



UNIVERSITY *of*
RWANDA

**PARENTS' SATISFACTION WITH HEALTH CARE SERVICES IN
NEONATAL CARE UNIT OF TWO SELECTED HOSPITALS IN
RWANDA**

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College of Medicine and Health Sciences

School of Nursing and Midwifery

Masters of Science in Nursing (Neonatal track)

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By

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In the College of Medicine and Health Sciences

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DECLARATION

Declaration I, Eugenie MUKESHIMANA, do hereby declare that this dissertation submitted for the degree of Master of Science in Nursing/ Neonatal Track in University of Rwanda/ College of Medicine and Health Sciences is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of information quoted or cited.

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DEDICATION

I sincerely dedicate this work to my lovely husband and children, my grand sister KAYIRANGWA Jacqueline who laid a foundation for my academic career and success in life, and all others who contributed to this work. Finally, my classmates for the moments we shared. Your love, support, and guidance laid this work successful. May Almighty God bless you abundantly.

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May almighty God bless you much!

ABSTRACT

Introduction: A neonatal care unit is a place where sick and premature neonates are admitted and receive specialized care. Infants are unable to communicate their wants, experiences, demands, opinions, or satisfaction; therefore, parents play this role for their young children. Parental satisfaction in neonatal care units (NCUs) is a crucial indicator of the quality services provided to the neonates and helps to enhance healthcare delivery.

Aim: To assess the parents' satisfaction with the care provided to their neonate in the neonatal care unit (NCU) at two selected district hospitals in Rwanda.

Method: To answer the research questions, a descriptive cross-sectional design was used and a random sampling method was applied to select two district hospitals of Kigali city (Muhima District Hospital and Kibagabaga District Hospital) as a study setting. The study population was all parents (mother or father) having their infants hospitalized in NCU at the period of study and participants signed consent voluntary. A sample of 261 parents was retrieved from the target population by using convenience non-probability sampling strategy method. Instrument was the neonatal satisfaction survey. With a 95% confidence interval (CI) and P-value under 0.05, descriptive statistics like frequencies, means, medians, and standard deviations as well as inferential statistics like ordered logistic regression were used.

Results: The findings revealed that among 261 study participants, more than a half 171(66%) were satisfied with health care services in neonatal care unit. More than three quarter of respondents 197 (75.5%), reported that they were strongly disagree on the care received by same group of doctors/nurses for themselves and their neonates. The nurses' consideration and care for the neonate, the nurses' and doctors' interest in hearing the opinions of parents as next of kin, the nurses' understanding and respect of parents are an important care and treatment that showed a positive strong relationship with level of satisfaction.

Conclusion: To improve parents' satisfaction in NCU service emphasis should made on the nurses' care and treatment as they spend much time with the parents. Therefore continuous training about the parents centered care in NCU should be considered by institution administrators.

KEY WORDS: Parents' satisfaction, Health care services, newborn, neonatal care unit

LIST OF ABBREVIATION

EBM= Expressed Breast Milk

FCC= Family centered care

HCP= Health Care Provider

IRB= Institution Review Board

NCU= Neonatal Care Unit

NICU= Neonatal Care Unit

NSS= Neonatal Satisfaction Survey

PPD= Post-partum Depression

PTSD= Post Traumatic Stress Disorder

QL= Quality of Life

RA= Researcher Assistant

SPSS= Statistic Package for Social Sciences

UR= University of Rwanda

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CHAP I: INTRODUCTION

1.1 INTRODUCTION

Satisfaction is defined as fulfillment of expectations, requirements, or preferences about health care supplied.(1). The purpose of this study is to assess the parents' satisfaction with health care services provided to their neonates in neonatal care unit. In this research the parents having their neonates in NCU pray the role of satisfaction for the health care received by their neonates. As a result, satisfied parents with the level of care they receive are more likely to adhere to prescribed treatment plans and encourage others to seek medical attention (2). According to a study conducted in India, lower stress levels and satisfied parents are key contributors to the neonate's speedy recovery (3).

The process of being in a neonatal care unit has the largest impact on mothers because they are the primary caretakers(4). Parents in NCU who are dissatisfied with health-care services have a high risk of anxiety, powerlessness and hopelessness, depression, and post-traumatic stress disorder (PTSD)(5). A study conducted in Midwestern USA (6) reported that,15% of mothers and 8% of fathers with newborns admitted to the NCU suffer from postpartum PTSD. Additionally, research has shown that postpartum depression (PPD) affects between 39 and 63% of mothers of NCU newborns, compared to 13 to 18% of moms without NCU infants (6). Another study (2) indicated that strong parental support and frequent information sharing increased family-centered care, decreased stress and anxiety, and improved satisfaction with the NCU experience.

A study conducted in Turkey demonstrated that parents are the legal guardians of neonates when it comes to medical care (7). As a result, parents are taken into account while evaluating neonatal healthcare services. Parents who are satisfied vs unsatisfied have distinct reactions to the service attention they received(2). Parents who are satisfied with the services are more likely to continue using them, to accept treatment recommendations, and to cooperate and adhere to therapy in more efficient ways (1). A study done in Iran by Salehi (8) suggests that the key to understanding how to address and increase parents' satisfaction is to continue conducting trustworthy and valid research. This study aimed to assess parents' satisfaction with health care services to the neonate in Neonatal care unit.

1.2. BACKGROUND

Newborn deaths account for 40% of all pediatric fatalities worldwide, while low- and middle-income nations account for 99% of all neonatal deaths (9). In the first 28 days of life, four million of the estimated 130 million newborns born each year worldwide die(2). 75% of neonatal deaths occur within the first week, with more than 25% occurring within the first 24 hours(2). More than 25% of neonatal deaths take place in the first 24 hours, and 75% of neonatal deaths happen in the first week. (2). Neonatal mortality rates from the Rwanda Demographic Health Survey 2014/2015 show 46 fatalities per 1000 live births(9).

In a research conducted in Eritrea by Andegiorgish and colleagues in 2016(10), 79 (65.6/1000 live births) of the 1204 babies hospitalized to the neonatal intensive care unit passed away. In a research conducted in Eritrea by Andegiorgish and colleagues in 2016(10), 79 (65.6/1000 live births) of the 1204 babies hospitalized to the neonatal care unit passed away. Sepsis (35.5%), respiratory distress syndrome (15.4%), and perinatal asphyxia (10%) were the main reasons for hospitalization. In a two-year study by Nyishime (2018), 1723 newborns were admitted to a hospital in rural Rwanda; 88.7% of them were admitted within the first 48 hours of life(11). In the neonatal care unit (NCU), newborns who are sick or preterm are admitted and receive age-appropriate specialized care. (2).

Twenty-four hours a day, a neonatal care unit (NCU) offers vital life support, physiological monitoring, and medical care(2). Parents experience environmental stress due to the presence of monitors in the neonatal care unit (NCU) and infants on mechanical ventilation(12). An infant's birth is challenging to parents (8); In addition, however, parents of infants admitted to NCUs experience an unfamiliar and particularly distressing and threatening situation, and therefore need support from nurses and physicians (3). Intense emotions and stress are especially severe when a newborn is admitted to a neonatal care unit due to premature birth or other medical problems(2). Parents' stress is associated to concerns about the baby's health, the baby's outcome, and changes to the parent-child relationship(13). According to studies, the parent's worries are a result of their infants, requirements during the NCU stay, their inability to breastfeed or provide expressed breastmilk, the NCU's visitation restrictions, and their lack of clinical updates (3).

Infants are unable to communicate their health requirements, requests, experiences, opinions, or satisfaction, therefore parents play this role(8,14). Parental experience is a critical indicator of newborns' satisfaction with care in NCUs and affects general satisfaction (6, 8). According to McCormick (1), satisfaction in the context of healthcare is the accomplishment of needs or expectations. Galanis (15) claims that satisfaction indicates appropriate or acceptable treatment, and that ratings may range amongst people since people may have different standards for care. (13). Auslander (14) reported that satisfaction is not merely a measure of quality, but also the goal of health care delivery. It has been shown that parents who are satisfied with the degree of care they received follow treatment recommendations more frequently and advocate for clinical care to others (2). Major contributing factors to the newborn's rapid recovery are greater parental satisfaction and lower parental stress levels(3). According to Galanis (15), assessing parents' needs and satisfaction with the treatment received in newborn care units is crucial for enhancing both parent satisfaction and facility integrity.

When assessing patient satisfaction and the standard of care provided in NCUs, it is essential to understand the various contributing components(16). According to Hagen and colleagues (17), the neonate's condition at the time of the interview is the primary indicator of satisfaction with neonatal care services.

Moreover, they also discovered that ethnicity, level of education, and mother's age were important predictors. In contrast, Ylmaz(7) found that satisfaction levels are not significantly influenced by the mothers' age or education level. According to Auslander (14), a range of factors are essential for parent satisfaction, including interpersonal connections, service accessibility, and access to preliminary health and decision-making progressions. Thi and others highlighted the significance of newborn care services, communication, information sharing, emotional support, family engagement, therapeutic skill, and environmental circumstances to make parents satisfied (4,18). Musabirema reported, poor staff-family relationship has a negative impact on the baby's care and may cause parents distress and dissatisfaction (19). Sankar(3) states that parent's satisfaction relies on how well and how frequently parents and caregivers communicate. Martin (20) showed that the most important aspect of a parent's satisfaction is communication between health provider and patients. The study confirmed that nurses must comprehend and address the elements that affect parents' happiness in NCUs (17).

Tsiron (16) noted that the length of the infant's hospital stay and the parents' sex are the most significant factors in determining how satisfied parents are. Age, sex, education level, and income are the socioeconomic factors mentioned by McCormick (1) as having an impact on parents' satisfaction. Researchers found that spending more time at the NCU made parents less satisfied with medical services and made them more anxious (7,8). Hagen's study (17) also showed that the most significant factors for satisfaction were family and friend support, followed by infants' gestational age, parents' age, newborn health, and parents' level of education. According to Bernado and colleagues (21), determining is necessary to collect information on both the parents' experiences with those factors as well as their level of satisfaction.

More research is needed to determine which sociodemographic factors are connected to parents' satisfaction with their newborn's care in NCU. This study can advance our understanding of parents' satisfaction and offer advice to healthcare facilities on how to improve parents' satisfaction in this condition. Thus, this study aims to assess parents' satisfaction with health care services of their neonate in the NCU.

I.3. PROBLEM STATEMENT

Neonatal care units (NCUs) are specialized areas where neonates with serious illnesses are admitted and given care by qualified medical professionals. Bonding of parents and infants usually begins prenatally and postnatally and lasts throughout infants' life (22). When newborns are born with a disease that requires admission to an NCU, parent-infant bonds may be hindered. According to Butt (13) and Sankar (3), parents of newborns in NCU experience anxiety, distress, depression, and post-traumatic stress disorder related to the condition and likely outcome of the neonate. As a result, these parents require more support from nurses and doctors. A study done in Rwanda found that about 80% of parents whose babies were admitted to NICU had been dissatisfied with the care in NCU during their hospital stay(19).

The parents' ability to learn how to give their newborns basic care is constrained by this circumstance. Additionally, majority of parents are dissatisfied with the newborn care services offered (19) and would not recommend neonatal services to others (23). Parents require clear communication from neonatal professionals as well as emotional support, successful interpersonal interactions, and information based on evidence. Studies showed that these elements greatly influence how satisfied parents are with the NCU's care and its quality (2,3,17)

Although several studies have been conducted on parents' satisfaction in NCU, little is known about parents' satisfaction of neonatal care in Rwanda. Data from this study will provide information that could help to address or mitigate parents' dissatisfaction with the care of their neonate in NCU.

I.4. OBJECTIVES OF THE STUDY

I.4.1. Purpose

The purpose of this research is to assess parents' satisfaction with the health care services provided to their neonates in the neonatal care unit at two selected district hospital of Rwanda.

I.4.2. Objectives

1. To determine the level of parents satisfaction with health care services provided to their neonates in NCU
2. To assess the relationship between parents' level of satisfaction with the health care services provided to their neonates and socio-demographic factor in NCU

I.5. RESEARCH QUESTIONS

1. What is the level of parents' satisfaction with health care services provided to their neonates in NCU?
2. What is the relationship between parents' satisfaction with health care services provided to their neonates and socio-demographic factors in NCU?

I.6. SIGNIFICANCE OF THE STUDY

I.6.1. Practice:

Parents' satisfaction is an indicator of quality care provided to the neonate. Parents' satisfaction can lead to improved neonatal care and healthcare services, such as family-centered care.

Identifying the factors associated with parents' satisfaction can improve the overall care and potentially the neonates' safety and outcomes in the identified units.

I.6.2. Education:

This research will contribute to the existing body of knowledge and create awareness of parents' satisfaction issues among neonates in neonatal care units. The educational curriculums of health care provider programs may be elaborated to address any identified gaps in practice.

1.6.3. Administrators:

This study will inform administrators to what extent their clients are satisfied with the care provided to their neonates and what factors could be amenable to change are not being met satisfactorily. The dissatisfaction area can help administrators plan and implement measures to improve the satisfaction of their customers.

1.6.4. Researchers:

The results of this research will be used as the base line to address the identified gaps or achievement in neonatal care in Rwanda. It will be an opportunity to research ways to improve or enhance parents' satisfaction with their neonates' care in NCU in the future.

I.7. DEFINITION OF THE CONCEPT

- **Parents' satisfaction** referred to as parents (mother/father) degree of satisfaction with the neonatal care services offered by nurses and doctors (7).
- **Neonate:** This covers the first four weeks following birth, or from the time of delivery to 28 days (24).
- **Health care provider (HCP):** This is the person who offers health care services to the neonates in NCU. In this study health care providers are nurses and doctors working in NCU. Health care services that are inclusive in this study are care and treatment by doctors and nurses as well as information provided to the parents during the period of NCU stay.
- **Parent:** This refers to either mother or father of the neonate. In this study parents are mother, father or any other designated primary care givers whose neonate is admitted to the selected NCU
- **Neonatal care unit:** The American Academy of Pediatrics classified neonatal care unit into four levels (25).
 - **Level I:** Represents a healthy newborn and offers care to the health term baby.
 - **Level II:** These are nurseries for intermediate or specialized care. When a neonate is high-risk or moderately unwell, these units can offer comprehensive treatment, initial supportive care before transferring the infant to a Level III unit, and convalescent care.
 - **Level III:** These are identified as NICUs and can provide comprehensive care for high-risk infants, including a full range of respiratory support. These are designated as NICUs

and are capable of offering high-risk neonates complete treatment, including a full range of breathing assistance.

- **Level IV NICUs:** These additionally have pediatric surgical subspecialists available (25). This study only considered NCU level I, II and III. This is because in the selected district Hospitals their minimum package of activities is only limited to the 3 levels.

I.8. STRUCTURE OF THE STUDY

This research report comprises six chapters; chapter one introduces the study and describes the study's foundation. Chapter two is the literature review, which includes a review of the theoretical literature and empirical literature on parents' satisfaction with care provided to the neonate in the hospital. Chapter three provides the methodology to support the objectives of the study. Chapter four will present the findings of the study in relation to the objectives. Chapter five will be the discussion section of the study, including the interpretation of the findings. Chapter six will provide a conclusion to the study, recommendations, and all references identified in the proposal.

I.9. CONCLUSION

Chapter one is the introductory chapter of the Master's thesis and comprises the research question background on parent's satisfaction with care provided to their neonates in the NCU. The parents-neonates bonding starts during pregnancy, labor and post-partum period. This is affected by unexpected condition of having neonate admitted in NCU and facing the stressful NCU environment. Doctors and nurses in neonatal care unit are required to provide clear communication, emotion support and interpersonal relationship to the parents to pass through this period successfully.

The effective interpersonal relationship between staff and parents reduces parents' stress and enhances parents' satisfaction. Parents' satisfaction with health providers' services to their neonates in NCU is an administrative measure of quality services to the institution. Therefore evaluation of parents' satisfaction with health provider's care of the newborn is needed to understand how to increase parents' satisfaction and improve quality of care. This chapter also includes the problem statement, the aim and objectives, research questions, the study's significance, and the concepts' definition.

CHAP II. LITERATURE REVIEW

2.1. INTRODUCTION

This chapter focuses on different arguments of other researchers who conducted similar studies related to parents' satisfaction with health provider's care in NCU. This part summarizes the research question and helps develop the recommendation and conclusion regarding the gap identified. The literature review involves; Introduction, Theoretical literature, Empirical literature, Research gap identification, Critical review, Conceptual framework, and conclusion. The literature review was conducted using the search terms related to the study's objectives using HINARI, PUBMED Central, and Google Scholar. Vancouver referencing style used throughout the proposal.

2.2. THEORETICAL LITERATURE

Within the confines of crucial limiting assumptions, theories are developed to explain, forecast, and comprehend phenomena as well as, in many circumstances, to challenge and extend known information (26). Theoretical literature reviews present existing theories, their connections, the extent to which they have been studied, and help create new testable hypotheses (26). This part will cover and discuss the definition, progression, and impact of parent satisfaction on different aspects.

2.2.1 Definition of parent's satisfaction

Satisfaction in health care referred to as fulfilling expectations, needs, requirements related to health care services. The expectancy-value theory of Linder-Pelz in 1982 recognizes the important rapport among person's expectations and the variance in satisfaction ratings(27). It provided an operational definition of parent satisfaction as "positive assessments of various healthcare-related factors" (27). According to Fox and Storms' discrepancy and transgression theories from 1981, even though the parents' healthcare orientations and the provider's circumstances of care varied, if those orientations and conditions are consistent, the parents' needs are satisfied (28). However, the parent's satisfaction cannot be guaranteed if there is a contradiction (28).

Similarly the parent's judgement of the quality of all parts of care, but especially the interpersonal component, is what Donabedian's theory of quality healthcare defines as the

expression of satisfaction or dissatisfaction (27). According to Yirmaz et al. (7), delivering the necessary services and meeting the expectations of parents and other family members is a significant indication of the quality of care in healthcare systems and parental satisfaction.

2.2.2. Advantages of parental satisfaction

Evidence reveals that a satisfied parent uses the services more frequently, accepts the treatment suggestions, and cooperates and complies with the therapy more successfully (8). The theory of parents' satisfaction was developed by Arde (29), who claimed that it results from the consonance between parents' expectations of care and the actual care they receive from the health provider, which affects the infants' health-related outcomes and the institution's quality of care (29). Demisse et al.(30) .'s study in Ethiopia came to the conclusion that the caring behavior of healthcare professionals is more important than just the efficiency of healthcare organizations in affecting the satisfaction and wellbeing of parents and their infants. Whereas Butt et al. (13) showed the need of measuring care satisfaction in order for healthcare professionals and facility managers to deliver the best possible care that is attentive to the demands of the parent. Oglio et al. (31) concluded that in NCU, measuring parents' satisfaction is necessary to come up with new ideas for the improvement of care received by neonates and parents.

2.2.3. Factors contributing to parents' satisfaction with care of neonates in NCU

Hagen et al. (17) evaluated the satisfaction of parents in NCU and found that family-centered care decreases stress and anxiety among parents and increases parent satisfaction as a result of parental involvement in the neonate's care. Family-centered care is defined by Oglio et al. (31) as a clinical practice strategy that incorporates the following tenets: Respect and understanding; information and education given to the family; care coordination achieved via excellent communication, physical and emotional support, and parental engagement in making decision and care. A study conducted by Shinde(28) in Kenya showed, parents' satisfaction with newborn care services is one of the foundations of family-centered care (FCC) and helps to lower parents' stress levels in neonatal intensive care units (NCU).

Similarly, Hunt (27) proposed that parents should be involved in the NCU team to help with decision-making and neonatal care. Furthermore, a study on the factors influencing parents' satisfaction by Tsiron et al. in Greece (16) revealed that, when parents are encouraged to spend more time with their infants and actively participate in their care, their satisfaction rises. A study

by Linder-Pelz(32) concluded that better parents participation in care of their neonates shown to be an important for ensuring better continuity of care during hospital stay.

2.3. EMPIRICAL LITERATURE

Original research is covered through empirical literature reviews (such as scientific experiments, surveys and research studies). The investigations don't follow a set of rules; instead, they are based on experience and observation. The analysis describes earlier empirical investigations on the subject that were conducted by various researchers and the conclusions that they came up with (33). This part will discuss parents' satisfaction with care in NCU consisting of two parts: parent-related factors and provider-related factors.

2.3.1. Factors Affecting Parents' Satisfaction

The study by Shinde (28) on a critical analysis of patient satisfaction and marketing efficacy in Mumbai Hospital identifies several elements, including ones that are provider- and parent-related, that can affect parents' satisfaction.

2.3.1.1. Provider-related factors

Doctors proficiency and interpersonal communication skills, hospital staffs behaviors, access to care, basic facilities and infrastructure are all provider-related factors to parents' satisfaction in (28). A survey of parents with neonates admitted to the NCU, conducted by Salehi et Al. in Iran, (8), showed that 17% of parents are satisfied with the health cost and insurance of their health care and 17.3% are dissatisfied with not meeting other family members. Yilmaz also discovered that parents were least satisfied (26.3%) with healthcare professionals' interactions with neonatal care, whereas 24.7% of parents were satisfied with the information supplied by nurses regarding correct lactation (7). According to Salehi's study (8), 8.3% of parents are least satisfied with physicians' information about their newborns' current status, while 19.7% of parents are most satisfied with doctors' education for the next appointment at discharge. In addition, a study by Tsiron (16) discovered that parents' satisfaction was impacted by health services and effective communication between parents and nursing or medical staff.

Similarly, a study carried out in Israel by Auslander et al. (14) revealed that communication and information sharing, emotional support and caring, family engagement, service accessibility, treatment abilities, and environmental factors were significant factors in parents' satisfaction. In

the same study (14), in relation to nursing care, 80.9% of parents were satisfied with emotional support, 31.9% with information, and 30.9% with professionalism (10). Auslander et al. (14) also revealed that for doctors' care, 53.2% of parents were satisfied with emotional support, 41.5% with information and 38.3% with professionalism.

A study in North India by Sankar et al. (3) reported, among 100 parents interviewed, more than 50 showed dissatisfaction with the communication between the nurses and doctors. Whereas, one-third reported their question responded in a short time by doctors; which improved their understanding (3). According to Lanlehin's study (4), nurses were shown to communicate more effectively than doctors among 20 mothers and 17 fathers when it came to elements related to information satisfaction. In the same study, (4) parents reported nurses were more effective at adapting their behavior or conversation to meet the parents' need. Auslander et al. (14) stated, care levels could differ and be impacted by outside variables such service accessibility or insurance status.

Hagen et al. (17) in his findings showed that, neonatal care may be more difficult for newborns from various minority groups due to their worse health status. According to Sankar's study (3), characteristics that contribute to greater parent satisfaction were assurance, concern, communication, consistent information, education, setting, follow-up care, pain management, participation, closeness, and support (3). A survey by Magliyah in Saudi Arabia showed, 51% of parents could not access or did not understand the information provided by nurses (59%). Additionally, 64% of parents were not informed of their child's progress or weren't involved in their care, and 73% of them didn't receive a response to their concerns (2). Lanlehin's (4) study concluded that effective communication between parents of unwell newborns and the direct caregivers is crucial,

A survey conducted on parents' satisfaction of infants admitted to NCUs in Iran, parents were 38.8% satisfied with nursing care and 39.3% satisfied with medical care(8). Another study conducted in Northern India found that 80.19% of parents are satisfied with their caregiver's interpersonal interactions (3). Additionally, according to the findings of a survey conducted in Turkey, the mean score for overall parent satisfaction was determined to be 65.6620.01(7). According to the study in Norwegian with a sample size of 568 parents, 432 (76%) were highly satisfied with NCUs services, answering from "largely" to "a very large extent"(17). In the same

study, the first question on the parents' overall satisfaction with the neonate's care scored 99%, and the second question about the parents' satisfaction with different aspects of care scored 91% (17).

2.3.1.2. Parental-related factors

Parental related factors associated with parents' satisfaction include sociodemographic characteristics of parents, neonate state of illness, and parents' perception of a relationship of trust and their sense of being involved in decisions regarding the neonates' care (27). Expectations and experiences with care are greatly influenced by the parents' expectations and past experiences with health, illness, and labor that they come with to the hospital setting (3). A study conducted by Auslander (14) exploring parents' satisfaction with care of the newborn in the Neonatal Care Unit (NCU) showed that Low-income and minority families gave their newborn's care poorer rating. Furthermore, the health of their newborns and receiving assistance from family and friends were the most variables influencing their degree of satisfaction (14). This result was comparable to one from a study by Hagen et al. (17), which also used the Neonatal Satisfaction Survey Tool (NSS-8), and found that the most important sociodemographic factor related with reported levels of parental satisfaction was support from family and friends. This indicates that compared to parents without visits, those whose siblings and friends visited them while they were hospitalized expressed reported their satisfaction with the care they received to be higher (17).

Hagen used the NSS-8 (Neonatal Satisfaction Survey-8) in his study to assess parent satisfaction with care-services offered within NCUs. The NSS-8 covers eight family-centered care principles, including care and treatment, doctors' visits, NCU facility, facilitating for siblings, information, parent anxiety, and discharge (17). In the same study, age, language, primary were not significantly associated with any of the eight NSS-8 characteristics (17). Additionally, parents' education level was inversely associated to the quality of the doctors' care, showing that parents with low education levels, their satisfaction with NCU doctors were more likely (17). Moreover, a strong negative association between the length of stay and parental anxiety, facility services, and doctor care was found (17). Hagen et al. (17) conducted a cross-sectional study with 568 parents from six different NCUs, and the results showed that support from family and friends was the main factor in parental satisfaction. Hagen et al. (17) also stated that allowing the

parent's siblings to visit and assist the parent during the hospital stay helped to reduce anxiety and increase satisfaction, which was 2.4 times greater than a parent without such support. The study also found that parents with basic or high school education were more satisfied with eight family-centered care principles than parents with college or university education, and that this satisfaction was 0.52 times higher in older parents (35 years and older) than in younger parents (17). A study done by Thi et al. (18) recruited 340 parents from two hospitals (e.g., national and provincial) and stratified parents by income group found that low-income status parents showed less satisfaction with doctor's and nurses' care, treatment, and communication.

A study by Thi et al. (18) further revealed that parents above 35 years of age, male, lower educational level, and low-income status were less satisfied than another group(16). According to a study by Galanis (15), women were more content (54%) than men (46%), and younger women, women with less education, mothers living in rural regions, and infants with shorter stays were more satisfied (15). In a study by McCormick(1), sociodemographic characteristics came in second place to the health of the newborn as a predictor of parents' satisfaction with neonatal care.

2.4. CRITICAL REVIEW AND IDENTIFICATION OF RESEARCH GAP FROM THE STUDY

After reading the research on the topics, it becomes clear that the majority of studies focus more on sociodemographic variables and the interactions between parents and healthcare professionals during the care of the neonates. In Rwanda, there are limited studies related to this research question; instead, most studies focused on patient satisfaction in general and parental perception of stress in NCU(19). Studying parents' satisfaction in Rwanda could create awareness of which parts of care need improvement and plan ways to address the needs and this will contribute the parents' satisfaction with care of the neonates in NCU.

2.5 CONCEPTUAL FRAMEWORK

This conceptual framework explains how this study's research problem will be explored and describes the relationship between this study's main concepts(34). The conceptual framework used adapted from Arde (29). The model proposes measuring parental satisfaction through five main concepts: parental care expectation, individualized providers care, parental satisfaction, institution quality of care, and health-related outcome (29). The current study is interested in

three components of this model as they are relevant to the research objectives, which focus on neonatal care within the NCU: parents' care expectations, individualized nursing care, and parental satisfaction. The two components: institution quality of care and the health-related outcome will not be considered because it is not related to the study objectives.

2.5.1. Description of components of the model

2.5.1.1 Parental care expectations

Parents' expectations for care are defined by Arde(29) as the parent's personal standard for the care provided by health providers (i.e., technical care, interaction or support care, and information care) based on their needs for care, their perception of the ideal level of care, and their interactions with providers (29). In this study, parents' care expectation is related to the independent variables, which are provider-related factors that influence parental satisfaction in NCU, including health providers' care and treatment, communication, and environment during the NCU stay. In this study, these variables will be assessed by part B of the research instrument.

2.5.1.2 Individualized provider's care

Arde(29) described this concept as what nurses and doctors provide to both parents and their neonates based on health care providers' assessment of neonates' and parents' needs and preferences. It is made up of the clinical situation, the response of parents to the aspects of clinical to the care of their neonates, their own individual condition, their background, any individual problems they may be experiencing and the degree of decisional control they are able and willing to exert over the care. Arde(29) further emphasized that these components of individualized care differ amongst parents, emphasized the significance of gathering and using data to provide parents the impression that their uniqueness is truly recognized and taken into consideration in the care of their newborns (29). In this study, these variables will be assessed by part A of the research instrument

In this study, individualized provider care is concerned with nursing and doctor's care, treatment, and communication and is related to the independent variables in relation to both parents and neonates socio-demographic factors. The independent variables include parents' age, gender, education level, occupation, income status, residence, duration of stay, religion, maternal condition during pregnancy, marital status, type of birth, and the neonates' gender, weeks of pregnancy, weight at birth, and medical condition. The association of parents' satisfaction with

individual provider's care in this study will be evaluated based on all of these aspects independently. All the socioeconomic variables are not measuring satisfaction itself (the outcome variable) but they are the factors which can influence it. As data, these will be collected in Part A.

2.5.1.3 Parents' satisfaction

Arde's(29) theory described patient satisfaction as the outcome of an agreement between the parent's expectation of care and actual care provided, considering the health-related outcome and the institution's quality of care (29). In the current study, this variable will be measured by the care and treatment parents expect their neonates to receive from the health care providers concerning to the care provided. In other words, the outcome between parents' expectations from health care providers and the actual care received from them. It will be measured in part B of the research instrument.

2.5.1.4 Institution quality of care

Arde (26) defines institution quality of care as the effectiveness of a healthcare institution's services and systems. It consists of a range of services, including nursing and medical care (29). In this study, institution quality of care will be manifested by parental agreement on whether they will return or refer their colleagues to seek care in the same institution or vice versa. This component will not be considered in the current study as the aim is to assess factors influencing parents' satisfaction in the immediate situation of the NCU admission and not the institution's quality of care which would require a more extended period to assess appropriately.

2.5.1.5. Health-related Outcomes

According to Arde (29), the parent's interactions with healthcare personnel resulted in both good and negative behaviors, and their satisfaction with the experience of receiving specialized nursing care influenced those behaviors (29). In the current study, the health-related outcome will not be measured as it is not the study's purpose.

2.6. CONCEPTUAL FRAMEWORK

Independent variable

Individualized nursing care

- Age, level of education, Employment, income status, residence, duration of stay, religion, marital status, type of birth, and the neonates' gender, gestation age, birth weight, medical condition, support from family and friends,

Parental care expectation

Care and treatment by Nurses and Doctors

- Nurses provided care and treatment at arrival and later during stay
- Nurses take your family situation into consideration
- Doctor's take care and treatment for you and your child
- Doctors give you explanation in the way you understand

- Information

- Parents' anxiety

Dependent variables

Level of
parents'
Satisfaction

High

Low

Intervening variables

Facility

- Bathroom
- Toilet
- Silence in patient room

Figure 1: CONCEPTUAL FRAMEWORK (Adapted from Arde, 2017).

CHAP III. METHODOLOGY

3.1. INTRODUCTION

This chapter describes the method used to conduct the research process and accomplish the study's objectives. It includes a details of the research design, research methodology, research setting, population, sampling techniques, validity and reliability of the research instruments, inclusion and exclusion criteria, sample size, data collection techniques, data analysis, ethical considerations, data management, and chapter conclusion.

3.2. RESEARCH DESIGN

The study's design uses evidence-based practices, guidelines, and instructions that provide researchers with the tools and framework they need to carry out their research (35).

The level of the parents' satisfaction with the neonatal care in NCU within the two chosen settings was assessed in this study using a descriptive cross-sectional design. Data are gathered from persons who fulfilled the study's inclusion requirements and gave their informed consent at a particular time during the study's designated time frame.

3.3. RESEARCH APPROACH

The study questions were addressed using a quantitative approach. To answer research questions a quantitative approach entails quantifying, utilizing, and analyzing numerical data using particular statistical procedures (36).

3.4. RESEARCH SETTING

Two district hospitals from four district hospitals in Kigali city were selected as study site using random sampling, allowing the researcher to make assumption or make generalizations about the population under study from the sample. Kigali City has three administrative districts, and among these, four hospitals have NCU under their administrative districts; Nyarugenge (Muhima District Hospital), Gasabo (Kibagabaga and Kacyiru District Hospitals), and Kicukiro (Masaka District Hospital). The district hospital is a secondary site of care delivery in Rwanda.

The random sampling was conducted by writing a district hospital's name on a separate piece of paper (Kacyiru, Kibagabaga, Masaka, and Muhima). Then all four pieces of paper were put in a basket. The basket was shuffled, and then two pieces of paper were randomly drawn. The selected sites included: Muhima District Hospital and Kibagabaga District Hospital. Muhima

District Hospital has a catchment area of 10 health centers. It also serves two others, such as Shyorongi health center and one clinic of Kigali's central prison; this means the hospital serves 11 health centers. The Kibagabaga District Hospital has a catchment area of 17 health centers. Moreover the two selected settings show high admission rates compared to the remaining two units. In 2019, Muhima District Hospital admitted approximately 130 neonates per month, Kibagabaga District Hospital admitted 120 neonates per month, Masaka District Hospital admitted approximately 95 neonates per months, and Kacyiru Hospital admitted approximately 110 neonates per month.

3.5. POPULATION

The study population was all parents (mother or father) who had their infants admitted in NCU at Muhima Hospital and Kibagabaga Hospital during a study time frame and participant who consented voluntarily. The infants admitted to the NCU were there three days or more to the follow-up visit. During the study period there was a potential population of 750 parents to draw a relevant sample of participants.

3.6. SAMPLING

Sampling is the process of selecting a sample of individuals from the target population who statistically reflect that population and who have similar characteristics (35). Sampling aids in obtaining a representative sample that can be researched and finds results with known accuracy that can be statistically calculated and generalized to the population of interest.

All parents having a neonate admitted to the NCU could not be studied, so instead, a representative sample is used. According to the NCU in-charge nurse, in 2019, Muhima admitted about 130 neonates per month, and Kibagabaga admitted about 120 neonates per month.

As data collection was conducted for approximately three months, the sample frame was $130+130+130= 390$ neonates from Muhima District Hospital, and the Kibagabaga sample frame was $120+120+120$ neonates = 360 neonates. The total population was the sum of the sample frame, 390 neonates + 360 neonates = 750 neonates. Because this study is related to assessing the parents' satisfaction with the care of the neonate in NCU, the total population drawn was 750 parents. From this total population, a sample was calculated.

The proportion of a sample = sample frame ÷ total population ×100. Proportion of Muhima setting = $390 \div 750 \times 100 = 52\%$, Proportion of Kibagabaga = $360 \div 750 \times 100 = 48\%$. For each setting, determining the sample size was dependent on the computed proportion.

3.6.1. Sampling strategies

A sampling strategy used in order to acquire a representative sample from the population of interest (35). Using convenience sampling, a non-probability sample procedure, the researcher recruited all parents. Using this method, the researcher chooses the sample components based on their accessibility and closeness (37). In this study, the participants that met the inclusion criteria and voluntarily agreed to participate were included in the study.

3.6.2. Sample size

A sample size is defined as selecting a sample population from the target population (34). The sample size for this study was determined by using the Taro Yamane technique (1967) to an estimated 750 participants from each of the two study settings.

$$n = N / (1 + N(e)^2)$$

N stands for the total population under research, n for the sample size, e for the margin of error of 5%, and CI of 95%.

$$n = 750 / (1 + 750(0.05)^2)$$

$$n = 750 / (1 + 750(0.0025))$$

$$n = 750 / (1 + 1.875)$$

$$n = 750 / 2.875$$

$$n = 260.869 \text{ Sample size is } 261 \text{ parents}$$

In order to maintain a confidence interval (CI) of 95% and a margin of error of 5%, the formula stipulated a sample size of 261 parents (mother or father) from a total population of 750 parents.

Table 1. Sample size calculation for each setting

Setting	Sample frame	Proportion	Sample size
Muhima District Hospital	390	52%	136
Kibagabaga District Hospital	360	48%	125
Total	750	100%	N = 261

3.6.2.1. Inclusion criteria - participants

Participants are parents (mother or father) or any designated primary care givers whose neonate is admitted to the selected NCU during the study period with a gestational age range of 24 to 42 weeks. Neonates' admissions lasting three days or longer and up until day 28 in the NCU considered sufficient period the parents to provide important information regarding health care services for their admitted neonates. Parents were able to communicate in Kinyarwanda or English and consent to participate in the study.

3.6.2.2. Exclusion criteria

A parent with their neonate admitted to NCU for fewer than three days; and more than 28 days were not included as study participants. Parents with a preterm less than 24 weeks gestation as a neonate born below this age would be managed at the terminal level. Parents whose neonate died while hospitalized were excluded from the study, as well as other parents unable to communicate due to mental or physical conditions.

3.7. INSTRUMENT

The instrument used in this study was the neonatal satisfaction survey (NSS-8) that was developed and validated in six Norwegian NICUs by Hagen and colleagues (17). The NSS-8 is a 51-item instrument that covers family-centered care (FCC) in the NICU. Permission to use the NSS-8 was obtained from the corresponding author by email on 9th/Sept/2020.

Eight elements related to nursing and medical care, visits (conditions, routines), the NCU facility, siblings (facilitating for siblings), information, parent anxiety, and discharge were

covered by the study instrument (17). Hagen's research variables yielded a Cronbach's alpha that ranged from 0.70 to 0.94 for the eight components (17).

Instrument was adapted for the local Rwandan context with permission, and some questions were removed. The removed questions are related to participants nationality, next of kin satisfaction, condition of the visit, discharge, parents anxiety and mother and father satisfaction (the author assessed either the mother or father). The instrument is divided into two parts, with Part A being completed by the researcher from health records, and the parent will complete part B.

Section A. This section is composed of questions about the sociodemographic characteristics of the parents and neonates. Parents part include; gender, age, education level, occupation, marital status, religion, mode of delivery, travel time from home to NCU, and support from family and friends; which have three items (Were you alone as dependent with your baby in the hospital?, did you get the support you needed from friends/family during your stay?, did you get practical help from friends/family to care for other children during hospital stay?).

Neonatal part include; age at birth, duration of stay in NCU (day 3-28), gender, birth weight (kg), gestation age at birth, previously hospitalized in NCU, neonatal feeding (breast feeding/nasal gastric tube feeding), neonate health at the time of data collection (8 items).

Section B: This section of the Neonatal Satisfaction Survey (NSS-8) is made up of 8 items with sub-items of Neonatal Satisfaction Survey (NSS-8) that cover the family-centered care (FCC) tenets and is scored using a five-point Likert scale (Strongly disagree, disagree, neither agree nor disagree, agree and strongly agree). The score for the item will range from 1 to 5, with 5 being the highest and 1 being the lowest. The items scored as: strongly agree 5, agree 4, neither agree nor disagree score 3, disagree 2 and strongly disagree with 1 score. Each factor score is calculated by summing the individual item scores for that factor and dividing by the number of items. The cut-off on the five-point Likert scale was established as "strongly disagree," "disagree," and "neither agree nor disagree" (low satisfaction) and "agree" and a "strongly agree" (high agreement) (high satisfaction). The total items in the questionnaire were 39, and two overall satisfaction questions, The Likert scale had a maximum score of 5 and a minimum score of 1.

The research instrument of this study covers aspects like care and treatment by health care professionals (nurse and doctor) , NCU facility, information, parent anxiety,

The data collection instrument modified, contextualized, translated from English to the Kinyarwanda language, the local language, and then reverse translated to check for accuracy. The researcher and supervisors were involved in this process. Prior to the data collection period, the instrument was assessed for its face/content validity and by calculating Cronbach's alpha coefficient for reliability.

3.7.1 Validity and reliability of research instruments

The extent to which an instrument measures what it is intended to measure is known as validity (38). Content validity is the degree to which a tool effectively captures all the content for the variables under study (38). The face validity of the research tool, a subset of content validity in which experts have been asked to express their opinion on whether an instrument assesses the concept intended, was reviewed.

The construction of this study's research tool is validated based on a similar study (8,13). The researcher's supervisors of this study validated the instrument's face validity for use in this study and verified items for clarity, readable, relevant, reasonable, and unambiguous.

When a research tool is utilized repeatedly in the same context, it can be said to be reliable or accurate if the results are consistently the similar (38). Cronbach's Alpha coefficient, the most widely used indicator of internal consistency, needs to be 0.70 or above to be regarded as a reliable instrument (38).

A pilot test was used for adding to the face validity and checking the internal reliability using Cronbach's alpha. 26 parents, representing 10% of the sample size that meets the inclusion criteria were included to test the instrument reliability and the results of Cronbach's alpha show 0.87. After a pilot study, the participants' feedback was incorporated into a revised instrument to fit the local context as one item of condition and routine of visit at the unit was removed as it was found to be not clear to the participants.

3.8. DATA COLLECTION PROCEDURE

After written permission by the UR IRB and research committee of the two selected settings, the principal researcher trained the two research assistants (RA) at each setting on the study's objectives, the questionnaire to collect data, and the consent form before the beginning of data collection. The individual incharge of the research committees and NCU of the two settings requested to present researchers to the parents with neonates admitted in NCU and explain to them the aim of their presence. The researcher presented the RAs to the settings and to the participants, and also approach the eligible parents and explained the nature of the study and questionnaire, confidentiality, and right to withdrawal from the study participation at any time was also ensured. The NCU of the two study settings were visited in alternate days within the three working days, and the other two working days were used to compile the already completed questionnaires. The numbers of participants to approach per day were identified at the first day of data collection in NCU settings visit.

The RAs began by collecting data from the patient's file and then gave the self-report questionnaire to the participants after they had finished signing the consent form. To ensure privacy and confidentiality, the questionnaire was completed in a quiet place outside the NCU. The RA was available for clarification in case any item was not well understood by a participant and checked if the questionnaire has been completed. The administered questionnaires were collected by researcher after being completed at the same day. The RA was among the staff of the two selected settings, but was familiar with the NCU area to increase parents' comfort and ease of data collection. The instrument took about 45 minutes to complete.

3.9. DATA ANALYSIS

Using the statistical package for social sciences (SPSS) version 21 to examine the data, the researcher determined how satisfied parents were with the care given to neonates in NCU.. The independent and dependent variables were calculated using descriptive statistics, such as frequency, mean, median, and standard deviation. The association between the variables was computed using inferential statistics like chi-square and ordered logistic regression; it was then tested using a 95% confidence interval (CI) and a P-value of less than 0.05. Tables and graphics were used to present the data. The level of parents' satisfaction was determined by calculating the total score. The cut-off on the five-point Likert scale was established; respondents who

scored "strongly disagree," "disagree," and "neither agree nor disagree" was classified as low satisfaction and those who scored "agree" and a "strongly agree" were categorized as high satisfaction. To gather parents' satisfaction 5 point Likert scale was used. To determine the cutoff, the midrange was computed by $(1+5)/2=3+1$ to refine. Then 4 score was considered as cutoff point. This means those who scored from 4 classified as high satisfied and those scored less than 4 classified as low satisfied with health providers care of the neonates in neonatal care unit.

The two overall questions, satisfaction with neonate treatment received at the hospital and satisfaction with parent as next of kin treated were categorized as follows: Items 1-3 received a low satisfaction rating (strongly dissatisfied, dissatisfied, and neither satisfied nor dissatisfied). Items 4-5 received a high level of satisfaction (satisfied and strongly satisfied). High satisfaction was assigned to items 4–5 (satisfied and strongly satisfied). The satisfied parent calculated from 8 to 10 score which is equivalent to 80 – 100%.

3.10. DATA MANAGEMENT

All data collection tools not having any personal identifying information recorded on them and they kept into a locked cupboard to maintain participant confidentiality. The gathered information was coded, entered into the researcher's computer, and kept completely private with a personal password. The collected information kept and safe guarded on flash drive and sent to the email for backup in case of a problem with the storage device. Hard copies of all the data will be securely stored for five years and then destroyed.

3.11. DISSEMINATION OF DATA

The University of Rwanda, College of Medicine and Health Sciences will share the data through an oral presentation, a written report, and a copy that will be kept in the library for future use. A formal presentation of the results will also be offered to the setting of the study. Within a year of graduation, data will also be presented at conferences and published in a peer-reviewed medical publication.

3.12. ETHICAL CONSIDERATIONS

The Institutional Review Board (IRB) of the University of Rwanda, College of Medicine and Health Sciences, received the study proposal for approval, and authorization was granted to collect data. Before starting to gather data, a written letter was submitted to the directors of both

institutions, and written feedback was collected. A written informed consent obtained for parents to be a study participant, and privacy and right to withdrawal from the study at any time without penalty granted. Assigning a study code to the data collection instrument instead of any personal identifying information helped to protect the participant's confidentiality. No patient name appeared in any report of the study.

1.13. CONCLUSION

This chapter covered the methods utilized to address the study's research questions. It displayed the research strategy, all methods used to acquire a sample, and all methods used to collect and analyze data. It also showed how ethical considerations were respected throughout the study period.

CHAPTER IV: PRESENTATION OF RESULTS

4.1. Sociodemographic characteristics of the participants

4.1.1 Sociodemographic characteristics of neonate

Sociodemographic characteristics of the neonates were assessed (table 2). The results showed that the majority was male 198 (75.9%) and aged less than 14 days, 219 (83.9%). Regarding newborn weight, 189 (72.4%) were greater than 2.5 kg. When asked the length of stay, the majority 216 (82.8%) reported 3-14 days. Most participants, 186 (71.5%), had a gestational age at birth between 38-42 weeks and no previous hospitalization in the department 219 (83.9%). Among respondents, 204 (78.2%) reported the breast feeding as feeding method. Regarding the child's health, all 261 (100%) reported that the child's health was good.

Table 2: Sociodemographic characteristics of neonate (n=261) (use “tabs” to align first number

Variables	n (%)
Gender	
Male	198 (75.9)
Female	63 (24.1)
Age (days)	
< 13	219 (83.9)
≥14	42 (16.1)
Birth weight (kg)	
<1.5	39 (14.9)
≥1.5 – 2.5	33 (12.6)
≥ 2.5	189 (72.4)
Lengths of hospital stay (days)	
3-14	216 (82.8)
15-28	45 (17.2)
Gestational age at birth (weeks)	
34-37	75 (28.7)

38-42	186 (71.3)
Previous hospitalization (days)	
3 -14	42 (16.1)
None	219 (83.9)
Feeding method	
Breast milk	204 (78.2)
Nasal gastric tube feeding	57 (21.8)
Child's current health	
Good	261 (100)
Not good	0 (0)

4.1.2 Sociodemographic characteristics of parents

Sociodemographic characteristics of parents were assessed (table 3). Among 261 participants responded the questionnaire, 223 (85.4%) were mothers. A total of 163 (62.5%) was between 26 and 36 years, held secondary 'A' level education 184 (70.5%) and not employed, 156 (59.8%). About 155 (59.4%) was married and affiliated with the Christian religion 254 (97.3%). A number of 153 (58.6%), reported that the time spent from home to the hospital was less to 1 hour. Most participants, 204 (89.7%), reported the mode of delivery was "spontaneous".

Table 3. Sociodemographic characteristics of parents (n=261)

Variables	n (%)
Respondents	
Mother	223 (85.4)
Father	38 (14.6)
Age of parent (years)	
15-25	33 (12.6)
26-36	163 (62.5)
37-45	65 (24.9)
Education level	
No level of education	37 (14.2)

Lower primary	35 (13.4)
Upper primary	2 (0.8)
Secondary 'A' level	184 (70.5)
Tertiary	3 (1.1)
Employment	
Yes	105 (40.2)
No	156 (59.80)
Religion	
Christian	254 (97.3)
Muslim	7 (2.7)
Marital status	
Single	77 (29.5)
Married	155 (59.4)
Separated	29 (11.1)
Parents time home to hospital (hours)	
<1	153 (58.6)
≥1	108 (41.4)
Mode of delivery	
Spontaneous	204 (89.7)
C-section	27 (10.3)

Parental support of the neonates

More than a half of parents 182 (69.7%), reported they spent some of their time in the hospital alone, and 162 (62.1%) reported they did not receive the support they needed from friends and relatives, whereas a total of 148 (56. %) said they got practical help from friends and family to care for other children during hospital stay (table 4).

Table 4. Parental support while neonates hospitalized (n=261)

Variables	n (%)
Were you alone or dependent with neonate	
Yes, I was alone part of the time	182 (69.7)
No, I was dependent	79 (30.3)
Support needed from friends/family in hospital	
Yes	99 (37.9)
No	162 (62.1)
Support from friends/family with other children	
Yes	148 (56.7)
No	8 (3.1)
Such assistant was not needed	105 (40.2)

4.2 Participant distribution on satisfaction of care and treatment

4.2.1. Care and treatment by nurses (n=261)

Participants were asked about satisfaction and the results are presented below (Table 5). More than three quarter of respondents reported strongly disagree 197 (75.5%), on the care received by same group of doctors/nurses for themselves and their neonates. Only 86 (33%) strongly agreed and 70 (26.8%) agreed that the doctors and nurses co-operated on the treatment and care of the child. Whereas, less than a half, 99 (37.9%) were undecided that the treatment and care followed a plan in the hospital. 204 people (78.2%) said they strongly agreed with how they were treated when they arrived at the facility. Of those, 112 (42.9%) strongly agreed that they were taken care of later throughout the hospital stay, while 120 (46%) were unsure.

A total of 138 (52.9%) responded strongly agreed and 94 (36%) agreed that the guidance/training in meeting the neonate's needs was received. A number of 92 (35.2%) reported they were undecided, 59 (22.6%) strongly agreed, and 35 (13.4%) disagreed that the nurses took their family situation into consideration. These results show that the individuality of parents was not

taken into account during treatment and care of the newborn. The most responded 127 (48.7%) reported strongly agreed and 90 (34.5%) agreed that nurses provide information about their responsibilities as next-of-kin and more than a half 182 (69.7%) agreed and 79 (30.3%) strongly agreed that the nurses had consideration and care for their neonates. A few number of participants 86 (33%) reported strongly agreed and 33 (12.6%) agreed that nurses had given them explanations in a way that they understood, whereas 98 (37.5%) disagreed that not understood any information. The most of responded 163 (62.5%) reported strongly agreed that the nurses appeared professionally competent.

Table 5: Care and treatment (n= 261)

Questions	Strongly disagree n(%)	Disagree n(%)	Neither agree nor disagree n(%)	Agree n(%)	Strongly agree n(%)
You experience the same group of care doctors/nurses looking after you and your neonate	62 (23.7)	197 (75.5)	0	0	2(0.8)
You experience doctors and nurses co-operated on treatment and care your neonate received	42 (16.1)	63 (24.1)	0	70 (26.8)	86 (33.0)
You experience that the treatment and care followed a plan in hospital	35 (13.4)	0	99(37.9)	35 (13.4)	92 (35.2)
You were taken care of upon arrival At the unit	0	0	0	57 (21.8)	204 (78.2)
You were taken care of later during The stay	0	29 (11.1)	120 (46)	0	112 (42.9)
The neonate taken care of throughout the stay	0	0	56 (21.5)	86 (33)	119 (45.6)
You receive guidance/training in meeting your neonate's needs	0	0	29 (11.1)	94 (36)	138 (52.9)
Your neonate receive the difference care with others in the unit	75 (28.7)	0	63 (24.1)	86 (33)	37 (14.2)
The nurses take your family situation into consideration	29 (16.1)	33 (12.6)	92 (35.2)	35 (13.4)	59 (22.6)

Nurses provide relief to the admitted neonate during the stay	2 (0.8)	33 (12.6)	71 (27.2)	57 (21.8)	98 (37.5)
Nurses inform you about your responsibilities as next-of-kin to the neonate at the hospital	0	2 (0.8)	42 (16.1)	90 (34.5)	127 (48.7)
Nurses have consideration and care for the neonate	0	0	0	182 (69.7)	79 (30.3)
Nurses were interested in hearing your opinion as a next of kin	2 (0.8)	0	42 (13.4)	132 (50.6)	92 (35.2)
Nurses give you explanations in a way that you understood	2(0.8)	98(37.5)	42(16.1)	33(12.6)	86(33)
Nurses show that they had time for You	63 (24.1)	64 (24.5)	0	57 (21.8)	77 (29.5)
Nurses appear professionally competent	0	0	35 (13.4)	63 (24.1)	163(62.5)
You were angry, upset, or disappointed by the unit nurse during your stay	134 (51.3)	92 (35.2)	35 (13.4)	0	0
Nurses show understanding and respect	0	63 (24.1)	29 (11.1)	92 (35.2)	77 (29.5)
Nurse call you when you were not on unit in event of changes in neonate's condition or treatment	92 (35.2)	29 (11.1)	93 (24.1)	0	77 (29.5)

4.2.2. Care and treatment by doctors (n=261)

Care and treatment by the doctors was assessed (table 6). A total of 226 (86.6%) respondent agreed that the doctors showed their neonate care and consideration; 134 (51.3%) agreed, and 92 (35.2%) strongly agreed. The majority of participants, 105 (40.2%), agreed and 92 (35.5%) strongly agreed that the doctors were interested in hearing their opinions as the next-of-kin, while 134 (51.5%) agreed that the doctors explained things in a way they could understand and 169 (64.8%) were unsure whether the doctors had provided them with enough information about the prognosis or outcome. Over three quarter 228 (87.4%) reported strongly agreed that the doctors appeared professionally competent.

Table 6: Care and treatment by doctors (n=261)

Questions	Strongly disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Strongly agree n (%)
Doctors show care and consideration for your neonate	0	0	0	226 (86.6)	35 (13.4)
Doctors show care and consideration for you	0	35 (13.4)	0	134 (51.3)	92 (35.2)
Doctors interested in hearing your opinion as next of kin	0	29 (11.1)	35 (13.2)	105(40.2)	92(35.2)
Doctors give you explanations in a way that you understood	0	0	92 (35.2)	35 (13.4)	134 (51.3)
Doctors gave you enough information regarding the prognosis/outcome	0	0	169 (64.8)	0	92 (35.2)
Doctors appear professionally competent	0	0	33 (12.6)	0	228 (87.4)
Doctors show that they had time for you	0	62 (23.8)	35 (12.4)	162 (62)	2 (0.8)
You experience one doctor had the responsibility for your neonate	155 (9.4)	42 (16.1)	33 (12.6)	29 (11.1)	2 (0.8)

4.2.3. Information

The Satisfaction with the adequacy and content of the information provided was assessed (table 7). About 86 (33%) respondents disagreed and 65 (24,9%) agreed that the information needed to understand why the tests and examinations had to be done when the newborn was admitted was provided. This results shows that the parents are not involved in the test and examination carried out to their neonates. A total of 94 (36%) strongly disagreed with this statement, and 92 (35.2%) disagreed that the essential information was provided regarding how tests and examinations would be conducted while the newborn was admitted. Over half, 151 (57.9%) strongly disagreed

that the necessary information about the effects and side effects of medication given to the child was given, and 142 (54.4%) strongly disagreed that the information received was adequate and given in an understandable way during the hospital stay. These study findings demonstrated that the information regarding examination, treatment provided to the neonate is lacking, therefore training is needed to improve family centered care and hence increase parents' satisfaction with health care services in NCU.

Table 7: Information

Questions	Strongly disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Strongly agree n(%)
You were given the necessary information about why tests/exam were carried out while your neonate was admitted	0	86 (33.0)	110 (42.2)	65 (24.9)	0
You were given the necessary information about how tests/exam were to Be carried out while neonate was admitted	94(36)	92(35.2)	0	75(28.7)	0
You were given the necessary information about effects/side effects of medication given to your neonate	151(57.9)	35(13.4)	0	75(28.7)	0
The information you received was adequate and given in understandable way during the hospital	0	142(54.4)	48(18.4)	71(27.2)	0

4.2.4. Parents' anxiety

Parent's anxiety was assessed and the more than a half 154(59%) strongly agreed to experience stress, sleeplessness, or anxiety during the period spent in the unit (table 8). Of them a large number strongly agree to be at any time afraid that the child would not be survive and 160(61.3%) that ant time afraid the child would have delayed effects.

Table 8: Parental anxiety

Questions	Strongly Disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Strongly agree n (%)
You experience stress, sleeplessness, or anxiety in connection with the stay at The unit	44 (16.9)	33 (12.6)	0	30 (11.5)	154 (59.0)
You were at any time afraid that your neonate would not survive	77(29.5)	29(11.1)	0	0	155 (59.4)
You were at any time afraid that your Neonate would have delayed effects	71 (27.2)	2 (0.8)	0	28 (10.7)	160 (61.3)

4.2.6 Your general view

Regarding the general satisfaction information, a total of 191 (73.2%) reported that they were satisfied with the treatment the neonate received at the hospital, and 186 (71.3%) were satisfied with how as the next-of-kin were treated (table 9).

Table 9: Your general view

How satisfied or dissatisfied are you

Questions	Strongly dissatisfied n(%)	Dissatisfied n(%)	Neither satisfied nor dissatisfied n (%)	Satisfied n(%)	Strongly satisfied n (%)
With the treatment your child received at the hospital?	37(14.2)	33(12.6)	0	191(73.2)	0
How satisfied or dissatisfied are you with how you, as the next-of-kin were treated?	46(17.6)	29(11.1)	0	186(71.3).	0

4.3. Level of parents' satisfaction (n=261)

To determine level of satisfaction total score was calculated, the 4 score was taken as cutoff point. This means those who scored from 4 classified as satisfied and those scored less than 4 classified as not satisfied with health providers care of the neonates in neonatal care unit. Among 261 parents assessed, a number of 171 (66%) were highly satisfied and 90 (34%) reported low dissatisfied with health providers care of the neonates in neonatal care units. For the two overall questions, we gathered a total score for the parents' satisfaction with the care of the neonate. To the

first question, 72.3% reported satisfaction and to the second question, 71.3% reported satisfaction while for the second question, 71.3% of the parents reported satisfaction.

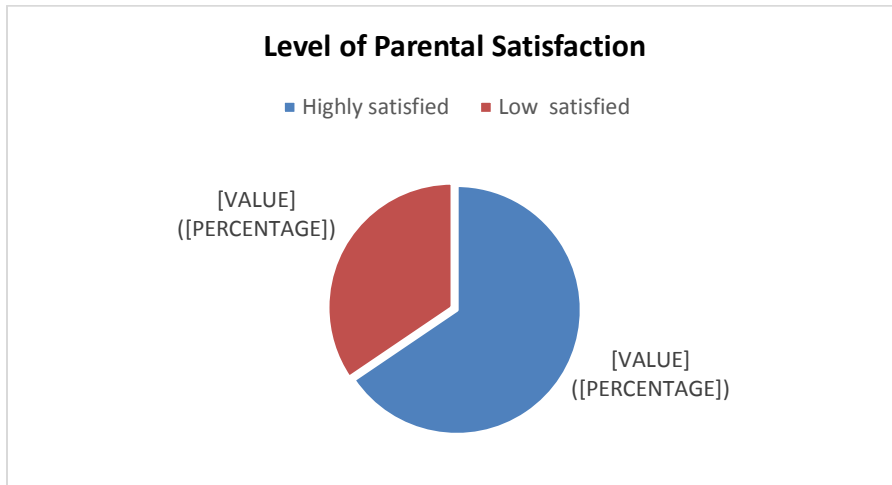


Figure 2: Level of parents’ satisfaction

4.4. The association between parents’ satisfaction with care provided to their neonates and socio-demographic factors in the NCU.

The association between parents’ satisfaction with care given to their neonates and sociodemographic factors was assessed using the Chi-square test (table 10). Nearly all variables showed a significant association with parent satisfaction including, gender (p=0.000), age of parents (p=0.000), level of education (p=0.000), employment status (p=0.000), marital status. (P=0.000), and parents time from home to the hospital (p=0.015). Only variable religion, showed no significant association with parent satisfaction (p-value >0.05).

Table 10: The association between parents’ satisfaction with the care provided to their neonates and socio-demographic factors in the NCU.

Variables	High satisfied n(%)	Low satisfied n(%)	X ²	P
Who answered the survey			2.4132	0.000
Mother	132 (59.5)	90 (40.5)		
Father	39 (100)	0(0)		
Age of parents (years)			1.457	0.000
15-25	33 (100)	0 (0)		

26-35	135 (82.8)	28 (17.2)		
36-45	3 (4.6)	62 (65.4)		
Level of education			5.754	0.000
Not applicable	37 (100)	0 (0)		
Lower primary	35 (100)	0 (0)		
Upper primary	2 (100)	0 (0)		
Secondary 'A' level	94 (51.1)	90 (48.9)		
Tertiary	3 (100)	0(0)		
Employment			4.692	0.000
Yes	128 (82.1)	28 (17.9)		
No	43 (41)	62 (59)		
Religion			1.635	0.238
Christian	168 (66.1)	86 (33.9)		
Muslim	3(42.9%)	4(57.1%)		
Marital status			9.206	0.000
Single	93 (60)	62 (40.5)		
Married	77 (100)	0 (00)		
Divorced	1 (3.4)	28 (96.6)		
Parents time home to hospital			5.971	0.015
< 1 hour	91 (59.5)	62 (40.5)		
≥ hour	80 (74.1)	28 (25.9)		

X² Chi -Square test, P P-value

4.5. The relationship between parents' level of satisfaction with health care services provided to their neonates in NCU.

A simple linear regression was carried out to ascertain the extent to which independent variables (care given by nurses, doctors, and information given to mother) can predict the satisfaction

(table 11). The assistance provided by health care providers to the child $r=0.407$; $p=.000$; $CI [-0.221,-0.126]$, and receiving the required information regarding the effects and adverse effects of the child's medication $r= 0.550$, $p= 0.000$, $CI [-0.236,-0.162]$ predicted the parents' satisfaction of care with a moderate positive correlation.

The nurses' consideration and care for the child $r= 0.931$; $p=0.00$; $CI [-0.372,-0.338]$, the nurses' interest in hearing the opinions of next-of-kin $r=0.914$, $p=0.000$; $CI[-0.494,0.443]$, the time nurses spend to the child $r=0.794$; $p=0.000$; $CI [-0.298]$, the nurse showing understanding and respect $r=0.891$, $p=0.003$; $CI [-0.397,-0.350]$, the interest of the doctors in hearing opinions of next-of-kin $r=.711$, $p=0.000$; $CI [-.357,-.280]$, care and consideration of the doctors $r=0.688$; $p=.000$; $CI [-0.264,-0.204]$, respecting the plan of care $r=0.697$, $p=0.000$; $CI [-0.198,-0.153]$, and the doctors explanation in understandable way $r=0.688$, $p=0.000$, $CI [-0.264,-0.204]$ showed to predict the parents' satisfaction with a strong positive correlation.

Giving the necessary information about why tests and examinations were performed while your child was in the hospital, $r=-.740$, $p=0.000$; $CI [-0.311,-0.248]$, how tests and examinations were to be performed, $r=-.728$, $p=0.000$; $CI [-.319, -.253]$, and giving the necessary information about the effects all indicated a strong negative correlation, while explaining the side effects of the medication given to the child $r=-.550$, $p=0.000$; $CI [-.236, -.162]$ indicated a moderate negative correlations.

Table 11: Linear regression between parent's level of satisfactions with health care services provided to their neonate in the NCU

Variables	B	95% CI of B		r	P
		Lower	Upper		
Assistance provided to admitted child during the stay	-.174	-.221	-.126	.407	.000
Information provided by nurses about your responsibilities as next-of-kin	-.138	-.219	-.058	.205	.001
Nurses' consideration and care for child	-.355	-.372	-.338	.931	.000
Nurses interested in hearing your opinion as a next of kin	-.468	-.494	-.443	.914	.000

Ability to understand explanations given by nurses	-.137	-.191	-.083	.296	.000
Nurses show that they had time for you	-.329	-.359	-.298	.794	.000
Nurses appear professionally competent	-.060	-.099	-.020	-.181	.003
Respect of Care Schedule	-.175	-.198	-.153	.697	.000
Nurses show understanding and respect	-.374	-.397	-.350	.891	.000
Care and consideration of the doctors	-.234	-.264	-.204	.688	.000
Doctors interested in hearing your opinions as next-of-kin	-.318	-.357	-.280	.711	.000
Doctors give you explanations in a way that you understood	-.234	-.264	-.204	.688	.000
Doctors give you sufficient information about prognosis/outcome	-.533	-.635	-.430	.052	.000
Doctors appear professionally competent	.197	.113	.281	.276	.000
Doctors giving time to patient	-.195	-.284	-.105	.045	.000
Having one constant doctor	.045	-.008	.098	.104	.095
Necessary information of why tests and examinations were carried out while your child was admitted were given	-.280	-.311	-.248	-.740	.000
Necessary information of how tests and examinations were to be carried out given	-.286	-.319	-.253	-.728	.000
Necessary information about the effects and side effects of medication given to your child explained	-.199	-.236	-.162	-.550	.000

B Unstandardized Coefficients, 95% Confidence Interval for B; r Standardized Coefficients Beta, *P* P-value

Summary

The results of this research found that, the majority of participants satisfied 171(66%) with care onates. The majority of nurses and doctors care and treatment was associated with a level of

satisfaction. Among them, the nurses' consideration and care for the child, the nurses' interest in hearing the opinions of next-of-kin, the time nurses spend to the child, the nurse showing understanding and respect, the interest of the doctors in hearing opinions of next-of-kin, care and consideration of the doctors, respecting the plan of care, and the doctors explanation in understandable way had a statistical strong positive correlation with the level of parents 'level of satisfaction about care and treatment provided by health care provided to their children in NCU.

Giving the essential information about why tests and examinations were performed while child was admitted, how tests and examinations were to be done, and giving the necessary information about the effects of medication had a statistical strong negative correlation with the level of parents' satisfaction about care and treatment provided by health care provided to their children in NCU.

CHAPTER V: DISCUSSION

The present study assessed the level of parents' satisfaction and its relationship with health care services provided to their neonates in the NCU at two health facilities in Rwanda. The demographic characteristics of the neonate (table 2) showed that the majority were aged 38-42 weeks' gestation at birth, male, weighed 2.5 kg or more, and had been hospitalized for 3-14 days. The majority of neonates had received breastmilk, and their current health was considered good. Findings of the demographics of the parents' completing the satisfaction survey (table 3) showed the majority was mothers, aged between 26 and 36 years, had secondary 'A' level education, Christian affiliation, married, and gave birth via spontaneous vaginal delivery. The majority was not employed and spent less than one hour getting from their home to the hospital. The majority of participants reported that they were alone with the neonate and did not need support from friends and family in the hospital though did need support with other children at home (table 4).

The findings showed that the more than a half (66%) of participants satisfied with the level of care provided at the health facilities (Figure 2). The parents were satisfied on the almost health services provided to their neonates. The majority agreed and strongly agreed that upon arrival at the unit they were given care and strong agreed and agreed that throughout the hospital stay their neonate were given care. In contrast, a study conducted in Iran by Salehi (7), showed the least were satisfied with health providers' interaction with neonatal care.

Findings of this study indicated that doctors and nurses' co-operation on the treatment and care, care and treatment followed a plan, taken care of through the stay, receiving guidance in meeting child's needs were statistically significant associated with the level of parent's satisfaction.

Findings in this research revealed that age of the parents, education level, employment status, marital status, and parents' time from home to hospital were significantly associated with parent satisfaction (Table 9). In contrast, findings from the Neonatal Satisfaction Survey-8 (17), showed age of the parent, language, primary income, civil status, education level, sole providers and travel time were not statistically correlated with parents' satisfaction.

A statistical significant association with parents' level of satisfaction were found on how nurses take family situation into consideration, assistance to the child during the stay, how nurses inform next of kin their responsibilities, the consideration given by nurses to the child, the

interest in hearing family opinions, understandable information provided by nurses to the family, the essential information of why tests and examination were performed and the adequate information given in an understandable way during the hospital stay with the level of satisfaction. These results are supported by a study by Auslander et al. (14) that was conducted in Israel and found that parents' satisfaction was significantly influenced by communication and information sharing, emotional support and caring.

Similar to the Sankar's study (3) revealed that assurance, caring, communication, consistent information, education, environment, follow-up care, pain management, participation, proximity, and support were identified as contributing factors of higher parent satisfaction. Linear regression in the present study revealed the strong positive association of the nurses' consideration and care for the child, the nurses' interest in hearing the opinions of next-of-kin, the time nurses spend to the child, the nurse's understanding and respect, the interest of the doctors in hearing opinions of next-of-kin, care and consideration of the doctors, respecting the plan of care, and the doctors explanation in understandable way had a statistical strong positive correlation with the level of parents 'level of satisfaction about care and treatment provided by health care provided to their children in NCU. These findings also are supported by Salehi's study (8) showed that parents are most satisfied with doctors' education regarding the next visit at discharge. Furthermore, the findings are in line with a study conducted by Tsiron (16) found that health services and good communication between parents and nursing or medical staff affected their satisfaction.

Cross-sectional design studies have the limitation of only testing participants at one time; therefore, the response may not be generalized to other times, settings, and populations. The study only includes parents with neonates in the NCU during the neonatal period, which is the first 28 days post-birth; therefore their satisfaction rates may be different if obtained when the neonate is older than 28 days post-birth. A challenge may be present if the mother is still hospitalized post-birth on day three and sharing a room with others on the obstetrics and gynecology ward. In that case, extra care will be needed to protect her privacy and confidentiality if included in the study. Moreover, the limitation of this study was due to Covid-19 lock down which extended the period of data collection and the transport expensive to reach to the setting for collecting data.

CHAPTER VI: CONCLUSION AND RECOMMENDATION

6.1. Conclusion

This study shows that more than a half of parents are satisfied with care and treatment by nurses and doctors. To boost and maintain satisfaction, however, various factors must be taken into account. thus nurses' consideration and care for the neonate, the nurses' and doctors' interest in hearing the opinions of parents as next of kin, the nurses' understanding and respect of parents, providing the same care by the same group of nurses and doctors in NCU, providing information to the parents in understandable way and giving information about the prognosis of neonates' condition during hospital stay. To identify caregiving practices that require improvement and to choose which interventions to put into place for additional parental support, it would be helpful to understand what makes parents satisfied.

6.2. Recommendations

The nurses and doctors in NCU maintain and improve the consideration and showing interest in hearing the parents as next of kin in NCU. The nurses and doctors in NCU maintain and improve the respect and keep providing understandable and necessary information about neonates care and treatment to their parent. NCU services should provide a continuous evaluation of parents' satisfaction for better understanding the area of parents satisfaction to improve the quality of services provided to the neonates in NCU. NCU service should plan the continuous training of staffs in NCU on the importance of parents/family centered care approach. As the results of this study shown, sufficient information regarding neonates care is lacking, therefore, health care providers are required to consider this important element in neonatal care unit for the good outcome of parents' satisfaction with care for their neonates. Moreover an advanced research is requires to assess the health providers barriers that contribute to provision of parent centered care in NCU.

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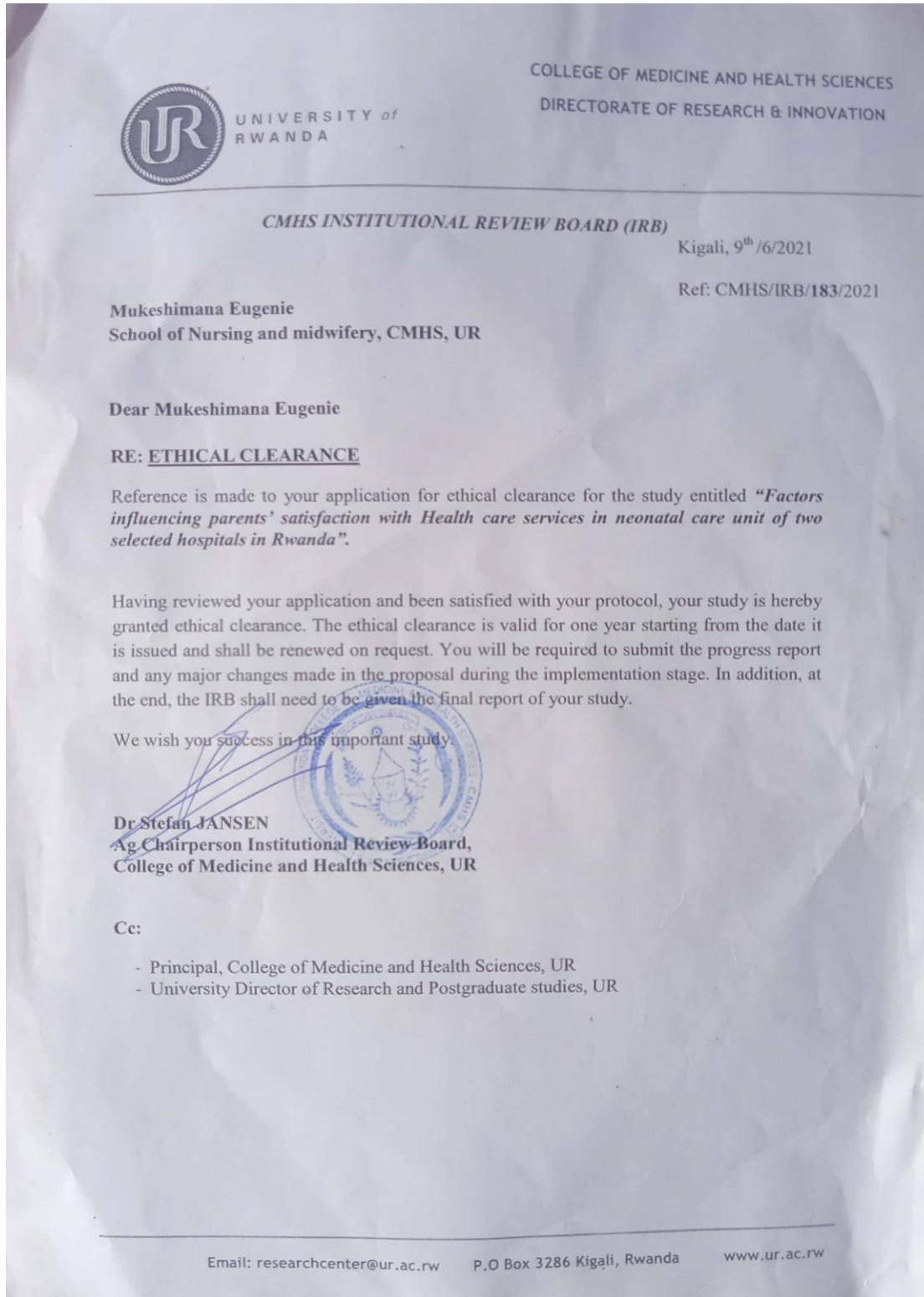
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APPENDICES

APPENDIX I: ETHICAL CLEARANCE FROM IRB



APPENDIX II. REQUEST FOR PERMISSION TO CARRY OUT A STUDY

MUKESHIMANA Eugenie

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23rd April, 2021

To

The Director General of Muhima Hospital

Kigali-Rwanda

Dear sir,

Re: Request for permission to carry out reseersch study and data collection

I hereby requesting permission to conduct a research study and data collection at your hoasptial. In fact Sir, I am a student in masters studies, neonatal track at the University of Rwanda/ College of Medicine Health Sciences and School of Nursing and Midwifery.

As a pre-requisite to complete this program, I should carry out a research study, and my dissertation is entitled **Factors influencing parents' satisfaction with health care services in neonatal care unit.**

I sincere requesting for permission to conduct this research among parents and any designated care givers having neonates admitted in Neonatal Care Unit at your hospital. Approval to conduct this study from University of Rwanda/Institution review board (UR/IRB) is attached here.

Your approval to conduct this study will be highly appreciated

Your faithfully



MUKESHIMANA Eugenie

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23rd April, 2021

To

The Director General of Kibagaga Hospital

Kigali-Rwanda

Dear sir,

Re: Request for permission to carry out reseersch study and data collection

I hereby requesting permission to conduct a research study and data collection at your hoospital. In fact Sir, I am a student in masters studies, neonatal track at the University of Rwanda/ College of Medicine Health Sciences and School of Nursing and Midwifery.

As a pre-requisite to complete this program, I should carry out a research study, and my dissertation is entitled **Factors influencing parents' satisfaction with health care services in neonatal care unit.**

I sincere requesting for permission to conduct this research among parents and any designated care givers having neonates admitted in Neonatal Care Unit at your hospital. Approval to conduct this study from University of Rwanda/Institution review board (UR/IRB) is attached here.

Your approval to conduct this study will be highly appreciated

Your faithfully



MUKESHIMANA Eugenie

APPENDIX III: REQUEST OF PERMISSION TO USE YOUR TOOL

Inbox



MUKESHIMANA Eugenie <eugmuksha@gmail.com>

Wed, Sep 9,
8:49 AM

to inger.h.hagen

Greetings

Dear Sir,

My name is Eugenie MUKESHIMANA, I am Rwandan and I'm a master's student at University of Rwanda, School of Nursing and Midwifery in neonatal tract.

I am currently writing a proposal on *factors influencing parent's satisfaction with newborn's health care services in NICU*. I came across your article entitled "*Parental satisfaction with neonatal intensive care unit: A quantitative cross sectional study*". I found the tool used can be useful to collect data in my study. That is the reason why I kindly request from you the permission to use data collection tool used in your research and make a minor change so that it can fit to the context of this study's participants. I promise that I'll not forget to cite your article and tool as well. Thank you for your understanding and help to progress my study.

Yours

Eugenie

APPENDIX IV. PERMISSION LETTER FROM AUTHER OWNER OF A TOOL

Inger Hilde Hagen <inger.h.hagen@ntnu.no>

Sep 9, 2020,
12:08 PM

to me

Dear Eugenie

Thank you for requesting our NSS-8 questionnaire, and I will gladly send you our English version. Of course, you have to cite us when publication from your research; thank you and wish you good luck

Med vennlig hilsen

Inger Hilde Hagen

Førsteamanuensis / Associate Professor, PhD

AIO-programkoordinator, emneansvarlig intensivsykepleie

Department of Health Science Aalesund,

Faculty of Medicine and Health Sciences,

NTNU -Norwegian University of Science and Technology

Tlf. 70 16 13 16/ Mob. 91 61 60 64


www.ntnu.no/ansatte/ingehag

APPENDEIX V: APPROVAL LETTER

APPROVAL
Inf: - 1412
30/06/2021
Dr N. Jamu

HOPITAL KIBAGABAGA
COU: ...
Date d'entrée: ...
N° d'enregistrement: ...
A traiter par: ...

MUKESHIMANA Eugenie
University of Rwanda/College of Medicine and Health Sciences
School of Nursing and Midwifery
Tel: +250788456428
Email: eugmuksha@gmail.com
23rd June, 2021



To
The Director General of Kibagaga Hospital
Kigali-Rwanda

Dear sir,

Re: Request for permission to carry out research study and data collection

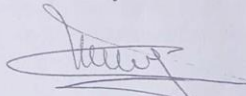
I hereby requesting permission to conduct a research study and data collection at your hospital. In fact Sir, I am a student in masters studies, neonatal track at the University of Rwanda/ College of Medicine and Health Sciences and School of Nursing and Midwifery.

As a pre-requisite to complete this program, I should carry out a research study, and my dissertation is entitled **Factors influencing parents' satisfaction with health care services in neonatal care unit.**

I sincere requesting for permission to conduct this research among parents and any designated care givers having neonates admitted in Neonatal Care Unit at your hospital. Approval to conduct this study from University of Rwanda/Institution review board (UR/IRB) is attached here.

Your approval to conduct this study will be highly appreciated

Your faithfully



MUKESHIMANA Eugenie

APPENDIX VI: RESEARCH TOOL

NEONATAL SATISFACTION SURVEY

You are being requested to participate in this study because you are the main care giver for a infant admitted to the neonatal care unit We request you to tell us about your satisfaction with the neonates' care in neonatal care unit.

The aim of this study is to improve services provided to the child and the family within the unit. As a carer who stayed in the hospital, we would like to know your satisfaction throughout the hospitalization period with your child. It is very helpful if you complete the questionnaire yourself without asking anyone else. Please, for each question, provide a single answer and tick your correct response on the paper. The completed form will be kept confidential, and your name will not appear on it. Please do not provide your identification on the questionnaire; just fill in the code number provided. You are requested to place the questionnaire in an envelope and return the completed form to the place directed by the researcher.

SECTION A: SOCIODEMOGRAPHIC CHARACTERISTICS

RESEARCHER TO COMPLETE

NEONATE

1. Gender	Male	
	Female	
2. Age	Less than 14 days	
	14 days and above	
3. Birthweight	Less than 1.5 kg	
	1.5 kg – 2.5 kg	

	Greater than 2.5 kg	
4. Length of hospital stay	3days – 14days	
	15 days – 28 days	
5. Gestational age at birth	24 – 28 weeks	
	29 – 33 weeks	
	34 – 37 weeks	
	38 – 42 weeks	
6. Previously hospitalizations in the department	3 days – 14 days	
	Greater than 14 days - 28 days	
	Not applicable	
7. Feeding method	Breast milk	
	Nasal gastric tube feeding	
8. Child's health now?	Good	
	Fair	

PARENT

9. Who answered the survey	Mother	
	Father	
10. Age of parent	15 - 25	
	26 - 35	
	36 - 45	
11. Level of education	Not applicable	
	Lower primary	
	Upper primary	
	Secondary "O" level	
	Secondary "A" level	
	Tertiary	
12. Employment	Yes	
	No	
13. Religion	Christian	
	Muslim	
14. Marital status	Single	
	Married	
	Divorced	
	Separated	
	Widowed	
15. Parent's time from home to the hospital	Less than 1hour	
	1hour and above	
16. Mode of delivery	Spontaneous	
	C-Section	
17. Were you alone as dependent with neonate in the hospital?	Yes, I was alone	
	Yes, I was alone part of the time.	
	No, I was dependent	

18. Did you get the support that you needed from friends/family during your stay?	Yes	
	No	
19. Did you get practical help from friends/family to care for other children during hospital stay?	Yes	
	No	
	Such an assistant is not needed.	

SECTION B: HEALTH CARE SERVICES

PARENT TO COMPLETE

CARE AND TREATMENT

GENERAL	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree
1. The same group of care doctors/nurses were looking after you and your child					
2. The doctors and nurses co-operated on the treatment and care your child received					
3. The treatment and care followed a plan in the hospital					
4. Upon arrival you were taken care of at the unit					
5. You were taken care of later during the hospital stay					
6. The child was taken care of throughout the hospital stay					
7. You receive guidance/training in meeting your child's needs					
8. Your child receive the difference care with others in the unit					

Comments:

.....

Care and treatment by Nurses

9. In your experience, did the nurses care:	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree
➤ The nurses take your family situation into consideration					
➤ The nurses provide relief or assistance to the admitted child during the stay					
➤ The nurses inform you about your responsibilities as next of kin to the child at the hospital					
➤ Nurses have consideration and care for the child					
➤ The nurses interested in hearing your opinions as a next of kin					
➤ Nurses give you explanations in a way that you understood					
➤ The nurses show they had time for you					
➤ The nurses appear professionally competent					

10. You were angry, upset, or disappointed by the unit nurse during your stay					
11. Nurses show understanding and respect					
12. Nurses call you when you were not at the unit in the event of changes in the child's condition or treatment					

Comments:

.....

.....

.....

Care and treatment by doctors

13. In your experience, tell me about the doctors on the unit where your child was staying:	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree
➤ Doctors show care and consideration for your child					
➤ Doctors show care and consideration for you					
➤ Doctors interested in hearing your opinions as next of kin					
➤ Doctors give you explanations in a way you understood					

➤ Doctors give you sufficient information regarding the prognosis/outcome					
➤ Doctors appear professionally competent					
➤ Doctors show they had time for you					
14. One doctor had the responsibility for your child					

Comments:

.....

FACILITY

15. What do you think about the conditions in the department?	Poor	Bad	Good	Very good	Not applicable
➤ Bathroom /toilet facilities					
➤ Silence in the patient's room					
➤ Offered food, rest, lodging, pump room, etc.					
➤ Patient/guardian proximity (confidentiality, privacy, place to change clothes, etc.)					

Comments.....

INFORMATION

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree
16. You were given necessary information about why tests and examinations carried out for your child					
17. You were given the necessary information about how tests and examinations carried out for your child					
18. You were given the necessary information about the effects and side effects of medication given to your child					
19. Information received were adequate and given in an understandable way					

Comments:

.....
.....

PARENT'S ANXIETY

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree
20. You experience stress, sleeplessness, or anxiety in connection with the stay at the unit					
21. You were at any time afraid that your child would not survive					
22. You were at any time afraid that your child would have delayed effects					

Comments:

.....
.....

YOUR GENERAL VIEW

	Strongly dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Strongly satisfied
1. How satisfied or dissatisfied are you with the treatment your child received at the hospital?					
2. How satisfied or dissatisfied are you with how you, as a next of kin, were treated?					

Thank you for completing this form!

APPENDIX VII: INFORMED CONSENT DOCUMENTS (English)

Information sheet

My name is MUKESHIMANA Eugenie; I am a student in Master’s Program, Neonatology track at the University of Rwanda carrying out a study entitled:’ *Factors influencing parental satisfaction with neonate’s health care services in NCU*”

I am requesting you to participate in this study.

In fact this study might not benefit you immediately but the findings may help to improve the quality of care provided to the baby and family in NICU for the future needs. There are no obvious physical risks foreseen or emotional risks anticipated. The information will be gathered from the participants by filling the questionnaire.

The information will include demographical data and neonatal satisfaction factors; you are free to ask any questions before completing the form. Your participation in this study is voluntary, meaning that you are free to withdraw from the study any time without any penalty. The service you receive at the unit and the relationship with the health care provider will not be affected in any way. You will not provide your identification; only the provided code by the researcher will be used. All information will be treated confidential. For any queries or questions, contact me through the University of Rwanda, College of Medicine and Health sciences the Chairperson of the CMHS IRB (0788 490 522) and of the Deputy Chairperson (0783 340040), contact the supervisor of this research on 0788693458 or use my cell phone 0788456428.

Will you please sign to your willingness to participate?

Participant’s Statement:

The study described above has been explained to me to my full understanding and I voluntarily give consent to participate in this study.

Participant / Witness’s Signature.....Date.....

Investigator’s Signature.....Date.....