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STRESS, INDIVIDUAL COPING MECHANISMS AND SUPPORT SYSTEMS FOR MOTHERS OF BABIES WITH NEONATAL SEPSIS IN KENYATTA NATIONAL HOSPITAL NEONATAL UNITS.

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This thesis was submitted for the partial fulfilment of the award of master of nursing sciences (midwifery/obstetric nursing) of the University of Nairobi.

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DECLARATION

I Adelight Nabwire, declare that this is my original work and that it has not been presented in any college or university.

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DEDICATION

I dedicate this work to my children Patience, Peace, Brighton and Grace. You have made me the mother that I am.

To my parents, thank you for defiling the Luhya culture and educating a girl child.

To all mothers to babies with neonatal sepsis, you have strength and resilience unequalled.

To all nurses who take care of sick neonates, you are a great treasure in the lives of mothers with sick neonates.

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I thank the almighty God for giving me Grace and passion for maternal health. He is my good father.

I am very grateful to my spiritual Father, Bishop James Njuguna, for supporting me throughout my study period.

I sincerely thank my supervisors Dr. Omondi Lilian and Dr. Kirui for their thorough guidance throughout this study.

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ABBREVIATIONS

DONS-Department of Nursing Sciences

KDHS- Kenya Demographic Health Survey

KNH-Kenyatta National Hospital

MDGS- Millennium Development Goals

NBU-New Born Unit

NICU- Neonatal Intensive Care Unit

NNU-Neonatal Units

PICU-Pediatric Intensive Care Unit

PRU-Pediatric Renal Unit

PTS-Post Traumatic Stress

UNICEF-United Nations Children's Fund

UON-University of Nairobi

WHO- World Health Organization

DEFINITION OF TERMS

Mother -A woman who has given birth.

New-born -This is an infant in the first 28 days after birth

Neonatal Unit -This is a unit specialized in taking care of ill neonates

Neonatal sepsis-local or systemic infection in babies below 28 days of life

Preterm Born- before 37 completed weeks of gestation

Stress- a change causing physical, emotional and psychological pain

Coping mechanism- Ways of minimizing effects of stress on the mother to a baby with neonatal sepsis.

Support systems -are external resources that alleviate the mothers' stress levels

ABSTRACT

Background: Maternal health is a major health concern worldwide.Admission of a neonate causes significant stress among mothers who are the main caregivers due to uncertainty about the progress of their babies. Mothers employ varied coping mechanisms when in such situations. Very few mothers have good support systems in such cases and experience a lot of strain emotionally, socially and financially. Maternal health is paramount in the outcome of a sick neonate because a healthy mother will participate optimally in the caring for her child. For this reason, mothers ought to receive optimal support from family, friends, religious groups and the hospital at large. **Objective**: To determine the stress levels, related factors, individual coping mechanisms and support systems for mothers whose babies have neonatal sepsis in Kenyatta national hospital, neonatal units. **Methodology:** A cross-sectional descriptive, quantitative study was conducted in Kenyatta National Hospital. Purposive sampling method was used to select the respondents. Data was collected for a period of three weeks among mothers in the neonatal units, using a semi-structured researcher-administered questionnaire and was analyzed using R version 4.1.2. Inferential statistics was done using Binary logistic regression tests. Results were presented using charts and graphs and tables. Qualitative data presented as per identified themes.

Results: This study found that on average, mothers whose babies were admitted to the hospital due to neonatal sepsis had moderate level of stress. None of the sociodemographic factors was significantly associated with maternal stress though being single, having a college education, not being supported by a spouse, maternal age less than 25 years, being unemployed, and delivering via caesarean section increases the odds of high-stress levels among the mothers. Psychological approach and meditation were identified as the two main stress coping mechanisms among mothers. Social support (family and friends, and medical professionals) was the main source of support for mothers of babies who were admitted to the hospital.

Conclusion: Mothers to babies with neonatal sepsis are often stressed and require psychological, social and financial support from family, church and the hospital at large to sail through as they take care of the sick neonates.

Recommendations: Healthcare workers need to monitor mothers of admitted babies and give them satisfactory information on care process as a way of curbing stress. There is a need for multisite study to be able to identify factors that significantly contribute to maternal stress among mothers whose babies are admitted with neonatal sepsis to other hospitals.

CHAPTER ONE: INTRODUCTION

1.0 **Introduction**

This chapter outlines the contents of chapter one of the study. This includes study background, problem statement and the significance of the study. The study research questions and the objectives of the study were also included in this chapter.

1.1 Study background

Maternal health is a major concern worldwide. Maternal health being the state of the mother during pregnancy, birth and puerperium, is a major priority of the World Health Organization (*Maternal Health*, 2021.).

Pregnancy and the birth of a child are special events in the life of a woman. This period has a lot of adjustments and role attainment and bonding between the mother and the baby. Maternal stress from whatever source severely affects this period and might have detrimental effects on the health of the mother and the child. The effects can be moderated when the mother is supported to cope.

Stress is described as a type of change that causes emotional, physical, psychological strain and affects the brain as well as the body. Just a little stress is protective but too much stress is harmful to the body. Learning how to cope with stress is important for mental and physical well-being (*Maternal Health*, 2021.).

Murthy et al. (2021) established that the majority of mothers with babies admitted had severe stressand the majority of them had moderate coping strategies. This clearly shows that the admission of a baby to the neonatal unit causes stress to the mother.

Sepsis among neonates has been found to be a major cause of neonatal mortality (Irimu et al., 2021). Statistics have indicated that 98% of the global one million neonatal deaths as a result of neonatal sepsis happens in Africa (Okube & Komen, 2020). Sepsis among neonates is also a major cause for hospital admissions for babies due to theirlow immune status (Kariuki et al., 2018). Babies who have complications of neonatal sepsis like respiratory failure are transferred from normal neonatal units to neonatal intensive care unit foradvanced life care support (Quinn et al., 2016).

When a neonate is admitted to a neonatal unit, the mother stays around the hospital environment rather than at home with the rest of the family members (Lazzerini et al., 2022). This disrupts family functioning (Yurdakul et al., 2009). Also, the mother stays away from the admitted babywhich also disrupts bonding between mother and baby (Horwood et al., 2019).

Medical and nursing care for neonates with neonatal sepsis concentrate more on the neonate alone and involve the mother when the baby's condition worsens to the point of needing

advanced care given in Neonatal Intensive Care Unit (NICU) or death (Horwood et al., 2019).

Many of the studies done on neonatal sepsis have also focused on the prevalence, risk factors and complications to the neonate with minimal focus on the mother (Kariuki et al., 2018).
Mothers who are stressed have inadequate milk for the neonate and this compromises the nutritional state of the neonate. But mothers who are well, participate optimally in the care of the neonate (*Protecting, Promoting and Supporting Breastfeeding*, n.d., 2020).

1.2 Problem statement

Many studies done worldwide have looked at the stressful effects of neonatal sepsis on babies, but less is known about the effects on caregivers, especially in developing countries.Mothers in particular bear the brunt of care and stress for babies who have neonatal sepsis andare admitted in a neonatal unit. A study done by Malouf et al. (2022) revealed that parents of babies admitted to neonatal units (NNU) are exposed to a range of potentially distressing experiences, significantly increasing their stress levels.

In Kenya, Statistics from Kenya Demographic Health Survey (Statistics et al., 2015) reveal that, millennium development goals (MDGS) for neonatal and maternal health are yet to be realized.Maternal well-being is still a great concern.

In Kenyatta national hospital, a study done by Okube & Komen (2020) revealed that the prevalence of neonatal sepsis was 28.6%. This implies a significant number of mothers whose stress levels cannot be ignored.

This study, therefore, seeks to explore the stress levels, contributing factors, coping strategies and support systems of mothers whose babies are admitted with neonatal sepsis which has not been addressed in the literature reviewed. The researchers envisage enhanced mother support for the sick neonates both in the hospital and at home and to overcome grief and loss if it happens.

1.3 Significance of the study

Identifying the stress levels and coping strategies used by mothers will help nurses to modify the care provided to the mothers and neonates in a way to reduce stress and enhance coping strategies.

The findings from this study will provide a basis on which the Ministry of Health would formulate policies to minimize stress among women of reproductive age in the postnatal period.

These findings will contribute to knowledge on care given to post-natal women nursing their sick babiesat hospitals, nationally, regionally and even globally.

The findings from this study will enlighten the immediate members of the family and community on howtoadequately support the mothers of babies admitted with neonatal sepsis. The findings of this study would also be utilized by future researchers interested in the subject or carrying out a study related to this subject.

1.4 Research questions

1.4.1 Main research question

How is the stress level, the aggravating factors, the individual coping strategies applied by mothers and the support systems available for mothers to babies with neonatal sepsis in Neonatal Units, KNH?

1.4.2 Specific research questions

1.What is the stress level among mothers of babies with neonatal sepsis?

2.What are the factors contributing to stress among mothers to babies with neonatal sepsis in KNH?

3.What are the coping strategies used by mothers of babies with neonatal sepsis in KNH?

4.What are the support systems for the management of stress in mothers to babies with neonatal sepsis in KNH?

1.5 Study objectives

1.5.1 Broad Objective

To determine the stress level, aggravating factors, coping strategies applied by mothers and support systems available for mothers to babies with neonatal sepsis in Neonatal Units, KNH.

1.5.2 Specific objectives

1. To assess the stress level of mothers to babies with neonatal sepsis in neonatal units, KNH.
2. To determine factors contributing to stress, to mothers whose babies have neonatal sepsis in KNH.
3. Determine coping strategies employed by mothers whose babies have neonatal sepsis in KNH.
4. Assess the support systems in the management of stress for the mothers whose babies have neonatal sepsis in KNH.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This section seeks to explore previous studies on stress factors, coping mechanisms and support systems for mothers of sick neonates. The literature review for the current study will be based the objectives of the study. The researcher will use various search engines: PubMed, Medline, Cochrane, Scopus, google scholar and science direct. The keywords and phrases that will be used for the search are maternal stress, stress levels, maternal coping mechanisms, and support systems for mothers and neonatal sepsis. The articles found will be used as a reference point to locate additional relevant literature. In addition, the researcher will use the University of Nairobi Library to access the thesis repository and the world health organization Hinari website to provide data on local studies which may not have been published. The literature review will help identify gaps in previous studies as well as compare the various methodologies used to determine suitable methodology for the current study (*Nursing Research*, 2017.)

2.1 Stress levels and stress factors among mothers

Stress induces flight and fight mechanisms in the body, this is facilitated by the release of catecholamine which forms a protective mechanism for the body for a short period. Prolonged periods of stress predispose one to develop chronic conditions like hypertension,diabetes and heart problems. This is due to the sustained vasoconstrictive effects of adrenaline.

Psychological stress is the most common among mothers It may be due to poor sleep, anxieties about the baby's health, insensitive treatment by health care professionals as well as disappointment about the quality of supportreceived from one's partner (*Postpartum Stress: A Guide for the Science-Minded Parent*, 2020.).

In the UK, a study on the Prevalence of anxiety and post-traumatic stress (PTS) among the caregivers of children hospitalized in neonatal units was done. The findings associated the mothers' great stress level with the obscurity of information about the baby's illness. The poor communication between the health workers contributed a lot to maternal stress when their babies were sick (Malouf et al., 2022).

In Asia, Abd Elrahman Mahmoud et al. (2022) studied “Stressors and Coping Strategies among Parents with Premature Infants” and found that the majority of the parents in the studied sample mentioned that nearly half of them had severe stress levels, near to one-third of parents had mild stress, more than one-quarter of them had moderate stress. They also established that increasing parents' age leads toincrease mean scores of stress levels due to changes in infant appearance and a decrease parent-infant relationship; changes in the infant appearance was the highest mean scores followed by changes in sight and unit light, then dealing with health team staff and lowest mean percent was the parent-infant relationship.

In “Perceived Postpartum Stress and Coping Strategies among Postnatal Mothers at Aims, Kochi" - *Amrita Vishwa Vidyapeetham* (2022) carried out a quantitative descriptive study among 100 postnatalmothers, on perceived postpartum stress and the coping strategies used by mothers. They found that there was a significant association found between the level of perceived postpartum stress and demographic variables such as age, education, status of pregnancy, method of baby feeding, pregnancy events, intrapartum events, birth weight of baby, childbirthexperience, status of newborn, and postpartum events

Still In India, Gurgani & Jogi (2018) did a quantitative Study to Estimate the Level of Stress and Coping Strategies among Mothers Whose Neonates were Admitted to the Neonatal IntensiveCare Unit (NICU). They found out that the majority of the participants 85.0% were with moderate stress,8.3% subjects had severe stress and 6.7% subjects were found to have mild stress. Their study showed that the majority of the subjects whose neonates were admitted to the NICU experienced moderate levels ofstress as they were having less familial support.

Still in India, a qualitative study was done to assess Stressors and support systems among parents of neonates hospitalized with systemic infections. Stressors among mothers whose babies were hospitalized with infections were found to be gaps in information, financial constraints, cultural rituals and barriers to bonding(Murthy et al., 2021).

A qualitative study was done in Rwanda, in order to explore the experience of parents of newborns admitted to neonatal care units in rural Rwanda was done by Byiringiro et al. (2021). They carried out interviews with 19 mothers who had been discharged. They concluded that the hospitalization of a neonate to the neonatal care unit (NCU) was a source of stress for parents and caregivers in the rural areas of Rwanda.

The sight of the baby, the environment itself, the fear of the health workers harming the baby as well as limiting access to the neonatal unit by the mother and other family members caused

stress to mothers

In Ghana, a descriptive cross-sectional study was done on the Environmental stressors, coping mechanisms and support system for mothers with infants at the neonatal intensive care unit. A structured questionnaire was used to collect data from 316 mothers. The results revealed that mothers of age more than 35 years, those with preterm babies and few days in NICU had increased levels of stress (Wuni et al., 2022).

In Ethiopia, Bikila (2016) carried out a study on stress levels and associated The researcher used a standardized questionnaire to carry out an institution-based quantitative cross-sectional study. It was established that 74 (23.9%) mothers were severely stressed, 154 (49.5%) mothers were found to have moderate stress and 81 (26.6%) mothers were found to have low-stress levels. The findings of this study further revealed that the mothers who had their neonates in NICU were more stressed due of physical facilities, then by communication with staff, Parental role and lastly relationship role-related stress. Furthermore, a hospital stay of 7-10 days, a large number of health professionals in the NICU, the feeling of helplessness to protect the baby from painful procedures as well as actions of staffs as they couldn't understand the special need of baby also contributed to stress among mothers.

Still in Ethiopia, a phenomenological study was done on parental experiences in the neonatal intensive care unit. Data was collected using an in-depth interview method from 18 purposively selected parents. It was found that Parents whose infants were admitted to the NICU suffered from various psychological and emotional problems (Mengesha et al., 2022).

In Kenya, Wycliffe1 et al. (2021) in their descriptive cross-sectional study on factors contributingto maternal distress among post-partum mothers with newborns in the newborn unit. They found out that factors which contributed to maternal distress when their babies were admitted to the newborn unit were, socio-demographic factors, hospital factors and socioeconomic factors.

2.2 Coping strategies used by mothers

Coping strategies are cognitive or behavioral, individual or social mechanisms used to reduce unpleasant emotions. They are used in the face of stress to help manage difficult emotions. Coping requires using greater energy than what is needed. Coping mechanisms can be good or poor. Two main types of coping skills are problem-based coping and emotion-based coping. Problem-based coping skills focus on changing the situation, while emotional-based coping skills are centered on changing how you feel. Good coping strategies benefit the mother and

baby. Poor coping mechanisms cause harm to the mother and /or baby (*Coping Strategy | Definition, Types & Examples - Video & Lesson Transcript*, n.d.).

Mothers who are still in puerperium and have neonates with infection in neonatal units need to have good coping mechanisms for the good of their health and that of the sick neonate. Studies have documented various coping mechanisms by mothers whose babies are in neonatal units or neonatal intensive care units.

In Europe, a cross-sectional study was done by Malliarou et al. (2021) on Preterm Parents' Stress and Coping Strategies in a Neonatal Intensive Care Unit. It was established that parents used religious and social means as main coping mechanisms. it was alsoestablished that those parents stressed due to their parental role used more frequently active positive coping, seeking support and the expression of negative feelings. Parents used less substance abuse and humor as coping strategies.

In India, Varma et al. (2019) in their study on the Level of Stress and Coping Strategies Seen Among Parents of Neonates found that 70% had moderate stress levels, none had mild stress levelswhile 30%had severe stress .it was also established that 87.5 % of participants had average coping strategies, 12.5%had good coping strategies while none had poor coping strategies.

Still in India, Gurgani & Jogi (2018) did a quantitative Study to estimate the level of stress and coping strategies among mothers whose neonates were admitted to the neonatal intensive care unit(NICU) and found that, the majority of the participants (93.3%) had average coping, 6.7% had good coping, and none of the participants in the study had low coping. This study showed thatthe majority of the participants used coping strategies moderately to overcome their stress. In India, Post-natal mothers with perceived stress used mostly emotional coping strategies than problem-focused coping strategies (Jayaseelan & Mohan, 2020).

Another study on coping mechanisms among post-natal mothers with stress done in India under "Perceived Postpartum Stress and Coping Strategies among Postnatal Mothers at Aims, Kochi" *(*Amrita Vishwa Vidyapeetham, 2022) found that the majority of the mothers used problem focused ways of coping with postpartum stress. They also found a greater correlation between the level of postpartum stress and emotion focused disengagement than emotion focused engagement coping styles.

In Asia, a qualitative study was done by Heidari et al. (2017) on Stress Management among Parents of Neonates Hospitalized in NICU. They came up with five themes used as coping strategies for mothers. These were spirituality, seeking information, seeking hope, maintaining

calm, attachment to the infant and communicating with the medical team.

Another study in Asia was done by Abd Elrahman Mahmoud et al. (2022) on Stressors and Coping Strategiesamong Parents with Premature Infants. High mean percentage were found among mothers utilizing social strategies, followed by religion and lastly illness denial

2.3 Support system for mothers

A support system is ideally network of positive minded people who assist an individual with practical or emotionalsupport. A support system is a network of people that can provide you with practical or emotionalsupport having the support system could help improve the overall health of a person and has been shown to reduce stress. Support could also be from total strangers. Some of the benefits of having a support system include higher levels of well-being, better coping skills andalonger healthier life.

In Korea, it was established that Active support for NICU families could be through supportive words and actions. The assurance of anti-infectionmanagement and better staffing levels to be fundamentally guaranteed to NICU staff also was a way of active support to mothers with sick neonates in South Korea. The findings also showed that the greatest unmet need was "relationship-based support" (58.2%), followed by "information and education-based support" (20.0%) and "system-level challenges" (5.4%) (Kim, 2020).

A study was done among 100 postnatal mothers in India,on perceived postpartum stress and coping strategies and found that there was good social support, especially from partners and parents, especially among post-natal mothers who had mild levels of stress (Perceived Postpartum Stress and Coping Strategies among Postnatal Mothers at Aims, Kochi - Amrita Vishwa Vidyapeetham, 2022).

Still in India, a study to explore stressors and support systems for families with a neonate admitted with a systemic infection in south India. Thirty-eight participants were interviewed and found that emotional and financial Support was sought from families and friends, peers, staff and religion (Murthy et al., 2021).

In Sweden, Karlsson et al. (2020) found out that the nurses perceived that parents of critically ill children had poorer conditions than other parents to achieve good health. The parents were in clear need of more support such as supportive environments, psychosocial support, and social andeconomic support

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2.4 Justification of the study

The health of the mother is paramount for the well-being of the baby. For good care of a sick

neonate, the mother has to be in optimum health.

The recent study was done on maternal stress in KNH and only focused on the contributing factors (Wycliffe1 et al., 2021). In KNH, there's inadequate literature on this subject.

upon this background that a quantitative study was done as a prerequisite to the initiation of prevention of stress as well as enhancing diverse coping mechanisms to be utilized by mothers of neonates with neonatal sepsis.

2.5 Conceptual framework

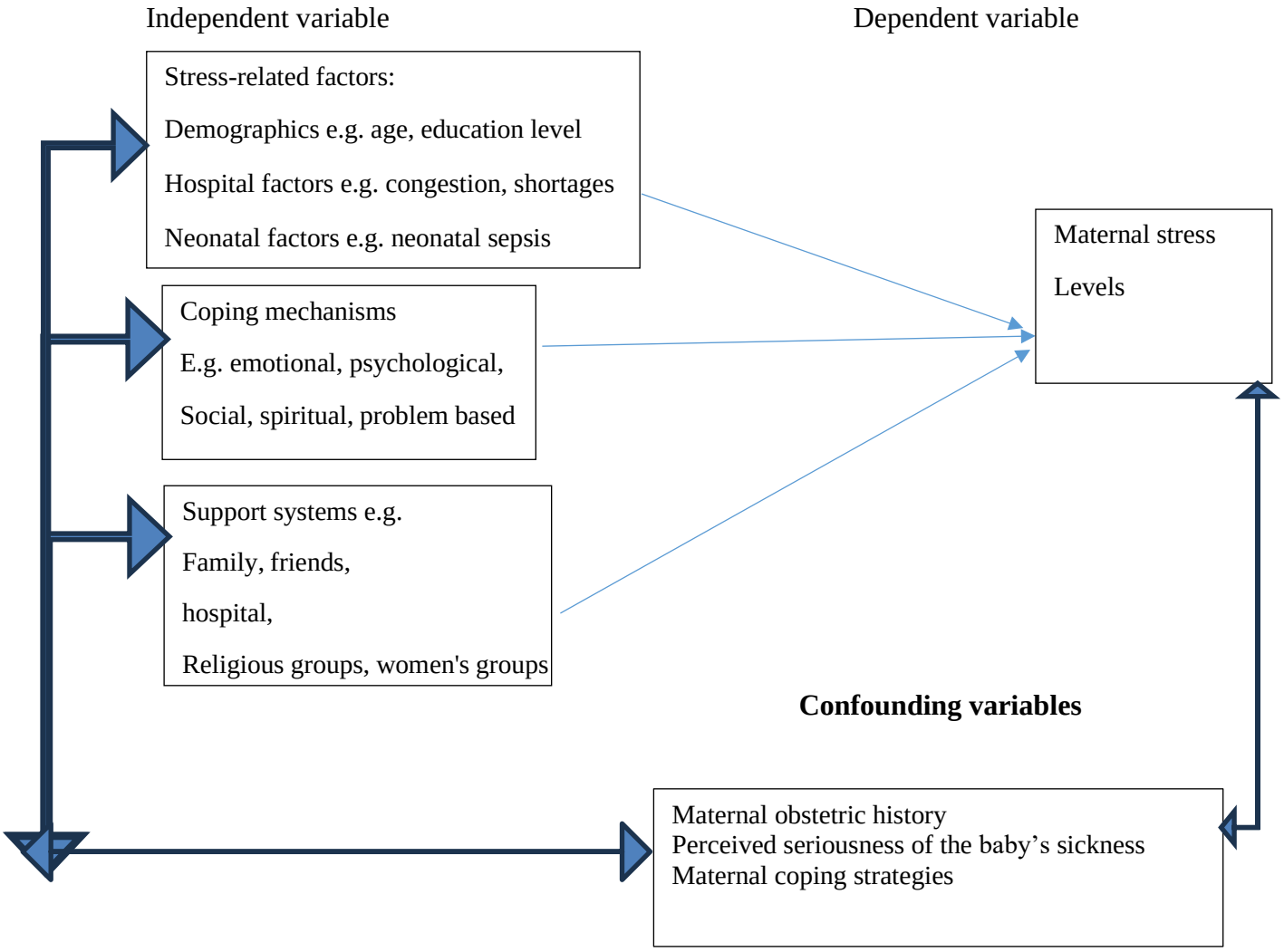

Figure 1: Conceptual framework

The following variables have been identified depending on the objectives of this study.

2.5.1 Independent variables

Demographic factors

These are age, education level, employment status, religion, mode of delivery, place of delivery and marital status

Environmental factors

These include the neonatal unit setting, the number of babies/cots, the equipment, and staff ratios in the neonatal unit

Coping mechanisms

These will include Emotional strategy, Problem-based strategy, Spiritual strategy, psychological strategy and social coping strategy.

Support systems

These will include Family support, hospital support, support from friends, support from religious groups and support from women groups.

2.5.2 dependent variable

Maternal stress level.

2.5.3 confounding variables

Maternal obstetric history

Perceived seriousness of baby's sickness

Maternal coping strategies

2.6 Theoretical framework.

This study will be based on Callister Roy's adaptation theory of nursing. This is because, of the adaptive aspect of the mothers to stressful conditions and for this case neonates being hospitalized.

Sir Callister Roy's adaptation model of nursing focuses on the response of the adaptive system to a constantly changing environment. When the adaptive system is unable to cope with changing environment in a manner that promotes the integrity of the system, a problem usually arises. The system consists of input, control processes, output and feedback mechanisms (Parker & Smith, 2010).

Input is the stimuli which could be internal or external. The controller processes could be regulators acting through physiological, self-concept role function and interdependence modes or they could be cognate acting through psychological, social, physical and physiological ways. Output behavior is adaptive and maladaptive behavior response. Adaptive responses promote while maladaptive responses disrupt the integrity of a person.in this case, output behaviors are inferred by the use of positive mechanisms such as engaging in activities, spiritual and diversional activities, and talking with family negative coping strategies include lack of interest in gathering, sitting alone, and self-blame. Feedback of information regarding the behavioral responses is conveyed as input in the system (Parker & Smith, 2010).

Adaptive system (mother with a sick baby)

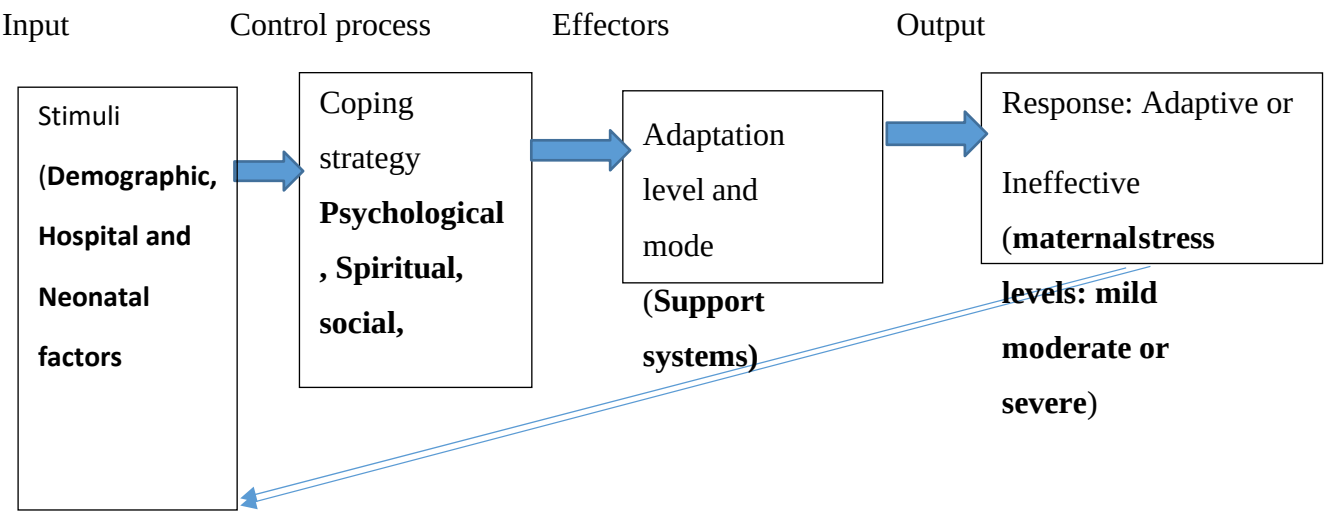

Figure 2: Summary of the conceptual framework (application of Callister Roy's adaptation model)

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This study aims at assessing the stress levels, determine the contributing factors, coping mechanisms and support systems for mothers to babies with neonatal sepsis admittedin the neonatal units. This chapter outlines the research methodology that was used .it includes the study design, area, population, sample size calculation and procedure, recruitment and consenting process, data collection, management, analysis and data dissemination plan.

3.1 Design

Across-sectional descriptive quantitative study. Descriptive was applicable for the determination of stress levels, factors, and coping mechanisms among mothers of neonates with neonatal sepsis. Data was collected using a semi-structured questionnaire.

3.2 Study area

Kenyatta National Hospital is among the three level six hospitals in the country offering specialized care. It receives neonates as referrals from Nairobi facilities as well as those near and far from Nairobi. Hence the study population is a true representation of the mothers in Kenya. The pediatric renal unit (PRU) admits around 30 children per month for peritoneal dialysisand is located on the second floor of the hospital's tower block. Among the children are neonateswith neonatal sepsis that is complicated to acute kidney injury warranting urgent dialysis. PRU has 16 nurses 13 of whom have specialized in renal nursing and the rest are general nurses.90%of admissions in PRU are due to neonatal sepsis (KNH records). Newborn unit (NBU) is located on the first floor of the hospital tower block. It admits about 150 babies per month withvarious conditions. Those from outside KNH are nursed in the isolation room.30% of babies in NBU develop sepsis along the course of treatment regardless of the condition on admission.NBU has a total of 87 nurses about 10 are critical care nurses (CCN), about 25 are specialized in neonatal care nursing (KRNEON) the rest are general nurses.

3.3 Study population

Mothers of neonates who were admitted due to neonatal sepsis. The mothers are hosted away from the PRU and NBU. They visit their children three hourly, to bring milk for the babies who are feeding. Some commute from their areas of residence because they have other little children at home with no one to take care of them. The mothers to babies with neonatal sepsis in the neonatal rooms in the pediatric wards stay in the neonatal rooms with the babies.

3.3.1 Inclusion criteria

Mothers whose babies have been confirmed with neonatal sepsis and who consentedto

participate in the study.

3.3.2 Exclusion criteria

Mothers who refused to give consent to participate in the study

Mothers of babies with other conditions other than neonatal sepsis

Hospitalized mothers were not included in the study.

Very sick mothers who are unconscious.

3.4 Sample size calculation

Using Fisher's formula for sample size calculation

$$n = \frac{Z_{\frac{\alpha}{2}}^2 p(1-p)}{d^2}$$

Where;

$n = desired\ sample\ size$e

=critical value at desired confidence interval confidence interval

of the population with the desired characteristics, 0.5

$d = degree\ of\ precision$ (5%)reeof precision (5%)

$$n = \frac{1.96^2 * 0.5(1-0.5)}{0.05^2}$$

$$n = 385$$

The formula was adjusted since the population is less than 10,000 using the formula;

estimated population with septic shock during the study period N = 98

$$n = \frac{n * N}{n + N}$$

$$n = \frac{385 * 98}{385 + 98}$$

$n = 78$ mothers

3.5 Sampling procedure

The preferred method of sampling was purposive sampling method. This is a non-probability sampling method that is suitable for this study since the researcher is interested in the mothers of babies with neonatal sepsis alone. Census technique was also utilized because all mothers of babies with neonatal sepsis in the neonatal units who gave informed consent to participate in the study were recruited.

3.6 Recruitment and consenting procedures

After study approval from the ethics committee, permission was also sought from the KNH Research and Programs Department and the ward in charge of PRU, NBU and the pediatric wards with neonatal rooms. Motherswere identified from the admissions records and traced in the various rooms where their sickbabies were. Rapport was established with the mothers and the contents of the informed consentform read to them. Mothers who agreed were required to sign at the end of the consent form.

3.7 Data collection

A semi-structured questionnaire (SSQ) utilizing closed-ended questions as well as open-ended questions was used in data collection and it was administered by the researcher and the trained research assistants. This enabled the researcher to collect self-report data helpful in meetingthe objectives of the study. Stress levels were assessed using the modified perceived stress scale (PSS_10) this scale is a 10-item questionnaire originally developed by Cohen et al (1983) and is widely used to assess stress levels in young and adult people. Responses to the four positively stated items (items 4, 5, 7, & 8) were reversed and then summed across all scale items. Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress.

Scores ranging from 0-13 were considered low stress, Scores ranging from 14-26 were considered moderate stress and Scores ranging from 27-40 were considered high perceived stress. The questionnaire had 5 parts as per the objectives of the study consisting of 43 items which the respondents responded to as guided in each section.

3.8 Pre-testing

Pretesting of the study tool was done in Mbagathi hospital NBU, a month prior to data collection. About 10% of the sample size (8 mothers) were used. The findings revealed that the tool was valid and reliable in achieving the objectives of the study. It revealed that all questions were clear. Through pretesting, the researcher realized the need to have the tool translated to Swahili language for easier understanding by mothers who had difficulty

answering in English.

3.8.1 Validity

Validity of the research instrument was achieved by using a well-designed questionnaire that was was based on the objectives of the study and the information from the literature reviewed.

3.8.2 Reliability

This is the accuracy and consistency of information that will be obtained in this study. Statistical reliability refers to the probability that the same results would be obtained with a completely new sample of subjects—that is, that the results are an accurate reflection of a wider group thanjust the particular people who participated in the study. The Cronbach's alpha of the PSS_10 was evaluated at >7 in the studies in which it was used.

3.9 Data management and analysis

3.9.1 Coding of responses

Data was translated to numerical values amenable for data analysis. Raw data was grouped and assigned numerical numbers in readiness for statistical analysis.

3.9.2 Data entry and cleaning

Filled questionnaires were checked to ensure they were complete and consistent. This was majorly done by the by the principal investigator. The questionnaires were kept in a sealed envelope and put in a lockable cabinet for confidentiality purposes. Data was keyed in a spreadsheet on a password-protected computer also to ensure data safety from external manipulation from unauthorized persons.

3.9.3 Data analysis process

Data was exported from spreadsheet to R version 4.1.2. Continuous data e.g., age was analyzed using means andstandard deviation for normally distributed data or median and interquartile ranges for skewed data. Categorical data e.g., education level was summarized using frequencies and proportions. Logistic regression was performed to examine associations between the independent variables e.g., demographic data and the dependent variable i.e., stress levels. Variables for the multivariable model were selected using Akaike's Information Criteria (AIC).

Results were presented using odds ratios and confidence intervals for odds ratios. Tests were interpreted at 5% significance level. Qualitative data transcripts were studied to generate repeating statements. The statements were then converted in to themes followed by generation of subthemes. The themes and subthemes were summarized in tables. The themes and subthemes were then presented together

with the narrative from the respondents in quotation marks.

3.10 Ethical considerations in the study

Approval was sought from the KNH-UON Research Ethical Review Committee by sending the proposal to them. Permission was also sought from all relevant authorities and the participants. Participation was voluntary,as no mother was forced or coaxed to participate in the study. The consenting process was done by the researcher assisted by two trained research assistants. Anonymity was observed because personal details of the mother like the name and personal contacts were not written in the data collection tool. The respondents signed at the end of the consent form attached here as appendix three, before proceeding to fill data collection tool. Privacy was also ensured by administering the questionnaire in the counselling rooms and or providing screens in the specified spaces. Confidentiality was ensured by not sharing the data collected by unauthorized persons. Social distance was ensured between the researcher and the respondents and an alcohol-based hand rub and face masks was provided to minimize the spreadof covid _19. Participation in the study did not cause any physical harm to the participants.However, the process of data collection could potentially cause psychological harm to the mothers as they describe their personal and family issues.in such cases, the affected mothers were referred to the hospital counsellor where they got counselling services at no extra cost. The findings of this study will be shared with the KNH management who are expected to come up with good planning for the welfare of the mothers in the hospital.

3.11 Study personnel

Data collection was assisted by two fourth-year BScN students. The research assistants were recruited based on their interest in maternal health and those who are willing. Research assistants were trained forthree days on how to administer the questionnaire, how to do data collection, how to carry out the consenting process and also on evaluation of the questionnaire to ensure completeness. The principal investigator was assisted by the research assistants in data collection, data cleaning and data entry.

3.12 Minimizing errors and bias

Consistency of the research tool was ensured through pretest and review. Participants were selected through purposive sampling and allowed to participate willingly without coercion.

3.13 Dissemination plan

The findings of this study will be presented to the Department of Nursing (UON). The informationwill also be shared with KNH, the Department of Clinical Services and neonatal units to inform holistic care of mothers to a baby with neonatal sepsis in KNH neonatal units.one copy will be presented to the faculty and kept in the university library for future reference. A manuscript written and willbe presented for publishing in peer-reviewed journals. It will also be presented in inscientific conferences, seminars and webinars concerned with maternal health.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the findings of this study as per the study objectives. These included the findings about the mothers' demographic characteristics, the responses eliciting stress levels, the contributing factors, the individual coping strategies and the support systems for the mothers. The findings are presented in prose, in tables graphs and the quotes from the mothers.

4.1 Socio-demographic characteristics

This study included 78 mothers with babies on treatment for neonatal sepsis at Kenyatta National Hospital. Most of the mothers 37 (47.4%) were aged between 26 to 34 years followed by those aged between 19 to 25 years. The rest were aged above 35 years. Most of the mothers 35 (44.9%) were secondary school leavers followed by those with a college education. The rest had primary-level education. Of the 78 mothers, 35 (44.9%) were self-employed, 12 (15.4%) were employed and the rest were not employed. Most of the mothers 50 (64.1%) were married, 27 (34.6%) were single and the rest were widowed. More than half of the mothers 45 (55.7%) had NHIF cover (Table 1).

Table 1: Socio-demographic characteristics (N = 78*)*

Variable	**Description**	**Frequency**	**Percent (%)**
Age in years	19-25	33	42.3
	26-34	37	47.4
	>35	8	10.3
	Total	**78**	**100**
Education	Primary	11	14.1
	Secondary	35	44.9
	College	32	41.0
	Total	**78**	**100**
Employment status	Unemployed	31	39.7
	Self-employed	35	44.9
	Employed	12	15.4
	Total	**78**	**100**
Marital status	Single	27	34.6
	Married	50	64.1
	Widowed	1	1.3

	Total	**78**	**100**
NHIF compliant	Yes	45	55.7
	No	33	44.3
	Total	**78**	**100**

**NHIF-National Health Insurance Fund*

Antenatal clinic attendance, delivery and stay in the hospital

This section covers the history of the mothers from attendance at the antenatal clinic, mode and place of delivery to the length of stay in the hospital at the time of this study.

This information is presented in table 2 below.

Table 2: Antenatal clinic (ANC) attendance, delivery and hospital stay history (N = 78)

Variable	**Description**	**Frequency**	**Percent (%)**
Antenatal clinic history			
Place of attendance	Public hospital	62	79.5
	Private hospital	16	20.5
	Total	**78**	**100**
Number of ANC visits	<4	29	37.2
	4 to 8	44	56.4
	>8	5	6.4
	Total	**78**	**100**
Any comorbidity during ANC	Yes	43	55.1
	No	35	44.9
	Total	**78**	**100**
Next of kin during ANC visits	None	6	7.7
	Parent	23	29.5
	Siblings	5	6.4
	Spouse	44	56.4
	Total	**78**	**100**
Delivery history			
Gestation at delivery in weeks	<34	36	46.1
	35 to 40	30	38.5
	>40	12	15.4
	Total	**78**	**100**
Mode of delivery	Normal	47	60.3
	Caesarean section	31	39.7
	Total	**78**	**100**
Place of birth	Home	4	5.1
	Public hospital	61	78.2
	Private hospital	13	16.7

	Total	**78**	**100**
Birth order	Firstborn	32	41
	Second born	18	23.1
	Third born	15	19.2
	Fourth born	7	9.0
	Fifth born	6	7.7
	Total	**78**	**100**
Admission history			
Number of days in the hospital	1-5 days	21	26.9
	6-10 days	17	21.8
	>10 days	40	51.3
	Total	**78**	**100**

The majority of the mothers 62 (79.5%) in this study had attended antenatal clinics in public hospitals. Most of the mothers 44 (56.4%) made between four and eight visits, 29 (37.2%) made less than four visits and the rest made more than 8 visits. Of the 78 mothers, 43 (55.1%) had other conditions during antenatal clinic visits. In terms of support during antenatal visits, the majority of the mothers 44 (56.4%) were supported by their spouses, 23 (29.5%) were supported by their spouses and 5 (6.4%) were supported by their siblings. The rest had no support.

At the time of delivery, 36 (46.1%) were less than 34 weeks gestation, 30 (38.5%) were between 35 and 40 weeks and the rest were above 40 weeks. Of the 78 mothers, 47 (60.3%) had delivered normally and the rest via caesarean section. Most of the mothers 61 (78.2%) had delivered in public hospitals, 13 (16.7%) had delivered in private hospitals and the rest at home. Of the 78 mothers, 32 (41%) had their first child, 18 (23.1%) had their second child, 15 (19.2%) had their third born, 7 (9.0%) had their fourth born and the rest had five children and above.

In terms of the number of days in the hospital, the majority of the mothers 40 (51.3%) had stayed for more than 10 days, and 21 (26.9%) had stayed for between one to five days. The rest stayed for between six to ten days (Table 2).

4.2 Stress level of mothers of babies with neonatal sepsis in neonatal units, knh (using modified perceived stress scale (cohen, 1994))

Table 3 below presents a five-point scale for measuring stress levels among the mothers in this study based on 10 questions. The measurement is based on the Modified Perceived Stress Scale (Cohen, 1994).

Table 3: Stress Levels among the Mothers Using Modified Perceived Stress Scale (N = 78)

Question	Perceived stress scale				
	Never n (%)	Almost never n (%)	Sometimes n (%)	Fairly often n (%)	Very often n (%)
Been upset because of something that happened unexpectedly	6 (7.7)	11 (14.1)	18 (23.1)	19 (24.4)	24 (30.8)
Felt that you were unable to control the important things in your life	1 (1.3)	11 (14.1)	13 (16.7)	28 (35.9)	25 (32.1)
Felt nervous and stressed	2 (2.6)	6 (7.7)	14 (17.9)	18 (23.1)	38 (48.7)
Felt confident about your ability to handle your problems	8 (10.3)	12 (15.4)	25 (32.1)	15 (19.2)	18 (23.1)
Felt that things were going your way	10 (12.)	11 (14.1)	22 (28.2)	15 (19.2)	20 (25.6)
Found that you could not cope with all the things that you had to do	7 (9.0)	12 (15.4)	12 (15.4)	24 (30.8)	23 (29.5)
Able to control irritations in your life	4 (5.1)	8 (10.3)	22 (28.2)	18 (23.1)	26 (33.3)
Felt that you were on top of things	9 (11.5)	13 (16.7)	24 (30.8)	20 (25.6)	12 (15.4)
Been angered because of things that were outside of your control	6 (7.7)	9 (11.5)	19 (24.4)	13 (16.7)	31 (39.7)
Felt difficulties were piling up so high that you could not overcome them	5 (6.4)	6 (7.7)	21 (26.9)	19 (24.4)	27 (34.6)

When mothers were asked whether they have ever been upset because of something that happened unexpectedly, 24 (30.8%) said they have been upset very often, 19 (24.4%) said fairly often, 18 (23.1%) said they sometimes get upset and 11 (14.1%) said they almost never get upset. The rest said they never get upset. When asked whether have ever felt that they were unable to control important things in their life, 25 (32.1%) said they were very often unable, 28 (35.9%) said fairly often, 13 (16.7%) said they are sometimes unable to control and 11 (14.1%) said almost never. The rest said they have never felt unable to control important things in their life.

In response to whether they have ever felt nervous and stressed, the majority of the mothers 38 (48.7%) said they very often feel nervous and stressed, 18 (23.1%) said fairly often, 14 (17.9%) said sometimes and 6 (7.7%) said they almost never feel nervous and stressed. The rest said they never feel nervous and stressed. When asked about confidence in their ability to handle personal problems, 8 (10.3%) said they have never felt confident, 12 (15.4%) said they almost never felt confident, 25 (32.1%) said they sometimes feel confident and 15 (19.2%) said they fairly feel confident. The rest said they very often feel confident.

On whether the mothers have ever felt things were going their way, 10 (12.8%) said never, 11 (14.1%) said almost never, 22 (28.2%) said they sometimes felt that things were going their way and 15 (19.2%) said they fairly often felt things were going their way. The rest said they very often felt things were going their way. Of the 78 mothers, 23 (29.5%) said that they very often could not cope with the things that they had to do, 24 (30.8%) said they could fairly often cope, 12 (15.4%) said they could sometimes cope and another 12 (15.4%) said they could almost never cope. The rest said they could never cope.

Asked whether they were able to control irritations in their life, 26 (33.3%) said they were very often able to control irritations, 18 (23.1%) said they were fairly often able to control irritations, 22 (28.2%) said they were sometimes and 8 (10.3%) said they were almost never able to control irritations. The rest said they were unable to control irritations. On whether they have ever felt on top of things, 12 (15.4%) said very often, 20 (25.6%) said fairly often, 24 (30.8%) said sometimes and 13 (16.7%) said almost never. The rest said they never felt that they were on top of things.

When asked whether they have ever felt angered because of things that were outside their control, 31 (39.7%) said very often, 13 (16.7%) said fairly often, 19 (24.4%) said sometimes and 9 (11.5%) said almost never. The rest said they never felt angered because of things that were outside their control. On whether they have felt difficulties piling up so high that they could not overcome them, 27 (34.6%) said very often, 19 (24.4%) said fairly often, 21 (26.9%) said sometimes and 6 (7.7%) said almost never. The rest said they never felt difficulties were piling up so high that they could not overcome them (Table 3).

Overall Perceived Stress Score

To derive the overall perceived stress score, we added the scores for all questions. For questions 4, 5, 7 and 8, the scores were reversed because the questions are positive.

According to the Modified Perceived Scale scores;

- ✓ Scores ranging from 0-13 were considered low stress.
- ✓ Scores ranging from 14-26 were considered moderate stress.
- ✓ Scores ranging from 27-40 were considered high perceived stress.

Of the 78 mothers, 20 (25%, 95% CI 17%, 37%) had high levels of perceived stress and 55 (71%, 95% CI 59%, 80%) had moderate levels of perceived stress. The remaining 3 (4%, 95% CI 1%, 12%) had low levels of perceived stress (Figure 1).

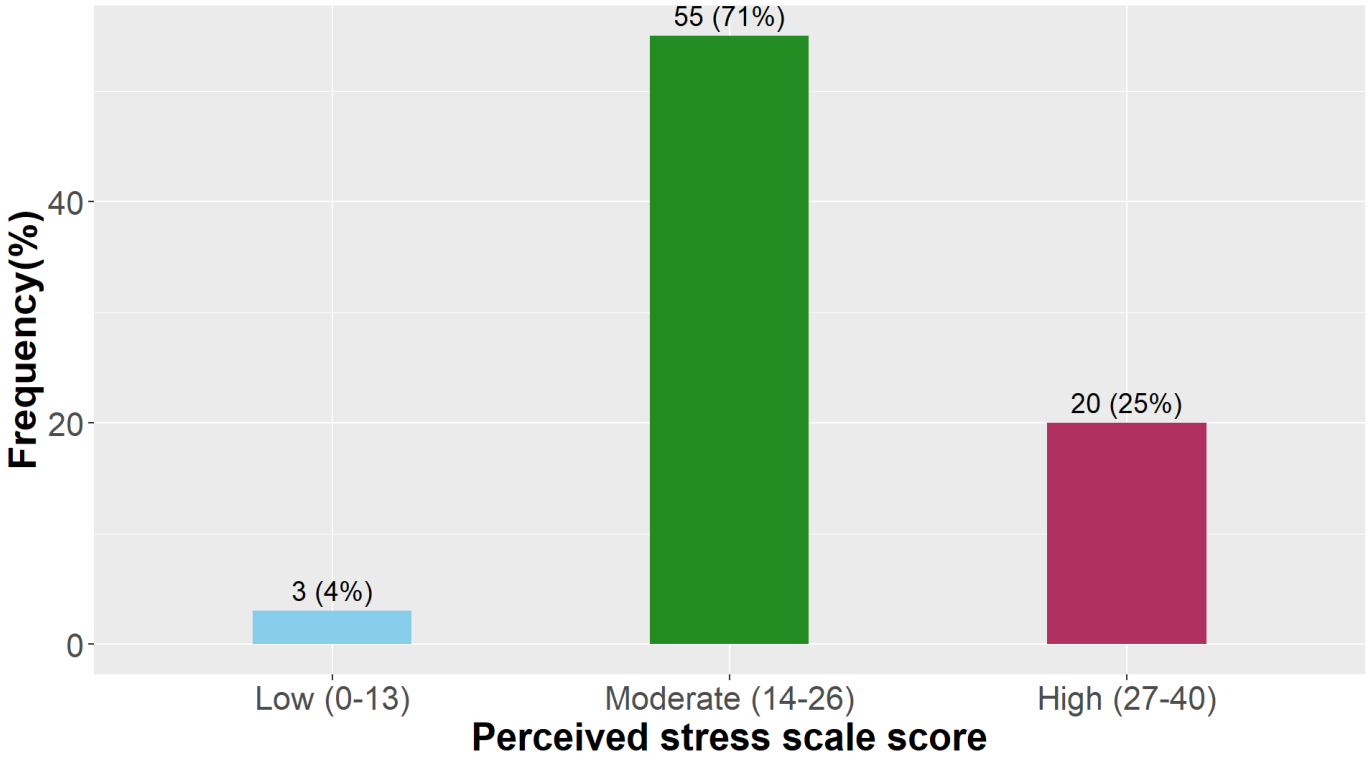

Figure 3: Perceived stress score levels among the mothers

Stress levels among mothers based on objective assessment

This section assessed stress in mothers from an objective point of view. This assessment was based on four items; appearance, speech, eye contact and body language.

Table 4: Stress levels among mothers based on objective assessment (N = 78)

Variable	Description	Frequency (n)	Percent (%)
Appearance	Dirty	45	57.7
	Very clean	33	42.3
Speech	Not audible	48	61.5
	Audible	30	38.5
Eye contact	No eye contact	58	74.4
	Good eye contact	20	25.6
Body language	Restless	47	60.3
	Calm and composed	31	39.7

Of the 78 mothers 45 (57.7%) were stressed from their appearance i.e., being dirty, 48 (61.5%) were stressed from speech assessment (inaudible) and 58 (74.4%) were stressed from their inability to maintain eye contact. In terms of body language, 47 (60.3%) were restless hence they were considered stressed (Table 4).

4.3 Factors contributing to stress among mothers whose babies have neonatal sepsis in knh

For factors contributing to maternal stress, we looked at sociodemographic factors, environmental factors and the sickness of the babies. This information is presented in tables 5, 6 and 7 respectively.

4.3.1 Effect of sociodemographic factors on maternal stress levels

This section examined how the various maternal factors affected stress levels among mothers. The stress levels (outcome) were determined as indicated by the information in figure 3. The low and moderate stress were combined since low had only three cases. From the bivariable analysis, none of the factors was significantly associated with stress levels among the mothers at 5% significance level (p values>0.05).

Bivariate analysis

Table 5: Association between sociodemographic factors and maternal stress levels

Variable	Description	Level of stress			
		High	**Low to moderate**	Crude OR (95% CI)	P value
Age in years	≤25	12	21	2.64 (0.93, 7.50)	0.06
	>25	8	37	***Reference***	
Education status of the mothers	Primary and below	1	10	***Reference***	
	Secondary	7	28	2.50 (0.27, 25.0)	0.66
	College	12	20	6.00 (0.68, 50.0)	0.09
Employment status	Unemployed	11	20	2.32 (0.83, 6.53)	0.11
	Employed	9	38	***Reference***	
Marital status	Single	10	18	2.22 (0.79, 6.28)	0.13
	Married	10	40	***Reference***	
NHIF compliant	Yes	7	26	0.66 (0.23, 0.66)	0.44
	No	13	32	***Reference***	
Number of ANC visits	≥4	15	34	2.13 (0.68, 6.67)	0.19
	<4	5	24	***Reference***	
Next of kin	Others	12	22	2.45 (0.87, 6.94)	0.09
	Spouse	8	36	***Reference***	
Mode of delivery	CS	9	22	1.34 (0.48, 3.74)	0.58
	Normal	11	36	***Reference***	
Number of children	Two and below	15	35	1.97 (0.63, 6.17)	0.24
	More than 2	5	23	***Reference***	

The odds of high stress levels for mothers who were 25 years and below were 2.64 times those of mothers above 25 years old OR 2.64 (95% CI 0.93, 7.50). The odds of high stress levels for mothers who had a college education were 6.0 times the odds of mothers with primary education OR 6.00 (95% CI 0.68, 50.0) while the odds for high stress levels for mothers with secondary education were 2.50 times those of mothers with primary education OR 2.50 (95% CI 0.27, 25.0).

Mothers who were not employed were 2.32 times more likely to have high stress levels compared to mothers who were employed OR 2.32 (95% CI 0.83, 6.53). the odds of high stress levels for single mothers were 2.22 times those of married mothers OR 2.22 (95% CI 0.79, 6.28) Table 5.

Multivariable analysis

The age of the mother was significantly associated with stress level after adjusting for the level of education at 5% significance level (P<0.05). Mothers who were aged 25 years and below were 3.08 times more likely to have high stress levels compared to those aged above 25 years after adjusting for the level of education, AOR 3.08 (95% CI 1.04, 9.80).

Mothers with secondary level education were 2.24 times more likely to have high stress levels compared to those with a primary education, AOR 2.24 (95% CI 0.32, 45.51). Mothers with college level education were 6.50 times more likely to have high stress compared to those with primary education, AOR 6.50 (95% CI 0.99, 130.21) Table 5b.

Table 6b: Association between sociodemographic factors and maternal stress levels

Variable	**Description**	**Level of stress**			
		High N = 20	**Low to moderate N = 58**	Adjusted OR (95% CI)	P value
Age in years	≤25	12	21	3.08 (1.04, 9.80)	0.046
	>25	8	37	***Reference***	
Education status of the mothers	Primary and below	1	10	***Reference***	
	Secondary	7	28	2.24 (0.32, 45.51)	0.481
	College	12	20	6.50 (0.99, 130.21)	0.098

4.3.2 Environmental related stressors

Under environmental stressors, we looked at the perceived stress among mothers based on their surroundings. This information is presented in table 6 below.In terms of unfamiliar medical equipment, 10 (12.8%) of the mothers said they were extremely stressful, 12 (15.4%) said they were very stressful and another 12 (15.4%) said they were moderately stressful. Twenty-eight (35.9%) felt the unfamiliar medical equipment was a little stressful and the rest said they were not stressful.

On orientation in the hospital unit where the babies were admitted, 6 (7.7%) felt it was extremely stressful, 12 (15.4%) felt it was very stressful, 14 (17.9%) said it was moderately stressful and 20 (25.6%) said it was little stressful. The rest said it was not stressful.

Table 7: Association between environmental factors and maternal stress levels

Perceived stressor	**Not stressful n (%)**	**Little stressful n (%)**	**Moderate stressful n (%)**	**Very stressful n (%)**	**Extremely stressful n (%)**	**% stress level**
Unfamiliar medical equipment	16 (20.5)	28 (35.9)	12 (15.4)	12 (15.4)	10 (12.8)	52.8
Orientation	26 (33.3)	20 (25.6)	14 (17.9)	12 (15.4)	6 (7.7)	47.7
Crowding in the unit	47 (60.3)	13 (16.7)	4 (5.1)	10 (12.8)	4 (5.1)	37.2
Sick babies sharing cots	10 (12.8)	13 (16.7)	9 (11.5)	26 (33.3)	20 (25.6)	68.5
The appearance of floors, walls and ceilings	51 (65.4)	6 (7.7)	11 (14.1)	8 (10.3)	2 (2.6)	35.4
Lack of privacy	35 (44.9)	7 (9.0)	11 (14.1)	15 (19.2)	10 (12.8)	49.2
Few nurses on the shift	26 (33.3)	11 (14.1)	4 (5.1)	13 (16.7)	24 (30.8)	59.5

Asked whether they were stressed by the crowding in the unit, 4 (5.1%) said it was extremely stressed, 10 (12.8%) said it was very stressful, 4 (5.1%) said it was moderately stressful and 13 (16.7%) said it was a little stressful. The rest said it was not stressful. On they were stressed by sick babies sharing cots, 20 (25.6%) said it was extremely stressful, 26 (33.3%) said it was very stressful, 9 (11.5%) said it was moderately stressful and 13 (16.7%) said it was a little stressful.

Asked whether the appearance of floors, walls and ceilings stressed them, two said it was extremely stressful, 8 (10.3%) said it was very stressful, 11 (14.1%) said it was moderately stressful and 6 (7.7%) said it was a little stressful.

Ten (12.8%) of the mothers said they were extremely stressed by a lack of privacy, 15 (19.2%) said the lack of privacy was very stressful, 11 (14.1%) said it was moderately stressful and 7 (9.0%) said it was a little stressful. The shortage of nurses seemed extremely stressful to 24 (30.8%), very stressful to 13 (16.7%), moderately stressful to 4 (5.1%) and a little stressful to 11 (14.1%) of the mothers.

For the percentage stress levels, we ranked the scores from 1-not stressful to 5-extremely stressful. We then calculated the total for each perceived stressor and divided by the number of respondents. This gave us the stress score out of five which we then converted in to a percentage.

Of the 8 perceived stressors, the most stressful of the perceived stressors was sick babies sharing cots (68.5%), shortage of nurses (59.5%) and unfamiliar medical equipment (52.8%). The least stressful of the stressors were appearance of floors, walls and ceilings (35.4%) and crowding in the unit (37.2%) (Table 6).

4.3.3 Babys Sickness related stressors

The sickness-related stressors mainly emanated from the babies' conditions and partly from activities surrounding the sick babies. When mothers were asked whether they were stressed by the baby being on life support, 25 (32.1%) said it was extremely stressful, 18 (23.1%) said it was very stressful, 5 (6.4%) said it was moderately stressful.

Table 8: Association between baby's sickness and maternal stress levels

Perceived stressor	Not stressful n (%)	Little stressful n (%)	Mod stressful n (%)	Very stressful n (%)	Extremely stressful n (%)	% stress level
Baby on life support	23 (29.5)	7 (9.0)	5 (6.4)	18 (23.1)	25 (32.1)	63.8
Baby on oxygen	16 (20.5)	4 (5.1)	8 (10.3)	25 (32.1)	25 (32.1)	73.1
Baby unable to breastfeed	9 (11.5)	11 (14.1)	5 (6.4)	27 (34.6)	26 (33.3)	74.6
Being separated from the baby	14 (17.9)	10 (12.8)	11 (14.1)	17 (21.8)	26 (33.3)	67.9
Going to see the baby every 3 hours	21 (26.9)	15 (19.2)	8 (10.3)	19 (24.4)	15 (19.2)	57.9
Worried about the recovery of baby	15 (19.2)	12 (15.4)	14 (17.9)	13 (16.7)	24 (30.8)	64.9

As to whether their babies being on oxygen was stressful, 25 (32.1%) said it was extremely stressful, another 25 (32.1%) said it was very stressful, 8 (10.3%) said it was moderately stressful and 4 (5.1%) said it was a little stressful. When asked whether the inability of their baby to breastfeed was stressful, 26 (33.3%) said it was extremely stressful, 27 (34.6%) said it was very stressful, 5 (6.4%) said it was moderately stressful and 11 (14.1%) said it was little stressful.

When mothers were asked whether being separated from their babies was stressful, 26 (33.3%) said it was extremely stressful, 17 (21.8%) said it was very stressful, 11 (14.1%) said it was moderately stressful and 10 (12.8%) said it was a little stressful. On whether they were stressed about their babies' recovery, 24 (30.8%) said it was extremely stressful, 13 (16.7%) said it was very stressful, 14 (17.9%) said it was moderately stressful and 12 (15.4%) said it was a little stressful. In terms of stressors related to baby's sickness, the most stressful of the perceived

stressors was baby unable to breastfeed (74.6%) and baby on oxygen (73.1%). The least stressful of the perceived stressors was going to see the baby every three hours (57.9%) and baby on life support (63.8%) (Table 7).

4.4 Coping strategies employed by mothers whose babies have neonatal sepsis

The themes and subthemes were developed from the interview responses on coping mechanisms. Table 8 below presents the themes and subthemes identified.

Table 9: Coping Strategies Employed by Mothers Whose Babies have Neonatal Sepsis at KNH

Objective	Theme	Subthemes
To determine factors contributing to stress, to mothers whose babies have neonatal sepsis in KNH	Psychosocial approach	Psychological approach Social approach
	Meditation	Reading novels Listening to music/singing

4.4.1 Psychosocial approach

Most of the responses provided coping mechanisms centered around the psychosocial approach. The subthemes identified under the psychosocial approach were; psychological and social approaches.

Psychological approaches

Most mothers narrated that to cope with stress, they would pray for God's help. This mainly involved either individual or group prayers.

"*I do pray to cope with stress. It is only God who can help*". [M78]

"*Hard to cope but prayer helps*". [M77]

Other mothers said that they would get emotional as a way of coping with their stressful situations.

"*I cope with stress through crying*". [M78]

"*Sometimes I cry to cope with stress*". [M64]

4.4.2Social approaches

Mothers reported that they share what is happening in their life with others. They mentioned other mothers, family members and friendly staff.

"*I share my ideas with other mothers*". [M38]

"*I talk to family members and friends when am stressed*". [M17]

"*By creating time with my colleagues who support each other by encouragement*". [M16]
"*I cope by talking to my spouse about everything*". [M28]

Meditation

Meditation is another theme that emerged from the interviews. A number of mothers reported engaging in activities that calmed their minds. The two subthemes that emerged here were; Reading novels and listening to music/singing.

Reading novels

Mothers reported that they coped with stress by reading. This was mainly through reading novels and the bible.
"*I cope with stress when I read a novel*". [M25]
"*I cope by reading the story books*". [M72]

Singing

Other mothers reported that they cope through singing. They mainly reported that they sing gospel music.
"*I mainly cope by singing gospel*". [M37]
"*I cope by singing and praying*". [M75]

4.5 Support systems in the management of stress for mothers whose babies have neonatal sepsis

Mothers were also asked about the support systems that enables them cope with stress. Two major themes emerged for the support systems i.e., social support and no support.

T**able 10: Support systems in the management of stress for the mothers whose babies have neonatal sepsis**

Objective	**Theme**	**Subthemes**
Assess the support systems in the management of stress for the mothers whose babies have neonatal sepsis in KNH	Social support	Family or friends Medical professionals
	None	No support Does not need support

Social support

The mothers' responses showed that their support was mainly social. Two subthemes emerged under social support; family or friends and medical professionals

Family or friends

Some mothers reported that they were mainly being supported by family and friends. These included spouses, siblings, other relatives and friends.

"*I get support from visiting relatives*". [M1]

"*I get support from spouse and parents*". [M17]

Medical professionals

Some mothers reported that their support was from medical professionals. These were mainly nurses and doctors.

"*I get support from the doctors*". [M6]

"*The support from nurses is okay*". [M1]

No support

Some mothers reported that they had no source of support. The two subthemes that emerged under no support were; does not need support and does not have support.

Does not need support

The mothers who reported that they did not need support said they were okay.

"I am okay for now". [M18]

"*I am Okey*". [M78]

Do not have support

Some mothers said they had no source of support. These were mostly single mothers. Below are some of their statements.

"*No source of support*". [M7]

"*I have no support*". [M15]

"*I don't have any support*". [M47]

"*No support for now*". [M46]

CHAPTER FIVE: DISCUSSION

5.0 Chapter Introduction

Our research looked at stress levels among mothers whose babies had been admitted with septic shock at Kenyatta National Hospital. We used the Modified Perceived Stress Score scale to determine the stress levels of the mothers based on a 10-item tool. The majority of the mothers had moderate stress levels followed by those with high stress levels. None of the assessed factors were found to be significantly associated with the mothers' stress levels.

5.1 Stress levels among mothers

Our study revealed that the majority of the mothers 55 (71%, 95% CI 59%, 80%) had moderate stress levels followed by 20 (25%, 95% CI 17%, 37%) with high-stress levels. Those with low-stress levels were the least at 3 (5%, 95% CI 1%, 12%). Overall stress levels of up to 60.8% for severe to extreme stress levels have been reported for parents of babies admitted with septic shock in hospitals (Ganguly et al., 2020). While the study supports our findings that parents with babies admitted to the hospital endure, the findings are not the same. This difference can be attributed to differences in the scale of measurement. Our study used the Modified Perceived Stress Scale while the cited study used Parental Stress Scale with a completely different set of items.

In India, research involving 100 mothers with babies hospitalized in neonatal ICU, 34% experienced low-stress levels, 28% had moderate stress levels and 38% had high-stress levels. The 38% finding of high stress levels slightly differs from our finding of high stress levels. The overall difference between these two studies could be attributed to the difference in study setting and participant characteristics.

In part support of our findings, Gurgani & Jogi (2018) found moderate stress levels among 85% of the mothers, severe stress among 8.3% of the mothers and mild stress among 6.7% of the mothers. The slight difference between the two studies could be a result of a difference in sample size. Another study that differed from the current was by Jayaseelan & Mohan (2020) that found 65% cases of mild stress, 25% moderate stress and 10% severe stress among postnatal mothers. This difference could be probably due to differences in demographic characteristics and study setting.

Pathak et al. (2022) found that 93.3% of parents with admitted babies had moderate stress. This finding does not support our results and this could be due to differences in study setting, and demographic characteristics.

Mental health issues among mothers with admitted babies may not be obvious to healthcare workers. This leads to the neglect of suffering mothers as health workers focus on the health of the babies. The stress levels demonstrated here call for close attention to the mental health of mothers as the health needs of their babies are addressed.

5.2 Stress-related factors

The stress-related factors in this study were grouped into three groups. These were individual, environmental and sickness-related factors.

None of the individual characteristics in our study were significantly associated with stress levels among the mothers. A study conducted in a neonatal intensive care unit in Rwanda found that parental age, level of education and occupation were significantly associated with parental stress levels (Musabirema et al., 2015). This difference could be attributed to a difference in sample size as larger sample sizes confer enough power leading to significant differences whenever they exist. Worth noting however is that despite the insignificance of our findings, age less than 25 years, having a college education and being single increased the odds of higher stress levels. Our study also revealed that spousal support reduced the odds of high stress levels. In support of our findings, Varma et al. (2019) identified higher stress levels among mothers with poor family support and those with higher levels of education. Mothers who lack family support e.g., from their spouses may feel lonely leading to high stress levels while those with higher levels of education are more conscious of the baby's sickness leading to higher levels of stress. Kawafha (2018) found parental age to be significantly associated with maternal stress levels. Another study by Kılıç & Taşgıt (2023) did not find a significant association between marital status, parental level of education and occupation with stress levels among parents of babies admitted to the hospital. This finding supports our results. Maureen et al. (2019) did not find a significant association between sociodemographic factors and maternal stress levels among mothers of admitted babies. This study is partly in support of our findings. The significance difference could have arisen from differences in sample size.

Other stressors for mothers whose babies are admitted with septic shock

Of the examined environmental stressors, we found that sick babies sharing cots had stress levels of 68.5% and shortage of nurses had stress levels of 59.5% and were the most stressful for the mothers. Sharing of cots among babies may deny mothers the chance to interact with their babies raising the stress levels. Mothers may also be worried that their babies may contract other diseases from the babies they are sharing cots with and this may heighten their stress levels. Concerning the shortage of nurses, mothers may feel hopeless when there are not enough nurses to care for their babies increasing their stress levels.

No references were found in the literature to compare with our findings.

Our study also revealed that the inability of the baby to breastfeed (74.6%), baby being on oxygen (73.1%) and baby being on life support (63.8%) had a higher degree of stressfulness when it came to sickness-related stressors. This shows that the degree of sickness of the baby contributes to maternal stress levels. A significant association has been reported between parental stress levels and a baby being on life support (Ionio et al., 2019). Mothers especially those with no medical education or those who have not been apprised by the health care workers on the sickness of their babies may find the hospital environment strange. This way, they are vulnerable to stress due lack of understanding of the health developments in their babies. There is a lack of information on sickness-related stressors from the baby's side in literature hence not many studies to compare with our findings.

5.3 Coping Mechanisms Employed by Mothers

The stress coping mechanisms identified in this study were psychological mechanisms e.g., prayer and social approaches e.g., sharing with other mothers and family members. A Ghanaian study on stressors and coping mechanisms among mothers with admitted babies revealed that praying was practised by 100% of the mothers and 93.3% shared their feelings with friends and family members (Wuni et al., 2022). The two studies agree on the prayer and social approach in coping with stress among mothers. The main difference is that our study employed a qualitative approach while the cited study used a quantitative approach.

A study by Malliarou et al. (2021) concluded that parents of babies admitted to the hospital need support and that religion and spirituality were one way through which they coped with stress. This is in support of the coping mechanism identified in our study.

A qualitative study by Sih et al. (2019) also identified praying as a way of coping with stress among mothers with babies admitted to the hospital.

We also identified meditation with the subthemes; reading novels and listening to music. A study by Khoramirad et al. (2021) found that a high level of mindfulness had an inverse relationship with maternal stress and that it enabled mothers to bond better with their babies. Mindfulness and meditation are almost similar and seem to play the same role in reducing maternal stress. In exploring the experiences of mothers with babies in the neonatal intensive care unit, Grieb et al. (2023) reported that mothers who were in the meditation arm reported more calmness, comfort, gained perspective on the situation, and facilitated self-care. This study supports our finding that meditation helps mothers cope with stress.

5.4 Support systems for mothers

The support systems identified by the mothers for coping with stressors were; family and friends, and medical professionals. Some of the mothers reported that they had no support. Murthy et al. (2021) identified family, peers and religion as the source of support for stressed mothers with admitted babies. This study agrees with our findings but differs on religion. Worthy to note is that religion through prayer was one of the coping mechanisms identified by the mothers. Another study revealed that family support is high among mothers whose babies are admitted to the hospital (Pai et al., 2015). This finding is in support of our study as family support was one of the sources of support among the mothers in our study.

Studies have also identified communication with the medical team as a support system (Heidari et al., 2017). This is one of the support systems identified among mothers in the current study. Communication is crucial when it comes to reducing stress. Communicating with medical professionals facilitates information sharing between mothers and health care workers. Through this, the mothers become more informed about their babies, allays anxiety and reduces stress levels.

A study by Negarandeh et al. (2021) reported that medical professionals can support NICU mothers through; reassuring the mothers and providing information. As explained above, reassuring the mothers and information sharing are crucial in stress reduction.

5.5 Conclusion

This study found that on average, mothers whose babies are admitted to the hospital due to neonatal sepsis have moderate level of stress. None of the sociodemographic factors was significantly associated with maternal stress though being single, having a college education, not being supported by a spouse, maternal age less than 25 years, being unemployed, and delivering via caesarean section increases the odds of high stress levels among the mothers.

Psychological approach and meditation were identified as the two main stress coping mechanisms among mothers. Social support (family and friends, and medical professionals) was the main source of support for mothers of babies who were admitted to the hospital.

5.6 Recommendations

1. Healthcare workers need to monitor mothers of admitted babies and give satisfactory information as a way of curbing stress among mothers.

2. There is a need for a multisite study to be able to identify factors that significantly contribute to maternal stress among mothers whose babies are admitted to other hospital.

3. There is also dire need to sensitize family, religious groups and women groups on their importance in supporting mothers when their sick neonates in hospitals as this would minimize stress and ensure good maternal health and neonatal health.

5.7 Study strength

This study utilized primary data and is therefore reliable and accurate.

5.8 Study limitation

This was a single-center study and therefore cannot be generalized to other centers.

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APPENDIX I: GHANT CHART

	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sept 2023
Proposal writing											
Presentation for correction and approval											
Proposal Submission to ethics committee for approval											
Pre testing											
Analysis and evaluation of pre test											
Field data collection											
Data cleaning											
Data analysis and repot writing											
Defence of project report											
Dissemination; submission and publication											

APPENDIX II: BUDGET

ITEM	Approx. NUMBER	COST (kshs)	TOTAL COST(kshs)
STATIONERY			
Pens	4	20	80
Folders	2	100	200
Face masks	2 boxes	500	1000
Hand sanitizer	3 bottles	400	1200
Sealable envelopes	20	10	200
Sub total			**2680**
B SERVICES			
Internet	6 months	2000	12000
Proposal printing	50 pages	10	500
Proposal photocopying	2 copies	150	300
Proposal binding	2 copies	50	100
Report printing	90 pages	5	450
Report photocopying	6 copies	270	1620
Report binding	6 copies	450	2700
Questionnaire printing	4 pages	10	40
Questionnaire photocopying	90 copies	20	1800
Consent form printing	2 pages	10	20
Consent form copies	90 copies	10	900
Ethics committee fee	1	2000	2,000
Research assistants	2	15000	30,000
Statistician fee	1	40,000	40,000
Publishing cost	1	40,000	40,000
Subtotal			**132,430**
TOTAL			**135,110**
Contingencies fee(10% of total cost)			13,511
TOTAL COST			**148,621**

This is based on current market prices and as inflation. the final budget is subject to change with changing inflation rate.

APPENDIX III: INFORMED CONSENT FOR MOTHERS

Title of the study: stress, individual coping mechanisms and support systems for mothers to babies with neonatal sepsis in Kenyatta national hospital, neonatal units.

Researcher: Adelight Nabwire, Master of Science in nursing (midwifery/obstetric nursing)

Institution of study: University of Nairobi, department of nursing sciences

Purpose of the study: the purpose of this study is to assess stress levels, determine the contributing factors, and establish the individual coping mechanism and the support systems available for the mothers to babies with neonatal sepsis.

Risks: there will be no economic nor physical risks to participating in this study. However you will take about 15 – 20 mins of your busy schedule to respond to questions from the researcher administered questionnaire. Some questions will require you to disclose personal information that might trigger some negative feelings. If this happens the researcher will refer you to the hospital counsellor for you to be counselled without cost.

Benefits: there will be no direct monetary benefit in participating in this study. However, the results of study will be useful in understanding maternal wellbeing and therefore utilized by stakeholders in improving maternal health especially when their neonate is admitted due to neonatal sepsis. Also, you will be served with a face mask in case you don't have one or is visibly dirty to curb spread of covid-19.

Confidentiality: this will be maintained and the information you provide will only be used for the intended purpose of the study. Al materials used during the study will be kept in a locked cupboard and only the personnel involved in the study will have access to them. Electronic files will be saved on pass worded computer.

Voluntary participation: Your decision to participate in this research is voluntary. You may withdraw from the study at any time. Refusal to participate will not affect the services you are entitled to receive in this hospital or any other health facility you visit.

Compensation: there will be no monetary compensation in this study for the time incurred during the study.

Questionnaire procedure: the questionnaire will be researcher administered and you will be required to understand each question before you respond to it. The questionnaire has 5 parts with a total of 45 items. Your name nor that of your baby will not be written anywhere on the questionnaire. Questions will be both open ended and closed ended.

Sharing the results: the results of this study will be presented during scientific and academic forums and will be published in scientific journals and academic papers.

Contact person: If you have any questions during or after participating in this study, please feel free to contact the principal investigator and the supervisors on the contacts given below:

1) Investigator:

Name: Adelight Nabwire

Email address: adeligtn@yahoo.com

Phone number: 0715430540

2) Supervisors

This study has three supervisors whose contacts are:

Dr. Lilian Omondi email laomondi@uonbi.ac.ke / mobile: 0720861317

Dr. Angeline Kirui. Email chepchirchir@uonbi.ac.ke/ mobile 0720440665

3)Ethical approval

This study obtained ethical approval by:KNH/UON ERC committee

Dr Beatrice K M Amugune

Secretary KNH_UON ERC

Email uonknh_erc@uonbi.ac.ke

APPENDIX IV: RESEARCH RESPONDENT STATEMENT

I have read this consent form. I have had the chance to discuss this research study with the researcher. The risks and benefits have been explained to me. I understand that my participation is voluntary and that I may withdraw at any time. I understand that all effort will be made to keep information regarding my personal identity confidential.by signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this study. Yes…….no…….Signature date

Researcher statement

I have fully explained the relevant details of this research study to the participant. The participant understood and has freely given the informed consent

Researcher(assistant)'s name ……signature……date……

APPENDIX V: STUDY QUESTIONNAIRE TO ESTABLISH STRESS LEVELS, CONTRIBUTING FACTORS, COPING MECHANISM AND SUPPORT SYSTEMS FOR THE MOTHERS.

1.Part 1: Demographic dataTick appropriately
Age in years A) under 18 ☐ B) 19_25 ☐ C) 26_34 ☐ D)>35 ☐

2.Education level. A) Uneducated ☐ B) primary ☐ C)secondary ☐ D) College ☐

3.Employment A) employed (public) ☐ B) self-employed ☐ C) Employed (private) ☐
D) unemployed ☐

4.Marital status A) Married ☐ B) Singe ☐ C) Widowed ☐

5.NHIF compliant. A) Yes ☐ B) No ☐

6. Antenatal clinic. A) Private ☐ B) public ☐

7. Number of antenatal visits. A) Less than 4 ☐ 4-8visits ☐ >8 visits ☐

8.Medical Conditions in antenatal period. A) Yes ☐ B) NO ☐

9.Next of kin. A) Spouse ☐ parent ☐ sibling ☐ none ☐

10. Gestation at delivery A) <34weeks ☐ 35-40weeks ☐ >40WEEKS

11. Mode of delivery. A) Normal ☐ B) Caesarean section ☐

12.Place of birth. A) Home ☐ transit ☐ private hospital ☐ public hospital ☐

13.Baby number. A) 1st ☐ 2nd ☐ 3RD ☐ 4TH ☐ 5TH ☐ >5TH

14. Day in the unit A) 1-5 days ☐ 5-10 days ☐ B) more than 10 days ☐

Part 2: stress levels

Modified perceived stress scale(Cohen, 1994)

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1 since admission of your baby, how often have you been upset because of something thathappened unexpectedly? 0 1 2 3 4

2 since admission of your baby, how often have you felt that you were unable to control theimportant things in your life? 0 1 2 3 4

3since admission of your baby, how often have you felt nervous and“Stressed”? 0 1 2 3 4

4 since admission of your baby, how often have you felt confident about your ability to handleyour personal problems? 0 1 2 3 4

5 since the admission of your baby, how often have you felt that things weregoing your way? 0 1 2 3 4

6 since the admission of your baby, how often have you found that you could not cope with allthe things that you had to do? 0 1 2 3 4

7 since the admission of your baby, how often have you been able to controlIrritations in your life? 0 1 2 3 4

8 since the admission of your baby, how often have you felt that you were on top of things? 01 2 3 4

9since the admission of your baby, how often have you been angered because of things that were outside of your control? 0 1 2 3 4

10. Since the admission of your baby, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

Part 2a.objective stress levels scale

This is an objective scale that the researcher will use to assess stress levels among the mothers.

	Not stressed	Stressed
appearance	Very clean	dirty
Speech	Audible	Not audible
Eye contact	eye contact	no eye contact
Body language	Calm and composed	Rest less

Part 3a: Stress factors from demographic dataPlease tick appropriately

	Demographic data	Not stressful	Little stressful	Moderate stressful	Very stressful	Extremely stressful
26	About my age					
27	About my education level					
28	How I feel about my employment					
29	How I feel about my marital status					
30	How I feel about antenatal clinic					
31	How I feel about the delivery process.					

Part 3b: stress factors from neonatal unit environment

	Neonatal unit environment	Not stressful	Little stressful	Moderate stressful	Very stressful	Extremely stressful
32	Medical equipment unknown to you					
33	Your orientation to the unit					
34	Very many people working in the unit					
35	Other sick babies sharing cots					
36	Flours, walls and ceiling appearance					
37	Lack of privacy					
38	Few nurses on the shift					

Part 3c: stress factors related to baby condition. Please tick appropriately

	Variable	Not stressful	Little stressful	Moderate stressful	Very stressful	Extremely stressful
39	Baby on life support					
40	Baby on oxygen					
41	Baby not able to breast feed					
42	Being separated from the baby most part of the day.					
43	Having to come to see my baby after every three hours.					
43	I am worried about the recovery of the child					

Part 4: coping mechanism

44. How do you cope with stress?

Part 5: support systems for the mothers

45 list your sources of support as you attend to your sick baby?

46. How would you wish to be supported to feel better?

APPENDIX VI: RIDHAA YA HABARI KWA AKINA MAMA

Kichwa cha utafiti: dhiki, mbinu za kukabiliana na mtu binafsi na mifumo ya usaidizi kwa akina mama kwa watoto walio na sepsis ya watoto wachanga katika hospitali ya kitaifa ya Kenyatta, vitengo vya watoto wachanga.

Mtafiti: Adelight Nabwire, Mwalimu wa Sayansi katika uuguzi (ukunga/uuguzi wa uzazi)

Taasisi ya Utafiti: Chuo Kikuu cha Nairobi, idara ya sayansi ya uuguzi

Madhumuni ya utafiti: Madhumuni ya utafiti huu ni kutathmini viwango vya mfadhaiko, kuamua sababu zinazochangia, na kuanzisha utaratibu wa mtu binafsi wa kukabiliana na hali hiyo na mifumo ya usaidizi inayopatikana kwa akina mama kwa watoto walio na sepsis ya watoto wachanga.

Hatari: hakutakuwa na hatari za kiuchumi wala za kimwili kwa kushiriki katika utafiti huu. Hata hivyo utachukua takribani dakika 15 – 20 za ratiba yako yenye shughuli nyingi kujibu maswali kutoka kwa dodoso linalosimamiwa na mtafiti. Baadhi ya maswali yatakuhitaji ufichue maelezo ya kibinafsi ambayo yanaweza kusababisha hisia hasi. Hili likitokea mtafiti atakuelekeza kwa mshauri wa hospitali ili upate ushauri nasaha bila gharama.

Manufaa: hakutakuwa na faida ya moja kwa moja ya fedha katika kushiriki katika utafiti huu. Hata hivyo, matokeo ya utafiti yatakuwa na manufaa katika kuelewa ustawi wa uzazi na hivyo kutumiwa na washikadau katika kuboresha afya ya uzazi hasa mtoto wao anapokubaliwa kutokana na sepsis ya watoto wachanga. Pia, utapewa kinyago ikiwa huna kinyago au kitakuwa chafu ili kuzuia kuenea kwa covid-19.

Usiri: hii itadumishwa na maelezo utakayotoa yatatumika tu kwa madhumuni yaliyokusudiwa ya utafiti. Nyenzo zote zilizotumiwa wakati wa utafiti zitawekwa kwenye kabati iliyofungwa na ni wafanyikazi waliohusika tu na utafiti ndio watakaoweza kuvipata. Faili za kielektroniki zitahifadhiwa kwenye kompyuta iliyo na maneno.

Ushiriki wa Hiari: Uamuzi wako wa kushiriki katika utafiti huu ni wa hiari. Unaweza kujiondoa kwenye utafiti wakati wowote. Kukataa kushiriki hakutaathiri huduma unazostahili kupokelewa katika hospitali hii au kituo chochote cha afya unachotembelea.

Fidia: hakutakuwa na fidia ya pesa katika utafiti huu kwa muda uliotumika wakati wa utafiti.

Utaratibu wa dodoso: dodoso litasimamiwa na mtafiti na utahitajika kuelewa kila swali kabla ya kulijibu. Hojaji ina sehemu 5 zenye jumla ya vitu 45. Jina lako wala la mtoto wako halitaandikwa popote kwenye dodoso. Maswali yatafunguliwa na kufungwa kumalizwa.

Kushiriki matokeo: matokeo ya utafiti huu yatawasilishwa wakati wa vikao vya kisayansi na kitaaluma na yatachapishwa katika majarida ya kisayansi na karatasi za kitaaluma.

Mtu wa mawasiliano: Ikiwa una maswali yoyote wakati au baada ya kushiriki katika utafiti huu tafadhali jisikie huru kuwasiliana na mpelelezi mkuu na wasimamizi kuhusu anwani zilizotolewa hapa chini:

1. Mpelelezi

   Jina: Adelight Nabwire

   Anwani ya barua pepe: adeligtn@yahoo.comNambari ya simu: 0715430540

2. Wasimamizi

   Utafiti huu una wasimamizi watatu ambao mawasiliano yao ni:

   Dk. Lilian Omondi barua pepe laomondi@uonbi.ac.ke / simu ya mkononi: 0720861317

   Dkt. Angeline Kirui. Barua pepe chepchirchir@uonbi.ac.ke/ simu ya rununu 0720440665

3. Idhini kuu

   Utafiti huu uliiidhinishwa na kamati ya KNH / UON ya Maadili na Utafiti

   Ikiongozwa naye Daktari Beatrice K M Amugune

   Ambaye ni katibu wake

   Barua pepe uonknh_erc@uonbi.ac.ke

APPENDIX VII: TAARIFA YA MHOJIWA UTAFITI

Nimesoma fomu hii ya idhini. Nimepata nafasi ya kujadili utafiti huu na mtafiti. Hatari na faida zimeelezewa kwangu. Ninaelewa kuwa ushiriki wangu ni wa hiari na ninaweza kujiondoa wakati wowote. Ninaelewa kuwa juhudi zote zitafanywa ili kuweka maelezo kuhusu utambulisho wangu binafsi kuwa siri. kwa kutia saini fomu hii ya idhini, sijaachanana haki zozote za kisheria nilizo nazo kama mshiriki katika utafiti wa utafiti.
Ninakubali kushiriki katika utafiti huu. Ndio ….la…Sahihi……tarehe…….

Kauli ya mtafiti

Nimeeleza kikamilifu maelezo muhimu ya utafiti huu kwa mshiriki. Mshiriki alielewa na ametoa kibali cha habari bila malipo

Jina la mtafiti(msaidizi) …….

APPENDIX VIII: DODOSO LA UTAFITI

Sehemu ya 1: Sehemu ya mama binafsi na mwanaweWeka tiki ipasavyo

1. Umri katika miaka A) chini ya miaka 18 B) 19_25 C) 26_34 D)>35
2. Kiwango cha elimu. A) Hajasoma B) msingi C) sekondari. D) Chuo
3. Ajira. A) kuajiriwa (umma) B) kujiajiri C) kuajiriwa (binafsi) D) bila ajira
4. Hali ya ndoa.A) Ndoa B) single C) mjane
5. kufuata NHIF. A) Ndiyo B) Hapana
6. Kliniki ya wajawazito. A) Binafsi B) umma
7. Idadi ya ziara katika ujauzito. A) Chini ya 4 B) kati ya 4_8 C) > Zaidi ya 8
8. Tatizo lolote katika kipindi cha ujauzito.A) Ndiyo B) hapana
9. Ndugu wa karibu. A) Mwenzi B) mzazi C) ndugu D) hakuna
10. Mimba wakati wa kujifungua A) <34wiki B) 35_40wiki C)>wiki 40
12. Njia ya kujifungua. A) Kawaida B) kupasuliwa
13. Mahali pa kuzaliwa.A) Nyumbani B) barabarani
    C) hospitali binafsi D) hospitali ya umma
14. Nambari ya mtoto. A) 1 B) 2 C) 3 D) 4 E) 5 F) >5
15. katika hospitali A) siku 1-5 B) siku 5-10 C) zaidi ya siku 10

Sehemu ya 2: viwango vya mkazo

Kiwango cha dhiki kilichorekebishwa (Cohen, 1994)

Maswali katika kipimo hiki yanakuuliza kuhusu hisia na mawazo yako katika mwezi uliopita. Katika kila kisa, utaulizwa kuonyesha kwa kuzungushia ni mara ngapi ulihisi au kufikiria kwa njia fulani.

0 = Kamwe 1 = Karibu Kamwe 2 = Wakati mwingine 3 = Mara nyingi sana 4 = Mara nyingi sana

1 tangu kulazwa kwa mtoto wako, ni mara ngapi umekerwa kwa sababu ya jambo lililotokea bila kutarajia? 0 1 2 3 4

2 tangu kulazwa kwa mtoto wako, ni mara ngapi umehisi kwamba hukuweza kudhibiti mambo muhimu maishani mwako? 0 1 2 3 4

3tangu kulazwa mtoto wako, ni mara ngapi umehisi woga na"Mkazo"? 0 1 2 3 4

4 tangu kulazwa kwa mtoto wako, ni mara ngapi umejisikia ujasiri kuhusu uwezo wako wa kushughulikia matatizo yako ya kibinafsi? 0 1 2 3 4

5 tangu kulazwa kwa mtoto wako, ni mara ngapi umehisi kuwa mambo yalikuwakwenda zako? 0 1 2 3 4

6 tangu kulazwa kwa mtoto wako, ni mara ngapi umegundua kuwa haukuweza kukabiliana na mambo yote uliyopaswa kufanya? 0 1 2 3 4

7 tangu kulazwa kwa mtoto wako, ni mara ngapi umeweza kudhibitiMaumivu katika maisha yako? 0 1 2 3 4

8 tangu kulazwa kwa mtoto wako, ni mara ngapi umehisi kuwa ulikuwa juu ya mambo? 0 1 23 4

9Tangu mtoto wako alazwe, ni mara ngapi umekasirishwa kwa sababu ya mambo ambayo hayakuwa ya uwezo wako? 0 1 2 3 4

10. Tangu kulazwa kwa mtoto wako, ni mara ngapi umehisi matatizo yanazidi kuongezeka hadi ukashindwa kuyashinda? 0 1 2 3 4

Sehemu ya 2a.kipimo cha viwango vya mkazo vya lengo

Hiki ni kipimo cha lengo ambacho mtafiti atatumia kutathmini viwango vya mfadhaiko miongoni mwa akina mama.

	Haijasisitizwa	Inasisitizwa
Muonekano	Safi sana	chafu
Hotuba	Inasikika	Haisikiki
Kutazamanakwa macho	Kutazamanakwa macho	hakuna kugusa macho
Lugha ya mwili	Tulivu na iliyotungwa	Pumzikakidogo

Sehemu ya 3a: Vipengele vya mkazo kutoka kwa data ya idadi ya watu

	Kina cha mfadhaiko	Haina mfadhaiko	kidogo Inafadhaika	Wastani Inafadhaisha	Inafadhaisha sana	Inafadhaisha sana
26	Kuhusu umri wangu					
27	Kuhusu kiwango changu cha elimu					
28	Jinsi ninavyohisi kuhusu kazi yangu					
29	Jinsi ninavyohisi kuhusu hali yangu ya ndoa					
30	Jinsi ninavyohisi kuhusu kliniki ya wajawazito					
31	Jinsi ninavyohisi kuhusu mchakato wa kujifungua.					

Sehemu ya 3b: Sababu za mkazo kutoka kwa mazingira ya kitengo cha watoto wachanga.

	Mazingira ya kitengo cha watoto wachanga	Hayana mfadhaiko	kidogo Yanafadhaisha	Wastani Yanafadhaisha	Inafadhaisha sana
32	Vifaa vya matibabu visivyojulikana kwako				
33	Mwelekeo wako kwa kitengo				
34	Watu wengi sana wanaofanya kazi katika kitengo				
35	Watoto wengine wagonjwa wakishiriki vitanda				
36	Unga, kuta na kuonekana kwa dari				
37	Ukosefu wa faragha				
38	Wauguzi wachache kwenye zamu				

Sehemu ya 3c: Sababu za mkazo zinazohusiana na hali ya mtoto. Tafadhali weka tikiipasavyo

	Kibadilishiko	Si cha mfadhaiko	kidogo Mfadhaiko	Wastani Mfadhaiko	Inafadhaisha sana	Inafadhaisha sana sana
39	Mtoto juu ya msaada wa mashine					
40	Mtoto aliyewekwa oksijeni					
41	Mtoto asiyeweza kunyonya					
42	Kutengwa na mtoto sehemu kubwa ya siku.					
43	kumwona mtoto kila baada ya saa tatu.					
43	Nina wasiwasi kuhusu kupona kwa mtoto					

Sehemu ya 4: utaratibu wa kukabiliana

44. Unakabilianaje na mfadhaiko?

Sehemu ya 5: Mifumo ya msaada kwa akina mama

45. orodhesha vyanzo vyako vya usaidizi unapo mhudumia mtoto wako mgonjwa?

46. Je, ungependa kusaidiwa vipi? ili ujisikie vizuri zaidi?

APPENDIX IX: LETTER OF APPROVAL FROM ETHICS COMMITTEE

UNIVERSITY OF NAIROBI
FACULTY OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/240

12th June, 2023

Adelight Nabwire
Reg No. H56/40634/2021
Dept. of Nursing Sciences
Faculty of Health Sciences
University of Nairobi

Dear Adelight,

ETHICAL APPROVAL-RESEARCH PROPOSAL: STRESS, INDIVIDUAL COPING MECHANISMS AND SUPPORT SYSTEMS FOR MOTHERS TO BABIES WITH NEONATAL SEPSIS IN KENYATTA NATIONAL HOSPITAL NEONATAL UNITS (P289/03/2023)

This is to inform you that KNH-UoN ERC has reviewed and approved your above research proposal. Your application approval number is **P289/03/2023.** The approval period is 12th June 2023 –11th June 2024.

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by KNH-UoN ERC.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KNH-UoN ERC 72 hours of notification.
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH-UoN ERC within 72 hours.
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to KNH-UoN ERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

DR. BEATRICE K.M. AMUGUNE
SECRETARY, KNH- UoN ERC

c.c. The Dean, Faculty of Health Sciences, UoN
The Senior Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information Dept., KNH
The Chair, Dept. of Nursing Sciences, UoN
Supervisors: Dr. Lilian A Omondi, Dept. of Nursing Sciences, UoN
Dr. Angeline C Kirui, Dept. of Nursing Sciences, UoN

APPENDIX X: APPROVAL LETTER FROM KNH CHIEF EXECUTIVE OFFICER

KENYATTA NATIONAL HOSPITAL
P.O. BOX 20723, 00202 Nairobi

Tel.: 2726300/2726450/2726550
Fax: 2725272
Email: knhadmin@knh.or.ke

Ref: KNH/PAEDS-HOD/48 Vol.II

Date: 26th June 2023

Adelight Nabwire
Reg.No.H56/40634/2021
Dept. of Nursing Sciences
Faculty of Health Sciences
University of Nairobi

Dear Adelight

RE: AUTHORITY TO COLLECT DATA IN PAEDIATRICS DEPARTMENT

Following approval of your Research proposal by the KNH/UON-Ethics & Research Committee and subsequent filing of the Study Registration Certificate, this is to inform you that authority has been granted to collect data in ***Paediatrics Department***, *on* your study titled ***"Stress, individual coping mechanisms and support systems for mothers to babies with neonatal sepsis in Kenyatta National Hospital"***. Kindly liaise with the Principal Nursing Officer, Paediatric General Wards.

You will also be required to submit a report of your study findings to the office of the HOD, Paediatrics - KNH after completion of your study.

Dr. Cyriaque Mbarubukeye
Ag. HOD Paediatrics

cc. Principal Nursing Officer, Paediatric General Wards

APPENDIX XI: RESEARCH LICENCE LETTER FROM NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION (NACOSTI)

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 950925

Date of Issue: 20/July/2023

RESEARCH LICENSE

This is to Certify that Ms.. Adelight Nabwire of University of Nairobi, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: stress, individual coping mechanisms and support systems for mothers to babies with neonatal sepsis in Kenyatta National hospital neonatal units for the period ending : 20/July/2024.

License No: NACOSTI/P/23/27582

950925

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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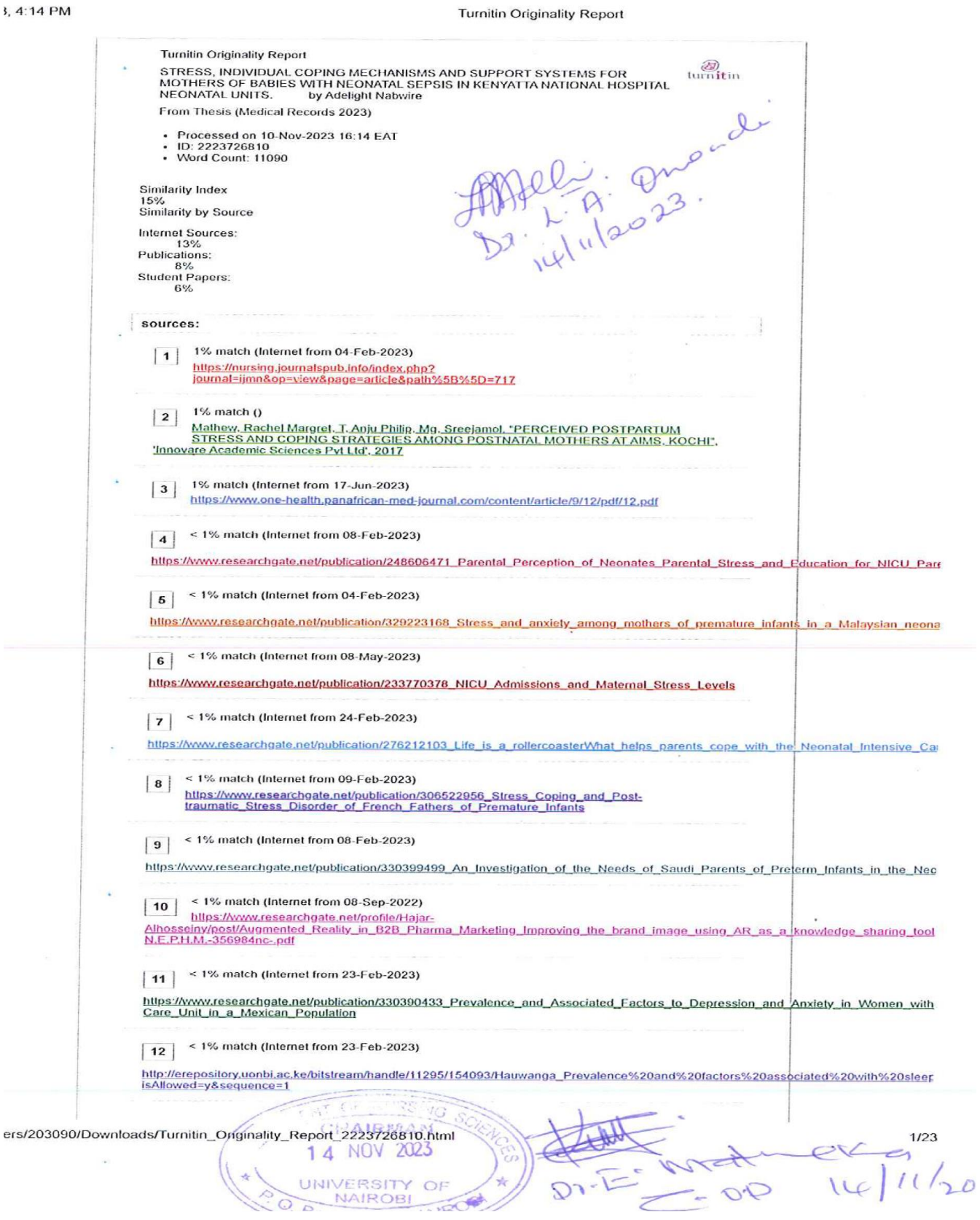
See overleaf for conditions

APPENDIX XI: PLAGIARISM REPORT



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N.E.P.H.M.-356984nc-.pdf

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isAllowed=y&sequence=1

Dr. L. A. Onsando 14/11/2023.

CHAIRMAN 14 NOV 2023 UNIVERSITY OF NAIROBI P.O. BOX

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