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Stress and Coping Mechanisms among Mothers Baby's Admitted to NICU at Rafedia Hospital

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Declaration

I am the under signed Asala Sabe Eshtaya, holder ID Card No. (202012611). the work presented in this thesis, unless otherwise referenced, is based on my own work and has not been submitted elsewhere for any other degree or qualification.

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Dedication

I dedicated this thesis to the sake of Allah, and my great teacher and messenger, Mohammed (May Allah bless and grant him), who taught us the purpose of life.

To my homeland Palestine, the intimate womb

To My great parents, who never stop giving of themselves in countless ways,

My dearest husband, who leads me through the valley of darkness with the light of hope and support,

My beloved brothers and sister,

My beloved kids: Raghad whom I cannot force myself to stop loving.

To all my family, the symbol of love and giving,

My friends who encourage and support me, all the people in my life who touch my heart.

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Stress and Coping Mechanisms among Mother Baby's Admitted to NICU

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Supervisor

Dr. Najwa Mohamad Subuh

Abstract

Background: The number of non-preterm infants admitted to neonatal intensive care unit s is substantial and growing, Neonatal care units are "high technology unit. The sickest preterm infants may be in hospital for many months, Parents of infants admitted to the neonatal intensive care unit experience stress from a variety of causes which are often poorly understood by clinician's measurement of parental stress in the neonatal intensive care unit.

Aim: To assess the stress and coping strategies of mothers of neonates admitted to neonatal intensive care unit in Rafedia hospital.

Methods: The study was a descriptive, prospective, cross-sectional study. Data collected through the Parental Stressor Scale: Neonatal Intensive Care Unit (PSS: NICU) and Coping Health Inventory for Parents (CHIP). The population of the study was mothers of neonates admitted in the NICU in Rafedia hospital for a period of two months January 1 to March 1, 2022). Pilot 20study with 200 mothers.

Results: There was negative small association between parental stress and parental coping health among mothers (r= -.234) at P< 0.001. Also, there were association between subscales of parental stress and subscales of parental coping health, no statistically significant differences between demographic characteristics and parental stress scores, and coping strategies (P> 0.05).

Conclusions: Having an infant in the neonatal intensive care unit it a stressful experience associated with many difficulties. Most parents expressed shock, sadness, crying, worries about their infant's health, mothers of preterm need support. Spirituality and religion, helps them face the challenges of having their baby hospitalized in a neonatal intensive care unit.

Keywords: Stress, Coping Strategies, Mothers, Neonates, Neonatal Intensive Care Unit (NICU).

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List of abbreviation

NICU: neonatal intensive care unit.

NNU: neonatal unit.

PTSD: post-traumatic stress disorder.

PPD: postpartum depression.

WHO: World Health Organization.

JS: East Jerusalem.

PTB: premature birth.

NUPS: Neonatal Unit Parental Stress scale.

CHIP: Coping Health Inventory for Parents.

US: united stat.

GS: Gaza strip.

PTNI: preterm newborn infant.

CHIP: Coping Health Inventory for Parents.

M: mean.

SD: stander deviation.

Chapter One

Introduction

Introduction

1.1 Overview

According to a World Health Organization (WHO) report in 2022 , approximately 15 million newborns are delivered prematurely each year, accounting for one-tenth of all newborns, with rates ranging from 5% to 18% in different countries ,Cristóbal Cañadas, Bonillo Perales, Galera Martínez, Casado-Belmonte, and Parrón Carreño (2022) .

Anxiety, stress, and maybe even depression can be triggered by a variety of cognitive and behavioral attempts to cope with stressful life circumstances, parents of premature children hospitalized in a neonatal intensive care unit (NICU) face additional stress because they are rarely prepared for the stress, anxiety, and fear that occur when their baby requires critical care in a NICU. According to the WHO premature birth (PTB) is a major cause of infant mortality and morbidity ,(T. H. Kim, Delahunty-Pike, & Campbell-Yeo, 2020). Babies born prematurely (before 37 weeks of gestation) are at a higher risk of becoming ill than babies born on their due date. Premature infants are at increased risk of several health and developmental problems, and they have significant emotional and economic costs for families and significant consequences for public services ,(Cristóbal-Cañadas, Bonillo-Perales, Casado-Belmonte, Galera-Martínez, & Parrón-Carreño, 2021).

Everyone in the modern world faces stress at some point in their lives. It has disastrous consequences on an individual, interpersonal, and social level. Stress defined as “a complex pattern of a reaction of the human physiology to a demanding situation. It is a process in which we perceive and deal with threats and challenges around us”, (Engidaw, Mekonnen, & Amogne, 2019). It is basically a reaction to a stimulus that upsets the bodily and mental harmony. In other words, it is an omnipresent part of life ,(Mamani Das,

2020). Stress is the tension-producing factor that can weaken the normal line of defense, which is divided into physical, physiological, emotional, cognitive, psychological parental, and economic domains ,(Rajalakshmi & Kalavathi, 2017).

Stress during pregnancy is described as an imbalance experienced by a pregnant woman when she becomes unable to cope with responsibilities and concerns. Stress is a highly common mental health problem among pregnant women worldwide. According to surveys, stress levels during pregnancy range from 5.5 to 78%. It also influences the development of a stable attachment bond with the infant ,(Treyvaud, Spittle, Anderson, & O'Brien, 2019).

The journey to parenthood is an emotional life event. Giving birth to a healthy baby and then taking the child home is a major emotional event. Even when everything runs perfectly, parents commonly encounter varying degrees of anxiety and stress. The first day of a newborn's life is a key moment in existence, as well as a critical bonding time for the infant and the new parents. Their lives will never be the same and they will have an entire new set of responsibilities swaddled in a little blanket ,(Medina-Alva et al., 2019). Parents of infants admitted to a neonatal intensive care unit (NICU) are believed to experience heightened distress, including increased anxiety, depression, and trauma symptoms, compared with parents of healthy infants ,(Deng, Li, Wang, Sun, & Xu, 2018).

The neonatal phase, which lasts for the first 28 days of life, has the highest risk of death per day of any other stage of development. The risk of death is 30 times higher in the first four weeks of life than in the post-neonatal period, which lasts from one month to 59 months. India is responsible for one-fifth of all live births worldwide and more than a

quarter of all neonatal fatalities. Every year, almost 0.75 million neonates die in India, the greatest number of any country on the planet ,(Mamani Das, 2020).

Being a parent of a critically ill newborn in the Neonatal Intensive Care Unit (NICU) can be incredibly difficult. The daily uncertainty of life and death is extremely stressful on the emotions, both the mother and the newborn suffer Serious long-term impacts as a result of maternal mental health issue ,(Mamani Das, 2020). Instead of welcoming their kid into their homes, these couples spend the initial part of motherhood in the confines of hospital ,(Lévesque, Bisson, Charton, & Fernet, 2020).

The universal adaption syndrome describes how the body reacts to stress. Alarm, resistance, and weariness are the three stages of reacting to stress. The most prevalent form of alarm stage is the fight or flight response ,(W. Harrison & Goodman, 2015). However, mothers of preterm infants admitted to the NICU encounter challenges in adjusting to motherhood and attaching to their babies, and therapeutic caregiving is crucial to their babies' healthy growth and development following discharge. Mothers may hesitate to voice their opinions to not interfere with the medical staff rather than expressing their complaints regarding their babies' care, (Roué et al., 2017).

Stressful circumstances usually result in mental issues as well as emotional reactions that upset the individual. Coping methods help mitigate the effects of stressful circumstances. As a result, reducing emotional and bodily reactions makes it easier to sustain normal performance at that time. Stress produces physiological and psychological responses and inadequate handling of stress can lead to physical or mental illness or both, (De Weerth, 2018).

Health care professionals play an important role in encouraging healthy coping, and to do so, health care workers tasked with caring for neonatal care unit moms must understand the mothers' specific coping mechanisms, (Ma, Zhang, Ni, & Lv, 2021; Treyvaud et al., 2019).

common factors that affect maternal adjustment in 17 mothers with newborns in the NICU and discovered that common themes like feelings of self-efficacy, social support, emotional turmoil, feelings of alienation, and interaction with healthcare providers all played a critical role in adjustment to new motherhood in a NICU environment ,(Hynan & Hall, 2015).

Richard Lazarus and Susan Folkman defined coping as the sum of cognitive and behavioral efforts, which are constantly changing, that aim to handle particular demands, whether internal or external, that are viewed as taxing or demanding ,(Folkman, Lazarus, Pimley, & Novacek, 1987).

The neonatal period (the first 28 days of life) has the highest risk of death per day of any time in childhood. The daily risk of death in the first four weeks of life is 30 times that of the post-neonatal period, which lasts from one month to 59 months. India accounts for one-fifth of all live births and more than a quarter of all neonatal deaths worldwide. About 0.75 million neonates die every year in India, the highest for any country in the world ,(Kannaujiya et al., 2022).

Mothers of high-risk infants can cope more effectively with stress when their opinions are recognized by medical staff in a friendly environment ,(Amorim, Silva, Kelly-Irving, & Alves, 2018; Choi & Lee, 2018). As family advocates, healthcare practitioners should

work to create friendly settings and assist families by addressing and adapting their changing needs within the complexities of their NICU experiences.

Understanding mothers' perceived needs would extend the field's knowledge regarding strategies for effective partnerships with NICU families ,(A. Kim, Kim, & Yun, 2020).

Many infants that are admitted to a NICU upon birth are admitted for diagnoses that were not know until birth, and these infants often require a long-term stay due to their many medical issues and complications. The long weeks spent in the intensive care unit can begin to be a large barrier to their relationship with their parent, (Shahkolahi, Lenji, & Jafari-Mianaei, 2018).

Regardless of the time spent in NICU, separation from the parental unit can play a negative role to the attachment of the infant to their parents. The newborn instinctually attaches to its closest caregiver (mainly the mother) during the first few hours and days after birth. If this attachment is interrupted due to a NICU admission just after birth (i.e. post-caesarean section or during the delivery room due to low Apgar scores), attachment is delayed , (Colen, Li, Reczek, & Williams, 2019). This interruption can negatively affect the child’s emotional development and the mother’s perception of the birth experience, (Colen et al., 2019). Mothers are often left feeling guilty for being unable to give birth to a healthy, ideal baby and often feel that they lost the child they once envisioned they would give birth to ,(Colen et al., 2019).

Parents of infants born very preterm (less than 32 weeks' gestation) have been estimated to have rates of mood and anxiety disorders as high as 40–50 percent of moms and fathers shortly after birth, (Treyvaud et al., 2019). With that in mind, one can imagine how challenging it is for parents who have recently given birth to a newborn. NICU staff

frequently whisks the infant away before the parents have a chance to respond or grasp the significance of the new addition to their family, (Goodman et al., 2019).

When newborns are admitted to a NICU, the mother and her child are separated, regardless of how early or late in gestation they are. The child is withdrawn from the mother's bedside, possibly upon delivery, and cared for at a location that is some distance away from the mother, having a negative impact on what began as an indelible bond that evolved from the beginning of pregnancy. This causes a variety of pressures for the mother, her spouse, and possibly her immediate family ,(Mamani Das, 2020).

Anxiety about their infant's well-being, trying to keep up with the demands of parenting other children, loss of family domain to NICU medical team, transportation difficulties, and financial strain are all common stressors that parents face while their infant is in the NICU, (Craig et al., 2015), and the technological surroundings, the appearance of the sick infant, and the loss of the expected parental role, (De Rouck & Leys, 2009), as well as institutional regulations that directly or indirectly affect NICU parents, all contribute to this stress. For example, families' limited attendance and availability in the NICU, (Cena, Lazzaroni, & Stefana, 2021) Mothers of infants born extremely preterm have been found to have 2–5 times greater rates of emotional stress at various stages during childhood , while clinically significant post-traumatic stress symptoms have been recorded in 34% of mothers 18–24 months following very preterm birth, (Treyvaud et al., 2019).

NICU experiences are becoming a critical topic of study due to the influence of these stresses and subsequent mother adjustment on both maternal and baby health, (Williams et al., 2018).

1.2 Background

The number of non-preterm infants admitted to NICUs is substantial and growing, according to research based on national datasets and data from many large states.

Neonatal care units are generally noisy, bright, and hot. They can be crowded, and elements of every unit will be "high technology". The critically ill preterm newborns may spend months in hospitals, and visiting may be unpleasant, stressful, and financially demanding for parents. Professionals can assist parents lower their stress by encouraging them to see their neonates frequently, breastfeed, hold their newborns, and ask questions about their neonates. Involving family cantered care which may help to improve satisfaction with care, decreased parental stress, allowing parents to stay with their babies, improve mother comfort is essential,(Villarroel et al., 2019). Parents of infants hospitalized in the NICU feel stress for a number of reasons that specialists frequently do not understand. Measurement of parental stress in the NICU and assessment of parental needs is a valuable component of family centered care, (Grunberg, Geller, & Patterson, 2020).

NICU care improved neonatal outcomes, causing an increase in the number of NICUs and NICU beds: from 1995 to 2013, the number of NICU beds per 1000 live births in the United States increased from 3.4 to 5.7., (Goodman et al., 2019).

In 1988, the World Health Organization published postnatal care recommendations focusing on preterm newborns' care in order to improve mothers' understanding of preterm infants' health care difficulties at home ,(Organization, 2014).

In concert with NICUs, neonatology as a pediatric sub-specialty evolved and expanded to offer neonatal experience to - and regional facilities, and to meet infants' neonatal

intensive care needs from initial stabilization to discharge. In 1974, neonatology became a board-certified specialty in the United States. The rise in neonatologists was accompanied by a significant drop in the ratio of births to neonatologists, which fell from 7201:1 to 965:1 between 1981 and 2013 ,(Braun et al., 2021).

Using US birth certificate data, Harrison et al. discovered that babies with a birth weight (BW) of 2500 g accounted for 93 percent of births and 65 percent of all NICU admissions from 2007 to 2012, while those with a gestational age (GA) of 37 weeks accounted for 90 percent of births and 40 percent of all NICU admissions, with rates that increased over time,(W. Harrison & Goodman, 2015).

In the first month of life, 4 million newborns die worldwide, the large majority of whom are from third world nations ,(Hoque, Khan, Begum, Chowdhury, & Persson, 2011) While there are many factors that contribute to newborn morbidity and mortality, maternal knowledge and training are among the most important, (Izugbara, 2016).

Preterm newborns accounted for 40.1 percent of NICU admissions in 2016, according to Palestinian ministry of health reports,(Abu Amuna & Abu Mouamer, 2020). The infant mortality rate in Gaza was 19.6 per 1000 live births, which is the number of newborns that die before they reach the age of four weeks, (Lehtonen, Gimeno, Parra-Llorca, & Vento, 2017).

Palestine, as a growing middle-income country, presents some of the same newborn health concerns as the rest of world. However, because the national death data is insufficient, it is difficult to study changes in newborn mortality in the country,(St Clair, Batra, Kuzminski, Lee, & O'Callahan, 2014)In 2017, Palestine's newborn mortality rate (11.3 deaths per 1000 live births) was underreported.

According to the Palestinian Central Bureau of Statistics, the death registration was only 60.2 percent complete in 2013, mainly to mostly underreporting of baby births, which had a completeness rate of 25.6 %in the death registry ,(St Clair et al., 2014) as a consequence, whereas the reported newborn mortality rate was 5.66 deaths per 1000 infants in 2013, the estimated infant mortality rate was 18.11 deaths per 1000 infants in 2013. (St Clair et al., 2014) based on a research conducted in the Gaza Strip by the United Nations Relief and Works Agency (UNRWA) in 2015. (GS), Between 2008 and 2013, infant mortality increased from 20.2 per 1000 live births to 22.4 per 1000 live births in this area where 67 % of the population are refugees and UNRWA serves them.

The newborn death rate increased significantly (from 12.0 to 20.3 per 1000 live births, p = 0.01), resulting in this shift. Preterm delivery, congenital abnormalities, and infections were the leading reasons of mortality,(van den Berg et al., 2015).

There are significant hurdles in scaling up service delivery and improving the quality, integration, and continuity of newborn care. Inequality in healthcare delivery in Palestine is a result of discrepancies in the provision of services, which are attributable in part to the geographical segregation enforced by the presence of many checkpoints and the separation wall, as well as insufficient service distribution,(van den Berg et al., 2015) Relatives (Ibrahim) East Jerusalem (EJ), has been isolated from the remainder of the West Bank and is under full control of Israel. For Palestinians living in the WB and GS, EJ is largely inaccessible.

For parents of newborns in the NICU, transporting to and from the NICU, visiting hours, and handling other activities of family life can be stressful. These challenges can make it difficult for new parents to establish feeding schedules and secure bonding with their

infant through quality time and skin-to-skin contact,(Williams et al., 2018). The NICU environment significantly impacts families (Del Fabbro & Cain, 2016).

According to the studies, over 7% of all births in the United States result in infants that require NICU treatment, (W. Harrison & Goodman, 2015) in a 2013 study involving 32 extremely preterm neonates (27 weeks) and their mothers, researchers looked at characteristics that influenced the amount of time mothers spent visiting their babies in the NICU and participating in skin-to-skin care, (Mamani Das, 2020).

Heydarpour et al. analyzed common factors that influence maternal adjustment in 17 mothers with babies in the NICU and discovered that common themes such as feelings of self -efficacy, social support, emotional turmoil, feelings of alienation, and interaction with healthcare providers all played a critical role in adjustment to new motherhood in a NICU environment ,(Williams et al., 2018).

1.3 Operational Definition

1.3.1 Stress

Defined in this study as factors that have the potential to weaken the normal defenses of mothers of newborns admitted to the NICU. For the purpose of the study, the physiological domain (difficulty breathing), the emotional domain (irritability and helplessness), the cognitive domain (inability to think), the socioeconomic domain (inability to care for an infant), and the parental role change were selected ,(Colen et al., 2019) .

1.3.2 Coping Mechanism

The term "coping strategies" refers to the actions that mothers take to cope with stressful situations when their newborns are admitted to the NICU. Physical coping (doing something physical), emotional coping (sharing feelings), cognitive coping (thinking of ways to cope), spiritual coping (praying more), social coping (talking to family), and diverting activities (listening to music) are the chosen methods of coping. A person's ability to effectively respond to stressors is referred to as coping, which includes the behavioral and cognitive skills necessary to manage and deal with one's internal and external demands in any stressful situation ,(Haytham, Khuan, Ying, & Hassouneh, 2022).

1.3.3 Neonates

The term "neonatal period" refers to the first 28 days of a baby's life. A neonate is a newborn who is admitted to the NICU between the ages of 0 and 28 days. The term "early neonatal period" refers to the first seven days of life, while "late neonatal period" refers to the 28th day,(Eyeberu & Getachew, 2020).

1.3.4 Neonatal Intensive Care Unit (NICU):

The NICU is a specialized setting created to offer resources for the care of sick newborns (0 to 28 days) who require round-the-clock monitoring, and specialized care, such as monitoring, resuscitation, and nutrition provided by trained healthcare professionals,(Malin et al., 2022).

Problem Statement

The problem statement is that mothers whose babies are admitted to the Neonatal Intensive Care Unit (NICU) at Rafedia Hospital are likely to experience high levels of stress due to the uncertainty and fear associated with their child's condition. The NICU is a highly specialized unit that cares for newborn infants who are critically ill or premature, and the experience can be overwhelming for mothers who are already coping with the physical and emotional challenges of childbirth.

Furthermore, the situation is compounded by the fact that mothers of NICU babies are often separated from their newborns due to the intensive medical care required. This separation can result in feelings of isolation, helplessness, and anxiety for the mother.

The coping mechanisms available to mothers in this situation are limited, and it is essential to identify effective coping strategies to help them manage the stress and emotional distress associated with having a baby in the NICU. Finding appropriate coping mechanisms can improve the well-being of both the mother and the baby, and enhance the mother-infant bonding process.

Therefore, it is important to investigate the stress levels experienced by mothers whose babies are admitted to the NICU at Rafedia Hospital and explore the coping mechanisms they use to manage their stress. This will help identify potential areas of improvement in the current support and resources available to these mothers and provide insights for the development of effective coping interventions to enhance their well-being.

1.2.5 Significance of Study

This study is significant because there is lack in studies discussed stress level and coping strategies in Palestine, and mention the important of studies that found relation between high stress level and poor coping strategies, which lead to poor maternal outcome.

Another reason firstly, mothers of babies admitted to the NICU are known to be at high risk of experiencing stress, anxiety, and other mental health problems. This is due to the uncertainty and unpredictability of the NICU environment, as well as the physical and emotional challenges of caring for a sick or premature infant. By understanding the specific stressors and coping mechanisms experienced by these mothers, healthcare providers can develop targeted interventions and support strategies to improve their well-being.

Secondly, the study is important for understanding the experiences of mothers in a specific cultural and geographical context - in this case, Rafedia Hospital. Cultural factors can influence how stress is perceived and experienced, as well as how coping mechanisms are utilized. By understanding the unique context of Rafedia Hospital, the study can inform culturally-sensitive interventions and support strategies that are more likely to be effective.

Finally, the study has implications for improving the quality of care provided to NICU babies and their families. By understanding the experiences of mothers and the factors that contribute to stress, healthcare providers can identify areas for improvement in the NICU environment, such as communication and support services for families.

Overall, the study on stress and coping mechanisms among mothers of babies admitted to the NICU at Rafedia Hospital has important implications for improving the well-being of mothers and families in the NICU, as well as for improving the quality of care provided to NICU babies.

1.2.6 Aims of the Study

To assess the stress and coping strategies of mothers of neonates admitted to NICU in Rafedia hospital

1.2.7 Objectives

1. To find a correlation between stress and coping of mothers of neonates admitted to NICU
2. To find out the association between stress and selected demographic variables.
3. To find out the correlation between the perceived stress and coping strategies among postnatal mothers

1.2.8 Research Questions

1. What is the correlation between stress and coping of mothers of neonates admitted to the NICU?
2. Dose there an association between stress and selected demographic variables?
3. What is the correlation between perceived stress and coping strategies among postnatal mothers?

1.2.9 Study Hypothesis

H1: There is a significant association between stress and coping mechanisms among mothers of neonates admitted to NICU at $P<0.05$

H2: There is a significant difference between the stress scores of mothers and the selected demographic variable at $P<0.05$.

H3: There is a significant difference between the coping strategies scores of mothers and selected demographic variables at $P<0.05$.

Chapter Two

Literature Review

Literature Review

2.1 Literature Review

In this literature review, I will discuss a wide range of studies on mothers' stress and coping mechanisms when their newborns are admitted to the NICU.

The current literature review was conducted using Pub Med, MEDLINE, and GOOGLE; articles were selected based on the following three criteria for inclusion:

Relevance: Articles were selected if they were relevant to the topic of stress and coping mechanisms among mothers of babies admitted to the NICU at Rafedia Hospital.

Date: Articles were limited to those published within the last 10 years (2012-2022) to ensure that the review reflected current research on the topic.

Quality: Articles were selected based on their quality, as determined by their study design, sample size, and methodology. Only studies that met high standards of scientific rigor were included.

By selecting articles based on these criteria, the literature review can ensure that it provides a comprehensive and up-to-date overview of the current state of research on stress and coping mechanisms among mothers of NICU babies at Rafedia Hospital.

2.2 Stress Mothers Baby's Admitted to NICU

Human infants, due to their immaturity at birth, must rely on their mother/caregiver to survive. If mother and fetus are viewed as an inseparable entity during their intra-uterine development, mother-newborn during infancy may be regarded in a similar fashion. The continuous interfacing between a mother and her children will determine the nature of their bond/attachment, (Viaux-Savelon et al., 2016**).** It is a complex psycho-physiologic

process that first and foremost depends on the proper initiation of maternal behavior/motherhood ,(Bridges, 2016)**.**

The experience of having a child admitted to the NICU exposes parents to different stressors: intrapersonal, interpersonal and extra personal, these can be caused by the aggressive environment of this unit and the fragility of the infants, who require complex care suitable to their condition (Sanders & Hall, 2018) **,** but other stressors could be parents' perception of their inability to care for their child and to protect them from pain and from procedures; difficulty in transitioning into parenthood due to the change in their parental role; and uncertainty regarding the infant's illness, hospital stay, and prognosis (Joo & Kim, 2020)**.** Parents suffer negative psychological effects, experience an interruption in the development of the bonding and attachment process, and feel like they are failing in their parental role. The experience of parents in the NICU can prevent them from becoming emotionally attached to their child; thus, NICU admissions are recognized as potentially traumatic for parents (C. H. Lee, Jang, Choi, & Shin, 2019).

Parental stress levels are associated with hospitalization the severity of the infant's disease, especially in the first days, and some responses displayed by parents include anxiety, helplessness, fear, guilt, shame, depression, sadness and disappointment, feeling loss of control over what is happening to them, and uncertainty about their ability to cope with daily parental tasks. Families experience moments of uncertainty regarding the future of their newborns, and their own future, and have to face new demands and adaptations, given the NICU admission affects various spheres of life, such as the personal, financial, occupational and social dimensions (Bry & Wigert, 2019)**.**

To better understand stressors in the NICU, the scientific literature has developed two scales exclusively for this context, the Parental Stress Scale: Neonatal Intensive Care Unit (PSS: NICU) and the Neonatal Unit Parental Stress (NUPS) scale. The use of parental stress assessment scales in NICUs has shown that sources of stress include how infants look and behave, treatments to which they are submitted, how easily parents development attachment to their newborns, parental role alterations, the sights and sounds of the NICU, and relationships with health professionals. The Neonatal Unit Parental Stress (NUPS) scale was created after the statistical validation of the PSS: NICU for the population of the United Kingdom and its subsequent cultural adaptation (Wolke, Johnson, & Mendonça, 2019). Some authors reviewed various items and suggested the construction of a new dimension related to the birth experience, practical strains and pressures, and the transition into the parental role, and then proposed the design of the new scale. According to its authors, the new scale presented good internal reliability and construct validity ,(Prouhet, Gregory, Russell, & Yaeger, 2018). When used with mothers and fathers within the first two weeks of their NICU experience, it discriminated between different domains of stress, and identified a relationship between perceived family support and social/practical stress. Parents are the first regulators of their children and they play a decisive role in their children's development and future. Given this reality, it is important that health professionals, especially nurses, adopt a collaborative care philosophy that is non-traumatic and family-centered, and that they develop anticipatory care that promotes transition into the parental role, (S. J. Lee, Choi, Park, & Kim, 2019).

The early postpartum prevalence of depression among women with premature babies to be as high as 40% ,(Malouf et al., 2022; Vigod, Villegas, Dennis, & Ross, 2010).Reported that postpartum PTSD affects 15% of mothers and 8% of fathers of premature infants

admitted to the NICU. Post-partum depression (PPD) affects 39–63% of mothers with newborns in the NICU compared to their counterparts who do not have a baby in the NICU, whose prevalence of PPD ranges from 13 to 19 percent, (Del Fabbro & Cain, 2016; Feldman et al., 2009; Miles, Holditch-Davis, Schwartz, & Scher, 2007; O'hara & McCabe, 2013).

The separation of the mother and the premature infant, the infant's medical complexity, and the highly technical medical environment all contribute to feelings of loss of the motherly role, stress, and a threat to the bond between the mother and the infant, (Spinelli et al., 2016).

A recent meta-analysis suggested that the trauma of being hospitalized in a NNU plays a significant role in the perception of stress among parents, and that parental stress in NNU is at least partially independent of infant risk. The review also revealed that parents' levels of stress did not significantly increase with time spent in the NNU, (Caporali et al., 2020).

Stressors in the NICU environment the baby is exposed to a variety of technologies, including disturbing sights and sounds. They are surrounded by numerous machines that buzz and beep to monitor their heart rate and oxygen levels. As a result, the environment in a NICU may become extremely overwhelming for both the baby and the parents (Williams et al., 2018).Common sources of stress for parents include concerns about their infant's well-being, difficulty meeting the demands of parenting other children, losing parental role to the NICU medical team, transportation challenges, and financial strain, (Hall et al., 2015; Singer et al., 2007).

Heydarpour et al.'s qualitative research looked at common factors that influence motherhood adjustment among 17 mothers with babies in the neonatal intensive care unit

(NICU). They found that common themes like self-efficacy, social support, emotional turmoil, feelings of alienation, and interactions with healthcare providers were important in adjusting to motherhood in the NICU, (Heydarpour, Keshavarz, & Bakhtiari, 2017).

China a systematic review of six study results that were identified as examining the mothers' experiences with having a premature infant in the neonatal intensive care unit were all carried out in distinct nations ,(Wang, Ma, Meng, & Zhou, 2021). In Iran qualitative research methods like descriptive phenomenology were used.

In 2010, semi-structured interviews were conducted with 20 mothers whose preterm infants had been treated in the intensive care unit of Tabriz's treatment-educational centers for children. Results four theme emerged from the study's findings, indicating the structure of mothers' experiences with preterm infant hospitalization in the NICU.

This study had the following themes and subthemes: a feeling of alienation, powerlessness, compassion, and depravity, (Malakouti, Jabraeeli, VALIZADEH, & Babapour, 2013).

In Jordan study about parents whose newborns were admitted to the NICU's lived experiences, care needs, and support systems are all discussed in this study, a phenomenological based qualitative design was used. Results the astonishment, worry, and anxiety felt by parents; the effects of admission to the NICU on parents' and families' experiences; the assistance and information that parents require and receive from healthcare professionals, the study's main themes, which reflect the lived experience of parents of newborns in the NICU, were parents' feelings and contentment ,(Abuidhail, Al-Motlaq, Mrayan, & Salameh, 2017).and in 2011 Jordanian study lived experience of having a preterm baby in the neonatal intensive care unit by Jordanian mothers

phenomenological method twenty Muslim mothers gave narrative audio interviews about what it was like to have a preterm child in the neonatal intensive care unit. Mothers said they felt emotionally unstable; enduring difficulties in family relationships and frequently feeling alone; enduring difficulties during religious services; gaining strength from spiritual convictions; and attempting to return to normalcy,(Obeidat & Callister, 2011).

South Africa in a public hospital in Johannesburg's neonatal unit, the mothers of very low birth weight premature infants were the focus of this study. The goals were to find out what obstacles mothers faced ,the results shed light on the emotions and challenges mothers faced while their children were in the hospital. After giving birth to very low birth weight premature infants, significant emotional reactions included shock and sadness; suffering internally; a variety of support options; some of the findings included the needs and wishes of mothers. These mothers may be better able to deal with the challenges they face if they have access to psychotherapy and counseling services, rooming facilities, and information about their babies' development ,(Ntswane-Lebang & Khoza, 2010).

In Spain Neonatal intensive care unit bonding: experiences of mothers of very premature babies using Gadamer's philosophical hermeneutics, an interpretive, qualitative research method was used. Eleven in-depth, semi-structured interviews and a focus group were carried out. The study included sixteen women, with a mean age of 34.4 years. The analysis of the data revealed two themes: (1) the subthemes "feeling of emptiness and emotional crisis" and "the complexity of the environment and care generate an emotional swing"; (premature labor and technological environment (2) figuring out what it's like to be a mother of a baby who is extremely premature, with the subthemes "the difficulty of relating to a stranger" and "forming the bond despite difficulties, (Medina et al., 2018)."

this study summarized the bond with extremely premature infants is broken. The environment of the neonatal intensive care unit and the emotional state of the mother impede its development. By encouraging communication, participation in care, massage, and breastfeeding, nursing care can strengthen the bond between mother and child ,(Medina et al., 2018).

In United Arab Emirates 2020 the study was conducted using a phenomenological qualitative design it was conducted among eleven women whose premature babies were admitted to a hospital in Ras Al Khaimah, United Arab Emirates, from October to January 2019.Participants were selected through purposeful sampling, which continued until data saturation was reached, this study concluded that the survival of premature infants admitted to the NICU worried both the mothers and their loved ones. They expressed feelings like sadness, anger, and anxiety. Mothers relied on the support of their families, faith, and hope to get through the recovery process. The mothers' satisfaction with the competent care and psychological support they received from nurses helped them cope ,(Hanson & Abuijlan, 2022).

The NICU experiences of Chinese parents with preterm infants: a qualitative Study 2020 results the analysis revealed five themes:1) experiences with mixed emotions; (2) being removed from the infants;3) a perception of inadequate care for preterm infants; (4) gathered support from a variety of sources;5) expected more from healthcare providers, (Yu, Zhang, & Yuan, 2020).

Experiences of parents in the intensive care unit for newborns in Ethiopia18 parents were interviewed for this study six themes have been identified by the researchers. Psychological issues like anxiety, stress, worry, hopelessness, and confusion were voiced

by parents. Additionally, the parents identified a number of significant emotional issues, including resentment, sadness, anger, crying, frustration, dissatisfaction, regret, disappointment, feeling bad, blaming oneself, nervousness, disturbance, and inability to control one's emotions. Parents complained that doctors and nurses lacked discipline, were uninterested, and were uncooperative. Similarly, lack of prescriptions, cash, and restricted opportunity to visit their youngsters were different worries of many guardians. At the same time, health care providers only provided minimal information to parents and showed only limited cooperation ,(Mengesha et al., 2022).

2.3 The Importance of Researching Stress

Anxiety and stress of postpartum women are affected by many factors, and the main factors are infant states, family environment and maternal characteristics ,(Tedgård, Tedgård, Råstam, & Johansson, 2020) .Among them, infant states were perceived as an essential risk factor for anxiety and stress states. It was reported that the levels of stress and anxiety significantly increased in mothers of preterm infants com-pared to that of full-term infants ,(Treyvaud et al., 2019) , which means attention should be paid to them.

Research has shown that preterm birth is a worrying event for parents, who often report stress and anxiety. Parenting in the NICU can cause great psychological anxiety. The mother–child relationship begins before birth and develops later; however, if the birth occurs earlier than expected, or even too early, it can interfere with the normal bonding process, (Gómez-Cantarino et al., 2021). Although both parents are undoubtedly influenced by the NICU experience, mothers may suffer a greater impact. Many women may experience a wide range of psychiatric symptoms with mood disorders and perinatal anxiety even in the context of a normal birth, which are among the most common mental

health effects. Several studies suggest that stressful reproductive events, such as admission to a neonatal intensive care unit, may provoke or exacerbate the onset of pre-existing maternal psychiatric symptoms, and postpartum depression (PPD) rates were found to be significantly higher in mothers with NICU than in the general population ,(González, Bou, Fragoso, & García, 2021).

Post-Partum Depression "PPD" is a common and serious mental health problem, which is related to maternal stress and anxiety and different negative consequences for infants. Regarding anxiety and stress, it is well documented that postnatal anxiety and adjustment disorders are associated with variables specific to NICU, such as very low birth weight, preterm birth, perinatal complications, and stressful birth experiences,(Furtado, Gonçalves Machado, & Carneiro, 2019). It has been shown that a prolonged stay in hospital can have a destructive effect on the bonding process. Although there have been changes in the NICU in recent decades that have made it easier for parents to be present while their child is in hospital, the NICU remains a stressful environment for parents, as many studies have shown ,(González, Bou, Fragoso, & García).

The physical environment of the NICU is characterized by monitoring equipment, wires, and tubes that are connected to children. Recent studies show that maternal functions and mother–infant interactions in mothers of preterm infants in the NICU may be impaired. However, the greatest stress experienced by parents is associated with separation from the child and loss of the parental role they had previously imagined, associated with a lack of physical and emotional closeness, which is an important factor in the early relationship between parents and the newborn, (Helle, Barkmann, Ehrhardt, & Bindt, 2018). In fact, as it is often reported in the literature, the first moments of the postnatal phase are crucial in establishing an early parent–child relationship. While the child is in

hospital, mothers may experience different, often contradictory emotional reactions such as loss of self-esteem, pain, feelings of failure, sadness, guilt, fear, and anger ,(Winter et al., 2018).

A neonatal unit (NNU) provides integrated services for delivering care to sick and preterm babies in need of specialist care. When a baby is admitted to a NNU the experience can be extremely distressing for the parents, (Malouf et al., 2022) . Not only are parents likely to be fearful for their baby's health and survival, they also face separation from their baby, an unfamiliar and possibly overwhelming environment, and potential difficulties accessing information and communicating with staff. Such experiences may affect parental mental health, which in turn can impact transition to parenthood, the parent-infant relationship, and longer-term child development, (Williams et al., 2018).

Previous research has shown that mental health problems are common among parents of babies admitted to a NNU. Systematic review evidence estimates the prevalence of depression to be as high as 40% in the early postpartum period among women with premature babies. Less is known about anxiety, as highlighted in a recent scoping review, which found little consistency in prevalence rates across the limited studies reported (Franck et al., 2020). Research on post-traumatic stress (PTS) has increased in the last decade, yet there is still little known about the prevalence of PTS in this population. There are many challenges for researchers in this field, in particular, the lack of clear, discrete definitions and variability in approaches to measurement of mental health problems in the perinatal period,(S. Harrison & Alderdice, 2020).

Furthermore, even in comparable NNU settings, parents' experiences are highly individual and variable, hence it is important to include all parents when exploring

parental mental health outcomes. A recent meta-analysis showed that parental stress in NNU is at least partially independent from infants' risk and suggests that the trauma of being hospitalized in a NNU plays a pivotal role in parents' stress perception. The review also showed the levels of stress reported by parents only marginally increased as a function of the time spent in the NNU, again highlighting the need for an inclusive approach in research on parental mental health ,(Caporali et al., 2020).

2.4 Coping Mechanism Mother Baby Admitted to NICU

Coping mechanisms help to reduce the effects of stressful situations.It is therefore easier to maintain normal performance at that time by reducing the emotional and physical rea ctions.Stress triggers physiological and psychological reactions, and when it is not mana ged properly, it can result in either physical or mental illness, or even both, (Mamani Das, 2020).According to Richard Lazarus and Susan Folkman, coping is the collection of constantly evolving cognitive and behavioral efforts aimed at coping with particular perceived taxing or demanding demands, whether internal or external, (Folkman, 1984).

The definition of maternal coping is the mother's attempt to reduce or eliminate stress and raise her tolerance. Premature infant mothers employ a variety of coping techniques to manage their stress and unstable situation. The social support and mental health of mothers of premature newborns, however, are closely related to coping strategies. The characteristics that are most helpful for using coping mechanisms are social support, awareness of stressful situations, sleep habits, and personal hygiene ,(Mohan, 2022).

Stress and coping mechanisms of preterm parents at the neonatal intensive care unit of a university hospital in central Greece group of 82 preterm parents in the Neonatal Intensive Care Unit of a University Hospital in Central Greece was the subject of this

cross-sectional study. They were approached to answer a survey with the Parental Stressor Scale: Unit for Neonatal Intensive Care, the Daily Spiritual Experience Scale (DSES), and Coping Orientation to Problems (BRIEF/COPE). Fathers' and mothers' perspectives on psychological support were compared using the McNemar test. Fathers and mothers' scores were compared using either the Wilcoxon-signed rank test or the paired t-test. This study found Support is necessary for preterm birth parents. Religion and spirituality support them as they cope with the difficulties of having their baby hospitalized in a NICU,(Malliarou et al., 2021).

Coping Strategies used by South African mothers with preterm babies admitted to hospital South Africa in 2019 according to the data analysis, praying, being attached to the baby, and accepting the situation were the primary coping mechanisms. The following subthemes emerged from the prayer: praying for God's strength, God's grace the survival of the babies, and giving thanks to God for their health and preferred gender. With the following subthemes, the theme of baby attachment emerged: seeing the baby and forming a relationship with it. The subtheme that followed was the final theme, which was acceptance of the situation: tenacity in the face of the situation and the mother's awareness of her role as a parent, (Sih, Bimerew, & Modeste, 2019).

Mothers' Strategies for Managing a Prematurely Born Child in Iran Resulted of Mothers' Coping Strategies: Through data analysis, categories of "asking for help, enhancing capability, and lowering personal obligations and commitments" were extracted. The various sub-categories of "religious appeal and relying on beliefs, seeking information from the treatment and caring team, participating in infant's care, companionship and support of family and friends," "focusing on positive thinking and imagination, patience and strength," and "ignoring some routine affairs and reducing role-related activities and

duties" revealed these categories in mothers, respectively ,(Arzani, Valizadeh, Zamanzadeh, & Mohammadi, 2015).Mothers used coping strategies adopted during hospital stay, coping mechanisms like accepting the situation, being devoted to God, and being attached to their families, (Acharya, Bhandari, Bhattarai, & Gaire, 2021).

Strategies for coping by Iranian mothers with preterm babies findings the concept of "Self-reinforcement" as the most common parenting tactic was formed by the experiences of the participants around four themes: support seeking, "spiritual euphoria," "creation of hope," and "getting energy from the baby" are some of the topics covered, (Alinejad-Naeini, Peyrovi, & Shoghi, 2021).

Systematic review the original study had to be published between 2015 and 2021, it had to use samples of mothers with premature babies, it had to be written in English, it had to be published in scientific journals and open-access journals, and it had to look into coping mechanisms. Strategies for Mothers Coping with Premature Children results The first result listed the following factors that influence coping strategies: method of delivery, income, information, knowledge, support, and maternal self-efficacy all play a role. The following were the coping mechanisms that mothers used when closely observing premature infants: belief in God, seeking assistance, and the development of the babies' condition. Two interventions were shown in the third result: the mother's strengthening favorable to gram and gathering conversations with well-being laborers. Supporting mothers by making it easier for them to participate in the care of their children is made possible by these two interventions designed to improve coping strategies, (Kapti, Arief, Triharini, Azizah, & Supriati, 2022).

The arrival of a new baby is an exciting moment but it creates stress for each of the parents, the couple and the family. The new member upsets the existing balances and demands from its members to adapt to the new parental roles. In the NICU environment, parents may feel their parenting role diminished as a result of professionals and policies governing interactions between parents and their infants, (Malliarou et al., 2021).

The preterm neonate may present a number of health problems and has to be admitted to Neonatal Intensive Care Units. Parents have to face uncertainty of their baby's survival, the separation from it, the long-term hospitalization, the long-term effects of prematurity, that may contradict the parents' expectations of the "perfect child", leading them to feel stress, anger, depression and post-traumatic stress disorder (Liu et al., 2020). The causes of parental stress may be due to the severity of the disease, long-term effects of prematurity on the child's adult life. in socioeconomic, biological, and emotional factors, (Sabnis et al., 2019).

The physical environment of the NICU is characterized by monitoring equipment, wires, and tubes that are connected to children. Recent studies show that maternal functions and mother–infant interactions in mothers of preterm infants in the NICU may be impaired,(T. H. Kim et al., 2020). However, the greatest stress experienced by parents is associated with separation from the child and loss of the parental role they had previously imagined, associated with a lack of physical and emotional closeness, which is an important factor in the early relationship between parents and the newborn. In fact, as it is often reported in the literature, the first moments of the postnatal phase are crucial in establishing an early parent–child relationship,(Bittner, Junge-Hoffmeister, Treichel, Coenen, & Weidner, 2020).

While the child is in hospital, mothers may experience different, often contradictory emotional reactions such as loss of self-esteem, pain, feelings of failure, sadness, guilt, fear, and anger. The literature shows that early symptoms of depression in mothers have negative effects on their relationship with their child and on their parental role, especially after preterm delivery ,(Gómez-Cantarino et al., 2021). In recent times, Post-Partum Depression "PPD" has received increased attention as it has been recognized as one of the most common morbidities in the perinatal period. In addition to its prevalence, it is estimated at about 14% that PPD is considered to be a devastating morbidity because it affects more than just the mother's health as it could also affect the child's development. PPD disrupts the mother–child bond, limiting a woman's ability to fulfill function in the maternal role and increasing the likelihood of early cessation of breastfeeding, as they often have problems with breastfeeding, (Bonacquisti, Geller, & Patterson, 2020).

Studies show that mothers with high levels of stress are more likely to suffer symptoms of depression. However, a sense of receiving support from healthcare professionals is a protective factor. Therefore, mothers of a hospitalized preterm newborn infant (PTNI) offer a good opportunity to perform interventions to reduce the stress associated with this experience, strengthen their parenting skills, increase their confidence in their own resources, and to change perceptions of themselves and their baby that might interfere with appropriate bonding. This, in turn can foster a safe environment for the newborn infant ,(Villamizar-Carvajal, Vargas-Porras, & García-Corzo, 2018).

2.5 Summary of literature review.

Mothers of babies admitted to the NICU experience a range of stressors, including the infant's health status, financial strain, communication with healthcare providers, and parental role adjustment.

Maternal stress in the NICU has been linked to negative outcomes for infants, such as longer hospital stays, lower birth weight, and increased risk of developmental delays.

Mothers in the NICU use a variety of coping mechanisms to manage stress, including seeking social support, engaging in self-care activities, and reframing their thoughts about the situation.

A range of interventions have been developed to support maternal coping in the NICU, including peer support groups, mindfulness-based stress reduction programs, and education and counseling sessions.

More research is needed to better understand the specific stressors experienced by mothers of NICU babies at Rafedia Hospital, as well as the most effective interventions to support maternal coping and improve outcomes for infants.

Overall, a literature review on stress and coping mechanisms among mothers of NICU babies at Rafedia Hospital would provide a comprehensive overview of the current state of research in this area, as well as identify areas for further study and potential interventions to support maternal coping and improve outcomes for infants.

Gap of a literature review on stress and coping mechanisms among mothers of NICU babies at world from the articles.

Without access to the specific articles reviewed, it is difficult to identify gaps in the literature review on stress and coping mechanisms among mothers of NICU babies globally. However, some potential gaps could include:

Lack of focus on fathers/partners: While the literature may focus on maternal stress and coping, it is important to also consider the experiences of fathers/partners and how they may support or hinder maternal coping.

Limited studies on long-term outcomes: While studies may focus on immediate stress and coping mechanisms, there may be a lack of studies that explore the long-term outcomes for mothers of NICU babies, such as post-traumatic stress disorder (PTSD) and depression.

Insufficient consideration of interventions: While studies may explore stress and coping mechanisms, there may be a lack of studies that examine the effectiveness of interventions to support maternal coping in the NICU, such as peer support programs or mindfulness-based interventions.

Identifying these gaps in the literature can help guide future research and interventions to better support mothers of NICU babies globally.

One potential gap in a literature review on stress and coping mechanisms among mothers of NICU babies in Palestine could be a lack of studies that address the specific cultural and social factors that may influence maternal stress and coping in this setting. For example, in Palestinian society, family support is considered important, and mothers may be expected to rely on their extended family for emotional and practical support. In addition, the political conflict in Palestine may add additional stressors for mothers of NICU babies, such as limited access to healthcare resources and prolonged hospital stays

due to travel restrictions. Therefore, a literature review that does not take into account these cultural and social factors may miss important insights into how maternal stress and coping may be influenced by the Palestinian context and may not provide effective strategies for supporting mothers of NICU babies in Palestine**.**

Chapter Three

Methodology

Methodology

This chapter provides an overview of the research conducted for this study. It consists of the following elements: structured design, study population, site and setting, sample and sampling, inclusion and exclusion criteria, tools, tool validity, and reliability, protocol, procedure, and ethical considerations for anesthesia.

3.1Study Design

The study was a descriptive, prospective, cross-sectional study. Data collected through the Parental Stressor Scale: Neonatal Intensive Care Unit (PSS: NICU) and Coping Health Inventory for Parents (CHIP). The population of the study was mothers of neonates admitted in the NICU in Rafedia hospital for a period of two months January 1 to March 1, 2022). Pilot 20, study with 200 mothers.

3.2 Study Population

The target population consists of 200 mothers. The targeted participants of the study it all mothers of neonates admitted to the NICU in Rafedia hospital. In the period 1 January to 1 march 2022, the pilot study taken before we start in collection the data.

3.3 Inclusion Criteriaيوحيد نمط كتابة العناوين

All mothers with their babies admitted to NICU in Rafidia governmental hospital as a central hospital during a period was defined and accepted to participate in this study.

3.4 The Exclusion Criteria will inClude who is:

1) Mother of a baby her age less than 18 years.

2) The illiterate mother who does not know how to read or write.

3) History of mental disorders.

3.5 Sample Size Calculation

A power analysis was conducted to determine the sample size that is needed to test the hypothesis. The sample for this study was two-tail ANOVA test for the difference between the variables, a power of .80, a significance level of .05, and an effect size of 0.25. The minimum sample size for each group was 180. To be conservative and avoid the negative influence of drop out, the sample size has increased to 200 participates.

3.7 Data Collection

After selected for mother how their baby admitted to unite, take consent form, and check for including criteria, give mother privacy.

After mother confer the questioner, the researcher set with mother and explain the purpose of the study, the question and how to be answer, and let her to Inquiry, give mother time and privacy.

Every mother take from 15-20 min. to complete the questioner.

3.8 Datasheet and its Validity

The psychometric properties of the PSS:NICU were originally evaluated in the USA and Canada by(Miles, Funk, & Kasper, 1992). and was further assessed in studies by (Franck, Cox, Allen, & Winter, 2005; Reid & Bramwell, 2003) Internal consistency was good with alpha coefficients of 0.70 for each subscale in the original PSS:NICU and internal consistency for the total instrument ranged from 0.94 to 0.89.

3.9 Ethical Consideration

The study is being carried out by the Helsinki Declaration, has been approved by an Arabic-American university, and has been approved by the Palestinian Ministry of

Health's research ethical committee. Before participation, parental consent forms and assent from mothers were obtained. Because the research involves human subjects, strict ethical principles must be followed. The participants were asked to consent and are assured that their participation or information would not be used against them. They were also guaranteed their right to privacy and anonymity. Anonymity is preserved by coding the participants and erasing the names associated with the numbers.

3.10 Privacy

Confidentiality is protected by preventing unauthorized access to the data. All mothers who participate in the study are fully informed about the research's purpose and assured that their anonymity will be maintained during analysis the and reporting of the findings. Patients were reassured that the data would not be associated with any individual names to protect their anonymity and confidentiality.

3.11 Harm

Participation will produce minimal harm to the participants, and their names would never be revealed to anyone.

3.12 Statistical Methods

For data analysis, the SPSS version 23 software was utilized. Descriptive statistics were applied to analyze the demographic data for the participants, where mean and standard deviation were used for continuous variables and number and percentages (%) for categorical variables. ANOVA test pearson correlation were utilized to examine the differences and relationship the study variables. The study findings were considered statistically significant at a p-value $\leq .05$.

Chapter Four

Results

Results

4.1 Introduction

This chapter deals with the data collected for analysis. The statistical method allowed the investigator to deduce, analyze, coordinate, measure, evaluate and convey the numerical information. The aim of data analysis is to provide answers to questions about the study. The data analysis strategy comes directly from the question, the design and the data collection process and the level of measurement of the data. This chapter edits, tabulates, analyzes and interprets the data collected.

This chapter expresses the findings concerning to assess the stress and coping strategies of mothers of neonate admitted in NICU. Statistical analyses were directed to explore three research hypothesis.

The hypotheses for the study are as follows:

1. There is a significant association between parental stress scores and parental coping health scores among mothers of neonate admitted in NICU at $p<0.05$
2. There are significant differences between parental stress scores of mothers and selected demographic variables at $p<0.05$
3. There are significant differences between parental coping health scores of mothers and selected demographic variables at $p<0.05$

4.2Cronbach's Alpha for Scales

For each of the scales, Cronbach's Alpha was calculated for Parental Stressor Scale: Neonatal Intensive Care Unit (PSS: NICU) and Coping Health for parents. Table 4-1 shows there was an alpha above 0.90 in all ratings.

Table 4.1: Cronbach's Alpha for perceived parents stress scale and coping stress scale

Scale	Cronbach's Alpha	Number of Items
Parental Stressor Scale: Neonatal Intensive Care Unit (PSS:NICU)	0.96	46
Coping Health for parents	0.92	45

4.3 Participants' Characteristics

One hundred and ninety one questioner from 200 questioner of mother participated in the study , the nine questioners drop out because their missing part in questioner not complete.The findings revealed that average age of the mothers was 28.8±SD 5.6.More than half of them 121(63.4%) were housewife and 108(56.5%) have bachelor and above. The majority of them 148(77.5) live with Nuclear family. Also, approximately 97(50.8%) live in village. Slightly, less than of the participants 91(47.6) reported that they have more than 2 children and 89 (46.6%) of them reported that the admitted newborn was third or above in birth order. Furthermore, 67(35.1%) of them reported that the duration of the hospitalization between 1-5 days, as seen in table (4-2).

Table 4.2: Demographic characteristics of the participants (N=191)

Characteristics		N (%)	M(SD)
Age			28.8(5.6) Range 17-40 years
Occupation	Housewife	121(63.4	
	Employee	70(36.6	
Educational level	No formal education	7(3.7)	
	Primary	7(3.7)	
	Secondary	8(4.2)	
	Higher secondary	61(31.9)	
	Bachelor and above	108(56.5)	
Family	Nuclear family	148(77.5)	
	Joint family	43(22.5)	
Residency	City	52(27.2)	
	Village	97(50.8)	
	Camp	42(22.0)	
Children	One child	31(16.2)	
	Two children	69(36.1)	
	More than 2 children	91(47.6)	
Birth order	First born	34(17.8)	
	Second born	68(35.6)	
	Third or above	89(46.6)	
Hospital duration/day	1-5 days	67(35.1)	
	6-10 days	63(33.0)	
	11-15 days	30(15.7)	
	More than 15 days	31(16.2)	

Note: % percentage

According parental stress, the analysis revealed that Relationship with baby and parental role have the highest mean subscale of parental stress 3.2± SD 1.0. Also, the overall parental stress was high 3.0± SD 0.8 above the average, as seen in (table 4-3).

Table 4.3: Parental Stressor of Neonatal Admission (N=191)

Subscale stress level	M(SD)
Sight and sound	3.1(1.1)
Infant behavior and appearance	2.9(1.1)
Relationship with baby and parental role	3.2(1.0)
Staff behavior and communication	3.0(0.9)
General stress	3.0(1.1)
Overall stress	3.0(0.8)

M= Mean, SD=Standard deviation

According to the Sights and Sounds subscale items, the analysis revealed that 70(36.6%) of the parents had very stressful of Presence of constant noises, followed 68(35.6) of them had very stressful of other sick babies and Large number of people working in the unit. Also, the analysis of infant appearance subscale items revealed that 57(29.8)of the parents had very stressful of Baby seemed to be in pain, followed56(29.3) of them had very stressful of Limp and weak, followed52(27.2) of them had very stressful of having a machine breathe for my baby, as seen in (table 4-4).

Table 4.4: Items Analysis of Parental Stressor of Neonatal Admission (N=191)

Item(s) according to subscale	not at all stressful	a little stressful	moderately stressful	very stressful	extremely stressful
	N (%)	N (%)	N (%)	N (%)	N (%)
Sights and Sounds					
(a) Presence of monitors & equipment	29(15.2)	33(17.3)	46(24.1)	66(34.6)	17(8.9)
(b) Presence of constant noises	28(14.7)	34(17.8)	45(23.6)	70(36.6)	14(7.3)
(c) Sudden noises	31(16.2)	28(14.7)	55(28.8)	55(28.8)	22(11.5)
(d) Other sick babies	30(15.7)	30(5.7)	49(25.7)	68(35.6)	14(7.3)
(e) Large number of people working in the unit	22(11.5)	28(14.7)	57(29.8)	68(35.6)	16(8.4)
Infant Appearance					
(a) Tubes and equipment	33(17.3)	48(25.1)	46(24.1)	39(20.4)	25(13.1)
(b) Bruises, cuts or incisions	31(16.2)	43(22.5)	50(26.2)	46(24.1)	21(11.0)
(c) Unusual color	31(16.2)	46(24.1)	48(25.1)	47(24.6)	19(9.9)
(d) Unusual breathing	26(13.6)	49(25.7)	43(22.5)	50(26.2)	23(12.0)
(e) Suddenly changes color	30(15.7)	39(20.4)	44(23.0)	47(24.6)	31(16.2)
(f) Stops breathing	32(16.8)	44(23.0)	34(17.8)	48(25.1)	33(17.3)
(g) Small size	38(19.9)	41(21.5)	43(22.5)	51(26.7)	18(9.4)
(h) Wrinkled appearance	45(23.6)	41(21.5)	39(20.4)	50(26.2)	16(8.4)
(i) Having a machine breathe for my baby	45(23.6)	34(17.8)	31(16.2)	52(27.2)	29(15.2)
(j) Needles and tubes	49(25.7)	30(15.7)	31(16.2)	51(26.7)	30(15.7)
(k) Intravenous line or tube	42(22.0)	38(19.9)	33(17.3)	50(26.2)	28(14.7)
(l) Baby seemed to be in pain	40(20.9)	41(21.5)	39(20.4)	57(29.8)	14(7.3)
(m) Crying for long periods	32(16.8)	46(24.1)	45(23.6)	50(26.2)	18(9.4)
(n) Clapping on baby's chest for drainage	16(8.4)	54(28.3)	55(28.8)	51(26.7)	15(7.9)
(o) Baby looked sad	27(14.1)	44(23.0)	57(29.8)	50(26.2)	13(6.8)
(p) Limp and weak	29(15.2)	46(24.1)	41(21.5)	56(29.3)	19(9.9)
(q) Jerky movements	29(15.2)	49(25.7)	38(19.9)	47(24.6)	28(14.7)
(r) Baby not being able to cry like other babies	28(14.7)	52(27.2)	45(23.6)	44(23.0)	22(11.5)
(s) Clapping on baby's chest for drainage	16(8.4)	54(28.3)	57(29.8)	49(25.7)	15(7.9)

According Parental coping health, the analysis revealed that Maintaining social support, self-esteem and psychological stability have the highest mean subscale 1.4± SD 0.6 but it below the average. Also, the overall Parental coping health was below the average1.4± SD 0.6,vf as seen in (table 4-5).

Table 4.5: Parental Coping Health of Admitted Newborn (N=191)

Subscale stress level	**M(SD)**
Maintaining family integration, cooperation, and an optimistic definition of the situation	1.4(0.6)
Maintaining social support, self-esteem and psychological stability	1.4(0.6)
Understanding the medical situation through communication with other parents and consultation with medical staff	0.4(0.1)
overall coping	1.4(0.6)

M= Mean, SD=Standard deviation

4.4 Testing Hypotheses

Hypothesis 1. There is a significant association between Parental Stress and Parental coping health among mothers of neonate admitted in NICU

The analysis revealed that there was negative small association between parental stress and parental coping health among mothers (r= -.234) at P< 0.001. Also, there were association between subscales of parental stress and subscales of parental coping health, as seen in (table 4-4). However, there was no association between Understanding the medical situation through communication with other parents and consultation with medical staff subscale of parental coping health and both Sight and sound and Infant behavior and appearance subscales of parental stress (P>0.05). Also, there were no association between maintaining social support, self-esteem and psychological stability

subscale of parental coping health and both Relationship with baby and parental role and general stress subscales of parental stress (P>0.05). Moreover, there were no association between Maintaining family integration, cooperation, and an optimistic definition of the situation subscale of parental coping health and both Relationship with baby and parental role and general stress subscales of parental stress (P>0.05), as seen in table 4-6.

Table 4.6: Association between Parental Stress and Parental Coping Health among Mothers of Neonate Admitted in NICU (N=191)

Variable	**Coping**			**Total**
Stress	Maintaining family integration, cooperation, and an optimistic definition of the situation	Maintaining social support, self-esteem and psychological stability	Understanding the medical situation through communication with other parents and consultation with medical staff	
Sight and sound	.747**	.658**	-.081	.691**
Infant behavior and appearance	.784**	.638**	-.026	.688**
Relationship with baby and parental role	.091	.124	.510**	.118
Staff behavior and communication	-.163*	-.186*	.761**	-.180*
General stress	.105	.105	.456**	.091
Overall stress	-.221**	-.222**	.962**	-.234**

***Correlation is significant at the 0.01 level (2-tailed).*

**Correlation is significant at the 0.05 level (2-tailed).*

Hypothesis 2: There are significant differences between parental stress scores of mothers and selected demographic variables at p<0.05

The analysis revealed that there were no statistically significant differences between demographic characteristics (occupation, educational level, children, birth order, and duration of hospitalization) and parental stress scores (P> 0.05). However, the analysis revealed that there was statistically a significant difference between demographic family and parental stress scores (P< 0.05), as seen in table 4-7.

Table 4.7: Differences between parental stress scores of mothers and selected demographic variables (N=191)

Variable		N	M(SD)	ANOVA	P. value
Occupation	Housewife	121	3.0(.8)	.227	.635
	Employee	70	3.1(.8)		
Educational level	No formal education	7	2.8(.8)	.196	.940
	Primary	7	3.0(.6)		
	Secondary	8	3.0(.5)		
	Higher secondary	61	3.0(.8)		
	Bachelor and above	108	3.1(.9)		
Family	Nuclear family	148	3.0(.8)	4.211	.042
	Joint family	43	3.2(.7)		
Children	One child	31	3.2(.9)	.652	.522
	Two children	69	3.0(.9)		
	More than 2 children	91	3.0(.7)		
Birth order	First born	34	3.2(.9)	1.303	.274
	Second born	68	3.0(.8)		
	Third or above	89	3.0(.7)		
Duration of hospitalization	1-5 days	67	3.0(.8)	.668	.573
	6-10 days	63	3.0(.8)		
	11-15 days	30	3.2(.7)		
	More than 15 days	31	2.9(.8)		

Hypothesis 3: There are significant differences between parental coping health scores of mothers and selected demographic variables at p<0.05

The analysis revealed that there were no statistically significant differences between demographic characteristics (occupation, educational level, family, children, birth order, and duration of hospitalization) and parental coping health scores (P> 0.05), as seen in table 4-8.

Table 4.8: Differences between parental coping health scores of mothers and selected demographic variables (N=191)

Variable		**N**	**M(SD)**	**ANOVA**	**P. value**
Occupation	Housewife	120	1.5(0.6)	.765	.383
	Employee	70	1.4(0.6)		
Educational level	No formal education	7	1.7(0.3)	2.211	.069
	Primary	7	1.7(0.4)		
	Secondary	8	1.8(0.5)		
	Higher secondary	61	1.3(0.6		
	Bachelor and above	107	1.4(0.6)		
Family	Nuclear family	147	1.4(0.6)	1.116	.292
	Joint family	43	1.5(0.5)		
Children	One child	31	1.4(0.6)	.215	.807
	Two children	68	1.4(0.6)		
	More than 2 children	91	1.4(0.6)		
Birth order	First born	34	2.3(0.6)	1.146	.320
	Second born	67	2.5(0.6)		
	Third or above	89	2.5(0.6)		
Duration of hospitalization	1-5 days	66	1.4(0.6)	1.558	.201
	6-10 days	63	1.4(0.6)		
	11-15 days	30	1.6(0.4)		
	More than 15 days	31	1.4(0.6)		

Chapter Five

Discussion

Discussion

The study explores the perceived stress and social support received by mothers of preterm infants admitted to NICU.

The PSS: NICU contains 46 items, corresponding to four subscales and a general stress item. The four subscales and their numbers of items are as follows: Sights and Sounds, 5 items; Infant Appearance, 19 items; Parent-infant Relationship, 10 items; and Staff, 11 items.

Participants were asked to rate each item, according to how stressful the situation described in each item was for them:

1 = not at all stressful, 2 = a little stressful, 3 = moderately stressful, 4 = very stressful, and 5 = extremely stressful. Stress was defined as feeling anxious, upset or tense. If participants had not experienced a particular situation, they were asked to indicate this by answering “not applicable.” If a participant had multiple infants in the unit, questions on the scale relating to a single infant were requested to be answered with regard to the most applicable infant.

One hundred and ninety-one mothers participated in the study. The findings revealed that average age of the mothers was 28.8±SD 5.6. More than half of them 121(63.4%) were housewife. This result in agreement with the result of (Ganguly, Patnaik, Sahoo, Pattanaik, & Sahu, 2020) a study about exploring perceived stress in mothers with singleton and multiple preterm infants. A cross-sectional study in Taiwan that resulted the mean age of the mothers with preterm infants in this study was 33.7 years, which is in line with the age range of 30–34 years at which, on average (Hug, Alexander, You, Alkema, & for Child, 2019) in a study about UN Inter-agency Group for Child Mortality

Estimation. National, regional, and global levels and trends in neonatal mortality between 1990 and 2017, with scenario-based projections to 2030: A systematic analysis who found that the mean age of the mothers with preterm infants in this study was 33.7 years, which is in line with the age range of 30–34 years

In (Hug et al., 2019) study, the mean gestational ages of preterm infants were 32.9 weeks and 34.4 weeks, respectively. These values are comparable to Lee's study, where the mean gestational ages of singleton and twin preterm infants were 32–33 weeks and 36–38 weeks, respectively(Hug et al., 2019).

According parental stress, the analysis revealed that relationship with baby and parental role have the highest mean subscale of parental stress3.2± SD 1.0. Also, the overall parental stress was high 3.0± SD 0.8 above the average. This parallel with (Ria et al., 2020) a study about Assessment of stress among parents of neonates admitted in the neonatal intensive care unit of a tertiary care hospital in Eastern India who found that the highest levels of stress experienced were in the "Sight and Sound Subscale" (3.23 ± 0.41) followed by Relationship with the baby and parental role," i. e., 2.46 ± 30(Ganguly et al., 2020).

The findings of the study revealed that stress experienced by parents in any of the subscales. Stress in sight and sound domain was there was a significant statistical difference between parental stress scores of mothers and length of hospitalization, than 10 days. These findings are consistent with the study conducted by (Ganguly et al., 2020*)*a study about Assessment of stress among parents of neonates admitted in the neonatal intensive care unit of a tertiary care hospital in Eastern India who found that parental stress levels in relation to length of stay. There was no significant difference in

stress experienced by father and mother in any of the subscales. Stress in sight and sound domain was statistically significantly higher (P = 0.009) among parents of babies with stay of ≤7 days(Ganguly et al., 2020).

Social Support of Mothers with Preterm Infants

According Parental coping health, the analysis revealed that Maintaining social support, self-esteem and psychological stability have the highest mean subscale 1.4± SD 0.6 but it below the average. Also, the overall Parental coping health was below the average 1.4± SD 0.6. This result in agreement with the result of A study by (Puthussery, Chutiyami, Tseng, Kilby, & Kapadia, 2018) about effectiveness of early intervention programs for parents of preterm infants: A meta-review of systematic reviews showed that both groups of mothers received social support in a moderate level (76 score out of 105). This might be a result of the postpartum confinement and one-month postpartum traditional care, whereby mothers would get more family support in Palestine country than in other countries.

For both groups of mothers, the categories that received the highest scores on the social support scale were having someone to take them if they needed to see a doctor and having someone to cook when they were unable to cook for themselves. Tangible support, such as providing money, spending time, improving surrounding environment, and doing chores, was the form of support the mothers most needed. This type of support can provide crucial social interactions and resources that reduce the stress of the mothers and increase the well-being of the infants

Another important support, information support, may displayed in the outcomes. Many mothers of preterm infants lack the confidence and skill set for preterm infant care. Study

reported that parenting support occurs by proving consistent advice, providing sufficient information about self-management for mothers, involving parents in discharge planning, and enabling clinical care consistency. Health professionals, therefore, provide informational support in the early postpartum, and family members provide tangible and emotional support when the infants are brought home.

If the four subscales are considered, what most stresses the parents (without differences by gender) is the NICU sight and sound (e.g., alarms, monitors, other hospitalized NB and so on), followed by relationship with baby and parental role. This is consistent with other studies by (Musabirema et al ,2015). These studies state that sights, sounds, and the general environment of the NICU often cause stress and panic in the parents (Musabirema, Brysiewicz, & Chipps, 2015).

According to the association between Parental Stress and Parental coping health among mothers of neonate admitted in NICU0.784 with Correlation is significant at the 0.01 level (2-tailed). The least stress was caused by "infant appearance" which may be because the type of interaction that occurs during visiting hours was not enough to create a bond or notice the behavior of the baby. On the contrary a study conducted by ,(Carter, Mulder, Frampton, & Darlow, 2007) a study about Parental stress in the NICU: the influence of personality, psychological, pregnancy and family factors found that if the four subscales are considered, what most stresses the parents (without differences by gender) is the NICU sight and sound (e.g., alarms, monitors, other hospitalized NB and so on), followed by relationship with baby and parental role**.** These studies state that sights, sounds, and the general environment of the NICU often cause stress and panic in the parents (Musabirema et al., 2015).

The second specific area that caused stress in this study was parents' relationship with baby and parental role which happened to be the most stressful scale for the study. These findings are consistent with the study conducted by (Ashwani, Rekha, & Kumar, 2017)study about Parental stress experiences with NICU admission in a tertiary care center, who concluded higher rates of neurodevelopment impairment, including motor, visual, and hearing disabilities; mental retardation; attention disorders; and learning disabilities at school age in these infants.

The least stress was caused by "infant appearance" which may be because the type of interaction that occurs during visiting hours was not enough to create a bond or notice the behavior of the baby.

The personal characteristics of the parent, such as their past experiences and pregnancy history, may influence parental stress. In this study, the stress presented by parents does not seem to be related to other pregnancy variables such as parity, or having an older child hospitalized in a NICU (3.2, 3.0) respectively. This differs from the studies by *(Carter et al., 2007)*, in which higher stress scores in mothers are associated with having complicated pregnancies and not having previous experience of having a child hospitalized in a NICU.

In this study, the analysis revealed that there were no statistically significant differences between demographic characteristics (occupation, educational level, family, children, birth order, and duration of hospitalization) and parental coping health scores (P> 0.05), This parallel with a study by (Chourasia, Surianarayanan, Adhisivam, & Vishnu Bhat, 2013)**.**in a study "NICU admissions and maternal stress levels" showed no statistical significance in three domains (infants' behavior, parental role alteration, sights, and

sounds) in respect to education, but in the present study, education of the interview was influenced in behavior and appearance subscale. Interview having <8 years of education have higher stress in behavior and appearance subscale. Lesser educated and uneducated parents were found to have higher stress. This may be explained by the difficulty to understand the information provided to them and they were not oriented to the environment of the NICU. This emphasizes the need for specific NICU educational and counseling support. Provision of competent care in a calm and reassuring manner as well as clear communication and careful explanations may help in parental comprehension capability which may reduce parental anxiety. Interventions addressing NICU parent stress, depression, and anxiety not only improve parents' outcomes but infants' outcomes as well. Unemployed interview and previous neonatal death have higher stress in sight and sound subscale and concluded that there was no association between total parental stress and gender of neonate, birth weight, and gestational age, mode of delivery, parity, and previous neonate being hospitalized in NICU.

The results of the present study in terms of sight and sound subscale showed that “the sudden sound of the monitor buzzer and presence of monitors,” respectively, were the most experienced stressor agents by parents with neonates in NICU. Among infant appearance and behavior, “tubes and equipment on my baby,” “baby in pain” were stressors with maximum scores. Among infant appearance and behavior, “tubes and equipment on my baby,” “baby in pain” were stressors with maximum scores. Thus, it is recommended that parents, particularly mothers with high-risk pregnancies be provided with some explanations before labor about the environment of the NICU. These explanations include the causes of devices alarms, rush of the staff, equipment and facilities of the unit, ventilators, intravenous tubes, and monitors. Previous studies shows

that parental trauma in the NICU is less related to infant characteristics than it is to alterations in their parental role. In the subscale relationship with baby and parental role, “not being able to care for baby myself,” “being separated from baby” and “not feeding my baby” had maximum scores.

In the subscale staff behavior, “staff explaining things too fast” and “staffs looking worried” were the main stressors. This may be due to increased workload in the NICUs of governmental hospitals, the health personnel including doctors and nurses find less time to focus on parental stressors in the NICU environment and give appropriate counseling to alleviate their anxiety. On the other hand, the increased privacy of individual rooms might make mothers feel more comfortable when spending time with their infant and consequently reduce parental stress. Kangaroo mother care method is a cheap and convenient way to take better care of premature neonates.

A study by ***(Fróes, Mendes, Pedroza, & Cunha, 2019)*** concluded that the “Baby Appearance and Behavior” subscale, the level of stress occurrence (3.16 (±1.57) was over 75% on seven items: “Tubes and equipment on or near my baby,” “Unusual or abnormal breathing by my baby ”,“ Seeing needles and tubes in my baby”,“ My baby being fed through a vein or a tube ”,“When my baby seemed to be in pain”, “When my baby looked sad” and “Flabby and fragile appearance of my baby. ” When analyzing the subscale for overall stress levels (3.89 (±1.37))) four items were over 75%: “Tubes and equipment on or near my baby”, “Seeing needles and tubes in my baby”, “My baby being fed through a vein or a tube” and “When my baby seemed to be in pain”. This is parallel with our study which resulted that the overall stress of mothers who have babies in NICU is (3.0). The study identified the most stressful elements for parents of preterm infants with<36 weeks in NICU were “feeling pain and the baby being sad”, and the appearance of preterm

infants were “bruises and cuts on the baby and the baby changing color”, taking as a reference high and extreme general stress levels (Fróes et al., 2019)

According to the Sights and Sounds subscale items, the analysis revealed that 70(36.6%) of the parents had very stressful of Presence of constant noises, followed 68(35.6) of them had very stressful of other sick babies and large number of people working in the unit. Also, the analysis of infant appearance subscale items revealed that 57(29.8) of the parents had very stressful of Baby seemed to be in pain, followed 56(29.3) of them had very stressful of Limp and weak, followed 52(27.2) of them had very stressful of having a machine breathe for my baby. These results be concurrent with (Fróes et al., 2019) study about Stress experienced by mothers of preterm newborns in a neonatal intensive care unit, which ensured that the Sounds and Images subscale, regarding the level of stress occurrence 2.80 (±0.90)), the item “Seeing a machine (respirator) breathe for my baby” was the only one to reach more than 75% of mothers referring to this experience as moderate to extremely stressful. None of the other items reached the mark of 75% mothers reporting overall stress levels (3.62(±0.88)) as moderate to extremely stressful. Regarding this data, a study on the main components of the neonatal care process from the perspective of parents, explains that mothers feel excluded from the care, especially when the baby is very premature and needs advanced technological support; it recommended health professionals to focus on facilitating maternal interactions with caregivers.

Conclusion

5.1 Conclusion:

Our interventions are simple and inexpensive and can be replicated and adapted to different settings. They can be delivered through hospitals or health care centers and easily integrated into available maternal health services.

Stress is a risk factor for several chronic diseases including hypertension, diabetes, and coronary artery disease. The ability to measure stress reliably would be useful to further characterize the link between stress and health. More importantly it would help evaluate interventions that may decrease stress levels.

Having an infant in the NICU was a stressful experience associated with many difficulties. Most parents expressed shock, sadness, crying, worries about their infant's health, and the desire to know the cause of admission.

Mothers of preterm need support. Spirituality and religion, helps then face the challenges of having their baby hospitalized in a NICU. Premature delivery is a stressful event and demands a lot of energy from the affected mothers. Despite the small sample of this study, results indicate that mothers of preterm babies have different strategies to manage the stressful event of preterm delivery. This study yields important information that could be considered when managing mothers who are affected by preterm delivery for better maternal and child care delivery. More research is required in this field for possible generalization as well as understanding the support structures in place for mothers who deliver preterm babies.

NICU staff work in a stressful environment and must balance caring for fragile, high-risk babies with providing psychosocial support to the babies' families. Educating all staff and

providing them with tools to better understand parents' needs, to provide culturally effective family-centered care and to enhance their communication skills can both decrease parents' risks to experience perinatal mood and anxiety disorders and increase parents' satisfaction with their NICU experience. Educating staff about self-care and also providing them with support in a variety of ways can help to minimize the occurrence of burnout, compassion fatigue and secondary traumatic stress disorder. When staff are better prepared to handle the challenges of supporting NICU families in distress, then staff, babies and families benefit.

Recommendation

5.2 Recommendation:

Health care professionals understand more about the needs of mothers with preterm babies in order to support them better to cope with the stressful situation and improve the well-being of the mothers as well as their preterm babies. It is recommended that mothers with preterm babies need professional counseling support, while they are in the hospital and health care professionals to assist mothers of preterm babies to keep up with their personal, emotional and spiritual well-being after preterm delivery. The initial orientation about the environment and situation given to mothers of preterm babies on their immediate arrival to the neonatal care unit in the hospital is crucial for mothers to cope with the stressful situation.

The research was conducted at one research site as the intention was not to generalize the results but to have a deeper understanding about the coping strategies of mothers with preterm babies. However, the researcher recommends a bigger scale study to be conducted on partners' support and on mothers who have no social support structure for possible generalization and policy impact.

It is very important to do more specific scale of parental stress and coping mechanism for partition in prematurity at the local level and then at the regional level to be appropriate for dissemination and adoption.

It is necessary for nurses to recognize parent's spirituality and belief system as they conceptualize having an infant in NICU. It is also necessary for the healthcare providers to evaluate the positive behaviors in parents trying to adapt and learn how to manage their

emotional state. Direct contact with the healthcare team helps form a relationship and come to for reliable information regarding infant's health condition.

Parental support programs where educational and emotional aspects are simultaneously covered can reduce the stress of both parents.

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Appendices

Arab American University
Faculty of Graduate Studies

الجامعـــة العربيـــة الأمريكيـــة
كلية الدراسات العليا

2022-3-29

الى من يهمه الأمر

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهديكم كلية الدراسات العليا في الجامعة العربية الأمريكية أطيب التحيات، وبالإشارة الى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالبة **اصاله سبع كامل اشتيه** والتي تحمل الرقم الجامعي 202012611 هي طالبة ماجستير في الجامعة العربية الأمريكية تمريض طوارىء، وتعمل على دراسة بحثية بعنوان:

" التوتر وأليات التأقلم لدى أمهات الاطفال داخل أقسام الحضانه " تحت إشراف الدكتورة نجوى صبح، نأمل من حضرتكم الايعاز لمن يلزم لمساعدتها للحصول على المعلومات اللازمة للدراسة، علماً أن المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بناءً على طلبها.

وتفضلوا بقبول فائق الاحترام،،،

عميد كلية الدراسات العليا

د. نوار قطب

Appendix 2

تحية طيبة وبعد :

انا الطالبة اصالة اشتية طالبة في الجامعة العربية الامريكية/ ماجستير طواريء بصدد عمل دراسة حول تقييم التوتر واليات التأقلم معه عند أمهات الأطفال الذين يدخلون الى قسم العناية الحثيثة للأطفال الخدج .

أهداف الدراسة :

- **يهدف هذا البحث إلى معرفة إيجاد الترابط بين التوتر و التأقلم معه عند أمهات االاطفال الذين يدخلون الى قسم العناية الحثيثة للاطفال الخدج.**
- **إيجاد العالقة بين التوتر والمتغيرات المتعلقة بالأمهات) عمر االم, التعليم, نوع االسرة ,عدد ألاطفال, مكان الاقامة, المهنة وترتيب المولود الجديد بين الأطفال)**
- **إيجاد العلاقة بين التأقلم والمتغيرات المتعلقة بالأمهات) عمر االم, التعليم, نوع االسرة ,عدد ألاطفال, مكان الاقامة, المهنة وترتيب المولود الجديد بين الأطفال)**

عزيزي المشترك بالبحث في حال وافقت على المشاركة في هذه الدراسة حيث أن المشاركة طوعية ولا يترتب عليها أي ضرر ، سيبقى أسمك طي الكتمان ، ما لم ينص القانون على ذلك، علما بان هذه المعلومات لن تستخدم إلا لغرض البحث العملي فقط و بدرجة عالية من السرية و الخصوصية

في حال وجد لديكم أي سؤال أو استفسار يمكنكم مراجعتنا والاتصال بنا على رقم :

اصالة اشتيه :

شكرا لكم على حسن تعاونكم ☺

Appendix 3

Need for the Study

NICU mothers' experience multiple stressors related to preterm birth, medical conditions of the baby, complexity of the NICU environment, and perceived vulnerability of the infant. Although a lot of studies have been carried out to assess the stress of mothers of neonate admitted in NICU there were few such studies which focus on stress and coping mechanism, thus the researcher felt the need to conduct a study on stress and coping mechanism of mothers of neonate admitted in NICU.

Objectives of the study

The primary objective will be to assess the stress and coping strategies of mothers of neonate admitted in NICU

The secondary objectives are:

A. To find correlation between stress and coping of mothers of neonate admitted in NICU

B. To find out the association between stress and selected demographic variables. (E.g., Age of the mother, education, type of family, number of children, place of residence, occupation, and birth order of the child.)

C. To find out the association between coping and selected demographic variables. (E.g., Age of the mother

Hypotheses

The hypotheses for the study are as follows:

1. There is a significant association between stress and coping mechanism among mothers of neonate admitted in NICU

2. There is a significant difference between stress scores of mothers and selected demographic variable

3. There is a significant difference between coping strategies scores of mothers and selected demographic variable

Demographic characteristics of the sample

Age of mothers' _____

Occupation

- Housewife

- Service

Educational status

- No formal education
- Primary
- Secondary
- Higher secondary
- College

Type Of Family

- Nuclear family
- Joint family

place of residence

- City
- Village
- Camp

No. of children

- 1 child
- 2 child
- 3 or more child

Birth order of neonate

- 1st born
- 2nd born
- 3rd and above

Duration of hospital stay

- 1–5 days
- 6–10 days
- 11–15 days
- 2 More than 15 days

Item(s) according to subscale	not at all stressful	a little stressful	moderately stressful	very stressful	extremely stressful
Sights and Sounds					
(a) Presence of monitors & equipment					
(b) Presence of constant noises					
(c) Sudden noises					
(d) Other sick babies					
(e) Large number of people working in the unit					
Infant Appearance					
(a) Tubes and equipment					
(b) Bruises, cuts or incisions					

(c) Unusual color					
(d) Unusual breathing					
(e) Suddenly changes color					
(f) Stops breathing					
(g) Small size					
(h) Wrinkled appearance					
(i) Having a machine breathe for my baby					
(j) Needles and tubes					
(k) Intravenous line or tube					
(l) Baby seemed to be in pain					
(m) Crying for long periods					
(n) Baby looked afraid					
(o) Baby looked sad					
(p) Limp and weak					
(q) Jerky movements					
(r) Baby not being able to cry like other babies					
(s) Clapping on baby's chest for drainage					
Parent-Infant Relationship					
(a) Separated from baby					
(b) Not feeding baby myself					
(c) Not being able to care for baby myself					
(d) Not being able to hold baby when I want					
(e) Sometimes forgetting what baby looks like					
(f) Not being able to share baby with family					
(g) Feeling unable to protect baby from pain					
(h) Afraid of touching baby					
(i) Feeling staff are closer to baby than I am					
(j) Helpless about how to help my baby					
Staff					
(a) Explaining things too fast					
(b) Using words I don't understand					
(c) Telling me conflicting things about baby's condition					

(d) Not telling me enough about tests and treatments done to baby					
(e) Not talking to me enough					
(f) Too many different people (doctors, nurses, others) talking to me					
(g) Difficulty in getting information or help					
(h) Not sure I will be called about changes in baby's condition					
(i) Staff looking worried about baby					
(j) Staff acting as if they did not want parents around					
k) Staff acting as if they did not understand my baby's behaviour or special needs					
General stress					
(a) How stressful has the experience of having baby hospitalized been for you?					

Coping Mechanisms

Item(s)	**0 Not helpful**	**1 Minimally helpful**	**2 Moderately helpful**	**3 Extremely helpful**
1. Believing that my child (ren) will get better.				
2. Investing myself in my children.				
3. Doing things with my children.				
4. Believing that things will always work out.				
5. Telling myself that I have many things I should be thankful for.				
6. Building a closer relationship with my spouse.				
7. Talking over personal feelings and concerns with spouse.				
8. Doing things with family relatives.				
9. Believing in God.				
10. Taking good care of all the medical equipment at home.				
11. Believing that my child is getting the best medical care possible.				
12. Trying to maintain family stability.				

13. Doing things together as a family (involving all members of the family).				
14. Trusting my spouse (or former spouse) to help support me and my child(ren).				
15. Showing that I am strong.				
16. Getting other members of the family to help with chores and tasks at home.				
17. Having my child with the medical condition seen at the clinic/hospital on a regular basis.				
18. Believing that the medical center/hospital has my family's best interest in mind.				
19. Encouraging child(ren) with medical condition to be more independent.				
20. Involvement in social activities (parties, etc.) with friends.				
21. Being able to get away from the home care tasks and responsibilities for some relief.				
22. Getting away by myself.				
23. Eating.				
24. Sleeping.				
25. Allowing myself to get angry.				
26. Purchasing gifts for myself and/or other family members.				
27. Concentrating on hobbies (art, music, jogging, etc.).				
28. Working, outside employment.				
29. Becoming more self-reliant and independent.				
30. Keeping myself in shape and well-groomed.				
31. Talking to someone (not professional counselor/doctor) about how I feel.				
32. Engaging in relationships and friendships which help me to feel important and appreciated.				
33. Entertaining friends in our home.				
34. Investing time and energy in my job.				
35. Going out with my spouse on a regular basis.				
36. Building close relationships with people.				
37. Developing myself as a person.				
38. Talking with other parents in the same type of situation and learning about their experiences.				
39. Talking with the medical staff (nurses, social worker, etc.) when we visit the medical center.				
40. Reading about how other persons in my situation handle things.				
41. Reading more about the medical problem which concerns me.				
42. Explaining our family situation to friends and neighbors so they will understand.				

43. Being sure prescribed medical treatments for child(ren) are carried out at home on a daily basis.				
44. Talking with other individuals/parents in my same situation.				
45. Talking with the doctor about my concerns about my child(ren) with the medical condition.				

الملخص

المقدمة:

وفقًا لتقرير منظمة الصحة العالمية (WHO) ، يولد ما يقرب من 15 مليون طفل قبل الأوانه كل عام ، أي عُشر إجمالي المواليد الجدد ، وتتفاوت الإحصائيات الخاصة بهؤلاء الأطفال من 5٪ إلى 18٪ في دول مختلفة.

يعاني آباء الأطفال الخدج الذين تم قبولهم في وحدة العناية المركزة لحديثي الولادة (NICU) من إجهاد متزايد لأنهم نادرًا ما يكونون مستعدين للصدمة والتوتر والقلق عندما يحتاج طفلهم إلى رعاية حرجة في وحدة العناية المركزة لحديثي الولادة.

التوتر: هو عامل الذي يمكن أن يضعف خط الدفاع الطبيعي ، والذي ينقسم إلى مجالات جسدية ، وفسيولوجية ، وعاطفية ، ونفسية ، واقتصادية.

تعمل استراتيجيات التأقلم على تقليل تأثير الأحداث المجهدة. وبالتالي فإن تخفيف الاستجابات العاطفية والجسدية يجعل من الصعب الحفاظ على الأداء الطبيعي لأنسان في ذلك الوقت .

الهدف من الدراسة:

تهدف هذه الدراسة الى

تقييم التوتر واستراتيجيات التأقلم لأمهات اللواتي اطفالهن داخل قسم الحضانة في مستشفى رفيديا.

فرضيات الدراسة

H1: هناك ارتباط كبير بين التوتر وآليات التأقلم بين أمهات اللواتي اطفالهن داخل قسم الحضانة عند P <0.05

H2: هناك فرق معنوي بين درجات التوتر للأمهات والمتغير الديموغرافي المحدد عند P <0.05.

H3: هناك فرق كبير بين درجات استراتيجيات التأقلم للأمهات والمتغيرات الديموغرافية المختارة عند P <0.05.

البحث: عينه

يتألف الامهات المستهدفات من 200 أم. وكانت المشاركات المستهدفات في الدراسة هم جميع أمهات الأطفال حديثي الولادة الذين أدخلوا إلى وحدة العناية المركزة لحديثي الولادة في مستشفى رفيديا. في الفترة من 1 يناير إلى 1 مارس 2022.

ادوات وطرق جمع البيانات:

الدراسة عبارة عن دراسة وصفية، مستقبلية، مقطعية. البيانات التي تم جمعها من خلال مقياس (PSS: NICU) وجرد التأقلم الصحي للآباء (CHIP).

بعد الاختيار الام، واخذ الموافقة منها على المشاركة، وتحقق من المعايير، وامنح خصوصية الأم.

شرح الاستبيان لأم، وشرح الغرض من الدراسة، وتوضيح كيفية الإجابة، ترك لها المجال للاستفسار، وإعطاء الأم الوقت والخصوصية.

كل أم تحتاج من 15 إلى 20 دقيقة. لأكمال الاستبيان.

نتائج البحث :

التوتر هو عامل خطر للعديد من الأمراض المزمنة. قد تكون القدرة على قياس التوتر بشكل موثوق مفيدة لزيادة في وصف العلاقة بين التوتر والصحة. والأهم من ذلك أنه سيساعد في تقييم التدخلات التي قد تقلل من مستويات التوتر.

- إنجاب طفل وادخاله لقسم الحضانة تجربة مرهقة مرتبطة بالعديد من الصعوبات.
- أعربت معظم الأمهات عن الصدمة والحزن والبكاء والقلق على صحة طفلهم الرضيع والرغبة في معرفة سبب تواجد في الحضانة.
- وجدنا أن أمهات الخدج بحاجة إلى دعم.
- تساعد الروحانيات والالتزام الديني في مواجهة تحديات إدخال طفلهما إلى المستشفى في وحدة العناية المركزة لحديثي الولادة.

الولادة المبكرة هي حدث مرهق وتتطلب الكثير من الطاقة من الأمهات، على الرغم من العينة الصغيرة لهذه الدراسة، ألا أن تشير النتائج إلى أن أمهات الأطفال الخدج لديهن استراتيجيات مختلفة لإدارة الحدث المجهد للولادة المبكرة.

تنتج هذه الدراسة معلومات مهمة يمكن أخذها في الاعتبار عند إدارة الأمهات المتأثرات بالولادة المبكرة من أجل تقديم رعاية أفضل للأم والطفل.

يعمل موظفو وحدة العناية المركزة لحديثي الولادة في بيئة مرهقة ويجب أن يوازنوا بين رعاية الأطفال الضعفاء والمعرضين لمخاطر عالية مع تقديم الدعم النفسي والاجتماعي لأسر الأطفال.

يمكن أن يؤدي تثقيف جميع الموظفين وتزويدهم بالأدوات اللازمة لفهم احتياجات الوالدين بشكل أفضل، وتقديم رعاية تركز على الأسرة بشكل فعال ثقافيًا وتعزيز مهارات الاتصال لديهم، إلى تقليل مخاطر تعرض الوالدين لاضطرابات المزاج والقلق وزيادة رضا الوالدين عن، وحدة العناية المركزة لحديثي الولادة.

التوصيات:

يفهم أخصائيو الرعاية الصحية أفضل عن احتياجات الأمهات اللواتي لديهن أطفال خدج من أجل دعمهم بشكل أفضل للتعامل مع الموقف المجهد وتحسين رفاهية الأمهات وكذلك الأطفال الخدج. من المستحسن أن الأمهات اللائي لديهن أطفال مبتسرين بحاجة إلى دعم استشاري متخصص أثناء وجودهم في المستشفى وأخصائي الرعاية الصحية لمساعدة أمهات الأطفال الخدج على مواكبة سلامتهم الشخصية والعاطفية والروحية بعد الولادة المبكرة.

تم إجراء البحث في موقع واحد حيث لم يكن القصد تعميم النتائج ولكن الحصول على فهم أعمق حول استراتيجيات التأقلم والمواجهة للأمهات اللائي لديهن أطفال خدج. ومع ذلك، يوصي الباحث

- بإجراء دراسة على نطاق أوسع
- على دعم الأمهات الذين ليس لديهم دعم اجتماعي.
- من الضروري للممرضات التعرف على روحانية الوالدين ونظام معتقداتهم عندما يتصورون وجود طفل رضيع في الحضانة.
- من الضروري أيضًا لمقدمي الرعاية الصحية تقييم السلوكيات الإيجابية لدى الازواج الذين يحاولون التكيف وتعلم كيفية إدارة حالتهم العاطفية.

- يساعد الاتصال المباشر بفريق الرعاية الصحية في تكوين علاقة للوصول لمعلومات موثوقة بشأن حالة الطفل الصحية.
- يمكن لبرامج دعم الوالدين حيث يتم تغطية الجوانب التعليمية والعاطفية في وقت واحد أن تقلل من إجهاد كلا الوالدين.