



Review Article

New Born Care Self Efficacy Deficit: Role of Nurses and Midwives

Basil PerfectGodsgift Nnamdi¹, Bello Cecelia Bukola², Bamigboye Theresa Olaitan², Basil Blessing Ikwuta³.

1Department of Nursing, Joseph Ayo Babalola University Ikeji Arakeji. Email: npbasil@jabu.edu.ng, 2Faculty of Nursing, Afe Babalola University, Ado Ekiti. Email: bukolabello@abuad.edu.ng, 2Faculty of Nursing, Afe Babalola University, Ado Ekiti. Email: bamigboyetto@abuad.edu.ng. 3Maternity Center, Joseph Ayo Babalola University Ikeji Arakeji. Email: blessingikwuta17@gmail.com

Abstract

After birth, a new period begins in the lives of the woman and infant. Researchers who studied the experiences and the difficulties of women during the postnatal period determined that women lack sufficient knowledge and have concerns in terms of infant care, selfcare, and emotional adjustment (Sari & Altay 2020; Shrestha, et al, 2015). Becoming a parent comes with challenges in adapting to the parenting role and taking care of the infant (Shrestha et al., 2019). Even though this is equally true for men and women (Kranenburg et al., 2019), women are often in focus with respect to the transition from the prenatal to the early postnatal phase. They undergo major bodily changes while carrying a child, giving birth, and recovering from this experience, and still serve as primary caregivers for young infants in most families (Samdan, et al., 2022). The seminar objectives are to describe: The concept of new born care, the challenges faced by mothers of newborn that requires self-efficacy, The factors behind the challenges related to care of newborns among mothers, The concept of self-efficacy as it relates to challenges faced by mothers of newborns and to highlight the role of nurses and midwives enhancing self-efficacy of mothers in care of newborn. from data base literature search gather from pubmed, google scholar, sci-space and consensors. findings reviewed that indeed, although the mothers reported to be in a significant relationship and to be supported in their daily life with their newborns by their partner and family, they experienced a high level of parenting stress. This aspect findings further reveals the strong impact the child's birth has on the psychological well-being of mothers. Thus social support did not reduce the parenting stress in the first days after the delivery, but it takes a longer time to be a protective factor for the well-being of mothers. Indeed, the first days of a mother and child relationship are a delicate period, characterized by daily discoveries and learnings (Tognasso et al, 2022). Consistently, the mothers are characterized by high levels of avoidant and anxious attachment, dimensions associated with more negative expectations about parenting, including uncertainty about parenting ability (Sable, 2008). These results are in line with the literature that highlights how having a baby activates the mother's attachment system (Mazzeschi, et, 2015) and how the attachment is linked to parental caregiving (Pace, et al, 2015). In the current study, we explored the complex relationship between mothers' attachment, parenting stress, maternal self-efficacy, and confidence in caretaking, aiming to understand whether adult attachment influences the mother's confidence in caretaking and if parenting stress and maternal self-efficacy could mediate in this relationship. The study examines the impact of maternal attachment on parenting stress and self-efficacy in the first month after childbirth. It found that avoidant attachment decreases maternal confidence in caretaking, mediated by parenting stress. Anxiety attachment did not affect confidence or parenting stress. The study suggests further research to understand the relationship between maternal attachment and lack of confidence in caretaking throughout the first year. Recommendations include developing technology interventions, supporting parents during the transition process, and incorporating health literacy strategies.

Keywords: New Born, Care, Self Efficacy, Deficit, Role, Nurses, Midwives.

Correspondence

Basil PerfectGodsgift Nnamdi

1Department of Nursing, Joseph Ayo Babalola University Ikeji Arakeji.

Email: npbasil@jabu.edu.ng, 2

INTRODUCTION

Infant and child health is an important health indicator worldwide. According to the World Health Organization (WHO), more than half of infant mortality occurs during the neonatal period (WHO, 2018). In Turkey, three quarters of infant mortality occurs during the neonatal period. WHO indicates that 98% of infant mortality in developing countries is related to infant infections, home births, and limited access to care (WHO, 2018). Emphatically, research indicates that certain overlooked environmental-level factors that contribute to infant mortality are inadequate antenatal attention, poor service provision from healthcare workers, and absence of skilled-care providers (Sokefun & Atulomah, 2020). Requirements of mothers include skill-building on health education and the relevance of timely immunization, exclusive breastfeeding, and prevention of diarrhoea and malaria. If not critically attended to, these issues will continually contribute to infant deaths regardless of the Sustainable Development Goals recently initiated (Sokefun & Atulomah, 2020). In order to reduce infant mortality, it is very important for women to learn about and correctly apply infant care. Reducing infant mortality is only possible if women learn about infant care by obtaining support and information before, during, and after birth (Sari & Altay 2020, Ceber, et al, 2013; Newbrander, et al, 2014).

After birth, a new period begins in the lives of the woman and infant. Researchers who studied the experiences and the difficulties of women during the postnatal period determined that women lack sufficient knowledge and have concerns in terms of infant care, self-care, and emotional adjustment (Sari & Altay 2020; Shrestha, et al, 2015). Becoming a parent comes with challenges in adapting to the parenting role and taking care of the infant (Shrestha et al., 2019). Even though this is equally true for men and women (Kranenburg et al., 2019), women are often in focus with respect to the transition from the prenatal to the early postnatal phase. They undergo major bodily changes while carrying a child, giving birth, and recovering from this experience, and still serve as primary caregivers for young infants in most families (Samdan, et al., 2022). How well mothers manage to meet these challenges has consequences not only for themselves but also for their offspring (Glover & Capron, 2017).

Transition to parenthood is a major developmental period that includes practical and psychological challenges for new parents (Lévesque, et al., 2020). First, they must understand and act according to the needs of the newborn, modifying their daily routines to deal with new tasks and greater responsibilities. This implies a change within the couple and could cause a lower relationship satisfaction since parents experience less time for couple communication or lower quality and frequency of time for the couple itself (Tognasso et al, 2022). Likewise, Yang, et al (2017) emphasized that in the care of newborn, it is no

surprise that parents of very low birth weight infants are apprehensive as they face discharge after their 2-3 months in the neonatal intensive care unit. Previous studies report parents of the infants feeling ill-prepared, uninformed, and unskilled to provide a myriad of home health care tasks.

Pregnancy and childbirth are crucial periods for the safety and continuity of the well-being of the mother and her newborn baby as mothers try to adapt with the physical, social, and mental health variation that occurs in this period (Ali & Nair, 2021). Maternal self-efficacy (MSE) is significant to facilitate compliance with this maternal experience and motherhood. Maternal self-efficacy is defined as mothers' belief regarding their abilities in managing and executing tasks in parenting children (Delavari et al., 2018). It is also witnessed that mothers lack of experience in child care, having more problems in coping with maternal responsibilities, often contributes to lower levels of maternal confidence (Aydemir and Onan, 2020). These experiences may have a combined effect on a mother's ability to balance their physical, psychological, and social well-being. Yet, the well-being of newly birthed mothers who are at risk of distress is not routinely assessed.

Psychological challenges connected to the transition to parenthood are mainly connected to the development of different identities (self, parent, and partner) which can be difficult to handle, and which can require some time to become comfortable with. Indeed, transition to parenthood is a reorganization process that involves both members of the couple, especially the mother, who is asked to rearrange both internal and external dynamics in terms of differentiating from the family of origin and re-laborating the position as a daughter to move towards the development of an idea of herself as mothers (Tognasso et al, 2022a). Karami and Mirghafourvand (2021) exact that Self-efficacy is one of the significant factors in the successful transition of the mother to the maternal role. Maternal self-efficacy plays a major role in the mother's care skills and can lead to better adaptation to the situation. Moreover, infant care behaviors are those behaviors that the mother does to care for, rear, and improve the infant's health, such as meeting all the physical needs of the infant, like feeding, clothing, and bathing, to ensure the baby's health. Risanger, et al (2023) assert that Developing maternal self-efficacy offsets negative psychological consequences of premature birth, improving maternal well-being. Women reported experiencing loss and biographical disruption in relation to mothering, loss of autonomy, and searching for normality after premature birth. Providing breast milk symbolized embodied contact with their baby and increased maternal confidence (Risanger, et al, 2023).

As the parenting role assumes priority, mothers often postpone their own needs to respond promptly to their child's needs, which can affect the mother's well-being and her relationship with her partner. For this practical and psychological reason, new mothers often report fatigue and exhaustion, psychological distress, and struggling with too

many new tasks and responsibilities (Tognasso et al,2022). Importantly, deficiencies emerging from lack of social-support exacerbate poor health outcomes. Programs with innovative approaches to engage key influencers (such as fathers and grandmothers) to assist and encourage mothers would be more successful in influencing their behaviours to improve infant care, including infant feeding (Sokefun & Atulomah,2020). Research has identified health-literacy, social-support, and self-efficacy as personal and environmental-level components for the enhancement of infant-survival practices. Among the many factors known to impact a mother's adaptation to parenthood are socio-demographic variables like maternal education and migration background (Wang et al., 2021; Fair et al., 2020), previous birth experiences, mental health (Glover & Capron, 2017), social support during pregnancy (Mihalic et al., 2016), and prenatal expectations related to one's own role as a parent. These factors are likely to influence the sense of maternal self-efficacy which is known to play a key role for later parenting (Taraban & Shaw, 2018; Vance & Brandon, 2017).Risanger, et al(2023)asserted that a better understanding of how maternal self-efficacy develops during the transition to parenthood, and how different factors determine its quality, can help promote maternal health and child development.They developed motivation, knowledge, and perseverance and perceived success from positive feedback, primarily from their baby and health professionals'such as nurses and midwives support and encouragement.

Sari and Altay (2020) stated that Education and counseling services should be initiated in the prenatal period to allow the woman to adapt to her new roles and increase her self-efficacy about infant care. Support that is initiated in the antenatal period and continues in the early postnatal period facilitates the transition to maternity, affects the maternal's self-efficacy, and minimizes problems. Fehling et al ascited in Sokefun and Atulomah (2020) asserted that a link exists between the skillfulness of health care providers and maternal and child health outcomes. Behavior-change in mothers to enhance their self-efficacy in ascertaining infant-survival will be because of comprehensible counselling, clear health education messages and skilled delivery.Ong et al. as cited in Sari &Altay (2020) concluded that women require health professionals'such as nurses and wives support in many subjects after being discharged from the hospital. Liu, et al (2017) stated that primiparous women require education about trust and support in terms of infant care.

For example, Fry-Bowers and colleagues as cited in Sokefun & Atulomah,(2020) inferred that health-literacy has a positive influence on decision-making for mothers regarding infant care. Moon et al as cited in Sokefun & Atulomah,(2020) concluded that the multi-level approach for infant care should include regulation of policies, modification of cultural and ethnic values, education skills and health counsels by professionals.When nurses and midwives are educated to international standards, it could

avert more than 80% of all maternal deaths, stillbirths and neonatal deaths as they are expected to be able to use the developing technology while fulfilling their responsibilities related to the protection and promotion of maternal and infant health in antenatal and postnatal period (WHO,2019;Kumar et al., 2013). In their study, which aimed to evaluate the effects of an Internet education program on neonatal care,nurses and midwives provided web-based neonatal care education to primiparous women from 32 to 34 weeks of gestation. This comprehensive web-based information about infant care contributed to maternal adaptation and self-efficacy (Chrysi,*et al.* 2023,Kuo et al., 2009). Using nursing theoretical models in education and nursing interventions by nurses and midwives provides a scientific basis for concepts and principles related to implementation and provides a systematic approach to care (Alligood, 2018). Pender's Health Promotion Model (PHPM) has been used in many studies, especially for breastfeeding education and the development of postnatal care program (Cangöl & Şahin, 2017; Scott, Shreve, Ayers, & McElfish, 2016). This framework could likely provide primiparous women with the information that they need to care for their infants. PHPM is suitable for explaining the factors that affect health behaviors (Jalili, et al, 2020;Pender, et al, 2011).

Considering primiparous women's concerns and lack of information on infant care, the basic concepts of the PHPM, including perceived barriers, perceived benefits, perceived self-efficacy, and individual characteristics, are useful in determining the factors that affect maternal and infant health(Jalili, et al, 2020). Planning the education/counseling services by nurses and midwives according to the individual characteristics of the woman and infant is more effective in terms of increasing the maternal's self-efficacy and improving the infant's health(Mohamadirizi, et al,2014; Kuo et al., 2009). A study that includes all of the issues of infant care, new born-mother's self-efficacy and role of health care professionals applied based on the model has not been reached. This study was planned to fill this gap in the literature.

Problem:

Mothers frequently encounter challenges in the care of their new born, as the transition to motherhood is faced withdifficulties which in turn leads to apprehension in undertaking the task of care due to lack of maternal self-efficacy to transited to motherhood.

The present seminar aims to explore the complex relationship between the mother's attachment, parenting stress, self-efficacy, and maternal confidence in caretaking in order to shed light on the mechanisms through which adult attachment influences the mother's confidence in caretaking,

To the best of our knowledge, the results could fill a gap in the literature regarding maternal confidence in caretaking, an aspect that has not yet been studied in

connection to adult attachment, self-efficacy, and parenting stress simultaneously.

Another novel aspect of the current seminar is that it analyzed these aspects focusing only on the first month postpartum, aiming to understand how maternal confidence in caretaking is influenced by mothers' attachment style and parenting stress experienced in the first period of being a mother.

The Objective of the Seminar

The seminar objectives are to describe:

1. The concept of new born care
2. The challenges faced by mothers of newborn that requires self-efficacy.
3. The factors behind the challenges related to care of newborns among mothers.
4. The concept of self-efficacy as it relates to challenges faced by mothers of newborns.
5. To highlight the role of nurses and midwives enhancing self-efficacy of mothers in care of newborn

The Concept of New Born Care

Neonatal mortality remains unacceptably high in most sub-Saharan and Asian communities, where cultural practices and poor antenatal care are common (Iganus et al, 2022). Memon, et al, (2019) stated that Each year nearly 7.7 million children under five years die around the world; out of which approximately 3.1 million of the newborns die during the neonatal period and almost all these (99%) deaths occur in the developing countries. According to the World Health Organization's estimation neonatal deaths account for 45% of the under-five deaths. More than one-third of these deaths occur in the first 24 h of birth, whereas three-quarter of the neonatal deaths takes place in the first seven days of birth (Memon, et al, 2019). Reliefweb (2022) Stated that the postnatal period, defined here as the period beginning immediately after the birth of the baby and extending up to six weeks (42 days), is a critical time for women, newborns, partners, parents, caregivers and families. Yet, during this period, the burden of maternal and neonatal mortality and morbidity remains unacceptably high, and opportunities to increase maternal well-being and to support nurturing newborn care have not been fully utilized. Newborn care practices play a key role in preventing neonatal deaths (Iganus et al, 2022). Memon, et al, (2019) asserts that The increasing evidence suggests that early newborn care practices impact neonatal mortality and morbidity. The burden of neonatal mortality and morbidity can be reduced by practicing essential newborn care (ENC) practices. Many studies have been done on the newborn care topics in Pakistan and in developing countries but most of them only focus on newborn care practices .

Postnatal care services are a fundamental component of the continuum of maternal, newborn and child care, and key to achieving the Sustainable Development Goals (SDGs) on reproductive, maternal and child health, including targets to reduce maternal mortality rates and end preventable deaths of newborns (Reliefweb, 2022). According to Belleza (2020), Newborns are one of the most curious and interesting humans could ever encounter. Newborn care is immediately done after birth in a separate space near the birthing area. Newborn care varies among cultures and in some areas in the world. WHO (2019) emphasized that High-quality universal newborn health care is the right of every newborn everywhere. Babies have the right to be protected from injury and infection, to breathe normally, to be warm and to be fed. All newborns should have access to essential newborn care, which is the critical care for all babies in the first days after birth.

WHO (2022) asserted that Caring for a newborn include Wipe the baby dry and clean and delay the first bath for at least 24 hours, Keep the baby warm with one or two layers of clothes more than adults and keep the head covered with a hat, Have the baby tested for eye and hearing problems and for jaundice, Keep the umbilical cord dry and, not applying anything on it, such as ointment, Keep the baby and the mother together in the same room and allow the baby to feed on demand, When the baby is small, keep the baby in skin-to skin contact as much as possible every day, Wash hands with soap and water before handling the baby, Know the danger signs and where to seek care, such as if the baby is not feeding well, has fast breathing or a high temperature. Belleza, (2020) stated that During the initial feeding, a term newborn could be fed immediately after birth while a formula-fed one should be fed at 2 to 4 hours of age. Bathing is done an hour after birth to gently wash away the vernix caseosa, and this is done daily. Areas such as the newborn's face, skin folds, and diaper area are the areas that need washing regularly. WHO (2019) further opined that Essential newborn care involves immediate care at the time of birth, and essential care during the entire newborn period. It is needed both in the health facility and at home. Essential newborn care includes: Immediate care at birth (delayed cord clamping, thorough drying, assessment of breathing, skin-to-skin contact, early initiation of breastfeeding), Thermal care, Resuscitation when needed, Support for breast milk feeding, Nurturing care, Infection prevention, Assessment of health problems, Recognition and response to danger signs, Timely and safe referral when needed

With respect to thermal protection, WHO has recommended preventive measures such as skin to skin contact, immediate placement of baby on mothers chest and delayed bathing with the gap of minimum six hours after birth are very important for a newborn as these can prevent the neonatal complication of hypothermia (Khan et al, 2018). The early bathing is known to be a leading risk factor for neonatal morbidity such as hypothermia and

mortality. cultural beliefs were related to early newborn bathing, early bathing of their newborns cleans the dirty coating of Vernix present on the baby. The difference seen here can be due to a difference in socio-cultural characteristics in different regions (Iganus et al, 2022). Dessalegn, et al (2022) stated that An umbilical cord is another sensitive issue concerning newborn care. deliveries and unsafe cord cutting and caring practices cause tetanus and sepsis which are two leading reasons for maternal and neonatal illnesses and deaths. The importance of applying Chlorhexidine was stated by Imdad A. et al. Draiko et al (2021) in Pakistan; a significant reduction in a number of cases of umbilical cord infections among newborns delivered at home. In the current study, 65.4% of the respondents stated that the umbilical cord was cut by a new blade. Nearly 26.9% of respondents reported using traditional substances on the cord, whereas, only 1.5% used chlorhexidine.

According to WHO 2021, breast milk is the best way of feeding babies and supplying them with nutrients essential for their healthy growth and development. Laksono, et al (2021) suggested possible explanation for the above result could be that mothers with young age may have better awareness regarding the benefits of newborn care practices. While older mothers may have more traditional influence or come from the traditional cohort, therefore, were less likely to have knowledge and practice in comparison to young mothers. Mothers' education level was found to be significantly associated with the KAP of newborn care. women with no formal education had lesser care than those mothers who had higher education (Berhea, et al, 2021). Leta M. (2022) probable explanation that a highly educated mother could have a better understanding or awareness about the importance of newborn care. Thus, giving these mothers confidence to take the right decisions to take care of their newborns, resulting in better knowledge and accurate practices.

In Pakistan, mothers are the primary caregiver to newborns hence the care is mostly dependent on their level of knowledge, attitude, and practice (KAP) about newborn care. (Memon, et al, 2019). Reliefweb (2022) This is a consolidated guideline of new and existing recommendations on routine postnatal care for women and newborns receiving facility- or community-based postnatal care in any resource setting. It provides a comprehensive set of recommendations for care during the postnatal period, focusing on the essential package that all women and newborns should receive, with due attention to quality of care; that is, the provision and experience of care. This guideline updates and expands upon the 2014 WHO recommendations on postnatal care of the mother and newborn, and complements existing WHO guidelines on the management of postnatal complications.

The Challenges Faced By Mothers of Newborn That Requires Self-Efficacy.

Becoming a mother could be a very stressful life event since involves a transition from a well-known reality to another one, characterized by new goals, behaviors, responsibilities, and a new concept of self (Saxbe et al, 2018; Goede & Greeff, 2016). These challenges are in line with the literature that highlights the challenges and difficulties present in the first period after the child's birth (Kaźmierczak, et al, 2021). A When a child is born, mothers are asked to change their habits, understand the child's signals, respond to his needs and develop a maternal role that could take some time to be learned and internalized. The transition to motherhood has been theorized as connected to mothers' fatigue, physical exhaustion, psychological distress, and less perception of their mothers' capability (Lévesque, et al, 2020). Memon, et al, (2019) affirmed that All these aspects could be an explanation for the high levels of stress that the mothers of the current study experienced. stress widely present in the first days of motherhood did not appear to be decreased by the support received.

Indeed, although the mothers reported to be in a significant relationship and to be supported in their daily life with their newborns by their partner and family, they experienced a high level of parenting stress. This aspect further reveals the strong impact the child's birth has on the psychological well-being of mothers. Thus social support did not reduce the parenting stress in the first days after the delivery, but it takes a longer time to be a protective factor for the well-being of mothers. Indeed, the first days of a mother and child relationship are a delicate period, characterized by daily discoveries and learnings (Tognasso et al, 2022).

Consistently, the mothers are characterized by high levels of avoidant and anxious attachment, dimensions associated with more negative expectations about parenting, including uncertainty about parenting ability (Sable, 2008). These results are in line with the literature that highlights how having a baby activates the mother's attachment system (Mazzeschi, et, 2015) and how the attachment is linked to parental caregiving (Pace, et al, 2015)

Rosenblad and Funkquist, (2022) founds Mothers of preterm infants often perceive the infant as having problems with crying, sleeping and feeding, sometimes summarised as 'state-regulation'. mothers with higher self-efficacy have an easier time adapting to the infant. additional barriers to feeding the infants can be maternal stress and anxiety; the infant's inability to breastfeed; and suboptimal hospital routines, such as separation of mother and infant or late initiation of breast milk expression, as well as use of bottles, pacifiers and nipple shields. Poorshaban, et al (2017) stated that an important variable in breastfeeding is breastfeeding self-efficacy which is the confidence and belief of mothers in their ability to breastfeed. Breastfeeding self-efficacy is essential for breastfeeding continuation. Awalyah, et al (2019) stated In reality, many women experience difficulties in

breastfeeding. For the majority, it is not easy or natural. A majority of women consider initial breastfeeding to be a painful, difficult and challenging experience. Failure in breastfeeding is not only related to feelings of guilt but also to the diminishing of maternal identity.

Rosenblad and Funkquist,(2022)emphasized that The mother's self-efficacy in breastfeeding is central to understanding which mothers are going to breastfeed their infants. Persons with low self-efficacy often find tasks difficult to perform. If they fail, they blame themselves, whereas persons with high self-efficacy are prepared to test and try until they reach a solution. Awalyah, et al (2019) identifies Some factors related to the duration are age, education, employment, household income, parity, and delivery type. Moreover, knowledge, attitude, self-efficacy, intention and social support mothers receive also affect satisfaction

The Factors Behindthe Challenges Related to Care of Newborns Among Mothers

Poorshaban, et al (2017) Breastfeeding self-efficacy is influenced by four main factors: performance accomplishments, vicarious experiences, verbal persuasion, and physiological responses. Self-efficacy can be affected by many factors, including personal-social factors such as mothers' age, educational level, training, the number of pregnancies, employment, family income and previous breastfeeding experience.

This assumption stems from the observation that mothers with poorer well-being perceive the infant as more often having problems with crying, sleeping and feeding, sometimes summarized as self-regulation difficulties, which is known as state-regulation difficulties among preterm infants. For example, the mother's anxiety is the best predictor of the infant's temperament, resembling irritability and nursing difficulty, and mothers who rate their sleep as poor when their preterm infant is a newborn, more often perceive their infant as having sleeping difficulties later in life (Rosenblad & Funkquist,2022).

A lower Socioeconomic status (SES) is associated with less access to resources, less knowledge of child rearing, higher distress levels (Roubinov & Boyce, 2017), as well as with lower parental self-efficacy, less parental educational orientation, and a lower quality of interaction among family members (Anders et al., 2015; Tazouti & Jarlégan, 2016). When exploring the impact of SES on child development, it is considered better to use specific SES indicators (e.g., O'Connell, 2019). The education level of parents plays a special role in child-rearing practices (Ghosh & Rausch, 2020). Investigations into the effects of maternal education level on maternal self-efficacy provide mixed results, but those with diverse or disadvantaged samples indicate lower maternal self-efficacy among mothers with lower education backgrounds (e.g., Wang et al., 2021).

Mothers with a migration background have a smaller social network and are more likely to experience

social isolation during pregnancy (Fair et al., 2020). Greater maternal acculturation conflict and increased discomfort with the new culture can lower maternal self-efficacy among immigrant women during pregnancy and beyond (Boruszak-Kiziukiewicz & Kmita, 2020). First-time mothers tend to be more strongly affected by experiences related to delivery and dealing with a very young infant, which increases their vulnerability for developing depressive symptoms (Martínez-Galiano et al., 2019). They often feel less competent as a parent than experienced mothers (McCarter-Spaulling & Kearney, 2001). The few studies that have assessed the impact of informal support on maternal self-efficacy during pregnancy have revealed that higher support goes along with higher maternal self-efficacy before giving birth (Gao et al., 2012; Ginja et al., 2018). This positive association was also reported for the postpartum period (Leahy-Warren et al., 2012), although the effects were small. So far, evidence has been based on cross-sectional data only.

Formal support by professionals includes participation in birth preparation courses, visiting counseling centers or midwives' practices. This is assumed to enhance early parenting practices and increase maternal sensitivity and reciprocity in interactions with the infant by increasing maternal knowledge of infant care (Mercer & Walker, 2006). Psychoeducational classes for pregnant women can improve postnatal maternal self-efficacy (Gao et al., 2012), although the effects of such educational interventions are not yet fully understood (Gagnon & Sandall, 2007). When formal and informal social support are both considered in parallel, insufficient informal support during pregnancy seems to increase the risk for postpartum , whereas the role of formal support remains unclear (Nakamura et al., 2020).

The perinatal and postnatal periods constitute periods of high vulnerability for experiencing depressive symptoms (Le Strat et al., 2011). Especially disadvantaged populations with low SES or migration status who are exposed to cumulative stressors carry an increased risk for depression (Anderson et al., 2017). Although higher levels of depressive symptoms seem to be associated with lower levels of maternal self-efficacy, longitudinal investigations on this relation are still rare and indicate differences according to the time of measurement and sample characteristics (Porter & Hsu, 2003; Takács et al., 2019).

The Concept of Self-Efficacy As It Relates To Challenges Faced By Mothers of Newborns.

The concept of self-efficacy refers to the belief in one's own ability to successfully accomplish a particular behavior, task or performance (Bandura, 1994). In the context of parenting, a mother's confidence in her own ability to care for the infant, and to respond to the infant's needs is of special interest. The terms maternal self-efficacy and maternal confidence show a great deal of conceptual overlap, as they both cover aspects of self-appraisal and

self-knowledge (Vance & Brandon, 2017). However, to avoid inaccuracies in the operationalization of the construct (Wittkowski et al., 2017), the present seminar exclusively refers to the term self-efficacy. Cherry(2023) assert that individuals with high self-efficacy tend to view challenging problems as tasks to be mastered, develop deeper interest in solving the problem, and maintain a greater effort to successfully complete the task. Mothers with higher levels of self-efficacy in parenting have been shown to provide a better home learning environment, to establish a better parent-child relationship, and to have children who reveal better social skills and less externalizing behavior than mothers with low self-efficacy in parenting (Albanese et al., 2019).

Conversely, individuals with low self- efficacy are likely to focus on personal failure and negative outcomes. They easily lose confidence in their capabilities and try to avoid challenging tasks as a result. This seems surprising, given that high levels of anticipated maternal self-efficacy during pregnancy can pave the way for a successful transition to parenthood (Biehle & Mickelson, 2011). According to Bandura (Bandura,1995), self-efficacy values are influenced by four resources: mastery experiences, vicarious experiences, social persuasion and physiological states. Bandura's Self-Efficacy Theory Applied is The most effective way of developing a strong sense of efficacy is through mastery experiences. Previous studies found a slow but gradual increase in maternal self-efficacy during pregnancy and a steeper increase during the postnatal period, especially a few weeks after giving birth, when mothers typically receive positive feedback from the infant because they have already learned how to interpret his/her signals (Gross & Marcussen, 2017; Law et al., 2019). A recent literature review on parental self-efficacy (Albanese et al., 2019) reveals that 115 studies explored the consequences of parental self-efficacy, whereas only 18 studies investigated its determinants. This raises the question as to how maternal self-efficacy develops.

Successes build self efficacy, a robust belief in one's personal efficacy. These successful experiences form expectations that they will succeed in other situations that may be similar or substantially different from the original experience (Bandura,1995). This also implies that helping people master specific skills creates successful experiences and builds the confidence to succeed. Vicarious experiences also have an effect on self-efficacy. Bandura suggested that observing other people successfully completing a task can enhance personal self-efficacy by demonstrating that the task is "doable" with some effort (Bandura,1994). Studies addressing this question often neglect the changes in maternal self-efficacy from the prenatal to the postnatal phase (Albanese et al., 2019).Hence, the transition phase seems to be a critical period for the development of maternal self-efficacy, and more studies clarifying the interplay of factors underlying this development are needed.

For attachment theory, adults' style of parenting is widely affected by the Internal Working Models, which are internalized representations of the self, others, and self-other relationships, based on childhood experiences with attachment (Tognasso et al,2022:Cassidy,et al.,1999). Several studies have underlined that mothers with insecure-avoidant attachment styles are more likely to disengage emotionally from interaction with the child and to show fewer sensitive styles of caregiving(Nordahl,et al,2020). However, attachment-based differences in parenting were dependent on the mother experiencing elevated levels of psychological distress, not only parenting stress. Likewise, the relationship between the adult attachment style and bonding was mediated by parenting stress: particularly, higher scores on attachment avoidance and anxiety were related to increased stress, which was related to decreased quality of bonding(Nordahl,et al,2020).In particular, attachment avoidance and anxiety are associated with more negative expectations about parenting, including uncertainty regarding parenting ability, expectations of being easily aggravated by and relating poorly to children, and having a less warm, more strict parenting style (Tognasso et al,2022.,Simpson,et al ,1995).Moreover, high avoidance was associated with an expectation of less overall satisfaction in parenting(Jones,et al,2015) .Attachment anxiety has also been linked to difficulties in understanding some child's requests and in supporting a child's exploratory behaviors, whereas attachment avoidance has been reported to be positively associated with distance in caregiving interactions and negatively associated with maternal sensitivity, especially in conditions of psychological distress(.Tognasso et al,2022).

The level of a mother's parental stress is influenced by contingent interactions between all these factors; in particular, there is a strong interaction between parenting stress and the mother's attachment style within the couple(Nordahl,et al,2020).Under stressful conditions, individuals with insecure attachment may engage in anxious/uncollaborative or avoidant/disengaged behaviors following their underlying working model. Moreover, insecure attachment styles could be associated with less sensitive parenting, especially if there are high levels of stress (Mills-Koonce,et al,2011).Self-efficacy is the individual perception and trust in one's own ability to perform a particular behavior successfully (Bandura,1977).

The concept of self-efficacy could be linked to the parenting skills and tasks required of the mother and her own beliefs regarding the successful enactment of these behaviors. Bandura (Bandura,1977) emphasized that mothers must believe that their actions will have the desired outcome and have confidence in their ability to perform specific behaviors or skills. If a woman feels that she can take good care of her baby, her self-esteem will increase and she will be able to show affectionate reactions to her baby's requests, building positive interactions with the baby. On the other hand, in a situation of less self-confidence in caring for the baby, performing the maternal role could be

very difficult (Copeland & Harbaugh, 2017). Several authors registered an increase in maternal self-confidence during the months postpartum (Field, et al, 2018) moreover, multiparas were found to have higher levels of MSE than primiparas, and levels of MSE increased over time for both primiparas and multiparas supporting Bandura's theory that childcare experience enhances MSE (Tognasso et al, 2022.)

Maternal Confidence in Caretaking (MCC) is essential because mothers' ability to care for their infants can impact the physical, cognitive, and socio-emotional development of their newborns (Premji et al, 2018) MCC, MSE, attachment, and parenting stress play an essential role in building the relationship between the new mother and her child. For this reason, some studies focus on the mediation effect between these variables (Ka'zmierczak et al, 2021). For instance, Nordahl (2020) found that the relationship between the adult attachment style and mother-infant bonding is mediated by parenting stress; higher scores on attachment avoidance and anxiety were related to a high level of stress and were connected to a decrease in the quality of bonding. Moreover (2019) examined the changes in both mothers' and fathers' parental adjustment over time and the mediating role of common dyadic coping (the way that parents interact about parenting questions) on the associations between anxious and avoidant attachment, parenting stress, and parental confidence. They found that, while perceived parenting stress declined throughout the first year after the child's birth, parental confidence increased. Moreover, parents with avoidant attachment were more likely to not present a common dyadic coping from pregnancy to six weeks postpartum, increasing their partners' parenting stress (especially if the partners were mothers), and decreasing their partners' parental confidence.

The Role of Nurses and Midwives Enhancing Self-Efficacy of Mothers in Care of Newborn

WHO (2022) affirmed that Most newborn deaths take place in low and middle-income countries. It is possible to improve survival and health of newborns and end preventable stillbirths by reaching high coverage of quality antenatal care, skilled care at birth, postnatal care for mother and baby, and care of small and sick newborns. Sandall, et al (2019) stated that in settings with well-functioning midwife programmes the provision of midwife-led continuity of care (MLCC) can reduce preterm births by up to 24%. MLCC is a model of care in which a midwife or a team of midwives provide care to the same woman throughout her pregnancy, childbirth and the postnatal period, calling upon medical support if necessary. Belleza, (2020) stated that in the Strategies to help mothers to build self-efficacy in the care of new born that the nurse must supervise the bathing together with the parents.

The bath water must be pleasantly warm as well as the room to prevent chilling. Bathing should be before feeding and not after it to prevent aspiration and vomiting.

Equipment needed during bathing are a basin of water, washcloth, soap, towel, diaper, a clean shirt, and comb. Start bathing the infant from the cleanest area (the eyes) towards the dirtiest area (the diaper area), and soap is never used for the baby's face, only for the body. Do not soak the cord when you wash the skin around it. Instruct the parents that the sleeping position of the infant must be flat on the back to prevent SIDS, but never place a pacifier on the infant during sleep. During diaper change, the area must be washed and dried well to prevent diaper rash. Petroleum jelly or a mild ointment is applied on the buttocks to avoid accumulation of ammonia and remove meconium. Vaccination for Hepatitis B and Vitamin K administration is also essential in the postpartal period (Belleza, 2020). Sokefun & Atulomah, (2020) inferred that health-literacy has a positive influence on decision-making for mothers regarding infant care. Moon et al as cited in Sokefun & Atulomah, (2020) concluded that the multi-level approach for infant care should include regulation of policies, modification of cultural and ethnic values, education skills and health counsels by professionals.

Sandall, et al (2019) Implementing midwife-led continuity models of care and what do we still need to find out? nurses and midwives can use Bandura theory in According to helping parents master specific skills and knowledge in caregiving tasks creates successful experiences and builds the confidence to succeed. In the antenatal preparation process, parents of infants receive intensive education on care-giving tasks, such as identification of post discharge needs, specialized care for specific disorders of prematurity, coordination of outpatient supplies and medications, referrals to appropriate services, transferring the medical care to the pediatric provider, and daily care practices (e.g., changing diaper, feeding, medication preparation). The antenatal staff responsible for antenatal education, mainly nurses and social workers, lead the education and encourage parents' active participation and hands-on practice instead of simply "showing" or "telling". Despite these efforts, parents' needs for information and communication are often overlooked during the antenatal preparations.

Thus, parents often feel unprepared for post partum period and desire more information and greater communication than is provided to them. For example, parents of infants receive a great deal of information upon admission to the antenatal. A 150-page booklet full of information on general infant care is given to each parent and it is assumed that they are likely to have read it before the time of delivery. The parents are given even a larger amount of additional information during the two week preparations, ranging from post partum home care instructions to coordination of outpatient supplies and services. Currently, educational materials are rarely tailored to a specific baby's condition or parents' health literacy. Parents, therefore, find the educational material "very general" or "irrelevant" or "difficult to understand".

The traditional paper-based information packet also makes dynamic information delivery and immediate information search difficult. As a result, parents are seeking more interactive form of information. As one father remarked in the interview: "What's in this booklet should be presented in a more interactive form. That would be nice, yeah. You could make the whole audio and visual product out of this book. Especially what would be helpful is the physical therapy. Using a video it would be much easier to learn this.. like, 'Ok, this is sign A, ok, this is how your baby looks.' A picture is one thing, but if you had a little video of each of these positions they want you to put him in, or the signs you should be looking at, yeah, that would be cool." It is our belief that pervasive technologies including mobile technologies can be an important asset to encourage and support parents' self-learning while accommodating individual differences such as unique learning styles and health literacy level, and culture differences among ethnic groups. For instance, an interactive discharge checklist can be developed for crib-side tablets or in-room kiosks to provide parents with anticipatory guidance on learning or their baby's conditions and medical treatment. Using this system, parents will be able to access educational material repeatedly and at their convenience.

Nurses and midwives can use vicarious experiences and Social Persuasion to enhance mothers self efficacy. Vicariously observing other parents successfully completing a task or receiving the verbal encouragement from others is another way to positively affect self-efficacy. Using such support groups, parents expected to receive informational and emotional support from the parents who had "been there, done that". Also, they desired a connection with other parents who are dealing with the same medical and environmental condition. For example, parents of multiples wish to be connected with other parents of multiples, or parents who lost one of their infants wish to get emotional support from families in the same case.

Recording and sharing their experiences with others in a timely and efficient manner can be challenging; therefore, mobile phone applications, such as a mobile multimedia care diary that allows parents to keep a record of nursing/care (e.g., feeding length, supplementation, bowel movements, wet diaper frequency) as well as infants' developmental data (e.g., weight and height), could help smooth data capturing and sharing. Tools that support lightweight communication among the social support network, such as text/multimedia message, could make a considerable contribution to increase the frequency and reach of the social persuasion as well.

Nurses and midwives must teach physiological responses that mothers of new born need in care of new born. Parenting a infant and transitioning this child is stressful work. Parents must balance other household

responsibilities along with caring for the infant, all of which can be a source of anxiety and feature for parents. In our case study, several parents reported high stress level and practice of a deep breathing technique when stressed at home. Self-efficacy theory asserted that physiological or emotional states such as stress, anxiety, or an individual's mood also affect judgments about parental self-efficacy .

Therefore, it is important to promote positive emotional states of parents, and pervasive technologies provide various opportunities for this role. For example, mobile applications can be developed to assess parents' stress level in their daily lives and provide remedies to alleviate the stress.

Implication to Nursing And Practices.

Education

Nurses and midwives in training should have skills and knowledge of building self confidence in mothers of newborn ,this should be build from antenatal visits of pregnant women on the transitional process and challenges of having the new born so as to help them provide adequate care.

Self efficacy,health literacy and mothers empowerment to over challenges of care of newborns should be included in educational curriculum

Research

The role of nurses and midwives is to improve mothers self efficiency especially in the care of new born in order to reduce the effect it has on the mother and child.

There is necessity to carry out the studies on new trend in self-efficacy impact on mothers of newborn and how it affect the care of new born in breasting feeding,coping with motherhood as a caretask.

Practices

nurses and midwives should be trained on the strategies required to help mothers of new born to overcome the challenges of care of new born by finding models similar to burdura theory.

There is need for more information for the community out there on the strategies to copy and overcome the challenges faced by mothers in care of new born through building self efficacy theory.

CONCLUSIONS

In the current study, we explored the complex relationship between mothers' attachment, parenting stress, maternal self-efficacy, and confidence in caretaking, aiming to understand whether adult attachment influences the mother's confidence in caretaking and if parenting stress and maternal self-efficacy could mediate in this relationship. We focused on the first month after the child's birth which represents a specific moment in the mothers' lives. Mothers go through several changes and challenges during the first weeks after the child is born because they need to change their habits, develop a new vision of self, and learn how to understand and respond to the child's signals.

All these aspects could explain why mothers in our sample were experiencing a high level of stress and perceived a low level of maternal self-efficacy. They were also more anxious and avoidant than the comparison groups, an aspect that should be considered as becoming a mother reactivating the attachment system.

To the best of our knowledge, this is one of the few studies regarding the concept of confidence in caretaking and how it is influenced by adult attachment, parenting stress, and maternal self-efficacy. For this reason, this study sheds a light on a novel path in research and could help both the researchers and the clinical workers to better understand the specificity of the first period after the delivery. Indeed, the new aspects highlighted by the current research could be used in working with mothers who are dealing with a new concept of themselves and a new role as mothers.

The most important result we found was that the avoidant attachment appeared to decrease maternal confidence in caretaking and that this relationship could be mediated by the level of parenting stress: women who have an avoidant attachment are likely to perceive themselves as lacking confidence in caretaking, especially if they are dealing with a high level of parenting stress. These results are in line with the literature that emphasizes the negative effects of parenting stress and underlines that parenting stress must be considered a risk factor for the mother-baby relationship and maternal well-being.

Surprisingly, the anxiety attachment appeared not to impact both the maternal confidence in caretaking, the parenting stress, and maternal self-efficacy. Another interesting aspect we discovered was that the avoidant attachment was not mediated by maternal self-efficacy in the relationship between attachment and maternal self-confidence in caretaking.

The knowledge developed and the concepts presented in this study may help both researchers and clinical psychologists in their work with mothers who are dealing with the period immediately after the delivery. These results highlight the significant relationship between mothers' avoidant attachment and mothers' feeling of lacking competence in caretaking.

Future research should focus on this relationship and study aspects of it in greater detail, exploring how the

relationship between maternal attachment and lack of confidence in caretaking changes not only in the first month after the delivery but throughout the first year from the child's birth.

Recommendation.

1. Research should be conducted to develop technology interventions to improve parental self-efficacy in caring for their medically vulnerable infants.
2. More studies should be conducted to examine technology solutions to support parents of infants complete transition process (e.g., the hospitalization period or the post-discharge period).
3. Health literacy be considered, giving to strategies to increase parents' self-efficacy using Bandura's self-efficacy theory as a framework to develop strategies for technological interventions that increase parenting confidence.
4. Health literacy will lay a foundation for designing technologies that empower and provide informational, emotional, and social support to mothers of new born thereby building their self efficacy in care of newborn.

REFERENCE.

1. Ali, N. A., & Nair, M. (2021). Maternal self-efficacy and peripartum depression amidst the COVID-19 pandemic. *Asian journal of psychiatry*, 62, 102736. <https://doi.org/10.1016/j.ajp.2021.102736>
2. Alves, S.; Milek, A.; Bodenmann, G.; Fonseca, A.; Canavarro, M.C.; Pereira, M.(2019). Romantic attachment, dyadic coping, and parental adjustment across the transition to parenthood. *Pers. Relatsh.* 2019, 26, 286–309.
3. Atif M., Halaki M., Raynes-Greenow C., Chow C.M.(2021) Perinatal depression in Pakistan: a systematic review and meta-analysis. *Birth.* 2021;48:149–163.
4. Atif N., Lovell K., Husain N., Sikander S., Patel V., Rahman A(2016). Barefoot therapists: barriers and facilitators to delivering maternal mental health care through peer volunteers in Pakistan: a qualitative study. *Int. J. Ment. Health Syst.* 2016;10:1–12.
5. Awaliyah, S.N., Rachmawati, I.N. & Rahmah, H(2019). Breastfeeding self-efficacy as a dominant factor affecting maternal breastfeeding satisfaction. *BMC Nurs* 18 (Suppl 1), 30 (2019). <https://doi.org/10.1186/s12912-019-0359-6>.
6. Aydemir S., Onan N(2020). The relationship between maternal self-confidence and postpartum depression in primipara mothers: a follow-up study. *Community Ment. Health J.* 2020:1–8.
7. B. E. Hamilton, J. Martin, and S. J. Ventura(2008), Births: Preliminary Data for 2008. National Center for Health Statistics. Hyattsville, MD. 2010.
8. Bandura, A(1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychol. Rev.* 1977, 84, 191–215.
9. Bandura,A(1994) "Self-efficacy". Ed. V. S. Ramachandran, Encyclopedia of human behavior, 4. New York: Academic Press, 1994, pp. 71-81.
10. Bandura,A(1995) Self-Efficacy in Changing Societies. Cambridge University Press. 1995.

11. Belsky, J.(1984)The Determinants of Parenting: A Process Model. *Child Dev.* 1984, 55, 83–96. [CrossRef] Porter, C.L.; Hsu, H.C.(2003). First-time mothers' perceptions of efficacy during the transition to motherhood: Links to infant temperament. *J. Fam. Psychol.* 2003, 17, 54–64.
12. Berhea, T. A., Belachew, A. B., & Abreha, G. F. (2018). Knowledge and practice of Essential Newborn Care among postnatal mothers in Mekelle City, North Ethiopia: A population-based survey. *PLoS one*, 13(8), e0202542. <https://doi.org/10.1371/journal.pone.0202542>
13. Bowlby, J (1969). Attachment and Loss: Volume I: Attachment; Basic Books: New York, NY, USA, 1969.
14. Brazelton, T.B.; Nugent, K(1995). Neonatal Behavioral Assessment Scale; Cambridge University Press: Cambridge, MA, USA, 1995.
15. Brennan, K.A.; Clark, C.L.; Shaver, PR (1998). Self-report measurement of adult attachment: An integrative overview. In Attachment Theory and Close Relationships; Simpson, J.A., Rholes, W.S., Eds.; The Guilford Press: New York, NY, USA, 1998; pp. 46–76, ISBN 1-57230-102-3.
16. Brown, A(2014). Maternal trait personality and breastfeeding duration: The importance of confidence and social support. *J. Adv. Nurs.* 2014, 70, 587–598.
17. Busonera, A.; San Martini, P.; Zavattini, G.C.; Santona,(2014) A. Psychometric properties of an Italian version of the experiences in close relationships-revised (ECR-R) scale. *Psychol. Rep.* 2014, 114, 785–801.
18. Cameron E.E., Joyce K.M., Delaquis C.P., Reynolds K., Protudjer J.L., Roos L.E.(2020) Maternal psychological distress & mental health service use during the COVID-19 pandemic. *J. Affect. Disord.* 2020;276:765–774.
19. Cassidy, J.; Shaver, P.R.; Guilford, E.T.(1999). Handbook of Attachment: Theory, Research, and Clinical Applications; The Guilford Press: New York, NY, USA, 1999.
20. Cepeda M.S., Kern D.M., Nicholson S.(2019) Treatment resistant depression in women with peripartum depression. *BMC Pregnancy Childbirth.* 2019;19:1–7.
21. Cherry(2023) Self Efficacy and Why Believing in Yourself Matters. Everything Psychology Book (2nd Edition) .<https://www.verywellmind.com/what-is-self-efficacy-2795954#citation-2>
22. Chrysi, M.S., Michopoulos, I., Dimitriadis, G. et al. (2023) A modern web-based health promotion program for patients in Greece with diabetes 2 and obesity: an interventional study. *BMC Public Health* **23**, 639 (2023). <https://doi.org/10.1186/s12889-023-15557-3>
23. Copeland, D.B.; Harbaugh, B.L.(2017). Early Maternal-Efficacy and Competence in First-Time, Low-Income Mothers. *Compr. Child Adolesc. Nurs.* 2017, 40, 6–28.
24. Cutrona, C.E.; Troutman, B.R.(1986). Social Support, Infant Temperament, and Parenting Self-Efficacy: A Mediation Model of Postpartum Depression. *Child Dev.* 1986, 57, 1507–1518.
25. De Goede, C.; Greeff, A(2016). Challenges couples face in managing family routines after the transition to parenthood. *Soc. Work* 2016, 52, 313–331.
26. Delavari M., Mohammad-Alizadeh-Charandabi S., Mirghafurvand M(2018). The relationship between maternal-fetal attachment and maternal self-efficacy in Iranian women: a prospective study. *J. Reprod. Infant Psychol.* 2018;36:302–311.
27. Delicate, A.; Ayers, S.; McMullen, S(2018). A systematic review and meta-synthesis of the impact of becoming parents on the couple relationship. *Midwifery* 2018, 61, 88–96.
28. Denis, A.; Ponsin, M.; Callahan, S(2012). The relationship between maternal self-esteem, maternal competence, infant temperament and post-partum blues. *J. Reprod. Infant Psychol.* 2012, 30, 388–397.
29. Dessalegn, N., Dagnaw, Y., Seid, K., & Wolde, A. (2022). Umbilical Cord Care Practices and Associated Factor Among Mothers of Neonates Visiting Mizan-Tepi University Teaching Hospital Southwest Ethiopia 2021. *Pediatric health, medicine and therapeutics*, 13, 227–234. <https://doi.org/10.2147/PHMT.S363252>
30. Di Marco, et al.(2006) “Authoring and generation of individualised patient education materials”. In Proc. AMIA SYMP 2006, pp. 195-199.
31. Diehl, M.; Elnick, A.B.; Bourbeau, L.S.; Labouvie-Vief, G.(1998) Adult attachment styles: Their relations to family context and personality. *J. Pers. Soc. Psychol.* 1998, 74, 1656–1669.
32. Doss, B.D.; Rhoades, G.K(2017). The transition to parenthood: Impact on couples' romantic relationships. *Curr. Opin. Psychol.* 2017, 13, 25–28.
33. Draiko, C. V., McKague, K., Maturu, J. D., & Joyce, S. (2021). The effect of umbilical cord cleansing with chlorhexidine gel on neonatal mortality among the community births in South Sudan: a quasi-experimental study. *The Pan African medical journal*, 38, 78. <https://doi.org/10.11604/pamj.2021.38.78.21713>
34. Epifanio, M.S.; Genna, V.; De Luca, C.; Roccella, M.; La Grutta, S(2015). Paternal and maternal transition to parenthood: The risk of postpartum depression and parenting stress. *Pediatr. Rep.* 2015, 7, 38–44.
35. Farewell C.V., Jewell J., Walls J., Leiferman J.A(2020). A mixed-methods pilot study of perinatal risk and resilience during COVID-19. *J. Prim. Care Community Health.* 2020;11
36. Field, T(2018). Postnatal anxiety prevalence, predictors and effects on development: A narrative review. *Infant Behav. Dev.* 2018, 51, 24–32.
37. Fisher J, Mello M.C.D., Patel V, Rahman A., Tran T., Holton S., Holmes W(2012). Prevalence and determinants of common perinatal mental disorders in women in low-and lower-middle-income countries: a systematic review. *Bull. World Health Organ.* 2012;90:139–149.
38. Fulton, J.M.; Mastergeorge, A.M.; Steele, J.S.; Hansen, R.L.(2012). Maternal perceptions of the infant: Relationship to maternal self-efficacy during the first six weeks' postpartum. *Infant Ment. Health J.* 2012, 33, 329–338.
39. G. R. Hayes, K. Cheng, S. Hirano, S. Park, D. Gravem, J. Rich, and D. Cooper,(2010) “FitBaby: Using observations of daily living to improve the health of preterm infants and their caregivers.” In Proc. workshop on Interactive Systems in Healthcare, pp.73-76.2010.
40. Hayman, L.L.; Callister, L.C(2006). First-time mothers: Social support and confidence in infant care. *MCN Am. J. Matern. Nurs.* 2006, 31, 66.
41. Hudson, D.B.; Elek, S.M.; Fleck, M.O(2001). First Time Mothers' and Fathers' Transition to Parenthood: Infant Care Self-Efficacy, Parenting Satisfaction and Infant Sex. *Issues Compr. Pediatr. Nurs.* 2001, 24, 31–43
42. Iganus, RB; Mechanic, AM; Wudiri, ZW1; Hill, ZE2; Omotara, BA1., Newborn Care: A Qualitative Study of Inter-Cultural Variations and Similarities Among Two Ethnic Groups in Northeastern Nigeria. *Nigerian Journal of Clinical Practice* 25(6):p 885-894, June 2022. | DOI: 10.4103/njcp.njcp_1897_21

43. J. Gray, C. Safran, R. Davis, et al. (2000) "Baby CareLink: Using the Internet and Telemedicine to Improve Care for High-Risk Infants". *Pediatrics*. 106(6), pp.318-1324, 2000.
44. Jalili Bahabadi, F., Estebsari, F., Rohani, C., Rahimi Khalifeh Kandi, Z., Sefidkar, R., & Mostafaei, D. (2020). Predictors of Health-Promoting Lifestyle in Pregnant Women Based on Pender's Health Promotion Model. *International journal of women's health*, 12, 71–77. <https://doi.org/10.2147/IJWH.S235169>
45. Jones, J.D.; Cassidy, J.; Shaver, P.R.(2015). Parents' Self-Reported Attachment Styles: A Review of Links with Parenting Behaviors, Emotions, and Cognitions. *Personal. Soc. Psychol. Rev.* 2015, 19, 44–76.
46. K. Dyer,(2011) NICU parent support blog. Retrieved June 28, 2011, from http://nicuparentsupport.blogspot.com/2007_07_01_archive.html
47. Ka'zmierczak, M.; Michalek-Kwiecień, J.; Kielbratowska, B.; Karasiewicz, K.(2021). Parents' personality and maternal experiences in childcare as predictors of postpartum depression in couples in transition to parenthood. *Psychiatr. Pol.* 2021, 54, 991–1005.
48. Karami F and Mirghafourvand M.(2021)Comparison of Maternal Self-efficacy and Infant Care Behavior Between Mothers with and Without Depression: A Case-Control Study. *Prog Psychiatr Behav Sci.* 2021;15(4):e99711. <https://doi.org/10.5812/ijpbs.99711>.
49. Ka'zmierczak, M.; Michalek-Kwiecień, J.; Kielbratowska, B.; Karasiewicz, K.(2021). Parents' personality and maternal experiences in childcare as predictors of postpartum depression in couples in transition to parenthood. *Psychiatr. Pol.* 2021, 54, 991–1005.
50. Khan, S. M., Kim, E. T., Singh, K., Amouzou, A., & Carvajal-Aguirre, L. (2018). Thermal care of newborns: drying and bathing practices in Malawi and Bangladesh. *Journal of global health*, 8(1), 010901. <https://doi.org/10.7189/jogh.08.010901>
51. L. Wilcox, D. Morris, D. Tan, J. Gatewood, and E. Horvitz,(2011) "Characterizing Patient-Friendly "MicroExplanations" of Medical Events." In Proc. CHI 2011, ACM Press, 2011, pp. 29-32.
52. Laksono, A.D., Wulandari, R.D., Ibad, M. *et al*(2021). The effects of mother's education on achieving exclusive breastfeeding in Indonesia. *BMC Public Health* 21, 14 (2021). <https://doi.org/10.1186/s12889-020-10018-7>
53. Leahy-Warren P, Mccarthy G(2011). Maternal parental self-efficacy in the postpartum period. *Midwifery*. 2011;27:802–810.
54. Leahy-Warren, P.; McCarthy, G(2011). Maternal parental self-efficacy in the postpartum period. *Midwifery* 2011, 27, 802–810.
55. Lee, S.Y.; Kwon, I.S(2006). A Comparative Study on Maternal Role Confidence and Parenting Stress according to the Infant's Feeding Method. *Korean J. Women Health Nurs.* 2006, 12, 231.
56. Lee, Garfield and Kim (2012) Self-Efficacy Theory as a Framework For Interventions That Support Parents of NICU Infant. rev 10 May, 2023. EUDL ,<https://eudl.eu › pdf › icst.pervasivehealth.2012...>
57. Leta M. (2022). Level of knowledge toward essential newborn care practices among postnatal mothers in governmental hospitals of Harar Town, Eastern Ethiopia. *SAGE open medicine*, 10, 20503121221076364. <https://doi.org/10.1177/20503121221076364>
58. Lévesque, S.; Bisson, V.; Charton, L.; Fernet, M (2020). Parenting and Relational Well-being During the Transition to Parenthood: Challenges for First-time Parents. *J. Child Fam. Stud.* 2020, 29, 1938–1956.
59. Levitt, E.E.(2015) *The Psychology of Anxiety*; Routledge: London, UK, 2015. 61. Lee, W.E.; Wadsworth, M.E.J.; Hotopf, M. The protective role of trait anxiety: A longitudinal cohort study. *Psychol. Med.* 2006, 36, 345–351.
60. Liu, C.C.; Chen, Y.C.; Yeh, Y.P.; Hsieh, Y.S.(2012). Effects of maternal confidence and competence on maternal parenting stress in newborn care. *J. Adv. Nurs.* 2012, 68, 908–918.
61. M. A. Underwood, B. Danielsen, W. M.(2007) Gilbert, "Cost, causes and rates of rehospitalization of preterm infants", *J. Perinatol.* 27(10), pp.614-619. 2007
62. M. Conner and P. Norman,(2005) "Predicting health behaviour: A social cognition approach". In *Predicting Health Behaviour: Research and Practice with Social Cognition Models*, M. Conner and P. Norman, Ed. 2nd edition. Buckingham: Open University Press. 2005.
63. M. S. Miles, S. G. Funk, S. G., and J. Carlson, J.(1993) "Parental stressor scale: Neonatal intensive care unit" *Nursing Research*. 42(3), 148–152, 1993.
64. Mazzeschi, C.; Pazzagli, C.; Radi, G.; Raspa, V.; Buratta, L.(2015). Antecedents of maternal parenting stress: The role of attachment style, prenatal attachment, and dyadic adjustment in first-time mothers. *Front. Psychol.* 2015, 6, 1443.
65. Mazzeschi, C.; Pazzagli, C.; Radi, G.; Raspa, V.; Buratta, L.(2015) Antecedents of maternal parenting stress: The role of attachment style, prenatal attachment, and dyadic adjustment in first-time mothers. *Front. Psychol.* 2015, 6, 1443.
66. Memon, J., Holakouie-Naieni, K., Majdzadeh, R. *et al*(2019). Knowledge, attitude, and practice among mothers about newborn care in Sindh, Pakistan. *BMC Pregnancy Childbirth* 19, 329 (2019). <https://doi.org/10.1186/s12884-019-2479-0>
67. Mercer, R.T(2004). Becoming a mother versus maternal role attainment. *J. Nurs. Scholarsh.* 2004, 36, 226–232.
68. Mills-Koonce, W.R.; Appleyard, K.; Barnett, M.; Deng, M.; Putallaz, M.; Cox, M.(2011). Adult attachment style and stress as risk factors for early maternal sensitivity and negativity. *Infant Ment. Health J.* 2011, 32, 277–285.
69. N. Sneath,(2009) "Discharge Teaching in the NICU: Are Parents Prepared? An Integrative Review of Parent's Perceptions. Neonatal Network." *J. Neonatal Nursing* 28 (4), pp. 237-246. 2009.
70. Nordahl, D.; Rogmo, K.; Bohne, A.; Landsem, I.P.; Moe, V.; Wang, C.E.A.; Høifødt, R.S.(2020). Adult attachment style and maternal-infant bonding: The indirect path of parenting stress. *BMC Psychol.* 2020, 8, 58.
71. Nordahl, D.; Rogmo, K.; Bohne, A.; Landsem, I.P.; Moe, V.; Wang, C.E.A.; Høifødt, R.S.(2020). Adult attachment style and maternal-infant bonding: The indirect path of parenting stress. *BMC Psychol.* 2020, 8, 58.
72. Oddi, K.B.; Murdock, K.W.; Vadnais, S.; Bridgett, D.J.; Gartstein, M.A.(2013) Maternal and Infant Temperament Characteristics as Contributors to Parenting Stress in the First Year Postpartum. *Infant Child Dev.* 2013, 22, 553–579.
73. Pace, C.S.; Santona, A.; Zavattini, G.C.; Di Folco, S.(2015) Attachment States of Mind and Couple Relationships in Couples Seeking to Adopt. *J. Child Fam. Stud.* 2015, 24, 3318–3330.

74. Pace, C.S.; Santona, A.; Zavattini, G.C.; Di Folco, S.(2015). Attachment States of Mind and Couple Relationships in Couples Seeking to Adopt. *J. Child Fam. Stud.* 2015, 24, 3318–3330.
75. Pillitteri A. Lippincott Williams & Wilkins;(2010). *Maternal & Child Health Nursing: Care of the Childbearing & Childrearing Family.*
76. Poorshaban, Farzaneh & Pakseresht, Sedigheh & Bostani Khalesi, Zahra & Leili, Ehsan. (2017). Factors Associated with Breastfeeding Self-Efficacy of Mothers Within 6 Weeks of Delivery. *Journal of Holistic Nursing and Midwifery.* 27, 27-34. 10.18869/acadpub.hnmj.27.1.27.
77. Premji, S.S.; Pana, G.; Currie, G.; Dosani, A.; Reilly, S.; Young, M.; Hall, M.; Williamson, T.; Lodha, A.K.(2018). Mother's level of confidence in caring for her late preterm infant: A mixed methods study. *J. Clin. Nurs.* 2018, 27, e1120–e1133.
78. Rahman A., Surkan P.J., Cayetano C.E., Rwagatare P, Dickson K.E.(2013). Grand challenges: integrating maternal mental health into maternal and child health programmes. *PLoS Med.* 2013;10
79. Reliefweb(2022)WHO recommendations on maternal and newborn care for a positive post-natal experience,<https://reliefweb.int/report/world/who-recommendations-maternal-and-newborn-care-positive-post-natal-experience?>
80. Rholes, W.S.; Blakely, B.S.; Simpson, J.A.; Lanigan, L.; Allen, E.A.(1997). Adult Attachment Styles, the Desire to Have Children, and Working Models of Parenthood. *J. Pers.* 1997, 65, 357–385.
81. Risanger, L. I., Kofoed, P.-E., Noergaard, B., & Vahlkvist, S. (2023). Parents' Perception of Staff Support in a Father-Friendly Neonatal Intensive Care Unit. *Children*, 10(4), 673. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/children10040673>
82. Roisman, G.I.; Holland, A.; Fortuna, K.; Fraley, R.C.; Clausell, E.; Clarke, A.(2007). The Adult Attachment Interview and Self-Reports of Attachment Style: An Empirical Rapprochement. *J. Pers. Soc. Psychol.* 2007, 92, 678–697.
83. Rosenblad, A.K., Funkquist, EL.(2022) Self-efficacy in breastfeeding predicts how mothers perceive their preterm infant's state-regulation. *Int Breastfeed J* 17, 44 (2022). <https://doi.org/10.1186/s13006-022-00486-5>
84. Sable, P.(2008) What is adult attachment? *Clin. Soc. Work J.* 2008, 36, 21–30.
85. Sable, P.(2008) What is adult attachment? *Clin. Soc. Work J.*(2008, 36, 21–30.
86. Samdan, G., Reinelt, T., Kiel, N., Mathes, B., & Pauen, S. (2022). Maternal self-efficacy development from pregnancy to 3 months after birth. *Infant Mental Health Journal*, 43, 864– 877. <https://doi.org/10.1002/imhj.22018>
87. Sandall, et al(2019)Implementing midwife-led continuity models of care and what do we still need to find out? <https://www.evidentlycochrane.net/midwife-led-continuity-of-care/>
88. Sari Ç& Altay (2020). Effects of providing nursing care with web-based program on maternal self-efficacy and infant health. *Public Health Nurs.* 2020;37:380– 392. <https://doi.org/10.1111/phn.12712>
89. Selcuk, E.; Zayas, V.; Hazan, C.(2010). Beyond Satisfaction: The Role of Attachment in Marital Functioning. *J. Fam. Theory Rev.* 2010, 2, 258–279.
90. Shaver, P.R.; Mikulincer, M(2002). Attachment-related psychodynamics. *Attach. Hum. Dev.* 2002, 4, 133–161.
91. Sibley, C.G.; Liu, JH(2004). Short-term temporal stability and factor structure of the revised experiences in close relationships (ECR-R) measure of adult attachment. *Pers. Individ. Dif.* 2004, 36, 969–975.
92. Sidhu G.S., Sidhu T.K., Kaur P, Lal D, Sangha N.K(2019). Evaluation of peripartum depression in females. *Int. J. Appl. Basic Med. Res.* 2019;9:201
93. Simpson, J.A.; Rholes, W.S.; Dede, P.(1995) Conflict in close relationships: An attachment perspective. *J. Pers. Soc. Psychol.* 1995, 71, 899–914.
94. Sokefun, E.E., Atulomah, N.O. Predictors of infant-survival practices among mothers attending paediatric clinics in Ijebu-Ode, Ogun State, Nigeria. *BMC Public Health* 20, 1245 (2020). <https://doi.org/10.1186/s12889-020-09310-3>
95. Swanson V, Nicol H, McInnes R, Cheyne H, Mactier H, Callander E(2012). Developing Maternal Self-Efficacy for Feeding Preterm Babies in the Neonatal Unit. *Qualitative Health Research.* 2012;22(10):1369-1382. doi:10.1177/1049732312451872.
96. T. J. Dishongh and M. McGrath,(2010) *Wireless Sensor Network.* Artechn House.Boxton. 2010.
97. Teti, D.M.; Gelfand, D.M(1991). Behavioral Competence among Mothers of Infants in the First Year: The Mediating Role of Maternal Self-Efficacy. *Child Dev.* 1991, 62, 918–929.
98. Tietz, A.; Zietlow, A.L.; Reck, C(2014). Maternal bonding in mothers with postpartum anxiety disorder: The crucial role of subclinical depressive symptoms and maternal avoidance behaviour. *Arch. Womens Ment. Health* 2014, 17, 433–442.
99. Tognasso G, Gorla L, Ambrosini C, Figurella F, De Carli P, Parolin L, Sarracino D, Santona A (2022). Parenting Stress, Maternal Self-Efficacy and Confidence in Caretaking in a Sample of Mothers with Newborns (0–1 Month). *International Journal of Environmental Research and Public Health.* 2022; 19(15):9651. <https://doi.org/10.3390/ijerph19159651>
100. Tognasso, G.; Gorla, L.; Ambrosini, C.; Figurella, F.; De Carli, P.; Parolin, L.; Sarracino, D.; Santona, A.(2022) Parenting Stress, Maternal Self-Efficacy and Confidence in Caretaking in a Sample of Mothers with Newborns (0–1 Month). *Int. J. Environ. Res. Public Health* 2022, 19, 9651. <https://doi.org/10.3390/ijerph19159651>.
101. WHO (2018). UN IGME child mortality report. UNICEF-WHOWB-UNPD. Retrieved from <http://www.webcitation.org/query>. Lit
102. WHO 2022Caring for a newborn:Your life, your health - Tips and information for health and well-being/Life phase/Newborns and children under 5 years. <https://www.who.int/tools/your-life-your-health/life-phase>
103. WHO(2019) essentials of new born care.<https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/newborn-health/essential-newborn-care>.
104. WHO(2022) Coronavirus (COVID-19) Dashboard | WHO Coronavirus (COVID-19) Dashboard With Vaccination Data (<https://covid19.who.int/measures>); last accessed 12 May, 2022.
105. WHO, 2019.Midwifery education and cares: [policy://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/maternal-health/midwifery](https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/maternal-health/midwifery)
106. Wolke, D.; James-Roberts, I(1987). Multi-Method Measurement of the Early Parent-Infant System with Easy and Difficult Newborns. *Adv. Psychol.* 1987, 46, 46–70.
107. Xue A., Oros V., Marca-Ghaemmaghami P.L., Scholkmann F., Righini-Grunder F., Natalucci G., Karen T., Bassler D., Restin

- T(2021). New parents experienced lower parenting self-efficacy during the COVID-19 pandemic lockdown. *Children*. 2021;8:79.
108. Yang, Y. Y., He, H. G., Lee, S. Y., Holroyd, E., Shorey, S., & Koh, S. S. L. (2017). Perceptions of Parents With Preterm Infants Hospitalized in Singaporean Neonatal Intensive Care Unit. *The Journal of perinatal & neonatal nursing*, 31(3), 263–273. <https://doi.org/10.1097/JPN.000000000000239>
109. Zietlow, A.L.; Schlüter, M.K.; Nonnenmacher, N.; Müller, M.; Reck, C(2014). Maternal Self-confidence Postpartum and at Pre-school Age: The Role of Depression, Anxiety Disorders, Maternal Attachment Insecurity. *Matern. Child Health J.* 2014, 18, 1873–1880.