

**INVESTIGATIONS INTO EXPERIENCES OF MOTHERS WHO
DELIVERED AND ARE CARING FOR PRETERM BABIES IN
NORTHERN NAMIBIAN STATE HOSPITALS:
A DISCHARGE HEALTH EDUCATIONAL - SUPPORT PROGRAMME**

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NORTHERN NAMIBIAN STATE HOSPITALS:
A DISCHARGE HEALTH EDUCATIONAL - SUPPORT PROGRAMME**

**IN
FULFILMENT OF THE REQUIREMENTS**

OF

**DOCTOR OF NURSING
THE UNIVERSITY OF NAMIBIA**

BY

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DEDICATIONS

I am dedicating this doctoral degree to my late mother, Lady B.V. Velikoshi (1952-1997) and to my baby girl Eva-Angela Jnr (02.01.2006- 07.01.2006), to my husband Tylväs, my children, Leonard and Lianna, to my siblings, and to all mothers who have delivered preterm babies in Namibia.

DECLARATIONS

I, Eva-Angelina Ndauana Velikoshi-Indongo, declare hereby that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree in any other institution of higher education.

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ABSTRACT

Prematurity has become a major global cause of death in neonates. The number of preterm babies has increased significantly in the past ten to fifteen years, creating a public health crisis in the financial and social fraternities. While prematurity has become a public health crisis, delivering and caring for a preterm baby also affects the emotional and social well-being of the mothers who delivered preterm babies. Most preterm infants are born ill, or have difficulties in adapting to extra-uterine life because of immature body systems and organs. As a result, preterm birth and caring for a preterm baby becomes a stressful and worrisome situation for parents.

However, some preterm babies do survive, and they can quite soon be discharged home with their mothers. But, although mothers may experience excitement and happiness at discharge, many are anxious and insecure about how to take care of their tiny babies at home. This creates another burden for the mothers, because they will be carrying on with the baby care at home without assistance. Therefore, nurses should be prepared to assist the mothers in this transitional period, by providing instructions and interventions that will give the mothers the necessary knowledge and skills to confidently and effectively care for their babies at home.

This research was conducted in the Neonatal Intensive Care Unit (NICUs) of the Pediatric and Maternity Wards of Intermediate Hospital Oshakati. The study was

undertaken as a qualitative, exploratory, descriptive and contextual study, aimed at understanding lived experiences of mothers regarding giving birth to a preterm baby and caring for him or her. In-depth interviews were conducted on eight mothers, who had been caring for their preterm babies for at least two weeks in the mentioned units. The researcher observed ethical implication pertaining to research conducting. Permission to conduct the study was sought from the concerned institutions. Ethical principles of informed consent, anonymity, confidentiality were adhered to.

The study revealed that mothers who delivered preterm babies experienced emotional challenges, manifested in shock, fear, despair and sadness. It also showed that the mothers relied mainly on their religion in an attempt to cope with preterm birth. In addition, mothers experienced difficulties in bonding with their babies as well as apprehension in the care of their babies because they had inadequate information about preterm birth and preterm baby care. This caused them to have no foundations to build the discharge care planning at home after discharge from the hospital. Hence, a discharge health educational-support programme was developed, to address their emotional challenges in the care of their preterm babies as well as to address their educational needs. The programme aimed to empower the mothers with knowledge and skills to enable them to effectively and confidently continue caring for their babies at home, as well as to address the emotional challenges brought about by prematurity.

The programme was implemented in seven sessions using demonstrations and group discussions as teaching strategies. For programme evaluation, three unstructured interviews were conducted with mothers caring for preterm babies on the discharge day of each preterm baby. Mothers said that they had found the programme useful to them, had gained knowledge and skills, were more confident in their abilities to continue with baby care at home, and they obtained emotional relief upon using the programme.

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CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 Background

Pregnancy is a wonderful occasion that almost every woman on earth would like to experience. The value attached to motherhood and to having a baby has made pregnancy a precious asset, especially in marriages. However, complications can arise, and a baby may be born before its expected delivery date, resulting in the birth of a preterm baby, and that can bring changes in the lives of the couples or the family concerned.

Preterm births have increased significantly over the past 15 years. According to the World Health Organization (WHO), 135 million live births were recorded globally in the year 2010. Fifteen (15) million (11.1%) of those live births were preterm births. Deaths related to preterm birth complications stood at 1.1 million. In Sub-Saharan Africa, 9.1 million (12.8%) of the total births were preterm births. In Namibia, sixty 60 000 live births were recorded, of which 8 700 (14.4%) of those live births were preterm births. Four hundreds (400) cases of preterm deaths related to preterm birth complications were recorded (WHO, 2012). These statistics reflect the severity of preterm births, making prematurity a public health problem, not only for the mothers who delivered and are caring for preterm babies, but also for the health-providing institutions globally.

Normally, a baby should be born after 37-40 weeks of gestation, thus labour that starts after 20 weeks of pregnancy, but less than 37 weeks of pregnancy is referred to as preterm labour (Arenson & Drake, 2007; Ricci & Kyle, 2009; White, Duncan, & Baumle, 2011). Babies born before the period 37-40 weeks may survive, some with no complications at all, some with minor complications, and others with severe complications.

Preterm babies require an extensive period of hospitalisation in the Neonatal Intensive Care Unit (NICU), which disturbs the establishment of maternal bonding because the mother and baby are separated. With or without complications after birth, having a preterm baby is usually stressful and worrisome for parents, the reason being that preterm babies can be born ill, have difficulties in coping after birth due to immature and malfunctioning systems, or just their mere appearance, being tiny and fragile.

Because of the nature of the NICU environment, there are problems about visiting and support in the family support systems, where family members, especially fathers of preterm babies, can visit and be informed on how to support their partners. The visitors have to see the babies through the transparent glass of the preterm baby unit, which discourages them from coming to visit and subsequently reduces support to the mothers.

Furthermore, looking at the tiny infant surrounded by many tubes in the incubator, the uncertainty over the diagnosis, and the inability to hold one's newborn right away, coupled with the pressure to learn about procedures in the preterm baby unit, can be

overwhelming. This creates a stressful environment for the mothers, as they are faced with the uncertain future of their babies and the possibility of death. As a result, these women experience feelings of anxiety, fear, anguish, guilt and denial (Sexson, 2005; Lauwers & Swisher, 2010).

On the other hand, some preterm babies survive, and are discharged from the NICU. Taking a preterm baby home is one of the difficult responsibilities that the couples and families of preterm babies are faced with. Mothers may be anxious about the babies' wellbeing, growth and development, and they lack confidence in their abilities to care for these fragile beings (Brodsky & Ouellete, 2008; Zeanah, 2009). Mothers need to be thoroughly prepared for discharge, with relevant and appropriate advice and support, so that they gain competence and increase their confidence in their abilities to care for their babies at home (Kenner & Lott, 2007; Meeks, Hallsworth, & Yeo, 2009).

Usually, nurses are in a position to assist the mothers in this transitional period, and it is imperative that they promote effective transition from NICU to home care, by providing instructions and interventions that will empower these mothers with necessary knowledge and skills to provide ongoing nursing care at home, taking into consideration the specific needs and problems of the family and newborn, and establish clear, simple goals and how they will be achieved (Da Silva Rabelo, Chaves, Cardoso, Mendonça, & Sherlock, 2007).

One solution to solve this problem is by teaching the mothers according to health educational programmes of the concerned hospital, in order to educate mothers on matters related to care of the baby. By making health information available to these mothers, family burdens and stress could be reduced, mothers could acquire and strengthen their coping skills and take an active part in the care of their babies in the NICU and at home, as well as enhancing self-efficiency.

Health educational programmes enable mothers to gain skills, understanding and competencies that will help them manage their preterm babies effectively, thus promoting a healthy parent-infant wellbeing (Redman, 2007; Zeanah, 2009). Without adequate and relevant health information and support, mothers probably will not be able to deal effectively with the trauma of preterm birth as well as fearlessly and independently continuing with care for their babies upon discharge. Frankly, these mothers probably will not be able to monitor growth and development of their babies as well as to identify complications related to prematurity early enough.

1.2. Statement of problem

The researcher is a registered nurse and midwife, who is familiar with nursing and midwifery practices. In spite of the long history of the birth of preterm babies, there seems to be a deficiency in some healthcare systems related to supporting and assisting mothers who have given birth to a preterm baby in the care for their babies. This creates a break in the efficient transition of care from hospital setting to home setting, upon

discharge. In a study conducted by registered nurse/midwife Velikoshi in northern Namibian state hospitals in 2008, it was observed that there was no discharge health educational-support programme for mothers who delivered and were caring for preterm babies in northern Namibian state hospitals. Women took their discharged preterm babies home, without any preparation for the next step, which was the continuation of the care of the preterm baby at home.

In addition, although there are international programmes that are aimed at assisting mothers to cope with preterm delivery and preterm baby care, none of those programmes have been adopted or used as models, to be applied in the state hospitals in northern Namibia, including in Intermediate Hospital Oshakati, which is a regional referral hospital, where in many instances these mothers are lay people from rural areas, who do not have access to modern media such as Internet or television. One such programme is Creating Opportunities for Parent Empowerment (COPE) that was designed to make parent-infant interactions a more positive experience, enhance parent mental health outcomes, and improve child development and behaviour (Melnik & Fineout-Overholt, 2011).

It was also observed that the nursing care team in the northern Namibian state hospitals did very little to provide emotional and psychological support to the mothers who were caring for their preterm babies. It appeared that nurses only provided nursing care to preterm babies, but did almost nothing for the education of mothers. Mothers were just provided with food and accommodation, but no counselling or support services of any

kind were offered to them from admission of their babies to discharge. As a result, mothers seemed to be enduring the long road of caring for their preterm babies all by themselves, and turning to each other for assistance. At times they gave one another advice when it happened that one of the mothers received information on how to feed and bathe the baby and clean an incubator.

According to the Intermediate Hospital Oshakati NICU policy, which is also applied in most district hospitals in northern Namibia, the preterm baby is discharged when it reaches 2.150 grams. When the baby reaches 1.800 grams, mothers are allowed to take their babies out of the NICUs and take them to the room where the mothers are accommodated. Looking at this practice, the baby being discharged at 2.150 grams is still small in comparison to the normal birth weight of 2.500 grams and upwards. Furthermore, the time frame the mothers stay with their babies out of the NICUs is short for mothers to learn and grow confident in the care of their babies. The questions to be asked are the following:

- If there is no discharge health education-support programme for mothers to prepare them for discharge and home care, how are they going to cope with caring for their preterm babies?
- How comfortable are the mothers about caring for their preterm babies?
- What are the challenges they are facing in the care of preterm babies?

The absence of a discharge health educational-support programme in the hospitals deprives women of knowledge and skills that will enable them to continue with adequate and effective care of the preterm baby at home. This may cause poor feeding and unhygienic practices which may lead to infections of the baby, as well as malnutrition, resulting in recurrent hospitalisation of the baby. Mothers will not be able to detect whether their babies are progressing in terms of growth and physical and mental development, or have developed complications, because they have not been made aware of these problems. In addition, the lack of a support system reduces chances of social support and involvement of fathers in the care of their babies. Consequently, as women are undergoing the effects of prematurity alone, there is a possibility that they adopt negative coping mechanisms such as feeling guilty, self-blaming, isolation from others, and anxiety, all of which are unhealthy for them (Obeidat, Bond, & Callister 2009).

The present study aims at developing a discharge health educational-support programme, intending to emotionally support and educate mothers caring for preterm babies in aspects of preterm baby care, as well as to empower the mothers with the necessary knowledge and skills to cope effectively with the care of their babies after being discharged from the health facilities, without compromising their own health or that of their babies.

1.3. Purpose of the study

The purpose of the study was to explore and describe the experiences of mothers regarding giving birth to a preterm baby and how they experience caring for their preterm babies, and subsequently to develop a discharge health educational-support programme which will empower mothers to effectively continue with the care of their preterm babies after discharge.

1.4. Objectives of the study

The objectives of the research were:

1. To explore and describe experiences of mothers related to preterm birth and caring for preterm babies;
2. To develop a conceptual framework for the discharge health educational-support programme;
3. To develop a discharge health educational-support programme for mothers caring for preterm babies, and
4. To implement and evaluate the developed discharge health educational-support programme.

1.5. Significance of study

There are certain relevant attributes to consider when identifying the significance of a study problem. One of those attributes is the implication for nursing practice, which evaluates whether the research has a potential to produce findings that can improve the

nursing practice, in terms of benefits to the patients, nurses and the community, and to the nursing or healthcare fraternity as a whole (Funnel, Koutoukidis, & Lawrence, 2008; Polit & Beck, 2008). Based on that attribute, this research study was significant because the information gathered can be used to develop a health educational programme, thus equipping mothers with knowledge, skills and understanding about the care of their babies, as well as to promote effective transition from NICU to home setting, promote and improve parent-infant interactions, as well as to identify complications earlier and seek help earlier.

It will also assist professional health workers to understand the behaviours of mothers with preterm babies, so that these workers understand that women interpret prematurity differently, and therefore, their behaviours and reactions will never be similar, although common experiences may be identified amongst these women. The presence of a health educational programme will also assist to provide standardised health education to the mothers, as the programme will lay foundations for information to be delivered to the mothers, thus providing similar information to all those who will be caring for preterm babies.

1.6. Paradigmatic perspectives of the study

The study was based on the philosophy of constructivism, using the ontology, epistemology and axiology perspectives. Constructivists pay attention to the multiple realities that are constructed by individual people, and to the consequences of such constructions (Black, Furney, & Graf, 2010). Employing constructivism will enable one to understand that behaviours are driven by beliefs which are entangled in the value system (Lapan, Quartaroli, & Remier, 2011). Thus, ontology, epistemology and axiology interact and overlap each other to describe what is viewed as reality, the relationship between the knower and what is known, and the values and ethical morals of the knower and the subject under study (Hays & Singh, 2011).

1.6.1. Ontological perspective

Ontological constructivism is concerned with nature and reality as perceived by the research participants in various situations. According to Coady and Lehman (2008), reality is created as a consequence of the individual's perceptions and reaction to the external stimuli to which she is responding. We construct our own understanding of the phenomena surrounding us by reflecting on our experiences. Another author, Klenke (2008), states that reality is subjective, and each individual creation of reality is unique and independently formulated. Ontology attempts to explain how the phenomenon is subjectively explained or perceived by the researcher and participants, and analyses the extent of universal truth about a particular phenomenon. Thus, reality is held in the mind of the perceiver, and reality is co-constructed between the researcher and the research

participants (Hays & Singh, 2011; Nassar-McMillan & Niles, 2011). Hence, there is no single reality; there are multiple realities, constructed by an individual from her perception and interpretation of the given phenomenon (Klenke, 2008). Therefore, ontological constructivists' assumptions are crucial in our understanding of human reality, the meaning of a phenomenon and its influence on human behaviour. For the naturalistic enquirer, reality exists within any given context, and it is not a fixed entity, but rather a construction of the individual's participation in the research (Lindgreen, 2008; Potvin, McQueen, & Hall, 2008; Holloway & Wheeler, 2010). In this study, reality lie in the experiences of mothers who gave birth to preterm babies who are caring for preterm babies and how to care for these babies.

Assumption: Every mother experiences the birth of a preterm baby in a different way. Hence, it can be assumed that different mothers will construct their own reality based on perceptions and reactions to preterm birth as well as individual experiences of caring for the preterm baby. Furthermore, these mothers can verbalise the meaning of these experiences of the reality which is to give birth to a preterm baby and to care for that baby, specifically after discharge from hospital.

1.6.2. Epistemology

Epistemology seeks to provide philosophical grounds for knowing and learning about the world around us. Epistemology has to do with how the researcher understands knowledge and how he/she comes to acquire knowledge, emphasising that real findings

are created through interaction between researcher and respondents (Lindgreen, 2008; Potvin et.al. 2008; Holloway& Wheeler, 2010). Epistemology attempts to answer this question: “How do we come to know what we know?” It tries to understand the nature of knowledge and the sources of knowledge. This includes understanding perceptions, truth explanations, beliefs and views of the concerned individuals (Coady & Lehman, 2008; Klenke, 2008). Thus, knowledge is generated through observations and interactions between the researcher (the knower) and the research subjects/participants (the would-be-known). These observations and interactions are broken down into sets of themes and abstracts in order to provide clear meanings (Mertens, 2009; Hays & Singh, 2011). Epistemology constructivists believe that knowledge develops from within an individual, based on the motor theory of the mind. They believe that human minds are proactive and generative organs which are self organising, and are able to process information from the external environment, hence creating meanings for the individual (Coady & Lehman, 2008). Therefore, it was necessary to conduct in-depth interviews with the mothers to get the answers, because the truth lies in the reality they constructed for themselves, and this will enable the researcher to gain knowledge on the experiences of the mothers towards preterm birth and caring for preterm babies.

Assumption: It can be assumed that information gathered from interacting with the mothers through regular contacts and interaction with the participants will enable the researcher to gain knowledge and insight on how mothers who delivered preterm babies cope and deal with preterm birth and caring for their tiny babies.

1.6.3. Axiology

Axiology is the study of “being”, and influences how people view themselves in relationships with others. It focuses on the role of values and ethics in research, which are basic beliefs that the researcher has drawn up, so that respondents and users of the research know the context in which the research was conducted (Klenke, 2008). Axiology tries to address what is considered ethical or moral behaviour by the researcher, and how her values influence the research questions and designs (Hays & Singh, 2011; Lapan et al. 2011). In this regard values play an important role. According to Nassar-McMillan and Niles (2011), researchers should be aware of their values and how these values influence research. In relation to this study, there are different concerned groups who bring their own values with them, such as nurses, mothers of preterm babies, and the entire healthcare team. These values are the fundamental core around which interpersonal relationships develop. It is important that this be taken into consideration when mothers need to be guided and informed about measures to deal with preterm birth as well as on how to care for their preterm babies (Lindgreen, 2008; Potvin et al. 2008; Holloway& Wheeler, 2010).

Assumptions: It can be assumed that effective education of the mothers caring for preterm babies can be achieved if positive, neutral interpersonal relationships, particularly nurse-mother relationships, are created and maintained, where the researcher’s professional and personal assumptions as well as experiences do not influence the research process.

1.6.4. Models, philosophical and theoretical basis of the study

1.6.4.1. The Dickoff, James and Wiedenbach's Model

This model prescribes activities or interventions required to reach pre-determined goals, and predict the consequences of interventions. It outlines the goal to be achieved, surveying alternatives, choosing among alternatives and prescribing activities to attain the goals (Dickoff, James, & Wiedenbach, 1968; McEwen & Wills, 2007). The model outlines six survey list questions, which explain concepts and analyse the prescribed activities that are aimed at realising the programme goal:

- a. Who performs the activity? (Agent)
- b. Who is the recipient of the activity? (Recipient)
- c. In what context is the activity performed? (Context)
- d. What is the energy source of the activity? (Dynamic)
- e. What is the guiding procedure, technique or protocol? (Procedure)
- f. What is the end point of the programme? (Terminus).

This theory was used to as a conceptual framework, providing a basis for the development and implementation of the health educational programme for the mothers caring for preterm babies. The theory and its concepts are discussed in detail in Chapter four (4).

1.6.4.2. Humanistic philosophical approach

The humanistic philosophical approach to learning was used as a philosophical base for enhancing and promoting learning. Humanistic theorists believe that learning is dictated by the recipient's (mother's) motivation to learn, thus the agent (nurse/midwife) acts as a facilitator to guide and facilitate the learning process. These theorists recognise the significance of emotions and feelings, respecting the rights of individuals to make their own choice and to nurture the potential for creativity in each person (Burton & Omrod, 2011; Keating, 2011). This approach is discussed in detail in Chapter 5.

1.7. Definitions of concepts

In this study, the following concepts will carry these meanings:

1.7.1. Experience

The word "experience" means "something that happened to you that affects how you feel" (Cambridge academic content dictionary, 2009). An experience is "something physical, a phenomenon [that] comes, and so it retains no enduring, identical being that can be objectively determinable into components [that] are analyzable into proper sense" (Munhall, 2010). In this study, "experience" will mean psychological and social concerns, thoughts and ideas encountered by women caring for preterm babies, which resulted from the early arrival of the baby.

1.7.2. A health educational programme

The World Health Education (WHO) defines health education as “constructed opportunities for learning that are designed to improve health literacy, including improving knowledge, developing life skills, fostering motivation, skill and confidence necessary to improve health” (WHO, 1998). A programme is defined as “an officially organised system of services, activities, or opportunities that help people achieve something” (Cambridge Academic Content Dictionary, 2009). In this study, a health educational programme will refer to compiled learning activities, advice and health information that will empower mothers caring for preterm babies with knowledge and skills that will enable them to independently continue with nursing care of their babies at home.

1.7.3. Caring

“Caring” denotes a feeling of compassion, interest and concern for someone. It means “to look after someone, attend to someone, to be fond of or to love someone” (Mallik, Hall, & Ioward, 2009; Dayer-Berenson, 2011). In the study, caring will refer to “looking after” the preterm babies.

1.7.4. Preterm baby

A baby born before the completion of 37th week of pregnancy is referred to as a “preterm baby” (Recee & Barbieri, 2010; Arulkumaran, Regan, Papageorghiou,

Farquharson, & Monga 2011; Edmonds, 2011). In this study, the same definition applies to a preterm baby.

1.7.5. Mother

A “mother” is defined as someone who gave birth to a child, or a caring female dedicated to the well-being of their offspring. As a verb, “mother” refers to that maternal attitude and care giving (Mayes, Fonagy, & Target, 2007; Panther, Thornburg, & Barcelona, 2009; Aitchison, 2012). In the present study, the word “mother” will refer to someone who gave birth to a preterm baby and is caring for her preterm baby.

1.7.6. Emotional support

The word emotional means relating to emotions, while to support means to agree with and give encouragement to someone because you want them to succeed (Cambridge academic content dictionary, 2009). Westall and Liamputtong (2011) refer to emotional support as having feelings understood by the others and having someone to talk to when difficulties arise. It includes empathy and encouragement. Thus, in this study, emotional support will refer to a therapeutical approach employed by nurses/midwives that will help the mothers to manage the emotional challenges caused by preterm birth.

1.8. Summary

Pregnancy is a wonderful thing that almost every woman on earth would like to experience. However, complications can arise, and the baby may be born before its expected delivery date, resulting in the birth of a preterm baby. Having a preterm baby is usually stressful and worrisome for parents, the reason being that preterm babies can be born ill, have difficulties in coping after birth, or just appear tiny and fragile. Despite those challenges, some preterm babies survive, and are discharged from the NICU. Taking a preterm baby home is one of the difficult responsibilities that couples and the families of preterm babies are faced with, as they have no knowledge and skills on how to care for these babies at home. Mothers need to be thoroughly prepared for discharge with relevant and appropriate advice and support, so that they gain competence and increase their confidence in their abilities to care for their babies at home.

In a self-assessment study conducted by the registered nurse/midwife Velikoshi at Oshakati Intermediate Hospital's NICUs in 2008, it was observed that there was no health education-support programme in place. Women were just discharged without any preparation for the next step, which is the continuation of the nursing care of the preterm baby at home. Thus, the present study aims at developing a health educational-support programme, aimed at providing emotional support to the mothers, educating mothers caring for preterm babies on aspects of preterm baby care, to empower the mothers with the necessary knowledge and skills to cope effectively with the care of their babies at home. Ontology, epistemology and axiology formed the philosophical paradigm of the

study, whereas the Dickoff, James and Wiedenbach's model was used as a conceptual framework of the study, which was used in programme development. Kolb's learning cycle laid a foundation for programme implementation.

CHAPTER 2

RESEARCH DESIGN AND METHODOLOGY

2.1. Introduction

The previous chapter focused on the introduction and background of the study. This chapter describes the research design; sampling procedures, data collection methods and population description, as well as strategies to ensure trustworthiness that were used in the study. The study was conducted in four phases- situational analysis (needs assessment), conceptual framework development, implementation and evaluation of programme. The phases will be explained in order as above, starting with needs assessment.

2.2. Phase 1: Situational analysis

This phase involved gathering and organising data that fully describes the context being studied, and it provides information essential for programme planning. Needs assessment is a systematic collection of information about needs of the target population, with the aim of using data to make programmes and policies. In this study, the needs assessment process entailed collection of empirical data related to experiences of mothers who delivered and are caring for their preterm babies (Polit and Beck, 2009; Linsley, Kane & Owen, 2011).

2.3. Research design and methodology

2.3.1. Research design

Research design denotes an organised plan of how the proposed research will be answered (Merriam, 2009). According to Macnee & McCabe (2008), research design is an outline of how the participants were studied, and why the study was conducted the way it was conducted. This gives an impression that research design is a sketch for acquiring information or knowledge on a particular research problem. Thus, research design merely explains the way(s) in which the research will be conducted (Mcnee & McCabe, 2008; Tappen, 2011). For this study, the research was undertaken as a qualitative, explorative, descriptive, contextual study, using a phenomenological approach.

2.3.1.1. Qualitative

A qualitative research design employs questions such as “how?” or “why?” to describe a social phenomenon (Matthews & Kostelis, 2009). Qualitative research focuses on the meaning of a phenomenon under study with the aim of gaining insight and understanding, so that the researcher understands how people interpret their experiences and the meanings they attach to these experiences (Merriam, 2009; Thomas, 2010; Houser, 2011). Qualitative design was favoured because it allows the researcher to gain an in-depth description and understanding of experiences from the perspective of mothers who have delivered, and now are caring for their preterm babies (Litchman, 2010; McKeown, Malihi-Shoja & Downe, 2010).

2.3.1.2. Phenomenological

Phenomenology is the study of human experiences; so that one understands the meanings those experiences hold for each individual or respondent – their perceptions, understandings and beliefs concerning a particular situation. A phenomenological approach allows direct investigation and description of the phenomenon as consciously experienced and narrated by those who have lived it (Merriam, 2009; Mertens, 2009; Loiselle, Profetto-McGrath, Polit, & Beck, 2010; Cresswell, Rocco, & Hatcher, 2011). Thus, it entails understanding how individuals perceive a particular event, in order to understand subjective reality (ontology) of that event (Matthew & Kosteli, 2009).

Therefore, based on the descriptions of phenomenology, the researcher opted to use the phenomenological paradigm, because it will pave way for her to clearly understand the experiences of the mothers related to delivering a preterm baby and caring for it – their perceptions, beliefs, behaviours and all other aspects surrounding the event of preterm birth and preterm baby caring.

2.3.1.3. Exploratory

This design is undertaken to investigate what is happening in a particular setting/context. It seeks to develop an initial understanding of a phenomenon, and subsequently to develop a clear understanding of the research participants in that particular setting/context (Hall, 2008; Blaikie, 2009; Bellini & Rumrill Jnr, 2009). Exploratory design was used to investigate what has been happening to the mothers caring for their

preterm babies (i.e. their experiences) and to understand the meanings they attached to those experiences.

2.3.1.4. Descriptive

Descriptive research is conducted to describe the experiences of the participants in a particular setting or towards a particular event. It gives a detailed description or account of the setting/phenomenon/context (Hall, 2008; Blaikie, 2009; Pitney & Parker, 2009). Descriptive design was used in this study to give a clear picture so that the readers of the research report could coherently understand the experiences of mothers during preterm birth and caring for a preterm baby. Direct quotes were used to show the participants' responses.

2.3.1.5. Contextual

“Context” means a particular setting in which a study is taking place. It refers to a particular setting in which various factors such as behaviours and outcomes are embedded, which include the environment, people, culture or community (Taylor, Kermode, & Roberts, 2006; Pequegnat, Strover, & Boyce, 2011). The research was conducted in the two NICUs of Intermediate Hospital Oshakati (Pediatric ward and Maternity ward). This context was selected because the researcher was familiar with the setting, and it was the place where the research participants lived while caring for their babies. Because this was a natural setting, it was an appropriate context for conducting the study.

2.3.2. Research methodology

2.3.2.1. Population description

“Population” (also referred to as target group) denotes a group of elements that contains features of interest to the researcher, that meets specified characters that are pre-determined by the researcher (Polit & Beck, 2009; Boswell & Cannon, 2011). This population consisted of mothers who had delivered preterm babies and were caring for them; whose preterm babies had been admitted in the preterm baby units of Intermediate Hospital Oshakati NICU, both at Pediatric ward (Ward 15) and Maternity Section (Ward 14).

All these mothers were given accommodation in one room in the pediatric and maternity wards, which was closer to the NICUs where their babies were admitted. The rationale for selection of this population was that these mothers had delivered preterm babies; and they were directly involved in the care of their babies every day. The researcher believed that since these mothers had encountered prematurity, they were able to reflect their experiences, and they were the ones who could provide the truth or reality related to preterm birth and caring for the preterm babies (Matthews & Kostelis, 2009).

During the week of data collection (February 2010), the population (total number of mothers who delivered and are caring for their preterm babies) consisted of twelve (12) mothers- four (4) mothers caring for their babies in the Maternity ward NICU and eight (8) mothers in the Pediatric NICU.

2.3.2.2. Sampling method

The sample was selected using non-probability, purposive sampling. With purposive sampling, the sample is selected because it contains characteristics that are typical to the population (Holloway & Wheeler, 2010; Newell & Burnard, 2010; Rubin & Babbie, 2010). According to the judgment of the researcher, these mothers could provide information needed for the study, as they had delivered preterm babies and were involved in the care of these babies on a daily basis. In addition to purposive sampling, the researcher also used the criterion sampling method, where only the respondents who met certain criteria were selected (Boeije, 2009; Gerrish & Lacey, 2010; Yin, 2010; Cresswell et al. 2011). From population of mothers caring for their babies during the week in which data was collected, respondents were sampled using the following three inclusion criteria:

1. A woman should have delivered a preterm baby in the Intermediate Hospital Oshakati maternity department;
2. A woman should have delivered a preterm baby at a district hospital and the baby was referred for admission to Intermediate Hospital Oshakati Pediatric Premature Unit. and
3. She had been caring for her preterm baby for at least 2 weeks. The time duration of 2 weeks was decided because the researcher believed that by that time, the mother had made a meaning of the world she found herself in, and would be able to provide reliable data regarding her experiences in delivering and caring for a preterm baby.

2.3.2.3. Sample size

Qualitative studies are not intended for generalisation to large populations. They are intended to provide a “thick” and meaningful description in order to increase existing knowledge of the phenomenon under investigation (Streubert & Carpenter, 2011; Creswell et al. 2011). Various authors are in agreement that there is no definite sample size for qualitative research to gain significance. The sample consisted of eight mothers, as data became saturated, and that was observed when there was no more new information to be gained from increasing the sample, and there was repetition of concepts and themes (Newell & Burnard, 2010; Loiselle et al. 2010; Hays & Singh, 2011).

2.4. Data collection method, interview preparation procedures and data analysis

2.4.1. Data collection method

Data was collected in the second week of February 2010, using in-depth interviews. In-depth interviews were used because they are important when one needs to uncover feelings and attitudes of individuals concerning a specific situation, especially on sensitive topics (Cresswell et al. 2011; Parvanta, Nelson, Parvanta & Harner, 2011). For this study the same question was used during the pilot study. Individual in-depth interviews were used because they allowed the researcher to seek clarity and elaboration on the answers given and because they enabled the mothers to answer freely, the way they wanted to answer (Arkin, 2009; Monette, Sullivan & De Jong, 2010; Hernández, 2011, Jacobsen, 2011).

The in-depth interviews were conducted using the question: “How do you feel now that you have delivered a preterm baby?” All interviews were recorded using a digital voice recorder, with the prior permission of the participants, to prevent possible distraction and breakage in eye contact during interviews (Henning, Stone, & Kelly, 2009; Zastrow, 2009). Digital voice recording was done with the consent of the mothers.

2.4.2. Pilot interviews

Prior to actual data collection, a pilot study was conducted in Onandjokwe Lutheran Hospital’s NICU, using the in-depth interview method. The question “I would like you to tell me: how do you feel now that you have delivered a premature baby?” was posed to the three (3) mothers at Onandjokwe Lutheran Hospital’s NICU. The interviews were recorded with the digital voice recorder, and transcribed and analysed. The categories identified from data analysis of the pilot study were results similar to those in actual study.

This pilot study assisted the researcher to determine the feasibility of the study in terms of budget and time, as well as the availability of the target population, and for the researcher to familiarise herself with the data collection method (Gerrish & Lacey, 2010; Houser, 2011). It also helped the researcher to gain experience related to guiding questions, probing and generally the overview of the actual data collection process.

2.4.3. Preparation of the research field

De Vos, Strydom, Fouché and Delpont (2005) argues that when preparation for data collection is properly done, pertinent information about the research field can be obtained, and this information will provide the researcher with confidence and guidance to manage the research field and approach the participants. After the pilot study, the researcher visited the two NICUs at Intermediate Hospital Oshakati for seven weeks prior to data collection, to establish a mutual trust relationship between her and the mothers. When the researcher arrived in the NICUs, she gathered the mothers in each NICU, and introduced herself to all of them (population target) irrespective of the number of days they had spent caring for their babies. The purpose and objectives of the study were explained to the mothers, and they were given freedom to ask questions throughout the research project. All the mothers who had their babies admitted were welcomed to join the research project, and the above process was repeated to every new mother whose preterm baby had been admitted to the two NICUs.

The researcher informed the target population about the data collection method and the digital voice recorder, as well as the importance of using the digital voice recorder. They were informed of their rights to decide whether the digital voice recorder be used on them or not.

When a strong mutual relationship had been established, the researcher planned to begin conducting interviews. She again gathered the mothers, to inform them of the plan to conduct interviews. Ethical issues of free will to participate (autonomy), confidentiality

and privacy were explained to them. She compiled “consent for participation forms”, prepared a note book and a pen, and two spare batteries. Since all the mothers were able to communicate in the local language, there was no need to have an interpreter on standby (Polit & Beck, 2009; Berthold, Miller, & Avila-Esparza, 2009).

2.4.4. Preparation of the venue

The researcher chose a room in the pediatric ward and an unused store room in the maternity ward (as there was no empty room at that moment), which were in the same wards that mothers were accommodated in. The rooms were cleaned; two chairs, a table and bedside chair were brought into the rooms for use during the interviews. The chairs were arranged so that the researcher and the mothers could communicate face-to-face during the interview. The bedside chair was placed besides the researcher but within easy reach, and it was used to keep the digital voice recorder (which was connected to the amplifier device). The venues were shown to the mothers, so that they could decide if they felt comfortable with them. The mothers were comfortable with the venues, so the venues were used for the interviews (Polit & Beck, 2009; Berthold et al. 2009).

2.4.5. Timing and invitation for interviews

Mothers were given the choice to decide on the time convenient for them to be interviewed, and they chose evening time because nurses in the NICUs were not too busy treating the preterm babies at that time, and it was not feeding time. Mothers came to the interview venue one at a time, and when an interview with one mother finished,

the next mother came in. The mothers waited for their turns in their sleeping room (Brunett, 2009).

2.4.6. Conducting interviews

Interviews were conducted in the second week of February 2010. The researcher welcomed the mothers in the interview room, and re-emphasised the purpose and objectives of the study. They were informed about their rights – to terminate the interview any time they so wished, to ask for repetition of questions, to answer as they wanted, and the right not to take part in the study. The mothers were informed about the use of the digital voice recorder, and that the information being recorded would be stored in the researcher's home (private) laptop for analysis purposes.

They were given a chance to ask questions related to the interview before the sessions started. Interviews were conducted in Oshiwambo (local language). The question: “I would like you to tell me: how do you feel now that you have delivered a premature baby?” was posed to all respondents. Interviews were digitally recorded, transcribed and the transcriptions were translated into English for analysis purposes. The research sought for assistance by fellow nurses/midwives in translation of some words which she experienced problems with during the translating process. The duration of the interviews was based on the satisfaction of the researcher and the participants that the necessary information was shared. After the interviews, the researcher thanked the mothers for accepting the interviews and for providing information, and replayed the interviews so

that the mothers were satisfied with the information they had given or to state that they would like the interview to be re-conducted (Bethold, Miller, & Avila-Esparza, 2009; Polit & Beck, 2009).

2.4.7. Field notes

Field notes of the in-depth interview sessions were recorded verbatim. The empirical observations were noted and documented immediately following an observation or an event. The recording of events and/or observations in the field notes ensures that details of all the events that occurred in the field are not lost, as it is practically impossible to keep all events in one's memory. However, it was limited, so as to avoid interrupting the interview sessions (Rubbin & Babbie, 2010; Yin, 2010).

2.4.8. Communication techniques used during the interviews

The following communication techniques were employed in the in-depth interview process:

- Participants were given time to describe their experiences without any interpretation.
- The researcher used language and terminology that was simple and understandable, in order to facilitate the participants' understanding. Participants were allowed to express their experiences in their mother-tongue. The researcher played the recorded interviews to the participants, to ensure that the recorded

interview reflected the experiences of the participants (Henning, Van Rensburg, & Smit, 2004).

- Tracking was done through attentively following the content and the meaning of their verbal conversations, and by keeping the discussion/interview on track and bringing it back to the purpose of the study (Henning et al. 2007); Blessing & Forister, 2012).
- Probing assisted the researcher to stimulate the participants to provide detailed exploration and clarification of their experiences in order to understand what was not coherently described (Babbie & Mouton, 2007; Blessing & Forister, 2012).

2.4.9. Interpersonal attitudes and skills employed during data collection

The researcher adopted the following interpersonal attitudes and skills while conducting the in-depth interviews:

- Interpersonal skills: Through prolonged engagement, the researcher established a positive, trust atmosphere that allowed open and free expression of thoughts and feelings during interviews;
- Empathy: Accepting and confirming the participants' responses without being judgmental (Segal & Hersen, 2009; Sommers-Flanagan & Sommers-Flanagan, 2012);
- Active listening: The researcher employed active listening and minimal verbal responses such as occasionally nodding the head; and

- **Congruence:** The researcher remained consistent while interacting with the participants during the interview sessions. All the participants were asked one central question during the in-depth interviews in a respectful manner. This consistency enabled the establishment of a mutual trust relationship which enabled the participants to freely supply information by narrating their experience regarding the phenomenon under study (Henning et al. 2009; Babbie & Mouton, 2007).

2.4.10. Data analysis

The recorded data was converted into transcripts and stored in the researcher's laptop (see Annexure G). Thereafter, data was analysed using open coding as per Tesch (1990) provisions (see Chapter 3).

2.5. Reasoning techniques

2.5.1. Inductive reasoning

“Inductive reasoning” refers to a bottom-up approach to problem solving, in which conclusions are drawn based on information obtained from experiences and observations from the study (Merriam, 2009). In this study, inductive reasoning was used to explore and describe the experiences of mothers related to preterm birth and caring for preterm babies, by identifying patterns as well as commonalities, and creating themes and categories to develop the results of the study, and thus to create knowledge and

understanding of the experiences of these mothers (McKenna & Slevin, 2008; Pitney & Parker, 2009).

2.5.2. Deductive reasoning

“Deductive reasoning” is a top-down form of problem solving in which conclusions are drawn based on theories, to confirm, support or reject the research findings (Matthews & Kostelis, 2009; Hartas, 2010). In this study, deductive reasoning was used through literature review, to support and to form a backbone for understanding the experiences of the participants.

2.5.3. Inferences

“Drawing an inference” means making logical declarations from the premises to the conclusion, which is determined by the support which the premise provides to the conclusion (Damer, 2008; Holyoak & Morrison, 2012). A preliminary literature review on frameworks about premature birth was conducted in order to understand the research phenomenon.

2.5.4. Bracketing

“Bracketing” is the process whereby the researcher examines her standpoint related to the study phenomenon and suspends her knowledge and personal experiences about the research phenomenon in order to learn about the participants’ perceptions without including his/her own ideas in the study (Pitney & Parker, 2009; Houser, 2011). This

prevents distortions in the data collected as described by the participants themselves. Prior to the interview sessions, the researcher identified and wrote down her thoughts, beliefs, assumptions and descriptions of her own perceptions and what she knew about the topic under study (De Vos et.al. 2005). This enabled her to deal with own preconceived ideas by “bracketing out” herself and by examining her own pre-judgment in order to obtain new information and understanding of the phenomenon based on the descriptions by the participants.

2.5.5. Reflexivity

Interactive reactions between the researcher and the participants in the research setting should be accounted for, so that the researcher does not influence the participants’ reactions and actions (Hays & Singh, 2011; Rossman & Rallis, 2012). In the present study, the researcher guarded against potential influences that she might have had on the research design, participants’ selection, the setting, and her behaviours during data collection, data discussion, interpretation and presentation (Holloway & Wheeler, 2010; Hennink, Hutter, & Bailey, 2011). Reflexivity was achieved through continuous submissions of completed research work to the two study supervisors on a regular basis, and involving a co-coder during data analysis and during research seminars where progress and research findings were presented.

2.6. Ethical measures

Research conducting is guided by ethics, which are associated with the provision of a safe environment and protection of participants, as well as provision of mechanisms for ensuring accountability and responsibility by the researcher. Various codes of ethics have been put in place to avoid violation of human rights during research (Klenke, 2008; Streubert & Carpenter, 2011). As for this study, the researcher observed and respected the ethical codes as follows:

2.6.1. Informed consent

Mothers were informed of the purposes, objectives and benefits of the study research in their indigenous language, so that they could easily and voluntarily decide whether they would like to take part in the study or not. The researcher identified herself, and informed the respondents that the study was for academic purposes. The thumb-print signed a consent form designed by the researcher (Annexure E), as a means to document their wish to participate (McNamee, Olivier, & Vainwright, 2007). Permission to conduct the research was also requested from the Ministry of Health, Onandjokwe Lutheran Hospital and Oshakati Intermeditate Hospital (Annexure A-C), as these are legal institutions that governed the well-being of the mothers as recipients of healthcare services. Approval to conduct the research was granted by the University of Namibia's Post Graduate Committee (Annexure D).

2.6.2. Right to confidentiality, privacy and anonymity

Confidentiality, anonymity and privacy revolve around protecting the research participants' identity and personality. Confidentiality entails keeping the gathered information in strict concealment. Anonymity principle involved protecting the identity of the mothers. Another principle of privacy states that the participants should not feel exposed by the research process and must be comfortable and safe from possible harm during and after the study (Hays & Singh, 2011). Thus, the researcher kept all personal data of the mothers confidential, so that respondents could not be identified. All information that the mothers revealed was kept private, and only the research and the study supervisors had accesses to the transcribed data. No names of the respondents appeared any where in the study as the researcher had decided to use thumb-prints instead of signing the consent form. In the transcriptions, the researcher used the words "R" to denote "researcher" and "P" to denote "participant" (mother).

2.6.3. Right to protection from exploitation

Participants need to be protected from exploitation of all kinds. According to Polit and Beck (2009), participation in a study should not be done at their expense, and the participants should not be subjected to adverse treatment during and after the research. The participants were informed that this study is for academic purposes, of which the researcher is attempting to enhance her academic growth. However, the participants were also made aware that the information that the information they are relaying will be also benefit mothers who delivered and are caring for preterm babies, and contribute to

the improvement of maternal and child health services. Thus, the researcher will use the information the mothers are giving, to develop a discharge health educational-support programme that at some stage can be adopted in Namibian state hospitals. Participants were informed of the researcher's intentions to publish an article from the study.

2.6.4. Right to self-determination

This refers to the right to make individual decisions (Polit & Beck, 2009). Mothers were treated as autonomous beings who had the capability to manage their own lives and make decisions independently. Thus, they were given the right to voluntarily decide whether to take part in the study without any threat and without being bribed. Mothers were also given the right to withdraw from the research project, ask questions or refuse to answer questions, any time that they so wished. They had the right to participate or to refuse participation. On another note, one of the mothers who participated in data collection during phase one suggested that their group photo, which was taken at a photo-taking session, be displayed on top of the health educational programme. Hence the photo on the pamphlet was displayed as per the mothers' decision (Polit & Beck, 2009; Hays & Singh, 2011).

2.7. Ensuring trustworthiness of data

According to Polit and Beck (2009), researchers want their findings to reflect the truth, so that they can make meaningful contributions to their fields/disciplines. Furthermore, the users or consumers of research need to assess the quality of evidence offered in a study, through evaluating the conceptual and methodological decisions the researcher has made throughout the research process. In qualitative studies, reliability and validity of data collected is termed “trustworthiness” or “rigour”.

“Rigour” refers to the overall quality of data collection and analysis, which is reflected in consistency of data analysis and interpretation, trustworthiness of the data collected, transferability of developed themes, and credibility of the data (Macnee & McCabe, 2008). For the researcher to be rigorous in conducting qualitative research, the researcher must be open to new ideas by letting go of his/her conventional ideas about the phenomenon, and by examining various spheres to form new ideas (Mishara, 2009). In this study, rigour was ensured through the researcher’s openness and willingness to obtain new information from the experiences of mothers who had delivered and were caring for preterm babies in northern Namibian state hospitals. The following four criteria were used to ensure trustworthiness in the study:

2.7.1. Credibility

“Credibility” refers to the degree of truth in the data collected, which is merely the extent to which the researcher can claim that the results were based on evidence (Evans & Hardy, 2010; Denzin & Lincoln, 2011; Holly, Salmond, & Saimbert, 2011; Thornicroft, Szmukler, Mueser, & Drake, 2011). To ensure credibility, the researcher used a prolonged engagement strategy. She spent several weeks on a familiarisation tour both prior to data collection and programme implementation, where she visited the mothers in the NICUs twice a week. This created a mutual as well as a trust relationship between the researcher and the mothers, which put the mothers at ease, making it possible for them (mothers) to verbalise their feelings, including even those feelings that might be uncomfortable about their experiences. Because the research was being conducted in the indigenous language of respondents (i.e. in Oshiwambo), the researcher undertook peer debriefing, where she sought assistance from fellow nurses and midwives to assist in ensuring that the information that was collected was correctly translated from Oshiwambo into English, and to ensure that the health educational information in the pamphlet was correctly translated into the local language.

In addition, member checks, which involved returning data and/or findings to the participants in order to obtain their comments and subsequent validation, were used. This allowed the mothers to correct errors of fact and to challenge any misinterpretations attached to the data they had provided. This was meant to confirm with the mothers that the interpretation of the data they had provided was accurate and reflected their

experiences. In addition, the pilot study was conducted so as to determine the feasibility of the study in terms of time, financial aspects and subjects' availability, as well as to give the researcher experience with the subjects, the premature units settings, and to refine the methodology of research conducting (Evans, & Hardy, 2010; Denzin & Lincoln, 2011; Holly et al. 2011; Thornicroft et al. 2011).

2.7.2. Transferability

“Transferability” refers to the extent to which data can be transferred or applied to other people in similar situations/contexts (Thornicroft et al. 2011). Findings from the study are transferable if they can be applied to other contexts and respondents. Though data collected from qualitative studies cannot be generalised because every situation or context to be studied is constituted of a unique environment, with a particular researcher and particular respondents or individuals, data should be transferable. This means that the researcher should provide sufficient descriptive data for it to be used by other researcher to compare with their studies (Evans & Hardy, 2010; Denzin & Lincoln, 2011; Holly et al. 2011). To ensure transferability, the researcher in this study provided coherent descriptions of research design, methodology, data analysis and discussion of results.

Dense description of background information was also undertaken, where the researcher provided an adequate database of the whole study, including the background of the problem theoretical and philosophical frameworks of the study, sampling procedures,

data collection methods, data analysis process (open-coding), programme development, and ethical issues. Purposive sampling was used to carefully select the sample, based on the predetermined three criteria.

2.7.3. Dependability

“Dependability” is a consistency measurement criterion, which is used to determine whether the findings from the study are consistent – that is, if the study has the ability to reproduce similar findings if it was repeated with the similar respondents in an identical context. This simply refers to the stability of collected data over time and over conditions. Data is said to be dependable if other researchers and evaluators can arrive or are able to arrive at the same results if they repeat the study or they analyse the same set of data.

In this study, dependability audit trait method was used to ensure dependability, of which the researcher made use of an independent coder (Evans & Hardy, 2010; Denzin & Lincoln, 2011; Holly et al. 2011; Thornicroft et al. 2011). The researcher approached a fellow health worker; to carry out an independent data analysis, develop themes, codes and categories on his own accord. The fellow health worker’s themes, codes and categories were compared with that of the researcher, the variations and similarities were and consensus was reached.

2.7.4. Conformability

“Conformability” is the degree to which the research findings are determined by the respondents and the conditions of enquiry, and not by the biases of the enquirer. This means that findings come fully from the respondents and not from the researcher’s perception and biases, thus making data objective and neutral. To ensure conformability, a conformability audit strategy was used, whereby the researcher kept available all raw data such as the digital voice recorder audiotape, transcripts, field notes, pilot study data (audiotapes, transcripts and field notes), data analysis (the open coding process), personal notes/diary, consent forms as well as literature review note books (Evans & Hardy, 2010; Denzin & Lincoln, 2011; Holly et al. 2011; Thornicroft et al. 2011). The above strategies are applied to the study as in the table on the next page.

Table 1. Guba's model - Strategies to ensure trustworthiness

| Criteria | Strategy to ensure trustworthiness | Method to ensure trustworthiness |
|--------------------|---|---|
| (a) Credibility | Prolonged engagement | <ul style="list-style-type: none"> The research has been visiting the two NICUs for 7 weeks during phase 1 and for three weeks during phase 3 of the study, to establish a mutual, trust relationship between her and the respondents. The researcher clearly explained the purpose and objectives of the study to the mothers. |
| | Member checks | <ul style="list-style-type: none"> The researcher played the video tapes and read the transcripts to the respondents to ensure that there is no misinterpretation of collected data. |
| | Peer debriefing | <ul style="list-style-type: none"> The researcher involved other local nurses and midwives to assist in translating from indigenous language (Oshiwambo) to English. |
| b) Transferability | Sufficient descriptive data | <ul style="list-style-type: none"> Coherent description of research design, methodology, data analysis and discussion of results was done. |
| | Dense description of background information | <ul style="list-style-type: none"> The researcher provided a descriptive database as reflected in the background of problem, theoretical and philosophical frameworks that backed the study, sampling procedures, data collection methods, data analysis method, and discussion of findings. |
| | Purposive sampling | <ul style="list-style-type: none"> The sample was carefully selected using the three determined criteria of inclusion. |
| c) Dependability | Dependability audits | <ul style="list-style-type: none"> Independent data analysis and comparison of results Independent coder consultation |
| d) Conformability | Conformability audits | <ul style="list-style-type: none"> All raw data such as digital voice recorder audiotapes, transcripts pilot study data (audiotapes, transcripts), the open coding process, personal notes/researcher's diary, consent forms and literature review note books are kept for scrutiny. |

2.8. Phase 2: Conceptual framework

The conceptual framework of Dickoff, James and Wiedenbach was used in the development of the health educational-support programme. The conceptual framework is described in detail in Chapter 4.

2.9. Phase 3: Development and implementation of the programme of a discharge health educational-support programme

This phase entailed developing and implementing a health educational-support programme for mothers caring for preterm babies in northern Namibian state hospitals. The programme was developed based on the themes from data analysis, as well as on literature review of various articles, books and websites. Programme implementation involves putting the designed programme into effect, or simply executing the planned actions. A programme implementation schedule was compiled, and it guided the way the programme should be implemented. The researcher, who is a registered nurse and midwife, implemented the health education intervention programme. The development and implementation process are discussed in detail in Chapter 5.

2.10. Phase 4: Evaluation of the discharge health educational-support programme

Programme evaluation constitutes Phase 4 of the study. Generally, evaluation of a programme consists of identifying whether the aims and objectives of the programme have been achieved – the programme efforts, effectiveness, efficacy and adequacy, based on systematic research methods of data collection and analysis (Issel, 2009;

Fertman & Allensworth, 2010; Hodges & Videto, 2010; Wholey, Hatry, & Newcomer, 2010).

For the present programme, the impact evaluation approach was used. Impact evaluation measures the immediate effects of a health educational programme and the extent to which the desired outcomes were attained (Healey & Zimmerman, 2010; Waltz, Strickland, & Lenz, 2010; Gertler, Martinez, Premand, Rawlings, & Vermeersch, 2011; Jackobsen, 2011).

The researcher conducted a programme evaluation using semi-structured interviews (Issel, 2009; Wholey et al. 2010, where three mothers of preterm babies (weighing 1.800g), who used the programme were interviewed. A leading question “How useful was the programme to you?” was posed to the mothers for discussion, in order to analyse the impacts of the programme interventions on their knowledge and confidence level, as well as on their emotional status. The interviews were recorded with a digital voice recorder, and transcribed for data analysis purposes.

2.11. Summary

This chapter provides an outline of the study: the research design, reasoning techniques, sampling procedures, data collection methods and population description, as well as strategies to ensure trustworthiness. Research was undertaken as a descriptive qualitative study, using a phenomenological paradigm. The population consisted of mothers who

had delivered preterm babies and were caring for babies admitted in the preterm baby units of Intermediate Hospital Oshakati NICUs. The sample was selected using purposive sampling, and sample size depended on saturation of data. A pilot study was conducted prior to main data collection. Data was collected using in-depth interviews.

The study was conducted in four phases – needs assessment, programme development, implementation of programme, and evaluation of programme. Phase 1, needs assessment, involved gathering data that provided information essential for programme planning. Phase 2 involved developing a conceptual framework to aid in programme development. Phase 3 focused on development and implementation of the programme of a discharge health educational-support programme for mothers caring for preterm babies in northern Namibian state hospitals, while Phase 4 focused on the evaluation of the developed discharge health educational-support programme. Research conducting was guided by ethics, which are associated with the protection of participants as well as provision of mechanisms for ensuring accountability and responsibility by researchers. Trustworthiness of data was ensured using several criteria.

CHAPTER 3

DATA ANALYSIS AND LITERATURE CONTROL

3.1. Introduction

Chapter 2 focused on discussion of the research design and methodology adopted in this study. The study was conducted in the four phases prescribed by this research method. This chapter entails analysis and discussion of the data collected through the method of in-depth interviews. Data was organised into themes and categories, and each theme and its categories was discussed.

3.2. Data analysis

Data was collected to explore and describe the experience of mothers related to preterm birth and caring for their preterm babies. The findings were supported by verbatim quotes from the interviews and were substantiated by relevant literature after each category was discussed.

Tesch's coding system was used to organise the data into themes and categories using the following steps:

- Getting a sense of the whole: The interview transcripts were read through one at a time, in the order that the interviews had been conducted (i.e. first, second, third till the eighth). The first interview was used as a starting point. It was read through three times, and the researcher jotted down ideas on the rectangular pieces of paper

that were cut and prepared to be used to organise information in flowchart format.

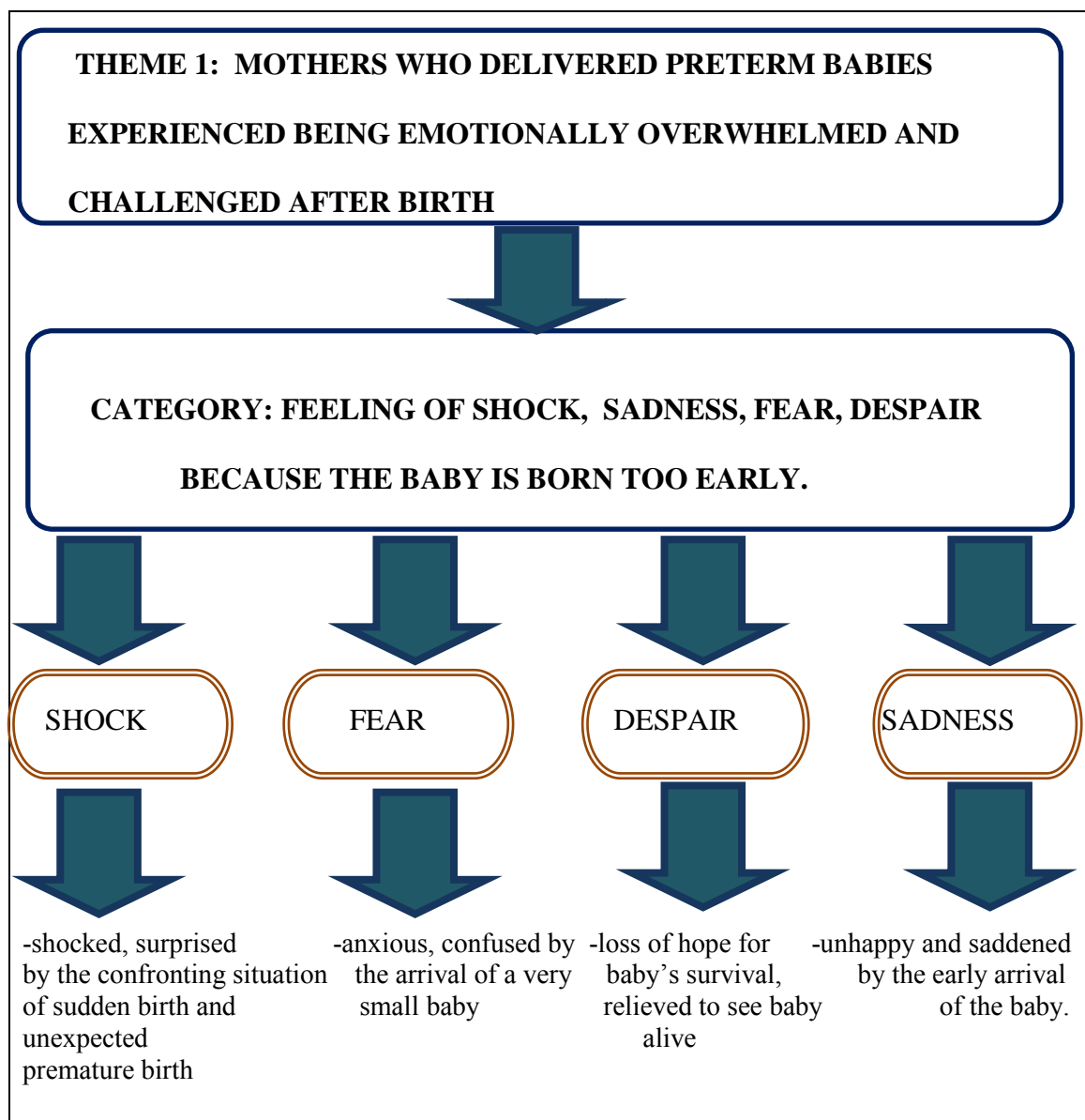
Each rectangular piece of paper contained a single idea.

- Identifying topics: The researcher identified topics to organise the ideas from the collected data. These topics also written on rectangular pieces of papers (a little larger than the ones from step 1), and they were pasted on a large plain poster, arranged in columns.
- Identifying categories: The rectangular pieces of papers with ideas from the first step were then placed in the columns. Each column contained rectangular pieces of papers with a similar meaning or idea. From this grouping into columns, categories were developed.
- Identifying themes: The categories were blended into concepts that could be seen as research outcomes. Four themes were developed, which best revealed the outcomes of the experiences of mothers who delivered and were caring for their preterm babies in Intermediate Hospital Oshakati (Tesch, 1990; Flick, 2009; Babbie, 2010; Lapan et al. 2011; Parker, 2011). The study supervisors, as well as visiting professors from University of South Africa (UNISA), provided guidance during the data analysis process.

Direct quotes were included as they were narrated in the transcribed interviews, and were presented in italicised format. An extract from an interview is included (Appendix G) in the research report. Four themes emerged from the data analysis that reflected the

mothers' experiences of delivering and caring for a preterm baby, and are presented in the figure below.

Figure 1: Themes and categories for experiences of mothers who delivered and are caring for preterm babies (Themes 1-4).



THEME 2: MOTHERS ATTEMPTED TO COPE WITH PRETERM BIRTH THROUGH ACCEPTANCE



CATEGORY: ACCEPTANCE OF A PRETERM BABY AS THE WILL OF GOD



ACCEPTANCE



-have to carry what God has given as there is no choice of feelings.

THEME 3: MOTHERS EXPERIENCED DIFFICULTIES IN BONDING WITH THEIR BABIES

CATEGORY: ANXIETY AND CONFUSION BECAUSE MOTHERS HAVE TO CARE FOR PRETERM BABIES

ANXIETY AND CONFUSION

- Anxious to hold the baby fearing it might slip out of linen, and fear of improper handling as baby is too small.

THEME 4: PARTICIPANTS EXPERIENCED FEELINGS OF APPREHENSION IN THE CARE OF THEIR BABIES.

CATEGORY 1: DISCOMFORT AND DIFFICULTIES IN THE CARE OF A PRETERM BABY AS A RESULT OF LACK KNOWLEDGE.

-problems associated with feeding and baby condition

CATEGORY 2: INABILITY TO PLAN HOME CARE RELATED TO LACK OF DISCHARGE PREPARATION

- no plans, limited planning for baby care at home.

3.3. Themes discussion

3.3.1. THEME 1: Mothers who delivered preterm babies experienced being emotionally overwhelmed and challenged after birth.

Participants expressed various emotional reactions when they discovered that they had delivered preterm babies. The birth of a preterm infant brings disruption in the parent-infant relationship, and mothers are faced with a dilemma of caring for these tiny babies as well as the unfamiliar environment of NICU (Sexson, 2005). So, an abrupt end of pregnancy can lead to emotional overwhelming of these mothers' minds, which is manifested in various emotional reactions.

- **Category: Feelings of sadness, fear, shock and despair because baby is born too early.**

Mothers caring for preterm babies were emotionally traumatised when they learnt that they had delivered preterm babies. This was shown in various positive and negative reactions towards the arrival of the baby. Participants revealed mixed emotional reactions as displayed in the following quotes:

Negative emotional feelings:

"I was shocked to hear that I have delivered a preterm baby. I don't even know how I was feeling. It was difficult."

"I felt bad, I was not expecting it. It is really bad".

"I don't know if the baby will survive or not, I just take each day as it comes."

"I lost hope, it is my first baby and I have never seen a preterm baby before."

“I was shocked because I didn’t expect to get a preterm baby.”

Positive emotional reactions included:

“I am thankful to God that the baby is alive, and when I now looking at the baby”.

“I feel I love her. I didn’t expect her to be alive.”

“I was relieved to see the baby alive. Because she is born in six months, I wasn’t expecting the baby to be alive....”

According to Lazarus (2006), the above-mentioned emotions occurred as a result of a perceived threatening situation. Positive emotional reactions can also be associated with emotional stress or disturbance. The mothers who had delivered preterm babies endured anxiety, depression, shock, fear, sadness and disappointment as their hopes of carrying a healthy baby were terminated. They also experience feelings of guilt or self-blame related to their failure in not carrying the baby to full term, helplessness and detachment, anticipatory grief displayed in fear of the baby dying, and grief because they did not have a healthy baby as they had hoped for, and were not prepared for preterm birth (Barnes & Rowe, 2008; Lindberg & Öhrling, 2008; Rathus, 2010; Boxwell, 2010).

Following preterm birth, mothers experience a range of mixed feelings. They may experience some positive emotions such as love, delight and pride, but negative feeling may dominate early weeks and months of hospitalisation in the NICU. These include:

- Shock and numbness upon hearing the news that they have given birth to a preterm baby;
- Sadness manifested in a feeling of sorrow, where birth has become a crisis rather than being a joyful event;
- Yearning to be close to the baby, which comes as a result of separation of baby from the mother, resulting in interference in the bonding process;
- Guilt, failure and feelings of self-blame that result from mothers feeling they did not do enough to prevent preterm birth, hence their babies are suffering in the NICU;
- A feeling of powerlessness that they had lost control of their pregnancies and were unable to care for their babies as they should have done as mothers;
- Feelings of isolation and loneliness, since they feel they are alone in dealing with the challenges facing them because family and relatives have little access to visit the baby in the NICU;
- Anger about all that has just happened: they feel no one seems to understand them, they feel they cannot do anything about preventing complications, and feel angry about the uncertain future of the baby;
- Fears about the baby's condition during hospitalisation, and more stressfully, discharge from hospital does not relieve the anxiety as mothers are thinking of the prognosis of their babies in the future (David & Stein, 2004; Barnes & Rowe, 2008; Rathus, 2010; Boxwell, 2010; Lauwers & Swisher, 2010).

Various studies have been carried out to identify the experience of mothers following preterm birth. In a study by Broeder (2009), it was discovered that mothers had embodied and relational responses such as aching, loss and sadness, and were yearning to be close to their babies. Mothers were faced with uncertainties after giving birth as they were separated from their babies because of the babies' medical conditions. In another study by Lindberg and Öhrling, mothers were not prepared for having preterm babies, so they were anxious and stressed. They were also struggling to feel close to their babies owing to separation from their babies (Lindberg & Öhrling, 2008).

In the literature and the above studies, mothers experienced devastating feelings following premature birth. An imbalance in their socio-mental sphere was created. The feelings of shock, guilt, self-blame, fear, and the others mentioned, can be hazardous to the mental health of these mothers. The birth and caring for a preterm baby, as well as admission of the preterm baby in the NICU, could be viewed as major life events, and if not well handled, could cause anxiety or nervousness, which could induce stress-related disorders such as depression in the post-natal period (Ayers, Baum, & McManus, 2007; Meeks et.al., 2009).

Leaving the mothers alone to deal with the confronting situation of premature birth while they do not possess skills and knowledge to manage their emotions, may become an additional burden to them. For some mothers, it is their first baby, for some it is their first time to deliver a preterm baby, and some mothers have never seen a preterm baby

before, and all of a sudden they found themselves caring for such tiny babies! So, without any knowledge, skills and support for these mothers, there are chances that some mothers may not effectively overcome preterm birth alone.

In addition, the mothers are caring for their babies alone in the NICUs without the support of their partners and/or relatives, because of the limited access into the NICU. This deprives them of the availability of the support system, and as result, mothers feel lonely and isolated. Some of the mothers did not have the support of their partners and/or families prior to the occurrence of this confronting situation. For those who do have a support system, the people around these mothers may not fully understand and fully appreciate the emotional impact of prematurity on the mother and her family, making it difficult for them to render emotional support to the mothers.

Furthermore, the mothers' experiences of fear related to the condition and prognosis of their preterm babies, as well as experiences of guilt, self-blame and failure may persist into the future, and may resurface, especially during the growing and development period of the baby. In any case, in the future, if the preterm baby develops complications or fails to achieve optimal growth and development, there are chances that mothers will revert to self-blame, guilt and fear, as they think that they are contributory factors to the problems of their babies.

Given the above context, mothers need to recover from and deal with this traumatising situation that confronts them, in order to maintain integrity and stability, both on the short and long-term basis. So in response to the threatening event of preterm birth, the NICU nurses should assist mothers to deal emotionally with premature birth and to adopt behaviours that will facilitate the process of coping and healing (Loiselle et al. 2010).

3.3.2. THEME 2: Mothers attempted to cope with preterm birth through acceptance.

Mothers caring for preterm babies have to deal with the situation of early arrival of their babies, through finding ways to cope and adapt to the present situation. Any normal person confronted with a perceived stressful situation makes a brief summing up and tries to address the situation using the resources at his/her disposal. Similarly the mothers have to find mechanisms to adapt to the stressful environment of NICU as well as caring for their tiny babies.

- **Category: Acceptance of a preterm baby as the will of God.**

Being confronted with a problem or a stressful situation is not the end of the world. People, including mothers of the preterm babies, need to deal with the problems challenging them, in a positive and growth-promoting manner. Some mothers felt that the arrival of a preterm baby was the will and the work of God, so they accepted their babies unconditionally. The following quotes support this statement:

“There is nothing I could do, that was what God has given me. I felt bad, but it is what God has given me. I have to accept that.”

“I will just carry what God has given me.”

“I had no choice of feelings; that is God’s creation.”

When people are able and have gone through the grief process, they eventually reach a point at which they begin to recover. They also try to make sense of what has happened in their lives (Floyd, 2008). People adopt various mechanisms to deal with a situation that they perceive as stressful or worrisome to them.

From data collected, it can be seen that following grieving, most of the mothers used a religious coping method to accept premature delivery and the role of carer for their premature babies. According to Floyd (2008) as well as Leary and Hoyle (2009), acceptance indicates that a person is not only recovering, but also that he or she is prepared to move forward and live a normal, stable life again. Acceptance entails restructuring one’s perceptions to come to terms with the confronting situation, consequently producing an outcome of effective grieving and adjusting to the loss. By accepting the situation, people develop goal-orientated adaptive boundaries within which to devote their time that is left (Floyd, 2008; Leary & Hoyle, 2009).

Generally speaking, by accepting the situation, a person is said to be coping with the invading situation, hence they find ways of adapting to the situation in a positive, constructive way, either through reducing the physical effects of stress, problem-solving,

or through learning and finding meaning in the experience, and even seeing humour in the situation (Kim & Kollac, 2006; Videbeck, 2010).

In the present study, mothers used religious coping (RC) as a basis for dealing with preterm birth. “Religious coping” means relying on religious means to deal with the problem positively (Fowler, Reimer-Kirkham, Sawatzky, & Taylor, 2012). This can be done through prayer, religious counselling or seeking comfort and strength from God, to deal with the trauma (Peteet, Lu, & Narrow, 2011).

In the case of these mothers, accepting the preterm birth situation and the early arrival of their babies could be influenced by various factors. Firstly, as mentioned above, religion plays a role in the lives of many people, and these mothers are no exception. In religious coping, God is seen as a loving, merciful, forgiving and generous God, who controls every situation that one finds oneself in, and simultaneously acts as a supporter in difficult situations (Nelson, 2009). Hence mothers viewed the situation of delivering and having to care for a premature baby as the will of God, as they believed God has the major influence on the whole prematurity situation. Second, mothers used a religious background that might be intrinsic or extrinsic, to ease the situation (Fowler et al. 2012). The strength or extent of their belief in God, as well as the presence of the supporting spiritual workers such as chaplains, pastors and spiritual counsellors, could have played an important role in maintaining the positive mental and emotional status of the mothers during this perceived difficult time. Therefore, from religion, mothers can get hope and

strength when they are overpowered, have lost control and feel bereaved by preterm birth, which is actually an essential mode of promoting positive emotional recovery. It must be noted that there are no specific studies that focus on identifying the effects or implications of religious coping during preterm birth. However, various studies on religion and other health conditions have been carried out; unfortunately they cannot be used to form a support base in the case of preterm birth.

On the other hand, acceptance through religious coping does not always imply that mothers are coping better or have gained emotional well-being. As seen in the data analysis, these mothers felt they had no choice but to accept what God had given to them, indicating religious compliance and pessimism, which is a negative coping strategy (Weiner & Craighead, 2010). With due respect to the religious beliefs and practices of the participants, acceptance by religious compliance may be detrimental as these mothers may well not be really prepared to accept the preterm birth situation and early arrival of the babies, but just because it is out of their control, they have to accept. Though mothers have accepted the situation, they may still be anxious, have guilt feelings or still be experiencing shock because of the preterm birth (Weiner & Craighead, 2010).

Acceptance by religious compliance only eases the challenges of preterm birth for the mothers; it does not completely address the emotional burden caused by the birth. Although religious coping plays a positive part in dealing with the difficult situation, it is

difficult to measure and evaluate the contributions of religion to the emotional support and mental well-being of the mothers, because the effects of religion are not directly measurable (Elisson & Levin, 2008).

Though the mothers accepted the situation by spiritual or religious means, religion and spirituality had only given them strength and ability to deal with preterm birth, but did not supply them with necessary resources to handle the situation effectively. Without a proper religious support platform (spiritual counselling, congregation visits, pastor visits) which liaises with the health services, emotional trauma caused by preterm birth could persist throughout the duration of baby care, and there are possibilities that mothers will feel that God is punishing them because of the sins they have committed at some points in their lives, especially if the baby develops complications at a later stage of growth and development (Kloos, Hill, Dalton, Elias, Wandersman, & Thomas, 2011; Peteet et al. 2011).

3.3.3. Theme 3: Participants experienced difficulties in bonding with their babies.

“Bonding” refers to parents’ affective relationship with their babies (Thornhill, 2007). It can be explained as the emotional ties of the parents with their babies, which reflect the commitment by a parent to meet and fulfill the baby’s basic needs.

- **Category: Anxiety and confusion because mothers have to care for preterm baby.**

Although bonding with the baby is supposed to establish a mother-baby relationship, mothers who delivered preterm babies experienced difficulties in bonding with their babies.

Mothers expressed concern mainly about how they would handle these very tiny babies.

In the study, the participants revealed their anxiety as follows:

“A premature baby, it is very small. How is it cared for? What will I do with it? Even if I go with it at home.....”

“I was holding the baby covered in the linen, I was afraid it will slip out of the linen.”

“I can handle her badly, because I am used to normal babies. Even the kilograms are not the same as my other babies, so it is difficult because the baby is too small.”

“I have never seen a preterm baby before”.

“At times I get concerned sometimes you find the baby is feverish; sometimes I find the condition changed to the worse. Sometimes I find the baby has just stopped breathing.”

Premature birth, the tiny baby, and admission to the NICU, can create an anxious atmosphere for the mother, and can create emotional trauma for her, as described in the first theme. The facts that the pregnancy ended earlier, that these women had become mothers to preterm babies, and the NICU environment itself, where the baby was separated from the mother and cared for in an incubator, surrounded by tubes all over

him or her, made the environment more stressful for the parents (McDermott-Perez, Penque, & Jones, 2007; Boynton, 2009; Meleis, 2011).

The mere fact that the preterm baby is admitted to the NICU and is being cared for in the incubator disrupts the bonding process. Given that the preterm baby is very tiny, it is quite difficult for it to be picked up and cuddled by the mother, especially immediately and for a few days following admission. According to Rathus (2010), preterm babies are naturally less attractive, and they do not really have that “baby look” like full-term babies. Their unnatural appearance, coupled with the responsibility of caring for such a baby, can bring fear and distress to a mother. These fears and distress may bring emotional health problems to a mother and to the baby if it is not attended to.

Fear felt by these mothers can also influence the bonding and attachment process. As seen from the data collected, they felt anxious and afraid to interact with their babies, fearing that they might harm the babies, or they just did not know where to start caring and interacting with their babies. This could be attributed to the lack of a support system for them, as well as a lack of knowledge and skills to interact with the babies.

According to Valman and Thomas (2009), all mothers have strong maternal urges that normally drive them to create a firm bond of affection with their babies. In cases where mothers are not supported to form and maintain a positive bond with their babies, bonding is likely to fail, and this may contribute to preterm baby abuse in the long run

(Valman & Thomas, 2009). If mothers have accepted preterm birth, they ought to carry out maternal duties towards their babies, giving them both physical and psycho-social care. They will only completely provide this care if they have strong feelings and strong relationships with their babies, as well as a sense of the babies being part of their families. Without that feeling, there is a risk that the mothers will not fully assume maternal roles towards their babies, and consequently may neglect caring for them either during the hospitalisation period or at home after the baby is discharged from the NICU.

Furthermore, the absence of a support system to initiate and promote bonding of the mothers and their preterm babies makes it difficult for effective bonding to take place from the time of admission to NICU until discharge from the NICU. Given that the babies are separated from the mothers, and are in incubators surrounded by all sorts of tubes, the unnatural appearance of the baby, anxiety, isolation and loneliness, and all the stressful environment of the NICU, one wonders how mothers will interact with their babies without a support system in place.

Charlesworth (2011) maintains that to avoid poor bonding, it is important to have interventive programmes to deal with the mothers' concerns about handling such tiny babies, as well as to provide emotional support and create a support network. Thus, it is imperative that interactive activities that promote bonding be initiated from admission and maintained throughout the hospitalisation period.

Support systems to promote bonding do not only promote and maintain bonding, but also provide emotional relief to the mother who delivered and is caring for her preterm baby. Fear and anxiety interrupt the bonding process. It is not possible for an anxious and fearful mother to touch, hold, cuddle or merely look at her baby, let alone care for such a baby holistically. Various studies have been carried out to identify the role of psychological emotional support interventions in relieving anxiety for the mothers of preterm babies. In a study by Kaaresen, Rønning, Ulvund and Dahl (2006), in which they studied the effect of an early intervention programme on reducing parenting stress after preterm birth, it came to light that an early intervention programme reduces parenting stress in both mothers and fathers to a level equivalent to the mothers of full-term babies.

Another such study was conducted by Jotzo and Poets (2005) to ascertain whether a trauma-preventative psychological intervention programme for parents of preterm babies during hospitalisation in the NICU reduced the severity of symptomatic responses to the traumatic impact of preterm birth. Results showed that those mothers who received the intervention programme showed significantly lower levels of symptomatic response to the traumatic stressor. The authors concluded that early crisis intervention after the birth, as well as intense support of the mothers during critical times of hospitalisation, reduced the symptoms of emotional trauma related to preterm birth.

The absence of a bonding support system deprives the mother of information. Where there is no bonding support system, mothers will probably not get information on how to interact with their babies, and how to strengthen and maintain bonding if they have already initiated it with their babies. Some of the mothers are layman, and could not get information related to preterm babies, preterm baby care and bonding, anywhere, if not in the hospital. Some mothers had had no previous experience with babies, let alone interacting with such a fragile baby. This lack of information adds further to the already existing anxiety, sadness, guilt and confusion that result from premature birth.

Brett, Staniszewska, Jones and Taylor (2011) carried out a study to identify effective interventions for communicating with, supporting and providing information to, parents of preterm babies. They found that parents' stress may be reduced through psychotherapy interventions that teach emotional coping and active problem-solving skills.

Proper management of emotional disturbances caused by preterm birth also has a significant impact on bonding with the baby. When there is an emotional support network available to the mothers, they are able to resolve their grief, and overcome the confronting situation of preterm birth and preterm baby care. This in turn will influence the initiation and securing of bonding between mother and preterm baby. Pedersen (2011) argued that mothers who are able to resolve their grieving following preterm birth and have established positive interactions with their babies are more likely to be

securely attached to their babies. Literature has even shown that mothers of preterm babies are able to interact with their babies on the same level or even at a higher level than the mothers of full-term babies (Korja, Latva and Lehtonen, 2012).

It is interesting to note that preterm birth itself is a catalyst to bonding, provided that the situation of prematurity and the care of the baby are promptly handled at the beginning. With an emotional and bonding support system in place, preterm birth will not be as severely frightening as it appears, allowing mothers to gradually recover from emotional challenges caused by premature birth and facilitating effective initiate and secure bonding with their babies.

Despite the emotional trauma that preterm birth causes, mothers can still feel they have an obligation towards their babies. Appiah, Agyemang and Antwi's study (2008) which was conducted to determine the effects of prematurity on bonding, revealed that 92.5% of the mothers felt close to their premature babies and ninety percent (90.0%) were comfortable relating to their babies. These mothers had to care for their babies for twenty-four hours a day, without skipping baby-care activities. They were more exposed to their babies and spent a lot of time with their babies in comparison to mothers of full-term babies. There is no literature that outlines negative bonding processes by caring mothers of preterm babies, such as withdrawal, maltreatment of the baby, and others. In a study to identify motives for mothers to stay at the hospital during their babies' hospitalisation in the NICU, De Araújo and Rodriguez (2010) found that mothers stayed

at the hospital so that they could be close to their babies, and to fulfill their maternal caring roles.

In an attempt to promote effective bonding, mothers should be supported. While mothers find themselves and their babies under hospital care, they should be assisted to cope with the stressful environment of NICU and to cope with caring of fragile, tiny babies, in order to promote effective bonding during the hospitalisation of their babies as well as upon discharge from the NICU (Tomey & Alligood, 2006; Roy, 2009; Sitzman & Eichelberger, 2011). However, for that to be possible, nurses in the NICU should promote effective coping and healing from the emotional trauma of preterm birth by attending to the mothers' concerns, enhancing and promoting successful coping and adaptation by promptly responding to the needs of the mothers (Neeraja, 2008; Master, 2009; Roy, 2009).

3.3.4. THEME 4: Participants experienced feelings of apprehension in the care of their babies.

In addition to the experience described in the previous themes, mothers experienced uneasiness in the process of caring for their babies. This was probably brought about by limited educational information that was supplied to them during admission and throughout the hospitalisation period, which mainly focused on feeding and hygienic practices. According to the participants, they were only given education on a few aspects related to the NICU baby care, as presented in the categories below.

Category 1

- **Discomfort and difficulties in the care of a preterm baby as a result of lack of knowledge**

It was revealed in the study that mothers were given inadequate information, mainly given information related to feeding and hygiene, which made it difficult to understand the conditions of their babies, as well as to ease anxiety brought about by preterm birth. The study showed that, mothers were only involved in feeding and maintaining hygiene, both for themselves and for their babies. This can be seen in the following quotes:

“They (nurses) told me I should wash my hands when I am coming to the baby, and if I remove a dirty nappy, I throw it away in the plastics and wash my hands.”

“They told me feeding hours, like I should feed at six o’clock and nine o’clock, how to measure milk because if you give her much the baby will vomit.”

“They showed me the changing room and the hospital uniform for patients and the cap”.

“They told me no jewelries are allowed, and if there is a visitor asking for me, I go to change clothes in the changing room and go to him/her, so that the baby doesn’t get bacteria and diarrhoea.”

Quite a lot of preterm baby care activities take place during the hospitalisation period. Some of these might be complicated specialised activities, but there are quite a number of activities that the mothers can be involved in. A study by Roets (1995) revealed that the needs of mothers with preterm babies remain unfulfilled, probably because the

nurses working in NICUs do not do a complete need assessment of the mother and baby. Thus needs of the mothers, whether physical, emotional, social or educational, are missed out, which makes it impossible to provide holistic care to the mothers and their babies.

As mothers are faced with emotional trauma resulting from preterm birth as well the burden of caring for the babies, it is worthwhile to establish what the mothers need, either related to themselves or their babies, or to both of them. Without a database of the needs of the mothers, it is impossible to identify their needs. In the absence of a needs assessment framework, the mothers were provided only with information on feeding and hygiene. There could be a lot more related to caring for a preterm baby than hygiene and feeding, that mothers could have been taught about, in the hospital and upon discharge.

There are various aspects that mothers ought to know related to preterm baby care. According to Price & Gwin (2007), mothers need to be educated on routine nursing observations of their babies in the language they understand, as well at the level that they can understand, and know what to do and how to do it. Harrison (2008) and Boxwell (2010) have outlined routine observations and educational activities that should be carried out for a preterm baby in NICU:

- Colour
- Respiration
- Abdomen

- Excretion
- Cord/Umbilicus
- Feeding charts
- General activities of the baby (e.g. bathing, hygiene).

It is impractical for mothers to interact freely with their babies if they do not understand their babies' condition. Similarly, fear and anxiety will not diminish if the mothers do not understand the behaviours and condition of their babies. The absence of the baseline need assessment framework does not only hinder needs identification (Roets, 1995), but deprives mothers of information related to the care of their babies, which might result in poor bonding and improper emotional coping mentioned in the previous themes.

Mothers need also to be educated on caring activities, so that they are able to interact positively and comfortably with their babies. This could effectively be done through educational and support programmes that should be implemented from admission and continued throughout the hospitalisation period (Melnik & Fineout-Overholt, 2011). In many instances, hospitals have their own educational and support policies and programmes in place. Unfortunately, in many others, including hospitals in the Northern Namibia, there are no such programmes or policies in place, hence mothers receive limited information or no information at all related to preterm baby care. The situation where no educational and support programmes/policies are in place makes it difficult for mothers to receive standardised information related to premature birth and caring for a

premature baby, emotional support as well as bonding promotion support, and increases the chances of stress and discomfort to the mothers caring for the babies.

Various hospitals have adopted programmes for such purposes, which might be a national programme (such as the March of Dimes Family Support National Programme in the United Kingdom), or the most frequently used internationally, Creating Opportunities for Parents Empowerment (COPE) programme.

COPE is an educational-behavioural intervention programme for parents who have delivered preterm babies. It is designed to begin very early in the course of the NICU admission, and extends through the first week after discharge. The programme is given to parents of premature infants in the first days after birth. The content and activities are specifically designed to help parents to cope and help their preterm babies to develop and grow. However, adoption of the more commonly used COPE programme may be unviable for adoption in Northern Namibia, given the context that the programme is technologically advanced, and state hospitals in Northern Namibia are quite technologically disadvantaged. The availability of computers, human resources skilled in information and technology may hinder successful adoption of such an advanced programme.

Mothers who have delivered, and are caring for preterm babies in hospitals which don't have educational-support programmes, are deprived of crucial information and support. Mothers cannot get support immediately following baby admission to NICU if the

progress of coping and caring for the baby is not monitored, mothers are not prepared for discharge, and no monitoring after discharge is offered. Mothers will seemingly endure the long journey of prematurity and preterm baby caring alone, probably on a trial-and-error basis as they do not have adequate information or they do not have any information at all.

Intervention programmes that focus on the support and education of mothers of preterm babies are important to mothers caring for babies in the NICU. This was shown in the study by Cooper, Gooding, Gallagher, Sternesky, Ledsky and Berns (2007), which evaluate the impacts of a national programme (The March of Dimes NICU Family Support Programme), and to provide information and comfort to families during the NICU hospitalisation of their newborn. It was concluded that the programme reduced stress, and made the mothers comfortable and more confident in their parental roles.

The education programme's effectiveness depends mostly on the feasibility of the activities in the programme. Mothers may be comfortable using the programme in the NICU because there is enough support and resources available to them, but upon discharge, some mothers might not be able to carry out activities at home because of the home environment and social and economic factors surrounding them.

Category 2

- **Inability to plan care of their babies at home related to lack of discharge preparation**

Participants were not given discharge preparation education, so that they could continue effectively with the care of their babies upon discharge from the NICU. In addition, there was no standardised discharge education programme in place in the NICU. These caused mothers not make or draw plans for home-care after discharge, as they had no foundations to build their plans on. This could be seen in the following quotations:

“I don’t know. Sometimes it comes into my mind, and get happy when nurses say I am about to go home with my baby. But I just don’t know where I will start when I go home. Maybe I will just keep my baby covered with a blanket and feed her.”

“I didn’t think of anything for care at home.” “I have to take care that the baby is always covered, give her food to eat, and taking her to the clinic.”

“I, myself..... [A minute of silence], I don’t know how I will care for her, since it is my first preterm baby. With the others, I didn’t have a problem because they were born well. Maybe I will just be breastfeeding her.”

“(Placing her right hand over right cheek) I just don’t know what to do. I never had a baby before, maybe my mother will help me take care.”

“[silent for 5 seconds]... I will... First as I come from the hospital, the baby will stay in its room for a month, so that it won’t come out often because it will be exposed to

wind/air and I will just go in to feed her as I use to do in hospital. I will clean and wash her. I will take her to the hospital as needed.... [Silent again]”.

Though the mothers might be excited and relieved that they were taking their babies home, they still expressed anxiety as the babies would not be cared for in the NICU. They were mainly concerned about their babies' well-being, growth and development (Brodsky & Ouellette, 2008; Zeanah, 2009). In a study that was conducted by Da Silva Rabelo et.al. (2007), to investigate the feelings and expectations of mothers of preterm babies at discharge, it was revealed that, although mothers experienced excitement and happiness at discharge, many reported being anxious and insecure about how to take care of their babies.

The long hospitalisation of the preterm baby in the NICU is exhausting to the mothers. When the preterm babies are about to be discharged from the NICU, mothers might be relieved, because at last their uncertainties, fears, shock and sadness because of the conditions of their babies would almost be over. However, with no pre-planned discharge educational-support of the mothers, they were unable to design how they would continue with the care of their babies at home, and this brought back the anxiety and fears as they are taking the babies home, away from the incubators and from nurses who had experience in caring for preterm babies.

Discharge planning does not only provide a basis for the mothers to gain knowledge and skills to continue with care of their babies at home, but it also provides emotional support for the mothers as they are preparing themselves to care for their babies on their own. According to Ricci and Kyle (2008) as well as to Meeks et al. (2009), the presence of a standardised health educational programme will not only provide health educational information, but in general will play an important role in promoting parental confidence in caring for the babies, reduce the risk of infection via promoting hygienic practices as well as in promoting visible infant growth and development.

Discharge education can also be done based on the discharge planning programmes of specific hospitals, or based on the internationally adopted COPE programme. Studies have shown that discharge educational programmes are useful to mothers who have delivered preterm babies and are caring for them. A study by Ferecini, Fonseca, Leite, Dare, Assis and Schoch (2009) to assess the perceptions of mothers of preterm babies on experience of the health educational programme, showed that mothers found the programme educational. Learning was enhanced, a possibility of sharing the knowledge with the family was created as well as improved nurse-mother relationships, and the participants found the programme to be relaxing.

The other major benefit of using an educational-support programme is that mothers do not only learn, acquiring skills and knowledge, but also get peace of mind if the programme has been successfully used (Ferecini et.al. 2009). Since some mothers are

lay people, discharge planning education can play a great role in their lives; they are taught and shown in real life how they are going to care for their babies at home, unlike having to search for information by themselves. In most instances in rural areas, mothers do not have access to the Internet, to libraries or to magazines, to get information. Some do not even know how to read, so they benefit from being taught in real situations.

Considering the benefits of using the educational programme demonstrated by studies conducted previously, it is necessary for hospitals to have discharge planning programmes in place, to prepare mothers for discharge. These programmes should include information that addresses all issues pertaining to preterm baby care: developmental issues, hygienic practices, sleeping and waking patterns of the baby, assessment of excretion patterns and excretion products, signs of illness, visiting and going out with the baby, feeding patterns, skin and membranes colouration, follow-ups and appointments, support services, temperature regulation, positioning, calculation of chronological age, and immunisations as well as complications (Kenner & Lott, 2007; Brodsky & Ouellette, 2008; Cloherty, Eichenwald, & Stark, 2008; Bakewell-Sachs, Blackburn, & Freda, 2009; Lauwers & Swisher, 2010). When mothers have all this information at their disposal, they are likely to be emotionally relaxed, and are able to understand their babies better, they are able to identify when things are probably not right in their babies' growth and development, and are also able to educate those who are around them on matters related to preterm care.

In conclusion, educational activities in the educational-support programme should aim at improving parental outcomes for parents and their family members. It should be the role of the NICU nurses to recognise the need for information for these mothers caring for preterm babies, as well as to facilitate the development of a collaborative, interdisciplinary plan of care, including discharge and follow-ups (Kenner & Lott, 2007). This collaboration and interdisciplinary planning will allow mothers to know to which Health Services Department to go to if they have identified any problems in the growth and development of their babies. Follow-ups on these mothers and their babies after discharge will strengthen the emotional support system of the mothers, and proper monitoring of the babies' growth and development.

3. 4. Summary

This chapter entailed analysis and discussion of the data collected through semi-structured interviews. Eight in-depth interviews were conducted in Oshakati Intermediate Hospital, to explore and describe the mothers' experiences of preterm birth and caring for their preterm babies. When data became saturated, as indicated by the emergence of repeated themes and categories, no further interviews were conducted. All the interviews were audio-taped and then transcribed verbatim by the researcher for analysis.

Data was organised into themes and categories, and each theme and its categories was discussed. Four themes were developed during data analysis:

- Mothers caring for preterm babies experienced being emotionally overwhelmed and challenged after the birth;
- Mothers attempted to cope with preterm birth through acceptance;
- Participants experienced difficulties in bonding with their babies;
- Participants experienced feelings of apprehension in the care of their babies.

A literature control was conducted to validate the findings of the research study.

CHAPTER 4

CONCEPTUAL FRAMEWORK

4.1. Introduction

In the previous chapter, data was analysed and a literature control was done. Experiences of mothers caring for preterm babies were identified and described, and results were reported in themes and categories. Chapter 4, which constitutes Phase 2 of the study focuses on developing a conceptual framework for the discharge health educational-support programme, with the purpose of developing a discharge health educational-support programme for mothers who have delivered and are caring for preterm babies in Northern Namibian state hospitals. The conceptual framework development was done based on Dickoff, James and Wiedenbach's reasoning map (Dickoff et al. 1968).

4.2. Conceptual framework

From the study, it was revealed that mothers experienced emotional challenges and need for education related to the care of their preterm babies. This necessitated the development of a discharge health educational-support programme. The discharge health educational-support programme was developed using prescriptive theories as foundational framework.

Prescriptive theories provided a fundamental framework for this study. Prescriptive theories (also called situation-producing theories) are theories that prescribe activities or interventions required to reach predetermined goals, and predict the consequences of

interventions. The intention of conceptualisation using prescription theories was to guide prescriptions (planned actions) towards the predetermined goal to be achieved, provide directives for prescriptions, and conceptualise the survey list (McEwen & Wills, 2007; Lloyd, Hancock, & Campbell, 2007). Dickoff, James and Wiedenbach's model (1968) was used as conceptual base for the development of the programme.

The Dickoff's model was used to link the findings of the study to practical nursing care situation, thus providing a foundation for the discharge health educational-support programme development. The model outlines six survey list questions, which explain concepts and analyse the prescribed activities that are aimed at realising the programme goal:

- a) Who performs the activity? (Agent)
- b) Who is the recipient of the activity? (Recipient)
- c) In what context is the activity performed? (Context)
- d) What is the energy source of the activity? (Dynamic)
- e) What is the guiding procedure, technique or protocol? (Procedure)
- f) What is the end point of the programme? (Terminus) (McEwen & Wills, 2007).

4.3. Explanation of concepts

4.3.1. Agent: Researcher as a registered nurse/midwife

An “agent” is a person who performs an activity (Dickoff et al. 1968). In this study, the agent was the researcher who was a registered nurse and midwife, who facilitated the implementation and execution of prescribed activities aimed at addressing the challenges and problems of mothers who delivered and were caring for preterm babies. According to Meleis (2011) the researcher uses her professional knowledge, skills, and practical experience in performing the prescriptions. Furthermore, for the researcher to carry out the facilitator role there is a need to observe a number of qualities that aid in establishing therapeutic nurse-mother relationships:

- Genuineness, where the facilitator is aware of her inner feelings, honest, and able to communicate in a relaxed appropriate manner;
- Trust and acceptance, which involve respect of mothers’ rights and simple acceptance of them as autonomous worthy beings, who can make their own decisions;
- Empathetic understanding so that she understands ideas and feelings of others from their perspectives;
- Establishing therapeutic nurse-mother relationships;
- Possession of communication, interpersonal, persuasion, supervisory skills; and
- Ability to coach, motivate and guide the mothers in the learning process (Bynum-Grant & Travis-Dinkins, 2010; Fero, Herrick, & Hu, 2011).

In addition, the researcher's role as a facilitator entails being:

- An educator in health promotion to promote healthy lifestyles;
- An organiser and coordinator of the learning process: outlining goals of the educational programmes, developing plans of action, providing learning material and eliminating obstacles to learning;
- Evaluator of the health programmes' outcomes, for which she is accountable (Daniels & Nicoll, 2011; Bastable, Gramet, Jacobs, & Sopczyk, 2011; Corkin, Clarke, & Liggett, 2012).

4.3.2. Recipient: Mothers who delivered and are caring for their preterm babies

The person to whom the activity is directed, and hence receives the activity, is termed a recipient (Dickoff et. al. 1968). From the study results, it was revealed that mothers experienced emotional challenges, attempted to cope via acceptance, had problems in bonding, and felt apprehension in the care of their babies. Thus, in this study, the interventional, prescribed activities designed by the agent are directed towards the addressing the above challenges. Therefore, mothers were the recipients of the activities. In addition, mothers are autonomous beings who can make their own decisions and manage their own lives, and that may also influence learning. Hence, the nurse/midwife should observe these parameters that may influence the teaching-learning process:

- Mothers' motivation to learn;
- Mothers' interest in the programme;
- The urge and readiness to learn;

- The level of self-confidence;
- Perception of the value of the activities to be learned;
- Their abilities to command their own learning (Durham, 2008; Dreeben, 2010; Falvo, 2011; Tollefson, Bishop, Jelly, Watson, & Tambree, 2012). Hence, mothers should be fully involved and spearhead the teaching learning process, while the nurse/midwife facilitates the learning process through motivating the mothers.

4.3.3. Context: The Neonatal Intensive Care Units

“Context” refers to the environment in which the activity is undertaken (Dickoff et al. 1968). Since the study was contextual, the data was collected in the natural context – in the NICUs where mothers care for their preterm babies. Hence, the discharge health educational-support programme was developed for NICU settings and should only be practically applicable to NICU environments (Meleis, 2011). The NICUs of Intermediate Oshakati Hospital were selected for the study because the hospital is centrally located; it is the regional referral hospital to all the Northern Namibian hospitals, and is the third biggest hospital in the country.

For effective teaching-learning to take place, the environment where programme implementation is taking place should be conducive to learning. The characteristics of a conducive environment include the following:

- The physical features of the environment: the environment should be therapeutic, in which the agent (registered nurse/midwife) should create mutual trust-relationships with the mothers;
- The environment should be large enough to allow for free and comfortable interaction in the learning process;
- The arrangement of the room should allow for visibility and audibility of the agent so that mothers can clearly see and hear when demonstrations/discussions are being carried out/held by the registered nurse/midwife;
- Humidity should be reasonable: the room should be well ventilated;
- The room ought to be at a controlled temperature: too hot or too cold temperatures may lead to mothers losing concentration;
- The noise level should be minimal, or if possible there should be no noise at all. This can be done by placing a notice on the door such as “procedure in progress, do not disturb”. The registered nurse/midwife can also select a room which is less exposed to noise.
- The environment should also be convenient to the mothers, so that they are comfortable with the timing of implementation of activities. This means that activities should be carried out at the time the mothers are relaxed, for instance in the afternoons ;
- Allocation of times for activities to be implemented should be adequate, that is not too short, so that activities are carried out in a rush, and not too long, so

that mothers become bored (Truglio-Londrigan & Lewenson, 2011; Miller & Stoeckel, 2011; Mertens & Wilson, 2012).

4.3.4. Dynamics (Interactive facilitation and communication)

“Dynamics” denotes the energy source or motivation for the activity (Dickoff et al. 1968). The dynamics are motivating or driving factors in performing activities to realise a particular goal (Meleis, 2011). In this study, the motivation to perform the prescriptions came from themes and categories obtained from the study results, which needed to be addressed:

- Emotional challenges after birth of preterm babies;
- Attempt to cope through acceptance;
- Expression of difficulties in bonding with preterm babies;
- Expression of apprehension feelings in the care of a preterm baby.

To ensure that these challenges and problems were addressed, interaction facilitation and a dynamic communication approach were undertaken. “Interactive facilitation” entails a nurse assisting the mothers to identify, develop and mobilise their personal strength in order to deal with the confronting problem (Peterson & Bredow, 2011).

“Interactive communication” comprises the exchange and processing of information between the nurse and mothers. The teaching-learning process is viewed as dynamic and interactive, which involves deliberate convention of information to the mothers in response to the identified challenges and problems (themes and categories), which are

aimed at achieving the programme's goals (Antai-Otong, 2007; Aquino, 2008; Lubkin & Larsen, 2011).

The nurse/midwife, who is an agent, is the sender of information to the recipient (mothers). Mothers process and analyse the sent information (message), interpret the message and respond to the message, based on how they have interpreted the message.

Based on the feedback or interpretation, the nurse/midwife is able to validate or modify the message, which involves assessing whether the mothers have understood the message as the nurse/midwife wanted them to understand it. This communication pattern is dynamic, and is expected to change, depending on the progress of the learning process (Antai-Otong, 2007; Aquino, 2008; Lubkin & Larsen, 2011). Therefore, interactive facilitation and communication form an interpersonal relationship between the nurse and the mothers, which is essential for effective learning to take place.

4.3.5. Procedure: A discharge health educational-support programme

The term "procedure" implies implementing the guiding procedures, techniques or protocol of the activity (Dickoff et al. 1968). "Procedure" refers to a series of steps to be undertaken to bring about the desired goal, which can be policies, protocols, programmes or rules (Meleis, 2011). The procedure in the study was the facilitation of learning through implementation of interventional activities of a discharge health educational-support programme, whose sole purpose was to provide emotional support,

and provision of knowledge and skills to the mothers who had delivered and were caring for preterm babies in Northern Namibian state hospitals.

The health educational-support programme was implemented in seven sessions. Each of the sessions addressed the challenges and problems identified (themes and categories). It was also upon the objectives that the evaluation of the programme was carried out, to determine its effectiveness.

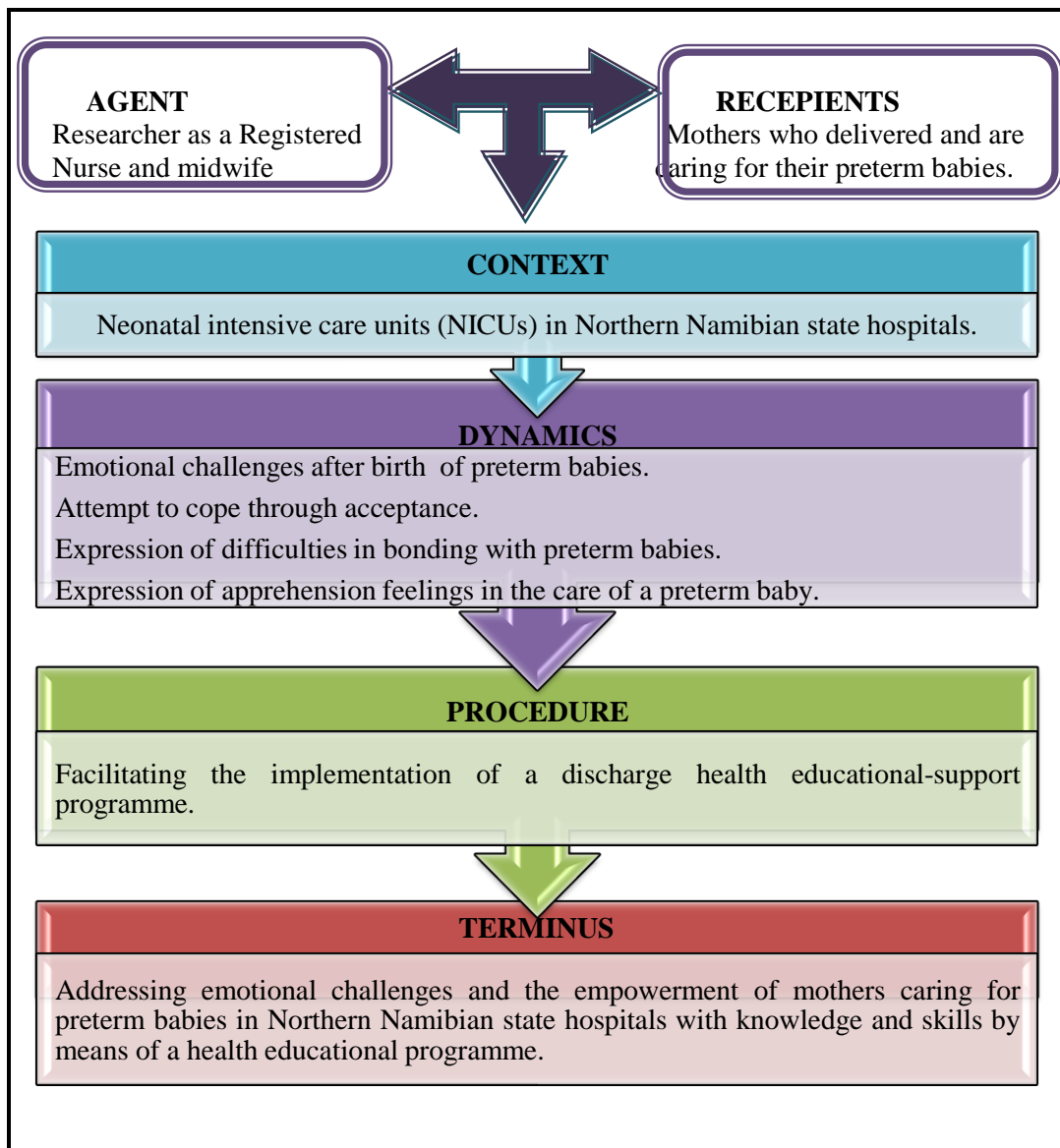
4.3.6. Terminus (Addressing emotional challenges and provision of knowledge and skills to mothers who delivered and are caring for preterm babies).

The terminus is the end point or goal of an activity (Dickoff et al. 1968). It refers to the goals that one would like to achieve by employing certain activities (Moleki 2008). In this study, the terminus is the ultimate goal of this discharge health educational-support programme, which is to address emotional challenges brought about by preterm birth, as well as empowerment of mothers with knowledge and skills that will enable them to confidently and competently care for their babies at home after discharge (Meleis, 2011).

Since the terminus entails addressing emotional challenges and provision of knowledge and skill to the mothers, the registered nurse/midwife (agent) should consider the cognitive, psychomotor and affect domains of mothers' teaching and learning (Falvo, 2011). For one to conclude that learning has occurred, mothers should have gained knowledge and intellectual skills from the implemented programme.

Dickoff's concepts and survey questions are schematically applied to the development of the conceptual framework of this study as illustrated below:

Figure 2. Conceptual framework for the discharge health educational-support programme



4.4. Summary

Chapter 4, which constituted Phase 2 of the study, focused on development of a conceptual framework for the discharge health educational-support programme. Prescriptive theories provided a fundamental framework for this study. The intention of conceptualisation using prescription theories was to guide prescriptions (planned actions) towards the predetermined goal to be achieved, provide directives for prescriptions, and conceptualise the survey list. The Dickoff's model was used to link the findings of the study to practical nursing care situation, thus providing a foundation for the discharge health educational-support programme development. The model outlines six survey list questions, which explain concepts and analyse the prescribed activities that are aimed at realising the programme. The concepts agent, recipient, context dynamics, procedure and terminus were explain in relation to the conceptual framework.

CHAPTER 5

DEVELOPMENT AND IMPLEMENTATION OF A DISCHARGE HEALTH EDUCATIONAL-SUPPORT PROGRAMME FOR MOTHERS CARING FOR PRETERM BABIES IN NORTHERN NAMIBIAN STATE HOSPITALS

5.1. Introduction

Chapter 4 focused on a conceptualisation framework that was based on Dickoff's reasoning map as a theoretical base for the study. Chapter 5 describes the development, implementation and evaluation of the discharge health educational-support programme for mothers caring for preterm babies in northern Namibia state hospitals. From the study, it was revealed that mothers endured emotional challenges when they learnt that they had delivered preterm babies, and they received limited education related to their baby care during admission and the hospitalisation period, and had inconveniences and difficulties in the care of their babies. Thus, the discharge health educational-support programme aims at addressing the identified needs, problems and concerns of the mothers caring for preterm babies.

5.2. Development of a discharge health educational-support programme

Programme development constituted Phase 3 of the study. The programme was developed through four phases: needs assessment, conceptual framework, developing and implementation of the programme, and evaluation of the programme. A needs assessment was carried out in Phase 1 of the study, and provided a foundation for

programme development. The programme contained the goals of the programme, objectives, interventional activities, teaching strategies and evaluation strategies (McKenzie, Pinger, & Kotecki, 2011; Gilbert, Sawyer, & Neil, 2009; Talbot & Verrinder, 2009; Doll, 2010; Watson, 2011). It also contained intervention advice, and activities that will enable the mothers to cope better with the problematic situation. The information contained in the programme was summarized in a pamphlet that mothers took home (handouts). Dickoff's reasoning map was used as a conceptual base for programme development and implementation, in which the researcher was guided by the six survey list questions (see chapter 4) to develop and implement the programme.

The programme formulation process can be depicted as follows:

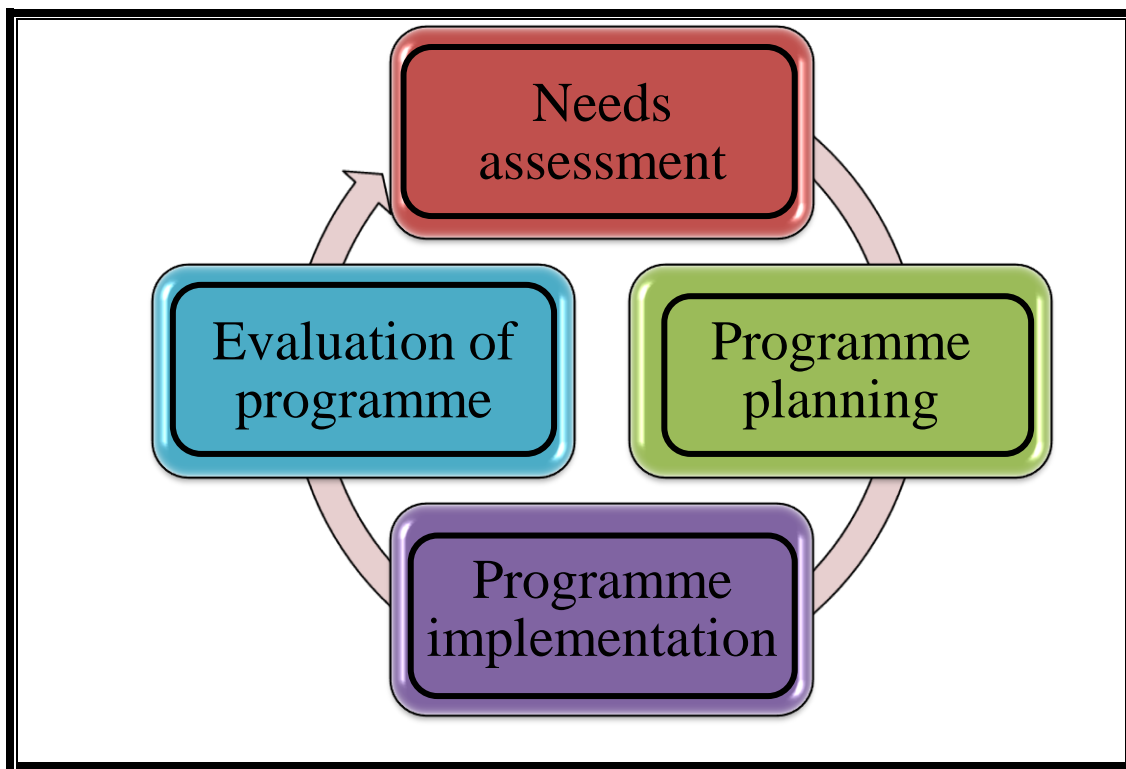


Figure 3. Programme development process

The programme was conceptualised using the Dickhoff, Wiedenbach and James model. The concepts were interacted in order to achieve the objectives of the study. This interaction can be depicted as follows:

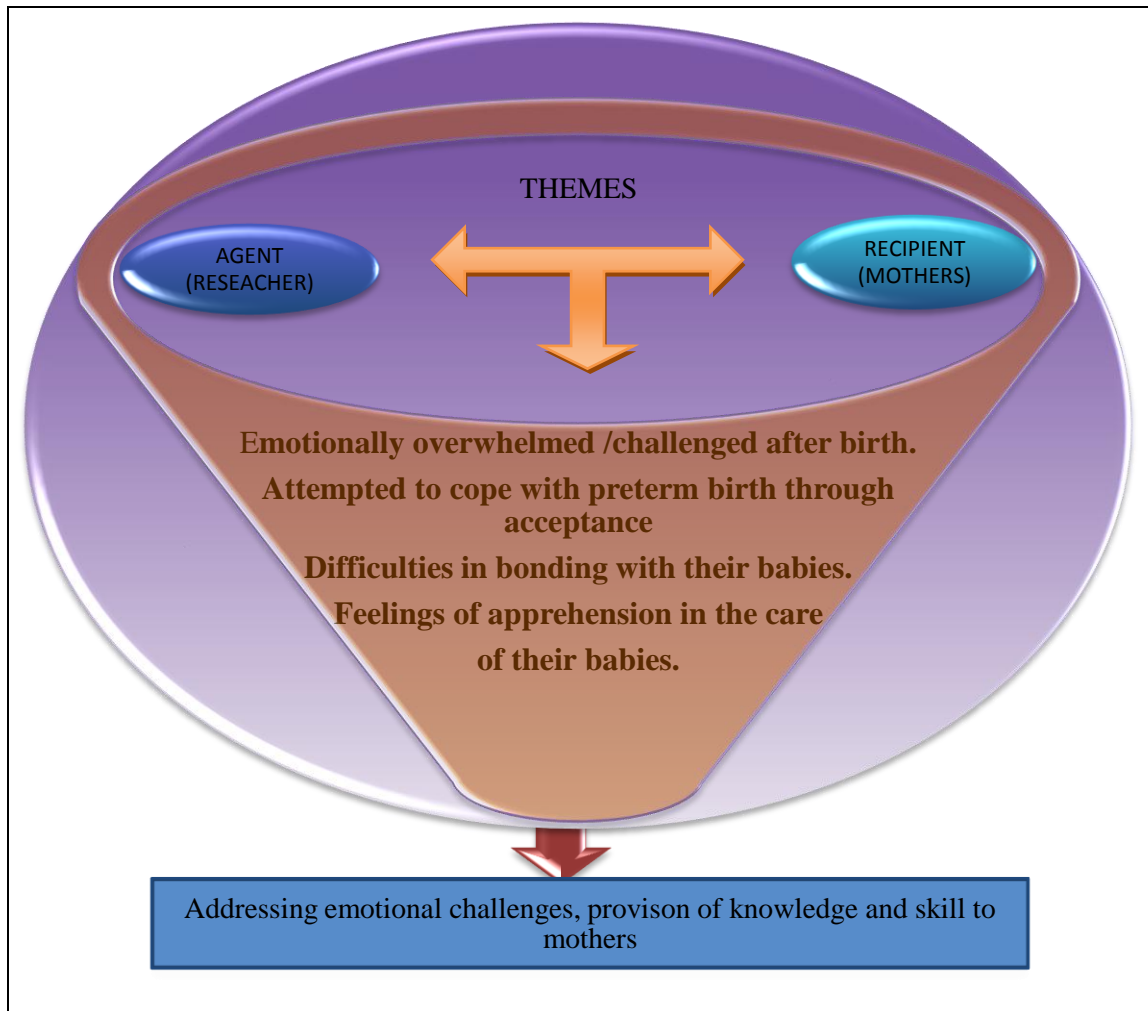


Figure 4. Integration of the themes and conceptual framework in programme development.

5.2.1. Purpose of programme development

Health educational programmes are developed to enhance parents' understanding of their babies' illnesses and their effects on the wellness of the sick child, to build confidence and competence in the caring of the affected child, and to reduce family distress and maladaptation (O'Donohue & Cummings, 2008; Shaw & De Maso, 2010). The purpose of this programme was to empower the mothers with knowledge and skills that would enable them to effectively and competently continue caring for their babies upon discharge from the hospital, as well as to provide emotional support of these mothers.

5.2.2. The objectives of the programme

The objectives were:

- 1) To provide emotional support aimed at addressing the emotional challenges that were brought up by preterm birth;
- 2) To improve interaction between mothers and babies, as well as to promote active involvement in the care of their babies both during hospitalisation and upon discharge; and
- 3) To provide skills and knowledge that will facilitate effective transition and continuation of the care from hospital to home setting.

5.2.3. Philosophical approach to learning

According to Toseland, Haigler and Monahan (2011), increasing the mothers' confidence and competency requires training that is aimed at providing the mothers with skills they need in order to care for their preterm babies. Toseland et al. (2011) argue that implementation of educational-support programme does not only provide the mothers with skills, but also focuses on helping mothers to develop knowledge needed to carry out baby care activities, enabling them to cope with their responsibilities.

For this health educational programme, the humanistic approach to learning was used as a philosophical base. Humanistic theorists believe that learning is dictated by the recipients' (mothers') motivation to learn, thus the agent (nurse/midwife) acts as a facilitator to guide and facilitate the learning process. These theorists recognise the significance of emotions and feelings, respecting the rights of individuals to make their own choices and to nurture the potential for creativity in each person (Burton & Omrod, 2011; Keating, 2011).

Of significance in this theory are two principles of learning and teaching: the teacher-learner relationships (in this case the agent being the teacher and the recipient being a learner) and the context, (the NICUs in the pediatric and maternity wards). The agent-recipient interpersonal relationship is a major variable influencing learning, and in turn affects the learning context. Learning is facilitated by allowing people freedom, supporting them, and making learning enjoyable, through engaging mothers in mutual

collaborative relationships (Coon & Mitterer, 2008; Butts & Rich, 2011). Literally speaking, the presence of conflicts and tensions in the context (NICU) significantly affects the quality of the relationship between the agent and the recipients, and these conflicts may have an influence on the learning process of the recipients. In addition, humanistic theorists believe that adults, including the mothers under study, can spearhead their own learning; hence these theorists emphasise the importance of the “self”: self-direction, empowerment and learner autonomy.

“Self-direction” refers to a recipient’s ability to plan and manage their own learning. “Empowerment” relates to a way of organising teaching that allows recipients to have more control over the learning process, while “autonomy” denotes independence and a sense of control over external forces (Coon & Mitterer, 2008; Bastable et al. 2011). In facilitating learning, recipients should not be seen as passive objects, but rather active, self-sustaining beings who are independent and have control over their lives.

Under the umbrella of humanistic theories, Carl Rogers’ client-centered therapy approach explains the role of the therapist as a facilitating learning for the client. The therapist, in this case the agent, guides the recipient (mother) to develop a deeper understanding of the “self”, through reflecting on the statements made by the recipient, so that the recipient is assisted in developing self-awareness. The agent is viewed as a facilitator of learning, who provides resources for learning, and as a knowledgeable person who shares knowledge (Keating, 2011; Burton & Omrod, 2011).

5.2.4. Principles of adult learning

In addition to Kolb's theory of learning, there are certain principles in adult learning that should be considered when addressing the experiences of the mothers who delivered preterm babies as adult learners:

- **Dialogue:** Adult learning is best achieved via dialogue, and through interacting with other individuals. The researcher promoted exchange of ideas among mothers and herself through sharing and discussion of experiences (among mothers) and of activities to be learned. The mothers were free to approach the researcher at any moment, and they had the researcher's contact number for such purposes.
- **Safe environment:** Mothers need to feel welcomed during the learning process, and they need to feel safe within the NICU environment. This safe environment created a discussion platform based on trust, thus reducing fear in the mothers. Therefore, with safe environment, mothers as adult learners will be free to participate, and the chances of honest and free dialogue are increased. The researcher had shared time with mothers resulting in establishment of rapport between mothers and the researcher. The researcher knew the mothers by their names, and the mothers knew the researcher by name.

This "socialization" created a sense of safety and worthiness in the mothers, making it easier to discuss matters that mothers felt were important to them

in the NICU setting. Mothers were made aware that making mistakes during practicing the planned activities is not punishable, as making mistakes was viewed as part of the learning process. The research ethical measures were adhered to throughout the research process, including the learning period.

Furthermore, the NICU setting was well prepared with adequate lighting, well ventilated, and noise was kept at minimal with sticker marked “Teaching in Progress”. The tables and chairs were arranged in the circular format to enhance interaction with every mother during discussions. During demonstrations and skills practice, the NICU was re-arranged to create adequate space so that mothers have enough space to practice (chair and tables shifted to corner side).

- Engagement: Mothers should be engaged in their learning process. This entails allowing mothers to actively participate in the learning process, thus making them owners of the learning process. The mothers were involved in guided practicing activities that allow them to be fully involved in active learning, such as, skills practice, workbook activities and reflection on the learned activities.
- Respect for ideas, feelings and actions: Since mothers were autonomous being that can make their own decision, mothers were encouraged to express their ideas on matters that they feel concern them, the researcher or the NICU during the teaching-learning process. Therefore mothers take control of the

learning process and take the lead in their own learning, while the researcher acts as a facilitator (Niven 2008; Hord, Roussin & Sommers, 2010).

5.3. Programme outline

5.3.1. Programme content

Information from the needs assessment phase and from data analysis as well as from literature review of various books, articles and websites was used to compile the programme contents. The programme contains mother-child activities that focus on increasing the mother's understanding of the baby's condition, as well as activities that facilitate participation in child care. The activities that were taught to the mothers were compiled in an activity workbook that was used during the learning process, as well as a pamphlet containing a summary of the activities in a workbook that mothers took home after discharge. These activities included interventions for emotional support of the mothers, baby care activities such as baby observations, general care activities of the baby, and activities to promote positive interaction between the mothers and their babies. The programme that was developed is shown below:

Table 2. Contents of a discharge health educational-support programme for mothers caring for preterm babies in Northern Namibian state hospitals.

| THEMES/ CHALLENGES | PROGRAMME OBJECTIVES | ACTIVITIES | EXPECTED OUTCOMES |
|--|--|---|---|
| 1. Emotional challenges following preterm birth. | To provide emotional support aimed at addressing emotional challenges that were brought up by premature birth. | Addressing emotional challenges and improving coping towards preterm birth: *Managing emotional challenges through counselling sessions *Creating positive nurse-mother relationships in the NICU. *Providing information related to the nature of preterm birth and prematurity (causes, risk factors etc.) | Mothers experience a decrease in the levels of the emotional challenges. |
| 2. Difficulties in bonding with the babies. | To improve interaction between mothers and babies as well as to promote active involvement in the care of their babies both during hospitalisation and upon discharge. | Creating bonding with the babies and relieving anxious feeling towards the baby: * Active involvement of mothers in the care of their babies. *Promoting and maintaining bonding through positive interaction with their babies (touching, rooming and kangaroo care). | Mothers exhibit no anxious feelings towards their babies, create and maintain bonding with their babies and are actively involved in the care of their babies. |
| 3. Inconveniences in the care of their babies. | To provide skills and knowledge that will facilitate effective care of preterm babies by the mothers. | Training of mothers on all pertinent aspects of preterm baby care through skills practice. | Mothers know how to perform the baby care activities confidently and effectively. |
| 4. Apprehension in the care of the babies related to inadequate knowledge. | Provision of educational information that will enhance effective transition and continuation of the care from hospital to home setting. | *Provision of educational materials (pamphlets, posters). | Mothers are knowledgeable in aspects of a caring for a preterm baby, understand their babies' conditions, and understand how to monitor growth and development of their babies at home. |

5.3.2. Emotional support of mothers following preterm birth

Mothers revealed that they experienced emotional challenges following preterm birth. These emotional challenges need to be addressed so that complications such as depression can be identified and prevented as early as possible. This can be done through counselling sessions that are aimed at assisting mothers to cope with preterm birth and subsequently caring for their preterm babies.

Melynk, Feinstein, Alpert-Gillis, Fairbanks, Crean, Sinkin, Stone, Small, Tu and Gross (2006) have found that emotional support programmes are delayed and are only started some weeks after preterm birth, resulting in the development of low confidence levels in parenting the babies, and also a chance to develop negative perceptions towards preterm birth and towards their babies. According to Brett et al. (2011), the following interventions can be effective in supporting and providing information to mothers of preterm babies:

- Educating mothers using individualised developmental and behavioural care programmes;
- Organising support platforms where mothers can meet and discuss their situations;
- Psychotherapy;
- Interventions to teach emotional coping skills and active problem-solving;
- Good communication throughout hospitalisation period.

It has been proved that intervention programmes which combine early crisis intervention and psychological aid through hospitalisation, coupled with intense support of the mothers, reduce symptoms of traumatisation related to preterm birth (Jotzo & Poet, 2005). Therefore, it is crucial that interventions such as counselling by the social worker, psychologist or a counselling nurse, should be initiated as early as possible to assist the mothers to deal better with the emotional effects of preterm birth.

5.3.3. Bonding with the preterm baby

When mothers have accepted their preterm babies, bonding should be promoted and maintained. However, as mentioned earlier, the participating mothers experienced anxiety in handling such small babies, which might hamper the bonding process. Mothers should be assisted in promoting and maintaining the bonding process, so that they interact with their babies without fear. According to Lissaner & Fanaroff (2011), mothers ought to be involved in the care of their babies from the start of admission. This will improve their confidence and give them comfort. When the baby is able to suck or drink from the cup, mothers should be encouraged to hold him or her during feeding (Lissaner & Fanaroff, 2011). With guidance from nurses, bonding and interaction of the mothers with their preterm babies can be promoted in the ways discussed below.

1. Touching

Although the preterm babies are naturally so tiny, and they may be medically unstable, which makes it quite difficult for the mothers to pick them up and cuddle them, bonding

can effectively be achieved through touching. Mothers can touch their babies through the portholes of the incubator, gently and lovingly caressing them, touching their feet and hands and tenderly massaging them from head to toe (Arnold, 2010). Touching has the following benefits to both the mothers and the babies:

Benefits to the mother:

- She feels she is at least doing something for her baby as a parent, and thus she feels she is also part of the baby-care team.
- It lifts up the moods of the mother.
- She feels comforted, calm and more connected to the baby.
- Touch creates a happy family atmosphere between the mother and the baby, meaning she gains a sense that the baby is part of her family.
- Benefits to the baby:
 - The baby feels good when it is being touched.
 - It stimulates development (Groeneveld, 2009; Moyse, 2009; Arnold, 2010; Green 2011).
 - Research has shown that touching aids in weight-gaining and therefore in reducing the hospitalisation days. A study by Vickers, Ohlsson, Lacy, & Horsley (2004) to determine whether infants exposed to massage experience improved weight gain and earlier discharge compared to infants receiving standard care, it was found that babies improved weight gain by 5.1grams and reduced length of stay by 4.5 days. However, how the interrelationship between touch and

stimulation of development and weight gain works, has not been properly studied.

2. Kangaroo care

“Kangaroo care” has become a common practice in most hospitals globally. It entails placing the baby between the mother’s breasts in an upright position for skin-to-skin contact. The baby is usually wearing a diaper and also has a covering on its head, and when it is put in direct contact with the mother’s body it is covered, so that it is kept warm (Fraser & Cooper, 2008).

Benefits associated with kangaroo care are:

- It creates a feeling of closeness between the mother and the baby, and they get to know each other better.
- Mothers gain an increased level of self-esteem and comfort in the care of their babies.
- It awakes a sense of responsibility in the mother.
- The baby sleeps well and cries less; and
- The baby stays warm and calm (Bowden & Greenberg, 2009; Neifert, 2009; Green, 2011).

A study conducted by Feldman, Eidelman, Sirota and Weller (2005) to study whether kangaroo care in preterm infants affected parent-child interaction and infant development, found that mothers showed positive effects: the mothers’ moods were lifted, mothers touched the babies often, and they adapted to infant behaviours/cues, reported less depression and perceived their babies as being less abnormal. As regards

the infants, they showed an increased level of alertness. Thus it was concluded that kangaroo care has a positive influence on the parenting process, as well as on infant growth and development.

3. Rooming-in with the baby in the NICU

Rooming-in involves mothers spending time with their babies in the NICU, caring for the baby as they were supposed to do at home. This is a preparation for the discharge method, where the mother carries out her parental role, with support from the nurses, or independently, with nurses available to offer support and help where she is uncertain or has queries related to her caring duties (Arnold, 2010). Rooming-in provides sufficient time for the mother to touch and kangaroo her baby. The benefits of rooming-in were revealed in a study by Bennett and Sheridan (2005), to identify mothers' perceptions of rooming-in in the NICU. It was found out that rooming-in had beneficial experiences in preparation of the mothers to transit from hospital to baby care at home. The identified benefits included that rooming-in aided in breast feeding, helped in bonding with the baby, increased mothers' confidence, helped the mothers to feel the baby was also part of family, and promoted a sense of motherhood. Thus it is important that the health educational programme should teach these interventions to promote bonding.

5.3.4. Educating mothers on aspects of preterm baby care.

According to Lauwers and Swisher (2010) mothers want to do something for their babies, only they do not know what and how to do it. Hence they need to be educated on

several matters, so that they can create a meaningful baby-mother relationship, learn care-giving, and promote confidence in the care of their babies after discharge (Arnold, 2010). Therefore, mothers need to be educated in the following aspects:

- Protection of the baby from infection and conditions that compromise its health, which include hygiene, for the mother, the baby, the environment, and the interaction with society at large (Lauwers & Swishers 2010; Cloherty et al. 2008)
- Nursing physical observations of the preterm baby as outlined by Boxwell (2010) as well as by Brodsky and Ouellette (2008):

Table 3. Observations for a preterm baby

| CHARACTERISTIC(S) | OBSERVATION(S) |
|--------------------------------|---|
| Color | Paleness (grey), jaundice (yellowish), cyanosis (blue) |
| Respiration | Apnea attacks (breath cessations), ribs retraction on breathing, grunting on breathing |
| Abdomen | Distension, soft/hard |
| Stools and urine (excretion) | Colour, frequency (how often is baby passing stools/urine), consistency/texture |
| Skin | Rashes, irritations, edema (swelling), birthmarks/ skin pigmentations |
| Cord/Umbilicus | Discharge, colour, odour of discharging stuff |
| Eyes | Discharges |
| Feeding | Sucking ability, vomiting/regurgitation, baby satisfied after feeds |
| Mucous membranes | Dryness of lips and mouth, oral thrush, wounds |
| Fontanels | sunken/bulging, |
| General activities of the baby | Movements (increased/decreased), lethargy (floppiness) convulsions, crying (strength of voice, frequency) |

- Feeding and nutrition, methods of feeding (frequency and nutritional supplements), chronological and correct age for introduction of solids as

explained below (Escott-Stump, 2008; Brown, Isaacs, Krinke, Lechtenberg, & Murtaugh, 2010; Curtis & Schuler, 2010).

- Chronological age calculation, which is counted from actual date of birth and correct age, which is counted based on the time the baby should have been in the womb. Corrected age is calculated as: Chronological age minus the number of weeks the baby arrived earlier. For instance, baby Leonard was born at 28 weeks (7 months) of gestation, born on May 2011, and he was supposed to be born in July 2011. Leonard arrived or was born 8 weeks (two months) earlier from his expected month of delivery. In November 2011, he turned 6 months, from the date he was born (i.e. his chronological/actual age). However, scientifically, Leonard is not 6 months old because he came two months earlier. Therefore, he is 4 months old now (Ricci & Kyle, 2009; Valman & Thomas, 2009).
- Assessment of growth and milestones development, which entails weight gaining, assessment of neuro-motor assessment of neurological developments such as smiling, grabbing of objects, sitting, crawling, walking and talking. All these milestones should be assessed based on corrected age (Davey, 2007; Nair & Jain, 2008; Coté, Lerman, & Todres, 2009; Curtis & Schuler, 2010).
- Immunisations, stressing the importance of routine baby immunisations that should be started at 8 weeks from birth, irrespective of gestational age. The baby should preferably start immunisations before going home upon discharge (Valman & Thomas, 2009).

- Complications such as neuro-sensory defects (such as hearing, blindness) neurological complications (cerebral palsy, necrotic-enterocolitis, patent ductus arteriosis, mental retardation) and metabolic complications (e.g. jaundice, anemia) (Marino & Fine, 2009; Pillitteri 2009; Nosarti, Murray, & Hack, 2010). The programme content was compiled into a pamphlet that mothers took home to ensure that they had all information they needed at their disposal.

A health educational-support programme is a valuable teaching tool for the mothers who have delivered and are caring for a preterm baby. It is not only a teaching tool, but a source of support and relaxation for these mothers. With such abundant knowledge, one can expect the mothers to be comfortable in the care of their babies, as well as confident and effective in the care of their babies at home after the baby is discharged from the NICU.

5.4. PROGRAMME IMPLEMENTATION

Programme implementation involves putting the designed programme into effect, or simply executing the planned actions (Lundy & Janes, 2009). To achieve effective implementation of the programme as well as realisation of the goal and objectives of the programme, it is imperative to select appropriate teaching methodology, which will enable effective execution of the activities in the programme, thus enhancing learning (Bassavanthap, 2008; Rubin & Babbie, 2010; Bathrolomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). The researcher, who is a registered nurse/midwife, implemented the programme herself.

The discharge health educational-support programme was implemented on the mothers whose babies had reached 1.800 grams, so that the mothers were prepared in time to gain knowledge and skills before the babies reached the Oshakati Intermediate Hospital's required discharge weight of 2.150 grams. During the implementation process, the researcher visited the mothers daily in the first week of programme implementation and on alternative days in the second week, to support them and guide them in the learning process so that they mastered the activities on the programme. Seven teaching sessions were conducted during the first week, of which one was counselling-support, conducted by a senior nurse working in the Maternity Department.

The programme had a time frame which set the dates for starting and expected completion. A work plan for implementation was also drawn up, which provided guidance on what was to be implemented, when, by whom and how it should be implemented (Bensley, 2009; Doll, 2010; Watson, 2011). To address the identified problems as manifested in the themes (which represent the concept of dynamics), the programme was implemented in seven sessions, each with a specific objective and expected outcome, as well as activities to allow mothers to reflect on what they had learnt. The programme was implemented as per framework on next page.

Table 4. Sessions 1-7 of the discharge health educational-support programme

Day 1- Session 1: Introduction to the discharge health educational-support programme

1.1. Orientation to the health education programme

- Implementing agent/facilitator : NICU Nurse/Midwife
- Method of implementation : Group discussion and reflection.
- Time frame : 10 minutes.
- **Content**

The session aims at giving background information to the mothers on aims and objectives of the programme. The research that was conducted by registered nurse/midwife Velikoshi in Oshakati Intermediate Hospital in February 2010 revealed that mothers who have delivered and are caring for their preterm babies in the NICUs of Oshakati Intermediate Hospital experienced emotional challenges following preterm birth, attempted to cope with preterm birth through acceptance, expressed difficulties in bonding with their preterm babies and express feelings of apprehension in the care of their babies.

Thus the discharge health educational-support programme was developed to address these emotional challenges, improve interaction between mothers and their babies as well as to promote active involvement of the mothers in the care of their babies, and to equip the mothers with knowledge and skills that will enable them to effectively and competently care for their babies after discharge from NICU.

The programme will be implemented by the nurses/midwives working in the NICU over a five (5) days period, and in seven sessions (including the introductory session).

1.2. Addressing emotional challenges

- Implementing agent/facilitator : NICU Nurse/midwife, Social worker, psychologist (if available)
- Expected outcome: Mothers experience a decrease in the levels of the emotional challenges.
- Method of implementation : Group discussion, individual consultation and reflection
- Time frame : 20 minutes
- **Content: Identifying and managing emotional challenges following preterm birth**

This session aims at addressing emotional challenges that were experienced following preterm birth. Mechanisms to deal with these challenges should be a focus point so that mothers' are assisted in finding ways to deal with these emotional challenges.

Counselling services either by nurses/midwives/psychologist should be provided to these mothers as early as possible. It is also essential that mothers are provided with information related to the nature of preterm birth and prematurity. As part of the support system, a positive nurse-mother relationship plays a vital role in dealing with these emotional challenges. Mothers should be encouraged to share and ask for counselling support services as they see fit to them.

- **Learning approach: Kolb's learning theory**

Concrete experience

Confrontation with premature birth and caring for a premature baby.

Reflection

Mothers discuss their feelings related to preterm birth and being a mother to a preterm baby, and share their experiences amongst themselves.

Concept Abstract

Mothers make use of the information to understand their feelings and experiences.

Active implementation

Mothers manage their feelings using the counselling session to promote healing and adaptation. The implementing agent continuously assesses the levels of mothers' emotional challenges through interactive communication /dialogue and observations as per individual mothers need. Prior to discharge of the baby, the implementing agent interviews the mother to determine if the objectives of the counselling sessions were achieved.

**Mothers' activity**

Document your emotions weekly and from the day of admission till day of discharge. Also indicate the actions you took in order to manage such emotions. On the day the baby will be discharged, make a summary of your emotions from birth to discharge date.

Please do the activity on the blank space provided at the end of the workbook.

Concept abstraction

Mothers gain new information by analysing and thinking about the demonstrated activity, and make their own plans on how they will approach the real activities to promote bonding (touching, kangaroo care and rooming-in). Note that mothers are individuals that make their own decisions on what to learn as well as the value they attach to the information they have learned, and this might influence the learning process.

Active implementation

Mothers practise bonding methods demonstrated to them. The implementing agent supports the mothers during practical sessions; and at the end of programme implementation carries out direct observation to assess the level of competence in execution of practical activities.

**Mothers' activity**

Explain briefly, how would you strengthen the maternal bond between you and your preterm baby?

Day 3- Session 3: Bonding and general care of the baby

- Implementing agent/facilitator: NICU Nurse/midwife
- Expected outcome : Mothers know how to perform the baby care activities confidently and effectively.
- Teaching-learning methods: Demonstration, discussion, reflection, skills practice, posters/teaching visual aids, workbook, pen.

- **Content: Bonding and General baby care activities**

This session aims at educating mothers on bonding promoting activities as well as general care of preterm baby care. Care should be taken by the facilitator to use simple, understandable terminologies during the teaching-learning sessions. The focus point is strengthening bonding, maintenance of hygiene and cleanliness for both mothers and babies of the as well as grooming the preterm infant, and the importance of keeping the environment, as well as manners of interacting with baby, family members, friends, neighbours with regard to preterm baby infection prevention.

- **Learning approach: Kolb's learning theory**

Concrete experience

Mothers watch and listen to the demonstrations by NICU nurses/midwives.

Reflective observation

Mothers discuss their feelings related to general responsibility of caring for their babies. Mothers discuss and ask questions with regard to cleanliness, and interacting with baby, family members, neighbours, and strangers.

Concept abstract

Mothers use information to make sense and analyse the value of hygiene and that of controlled interact with the baby, family members, neighbours and strangers in NICU and at home. It should still be noted that mothers are autonomous being who decides the value of the information provided to them, and this might influence the learning process.

Active implementation

Practising hygiene, bathing and dressing their babies, interacting with the baby, family, neighbours and society/strangers. The implementing agent supports and guides the mothers during the practical sessions, and carries out direct observation to assess the level of competence of the mothers.



Mothers activity

What education or information will you give to your house members, friends and neighbours who are eager and longing to see the baby?

Day 4- Session 4: Observations of the preterm baby

- Implementing agent/facilitator: NICU Nurse/midwife
- Expected outcome: Mothers (recipients) are able to carry out non-technical/non-scientific observations of the babies and understand the well-being of their babies.
- Teaching-learning methods: Demonstration, group discussion, reflection, skills practice, posters/teaching visual aids, workbook, pen.
- Time frame: 30 minutes.
- **Content: carrying out observations of the baby**

The session focuses on educating the mothers on non-technical/non-scientific observations of their babies that will enable them to understand the daily behaviours/conditions of their babies. Most of preterm baby observations are not complicated, and mothers can also perform them, if they are educated to do so. Thus, the aim of this session is to enable them to make decisions related to the daily well-being of their babies at home, and in cases of deviations from normal observations, mothers seek nursing/medical help as early as possible. This session covers observations of the following characters: colour, respiration, abdomen, excretion, skin, umbilicus, eyes, feeding, mucous membranes, fontanel and general activeness of the baby.

- **Learning approach: Kolb's learning theory**

Concrete experience

NICU nurses/midwives carrying out a procedure on observing the preterm baby in non-technical terms.

Reflective observations

Mothers watch the demonstration, analyse the demonstration, ask questions on the observations procedure carried out. They also discuss how they feel about the demonstration.

Concept abstraction

Mothers gain new information and knowledge on the aspect of observing a preterm baby. They individually attach value to the learned information. Mothers are adults who make learning decisions autonomously, and this might influence the learning process.

Active implementation

Mothers practise observing their babies twice daily, in the morning and in the evening. The implementing agent supports and guides the mothers during practical sessions, and assesses the level of competency through direct observation.

**Mothers' activity**

How will you, as a mother of a preterm baby recognise that your baby is not feeling well today?

Day 4- Session 5: Feeding and nutrition

- Implementing agent/facilitator: Nurse/midwife
- Expected outcome: Mothers understand the available feeding and nutritional methods, and are understand when to introduce solids (at the correct time) upon discharge from the hospital.
- Teaching-learning method: Demonstration, discussion, reflection, skills practise, posters/visual teaching aids, workbook, pen.
- Time frame: 30 minutes.
- **Content: Feeding the preterm baby- available methods and introduction of solids**

The session aims at providing mothers with information related to feeding and nutrition of their preterm babies and correct positioning of their babies after feeds. Various methods of feeding are preferred by various individuals, but emphasis should be put on expressed breast milk feeding and breast feeding. Those preferring bottle feeding (considering mothers who are HIV positive) should be taught hygienic methods of preparing bottled milk. Introduction of solids should be based on corrected/chronological age as calculated in the next session.

- **Learning approach: Kolb's learning theory**

Concrete experience

Feeding methods are demonstrated to them by the NICU nurse/midwife: correct feeding with a cup and breast. Visual teaching aids of solid food that can be introduced at the corrected/chronological age should be used in teaching mothers "introduction of solid food".

Reflective observation

Mothers express their feelings towards feeding the preterm baby, discuss the procedure of feeding methods, and ask questions related to feeding.

Abstract conceptualisation

Mothers use the information gained from procedure to form a baseline for baby feeding, analyze the information given and make decisions on the manner of feeding they will adopt. The mothers make their own decisions, but they should be supported and encouraged to make decisions that will benefit their preterm babies.

Active implementation

Mothers practise feeding by cup, preparing milk feeds (those who selected this method) and do an activity related to feeding. The implementing agent supports the mothers during practical sessions; and at the end of programme implementation carries out direct observation to assess the level of competence in execution of feeding practices.

**Mothers' activity**

Mention any of the benefits of breast milk to the baby and to the mother.

Day 5- Session 6: Preterm age calculation and milestones development

- Implementing agent/facilitator: NICU Nurse/Midwife
- Expected outcome(s):
 - Mothers know how to calculate their babies' ages – corrected and actual age.
 - Mothers are able to identify correct months for milestones development, and to identify delays in milestones development.
- Teaching-learning methods: Demonstrations, reflection, skills practice, visual teaching aids, workbook, pen.
- Time frame: 30 minutes

- **Content: Milestones development monitoring (corrected/chronological age calculation, actual age and milestones development)**

The session encompasses educating mothers on milestones development, calculation of corrected/chronological age and actual age. This educational information will enable them to correctly monitor development and progression of their babies' milestones, based on the correct age, as these babies were born earlier than expected.

- **Learning approach: Kolb's leaning theory**

Concrete experience

NICU nurses/midwives demonstrate calculation of corrected/chronological age and actual age, and discuss with the mothers the milestones that are highlighted in the Ministry of Health and Social Services' pediatric yellow health passport.

Reflective observations

Discussion about the demonstration, ask questions related to the demonstration. Mothers express their feelings on the demonstrated activity.

Concept abstraction

Mothers gain new information on age calculation and milestones monitoring, which they will use in determining the correct age of their babies.

Active implementation

Mothers practise the activity in their workbook. The implementing agent supports the mothers during this calculation session; and ensures that all mothers do know how to correctly calculate the age of their babies before they are discharged.



Mothers' activity

Using all two methods, try to determine how old (in months) will your baby be in December 2011 (use the relevant year).

Day 5- Session 7: Growth monitoring, regular weighing and identification of complications.

- Implementing agent/facilitator: NICU nurse/midwife
Expected outcomes: Mothers are able to reasonably read and interpret the growth curves of their babies, according to the weight plotted in the baby's health passport.
- Teaching-learning methods: Demonstration, discussion, skills practice, posters/teaching visual aids, reflection.
- Time frame: 30 minutes.
- **Content: Growth monitoring of the preterm baby and potential complications identification**

The session aims at educating mothers on understanding growth monitoring curves that are used in the Ministry of Health and Social Services. This will enable them to understand the growth of their babies in terms of gaining weight, and be able to make decisions related to feeding based on the growth the weight gaining progress of their babies. In addition, the session aims to enlighten mothers with educational information related to complications that their babies are likely to encounter. This will enable them to identify potential complications early and seek nursing/medical help as soon as possible.

- **Learning approach: Kolb's learning theory**

Concrete experience

Demonstration on growth monitoring curves and weight gaining (growth monitoring chart) by NICU nurses/midwives, using growth monitoring charts, and discussion of potential complications of prematurity.

Reflection observations

Mothers analyse the baby growth charts in their baby's health passports, and ask questions about the growth monitoring chart, as well as ask questions on potential complications.

Concept abstraction

Mothers acquire information and knowledge of skills that they will use to understand the concepts of growth and potential complications in their babies.

Active implementation

Mothers practise reading and interpreting various plotted weights in the pediatric/yellow health passport. The implementing agent supports the mothers during the learning session; and ensures that before discharge of their babies, all mothers do know how to reasonably interpret the plotted weights on the health passports of their babies, and understand the potential problems that their babies may encounter.

**Mothers' activity**

In your own words, interpret the given/plotted weights of baby Saara.

5.4.1. Educational approach: Kolb's experiential learning theory

Experiential learning formed the basis for educational approach. Kolb defines experiential learning as “the process whereby knowledge is created through transformation of experience (Kolb, Boyatzis, & Mainemelis, 1999; Bradshaw & Lowenstein, 2011; McArdle, 2010). It is learning that has come about as a consequence of reflection (Wurdinger & Carlson, 2010). There are four steps of the experiential learning cycle: concrete experience, observation and reflection, formation of abstract concepts and generalisation and testing implications of new situations.

1. **Concrete experiences (CE)** – Learners engage fully and openly in the new experience, and perceive what is happening through using their senses – what they saw, heard or felt about the experience. The goal of education is to structure and organise learning activities in which experience itself facilitates learning, such as doing something, reading or attending a course.
2. **Reflective observation (RO)** – reflecting and observing on the practical experiences demonstrated by the agent. It is concerned with reviewing the event or practical experience in one's mind, and exploring what she/he did as well as how he/she (as well as others involved) felt about the experience.
3. **Abstract Conceptualisation (AC)** – creating concepts that integrate their observations into logical sound theories. It is concerned with drawing conclusions about an experience through making sense of the reflections and observations.
4. **Active experimentation (AE)** – using the theories to make decisions and solve problems. The learner uses his/her understanding and conclusions drawn from it, to guide his/her decision-making and actions, to address the new experience (McArdle, 2010; Davies, 2008; Rimondini, 2010; Wurdinger & Carlson, 2010; McKee & Erant, 2011). Kolb's educational approach was applied to the programme as follows:

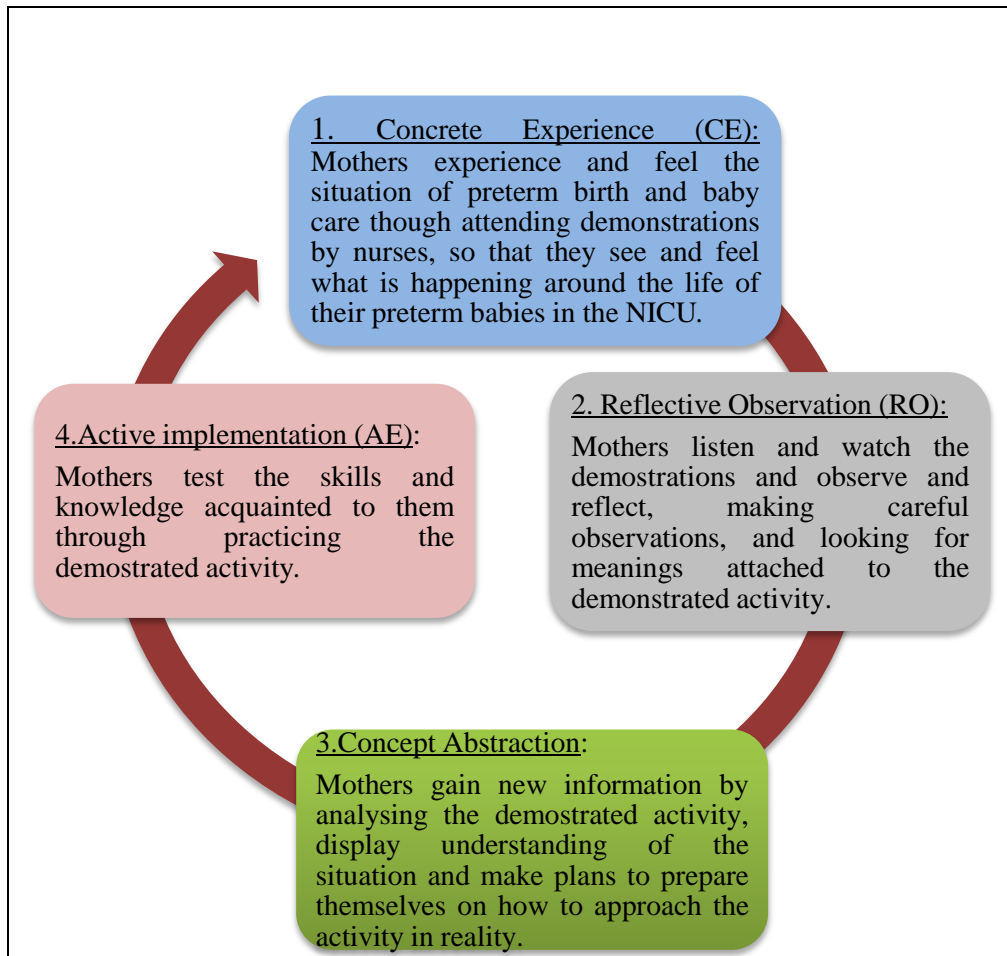


Figure 5. Application of Kolb's learning theory (Adapted from Kolb, Boyatzis & Mainemellis, 1999)

Two methods were used in the implementation of the educational programme. One was demonstration, which refers to a performance of a procedure or an activity with the intention of giving the mothers a clear mental picture of how the activity is performed (Redman, 2007; Bensley & Brookins-Fisher, 2009; Young et al. 2009).

The agent, who is a nurse/midwife, showed the recipients (mothers) how to carry out a particular activity, explaining each step and why it was performed, thus enabling the

mothers to acquire both knowledge and skills. Mothers got an opportunity to practise the skill after demonstration and had to complete activities in their activity workbooks to reflect on what they had learned. Through using demonstration as a teaching method, the learning situation became personalised as the recipients were actively involved in the learning process, and they realised the reality of the situation surrounding them (Redman, 2007; Bensley & Brookins-Fisher, 2009; Young et al. 2009).

The discussion method was used, where the agent held discussions with the recipients around key points, so that she clarified points that were taught. This enabled clarification of points immediately (Bradshaw & Lowenstein, 2011). For this health educational programme, it is important to note that the programme was not implemented on the mothers who were research participants. The fact that the babies are hospitalised for almost two to three months then they are discharged makes it impossible to implement the developed educational programme on them. Hence the programme was transferred for implementation to the mothers who were caring for their preterm babies at that specific time.

5.4.2. Barriers and obstacles during programme implementation, as well as strategies to overcome them

Though careful consideration is given when the programme is planned and developed, various barriers can be encountered during the programme implementation phase. There various factors need to be identified earlier, and strategies to overcome them should be

established in order to realise the goals and objectives of the programme (Watson, 2011).

Most if not all programmes require funds, human capital and time in order for them to be effectively implemented. Similarly in this health educational-support programme, these resources were needed. Money was needed for photocopying, buying workbooks, pens, and for printing. Furthermore, though a health education programme is designed to respond to the identified needs of the concerned population, programme users may not be actively and sufficiently involved in the process of programme implementation, resulting in failure to reach the goal and objective of the programme.

Thus, should this discharge educational-support programme be adopted for implementation in Namibian public hospitals, financial implications ought to be considered; and appropriate budgeting should be done in order to sustain the programme. In addition, awareness about the programme need to be undertaken, so that the intended recipients of the programme involve and take ownership of the programme, thus facilitating achievement of the goals and objectives of the programme (CLSE, 2008; Novick, Morrow, & Mays, 2008; Freshman, Rubino, Chassiakos, 2010; Watson, 2011).

5.5. Summary

The programme was developed in four phases: needs assessment, conceptual framework, developing and implementation of the programme, and evaluation of the programme. A needs assessment was carried out in Phase 1 of the study, and provided a foundation for programme development. The programme contains the goals of the programme, objectives, interventional activities and teaching methods, as well as activities that will enable the mothers to cope better with the preterm birth and caring for a preterm baby. Dickoff's reasoning map was used as a conceptual base for programme development and implementation, whereas a humanistic approach was used as a philosophical base for programme development. Kolb's experiential learning approach was used as a baseline for enhancing learning. Demonstration and group discussion methods were used as teaching strategies. The programme was implemented as per outlined schedule.

CHAPTER 6

PROGRAMME EVALUATION

6.1. Introduction

The previous chapter focused on programme development and implementation. The programme contained goals and objectives that were aimed at addressing the challenges of the mothers caring for preterm babies in northern Namibian state hospitals. It was implemented using the predesigned methods, and according to the time framework that was developed. This chapter entails evaluation of the programme that was implemented as well as compiling a programme evaluation report to determine whether the programme had successfully achieved its goals and objectives.

6.2. Planning programme evaluation

Evaluation is a systematic collection of information about activities, characteristics and outcomes of a programme, in order to answer questions and make decisions about the programme (Hodges & Videto, 2010, Fertman & Allensworth, 2010). It involves using various approaches to examine the goals, processes and/or outcomes of the programme with the aim of providing a feedback about the programme (Anderson & McFarlane, 2010; Jacobsen, 2011). Generally, evaluation of the programme assists in identifying whether its aims and objectives have been achieved (Hodges & Videto, 2010; Wholey et al. 2010).

According to Hodges and Videto (2010) as well as to Grinnell, Gabor & Unrau (2012), evaluation [of a programme] is undertaken to determine:

- If the programme was implemented as was intended;
- If the programme had reached its goals and objectives (effectiveness);
- Whether the resources allocated for programme implementation were used appropriately (efficiency);
- If there was an identifiable link between the programme activities and progress with the goals and objectives (attribution).

In general, prior to the process of programme evaluation, evaluation planning should be undertaken. This planning involves designing an evaluation approach, that is to say, how the programme will be evaluated, stating who will do the evaluation, developing programme evaluation indicators and methods for evaluation data collection as well as setting the time frame for evaluation (Royse & Thyer, 2009; Anderson & McFarlane, 2010). For this study, programme evaluation planning was carried out as follows:

1. Assessment Context: the programme was described, and evaluation question(s) based on the objectives of the programme were developed using the Evaluation Planning Matrix (EPM) based on the programme objectives;
2. The evaluation design (impact evaluation) and data collection method were developed (see data collection);
3. Evaluation indicators were developed;
4. Unstructured interview and direct observation methods were used for data collection;

5. Stakeholders (academic supervisors) were engaged for advice and guidance (Zimmerman & Holden, 2009; Bartholomew et al. 2010).

6.2.1. Programme evaluation approach

To obtain a feedback about an implemented programme, an evaluation method should be selected. For this programme, impact evaluation approach was used. “Impact evaluation” refers to the measurement of the extent to which the programme has caused intended changes in the target population (Hodges & Videto, 2010; Fertaman & Allensworth, 2010; Healey & Zimmerman, 2010; Jackobsen, 2011). Impact evaluation attempts to explain the outcomes, and seeks to explain the cause-effect relationship by assessing the difference that the intervention(s) has/have made in the outcome (Gertler, et al. 2010). Basically, impact evaluation attempts to explain the difference that the programme has brought to the lives of the people who have used the programme (Merterns & Wilson, 2012).

Thus, for this study, impact evaluation was used to determine the effects of the health educational-support programme on the knowledge levels, confidence levels and the emotions challenges reduction of the mothers who delivered and were caring for preterm babies.

6.2.2. Programme evaluation indicators

As mentioned earlier, it is important to assess whether learning has occurred. Mothers should have gained knowledge and intellectual skills from the implemented programme,

by displaying cognitive, psychomotor affective skills and knowledge. Using the learner-focused evaluation which is based on the programme's objectives, it was evaluated as follows:

1. Cognitive domain: knowledge and development of intellectual skills

According to Oermann and Gaberson (2009), the cognitive domain deals with acquisition of information and techniques that are essential to preterm baby care. This involves assessment of the mothers at these six levels: knowledge, comprehension, application, analysis, synthesis and evaluation, which mainly reflect the mothers' ability to recall and apply the information that was given to them (Lowenstein, Foord-May, & Romano, 2009; Amin & Khoo, 2009; Dreeben, 2010). Thus, direct observation method was used to determine the mothers' understanding of the learned information.

2. Psychomotor domain: Development of skills and competency

Psychomotor skills are the physical skills that are required to implement the learned activity. The development of these skills requires practice, until the learned activity is mastered (Dreeben, 2010). Assessment of learning in this domain can be made in these five levels: coordination, manipulation, precision, manipulation, and naturalisation, which reflect the mothers' ability to integrate the learned information, as well as to reproduce the activities that they were taught (Lowenstein et al. 2009; Anema & McCoy, 2010). The direct observation method was used to assess the ability of the mothers to integrate the learned information, ability to reason/rationalise each activity, and the

ability to carry out demonstrated procedures confidently, safely and proficiently (Dreeben, 2010; Miller, Stoeckel, & Babcock, 2011).

3. Affect domain: perceptions

The affect involves development of values, attitudes and beliefs which are congruent with caring for the preterm baby (Oermann & Gaberson, 2009). This domain can be assessed at five levels: accepting the phenomenon, responding to the phenomenon, valuing, organising and internalising values which are reflected by the mothers' wish and interest in making the learned information and activities part of their lifestyles (Lowenstein et al. 2009; Dreeben, 2010). Mothers' attitudes towards the programme were evaluated by using an unstructured interview method, in which they were asked the question: "How helpful was the programme to you?"

Therefore, evaluation of the discharge health educational-support programme was undertaken to answer the following questions about it:

1. What are the results of programme activities in providing emotional support to the mothers (emotional relief)?
2. Are there any changes in the ability of the mothers in the care of their preterm babies (improved interaction and bonding with the baby)?
3. Have the mothers gained knowledge and skills that will enable them to effectively continue with care of their babies at home (knowledge and skills)? (Hodges and Videto, 2010; Mertens & Wilson, 2012).

6.3. The purpose of the programme

The purpose of this programme was to empower the mothers with knowledge and skills that will enable them to effectively and competently continue caring for their babies upon discharge from the hospital, as well as to provide emotional support of these mothers.

6.4. Objectives of the programme

The objectives of the programme were:

1. To provide emotional support aimed at addressing the emotional challenges that were brought up by preterm birth;
2. To improve interaction and bonding between mothers and babies, as well as to promote active involvement in the care of their babies both during hospitalisation and upon discharge; and
3. To provide knowledge and skills that will facilitate effective transition and continuation of the care from hospital to the home setting.

6.5. Programme contents

The programme contained mother-child activities that focused on increasing the mothers' understanding of the baby's condition, as well as activities that facilitate acquisition of skills through participation in child care as well as those that provide knowledge to the mothers. The activities that were taught were compiled in an activity workbook that was used during the learning process, as well as a pamphlet containing a summary of the activities in a workbook that mothers took home after discharge. These

activities included the baby-care activities that were demonstrated to the mothers during programme implementation as well as those that the mothers will be carrying out at home after discharge, so that effective transition is enhanced. The contents of the programme were summarised in a pamphlet format.

6.6. Data collection method(s)

Evaluation data was collected using direct observation method and an unstructured interview method, with the aim of gaining information related to the programme objectives and effectiveness of the programme from the mothers' own perspectives (Arkin, 2009; Simons-Morton, McLeroy, & Wendel, 2011).

Data was collected by the researcher in November 2010, and the population consisted of mothers upon whom the programme was implemented (recipients). These mothers met criteria, where their babies weighed 1,800g or more. From the population of eleven (11) mothers who were caring for their preterm babies- (3 in Maternity department NICU, and 8 in the Pediatric ward NICU), only 4 mothers have reached the inclusion criteria for programme implementation. Three interviews were conducted on three different days as the three preterm babies were discharged on different days. The programme was initially applied to four mothers, but sadly, one baby developed complications and died within a week of programme implementation, which made it impractical to include that mother in the programme evaluation.

The direct observation method, which involves observing participants in the study, was used, to observe how mothers executed the demonstrated activities and how well they mastered them (Wholey et al. 2010; Locido, Spaulding, & Voegtle, 2010).

6.7. Results and discussion of programme evaluation

As mentioned earlier, programme evaluation aimed at answering three questions mentioned earlier, based on themes which emerged from the data collected. From the interviews conducted, it was revealed that mothers found the programme useful to them. When they used the programme for those two weeks, they found relaxation of mind, learned a lot, and gained courage in their quest to care for their babies. The table below summarises programme evaluation outcomes:

Table 5: Evaluation of the health educational-support programme: outcomes.

| PROGRAMME OBJECTIVES | EVALUATION INDICATORS | THEMES | CATEGORIES | LEVEL OF OBJECTIVE ACHIEVEMENT |
|---|--|---|--|---|
| <ul style="list-style-type: none"> • To provide emotional support aimed to address the emotional challenges that were brought up by preterm birth • To improve interaction between mothers and babies as well as to promote active involvement in the care of their babies both during hospitalisation and upon discharge. • To provide knowledge and skills that will facilitate effective transition and continuation of the care from hospital to home setting. | <ul style="list-style-type: none"> • Emotional relief • Improved interaction with the baby • Knowledge and skills aquisition. | <ul style="list-style-type: none"> • Mothers experienced emotional support and relaxation from using the programme • Mothers frequently interacted with their babies in the NICU. • Mothers acquired knowledge and skills related to preterm baby care from using the programme. | <ul style="list-style-type: none"> • Feelings of happiness, gained courage and hope alleviation of bad emotions and thoughts that mothers had been encountering. • Comfortability in interacting with the baby. • Information aquisition related to how the babies' well-being, feeding and general care of the preterm baby. | <ul style="list-style-type: none"> • Mothers experienced emotional relief. • Mothers interacted easily with their babies. • Mothers gained, knowledge and skills from the programme. |

The data from the above findings revealed the following:

- 1) Indicator: Emotional relief: The programme objective that targeted addressing the emotional challenges that were brought about by preterm birth, by providing

emotional support, was met. Mothers found support and emotional relaxation and experienced decreased trauma signs that were related to preterm birth.

This was supported by the following quotes:

“I was very sad for a very long time because there was no one to counsel me, or any place where I can ask when I am burdened by the condition of my baby. I now have courage, to stay with my baby, and I see her just like all other normal babies now. The programme helped me; it gave me information on how to stay with my baby. I feel happy about it.”

“This programme helped me well; it broke down bad emotions and thoughts that I had. It taught me. I thought we are not going to be discharged, but it gave me hope. I feel happy about the programme, and am thankful about it.”

2. Indicator: Improved interaction with the baby: The programme objective was to improve interaction and bonding between mothers and babies, as well as to promote active involvement in the care of their babies both during hospitalisation and upon discharge. This objective was met. Mothers were able to interact comfortably and freely with their babies.

The quotes below support the above statement:

“This programme helps and it gave me information on how to stay with a preterm baby.” [Playing with the baby’s fingers and looking the baby in the face] “Honestly, I didn’t know how to stay with this baby – how to handle her, to breast feed her. I can now feel that the baby has even gained weight since I have been using the programme.”

“I have seen I have fed the baby more well then before, and the baby has even picked up weight”.

“I am even more comfortable with my baby now.”

“I have been enjoying caring for my baby and sometimes I even forget that she is a preterm baby.”

3. Indicator: Knowledge and skills: The programme objective was aimed at providing skills and knowledge that will facilitate effective transition and continuation of the care from hospital to the home setting. This objective was also met. Mothers gained knowledge and skills from using the programme and this can be substantiated by the following quotes:

“The programme gave me information in the care of this preterm baby, like how to nourish her and on health matters and how the baby should be. I am happy for this programme.”

“I didn’t know that my child has two types of age, but now I know.”

“If I was not given this information, I don’t know how I would have cared for my baby at home.”

In a study by Ferecini, Fonseca, Leite, Dare, Assis & Scochi (2009) that was done to identify perceptions of mothers of premature babies regarding their experience with a health educational programme, it was found that mothers developed knowledge, found the programme to be a family education tool, viewed the health education programme to be relaxing, and improved bonding between the mother and other mothers and with the

nurses. Another study by Brett et al. (2011) revealed that mothers of preterm babies felt supported throughout individualised educational programmes, and parental stress was significantly lessened.

This literature supports the findings from the study, in which mothers gained knowledge, skills and relaxation of mind, through using the discharge health educational programme as an education tool. It gives the impression that the programme has successfully achieved its aim and objectives, by equipping mothers with affective knowledge and skills, thus enabling them to effectively and confidently continue with the care of their babies at home.

6.8. Summary

This chapter entails evaluation of the programme that was implemented as well as compiling a programme evaluation report to determine whether the programme had successfully achieved its goals and objectives. The programme was described, and evaluation question(s) based on the objectives of the programme were developed. The evaluation design and data collection method and evaluation indicators were developed. A data was collected using direct observation and unstructured interview methods with the aim of gaining feedback related to the achievement of programme goals and objectives. Stakeholders (academic supervisors) were engaged for advice and guidance. Mothers revealed that they gained knowledge and skills, as well emotional relaxation upon using the programme. The programme has successfully achieved its aim and

objectives, addressing emotional challenges and equipping mothers with affective knowledge and skills, thus enabling them to effectively and confidently continue with the care of their babies at home.

CHAPTER 7

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

7.1. Introduction

Chapter 7 concludes this study. It focuses on drawing conclusions, describe limitations of the study and make recommendations for educating and supporting mothers who delivered and carrying for preterm babies in Northern Namibia. The conclusions are based on study findings were used to answer the research question “How do you feel now that you have delivered a preterm baby?” These conclusions were used to elucidate whether the purpose and objectives of the study were achieved.

7.2. The purpose of the study

The purpose of the study was to explore and describe the experiences of mothers related to giving birth to a preterm baby and how they experienced caring for their preterm baby, and subsequently to develop a discharge health educational-support programme which would empower mothers to effectively continue with the care of their babies after discharge from the hospital.

7.3. The objectives of the study

The objectives of the research were:

- 1) To explore and describe experiences of mothers related to preterm birth and caring for preterm babies;

- 2) To develop a conceptual framework for a health educational programme;
- 3) To develop a discharge health educational-support programme for mothers caring for preterm babies; and
- 4) To implement and evaluate the developed discharge health educational-support programme.

7.4. Research design

The study was undertaken as a qualitative, explorative, descriptive study, using a phenomenological approach, aimed at understanding, explaining and analysing in depth the experiences of mothers who had delivered and were caring for their preterm babies in Northern Namibian state hospitals.

7.5. Population description, sampling method and sample size

The population consisted of mothers who had delivered preterm babies and were caring for their babies, whose preterm babies had been admitted in the preterm baby units of Intermediate Hospital Oshakati Neonatal Intensive Units (NICUs), both in the Pediatric Ward (Ward 15) and Maternity Section (Ward 14). The sample was selected using non-probability, purposive sampling using predetermined criteria (Yin, 2010; Cresswell et al. (2011).

7.6. Data collection and data analysis

Data was collected in February 2010, using the in-depth interview method to uncover the feelings of participants. Eight interviews were conducted. Data was organised into themes and categories as per Tesch's method of data analysis (Tesch, 1990). All interviews were tape recorded and transcribed.

7.7. Results

Four themes were developed during data analysis:

- 1) Mothers who delivered preterm babies experienced being emotionally overwhelmed and challenged after birth.
- 2) Mothers attempted to cope with preterm birth through acceptance;
- 3) Mothers experienced difficulties in bonding with their babies; and
- 4) Participants experienced feelings of apprehension in the care of their babies.

Upon implementation of the programme, it was evaluated. Indicators for programme evaluation were developed, according to which, attainment of the programme's goals was measured. Mothers revealed that they gained knowledge and skills, as well emotional relaxation from using the programme; hence the programme's objectives were fully achieved.

7.8. Conclusions

The research question that was posed to the mothers was answered by the research findings as evident in themes and categories in chapter 3, and by the development of a discharge health educational-support programme.

7.8.1. Experiences of mothers related to preterm birth and caring for preterm babies.

Findings revealed that:

- Mothers who delivered preterm and were caring for their babies experienced being emotionally overwhelmed and challenged after birth, manifested in shock, fear, despair and sadness.
- Following preterm birth, mothers attempted to cope with the early arrival of the baby through acceptance, using religious coping.
- Participants experienced difficulties in bonding with their babies, which was manifested through anxiety to hold such tiny babies.
- Participants experienced feelings of apprehension in the care of their babies as a result of inadequate knowledge on how to care for these babies.

7.8.2. Development and implementation of a discharge health educational-support programme

A discharge health educational-support programme was developed based on Dickoff's model as a conceptual framework. The programme was conceptualized using the six

survey concepts/list (agent, recipient, dynamics, procedure, context and terminus) enlisted in the Dickoff model. Conclusively, the programme was successfully developed, and was implemented using the designed implementation schedule.

7.8.3. Evaluation of the programme

Programme evaluation was done, and the findings revealed that the programme was helpful to the mothers who used it. Participants experienced emotional support and relaxation from using the programme; they frequently interacted with their babies in the NICU, and lastly they acquired knowledge and skills related to preterm baby-care from using the programme. Hence, the purpose and objectives of the study were achieved.

7.9. Recommendations

7.9.1. Recommendations for supporting and educating mothers who have delivered and are caring for preterm babies in Northern Namibian state hospitals.

From the study results, it is recommended that:

- Counselling services be offered to the mothers who delivered and are caring for preterm babies as early as possible to address emotional challenges encountered by the mothers following preterm birth.
- A Preterm Baby Co-ordination unit be established to cater health, growth and developmental needs of preterm babies well-being up the age of 5 years.

- Regular home visits by the nurses/midwives should be carried out to assess how effectively, have the mothers continued with the care of their babies after discharge, and provide support to them
- Educational pamphlets with relevant, comprehensive yet understandable information related to prematurity and preterm baby care be developed and distributed to the mothers to take home as their guidance in the care of their babies.

7.9.2. Recommendations for training of nurses/midwives as agents responsible for supporting and educating mothers who delivered and are caring for their preterm babies.

- Nurses/midwives providing care in the NICUs should undergo regular training on issues pertaining to mothers who have delivered and are caring for preterm babies, so as to keep them abreast with the latest information related to supporting and educating mothers who have delivered preterm babies.
- The nurses/midwife training institutions should enclose case studies for families with sick babies including the preterm baby, to expose students to challenges that these families face
- Should the developed programme be adopted for use in the Namibian hospitals, training of nurses/midwives who are entrusted with the role of supporting and educating the mothers who delivered and are carrying for preterm babies should be undertaken, to familiarize them as agents of the health educational-support

programme. The researcher may play a role in training of the nurses/midwives if need be.

7.9.3. Recommendations for further research

Results for the study have prompted the researcher to recommend further research related to mothers who delivered and are caring for preterm babies:

- Observational study of home care of the preterm babies post discharge from the NICU up to five (5) years of age.
- Comparative evaluation studies of the experiences of the mothers caring of preterm babies in the presence and absence of discharge health educational-support programme, from admission period to the first week post discharge.

7.10. Limitations of the study

This study was conducted only on Northern Namibian mothers. Therefore, generalization beyond the Northern Namibian state hospitals may not be applicable. Additional studies on experiences of mothers who delivered and are caring for preterm babies ought to be carried out for generalization to be done. Secondly, the participants might have withheld negative responses in fear that the information might reach the nurses who are working in the NICUs, leading to prejudices. Thus, the researcher have used the prolonged engagement strategy and adhered to ethical principles. Prolonged engagement however, has its limitations. Mothers may have given the responded they way they did because they would like to satisfy the researcher.

7.11. Contributions made to knowledge in the nursing and midwifery sciences

This study has contributed to knowledge in the nursing and midwifery sciences through the development of a discharge health educational-support programme that will address the emotional challenges and educational needs of the mothers who delivered and are caring for preterm babies in Northern Namibia. Given the fact that most of these mothers have limited or no access to technology as a source of information related to preterm birth and preterm baby care, the programme serves as an educational tool to these mothers.

The study also contributed to the knowledge base of the roles and functions of the professional nurse and the health managers of hospitals, to ensure that mothers get the necessary support and knowledge from them. Nurses/midwives working in the NICUs can use the results from the study to improve the overall quality of maternal and child care provision, thereby enhancing the well-being of the mothers and their babies, thus preventing unnecessary re-hospitalizations episodes of preterm babies and reduction in morbidity rates among the preterm babies.

Policy makers, specifically those administering maternal and child health in Namibia could also use the results from the study, to plan and improve the quality of maternal and child health provision in Namibia.

7.12. Conclusive remarks

The conclusions and recommendations were drawn based on the purpose and objectives of the study. The purpose of the study was to explore and describe the experiences of mothers related to giving birth to a preterm baby and how they experienced caring for their preterm babies, and subsequently to develop a discharge health educational-support programme which would provide emotional support to the mothers and empower them to effectively continue with the care of their preterm babies after discharge. Conclusions on each objective, limitations of the study, and contributions to the bodies of nursing and maternal sciences, as well as recommendations, were drawn.

Overall, this was an interesting study. It helped the researcher to understand and find answers to challenging questions that surround experiences of mothers who had delivered and were caring for preterm babies, especially because these babies arrived suddenly in preterm birth, were so tiny, and were discharged weighing only 2.000g , which is still far shorter than the accepted 2,500g birth weight.

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ANNEXURE A

PERMISSION FROM THE MINISTRY OF HEALTH AND SOCIAL SERVICES



REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: (061) 2032562
Fax: (061) 272286
E-mail: hilmanangombe@yahoo.com

Enquiries: Ms. H. Nangombe Ref.: 17/3/3/AP

Date: 27 July 2009

OFFICE OF THE PERMANENT SECRETARY

Ms. Angelina Velikoshi
P. O. Box 15271
Oshakati
Namibia

Dear Ms. Velikoshi,

Re: Investigation on experiences of mothers nursing premature babies in Oshana Region: A health discharge programme.

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. Kindly be informed that approval has been granted under the following conditions:
 - 3.1 The data collected is only to be used for your academic purpose;
 - 3.2 A quarterly progress report is to be submitted to the Ministry's Research Unit;
 - 3.3 Preliminary findings are to be submitted to the Ministry before the final report;
 - 3.4 Final report to be submitted upon completion of the study;
 - 3.5 Separate permission to be sought from the Ministry for the publication of the findings.

Yours sincerely,


Mr. K. Kahuure
PERMANENT SECRETARY

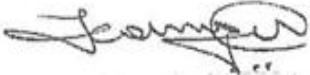


ANNEXURE B

PERMISSION FROM OSHAKATI INTERMEDIATE HOSPITAL

Ms E. A.N. Velikoshi
P.O. Box 15271
Oshakati
Tel 2233381 (w)
Cell: 0812400185
05 August 2009

Attention:
The Superintendent
Oshakati Intermediate Hospital
P/Bag 5501
Oshakati

No objection
c.c. Ms. Kasimipi

M.S. 5/8/09
SUPERINTENDENT
OSHAKATI HOSPITAL
MINISTRY OF HEALTH
SOCIAL SERVICES
NAMIBIA

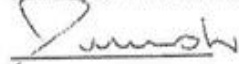
Dear Sir,

Re: Permission to conduct research at Oshakati Intermediate Hospital

I, Ms E.A.N. Velikoshi, a Registered Nurse would like to request permission to conduct research at the Premature Baby Units (both the Maternity and Pediatric Ward Premature Baby Units). Attached, please find a letter of approval from the Permanent Secretary.

Yours faithfully,

Ms E.A.N. Velikoshi (Ms)

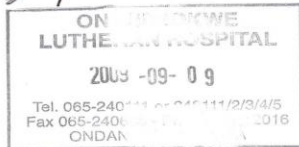


(MNSc, Doctoral Student, University of Namibia)

ANNEXURE C

PERMISSION FROM ONANDJOKWE LUTHERAN HOSPITAL

*approved
09.09.09.
Johannes Lumbu*



Ms E. Velikoshi
P.O. Box 15271
Oshakati
Cell: 0812400185
Fax: 088613575
5th September 2009

Attention:


The Superintendent
The Chief of Nursing Division
Onandjokwe Lutheran Hospital

Dear Sir/Madam

Re: Permission to do Pilot Study- Mothers caring for premature babies


I am a Registered Nurse, a Doctoral student at the University of Namibia and am working at Oshakati State Hospital. I would like to do a pilot study for academic purposes on the 17th September 2009. Attached is a copy of approved permission from the Permanent Secretary of Ministry of Health and Social Services. Please hand over your responding letter to Mr Johannes Lumbu, who works in your hospital at the Nursing Offices or fax to Ms. Eva Velikoshi 088613575.

Thanking you in advance,

Eva Velikoshi (Ms)

Doctoral Student

ANNEXURE D

POST GRADUATE STUDY COMMITTEE PERMISSION


UNIVERSITY OF NAMIBIA

340 Mandume Ndlovu Avenue
Private bag 13301
Windhoek
NAMIBIA

Inspiring minds & shaping the future

**FACULTY OF HEALTH SCIENCES
SCHOOL OF NURSING AND PUBLIC HEALTH
UNIVERSITY OF NAMIBIA**

**Letter of permission:
Post graduate students**

Date: 29 July 2009

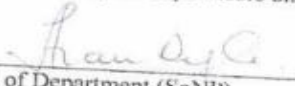
Dear Student: Ms E Velikoshi

The post graduate studies committee has approved your research proposal.

Experiences of mothers who delivered and caring for their preterm babies in Northern Namibian State Hospitals: a Health Education- Support Programme

It may be required that you need to apply for additional permission to utilize your target population. If so, please submit this letter to the relevant organizations involved. It is stressed that you should not proceed with data collection and fieldwork before you have received this letter and got permission from the other institutions to conduct the study. It may also be expected that these organizations may require additional information from you.

Please contact your supervisors on a regular basis


Head of Department (SoNP)

ANNEXURE E**CONSENT FOR PARTICIPATION FORM****CONSENT FORM**

Experiences of mothers caring for preterm babies in Northern Namibian State Hospitals 2009.

Name of Researcher _____

I do hereby give consent to participate in the study, whereby I am informed of the aims of the study, the methods of data collection and duration thereof.

Left thumb print _____

Date _____
(Translated into local language)

OMBAPILA YEZIMININO

Omaiyuvo goomeme taasile oshimpwiyu uunona wuupelema miipangelo yepangelo moNooli ya Namibia 2009.

Edhina lyomupekapeki _____

Otandi gandja mpaka eziminino lyokukutha ombinga mepakapeko ndika, moka nda lombwelwa omalakano gepekapeko, omukalogwepekapeko, muulethimbo wepekapeko.

Ostambe yomunwe gwokolumoho _____

Esiku _____
(Translated into local language)

ANNEXURE F

A PAMPHLET- TAKING CARE OF YOUR PRETERM BABY

Taking Care of a Preterm baby (TACOP)

A discharge health educational-support programme for mothers who delivered and are caring for preterm babies



Designed by Sr. Eva Velikoshi (R/N, R/M), Oshakati Intermediate Hospital

Assisted by: Professor Agnes Van Dyk (University of Namibia)

© November 2011

(Picture used as suggested by mothers who participated in study)

1. Introduction

It is a dream of every pregnant woman to have a healthy, full term baby. However, things can go wrong, and the baby can be born earlier than it is expected. A study that was conducted in Oshakati Intermediate/State Hospital in 2009 as well as other researches done in other parts of the world on experiences of mothers caring for preterm infants revealed that these mothers react to the early arrival of their babies with sadness, shock, guilty feeling, fear, anxiety and confusion. In many instances, mothers take their babies home with no pre-discharge preparations done for them, which can hamper effective transition from hospital NICU care to home care. Therefore, this pamphlet is designed to assist mothers to care for their preterm infants effectively at home, by providing them with information and knowledge on their care of their babies at home.

2. Nature of prematurity

2.1. What is prematurity?

Preterm labour refers to labour that starts after 20 weeks of pregnancy, but less than 37 weeks of pregnancy. It is the onset of contractions that occurs before the 37th week of gestation, which causes cervical changes that may lead to the birth of an immature baby. This results in the birth of a preterm baby. Premature babies categorized as severe premature or mild premature depending on in which weeks they were born.

2.2. Causes of prematurity

The definite cause of preterm labour is not yet well understood. However, there are several factors that are believed to be responsible for premature labour.

- Maternal infections, where bacteria from the vagina ascend via the cervical canal, into the uterine cavity, infecting the membranes and the placenta.
- Uterine abnormalities such as fibroids and myomas in uterus reduce the uterine cavity, as well as cervical cervix problems that make it difficult to keep the baby in the womb.
- Poor nutrition makes it difficult for the mother to share nutrients with the baby
- Poverty, because without income, a woman cannot afford a balance diet, and also cannot attend antenatal care as they cannot afford to pay for transport every month. Thus, some risk problems that may cause preterm labour such as eclampsia cannot be detected and managed early.
- Placenta abnormalities, where the placenta cannot supply the baby with enough nutrition.
- Early placenta detachment, causing the causing concealed intrauterine bleeding or vaginal bleeding during pregnancy.

- Trauma, which can be either blunt or penetrative, can cause accidental rupture of membranes.

2.3 Signs of premature labour

Premature labour is manifested by the following characteristics:

- uterine contractions, which are 5-10 minutes apart or less, and are not relieved by rest
- menstrual like cramping pain in the abdomen
- there may be lower abdominal pain
- change in the nature of vaginal discharge, which become mucoid, watery or blood tingled
- a gush of fluid from vagina
- passing urine frequently
- pelvic pressure that feels like the baby is pushing down
- a general feeling that something is not well within the woman's body.

2.4 Treatment of premature labour

If preterm labour is identified early, the doctors can give treatment to stop the contractions. However, if the woman visit the hospital late, chances are that the baby will be born prematurely as there is nothing to be done, since labour has already started.

3. Problems and complications of prematurity

Although there are successes in neonatal medicine to improve the survival rate of premature infants, surviving premature infants experience interference in their growth and development process. They don't grow and develop at a fast pace like full term babies do. Some preterm infants may develop complications which may be short or long lived. However, they can be assisted.

- Blindness, as a result slow growth of retinal blood vessels problems the growth of blood vessels
- Lung diseases, which affects almost exclusively premature infants, caused by pulmonary immaturity and insufficient lung surfactant.
- Brain development problems that lead to developmental disorders and disability, and may disturb the infant's cognitive, motor, visual, auditory, and psychosocial-behavioral.
- Infection because the immune system of premature infants is immature to protect it from disease
- Several other problems such as anaemia, jaundice, hypothermia, malnutrition because all major organs of the body are underdeveloped.

4. Prevention of preterm labour

Since there is no definite cause of premature labour, it is difficult to prevent it completely. However, pregnant women should:

- attend antenatal care regularly
- have adequate rest and restrict their activities
- consulting the health centre if they have constant lower backache, menstrual like cramps, vaginal bleeding, fluid draining from vagina, fever or when they feel something is just not right with their bodies
- abstain from sex if they are at risk, especially in the second trimester.

5. How should I take care of my preterm infant?

- Always have your baby vaccinated, it helps to keep her immunity strong.
- Your baby needs to be regularly assessed for growth and development. Thus, take him/her for monthly weighing at the local clinic.
- Keep the environment around your baby clean- this keeps infections away.
- Keep yourself and your baby clean.
- Avoid exposing the baby to dusty windy conditions as well as to smoking.
- Touching the baby should be kept minimal- do not allow people surrounding your baby, be it house members, neighbours and passers to frequent touch the baby as this can transmit infections to the baby.
- Introduce solid foods at 4-6 months corrected age. Corrected age is calculated as follows- actual age of the baby now minus the months/weeks the baby was born earlier. For example, if baby Eva is 3 months old now, and she was born 1 month (4 weeks) earlier, baby Eva is actually 2 months now. So, solid food can be introduced when baby Eva is 5-6 months old.
- Assess your baby's milestone development, based on corrected age. For example, baby Eva's sitting, crawling, walking and talking will be a bit slow. If you notice something unusual, contact the clinic or hospital next to you.
- Always observe the general condition of your baby- actively crying and kicking around, passing urine and stool well, feeding well, nail beds and mouth membranes are pink (not blue), skin is clear of rashes and is not cold or hot.
- Have your baby's hearing, eyesight and neural functions checked for complications at least twice a year at the local hospital. This will help in early identification of problems.

- Stick to follow-up dates!
- Remember, always smile and talk to your baby- this will brighten your day!

Visit the hospital immediately if:

- The baby has fever/ increased body temperature
- Baby has trouble breathing
- The skin is cold when you touch the baby and lips, nails and eyes are pallor (a kind of whitish in colour), or when nails, soles of feet and palm of hands have turned blue
- Baby is unable to drink or eat anything for 24 hours
- Baby has been inactive/lethargic for most of the day 24 hours,
- Baby did not pass stool in 3 days.
- The baby has not passed urine in 24 hours
- Baby is coughing, have chills or any signs of illness.

6. Contact numbers for hospital in Northern Namibia

Intermediate Hospital Oshakati, 065-2233000, Onandjokwe Lutheran Hospital, 065-240111, Engela District Hospital, 065-266604, Tsandi District Hospital, 065-258120/258121, Okahao District Hospital, 065-256735, Outapi District Hospital, 065-251071, Eenhana District Hospital, 065-263023/263025, Kongo District Hospital, 065-266434, Tsumeb District Hospital, 067-224300, Opuwo District Hospital, 065-272800.

ANNEXURE G**INTERVIEW TRANSCRIPT**

Q: The question that I would like to ask you, is that, I would like you to tell me: how do you feel now that you have delivered a premature baby?

A: I am not feeling happy at all. A premature baby.... [Silent for 5sec]... It is very small, how is it cared for? What will I do with it? Even if you go with it at home..... [Silent for some time].

Q: You said you are not happy.

A: No, I am not happy at all.

Q: Why are you saying you are not happy at all?

A: It's my first baby, I have never had one. And when I came here I was confused because the baby is small, I think I haven't even memorized what I was told by nurses that day.

Q: You mean because the baby is small, or you don't know how to care for it, or what exactly are you confused about?

A: Yes, everything. I just don't know what to do.

Q: Okay. What were you taught by the nurses from the day your baby was admitted, anything that you can remember?

A: They taught me to express milk into the cup, and feed through the tube. That is how it (the baby) is fed.

Q: What more do they taught you?

A: They taught me about the oxygen.

Q: So, what about oxygen?

A: That the baby will be assisted with breathing, so that it can breath well, because sometimes it just lie there without breathing. They told me if I finish feeding, I should put that box back (referring to oxygen head box).

Q: Okay. What have you identified as difficult for you in caring for your baby?

A: I noticed that the baby can vomit after feeds. I don't know why, because as I see it, I am giving the measurements I was told to give but, after feeding the baby sometimes vomits.

Q: What have you done that when you saw the baby was vomiting?

A: I called the nurses.

Q: What did the nurses said?

A: They just told me that they are coming.

Q: Alright. You have just told me that you don't know how to care for the preterm baby and it seems you have lots of questions or concerns about your preterm baby. What do you want nurses to assist you with so that you continue with care of your baby at home?

A: I want to be taught how to care for this baby especially when I am taking it home. Maybe I may over breastfeed the baby. I just don't know how I will stay with the baby at home.

Q: What else have you identified you need to be assisted with in the care of your baby at home?

A: Nothing more. I just need to be taught.

Q: Alright. Let me thank you for your information. I will still be here for the next week, so we will be meeting now and then. Thanks very much.