the parents feel worse" (Participant 3, 138-142).*

Furthermore, participant 7 accentuated the impact of FCC on infant-parent bond and overall recovery. The significance of approaches like breastfeeding and physical contact in enhancing this bond and supporting the infants' well-being was emphasised.

> *"I have noted that FCC implementation does make a difference throughout the baby's care and recovery. I mean even breastfeeding, some of them when they take breast milk, especially if they're premature babies, it is very good for them. So, when breastfeeding would help as well with the bond and even if they hold the baby." (Participant 7, 106-110)*

On another note, participant 8 highlighted the fundamental role of parental presence and engagement in long-term hospitalised infants.

> *"We had a child who was here for a year. I mean, if we're busy, we don't have the time to play with him. We don't have the time to do the physio exercises with him. So, you know, we try, I mean, we do interact with them, of course, but I mean, but you have your priority, if you have him and another child or two other children, you can't dedicate that time. So the mother was able to be with him, feed him, in fact that because of the mother, you managed to be able to give him actual food, he was drinking the bottles. And he was improving, giggling you know, and you'll see and all these kinds of milestones and interactions. He was achieving them because the mother took the dedication to be there and, you know, be able to do these things. So, it's quite important" (Participant 8, 188-198)*

In conclusion, participant 9 stated that parental involvement impacts the infants' behaviour in the NPICU, resulting in calmness. This is noted when comparing to infants whose parents visit less frequently.

> *"The baby itself can also show you how much there is a difference when the parents are around and involved in the care, the baby would be calmer. When we get a mother or a father who are not very frequently around the baby and who do not have many hands-on practice, you can note that they would be much more excited. So, the baby would feel the difference, especially even when there is certain calmness in the parents and that they would know what they are doing, and that they have more time and no hurry" (Participant 9, 194-201).*

4.8.3 Subtheme Q: Satisfaction Derived from FCC approaches in Neonatal Nursing Practice

Subtheme Q presents how participants express a deep sense of fulfilment and satisfaction in witnessing the positive outcomes of FCC in the NPICU.

Firstly, participant 1 noted that throughout the years, nursing staff has been trying to involve the families more, consequently noting a positive change.

> *We try to engage more with the family more, include them more. There was definitely a positive change throughout the years. (Participant 1, 222-224)*

Participant 2 commented about the positive impact of FCC management on both on the parents and the infant, stating that different parental approaches influence the infants' development.

"The management of the care in general, you can see the difference within the approach. You can also note positive outcomes on the baby too. You get parents who come in, sit by the incubator, and read to their child, you can see those who perform regular skin to skin, those who turn up for each feed. You can really see it in the development of the baby. And it is something that carries through, it is not just in here, it can carry on." (Participant 2, 181-186)

Many participants showed their satisfaction when infants go from being critically ill to being discharged, with some voicing gratitude for parents and infants visiting back. Participant 7 expressed that seeing infants improving and being discharged is the most rewarding experience.

"We see them from being very critically ill to getting better and ultimately going home, it gives you a real satisfaction, and even from the parents' point of view, that they come back here and they bring them along, it's very rewarding." (Participant 1, 279- 282)

"Rewarding I think, seeing them improve and getting discharged in a good condition. I think it's very rewarding." (Participant 7, 130-131)

Participant 3 further expressed satisfaction towards having an infant being discharged home, while focusing on the developmental process and the infants' improvement.

"The most rewarding thing when working here is when you have a critically ill baby here, spending a lot of time with the same baby and speaking to the parents every day, and then having the baby being discharged home. That is very rewarding as you get to see the whole process and improvement" (Participant 3, 204-208).

"Because they come here as preterm, literally skin and bones, and then they leave here healthy, and it gets very rewarding for us." (Participant 3, 208-209).

Additionally, participant 6 discussed the profound emotional attachment created to the long-term babies in the NPICU, highlighting the intense joy and heartache experienced when they are discharged healthy.

"L-iktar ħaġa awarding meta jkunu viċin u meta jaslu għad-discharge b'wiċċ il-ġid. Għax kif għidtlek, ġieli jkollna long term cases, jkun ilhom għandna disa xhur jew f'dak l-ilma. Dak it-tip, baptism għamilnihielu aħna, birthday għamilnihulu aħna, milestones rajnihom aħna. Imbagħad jasal f'dak il punt li tgħid, fl-aħħar waslet il-ġurnata li jmur id-dar mal-familja tiegħu. Onestament għafsa ta' qalb kbira, u kulħadd jispiċċa jibki, għax wisq xi ħaġa sabiħa, wisq sabiħa. Like, ma nistax nispjegaha, il-feeling ta' meta xi ħadd wasal għad-discharge wara a long, long period of time."
(Participant 6, 289-299)

"The most rewarding aspect is when the babies come closer and get discharged healthy and safely. Because as I told you, sometimes we have long term-cases who would have been here for long, like nine months or so. Like in some cases, we would have done the baptism, birthday would have been celebrated here, milestones would have been achieved and seen by us too. And then they get to a point where you know that the baby has finally come to the day where he is going back home with his family. Honestly it creates a heartache for us, we all end up crying, because it is too much of a beautiful thing, too much. Like, I cannot even explain it, I cannot explain the feeling of knowing that a baby has come to the stage of being discharged after a long, long period of time."
(Participant 6, 289-299)

Participant 9 related to Participant 6's concept regarding the progress and milestones of an infant who had been admitted in the unit for 11 months.

"When you see the progress, till last week they brought him here for a visit, they told us he is at home, walking, eating, and reaching milestones. And even in here, 11 months, we saw him starting weaning, then eating puree food. This is honestly a really big reward for us" (Participant 9, 262-265).

Furthermore, Participant 5 expressed fulfilment derived from witnessing positive outcomes which outweigh the difficulties encountered in daily work.

"Li tarahom ħerġin minn hawn, qawwijin u sħaħ. Għalhekk sabiħ l-NPICU, hawn ħafna ikrah għax naraw ħafna affarijiet koroh li naraw kuljum, imma għandek ħafna job satisfaction jekk tkun veru tħobb il-job."
(Participant 5, 235-238).

"Seeing them being discharged from the NPICU healthy. This is why the NPICU is a nice place to work in, there is a lot of bad and negative things which we face on a daily basis, but there is a high job satisfaction, if you really love the job."
(Participant 5, 235-238).

Participant 2 addressed that different approaches made parents feel included as if they were part of their family. Additionally, participant 4 also stated that on birthday occasions, sometimes parents come to visit with their toddler or child, making them feel very rewarded.

"And it's nice when they come back and visit on birthdays, or when they have an outpatients visit, for us that means that they felt like they are part of the family." (Participant 2, 241-243)

"The most rewarding aspect is when the families and the baby come to visit you. Even year after year when they come to show you their child on their birthday." (Participant 4, 143-145)

Furthermore, participant 3 stated that development would not only be noted on the infants' care, but also on parents' emotional state.

"Even seeing the parents, when they come, they are very sad, they stay crying, it's not easy for them. But then seeing them leaving the unit happy and saying thank you, it is too rewarding" (Participant 3, 210- 212).

Lastly, Participant 8 reflected on witnessing recoveries that were deemed to be 'miraculous' in the NPICU, while highlighting the joy of seeing babies who initially seemed unlikely to survive being discharged home with their families.

"You know, seeing those like one off miracles, like babies where you think would never have made it since then, seeing them go home as a family together and you know, something, we see a lot of bad here, unfortunately, so it is seeing this bit of good" (Participant 8, 165-168).

"I mean, I've been here for quite a while and I still remember my first case, when she was a 25-weeker, 470 grammes. She was the smallest baby that I have ever seen. And at that time, and she left the hospital with no complications, nothing, a healthy child" (Participant 8, 268-272).

4.9 Conclusion

This chapter presented the data analysis. Five main themes emerged that reflected multiple perspectives of nurses working in a Maltese NPICU regarding FCC implementation. Despite encountering multiple challenges hindering FCC implementation, participants described that through other facilitator components and their adaptation strategies throughout the delivery of neonatal care, their main aim is to reach effective FCC. Evidently, all participants agree on the importance of FCC and its benefits.

The following chapter presents an in-depth discussion of the results presented in light of the literature reviewed in Chapter 2.

CHAPTER 5

DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter discusses the findings of the study. The interpretation of the findings follows a descriptive phenomenological approach. This discussion is structured according to the five themes that emerged from the findings, but also in light of the aims and objectives of this study and the literature review (LR). The aim/s or objective/s being addressed in each subtheme will be initially presented, followed by a discussion on the findings and existing literature. The main themes include:

- Approaches to Family-Centered Care (FCC)
- Challenges in FCC Implementations
- Factors Facilitating FCC
- Adaptation Strategies for FCC Delivery
- Positive Outcomes of FCC

5.2 Approaches to Family-Centered Care

5.2.1. Parental Education

In light of objective B, participants explained how parental education leads serves as a FCC approach. The objective extends beyond sending the baby home in good health, but it aims to also equip and empower the parents for their new caregiving responsibilities (Padratzik & Love, 2022). This reflects how comprehensive parental education emerges as a basis in preparing both infants and parents for a successful transition from the NICU to home care.

Participants expressed active education and parental engagement as the HCW's main aims, leading to parents playing an active role in their infants' well-being while aiding FCC implementation. This result keeps in line with Heidari & Mardani-Hamooleh (2020), who concluded that knowledge sharing through parental training automatically results in better participation in FCC. Furthermore, Toivonen et al. (2020) states that educating parents was thought to have improved FCC quality by the whole multidisciplinary team (MDT).

Participants noted that parental knowledge through education lead to various significant improvements. These results are consistent with findings from Kubicka et al. (2023), Heidari & Mardani-Hamooleh (2020) and Brødsgaard et al. (2019). Furthermore, Ramezani et al. (2014) implied that parental involvement through educational approaches and programs fosters a collaborative environment, consequently leading to improved FCC.

Moreover, participants noted that parental education is vital to reach an acceptable competence level prior to having the infant being discharged. Both Kubicka et al. (2023) and Brødsgaard et al. (2019) resonated the same concept. Kubicka et al. (2023) had reported that nurses believed that FIC (Family Implemented Care) improved nurses' perceptions of parental confidence for discharging the patient home. Brødsgaard et al. (2019), stated that excellent nursing competencies enabled the parents to experience support through education, which consequently encouraged them to provide care for their infant in preparation for discharge. In the NICU, ensuring parental readiness for discharge is of utmost importance (Osario Galeano & Maya. 2023).

5.2.2 Hands-On Practice & Physical Approaches

While addressing objective B and E, participants mentioned different approaches to physical touch and hands-on practice, while highlighting their importance and hindering factors. Participants reported significant improvements in health outcomes and parent-infant bonds, highlighting the need for more effective physical approaches in the NPICU.

Although participants addressed objective B by emphasising the critical importance of physical approaches in the NPICU setting, nurses highlighted that they must take precaution when infants have certain medical equipment which might risk being dislodged, leading to further complications. The importance of touching the infant was highlighted by Fonseca et al. (2020), where it was stated that touching the infant has been seen to have clinical improvements in the infants.

Additionally, participants noted that when infants are unable to be taken out of the incubator due to medical restrictions, nurses recommend touching the baby and placing their hands on them, thus addressing objective B. Fonseca et al. (2020) highlighted that in such situations, nurses believe that they are capable of determining the moments for when physical interaction between parents and children should start. The latter author discussed how a risk assessment of the infant should be conducted, indicating any precautions which should be taken. Consequently, while addressing objective E, nurses mentioned that medical equipment requirements, such as central lines and ventilators are considered as inhibiting factors of FCC.

Furthermore, nurses emphasised on the physical contact between parents and the infant, acting as a physical approach for FCC implementation, thus addressing

objective B. Flacking et al. (2012) argues that FCC, involving close physical contact between the parents and infants can aid the infant by reducing cortisol levels and pain responses. In infants, increased cortisol indicates stress or behavioural reactions (Hernandez-Reif & Gungordu, 2021).

Feely et al. (2016) argues that while parents often feel the need to ask nurses for permission to hold their infant, impacting their parental role negatively, parental involvement is perceived positively by nurses in terms of work satisfaction. Therefore, incorporating parents in hands-on daily practice is determined of utmost importance and thus, recommended.

5.2.3 Communication

In light of objective G and H, participants stated that if communication is not maintained in the NPICU, there is no way forward. Participants also agreed that interactions and communication is the key to every step taken in the unit.

Participants described how upon admission, they welcome and orientate families around the NPICU while discussing the baby's care plan, addressing objective G. During interviews conducted within the unit, the researcher observed how nurses greeted and communicated with parents upon their arrival, enhancing reliability of participants' reported actions. Gomes de Silva et al. (2016) findings' support these approaches through emphasising implementing communication strategies throughout, while reinforcing the importance of proactive communication strategies in neonatal care.

While addressing aim 3, participants highlighted that ongoing communication and collaboration leads to having parents informed about what is going on throughout, consequently aiding in improving the decision-making process. Gomes de Silva., (2016) revealed that participants understood the importance of sharing knowledge to eventually help with the decision-making processes. As stated by Sullivan & Cummings (2020), a collaborative decision-making method emphasises the significance of understanding parental perspectives, while considering their values to facilitate the decision-making process.

MDT meetings is another approach to FCC implementation, addressing objective G. Participants acknowledged the importance of meetings involving the entire MDT during the infants' admission, particularly as discharge approaches to address the family needs. Brødsgaard et al. (2019) highlighted the significance of establishing regular meetings with nurses and doctors, which was valued by parents for fostering effective communication and recognition. Additionally, the latter author noted disparity between nurses' perceptions and parents' actual needs, despite nurses' belief in understanding parental perspectives. Thus, scheduling MDT meetings with parents is recommended to significantly enhance communication and address family needs satisfactorily.

The significance of clear communication and information-sharing with parents in the NPICU emerged as a consistent finding in this study, addressing aim 3. The importance of patience in achieving effective communication to ensure that parents understand information provided was highlighted. Furthermore, while addressing objective H, participants emphasised how using simple and clear language enhances communication and facilitates FCC implementation. Brødsgaard et al. (2019)

emphasized that effective communication pivots around clarity, transparency, and expressiveness. Riskin et al. (2022) further supported the importance of clear communication due to the high risk of misunderstanding, misinterpretation, and conflict in the NICU environment. Therefore, while addressing objective K, clear communication is recommended to mitigate negative effects on the infants' care, while alleviating parental distress.

5.3 Challenges in FCC Implementation

5.3.1. Time Constraints & Excessive Workload

Participants determined increased workload as a challenge, leading them to time constraints, especially to communicate and involve the families in FCC. Determining this challenge addressed objective E. Participants stated that the NPICU's hectic environment makes it very challenging for nurses to manage this workload, while pointing out the big workload that they face, making it increasingly difficult to communicate with parents effectively. Mirlashari et al. (2019) states that high workloads in hospitals have been known as a barrier to FCC implementation. Furthermore, Alemdar et al., (2017) reported that participants recognised that excessive workload led to neglection of FCC.

Interestingly, Sarin & Maria (2019) argued that FCC is recognised as a tool to reduce staff workload, empowering parents, and enhancing their caregiving skills. This study's participants did not acknowledge this perspective, therefore, in light of objective F and L, it is recommended that future research should explore how FCC can be used as a tool to reduce workloads.

5.3.2 Environmental Limitations

Objective E was addressed through recognizing environmental limitations by this study's participants, who expressed concerns regarding the challenges raised in implementing FCC within the NPICUs' crowded and limited space. It was noted that environmental challenges are posed due to logistical factors and lack of space planning.

Participants stated that the NPICUs' environment and the challenging dynamics between parents and HCPs, constitutes significant obstacles, addressing objective F. However, while addressing objective I, participants emphasised that amidst the challenges encountered, nurses strive to implement FCC approaches to balance between promoting parental involvement and ensuring medical safety.

Xiang et al. (2020) states that inadequate space in the NICU was identified as one of the top three barriers to adopting the FIC model, with 61.7% of nurses highlighting this issue. Moreover, Heidari & Mardani-Hamooleh (2020) presented that employees emphasised on the equipment deficiency and unreadiness of the unit for implementing FCC, namely that of lack of physical space, while discussing that having two or more neonates in one room can eventually lead to the parents feeling uncomfortable. Moreover, the latter author pointed out that certain FCC approaches, such as breastfeeding, might lack due to the mother feeling uncomfortable of breastfeeding her baby in front of other parents, especially those with different cultures.

Environmental limitations were also found to create cultural shame, hindering FCC implementation (Heidari & Mardani-Hamooleh, 2020). The latter study, based in Iran, discusses the discomfort mothers feel when breastfeeding in the presence of non-

mahram men, highlighting the need to recognise and address environmental factors hindering FCC provision due to cultural beliefs.

Therefore, in light of objective I, it is recommended that when refurbishment or a new unit is built, available space is utilised as necessary to aid FCC practices.

5.3.3 Nursing Staff Shortages

All participants acknowledged encountering nursing staff shortages locally, with a few emphasising that staffing issues result in less time being available for FCC, addressing objective E and F. Participants highlighted the importance of prioritisation, especially when nurses are understaffed.

Due to understaffing, the nurse patient ratio which is supposed to be that of one nurse to one infant alters, consequently hindering FCC implementation. Xiang et al. (2020) identifies lack of human resources as one of the top three barriers when applying the FIC model to current practice. In fact, Sarin & Maria (2019) also expressed that their participants' regular work routines were disrupted during nursing staff shortages, leading to increased workload while having to balance clinical duties with involving parents in neonatal care. Heidari & Mardani-Hamooleh (2020) also argued that understaffing lead to an increased workload and insufficient time to hear parents out, causing parents to think that they are being ignored.

This issue addresses objective F, as a serious concern which not only prohibits nurses and the infants' families from practicing FCC, but as stated by the National Association of Neonatal Nurses (2021), evidence indicates that understaffing leads to

increased risks for patients due to limited care, medical errors, and consequently increased rates of illness and death. Thus, in light of objective L, exploring the impact of understaffing on care quality and errors is recommended locally. Furthermore, it is recommended to revise nurse to patient ratios to ensure adequate staffing in the unit.

5.3.4 Cultural & Religious Diversity

Participants mentioned various strategies to accommodate parental cultural and religious belief, while highlighting the importance of considering parental wishes, thus addressing objective F. However, participants argued that religious beliefs can hinder medical care plans. Despite efforts to acknowledge and accept parental beliefs, participants noted instances where parents refuse life-saving treatments, thus requiring a thorough explanation of the potential consequences. Participants also stated that if parents still disagree, legal advice based on ethical and legal principles is sought. On a different note, language barriers were recognised as a challenge on FCC implementation, due to difficulties arising whilst communicating with parents.

FCC incorporates acknowledging cultural differences within families and considers the needs of all the family members (Alemdar et al., 2017). Brødsgaard et al. (2019) emphasises the importance of transparent communication in building partnerships between parents and nurses, while respecting diverse cultures, beliefs, and backgrounds. This concept is supported by Arabiat et al. (2018), who advocates for valuing parents as partners in infant care, especially in decision-making processes.

Nyaloko et al. (2023) reveals that parental cultural beliefs significantly influence infant nurturing, emphasizing the necessity for HCPs to understand diverse cultural

factors, providing culturally sensitive care. Additionally, Oehmke et al., (2019) presented that seeking guidance from religious leaders may potentially aid parents in cases of decision-making conflicts.

Considering and acknowledging is a crucial aspect of family needs within the context of neonatal nursing care in a NICU (Soares et al., 2015). The latter author presented that families experiencing their infants' hospitalisation journey encounter many challenges throughout, therefore having many emotional commotions, spiritual thoughts, and existential fears, consequently making their interpretation of religiosity profound and meaningful. Fonseca et al. (2020) assert that nurses' behaviours are influenced by personal beliefs developed through their nursing experiences, affecting their approach to FCC. The American Medical Association (n.d) advocates for ethical and legal consultation in cases of disagreement with parents. Furthermore, the local Minor Protection Act provides additional guidance for nursing and medical staff in such situations.

Mirlashari et al. (2019), presented that the participants believed that due to language barrier, FCC can be potentially excluded, while HCWs can experience frustration and powerlessness when they attempt to communicate with parents. Communication is a key principle within the care relationship, and if this is unsuccessful, there is a risk that the families may feel that the care provided is not satisfactory (Kroening et al., 2016).

In light of objective L, it is recommended to explore how various cultural or religious barriers could be addressed to reach parental satisfaction and infant health. Furthermore, to address objective J, it is recommended that HCWs are trained and informed about different approaches suiting different cultures.

5.3.5 Parental Fear & Anxiety

While addressing objective E, participants stated that parental fear is a barrier to FCC. Objective I was then addressed by suggesting that the first step to reducing parental fear is to implement key FCC approaches. Participants discussed how parental fear affects nurses' approach by encouraging parents to overcome their fears and manage certain skills or approaches recommended in FCC. Furthermore, findings highlighted the contrast in perception between HCPs and parents in the NPICU, signifiying the need of empathy and effective communication while addressing parental fears and routine procedures. Participants also highlighted the correlation between parental fear and communication, emphasising the need of providing rationale throughout nursing care.

Providing care for a NICU infant is undeniably stressful for parents due to fundamental shifts in their parental roles, challenges from the infants' behaviour, and the overwhelming NICU atmosphere (Mirlashari et al., 2019). Despite this, neonatal nurses play a pivotal role in addressing parental fears and in actively alleviating stress through comprehensive support and FCC implementation (Baghlani et al., 2019).

Parental fear stands as a significant barrier to effective FCC implementation, which is said to consequently affect both the parents and staff (Mirlashari et al., 2019). NICU nurses utilise strategic interventions guided by FCC principles to empower parents in navigating challenges and building confidence in their caregiving role. This proactive approach fosters parental confidence while ensuring better outcomes for the infant and the family upon discharge. Fonseca et al. (2020) found that FCC measures, such as education, improved nurses' capacity in aiding parents in overcoming fears and

anxieties, thus emphasising the significance of preventing parental anxiety from interfering with their care process and interaction with their infant.

Sarin & Maria (2019) also presented that in a review of fathers' role in the NICU, their own feelings and fear about parenting a fragile infant were reported as barriers to FCC. Sarin & Maria (2019) findings' exposed the same feelings, as fathers initially feared holding their infant due to their small size. However, the latter authors observed that fathers quickly overcame this fear and were then increasingly noted to be engaging in care giving, underscoring the impact FCC implementation can have on parental fear.

To address objective F and L, future research should explore parental fears and their extents. Addressing them through discussions and providing informative sessions throughout pregnancy potentially aids in enhancing parental knowledge, consequently decreasing fear, and allowing FCC to be implemented further.

5.4. Factors Facilitating FCC

5.4.1. Discharge Planning

The findings addressed objective D by revealing that discharge checklists and additional support resources in the NPICU enhance the critical role of nursing interventions in preparing parents for the safe transition back home with their infant. Participants acknowledged discharge checklists as comprehensive tools for ensuring parental competence in essential caregiving tasks post-discharge. Participants emphasised further the importance of a MDT meeting prior to discharge, highlighting

the importance of collaborative care planning and coordination among HCPs within a family centred environment, providing reassurance to parents.

Discharge planning entails collaborating with families to facilitate a smooth transition from the NICU to home, while addressing their unique needs and those of their infant and improving parental confidence and infant care outcomes (Smith et al., 2022). Xiang et al. (2020), agrees that FIC aided in increasing parental confidence on discharge. Parental readiness and competency are known to consequently ensure safe care on discharge. Additionally, Kubicka et al. (2023) stated that through parent-staff communication, parental readiness for discharge through the utilisation of a pre discharge checklist was increasingly improved. On another note, Brødsgaard et al. (2019) also discussed that planning as a team facilitates the transition of responsibility to the parents in an easier and less-frustrating manner.

Thus, in light of objective J and K, increased awareness could be made regarding discharge planning by training HCPs about discharge checklists and their importance. Both staff and families should be informed regarding the importance of communication during discharge planning. Objective L could be addressed by conducting future research regarding various approaches of discharge planning to determine approaches with best outcomes.

5.4.2 Implementation of Rooming-In Room Services

The significance of rooming-in rooms in supporting families with babies who have undergone prolonged hospital stays and complex medical procedures has stuck out in this study, addressing objective D. Participants' acknowledged limitations in resources and the selective delivery of rooming-in services to families with more complicated cases support. However, despite these limitations, nurses agreed on the effectiveness of rooming-in services in facilitating FCC implementation. Furthermore, participants explained that through the services provided within these rooming-in services, nurses ensure that parents feel like they are at home.

Sarin & Maria (2019) states that studies based in Western areas emphasised the positive impact of providing single-family rooms and its' effect on parental participation, communication with HCPs, and overall care quality. Heidari et al. (2019), emphasized the necessity of private areas while caring for hospitalized infants, while facilitating FCC through increased family participation. Gomes da Silva et al. (2016) discussed how for enhanced FCC implementation, it is vital for the NICU to have proper infrastructure to comfortably accommodate family members to stay within the environment provided.

Furthermore, Mirlashari et al. (2019), highlighted the challenges faced by NICUs in providing adequate facilities for parents to comfortably stay with their infant. Sarin & Maria (2019) noted that this limitation may potentially contribute to parental stressors, thus emphasising the importance of addressing environmental arrangements to promote parental involvement in neonatal care.

Such findings from previous and current studies suggest that in light of objective I, while organisational limitations are encountered, efforts to prioritise the delivery of suitable accommodations can significantly enhance FCC practices within the NICU.

5.4.3 Staff & Parental Participation in Training Courses

Objective D was further addressed since participants highlighted the importance of staff and parental participation in training courses within the NPICU. The insights provided by participants in this study not only highlight the efficacy of specialised courses provided, but also the disparities in access to such training opportunities. Additionally, participants' recognition of specialised courses was commonly argued that health care institutions should ensure that HCW's are well-educated to deliver high-quality care within a family-centred environment effectively. Conversely, some participants' created concerns regarding the lack of access to specified courses.

Extensive review of the literature consistently accentuates the importance of education and training programs. Studies by Xiang et al. (2020) and Mirlashari et al. (2019) underscore the indispensable link between enhanced staff education and the promotion of FIC, emphasising the need for buy-in activities and tailored training programs. Furthermore, established literature underscores the foundational role of education in shaping attitudes, practices, and ultimately, the QOC delivered within the NICU (Abuhammad et al., 2023).

Sarin & Maria (2019), shed light on the need for comprehensive training to mitigate conflicts and promote effective FCC implementation, while emphasising the urgency

of addressing barriers and ensuring access to education and training resources. This was also discussed in a separate study conducted by Toivonen et al. (2019), where the findings revealed that nurse participants stated that the training program regarding FCC improved interactions among staff while enhancing their care practices, leading to better work satisfaction. Furthermore, the findings of the latter authors also emphasized how training courses led to better attitudes towards parents in the NICU, ultimately facilitating FCC. Brødsgaard et al., (2019), highlights the nurses' responsibility to implement FCC by encouraging parents to participate in parental training, overcoming their fears for effective infant care and giving them the opportunity to practice.

Amidst the fact that participants and existing literature agree to staff and parental training courses, there is still room for further discussions. Therefore, objective L could be addressed by recommending further research focusing on staff and parental training and its' effect on FCC and overall QOC. Then after, objective J can be addressed by organising training opportunities tailored for both parties accordingly.

5.5 Adaptation Strategies for FCC Delivery

5.5.1 Cultural and Religious Adaptive Practices

As noted in this study's findings, partnerships with parents should also be done through adaptation strategies, through recognising their role in reaching one's cultural and religious needs, addressing objectives A and E. Participants stated that it is of utmost importance for nurses to adapt to the parents cultural and religious needs

through effective communication, to implement FCC effectively. Moreover, participants acknowledged the importance of adaptation strategies, while going out of their usual practices to achieve their role in providing satisfying care.

It is known that to successfully implement FCC, HCP care-giving practices need to be adapted so as to promote mutual respect and support for parents (Mirlashari et al., 2019). Nyaloko et al., (2013) states that cultural beliefs and practices impact how parents use healthcare services and their interactions with HCPs. Since culture is the basis of many parental actions and decisions, Halllowell et al., (2019) discusses how a shift in the NICU culture toward partnerships with parents would allow parents to participate in many daily activities, thus contributing to the development of daily care routines.

Fonseca et al. (2020), argues how the provision of adapting care is not plain sailing due to the units' culture interfering with the parents' culture. Moreover, Condon & Salmon (2015) argues how inaccurate assumptions of HCPs lead to ineffective and inappropriate care, thus emphasising the need of communication so as to reach the families wishes.

In light of available literature and objective L, further research to explore the effectiveness of cultural and religious adaptive practices while recognising their positive effects is recommended.

5.5.2 Empathising with Difficult Parental Circumstances

While addressing objective A and F, participants shared how adopting and recognising their roles to empathise with parents, leads to understanding their situations better. Additionally, they discussed effective strategies which are utilised for communicating with parents who are unable to be present due to personal circumstances. Moreover, participants argued that the need for patience and understanding is of utmost importance, particularly in cases where families may be experiencing complex circumstances which consequently hinder their engagement with nursing staff.

Parents of infants being cared for in the NICU are known to experience high levels of distress, and trauma symptoms when being compared to parents of healthy infants (Obeidat et al., 2009). As Haward et al., (2020) stated, it is difficult for parents who have an infant in the NICU to figure out what it means to be a good parent in those circumstances, while also stating that certain NICU parents find it more challenging than others due to situations they are presented with.

In alignment with Fonseca et al. (2020) findings' on the negative impacts of various circumstances on family wellness and interactions with HCPs, Mirlashari et al. (2018) stated that both nurses and physicians confirmed encountering challenges which prohibit families from participating in FCC. These include long distances from hospital, lack of childcare and socioeconomic struggles. Families with multiple needs require further support, hence making the implementation of FCC more challenging (Mirlashari et al., 2018). Through understanding each other's perspective, Brødsgaard

et al., (2019) argues how empowering parents to negotiate their roles fosters equal partnerships with nurses, leading to facilitating agreement on shared goals.

In light of the need for further support for families with difficult circumstances, objective L can be addressed by recommending further research focusing on families' needs to allow nurses and future practice to adapt to such needs into practice accordingly.

5.6 Positive Outcomes of FCC

The following subsections addressing enhanced parental confidence and competency, enhanced neonate-parent bonding, and nurse satisfaction address aim 1 and objective C.

5.6.1 Enhanced Parental Confidence and Competency

Participants in this study collaboratively addressed objective C by agreeing that FCC has a positive outcome on parental competence and confidence on discharge. Furthermore, they highlighted the positive impact of educating families throughout neonatal care, observing an increase of positive outcomes, especially on discharge.

Through FCC implementation, parents are provided with the necessary support and education to enhance their confidence and competency in caring for their infants, leading to positive outcomes post-discharge (Gómez-Cantarino et al., 2020). O'Brien et al. (2018) stated that FCC acts as a mechanism for parents to build the confidence

and skills to better support their infant after discharge, consequently improving parental confidence. Several studies have reported positive effects of FCC participation, such as increased parental confidence, discharge readiness and satisfaction with the care received (Kubicka et al., (2023), Xiang et al., (2020) and Alemdar et al. (2017)). Additionally, Fonseca et al. (2020) emphasise the importance of the nursing team's presence in teaching, supporting, and guiding parents in caring for their infants, contributing to their gradual process of becoming confident caregivers.

In fact, Gomes da Silva et al. (2016), mentioned that the responsibility of nurses to facilitate a supportive environment for families, while aiming to share knowledge and resources, highlights further the collaborative nature of FCC and empowering parents in building their competence in infant care.

Sarin & Maria (2019) provide additional evidence of increased parental capability to care for infants while also expressing confidence in continuing care at home, regardless of any challenges they might encounter. This highlights the transformative impact of FCC on parental confidence and competency, extending beyond the inpatient phase. Moreover, Kubicka et al., (2023) presents that they also reported that FIC improved nurses perceptions of parental readiness for discharge ($p<0.0001$) and parental confidence to care for their infant at home ($p<0.0001$).

5.6.2 Enhanced Infant-Parent Bonding

The findings in this study regarding enhanced infant-parent bonding through FCC address objective C. Participants highlighted FCC as an approach for parents to connect with their infants, while highlighting the relevance of parental involvement in

neonatal care to nurture the parent-infant relationship. Furthermore, it was consistently agreed that FCC approaches facilitate a stronger bond between parents and their infants in the NPICU. The vital role of parental presence in supporting infants with long-term hospitalisation was also observed, while noting improved infant behaviour.

Infants admitted to the NICU, along with their families, encounter distressing situations and difficult conditions that can induce psychological stress in parents (Kim & Kim, 2022). Fonseca et al. (2020) states that bonding is immediately interrupted as the hospitalisation of an infant directly after birth interrupts an important family moment. Argumentatively, Toivonen et al. (2020) states that FCC implementation in the NICU aids the establishment of strong parent-infant bonds, which is crucial for development during the primary years of life.

This aligns with Heidari & Mardani-Hamooleh (2020), who stresses the importance of parental presence in promoting closeness and affective bonding between parents and infants. In a longitudinal study, it was noted that increased presence, involvement in care and skin-to-skin contact in the NICU were associated with higher rates of parental emotional closeness (Lebel et al., 2022).

Additionally, Alemdar et al. (2017) and Sarin & Maria (2019), both discussed how their findings revealed that FCC implementation not only enhances parent-infant bonding, but also contributes to positive clinical outcomes and a decreased length of hospital stay for infants. Heidari & Mardani-Hamooleh (2020), commented on how infants' calmness was maintained due to parental presence, thus fostering attachment and alleviating stressors stemming from having an infant in the NICU.

5.6.3 Satisfaction Derived from FCC approaches in Neonatal Nursing Practice

Lastly, participants' satisfying experiences in different scenarios addressed objective C. Participants discussed the way that they are emotionally fulfilled when they experience infants improving and eventually being discharged home. Furthermore, they encountered increased satisfaction when parents go back to the unit to visit them, while implying that they feel like they are part of the family. This reflects the participants' accounts of feeling rewarded due to parental gratitude, indicating the development of a positive relationship between staff and families due to FCC implementation. Through their perspectives, it was noted that FCC not only benefits families, but also contributes to the well-being and satisfaction of HCPs.

Providing uninterrupted service and support to hospitalised individuals and their families can potentially enhance job satisfaction of nurses, consequently influencing the quality of nursing care positively (De Simone et al., 2018). Kubicka et al. (2023) stated that implementing FCC is not only known to decrease nursing work-related stress, but actually leads to increased job satisfaction among nurses. Nazzari et al., (2022) further discussed that in a clinical setting where HCPs experience job satisfaction, they are prone to experience lower levels of emotional distress. Therefore, increased job satisfaction leads to HCPs being more inclined to provide safe and excellent care, while remaining attentive to their patients' and families requirements.

This argument was also discussed by Sarin & Maria (2019), who concluded that family members express gratitude towards hospital staff who demonstrate patience, provide guidance, and are attentive to their babies' care through FCC. Argumentatively, White

et al., (2019) further highlights the importance of job satisfaction by discussing how persistent dissatisfaction among nurses not only has the possibility of disturbing the care being provided but can also lead to diminishing nurses' dedication to their profession.

Whilst the majority of the literature aligns on the positive correlation between FCC implementation and heightened job satisfaction, Mirlashari et al. (2020) instil a critical perspective to this subject. It was stated that elevated nursing workloads act as a challenging barrier to effective FCC implementation, resulting in diminished job satisfaction. Therefore, it is crucial to acknowledge and address the challenges faced by nurses while evaluating the impact of FCC on job satisfaction. These barriers not only hinder the integration of FCC principles altogether, but also impedes the delivery of optimal nursing care, ultimately increasing nursing dissatisfaction.

Therefore, in light of this critical perspective, objective L can be addressed by recommending future research in exploring the workloads brought by FCC and its' impacts on nursing practice and the nurses' overall job satisfaction levels.

5.7 Application of the theoretical frameworks in relation to the results of the study

5.7.1 Application of Rodgers' Family Centred Theory

Rodgers' FCT upholds the principle of treating every patient and their family with equal dignity and respect, irrespective of their race, ethnicity, or cultural background

(Agtarap, 2018). This approach emphasises acknowledging diversity and the autonomy of individual family members, fostering an environment where families are empowered to make choices aligning with their values and preferences, thus suiting the concept of FCC explored in this study. This study revealed that although nurses encountered many difficulties in delivering FCC in a Maltese NPICU, they gained insights into different practices while also recognizing the positive outcomes and satisfaction levels achieved through successful FCC implementation.

The application of Rodgers' FCT in this study involves recognising and respecting nurses' perspectives while considering families' needs in the NICU setting. By understanding the challenges nurses face in implementing FCC, the theory suggests creating an environment that supports nurses in overcoming these obstacles to meet the needs of each individualized family, as noted in the participants' experiences. Moreover, this could involve providing adequate resources, training, and support to empower nurses to deliver FCC effectively. Additionally, the theory emphasises collaboration and shared decision-making between nurses and families, highlighting the need for education, transparent communication, and mutual respect.

Regarding clinical competencies aiding in achieving the aims of Rodgers' FCT, participants acknowledged that different experiences helped them reflect on various practices, eventually finding some to be more effective than others. This concurs with Papadopoulos et al. (2020), who concluded that the personal attributes and professional experiences of nurses can either support or hinder compassionate and therapeutic interactions while delivering nursing care. Therefore, this study supports Rodgers' FCT as the participants describes their perspectives and approaches of FCC as a way to perceive their role in facilitating family involvement.

5.7.2 Application of the Roy Adaptation Model

Neonatal nurses who implement principles of FCC in practice, hold a crucial position in identifying the requirements of both parents and infants, thus adjusting their practices to facilitate parental participation in infant care within the NICU. Through the application of the RAM, its' framework provides the researcher with guidance to understand how nurses in the NPICU adapt their neonatal nursing practice to implement FCC successfully, thereby meeting the principles of FCT too.

Nurses acquire adaptation mechanisms through first-hand experience, enabling them to manage a range of stressors including emotional, mental, physical, and social challenges (Han et al., 2023). Yılmaz (2017) discusses how continuous exposure to such challenges prompts nurses to develop coping and adaptation strategies. This was evidenced by the participants in this study, who devised various approaches to address specific challenges throughout the implementation of FCC. Moreover, the four key components which make up RAM were noticed and followed up throughout. Assessing these components while gathering nurses' perspectives served as a basis to better understand their perceptions and implementations of adaptation strategies.

Therefore, in the context of this study, the RAM helps clarify how nurses adapt their approach to implementing FCC based on the specific needs and circumstances of each family. Furthermore, through the collected data, it was noted that nurses utilise the RAM to assess the adaptive responses of families to the NPICU environment while modifying their interventions accordingly. Additionally, by considering the physiological, psychological, and social aspects of adaptation outlined in Roy's theory, nurses can better understand the challenges families face, while developing strategies to support them in engaging with FCC practices effectively. It is known that

clinical nurses with more approach-oriented coping strategies are recognised to have a better overall psychological well-being in (Lee et al., 2019).

Therefore, one can conclude that utilising RAM in the NPICU not only improves the provision of FCC and the delivery of care to the infants and their families, but also benefits the overall well-being of nurses. Lastly, it was noted that NPICU nurses gained experience in terms of adaptation process and approaches with the passage of time and through exposure to various situations. However, this study also revealed that some nurses still needed to clinically improve their adaptation skills, through education and practice to achieve higher satisfaction levels from the infants' families.

5.8 Conclusion

In this chapter, the main research findings were presented and discussed thoroughly in light of existing literature. Furthermore, the conceptual frameworks applied in this study guided the analysis of the findings. These findings offer the researcher realistic and current data, which consequently provide recommendations on how FCC can be improved through understanding and acting on specific challenges encountered by local NICU nurses. The creation of recommendations aims to improve nursing care within a family-centred environment and, ultimately, the infants' health.

The following concluding chapter presents a thorough summary of this research, while presenting the strengths and limitations encountered throughout the conduction of this

study. Moreover, recommendations for future practice, management, education, and research in this field will be presented.

CHAPTER 6

CONCLUSION & RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary of this study which gathered perspectives of nurses working in a Maltese NPICU regarding FCC. Following the summary, implications of the findings and strengths and limitations of this research process are also addressed. Recommendations for practice, policy and management, education, and research are discussed followed by a reflective account of the learning curve achieved while conducting this dissertation.

6.2 Summary of the Research Study

While neonatal nursing research has been increasingly explored in the literature, there is a noticeable gap regarding nurses' perspectives on generalised FCC. Prior to this study, no research had been conducted on this topic in Malta. Therefore, the purpose of this study was to establish a set of recommendations for future clinical practice and management, education, and research through exploring nurses' viewpoints of FCC implementation while working in a Maltese NPICU. The main aims of this study included gathering perspectives regarding nurses' roles in FCC implementation, exploring potential facilitators and barriers, and the importance of effective communication. The last aim of this study is to identify recommendations for enhancing FCC implementation.

Due to the lack of studies conducted on generalised FCC in the NPICU, a thorough literature search was conducted so as to select literature which focus on nurses'

perspectives of generalised FCC in the NPICU. PubMed, CINAHL COMPLETE, PsychInfo, Medline Complete and Scopus were utilised for the search strategy. The literature search resulted in 9 relevant research studies which were retrieved and appraised.

Prior to starting the data collection process, ethical approval was acquired from the Faculty Research Ethics committee of the University of Malta, while an intermediary was recruited to invite potential participants. As stated throughout this dissertation, the target sample population was that of nurses working in a Maltese NPICU and who have at least one year of working experience. Purposive sampling was utilised, and nine participants were recruited. Informed written consent was obtained from the participants which then followed audio-recorded face to face in-depth semi-structured interviews with each participant. Time, location, and the language which the interview was conducted in were chosen by the participants for their convenience.

A qualitative descriptive phenomenological approach was employed to investigate this subject, followed by the data analysis process using Braun and Clarke's (2006) six-phase TA. Each interview was manually transcribed precisely by the researcher. The resulting themes are interconnected, reflecting the diverse perspectives of nurses on FCC. Moreover, themes were discussed comprehensively within the framework of the research study and existing literature.

Following the completion of the TA five themes emerged, with each having different subthemes. The resulting themes indicate the main approaches which are required to implement FCC successfully, while other themes explained the inhibitors and

challenges encountered throughout FCC provision. Nurses experience challenges due to the different backgrounds and furthermore, due to the environment, conditions, and resources that they are presented with. Additionally, the nurses described how they adapt their practice through different strategies while also highlighting the positive outcomes of the FCC approach.

The utilisation of Rodgers' FCT and RAM served as a conceptual framework which aided in exploring and ultimately, understanding the nurses' perspectives of FCC in the NPICU. Rodger's FCT guided the researcher by providing a framework which aids in recognizing the importance of the families' role, while also respecting their autonomy as a family. This was noted through the emphasis of promoting respect, effective communication and ultimately building trustful relationships between the nurses and their families. On the other hand, the application of the RAM served differently since the researcher could understand the different adaptation strategies FCC successfully through the different stages of the model. Furthermore, the findings indicate that NPICU nurses had cultivated adaptive strategies in order to cope successfully in this setting, while implementing FCC effectively. These strategies involved understanding different cultural and religious practices, whilst also trying to understand parental circumstances. Moreover, although implementing FCC was noted to be challenging, participants reported a variety of positive outcomes which can be reached through FCC implementation. Ultimately, seeing the infant being discharged back home within a safe, family centred environment led to nurses' fulfilment.

6.3 Strengths & Limitations of this Research

6.3.1 Strengths of this Research Study

This is the first study in Malta exploring NPICU nurses perspectives of FCC following from a previous study about parents (Pace Parscandolo, 2016). This study adopted a qualitative descriptive exploratory research design by way of in depth semi-structured interviews, which made it possible for the researcher to gather in-depth information regarding the perspectives of FCC from the participants. This specific data would have not been possible through quantitative research. This data collection method serves as a strength to this study, since it allows both the researcher and the participants to be more elaborate and flexible, thus delving deeper into the subject. This method leads to gathering further information which could be deemed relevant. Moreover, conducting these interviews face to face aided the researcher to build a good connection and discussion with the participants. This could have made participants more comfortable in presenting certain data and consequently, enabling better data collection.

The study's authenticity was also a strength of this research study since raw data was not only collected and analysed, but it was also presented thoroughly. A careful interpretation of the findings was conducted so as to provide details which prove that the presented data is realistic and truthful. Direct quotations from the conducted interviews were also presented so that the readers could easily understand the participants' perspectives based on their experiences too. Moreover, quotations from interviews which were conducted in the Maltese language were presented in both the

Maltese and English language, so as to ensure and provide proof of accuracy throughout the translation process.

6.3.2 Limitations of this Research Study

This was the first research study that the researcher conducted with qualitative research. An academic supervisor was allocated to the researcher to guide the researcher throughout the conduction of this study, thus potentially setting off the limitations brought about by the novice status of the researcher. Additionally, not only did the researcher not have any previous experience, but the researcher was also challenged by time constraints which were provided to complete this study as part of a part fulfilment academic programme. Another obstacle which was presented was the balancing of multiple roles as a researcher and interviewer while also working as a HCP. Therefore, a reflective journal was kept throughout different stages of this study so as to help minimise bias.

Qualitative research was not easy to conduct as it is known to be time-consuming (Silverio et al., 2020). Moreover, the study was conducted in a specific neonatal intensive-care setting, making this study's findings relevant to this population only but more in-depth.

The use of the English language presented a challenge which could have affected the precision of this study. The decision to utilise the English language was based on the fact that all participants were HCP's who had previously completed their nursing studies course in English, hence assuming that all participants understand English. In fact, although all questions were presented in the English language, all participants

seemed to have understood the questions well and responded accordingly. In certain instances, it was noted that certain participants faced slight difficulties in expressing their feelings effectively. Therefore, some participants chose to answer in Maltese due to them feeling more at ease in expressing themselves in their native language. Thus, this can be considered as a limitation since participants who produced data in the English language may have potentially expressed themselves better. For this reason, a professional translator was brought in to ensure that the translation was as accurate as possible. Moreover, as noted earlier, the translation between the Maltese and English language for participants who spoke in Maltese was presented.

6.4 Recommendations

A research gap on FCC perspectives of nurses working in a Maltese NPICU was noted throughout the literature review conducted in Chapter 2. Therefore, the researcher hoped to increase interest of the readers in conducting further research regarding this topic by also presenting a list of recommendations for clinical practice policies and management, further education, and research, thus reaching the higher purpose of this study.

6.4.1 Recommendations for Clinical Practice Policies

1. Participants outlined the importance for effective communication, not only between nurses and families, but also through including the whole MDT.

- It is recommended to keep prioritizing and highlighting the importance of effective communication between the whole MDT and the infants' families, while ensuring that communication strategies are improving throughout the years.

Establishing regular MDT meetings whilst involving the family and utilizing clear communication strategies will consequently foster collaboration between the MDT and the family, thus making FCC more effective.

2. The importance of discharge planning was noted by participants.

    - It is recommended that nurses keep utilising and improving discharge planning processes, while involving families and coordinating with the rest of the MDT.

This recommendation is of utmost importance to keep improving transitions back home while also reducing future readmissions. Discharge planning is also recommended due to it being known for improved long-term outcomes for both the infants and their families.

6.4.2 Recommendations for Management

1. The study identified many environmental barriers which potentially inhibit FCC. Multiple nurses stated that the unit was very overcrowded, while families did not have any privacy. Therefore, it is recommended to:

- Revise the units' layout and making necessary adjustments in order to make it more FCC friendly.
- Plan and open up another NPICU.

The significance of these recommendations is to create a more conducive environment for family involvement, especially due to the overpopulation Malta is facing. Overpopulation presents HCWs with challenges to care for all the infants admitted within one unit.

2. The study identified staff shortages, time constraints and high workloads as contributing factors to diminished FCC implementation. Therefore, it is recommended to:

    - Officially revise and amend nurse to patient ratios so as to alleviate staff shortages.
    - To revise nurse distributions in wards.

This recommendation ensures an adequate nurse- patient ratio, potentially solving staff shortages, time constraints and consequently higher workloads. Thus, decreasing staff shortages would effectively respond to better FCC implementation.

6.4.3 Recommendations for Further Education

Recommendations for Staff Education

1. The need for professional education and training regarding FCC was highlighted by nurse participants. Thus, it is recommended to:

- Offer specialised workshops, simulations, and courses for FCC implementation.
- Encourage participation in local or foreign conferences related to FCC.
- Provide a mentoring programme specifically related to newly recruited nurses within the unit.
- Include training on FCC implementation within the NPICU during the induction programme.

Such workshops and courses may provide nurses with practical training which focus on communication strategies between families and the MDT. Conferences provide nurses with updated strategies which are based on latest research. Attending to conferences abroad may also aid the HCP in expanding ideas due to diverse perspectives and cultures. Creating a mentoring programme or induction courses for newly recruited nurses is necessary to make and increase nurses' awareness about the importance of FCC from the start.

Recommendations for Parental Education

1. An increased need for educating parents at their own pace is necessary to prevent parental fear. Parental fear was concluded to be a factor which ultimately inhibits FCC implementation. Therefore, it is recommended to:

    - Educate parents thoroughly prior and during neonatal care while being accompanied by HCPs.
    - Utilise parental education further through providing information to each family, while addressing their needs and at their tailored pace.

This can be offered further by continuous learning through online platforms, short courses and written materials.

Parental education is necessary since it empowers the parents to actively participate in their infants' care, while explaining and improving their understanding of different approaches, procedures, and treatment. Understanding such important aspects through parental education at their own, tailored pace may lead to reducing parental fear, thus enhancing FCC in the NPICU.

6.4.4 Recommendations for Future Research

1. FCC was perceived differently by nurses in different grades.

    - A similar research study with the same or similar aims and objectives is recommended to be conducted with the participation of both novice and experienced nurse participants.

Such a recommendation is significant to aid in understanding the difficulties of both groups differently, hence creating further recommendations and educational training for both populations accordingly.

2. The importance of FCC and its beneficial outcomes in this setting was highly noted. Therefore, it is recommended to:

    - Identify the importance while considering conducting future research regarding FCC in other paediatric settings.

The significance of this recommendation is to offer thorough support to families in paediatric wards, while enhancing the overall QOC provided.

6.5 Reflective Conclusion

This research study has been a fulfilling, yet challenging journey. Given my limited experience in conducting research, this research study has provided me with a significant educational journey, while being presented with the opportunity to explore this subject through qualitative research. Furthermore, although neonatal nursing was always a personal topic of interest, exploring this subject improved my understanding of FCC and different approaches to it.

On a personal level, this journey has been a continuous learning curve. Conducting this research study while working as a full-time nurse required balancing the research process with my professional responsibilities, thus enhancing my time management skills. Furthermore, conducting this study while going through various personal milestones presented an opportunity to improve prioritisation skills. Lastly, gathering nurses' perspectives provided me with the opportunity to understand and accept various opinions, while appreciating their passion and efforts in their daily work. This research study has not only enhanced my knowledge in this field, but also contributed to my personal and professional growth, for which I am forever grateful.

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APPENDIX A

The Search Strategy Including Databases Used, Keywords, Limiters and Total Amount of Hits

Databases	*Search Terms*	*Total Number of Hits prior to applying limiters*	*Limiters*	*Total Number of Hits after applying limiters*	*Relevant Hits*
Google Scholar	'NICU' AND 'Nurses Perspectives' OR 'Staff Nurses views' AND ``Family Centred Care`` OR "Family Integrated Care' OR "FiCare"	18100	Past 10 years Include Patents Removed Include Citations Removed	725	**7**
Google Scholar	'NICU' OR 'Neonatal Intensive Care' Unit' AND 'Staff Nurses" OR "Qualified Nurses" AND 'Perspectives' OR 'Thoughts' AND 'FiCare' OR 'Family Integrated Care' OR "Family Centred Nursing"	54	Past 10 years Include Patents Removed Include Citations Removed	29	**2**
Google Scholar	NICU OR 'NPICU' AND 'Staff Nurses' OR 'Registered Nurses' AND 'Perspectives' AND 'Family Centred Care' OR "Family Centred Nursing"	15300	Past 10 years Include Patents Removed Include Citations Removed	16	**0**
Google Scholar	NICU OR 'Neonatal & Paediatric Internsive Care Unit" AND Nurs*' AND 'Views' AND	16300	Past 10 years Include Patents Removed Include Citations Removed	181	**2**

	'Family Centred Care' or “Family Integrated Care”				
PUBMED	'NICU' OR 'NPICU’ AND 'Nurses Perspectives' OR 'Nurses thoughts’ AND 'Family Centred Care' or "Family Integrated Care'	13382	Past 10 years Free Full Text Full Text English Language Human Species Clinical Trials Meta Analysis Randomized Controlled Trials Systematic Review	588	**4**
PUBMED	'NICU’ OR ‘NPICU’ AND 'Staff Nurses' OR 'Staff Nurs*' AND 'Perspectives' OR 'Views' AND ‘'Family Centred Care' or ‘FiCare”	12859	Past 10 years Free Full Text Full Text English Language Human Species Clinical Trials Meta Analysis Randomized Controlled Trials Systematic Review	557	**5**
PUBMED	NICU OR 'Neonatal Intensive Care Unit' AND Nurs*' AND ' Perspectives' AND ‘FiCare' OR 'Family Integrated Care' OR “Family Centred Nursing”	12859	Past 10 years Free Full Text Full Text English Language Human Species Clinical Trials Meta Analysis Randomized Controlled Trials Systematic Review	546	**8**

PUBMED	'Neonatal Intensive Care Unit' OR 'NPICU' AND 'Nurses' OR 'Nurs*' AND 'Perspectives' AND 'Family Centred Care' OR "Family Centred Nursing"	185	Past 10 years Free Full Text Full Text English Language Human Species Clinical Trials Meta Analysis Randomized Controlled Trials Systematic Review	3	**1**
CINAHL Complete	"NICU" OR "Neonatal Intensive Care Unit" AND "Nurses" OR "Staff Nurses" OR "Qualified Nurses" AND "Perspectives" OR "Views" AND "Family Centred Care" OR "Family Centred Approach OR "FiCare"	22	Full Text English Language Past 10 years	13	**1**
CINAHL Complete	NICU" OR "Neonatal & Paediatric Intensive Care Unit" AND "Staff Nurses" OR "Qualified Nurses" OR "Nurs*" AND 'Views" OR "Thoughts" OR "Opinions" AND "Family Centred Approach" OR "Family Integrated Care"	0	N/A	0	**0**
CINAHL Complete	"Neonatal Intensive Care Unit" OR "NICU" AND "Nurs*" OR "Registered Nurses" AND	11	Full Text English Language Past 10 years	1	**0**

	"Perspectives" OR "Opinions" AND "Family Centred Care" OR "FiCare" OR "Family Centred Nursing"				
CINAHL Complete	"NICU" AND "Staff Nurses" AND "Opinions" OR "Views" AND "Family Centred Approach"	85	Full Text English Language Past 10 years	4	**2**
PSYCHInfo (EBSCO)	"NICU" OR "'NPICU" AND 'Nurses Perspectives' OR 'Staff Nurses views' AND 'Family Centred Care' or "Family Integrated Care'	2	Full Text English Language Past 10 years	2	**0**
PSYCHInfo (EBSCO)	NICU" OR "Neonatal Intensive Care Unit" AND "Nurses" OR "Staff Nurses" OR "Qualified Nurses" AND "Perspectives" OR "Views" AND "FiCare" OR "Family Centred Approach	0	N/A	0	**0**
PSYCHInfo (EBSCO)	"Neonatal Intensive Care Unit " OR "Neonatal & Paediatric Intensive Care Unit" AND Nurs*' AND 'Views' AND	3	Full Text English Language Past 10 years	3	**1**

	'Family Centred Care' or “Family Centred Nursing”				
PSYCHInfo (EBSCO)	“NPICU” AND Nurs*' AND ' Perspectives' OR “Opinions” AND ‘Family Centred Care' OR 'Family Integrated Care'	5	Full Text English Language Past 10 years	4	**0**
HyDi	“NICU” OR “Neonatal Intensive Care Unit” AND “Nurses” OR “Staff Nurses” OR “Qualified Nurses” AND “Perspectives” OR “Views” AND “Family Centred Care” OR “Family Centred Approach OR “FiCare”	33809	Past 10 years Full Text Online Articles Dissertations Reviews Humans Paediatrics Infant, Newborn Infants Nursing Intensive Care Newborn Babies Nurses Neonates Intensive Care Units, Neonatal Infant	305	**6**
HyDi	“NICU” AND “Nurses” OR “Nurs*” AND “Perspectives” AND	39	Past 10 years Full Text Online Open Access Articles Nursing Infants	9	**1**

	"FiCare" OR "Family Centred Nursing"		Humans Infant, Newborn Nicu Intensive Care Newborn Babies Nurses Neonatal Care Qualitive Research Professional-Family Relations Family Centred Care		
HyDi	"NICU" OR "NPICU" AND "Registered Nurse" OR " Nurs*" AND "Views" OR "Opinions" AND "Family Centred Care" OR "Family Centred Approach"	4047	Past 10 years Full Text Online Open Access Articles Dissertations Reviews Humasn Infant, Newborn Infants Intensive Care Units, Neonatal Newborn Babies Intensive Care Nursing Neonates NICU Infant Babies Neonatal Intensive Care Infant, Premature, Premature Infants Neonatal Nursing	640	**10**

			Family Nursing		
HyDi	"NICU" AND "Staff Nurse" OR "Regsitered Nurse*" AND "Perspectives" OR "Thoughts" AND "Family Centred Care" OR "Family Centred Nursing"	711	Past 10 years Full Text Online Open Access Articles Dissertations Reviews Humans Nursing Nurses Patients Neonatal Intensice Care	176	**1**
Medline Complete	"NICU" OR "'NPICU" AND "Nurses" OR "Staff Nurses" AND "Perspectives" OR "Views" "Family Centred Care" or "Family Integrated Care"	23	Full Text English Language Past 10 years	1	0
Medline Complete	NICU" OR "Neonatal Intensive Care Unit" AND "Nurses" OR "Staff Nurses" AND "Perspectives" OR "Views" OR "Opinions" AND "Family Centred Care" or "FiCare"	60	Full Text English Language Past 10 years	9	2

Medline Complete	"NICU" OR "Neonatal Intensive Care Unit" OR "NPICU" AND "Registered Nurses" OR "Qualified Nurses" AND "Perpsectives" OR "Thoughts" AND "Family Centred Care"	1	Full Text English Language Past 10 years	1	0
Medline Complete	"NICU" OR "Neonatal & Paediatric Intensive Care Unit" AND "Staff Nurses" OR "Nurs*" AND "Perspectives" AND "Family Centred Care" OR "Family Centred Nursing"	1	Full Text English Language Past 10 years	1	0
Scopus	"Neonatal Intensive Care Unit" AND "Nurs*" OR "Registered Nurses" AND "Perspectives" OR "Opinions" AND "Family Centred Care" OR "FiCare" OR "Family Centred Nursing"	1687	Past 10 years Nursing Articles Reviews English Language Newborn Infants Neonatal Intensive Care Unit Newborn Intensive Care Family Centred Care Neonatal Nursing NICU Newborn Nursing	426	9

Scopus	"NICU" OR "Neonatal Intensive Care Unit" AND "Staff Nurses" OR "Nurs*" AND "Perspectives" AND "Family Centred Care" OR "Family Centred Nursing"	1735	Past 10 years Nursing Articles Reviews English Language Newborn Infants Neonatal Intensive Care Unit Newborn Intensive Care Family Centred Care Neonatal Nursing NICU Newborn Nursing Professional-Family Relations Finalised Publication Stage Open Access	153	2
Scopus	"NICU" OR "NPICU" AND "Nurses" OR "Nurs*" AND "Perspectives" OR "Thoughts" AND "FiCare" OR "Family Centred Nursing"	69	Past 10 years Nursing Articles Reviews English Language Humans Infant, Newborn Neonatal Intensive Care Unit Newborn Intensive Care Units, Neonatal Infant, Premature Nurse Family Centred Care	14	1

			Neonatal Nursing NICU Professional-Family Relations Neonatal Nurse Family-Centred Nursing Finalised Publication Stage Open Access		
Scopus	"NICU" OR "Neonatal and Paediatric Intensive Care Unit" AND "Qualified Nurses" OR "Registered Nurses" OR "Nurs*" AND "Perspectives" OR "Opinions" AND "Family Centred Approach"	133	Past 10 years Nursing Article Review Newborn Infant Infant, New-born Neonatal Intensive Care Unit New-born Intensive Care Professional- Family Relations Family Centred Care Newborn Care Infant, Premature Family Nursing Neonatal Nursing Final Publication Stage Open Access	8	0

APPENDIX B

Qualitative Methods CASP Tool

CASP
Critical Appraisal Skills Programme

www.casp-uk.net
info@casp-uk.net
Summertown Pavilion, Middle Way Oxford OX2 7LG

CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

CASP
Critical Appraisal Skills Programme

Paper for appraisal and reference:

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- what was the goal of the research
- why it was thought important
- its relevance

Comments:

2. Is a qualitative methodology appropriate?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal

Comments:

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:

CASP
Critical Appraisal Skills Programme

4. Was the recruitment strategy appropriate to the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments:

5. Was the data collected in a way that addressed the research issue?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

Comments:

CASP
Critical Appraisal Skills Programme

6. Has the relationship between researcher and participants been adequately considered?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:

Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

Comments:

CASP
Critical Appraisal Skills Programme

8. Was the data analysis sufficiently rigorous?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Comments:

9. Is there a clear statement of findings?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider whether
- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

Comments:

CASP
Critical Appraisal Skills Programme

Section C: Will the results help locally?

10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

APPENDIX C

Utilisation of CASP Tool for Qualitative Studies Assessment

Questions	*Heidari & Mardani-Hamooleh (2020)*	*Mirlashari et al., (2019)*	*Fonseca et al., (2020)*	*Gomes da Silva et al., (2016)*	*Sarin & Maria (2019)*
1. Was there a clear statement of the aims of the research?	*Y*	*Y*	*Y*	*Y*	*Y*
2. Is a qualitative methodology appropriate?	*Y*	*Y*	*Y*	*Y*	*Y*
3. Was the research design appropriate to address the aims of the research?	*Y*	*Y*	*Y*	*Y*	*Y*
4. Was the recruitment strategy appropriate to the aims of the research?	*Y*	*CT*	*Y*	*CT*	*Y*
5. Was the data collected in a way that addressed the research issue?	*Y*	*Y*	*Y*	*Y*	*Y*
6. Has the relationship between researcher and participants been adequately considered?	*CT*	*CT*	*CT*	*CT*	*Y*
7. Have ethical issues been taken into consideration?	*Y*	*Y*	*Y*	*CT*	*Y*
8. Was the data analysis sufficiently rigorous?	*Y*	*Y*	*Y*	*Y*	*Y*
9. Is there a clear statement of findings?	*Y*	*N*	*Y*	*Y*	*Y*
10. Is the research valuable?	*Y*	*Y*	*Y*	*Y*	*Y*

YES= Y, NO=N, Cannot Tell= CT

APPENDIX D

JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies

JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTICAL CROSS SECTIONAL STUDIES

Reviewer_____
Date_____

Author_____Year_____ Record Number_____

	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5. Were confounding factors identified?	☐	☐	☐	☐
6. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

EXPLANATION OF ANALYTICAL CROSS SECTIONAL STUDIES CRITICAL APPRAISAL

How to cite: Moola S, Munn Z, Tufanaru C, Aromataris E, Sears K, Sfetcu R, Currie M, Qureshi R, Mattis P, Lisy K, Mu P-F. Chapter 7: Systematic reviews of etiology and risk . In: Aromataris E, Munn Z (Editors). *JBI Manual for Evidence Synthesis.* JBI, 2020. Available from https://synthesismanual.jbi.global

Analytical cross sectional studies Critical Appraisal Tool

Answers: Yes, No, Unclear or Not/Applicable

1. Were the criteria for inclusion in the sample clearly defined?

The authors should provide clear inclusion and exclusion criteria that they developed prior to recruitment of the study participants. The inclusion/exclusion criteria should be specified (e.g., risk, stage of disease progression) with sufficient detail and all the necessary information critical to the study.

2. Were the study subjects and the setting described in detail?

The study sample should be described in sufficient detail so that other researchers can determine if it is comparable to the population of interest to them. The authors should provide a clear description of the population from which the study participants were selected or recruited, including demographics, location, and time period.

3. Was the exposure measured in a valid and reliable way?

The study should clearly describe the method of measurement of exposure. Assessing validity requires that a 'gold standard' is available to which the measure can be compared. The validity of exposure measurement usually relates to whether a current measure is appropriate or whether a measure of past exposure is needed.

Reliability refers to the processes included in an epidemiological study to check repeatability of measurements of the exposures. These usually include intra-observer reliability and inter-observer reliability.

4. Were objective, standard criteria used for measurement of the condition?

It is useful to determine if patients were included in the study based on either a specified diagnosis or definition. This is more likely to decrease the risk of bias. Characteristics are another useful approach to matching groups, and studies that did not use specified diagnostic methods or definitions should provide evidence on matching by key characteristics

5. Were confounding factors identified?

Confounding has occurred where the estimated intervention exposure effect is biased by the presence of some difference between the comparison groups (apart from the exposure investigated/of interest). Typical confounders include baseline characteristics, prognostic factors, or concomitant exposures (e.g. smoking). A confounder is a difference between the comparison groups and it influences the direction of the study results. A high quality study at the level of cohort design will identify the potential confounders and measure them (where possible). This is difficult for studies where behavioral, attitudinal or lifestyle factors may impact on the results.

6. Were strategies to deal with confounding factors stated?

Strategies to deal with effects of confounding factors may be dealt within the study design or in data analysis. By matching or stratifying sampling of participants, effects of

confounding factors can be adjusted for. When dealing with adjustment in data analysis, assess the statistics used in the study. Most will be some form of multivariate regression analysis to account for the confounding factors measured.

7. Were the outcomes measured in a valid and reliable way?

Read the methods section of the paper. If for e.g. lung cancer is assessed based on existing definitions or diagnostic criteria, then the answer to this question is likely to be yes. If lung cancer is assessed using observer reported, or self-reported scales, the risk of over- or under-reporting is increased, and objectivity is compromised. Importantly, determine if the measurement tools used were validated instruments as this has a significant impact on outcome assessment validity.

Having established the objectivity of the outcome measurement (e.g. lung cancer) instrument, it's important to establish how the measurement was conducted. Were those involved in collecting data trained or educated in the use of the instrument/s? (e.g. radiographers). If there was more than one data collector, were they similar in terms of level of education, clinical or research experience, or level of responsibility in the piece of research being appraised?

8. Was appropriate statistical analysis used?

As with any consideration of statistical analysis, consideration should be given to whether there was a more appropriate alternate statistical method that could have been used. The methods section should be detailed enough for reviewers to identify which analytical techniques were used (in particular, regression or stratification) and how specific confounders were measured.

For studies utilizing regression analysis, it is useful to identify if the study identified which variables were included and how they related to the outcome. If stratification was the analytical approach used, were the strata of analysis defined by the specified variables? Additionally, it is also important to assess the appropriateness of the analytical strategy in terms of the assumptions associated with the approach as differing methods of analysis are based on differing assumptions about the data and how it will respond

APPENDIX E

Utilisation of JBI Checklist for Cross-Sectional Studies Assessment

Questions	*Alemdar et al., (2017)*
1. Were the criteria for inclusion in the sample clearly defined?	*N*
2. Were the study subjects and the setting described in detail?	*Y*
3. Was the exposure measured in a valid and reliable way?	*Y*
4. Were objective, standard criteria used for measurement of the condition?	*Y*
5. Were confounding factors identified?	*Y*
6. Were strategies to deal with confounding factors stated?	*CT*
7. Were the outcomes measured in a valid and reliable way?	*Y*
8. Was appropriate statistical analysis used?	*Y*

YES= Y, NO=N, Unclear =U, Cannot Tell= CT

APPENDIX F

JBI Critical Appraisal Checklist for Case Control Studies

JBI CRITICAL APPRAISAL CHECKLIST FOR CASE CONTROL STUDIES

Reviewer_____
Date_____

Author_____Year_____ Record Number_____

	Yes	No	Unclear	Not applicable
1. Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	☐	☐	☐	☐
2. Were cases and controls matched appropriately?	☐	☐	☐	☐
3. Were the same criteria used for identification of cases and controls?	☐	☐	☐	☐
4. Was exposure measured in a standard, valid and reliable way?	☐	☐	☐	☐
5. Was exposure measured in the same way for cases and controls?	☐	☐	☐	☐
6. Were confounding factors identified?	☐	☐	☐	☐
7. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
8. Were outcomes assessed in a standard, valid and reliable way for cases and controls?	☐	☐	☐	☐
9. Was the exposure period of interest long enough to be meaningful?	☐	☐	☐	☐
10. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

EXPLANATION OF CASE CONTROL STUDIES CRITICAL APPRAISAL

How to cite: *Moola S, Munn Z, Tufanaru C, Aromataris E, Sears K, Sfetcu R, Currie M, Qureshi R, Mattis P, Lisy K, Mu P-F. Chapter 7: Systematic reviews of etiology and risk . In: Aromataris E, Munn Z (Editors). JBI Manual for Evidence Synthesis.* JBI, 2020. Available from https://synthesismanual.jbi.global

Case Control Studies Critical Appraisal Tool

Answers: Yes, No, Unclear or Not/Applicable

1. Were the groups comparable other than presence of disease in cases or absence of disease in controls?

   The control group should be representative of the source population that produced the cases. This is usually done by individual matching; wherein controls are selected for each case on the basis of similarity with respect to certain characteristics other than the exposure of interest. Frequency or group matching is an alternative method. Selection bias may result if the groups are not comparable.

2. Were cases and controls matched appropriately?

   As in item 1, the study should include clear definitions of the source population. Sources from which cases and controls were recruited should be carefully looked at. For example, cancer registries may be used to recruit participants in a study examining risk factors for lung cancer, which typify population-based case control studies. Study participants may be selected from the target population, the source population, or from a pool of eligible participants (such as in hospital-based case control studies).

3. Were the same criteria used for identification of cases and controls?

   It is useful to determine if patients were included in the study based on either a specified diagnosis or definition. This is more likely to decrease the risk of bias. Characteristics are another useful approach to matching groups, and studies that did not use specified diagnostic methods or definitions should provide evidence on matching by key characteristics. A case should be defined clearly. It is also important that controls must fulfil all the eligibility criteria defined for the cases except for those relating to diagnosis of the disease.

4. Was exposure measured in a standard, valid and reliable way?

   The study should clearly describe the method of measurement of exposure. Assessing validity requires that a 'gold standard' is available to which the measure can be compared. The validity of exposure measurement usually relates to whether a current measure is appropriate or whether a measure of past exposure is needed. Case control studies may investigate many different ‘exposures’ that may or may not be associated with the condition. In these cases, reviewers should use the main exposure of interest for their review to answer this question when using this tool at the study level.

   Reliability refers to the processes included in an epidemiological study to check repeatability of measurements of the exposures. These usually include intra-observer reliability and inter-observer reliability.

5. Was exposure measured in the same way for cases and controls?
   As in item 4, the study should clearly describe the method of measurement of exposure. The exposure measures should be clearly defined and described in detail. Assessment of exposure or risk factors should have been carried out according to same procedures or protocols for both cases and controls.
6. Were confounding factors identified?
   Confounding has occurred where the estimated intervention exposure effect is biased by the presence of some difference between the comparison groups (apart from the exposure investigated/of interest). Typical confounders include baseline characteristics, prognostic factors, or concomitant exposures (e.g. smoking). A confounder is a difference between the comparison groups and it influences the direction of the study results. A high quality study at the level of case control design will identify the potential confounders and measure them (where possible). This is difficult for studies where behavioral, attitudinal or lifestyle factors may impact on the results.
7. Were strategies to deal with confounding factors stated?
   Strategies to deal with effects of confounding factors may be dealt within the study design or in data analysis. By matching or stratifying sampling of participants, effects of confounding factors can be adjusted for. When dealing with adjustment in data analysis, assess the statistics used in the study. Most will be some form of multivariate regression analysis to account for the confounding factors measured. Look out for a description of statistical methods as regression methods such as logistic regression are usually employed to deal with confounding factors/ variables of interest.
8. Were outcomes assessed in a standard, valid and reliable way for cases and controls?
   Read the methods section of the paper. If for e.g. lung cancer is assessed based on existing definitions or diagnostic criteria, then the answer to this question is likely to be yes. If lung cancer is assessed using observer reported, or self-reported scales, the risk of over- or under-reporting is increased, and objectivity is compromised. Importantly, determine if the measurement tools used were validated instruments as this has a significant impact on outcome assessment validity.
   Having established the objectivity of the outcome measurement (e.g. lung cancer) instrument, it's important to establish how the measurement was conducted. Were those involved in collecting data trained or educated in the use of the instrument/s? (e.g. radiographers). If there was more than one data collector, were they similar in terms of level of education, clinical or research experience, or level of responsibility in the piece of research being appraised?
9. Was the exposure period of interest long enough to be meaningful?
   It is particularly important in a case control study that the exposure time was sufficient enough to show an association between the exposure and the outcome. It may be that the exposure period may be too short or too long to influence the outcome.
10. Was appropriate statistical analysis used?
    As with any consideration of statistical analysis, consideration should be given to whether there was a more appropriate alternate statistical method that could have

been used. The methods section should be detailed enough for reviewers to identify which analytical techniques were used (in particular, regression or stratification) and how specific confounders were measured.
For studies utilizing regression analysis, it is useful to identify if the study identified which variables were included and how they related to the outcome. If stratification was the analytical approach used, were the strata of analysis defined by the specified variables? Additionally, it is also important to assess the appropriateness of the analytical strategy in terms of the assumptions associated with the approach as differing methods of analysis are based on differing assumptions about the data and how it will respond.

APPENDIX G

Utilisation of JBI Checklist for Case Control Studies Assessment

Questions	*Kubicka et al,. (2023)*
1. Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	*Y*
2. Were cases and controls matched appropriately?	*Y*
3. Were the same criteria used for identification of cases and controls?	*Y*
4. Was exposure measured in a standard, valid and reliable way?	*Y*
5. Was exposure measured in the same way for cases and controls?	*Y*
6. Were confounding factors identified?	*Y*
7. Were strategies to deal with confounding factors stated?	*N*
8. Were outcomes assessed in a standard, valid and reliable way for cases and controls?	*Y*
9. Was the exposure period of interest long enough to be meaningful?	*Y*
10. Was appropriate statistical analysis used?	*CT*

YES= Y, NO=N, Unclear =U, Cannot Tell= CT

APPENDIX H

JBI Critical Appraisal Checklist for Cohort Studies

JBI CRITICAL APPRAISAL CHECKLIST FOR COHORT STUDIES

Reviewer_____
Date_____

Author_____Year_____ Record Number_____

	Yes	No	Unclear	Not applicable
1. Were the two groups similar and recruited from the same population?	☐	☐	☐	☐
2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were confounding factors identified?	☐	☐	☐	☐
5. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?	☐	☐	☐	☐
9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?	☐	☐	☐	☐
10. Were strategies to address incomplete follow up utilized?	☐	☐	☐	☐
11. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

Explanation of cohort studies critical appraisal
How to Cite: *Moola S, Munn Z, Tufanaru C, Aromataris E, Sears K, Sfetcu R, Currie M, Qureshi R, Mattis P, Lisy K, Mu P-F. Chapter 7: Systematic reviews of etiology and risk . In: Aromataris E, Munn Z (Editors). JBI Manual for Evidence Synthesis.* JBI, 2020. Available from https://synthesismanual.jbi.global

Cohort Studies Critical Appraisal Tool

Answers: Yes, No, Unclear or Not/Applicable

1. Were the two groups similar and recruited from the same population?

Check the paper carefully for descriptions of participants to determine if patients within and across groups have similar characteristics in relation to exposure (e.g. risk factor under investigation). The two groups selected for comparison should be as similar as possible in all characteristics except for their exposure status, relevant to the study in question. The authors should provide clear inclusion and exclusion criteria that they developed prior to recruitment of the study participants.

2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?

A high quality study at the level of cohort design should mention or describe how the exposures were measured. The exposure measures should be clearly defined and described in detail. This will enable reviewers to assess whether or not the participants received the exposure of interest.

3. Was the exposure measured in a valid and reliable way?

The study should clearly describe the method of measurement of exposure. Assessing validity requires that a 'gold standard' is available to which the measure can be compared. The validity of exposure measurement usually relates to whether a current measure is appropriate or whether a measure of past exposure is needed.

Reliability refers to the processes included in an epidemiological study to check repeatability of measurements of the exposures. These usually include intra-observer reliability and inter-observer reliability.

4. Were confounding factors identified?

Confounding has occurred where the estimated intervention exposure effect is biased by the presence of some difference between the comparison groups (apart from the exposure investigated/of interest). Typical confounders include baseline characteristics, prognostic factors, or concomitant exposures (e.g. smoking). A confounder is a difference between the comparison groups and it influences the direction of the study results. A high quality study at the level of cohort design will identify the potential confounders and measure them (where possible). This is difficult for studies where behavioral, attitudinal or lifestyle factors may impact on the results.

5. Were strategies to deal with confounding factors stated?

Strategies to deal with effects of confounding factors may be dealt within the study design or in data analysis. By matching or stratifying sampling of participants, effects of confounding factors can be adjusted for. When dealing with adjustment in data analysis, assess the statistics used in the study. Most will be some form of multivariate regression analysis to account for the confounding factors measured. Look out for a description of statistical methods as regression methods such as logistic regression are usually employed to deal with confounding factors/variables of interest.

6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?

The participants should be free of the outcomes of interest at the start of the study. Refer to the 'methods' section in the paper for this information, which is usually found in descriptions of participant/sample recruitment, definitions of variables, and/or inclusion/exclusion criteria.

7. Were the outcomes measured in a valid and reliable way?

Read the methods section of the paper. If for e.g. lung cancer is assessed based on existing definitions or diagnostic criteria, then the answer to this question is likely to be yes. If lung cancer is assessed using observer reported, or self-reported scales, the risk of over- or under-reporting is increased, and objectivity is compromised. Importantly, determine if the measurement tools used were validated instruments as this has a significant impact on outcome assessment validity.

Having established the objectivity of the outcome measurement (e.g. lung cancer) instrument, it's important to establish how the measurement was conducted. Were those involved in collecting data trained or educated in the use of the instrument/s? (e.g. radiographers). If there was more than one data collector, were they similar in terms of level of education, clinical or research experience, or level of responsibility in the piece of research being appraised?

8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?

The appropriate length of time for follow up will vary with the nature and characteristics of the population of interest and/or the intervention, disease or exposure. To estimate an appropriate duration of follow up, read across multiple papers and take note of the range for duration of follow up. The opinions of experts in clinical practice or clinical research may also assist in determining an appropriate duration of follow up. For example, a longer timeframe may be needed to examine the association between occupational exposure to asbestos and the risk of lung cancer. It is important, particularly in cohort studies that follow up is long enough to enable the outcomes. However, it should be remembered that the research question and outcomes being examined would probably dictate the follow up time.

9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?

It is important in a cohort study that a greater percentage of people are followed up. As a general guideline, at least 80% of patients should be followed up. Generally a dropout rate of 5% or less is considered insignificant. A rate of 20% or greater is considered to significantly impact on the

validity of the study. However, in observational studies conducted over a lengthy period of time a higher dropout rate is to be expected. A decision on whether to include or exclude a study because of a high dropout rate is a matter of judgement based on the reasons why people dropped out, and whether dropout rates were comparable in the exposed and unexposed groups.

Reporting of efforts to follow up participants that dropped out may be regarded as an indicator of a well conducted study. Look for clear and justifiable description of why people were left out, excluded, dropped out etc. If there is no clear description or a statement in this regards, this will be a 'No'.

10. Were strategies to address incomplete follow up utilized?

Some people may withdraw due to change in employment or some may die; however, it is important that their outcomes are assessed. Selection bias may occur as a result of incomplete follow up. Therefore, participants with unequal follow up periods must be taken into account in the analysis, which should be adjusted to allow for differences in length of follow up periods. This is usually done by calculating rates which use person-years at risk, i.e. considering time in the denominator.

11. Was appropriate statistical analysis used?

As with any consideration of statistical analysis, consideration should be given to whether there was a more appropriate alternate statistical method that could have been used. The methods section of cohort studies should be detailed enough for reviewers to identify which analytical techniques were used (in particular, regression or stratification) and how specific confounders were measured.

For studies utilizing regression analysis, it is useful to identify if the study identified which variables were included and how they related to the outcome. If stratification was the analytical approach used, were the strata of analysis defined by the specified variables? Additionally, it is also important to assess the appropriateness of the analytical strategy in terms of the assumptions associated with the approach as differing methods of analysis are based on differing assumptions about the data and how it will respond.

APPENDIX I

Utilisation of JBI Checklist for Cohort Studies Assessment

Questions	*Xiang et al., (2020)*
1. Were the two groups similar and recruited from the same population?	*CT*
2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?	*Y*
3. Was the exposure measured in a valid and reliable way?	*N*
4. Were confounding factors identified?	*N*
5. Were strategies to deal with confounding factors stated?	*N*
6. Were the the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?	*CT*
7. Were the outcomes measured in a valid and reliable way?	*Y*
8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?	*N*
9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?	*N*
10. Were strategies to address incomplete follow up utilized?	*N*
11. Was appropriate statistical analysis used?	*Y*

YES= Y, NO=N, Unclear =U, Cannot Tell= CT

APPENDIX J

JBI Systematic Reviews and Research Syntheses Appraisal Tool

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESES

Reviewer_____
Date_____

Author_____Year_____ Record Number_____

		Yes	No	Unclear	Not applicable
1.	Is the review question clearly and explicitly stated?	☐	☐	☐	☐
2.	Were the inclusion criteria appropriate for the review question?	☐	☐	☐	☐
3.	Was the search strategy appropriate?	☐	☐	☐	☐
4.	Were the sources and resources used to search for studies adequate?	☐	☐	☐	☐
5.	Were the criteria for appraising studies appropriate?	☐	☐	☐	☐
6.	Was critical appraisal conducted by two or more reviewers independently?	☐	☐	☐	☐
7.	Were there methods to minimize errors in data extraction?	☐	☐	☐	☐
8.	Were the methods used to combine studies appropriate?	☐	☐	☐	☐
9.	Was the likelihood of publication bias assessed?	☐	☐	☐	☐
10.	Were recommendations for policy and/or practice supported by the reported data?	☐	☐	☐	☐
11.	Were the specific directives for new research appropriate?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESIS

How to cite: *Aromataris E, Fernandez R, Godfrey C, Holly C, Kahlil H, Tungpunkom P. Summarizing systematic reviews: methodological development, conduct and reporting of an Umbrella review approach. Int J Evid Based Healthc. 2015;13(3):132-40.*

When conducting an umbrella review using the JBI method, the critical appraisal instrument for Systematic Reviews should be used.

The primary and secondary reviewer should discuss each item in the appraisal instrument for each study included in their review. In particular, discussions should focus on what is considered acceptable to the aims of the review in terms of the specific study characteristics. When appraising systematic reviews this discussion may include issues such as what represents an adequate search strategy or appropriate methods of synthesis. The reviewers should be clear on what constitutes acceptable levels of information to allocate a positive appraisal compared with a negative, or response of "unclear". This discussion should ideally take place before the reviewers independently conduct the appraisal.

Within umbrella reviews, quantitative or qualitative systematic reviews may be incorporated, as well as meta-analyses of existing research. There are 11 questions to guide the appraisal of systematic reviews or meta-analyses. Each question should be answered as "yes", "no", or "unclear". Not applicable "NA" is also provided as an option and may be appropriate in rare instances.

1. Is the review question clearly and explicitly stated?

   The review question is an essential step in the systematic review process. A well-articulated question defines the scope of the review and aids in the development of the search strategy to locate the relevant evidence. An explicitly stated question, formulated around its PICO (Population, Intervention, Comparator, Outcome) elements aids both the review team in the conduct of the review and the reader in determining if the review has achieved its objectives. Ideally the review question should be articulated in a published protocol; however this will not always be the case with many reviews that are located.

2. Were the inclusion criteria appropriate for the review question?

   The inclusion criteria should be identifiable from, and match the review question. The necessary elements of the PICO should be explicit and clearly defined. The inclusion criteria should be detailed and the included reviews should clearly be eligible when matched against the stated inclusion criteria. Appraisers of meta-analyses will find that inclusion criteria may include criteria around the ability to conduct statistical analyses which would not be the norm for a systematic review. The types of included studies should be relevant to the review question, for example, an umbrella review aiming to summarize a range of effective non-pharmacological interventions for aggressive behaviors amongst elderly patients with dementia will limit itself to including systematic reviews and meta-analyses that synthesize quantitative studies assessing the various interventions; qualitative or economic reviews would not be included.

3. Was the search strategy appropriate?

   A systematic review should provide evidence of the search strategy that has been used to locate the evidence. This may be found in the methods section of the review report in some cases, or as an appendix that may be provided as supplementary information to the review publication. A systematic review should present a clear search strategy that addresses each of the identifiable PICO components of the

review question. Some reviews may also provide a description of the approach to searching and how the terms that were ultimately used were derived, though due to limits on word counts in journals this may be more the norm in online only publications. There

should be evidence of logical and relevant keywords and terms and also evidence that Subject
Headings and Indexing terms have been used in the conduct of the search. Limits on the search should also be considered and their potential impact; for example, if a date limit was used, was this appropriate and/or justified? If only English language studies were included, will such a language bias have an impact on the review? The response to these considerations will depend, in part, on the review question.

4. Were the sources and resources used to search for studies adequate?

A systematic review should attempt to identify "all" the available evidence and as such there should be evidence of a comprehensive search strategy. Multiple electronic databases should be searched including major bibliographic citation databases such as MEDLINE and CINAHL. Ideally, other databases that are relevant to the review question should also be searched, for example, a systematic review with a question about a physical therapy intervention should also look to search the PEDro database, whilst a review focusing on an educational intervention should also search the ERIC. Reviews of effectiveness should aim to search trial registries. A comprehensive search is the ideal way to minimize publication bias, as a result, a well conducted systematic review should also attempt to search for grey literature, or "unpublished" studies; this may involve searching websites relevant to the review question, or thesis repositories.

5. Were the criteria for appraising studies appropriate?

The systematic review should present a clear statement that critical appraisal was conducted and provide the details of the items that were used to assess the included studies. This may be presented in the methods of the review, as an appendix of supplementary information, or as a reference to a source that can be located. The tools or instruments used should be appropriate for the review question asked and the type of research conducted. For example, a systematic review of effectiveness should present a tool or instrument that addresses aspects of validity for experimental studies and randomized controlled trials such as randomization and blinding – if the review includes observational research to answer the same question a different tool would be more appropriate. Similarly, a review assessing diagnostic test accuracy may refer to the recognised QUADAS[1] tool.

6. Was critical appraisal conducted by two or more reviewers independently?

Critical appraisal or some similar assessment of the quality of the literature included in a systematic review is essential. A key characteristic to minimize bias or systematic error in the conduct of a systematic review is to have the critical appraisal of the included studies completed independently and in duplicate by members of the review team. The systematic review should present a clear statement that critical appraisal was conducted by at least two reviewers working independently from each other and conferring where necessary to reach decision regarding study quality and eligibility on the basis of quality.

7. Were there methods to minimize errors in data extraction?

   Efforts made by review authors during data extraction can also minimize bias or systematic errors in the conduct of a systematic review. Strategies to minimize bias may include conducting all data extraction in duplicate and independently, using specific tools or instruments to guide data extraction and some evidence of piloting or training around their use.

8. Were the methods used to combine studies appropriate?

   A synthesis of the evidence is a key feature of a systematic review. The synthesis that is presented should be appropriate for the review question and the stated type of systematic review and evidence it refers to. If a meta-analysis has been conducted this needs to be reviewed carefully.

   Was it appropriate to combine the studies? Have the reviewers assessed heterogeneity statistically and provided some explanation for heterogeneity that may be present? Often, where heterogeneous studies are included in the systematic review, narrative synthesis will be an appropriate method for presenting the results of multiple studies. If a qualitative review, are the methods that have been used to synthesize findings congruent with the stated methodology of the review? Is there adequate descriptive and explanatory information to support the final synthesized findings that have been constructed from the findings sourced from the original research?

9. Was the likelihood of publication bias assessed?

   As mentioned, a comprehensive search strategy is the best means by which a review author may alleviate the impact of publication bias on the results of the review. Reviews may also present statistical tests such as Egger's test or funnel plots to also assess the potential presence of publication bias and its potential impact on the results of the review. This question will not be applicable to systematic reviews of qualitative evidence.

10. Were recommendations for policy and/or practice supported by the reported data?

    Whilst the first nine (9) questions specifically look to identify potential bias in the conduct of a systematic review, the final questions are more indictors of review quality rather than validity. Ideally a review should present recommendations for policy and practice. Where these recommendations are made there should be a clear link to the results of the review. Is there evidence that the strength of the findings and the quality of the research been considered in the formulation of review recommendations?

11. Were the specific directives for new research appropriate?

    The systematic review process is recognised for its ability to identify where gaps in the research, or knowledge base, around a particular topic exist. Most systematic review authors will provide some indication, often in the discussion section of the report, of where future research direction should lie. Where evidence is scarce or sample sizes that support overall estimates of effect are small and effect estimates are imprecise, repeating similar research to those identified by the review may be necessary and appropriate. In other instances, the case for new research questions to investigate the topic may be warranted.

APPENDIX K

Utilisation of JBI Checklist for Systematic Reviews and Research Syntheses Assessment

Questions	*Brødsgaard et al., (2019)*
1. Is the review question clearly and explicitly stated?	*N*
2. Were the inclusion criteria appropriate for the review question?	*Y*
3. Was the search strategy appropriate?	*Y*
4. Were the sources and resources used to search for studies adequate?	*Y*
5. Were the criteria for appraising studies appropriate?	*Y*
6. Was critical appraisal conducted by two or more reviewers independently?	*Y*
7. Were there methods to minimize errors in data extraction?	*CT*
8. Were the methods used to combine studies appropriate?	*Y*
9. Was the likelihood of publication bias assessed?	*N*
10. Were recommendations for policy and/or practice supported by the reported data?	*Y*
11. Were the specific directives for new research appropriate?	*Y*

YES= Y, NO=N, Unclear =U, Cannot Tell= CT

APPENDIX L

Participant Information Letter

Information Letter

Dear Sir/ Madam,

My name is Rebecca Caffari and I am a student at the University of Malta, reading for a Master of Science in Nursing. I am presently conducting research as part of my dissertation titled 'NPICU Nurses' Perspectives of Family Centered Neonatal Care in Malta: A Qualitative Study'. This is being supervised by Dr. Sharon Martinelli (sharon.martinelli@um.edu.mt) & Dr. Roderick Bugeja (roderick.bugeja@um.edu.mt). The aim of my study is to explore Neonatal and Paediatric Intensive Care Unit (NPICU) nurses' perspectives on implementing family- centred care in a Maltese intensive care setting for critically ill infants.

Your Participation

Any data collected from this research will be used solely for purposes of this study.

Should you choose to participate, you will be asked to take part in a face-to-face semi-structured interview which will be audio recorded. This interview will be around one hour long, and the date, time and location of the interview can be chosen by yourself. During this interview, you will be asked questions which will help the researcher to understand your perspectives in regard to family-centred care in the NPICU. Moreover, you are open to discuss or mention any other experiences which might have affected your views about the implementation of family-centred care in the NPICU setting.

All data collected will be gathered, transcribed, and analysed through the use of the thematic analysis approach. Participation in this study is entirely voluntary; in other words, you are free to accept or refuse to participate, without needing to give a reason. You are also free to withdraw from the study at any time, without needing to provide any explanation and without any negative repercussions for you. Should you choose to withdraw, any data collected from you will be erased as long as this is technically possible (for example, before it is anonymized or published), unless erasure of data would render impossible or seriously impair achievement of the research objectives, in which case it shall be retained in an anonymized form.

If you choose to participate, please note that there are the following direct benefits to you: This research may help to increase awareness about the importance of the implementation of family-centered care within the NPICU setting, both on a personal and holistically based level.

Your participation entails the following risks: The interview may trigger emotional distress and thus, in case this occurs, the psychotherapist Ms Mariella Meachen has consented to meet the participants if needed. The support offered by Ms. Maechen is free of charge. She can be contacted on mariella.meachan@gov.mt.

Data Management

In accordance with the data protection act, all gathered data will be treated confidentially and pseudonymized so that the identity of the participants will not be revealed in the research or any publications which arise from. All research data will be stored separately on the researchers' personal computer which will be password protected. Only the researcher, and in exceptional circumstances, the supervisors and the examiner(s) will have access to uncoded data. If you would like to know who accessed your personal data, please contact the researcher on rebecca.caffari.17@um.edu.mt or 79365563.

Please also note that, as a participant, you have the right under the General Data Protection Regulation (GDPR) and national legislation to access, rectify and where applicable ask for the data concerning you to be erased.

All data collected will be erased by August 2024, upon completion of the study.

As a participant, a copy of this information and consent form can be kept for future reference.

It is not anticipated that incidental findings will arise from this research.

Thank you for your time and consideration. Should you have any questions or concerns, please do not hesitate to contact me by e-mail on rebecca.caffari.17@um.edu.mt. You can also contact my supervisor Dr. Sharon Martinelli over the phone number 2340 1832 or via email: sharon.martinelli@um.edu.mt, or Dr. Roderick Bugeja over the phone number 23401165 or via email: roderick.bugeja@um.edu.mt.

Sincerely,

REBECCA CAFFARI
(Student Researcher)

DR. SHARON MARTINELLI
(Principal Supervisor)

APPENDIX M

FREC Approval for the Conduct of this Study

L-Università ta' Malta

Rebecca Caffari <rebecca.caffari.17@um.edu.mt>

FHS-2023-00524 Rebecca Caffari

Paulann Grech <paulann.grech@um.edu.mt> 27 October 2023 at 08:00
To: Rebecca Caffari <rebecca.caffari.17@um.edu.mt>
Cc: Roderick Bugeja <roderick.bugeja@um.edu.mt>, Sharon Martinelli <sharon.martinelli@um.edu.mt>, Research Ethics HEALTHSCI <research-ethics.healthsci@um.edu.mt>

Dear Rebecca,

Thank you for the update. Your recent amendments have been reviewed and approval is granted on behalf of FREC.

Please make sure that the updated documents forwarded to FREC have also been uploaded on the URECA portal, without track changes.
You may continue with your data collection.

Good luck.
[Quoted text hidden]
[Quoted text hidden]

APPENDIX N

Interview Guides

Interview Guides

Definition and Understanding of Family-Centered Care:

1. What are the key principles of family-centred care, and how do you see them being implemented in the NPICU?
2. What types of interactions do you have with the infant's families, and how do you see these interactions contributing to family-centred care?

Barriers & Facilitators to Family-Centred Care:

3. What types of challenges do you encounter which might inhibit the implementation of family-centred care in this setting?
4. On the other hand, what practices or resources do you find helpful in order to implement family-centred care?

Cultural Sensitivity:

5. Are there any specific cultural or logistical factors that affect the implementation of family-centred care in the NPICU? (Prompt: If yes, explain why. If no, explain why)

Communication and Collaboration:

6. What type of communication strategies are utilised in order to keep the families updated and engaged in their infants' care from all aspects of the multidisciplinary team?

7. What are your perspectives and beliefs in regard to involving families in their infants' care in the NPICU?

Quality of Care and Outcomes:

8. Have you ever noted potential benefits or outcomes due to the implementation of family-centred care which leaded to you changing your perspectives about this approach?

Recommendations for Improvement:

9. In your opinion, what resources or changes could be made that would be helpful in order to enhance family-centred care in the NPICU?

Professional Well-Being:

10. What is the most rewarding aspect while providing care for such critically ill infants within a family-centred environment?

APPENDIX O

Researchers' Reflective Diary Excepts

Pre-First Interview November 2023

Today I will be conducting my first interview, which will be the interview being used for the pilot study. I am excited to be starting my interviews but on the other hand I am feeling nervous for this data collection process. Not working in this environment is one of the reasons to why I am feeling anxious as I need to find the courage to manage these interviews while lacking certain knowledge about this field. I have also been in contact with the participant to reconfirm that it is fine to conduct the interview today as this interview will be conducted during break time at work.

After First Interview:

First interview was done just an hour ago and on the contrary of what I thought, the interview went so well, and I am very happy with the outcome and the data collected since. The participant was very informative and went into detail, while understanding all the questions that were asked. Despite this, the participant narrated certain details which were not asked, but related to the topic. The participant could relate to certain nursing experiences in the NPICU by understanding and comparing them to what she would do as a parent if she had to experience being in the NPICU.

On another note, although I was planning to jot down notes during the interview, I felt uncomfortable doing this as to provide full attention to the participant while ensuring that the participant would not be distracted while I was writing any notes. Due to this reason, I am more determined to go through the voice recording while starting the transcription process later today.

This interview which also served as a pilot study ensured that all interview questions were suitable for this study. It also made me realise that certain questions led to the participant narrating experiences, which could also be the case for future interviews. I feel that narrating experiences related to this topic could ultimately lead to improving the data collected.

Diary Excerpt - December 2024

This morning's interview was very satisfying since the participant was very informative and knowledgeable about FCC. Not only did the participant present relevant information, but the participant also linked it specifically to how they adapt nursing practice to implement FCC successfully. This allowed me to interconnect the adaptation model guiding me throughout my dissertation to understand adaptation strategies in real practice. Although this is my first experience conducting interviews for research purposed, overall I am feeling happy and satisfied with how this process is going and I am looking forward to conducting more interviews to understand this topic further.