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**DESCRIPTION OF GASTRO-INTESTINAL EFFECTS OF NEONATES BEING
READMITTED DURING THE NEONATAL PERIOD AFTER EXPOSURE TO
TRADITIONAL SUBSTANCES**

**Dissertation submitted in fulfilment of the requirements for the degree MNurs
(Neonatal Nursing Science)**

**In the
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Dedication

This dissertation is dedicated to all the healthcare workers who are working so hard to save the lives of the neonates that are in need.

“Whoever saves one life saves the world entire.” - *Stern*

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First and foremost, praises and thanks to the God, Almighty for his showers of blessings throughout the work that was done.

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Abstract

Introduction: Traditional substances use and practices are common in rural communities and are believed to be effective. Mothers are using traditional substances in the early stages of life as part of cultural initiation or to treat conditions like inyoni, ibala and other illnesses. It was observed that often the mothers visit the health institutions after using traditional substances in their neonates when they are not well, especially with gastro-intestinal effects. The exact gastro-intestinal effects caused by the use of traditional substances and performing of cultural practices during the neonatal period were unknown, but neonates were often readmitted in two hospitals in Mpumalanga province with a history of being exposed to traditional substances.

Aim: The aim of the study was to determine the gastro-intestinal effects of neonates who had been readmitted during the neonatal period after exposure to traditional substances.

Research methods: A retrospective quantitative review method was used in the study to collect data from patient files of neonates who were readmitted to the two selected hospitals after exposure to traditional substances. The data was analysed using descriptive and inferential statistics.

Results: A total of 32 files were used for capturing the data and a link was determined between the use of traditional substances and gastro-intestinal signs and symptoms. The neonates presented with either diarrhoea, vomiting, abdominal pains or dehydration.

Recommendations: It is recommended for health training institutions to incorporate a module educating students about the cultural beliefs, practices and activities occurring in the communities with which they live. Healthcare workers should acquire enhanced understanding of history taking. A collaboration between the healthcare sector and traditional sector can be of assistance in adopting a mutual understanding between the two sectors regarding the use of medications and traditional substances.

Key words: Traditional medicine, Traditional substances, Readmission during neonatal period, Gastro-intestinal effects of neonates

Declaration

I, Bongani Sizwe Mabutho Thabede, do hereby declare that this study represents my own work and that the research reported in this dissertation is the result of my investigation and has not been submitted for any degree or academic examination at any other institution. All sources used or quoted have been duly acknowledged within in text referencing and in the reference list.

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B.S.M Thabede

January 2023

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1.1. INTRODUCTION AND BACKGROUND

Childbirth and the resulting neonatal period may come with socio-economic events that carry varying meanings across different societies and cultures (Slade, Molyneux & Watt, 2021:679). There are cultural and religious events which are often translated into social expectations of how a particular society expects mothers to take care of their babies during the neonatal period. Native beliefs and practices offer both opportunities and barriers to health service providers as mothers may want to have the opportunity to use traditional substances which may prolong the hospitalization period during the readmission period. According to Sharma, Tiejlingen, Hundley, Angell and Simkhada (2016:10) health and maternity care providers need to be aware of local values, beliefs and traditions to anticipate and meet the needs of the woman and the neonate. These care providers must gain the mothers' trust and work with them despite differences in cultural beliefs. The use of traditional medicine in neonates is common in rural areas, and therefore health workers should be aware that some mothers use traditional substances for their neonates before bringing them to hospitals or clinics (Nwaiwu & Ayelade, 2016:43).

The gastro-intestinal tract of the neonate is the first point of contact with ingested substances and food, and it does not only digests food but it also plays an important role in wellbeing of the neonate (Mukonowenzou, Adeshina, Donaldson, Ibrahim, Usman & Erlwanger, 2021:1).

Immediately after birth the gastro-intestinal system of the normal neonate is able to master the digestion process, but the digestive system is fragile and weak compared to an adult system. For this reason, feeds are given according to the specific age-related requirements which should include exclusive breastmilk feeding for six months (Bagga, Nadipineni & Mohamed, 2018:131).

Several abnormalities can arise from the type of neonatal feeding, how the baby is fed and what is excluded from feeding, if the feeding is wrong. The 2006 Rome III criteria classify and clinically distinguish functional gastro-intestinal disorders in children that are

a natural response of the gastro-intestinal system to abnormal feeds, based on clinical presentation such as regurgitation, colic, dyschezia, abdominal pains, constipation and diarrhoea (Salvatore, Baldassarre, Mauro, Laforgia & Tafuri, 2019:44).

The use of traditional substances by families during the neonatal period is likely to be linked with abnormalities such as diarrhoea, vomiting, electrolyte imbalance and dehydration (Oyunchimeg, Hwang & Ahmed, 2017:1), which might result in illness and readmission of the neonate for hospitalization, or even mortality.

In some families the use of traditional substances is done as a form of customs and initiation of the neonate. They perform it sometimes to protect the infant from evil spirits that might be present or will come in future. The safety though in using traditional substances in neonates is a continuous pressing concern which often results in disagreement between healthcare workers, mothers of neonates and traditional healers (Mudonhi & Nunu, 2021:1). People might also use traditional substances for managing symptoms of diseases such as vomiting, diarrhoea and constipation in spite of the lack of clinical proof thereof (Oyunchimeg, Hwang & Ahmed, 2017:1).

According to Lekgothoane and Ross (2020:5) about 80% of the South African population rely on traditional substances and visit traditional practitioners to seek assistance for advice when they are not physically, emotionally, or spiritually well. Mothers or caregivers of neonates often follow this practice when they have newborn babies or their babies are not well.

Traditional medicine in Africa is a diverse and multifaceted knowledge system, which is mostly transferred verbally from one generation to the other and combines global and local elements (Che, George, Ijiru, Pushpangadan & Andrae-Marobela, 2017:25). A common feature in South African's healthcare is the use of traditional substances in combination with Western medicine (Price, Willcox & Kabudula, 2019:871), but the extent of use in neonates is not known.

Nwaiwu and Oyelade (2016:1) reported that many mothers use traditional substances in neonates and infants less than six months of age in spite of potential side effects. According to Hillman, Gottfried, Whitsett, Rakela, Schilsky, Lee and Ganger (2016:114) the use of alternative and traditional substances is grossly under-reported, and nearly half of the medicine users fail to report the use to their healthcare workers and if they do

report, they fail to report all the medicine they use. Foley, Steele and Cramer and Adams (2018:5) indicate that the under-reporting may be influenced by lack of inquiry from medical providers, fear of disapproval by healthcare providers, perception that disclosure is not important, the belief that the medicine is safe or the opinion that the healthcare providers lack knowledge about the traditional substances.

Some members of the community are of the opinion that Western medicine fails to provide satisfactory cure to many diseases and that many drugs have side effects, therefore they search for alternative therapies and herbs-based supplements (Che, George & Ijindu, 2017:19). Traditional medicine is often used as an alternative for the treatment of chronic illnesses, and after discharge from health facilities, mothers often use it as a follow-up method of care for their children to treat when they get sick (Price et al., 2019:872).

Traditional substances are not supported by evidence-based information and most drugs used are not scientifically tested. Some medicine is considered to be safe by users even if the efficacy is not clear, and its side effects may vary from user to user. Traditional substances commonly do not have specific doses or strengths which might pose a danger to the infants as the risk is high for giving them high dosage (Alhusban, Ata & Shraim, 2019:313).

Alhusban et al. (2019:313) found a high prevalence of traditional substances used, particularly herbal remedies, in paediatric patients with hepatogastric intestinal diseases on readmission that were previously discharged in good health.

Bacterial gastroenteritis is characterized by prolonged or severe diarrhoea and most common in children under the age of five years. The number of recorded cases for prolonged or severe diarrhoea is approximately 1,7 billion yearly and resulting mortality added up to 520 000 - thus ranking the fourth biggest cause of death of children under five years (Nyino, Atu & Oluma, 2018:3; Lopman, Steele & Kirkwood, 2016:2). It is however not clear how many of the reported cases had diarrhoea for other reasons than bacterial gastroenteritis, such as the use of traditional substances.

1.2. PROBLEM STATEMENT

The Sustainable Development Goal 3 is to ensure healthy lives and promote wellbeing of all ages. This goal encompasses the objective to reduce the global child mortality rate, of

which the neonatal mortality rate forms a significant part. The target for neonatal mortality is less than 12 deaths per 1000 live births (United Nations (UN) 2021:1). The global neonatal mortality rate in 2018 was 18 deaths per 1000 live births (Masaba & Mmusi-Phetoe, 2020:709). South Africa's neonatal mortality rate was 11.5 per 1000 live births in 2018 (Goga, Feucht, Zar, Vanker, Wiysonge, McKerrow, Wright, Loveday, Odendaal, Ramokolo, Ramraj, Bamford, Green, Pillay & Nannan, 2019:83). The neonatal mortality rate at the hospitals in this study's context was 79 per 1000 live births between 2018 and 2019, and 45 per 1000 live births between 2019 and 2020 (Hospitals' Statistics, 2020).

The study done by Degefa, Diraba. Girma, Kebede, Senbeto and Eshetu (2019:2) in Ethiopia states that the neonatal period is the most determining time in a child's life and that signs and symptoms like vomiting, dehydration and sunken fontanelles should not be ignored by the mothers. The authors further provide some evidence that in Africa there is still a high risk of neonatal deaths due to the inability of mothers to identify the early warning signs when their neonates are sick. According to the Global Health Action study by Abdullah, Hort, Butu and Simpson (2016:5) neonatal deaths are often due to lack of knowledge about the danger signs and late response to health problems, and this ignorance might be a reason why people might prefer the use traditional substances.

Furthermore, cultural and traditional customs are part of the growing child from birth, and it gives a sense of belonging to the child and family. The use of traditional substances is therefore respected and practiced worldwide by traditional practitioners and families, but the effects and side-effects thereof are often unknown. In South Africa there is no national regulation thereof and there are only drafts in the process of development for the regulation of herbal medicine (WHO, 2019:78).

The researcher observed in the two hospitals' where he is working that the mothers still choose to use the traditional substances for healing of what is believed to be traditional illnesses in their neonates. The researcher further observed that several babies who had been readmitted in the two hospitals presented with gastro-intestinal problems and signs and symptoms such as diarrhoea, vomiting and severe dehydration. During history taking the caregivers often indicated that they used traditional substances. The aim of this study therefore was to determine the effects of using traditional substances on the gastro-intestinal system during the neonatal period in the particular context.

1.3. RESEARCH QUESTION, AIM AND OBJECTIVES

A research idea is formation or definition of a research question and the idea can lead to identifying the holes in the map either by discovering or formulating them. This creates a statement of a query that a researcher wants to address related to the identified problem (Inie, Frich & Dalsgaard, 2022:10). For the purpose of the study the research question was:

What are the gastro-intestinal effects of neonates being readmitted during the neonatal period after exposure to traditional substances?

The aim of the study was to determine the gastro-intestinal effects of neonates being readmitted during the neonatal period after exposure to traditional substances.

The objectives of the study were as follows:

- To describe the use of traditional substances for neonates who were readmitted to the neonatal wards of the particular two hospitals.
- To describe the gastro-intestinal signs and symptoms of neonates who were readmitted to the neonatal wards after exposure to traditional substances.
- To describe the results of gastro-intestinal effects of neonates who were readmitted to the neonatal wards after exposure to traditional substances.

1.4. IMPORTANCE AND BENEFITS OF THE PROPOSED STUDY

This study contributed to knowledge, understanding and awareness about the use of traditional substances in neonates and the associated effects on the gastro-intestinal tract of the neonates. The benefits might be related to practice, education and research, and related recommendations are made in Chapter 4.

1.5. DELIMITATIONS AND ASSUMPTIONS

1.5.1. Delimitations

The study was limited to the two hospitals only as the settings where the neonates were readmitted. The focus was limited to the effects on the gastro-intestinal tract of the

neonates who were readmitted after the use of traditional substances within the neonatal period.

1.5.2. Assumptions

This study followed a retrospective quantitative approach embedded in the positivist paradigm with the following assumptions:

- The data obtained from the files were assumed to be correct and a true reflection of the states of the neonates when being readmitted; and
- It was assumed that the mothers were truthful when reporting on the traditional substances given to the neonates.

1.6. DEFINITION OF KEY TERMS

The following key terms were formulated for this study:

1.6.1. Gastro-intestinal effects

An effect is “a change that results when something is done or happens: an event, condition, or of affairs that is produced by a cause” (Merriam-Webster Dictionary, 2021: n. p.). Gastro-intestinal relates to the stomach and intestines (Brandstaeter, Fuch, Aydin & Cyron, 2019:2). In this study gastro-intestinal effects referred to the changes that occurred in the stomach or intestines of neonates probably due to the use of traditional substances. These effects were observed as clinical presentation of vomiting, diarrhoea, or dehydration, or were reflected as abnormalities in the investigations, such as abdominal X-rays and electrolyte imbalances on the blood results.

1.6.2. Neonates

A neonate is a baby that is less than 28 days of age (WHO, 2021: n. p.). The study focused on babies who were readmitted in the hospital within the first 28 days after birth with gastro-intestinal problems and with a history of exposure to traditional substances.

1.6.3. Traditional substances

“Traditional medicine refers to the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, used in the maintenance of

health and in the prevention, diagnosis, improvement or treatment of physical and mental illness” (WHO, 2021: n.p.). In this study traditional substances referred to the treatment, herbs, medicine, or other matter given by mothers to their neonates after discharge based on cultural beliefs. The substances might be given orally, rectally, topical or through an incision.

1.7. STUDY SETTING

The study was conducted in two district hospitals in the Gert Sibande District, Pixley ka Isaka Seme Municipality in Mpumalanga Province. The neonates who were readmitted in these two hospitals came from the same geographical area, which implied that the cultural practices used were very similar. The two hospitals were under the same management and Chief Executive Officer (CEO), which implied that the operational policies were similar. The one hospital had 22 beds of which five were allocated for neonatal use and the other one was a 105-bedded hospital with 10 neonatal beds. The total number of admissions of neonates per month for the two hospitals was on average 65. The readmission rates per month were approximately 15 neonates, but it was unknown how many of them had a history of traditional substances use. The estimation was that 11 out of 15 neonates that were readmitted monthly might be related or linked to traditional substance use, of which most presented with gastro-intestinal effects. It was not clear which traditional substance were given to the neonates, which created a need for this study.

1.8. RESEARCH DESIGN AND METHODS

The following section provides an overview of the research methodology and is discussed in more details in Chapter 3, while the findings are discussed in Chapter 4.

A retrospective quantitative approach was used, which relied on statistical data as described by Becker, Atinc and Breugh (2015:10) to provide a more accurate description of the gastro-intestinal effects of traditional substances in neonates who were readmitted.

Quantitative retrospective research adopts structured procedures and formal instruments for data collection. The data is collected objectively and systematically using the existing data that have been recorded for reasons other than research (Queirós, Faria & Almeida, 2017:370).,

This study focused on the gastro-intestinal effects of traditional substances which may include physiological changes which were measured by interpretation of blood results from the laboratory, abdominal X-rays and clinical presentation of neonates during readmission. The data was collected from the hospital files after discharge of these neonates.

1.8.1. Unit of analysis and sampling

The unit of analysis included the hospital files of neonates being readmitted with gastro-intestinal problems or complaints and signs and symptoms of dehydration, vomiting and diarrhoea after the use of traditional substances as reported by the mother during history taking. Observations made by the nursing staff of incisions or body marks on the neonate during assessment would be captured on the documents.

A sample size of at least 30 files of neonates that were admitted in the two hospitals over a six-months' period with—problems or complaints of diarrhoea, vomiting and/or dehydration and observation of incisions or body marks plus history or indication of traditional/herbal substances, were advised by the statistician. The statistician also advised that if the sample size couldn't be reached, files over a longer period would be included (view Annexure D).

Inclusion criteria were as follows for the files to be selected:

- The neonate whose file it was, was a readmission within 28 days after birth.
- The information included notes from nurses, clinical associates, or doctors with an indication of any history of traditional substances being given to the neonate before the readmission or observations showing signs and symptoms, such as diarrhoea and vomiting linked to traditional medicine use.

Files where there was an indication or diagnosis of respiratory problems or infection were excluded, as well as files with limited information. The files were selected retrospectively after formal permission was obtained from the Ethics Committee of the University of Pretoria (view Annexure E), and the CEO of the hospitals (view Annexure D).

1.8.2. Pretesting of the audit tool

The data collection tool (audit tool) was compiled by the researcher based on information related to gastro-intestinal effects that were usually captured in the files (View Annexure B). Thereafter the content was evaluated by two experts and a biostatistician for the construction thereof. Pretesting was done by selecting five files to test if the data collection instrument was appropriate and adequate to capture the necessary data (view Annexure B for the data capturing instrument and Chapter 3 for discussion of the methodology).

1.8.3. Data collection

Data collection is the gathering of information to solve a research problem by following a sequence of steps or actions that will lead to a desired result (Mohajan, 2020:3). The study used an audit tool to retrospectively collect data from the files of neonates who were readmitted with signs and symptoms such as diarrhoea, vomiting, dehydration, electrolyte imbalances or abdominal distention. Files were collected to cover the readmitted neonates over a six-month period from November to May (view Chapter 3 for the discussion of the data collection tool and data collection process).

The following information was captured on the data collection tool: reason for readmission, history of traditional substances uses, gastro-intestinal signs or symptoms (including vomiting, diarrhoea and dehydration, electrolyte imbalances on blood results and any abnormalities on abdominal X-ray images) (view Chapter 3 for discussion).

1.8.4. Data management and analysis

The data were captured by the researcher on the data collection instrument (Annexure B) and then transferred to an Excel spreadsheet as agreed with the statistician. A computer that was password-protected was used. Hard copies will be stored in a safe locked cupboard for 15 years.

Descriptive statistics were used to describe the traditional substances used and the gastro-intestinal effects on neonates who are readmitted after exposure to it, with the assistance of a biostatistician (view Chapter 4 for discussion).

1.8.5. Validity and reliability

Strategies to obtain face validity, content validity and construct validity of the instrument, as well as reliability are discussed in Chapter 3.

1.9. ETHICAL AND LEGAL CONSIDERATIONS

Formal approval to conduct the study was obtained from the CEO of the two institutions, the Department of Health of Mpumalanga and the Research Ethics Committee or the Faculty of Health Sciences of the University of Pretoria prior to data collection (view Annexure D and Annexure E). The following ethical principles were adhered to: beneficence and non-maleficence, justice and respect for human dignity.

1.9.1. Beneficence and non-maleficence

It is the researcher's duty to do good and to prevent harm to human participants that are part of the study (Surmiak, 2019:230). In this study only patient files were used and there were no human participants involved that were exposed to any discomfort. The researcher still ensured that no information was exploited and that the information collected from the files only benefitted the study aims and objectives, and were used to answer the research question.

1.9.2. Justice

The principle of justice indicates that participants need assurance that the information obtained from them will not be used against them (Farrugia, 2019:50). Although participants were not directly involved, no personal information from the files was used and confidentiality was maintained to protect the information about individuals. The researcher was the only person who collected the data, and only numbers and no names were used.

1.9.3. Respect for human dignity

Respect for human dignity is originally a philosophical and religious notion but has become a legal right that can lead to a court case around the world (Daly & May 2019:177). Permission was granted by the CEO to get access to the files. A waiver was

granted by the Research Ethics Committee for the informed consent from the patients' mothers.

1.9.4. Anonymity

For confidentiality reasons the researcher decided to use participant codes such as B1, B2, etc., and not use the patients' names or hospital file number. The capturing was done in the hospitals' boardrooms, which provided privacy and a conducive environment while the files did not leave the hospital premises.

1.10. CONCLUSION

This chapter provided an overview of the study. The lay-out of the dissertation is as follows:

Chapter 1:	Overview of the study
Chapter 2:	Literature review
Chapter 3:	Research design and methodology
Chapter 4:	Research findings
Chapter 5:	Conclusions, limitations and recommendations

The following chapter focuses on the relevant literature that relate to traditional substances use and its effects on the gastro-intestinal tract of neonates.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

Chapter one provided an overview of the study. This chapter focuses on the literature related to neonates and traditional substances that are used by African communities and some description on why communities and mothers might use traditional substances. Insight is also provided into the mothers' choices not to follow the instructions on how to take care of their neonates post-delivery and post discharge from the hospital.

2.2. INTRA-UTERINE LIFE AND TRADITIONAL MEDICINE

The growth of foetal organs is a dynamic process involving changes in the anatomical and physiological parameters (Abduljalil, Jamei & Johnson, 2018:236). Before birth the foetus is surrounded with a fluid called amniotic fluid which is covered by an amniotic sac. Both the amniotic fluid and sac play a major role of protecting and keep the foetal environment suitable and sterile and are responsible for foetal development together with the placenta and the uterus (Morris, Meller, Tamblyn, Malin, Riley, Kilby, Robson & Khan, 2014:686).

The sonography of the foetus shows that on the 4th week of pregnancy the gut begins to appear as a tube and develops to the stage seen in the newborn. The amniotic fluid swallowing activity by the foetus is observed at the 16th week of gestational age. The stomach is formed at 9 weeks of gestation and takes its final shape by 26 weeks. At this stage the digestive system is fully formed, but not yet responsible for supply of nutrients to the foetus (Abduljalil & Jamei, 2018:236)

During intra-uterine life, the foetus relies on receiving the nutrients and oxygen from the mother until the birth process take place. That process is called "foetal programming". It has been proven that a pregnant woman should have a balanced lifestyle in terms of diet, exercise, well controlled emotions, and sleep patterns for normal growth of the foetus. If the foetus is not getting enough nutrients and oxygen supply, the growth may be affected. This may change their development process during childhood and adulthood, and they may experience medical complications such as hypertension, diabetes, and coronary heart disease (Lindsay, Buss, Wadwa & Entringer, 2019:2).

“Foetal programming” is a process whereby a foetus senses, receives nutrients that she receives from the mother and respond to foetal environment. Any disturbance to it may produce changes in the structure, organ systems and developmental process. A balanced lifestyle is a very important gift from a pregnant mother to her infant and it plays a major role in foetal development (Lindsay, Buss, Wadhwa & Entringer, 2018:135). Embryonic and foetal life represents an important developmental period, meaning the maternal environment, activities, psychosocial stress, and nutrition are responsible for influencing foetal development. The exposure of the foetus to suboptimal conditions can result in structural and functional changes in cells, tissues and organ systems and may have long term consequences for their health (Lindsay, Buss, Wadwa & Entringer, 2018:1).

There are issues concerning the use of traditional medicine during pregnancy. A Cameroonian study indicated that 31.2% of women uses traditional substances during pregnancy and the use of the substances is associated with foetal and neonatal complications like foetal distress and increased rate of emergency caesarean sections (Dohbit, Meka, Tochie, Koudo Ze & Essiben, 2019:1).

In an Iranian study the results showed that low birth weight can be prevented by giving Iranian traditional medicine to pregnant women in the third trimester (Rumi, Farsani, Riahi, Dizaji, Mehrabani & Mokaberinejad, 2018:215). Most of this medicine is given in a form of dietary intake. The study suggests that foods like “exireazam, quanoon, moalejateaghii and tabeakbari” can lead to improvement of blood supply through the placenta and therefore this improves nutrients supply from the mother to foetus. The results of the study showed positive effects from the use of the above substances (Rumi, Farsani, Riahi, Dizaji, Mehrabani & Mokaberinejad, 2018:215).

The use of traditional substances during pregnancy therefore might have positive or negative effects, but limited research could be found on which substances are positive and which are negative, especially related to the gastro-intestinal system.

2.3. BIRTH PROCESS AND POST-NATAL PERIOD

The birth process may have many events and it is believed to be a moment of blessing for most families. After birth the neonate needs to become independent and maintain physiological balance in the new extra-uterine environment. The environment is different from intra-uterine where it received nutrients and oxygen from the mother and was

protected from cold, micro-organisms and physical injury (Yu, Khodadadi, Malik, Dividson, Salles & Bhatia, 2018:1).

After birth the neonate should have a normal state of internal chemical and physical functioning which is maintained by body systems known as a process of homeostasis, including normal blood glucose levels, blood circulation and breathing for normal oxygen supply (Guemes, Rahman & Hussain, 2016:569).

The baby's ability to maintain the body's equilibrium and to cope with the new environment immediately after birth and during the neonatal period is crucial. The neonate still depends on the mother for care, protection, warmth, the supply with nutrients and glucose acquired through breastfeeding, as well as attachment and bonding (Sharma, Davis & Shekhawat, 2017:335).

Over the past ten years the interest in maternal and newborn survival has grown where more concerns were raised about access of pregnant women and neonates to institutional care. Part of the recommendations to improve survival, was the standardization of care to pregnant women and support during labour by skilled birth attendants. The use of drills ensure that all the procedures were followed correctly during the birth process, especially when there is a birth complication (Saxena, Srivastana, Dwivedi & Battacharyya, 2019:1).

All the stages of labour are regarded as important. The first and the second which are the most stressful because of pain and contractions that increases as it progresses (Huang, Zang, Ren, Li & Lu, 2019:460). According to the co-standards used globally, the nurse's duty room is nearby the patient's bed to ensure close monitoring of the patient's progress. The third stage and fourth stage so far are regarded as the urgent stage of labour because it may have many abnormalities in a short space of time and may happen quickly. These abnormalities may lead to maternal mortality as a result of post-partum haemorrhage and other causes (Ghani, Janjua, Mubeen, Hussain & Jawad, 2020:86).

The fifth stage (discharge) is a preparation for discharge and for monitoring if the woman and the neonate meet the requirements for discharge, for example: six hours have passed, the neonate passed meconium and have no signs of vomiting, the mother has normal vaginal bleeding and there are no medical, surgical, or obstetric problems that require attention (Ngunyulu, Mulaudzi & Peu, 2020:1). During this stage vaccination is done and health education is given to the mother and the companion regarding the care of the baby, methods of feeding, clinic follow-up and especially about the danger signs to

look out for. The mother is advised about the importance of danger signs like dehydration, vomiting, lethargy and convulsions. She is given education about the dangers of using the traditional medicine for the neonate and is told about seeking medical attention whenever she notices the danger signs without any hesitation to avoid poor help-seeking syndrome (Saxena & Srivastana, 2019:12).

Several gaps have been found to be present during the birth process which includes poor partograph, shortage of staff, and poor or no documentation of vital signs and foetal heart monitoring, which may put the mother and the neonate at risk. The aim of evaluation of gaps is to correct them and to reduce them as far as possible (Ayebare, Jonas, Ndeezi, Nakunda, Hanson, Tumwine & Hjelmstedt, 2020:6).

Depending on the beliefs of the people in a geographical area, the use of traditional medicine is increasing amongst the African mothers to heal illnesses like Ibala, inyoni, inkaba and other illnesses that they believe are not known by Western medicine. This raised several concerns from Western health professionals because some conditions may be congenital and may be complicated by giving traditional substances (Lekgothoane & Ross, 2020:4).

Furthermore, oral traditional substances within 72 hours of prior to delivery like isihlambeso have been proven to have no effect on foetal outcomes but it is associated with vaginal bleeding, uterine atony and dystocic delivery of the mother. The mothers indicate that they use the substances to prevent prolonged labour and because of traditional customs (Dohbit & Meka, 2019:3).

Due to limited research being available regarding the use of traditional substances during the different stages of labour and the effects thereof on neonates, it cannot be concluded to be safe practice.

2.4. NEONATAL GASTRO-INTESTINAL SYSTEM

The neonatal period is the most determinant time for child's survival (Degefa, Diriba, Girma, Kebede, Senbeto, Eshetu, Aschalew, Tariku & Zerihun, 2019:2). The Maternal and neonatal factors like young maternal age, primipara, maternal health complications, not breastfeeding, low birth weight, multiple births and male gender are associated with the death of newborns (Degefa et al., 2019:2).

The primary focus of this study is on the gastro-intestinal system, which will therefore be discussed in more detail in this section. The normal gastro-intestinal system is divided into two segments which is upper and lower gastro-intestinal system. The upper gastro-intestinal system includes the oesophagus, stomach, duodenum, pancreas and hepatobiliary tract. The lower segment consists of the jejunum, colon and anal opening. The gastro-intestinal system is responsible for digestion, absorption, distribution of nutrients and excretion of waste products in a normal neonate (Verma, 2021:01). After birth the gastro-intestinal system's composition is ready to take responsibility for digestion and absorption of breastmilk – which is needed for survival of the neonate. The mother's breastmilk is unique, as it is a biomedical product that is pre-eminent for neonates. It is a natural product that provides the neonates with all the nutrient needs for the first six months of life (Witten, Claasen, Kruger, Coutsoadis & Grobler, 2020:2).

The neonates' gut is sterile at birth. From birth onwards, neonates encounter numerous bacteria in the environment from parents, siblings, nurses, and feeding which populate the gastro-intestinal system. This may cause the gastro-intestinal system composition profile of the neonate to be almost similar to the adult bacterial composition profile. If the gastro-intestinal system is failing to tolerate the bacteria, it may lead to vomiting, diarrhoea, and other illnesses like gastro-enteritis (Chong, Bloomfield & O'Sullivan, 2018:1). Below is a detailed description of the signs and symptoms of a disturbed gastro-intestinal system.

- **Diarrhoea**

Diarrhoea is defined as having three (3) or more loose or watery stool in a period of 24 hours in a neonate. This is contrary to the normal defecation pattern on a neonate in the late neonatal period – 8 to 28 days of life – which composes of 2 to 3 stools with a consistency that is pasty and soft in period of 24 hours. The late neonatal period is considered because all the neonates in this study were readmitted in that period and not the early neonatal period which is from birth to day 7 of life. The impact of persistent diarrhoea includes dehydration and malnutrition due to the loss of water, electrolytes and nutrients (Levine, Walson, Atlas, Lamberti & Pavlinac, 2017:289).

- **Vomiting**

Shields and Lightdale (2018:342) in their article titled "Vomiting in Children" define vomiting as the forceful expulsion of gastric contents through the mouth and/or nose. In

normal circumstances, the gastric contents are retained in the stomach. However, in instances where there is an underlying gastro-intestinal condition, the cardiac sphincter – which is a circular muscular band located between the oesophagus and stomach – becomes loose, leading to vomiting. The effects of persistent vomiting (2 to 3 episodes) include electrolyte loss, dehydration and injury to the oesophagus.

- **Abdominal distention**

Abdominal distension is defined as a measurable increase in abdominal girth accompanied by a decrease in the audibility of bowel sounds (Lacy, Cangemi, & Vazquez-Roque, 2021:219). The mean abdominal girth in neonates born at full term is 30 to 33cm (Meldere, Urtans, Kruze, Petersons & Abola, 2013:47). An increase in this parameter is classified as abdominal distension. Causes of this distention in neonates include congenital malformations such as biliary atresia, obstruction of the colon and liver problems leading to ascites. The impact of a distended abdomen incorporates shortness of breath due to upward shifted diaphragm, a muscle separating the chest cavity from the abdominal cavity.

- **Abdominal pain/ Abdominal discomfort**

Pain is a subjective complain and symptom, which should be investigated and treated. Neonatal abdominal pain and discomfort may pose diagnostic challenge to diagnose due variety of underlying causes like constipation, overeating or gas cause by sucking are during breast feeding. The same challenge may happen if there is inability to give reliable history from the care-giver during the hospital consultation. (Khalid, Redhu, Nazir, Khalid, Chana & Jha, 2012:198).

- **Constipation**

Constipation is defined as the passage of abnormally large calibre of hard stools, with a frequency of less than 3 per week or painful defecation. It is a common paediatric problem, accounting for 3% to 5% of paediatric primary care visits and 10% to 25% of paediatric gastroenterology consultation. A study that was done by Poddar (2016:320) suggest that the common causes of constipation are due to *drugs* like anti-consultants, *endocrine/ metabolic* disorder like hypothyroidism, *neurological* disorder like cerebral palsy, *congenital anomalies* like anal stenosis, motility related problems like Hirschsprung

disease and functional constipation. About 95% causes are due to functional constipation and 5% is due to organic causes like Hirschsprung disease.

- **Dehydration**

Dehydration/ excessive weight loss is defined as a loss of more than 10% of birth weight prior to the end of the first week of life, and is thought to occur in up to 15% of exclusively breast-fed neonates (Sarin, Thill & Yaklin, 2019:197). It may be due to conditions that causes the body to lose too much body fluids such as excessive heat, sweating, infections or illness, side effect of medication and not drinking enough fluids (Fadlalmola, 2020:19). The loss of fluids may lead to electrolyte imbalances like hypernatremia or hypokalaemia which may lead to disturbances in body metabolic functions (Sam, Study, Deepa, Chikkanarasareddy & Suresh, 2022:4267). Other signs of dehydration may include loss of skin turgor, sunken frontal anterior fontanelle, dryness of oral cavity and eyes (Bag, Karan & Saha, 2019:676).

Morbidity of the gastro-intestinal system that might be associated with neonates include congenital abnormalities, which are mentioned here briefly. The brief discussion is included as these abnormalities might present with gastro-intestinal signs and symptoms and it is important to exclude congenital abnormalities before consideration of the clinical presentation as being a result of traditional substances. The study done by Mahfuz, Alam, Islam, Naila, Chisti, Alam, Sarker and Ahmed (2017:2) suggest that the most important information to be taken during history taking on readmitted neonates with gastro-intestinal related complains should be presence of diarrhoea or vomiting, stool consistency, feeding method an history, hydration status assessment, treatment history, medication use, bloods results and x-rays to confirm the conditions that are suspected.

- **X-ray findings**

The abdomen contains important organs like stomach, liver, spleen, kidneys, small and large intestines. Diagnosing and confirming problems to neonatal abdominal organs may be difficult without the assistance of the available computational anatomical models like x-ray, ultrasound and magnetic resonance imaging (Rehman & Khan, 2020:4)

The normal functioning gastro-intestinal system carries motor, transport, secretory, storage and excretion functions that results from complex balanced control mechanism. The enteric mechanism is regulated by sympathetic and para-sympathetic nervous

system. Any abnormalities or disturbances in the gastro-intestinal function may result in wide range of symptoms including vomiting, abdominal pains, constipation and other complicated conditions like Hirschsprung's disease in neonates which affects bowel movement (Camileri, 2021:2).

The use of methods like an x-ray that was discovered in 1895 and used in 1896 to capture the human tissue first time, assists in identifying the abnormalities in the gastro-intestinal system if they are present. They use ionizing radiation to generate images of person internal structures (Rehman & Khan, 2020:5) Another method that is useful is the ultrasound, which is extensively applied in detection of different diseases because of its safety and high efficiency in diagnosing liver cancer, gastro-enteric diseases and other diseases (Huang, Zang & Li, 2018:1).

The use of diagnostic models increases the probability of correct diagnosis, appropriate treatment and improve patient outcomes in neonatal wards. Healthcare workers must choose and use appropriate available model and they can use them while they waiting for laboratory findings like blood results that is most appropriate for the presenting condition (Limsrivilai & Pausawasdi, 2021:30).

- **Special investigations**

Healthcare workers have a critical role of making sure that the hospitalization experience is not frightful for parents and neonates. During hospital visit and hospitalization certain procedures may be done either to investigate the cause of illness or to treat the condition (Boztepe, Cinar & Ay, 2017:163). In this study the researcher noted that neonates were readmitted with the gastro-intestinal signs and symptoms that are listed above and the common investigations that were done included blood gas, laboratory electrolytes tests. The majority of the neonates presented with dehydration which is a main cause of complications like hypovolemic shock, pre-renal acute kidney injury and acute tubular necrosis as indicated by Tam, Wong, Plint, Lepage and Filler (2014:1).

Increased fluid losses from vomiting, diarrhoea and the abovementioned conditions may result in rapid fluid loss and electrolyte shifts according by Prisco, Capalbo, Guarino, Miraglia Del Giudice and Marzuillo (2021:114).

The most commonly noted abnormal electrolyte is Sodium which is also known as hyponatremia. It is defined as a serum sodium concentration of more than >145 mmol/l

caused by dehydration, excessive sodium intake and salt poisoning. The normal ranges of Sodium are 135 mmol/l to 145 mmol/l (Ghose, Harvey & Edmunds, 2020:654). A study by Felix (2017:2042) suggest that potassium is another electrolyte that is affected by loss of fluids in neonates. It is the major cation in intracellular fluids, is essential for vital biological functions. Neonates maintain a net positive potassium balance, which is fundamental to warrant somatic growth. Hypokalaemia in the neonate is defined as a plasma of less <3,5 mEq/L. The excessive potassium is more than >6 mEq/L which is also known as hyperkalaemia that may be due to decreased renal excretion.

Maternal education on discharge post-delivery has been reported to influence the health of neonates, through improving child feeding and caring practices including accessing healthcare facilities even for those who are living in rural areas. This is done to prevent late identification of gastro-intestinal problems like diarrhoea, vomiting, and constipation (Das, Faruque, Chisti, Malek, Salam & Sack, 2012:455). The abovementioned conditions can complicate and cause electrolyte imbalances mostly hypernatremia and hypokalaemia which may cause restlessness, lethargy, drowsiness and comatose which may require admission in the ward or intensive care unit (Shahid, Ahmed, Kabir, Huq, Shahunja, Faruque, Rahman, Islam & Chisti, 2019:2).

2.5. NEONATAL CONGENITAL ABNORMALITIES

Congenital abnormalities might be a result of malformation during the embryonic period. Some of the abnormalities affecting the gastro-intestinal system are outspoken and visible, such as gastroschisis and exomphalos. Gatoschisis is a paramedian defect of the abdominal wall with extrusion of the bowel that is not covered by the peritoneum, whereas exomphalos, also known as omphalocele, is a defect of in which the bowel or other viscera protrude through the umbilicus.

Some of the gastro-intestinal abnormalities are undetectable during the first few hours after birth, and might therefore be missed if they are discharged a few hours after birth. This may lead to mothers to opt for help from private healthcare providers and traditional healers, or to home remedies if the neonate presents with gastro-intestinal effects at home (Verma, 2020:1). Malformations may result in complications leading to readmission of the neonate and this may lead to management errors if they are treated as being related to traditional substance use while the problem could be congenital (Verma, 2021:01). A

brief description of common congenital gastro-intestinal abnormalities which are not easily detectable, is given in the following section.

Oesophageal atresia is a congenital anatomical malformation of the oesophagus as a result of disruptions to foregut separation during embryological development. The clinical presentation thereof in newborns include coughing, drooling and fronting during the feeding (Traini, Menzies, Leach & Krishnan, 2020:1263).

Pyloric stenosis is a common cause of gastro-intestinal obstruction in infancy due to the stenosis of the pyloric valve between the stomach and small intestine, affecting up to three of 1000 live births. Its aetiology is unknown. The infant commonly presents with non-bilious vomiting at 3 to 4 weeks of life (Verma, 2021:5).

Biliary atresia is the abnormal development or blockage of the bile ducts between the liver and gall bladder due to unknown aetiology between 4 to 10 weeks of gestation. The clinical presentation includes worsening jaundice (Verma, 2021:6).

Small intestinal atresia is a structural obstruction as a result of malformed small intestines. The lack of passage of meconium in the first 24 hours to 48hrs of life, bilious emesis and distended abdomen is characteristic. The X-ray reveals dilated portions of bowel proximal to the site of obstruction with collapsed loops and paucity of air in the distal bowel (Verma, 2021:10).

The above examples of gastro-intestinal congenital abnormalities highlight the importance to conduct proper assessment of a neonate who is readmitted with gastro-intestinal signs and symptoms to eliminate congenital abnormalities prior to management, and not to assume those are related to traditional medicine or substance use.

2.6. TRADITIONAL MEDICINE AND SUBSTANCES

“Traditional medicine is the sum total of knowledge, skills practices based on the theories, beliefs, experience, indigenous to different cultures whether explicable or not used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness” (Paknejad, Motaharifard, Barimani, Kabiri, & Karimi, 2019:813). The use of traditional medicine is associated with witchcraft, supernatural and magical implications in some communities, and a person who practices traditional medicine needs to be initiated in a secret society where they teach about the rules of

using the traditional medicine. The use of traditional medicine involves treating conditions in a form of a holistic care system (Ozioma & Chiwe, 2019:192).

In South Africa there is no formal institutional training for traditional healers, but a prospective approach is used where trainees are learning from the experienced traditional healer known as uGobela. The training may take months or years (Ozioma & Chiwe, 2019:196). In 2006 the presidential task team was appointed to assist on national policy, appropriate regulatory and legal framework regarding traditional medicine institutionalisation. This led to implementation passing of Traditional Health Practitioners Act No 22 of 2007. This act was aimed to establish an interim Traditional Health Council, which was eventually inaugurated in 2013 which was meant to provide a regulatory framework to ensure efficacy, safety and equity of traditional healthcare services. It was also meant to control and manage the registration, training and conduct of practitioners, students and other categories of traditional healers. Due to aspects like not having a code of conduct, there was a reluctance to take up registration from traditional healers (Mothibe & Sibanda, 2019:6).

The traditional healing and care system is organized into three levels of specialty which is divination, spiritualism and herbalism which provides services based on culture, religious background, knowledge, attitudes, and beliefs that are known and familiar to the community. This also depends if the cause / illness is believed to be natural or supernatural and that leads to treatment of the physical or spiritual being using herbs, exorcism, and animal sacrifices (Ozioma & Chiwe, 2019:191).

The WHO defines herbal medicine as a practice which includes herbs, herbal materials, herbal preparations and finished herbal products, that contain active ingredients or parts of plants, or other plant materials, or combinations derived from leaves, stems, flowers, roots and / or seeds (WHO, 2000:1). The use of traditional medicine is growing though there are some concerns regarding the quality and safety standards. There is evidence that a number of members of the public rely on traditional substances when they or their neonates are not well (Altyn & Twarużek, 2020:01).

Traditional substances are prepared in many forms depending on the reason for use and illness. According to Traditional Health Practitioners Act No 22 of 2007 diviners, herbalist, traditional surgeons, Isangoma, iNyanga, uMthandazi in isiZulu may use collected plants materials for healing people. Many forms of traditional substances may be issued made

from dried processed plants, crude processed plants, ready mixed concoctions, and herbal mixtures also known as traditional substance (Mothibe & Sibanda, 2019:12).

Many of these substances are made from plants and parts of the plants like roots (woody roots of African plants), tubers (potatoes and yams), bark (layer of tree stems and trunk), rhizomes (woody stems like ginger), leaves, and fruit seeds (Ozioma & Chiwe, 2019:194). The medical substances are prepared in different methods depending on the geographical area and culture. The preparation methods can be done by extraction, decoction or ashing. The mode of administration depends on the traditional healer's preference because some substances may be toxic when used incorrectly. A typical example of the medication is one that is used on the skin after the small cuts have been made known as "ukugcaba" and the substance that is applied is believed to be in the blood stream healing and protecting the person (Ozioma & Chiwe, 2019:195-6).

Honey during pregnancy and labour can promote uterine contractions the same way as oxytocin as it contains a hormone called oestrogen which augments uterine contractility via increasing myometrium excitability (Dohbit et al., 2019:4).

Some traditional substances contain active ingredients which contains additives like dilutions, solvents or preservatives to protect the plants from damage and contribute to colour, flavour, and smell (aroma), and might affect humans in various ways. The traditional substances differ according to the area and community beliefs. An example of a commonly used substance is medication like *Echinacea purpurea*, which is used for treatment of infections, sepsis and stomach cramps (Msomi & Simelane, 2018:217).

2.7. THE HISTORY OF TRADITIONAL MEDICINE

Many years ago, plants have been providing humans with all the needs like food, shelter, clothing, flavors, fragrances and medicines. The use of traditional substances for healthcare management might have been a challenge because some non-consumable plants that were used might have led to vomiting, diarrhoea, coma, or either toxic reaction (Adhikari & Paul, 2018:422).

The evidence from the fossils shows that the human use of plants as medicine started 60 000 years ago (Fabricant & Farnworth, 2001). People were using it for survival and against diseases that were threatening their existence (Abdullahi, 2011:115). Almost 65% of today's world population depend on plants as part of their primary healthcare and 60%

of South African population consult one of the 200 000 traditional healers compared to Western medical doctors (Elgorashi, Taylor, Maes, Staden, Kimpe & Verschaeve, 2003:195). Traditional substances in a form of natural products have been a source of many active ingredients in Western prescriptions. In the post-genomic time, over eighty percent (80%) of drugs were obtained from natural products (Adhikari & Paul, 2018:424).

The traditional substances are widely used but the adverse effect is not well documented in the literature and with their long-term use by humans one might expect them to have low toxicity (Elgorashi, Taylor, Maes, Staden, Kimpe & Verschaeve, 2003:195). According to the study that was done by Street, Stirk and Van Staden (2008:705) about 27 million South Africans are depending on traditional substances and the study also stressed that the safety issue remains a concern. According to Street et al. (2008:708) South Africa is left behind in all fronts with a lack of direction and focus when it comes to challenges regarding the plant trade. The safety and strength issue are a concern which creates a debate amongst users and those who do not believe in using the traditional medicine. This remains an issue even today.

Based on their study done, Lekgothoane and Ross (2017:14) suggest that the understanding of methods, beliefs and preferences by most African mothers to heal their neonates is important in order to be able to approach cultural issues in a relevant manner. Most of the mothers prefer the traditional methods because they believe the old methods are effective in solving indigenous illnesses. Regardless of the health education given to the mothers, the use of traditional medicine is persistent on the African continent.

The use of traditional substances for treatment of indigenous neonatal illnesses like ibala, inkaba, inyoni and other illness have increased in South Africa, as mothers believe the only medication that can help their neonates regarding the illness is traditional medicine. They also maintain that it is the oldest form of treating these conditions (Randrianarivony, Randrianasolo, Andriamihajarivo, Ramarosandratana, Jeannoda, Rakotoarivony & Bussmann, 2016:68).

The importance of Western medicine is presented and explained to mothers but they still decide to use traditional substances. They also choose to use traditional medicine to avoid long waiting periods at health facilities, healthcare workers not spending enough time on them during consultation, and the fear of myths they have been told regarding the

modern medicine and not having an adequate relationship with the healthcare workers (Özdemir, Erol, Bostan Gayret, Mete, Özel, & Yiğit, 2020:37).

Traditional medicine is an integral part of Zambian culture and a study done in Zambia suggests that most people who use traditional medicine have much knowledge of the medicine in neonates or during pregnancy (Hajj, Sitali, Vwalika & Holst, 2020:2). The use of traditional substances depends on social status, ethnicity, cultural background, indications, and it may include a variety of herbs like ginger, onions, and neem. The use varies across regions, and it may be that the mother believes that because it is natural, it is safer than other medicine (Tengia-Kessy & Msalale, 2021:2).

It is important for nurses to know, identify and learn more about the traditional substances or customs that are used by mothers during neonatal care. It is even better if they can identify the clinical presentations that will assist in future scientific studies and treatment to reverse the effects if they are present during the readmission at the hospital (Nwaiwu & Oyelade, 2016:41). They must also understand the role of traditional birth attendants in the management of mothers and neonates in rural areas. Traditional birth attendants and traditional healers are concerned about the healthcare workers who are failing to collaborate in saving the lives of the pregnant mothers and neonates (Musie, Mulaudzi, Anokwuru & Bhana-Pema, 2021:7-8).

The study in South Africa by Rasweswe, Mogale, Musie and Rikhotso (2021:2) suggests that patients' treatment requires understanding and consideration of treating the person as a whole by focusing on physical, psychological, social and spiritual needs during the consultation period.

2.8. THE ROLE OF THE WORLD HEALTH ORGANIZATION IN TRADITIONAL SUBSTANCES

The WHO has been involved in many ways regarding the recognition and acceptance of traditional medicine use. The initiative observed in 1976 during the World Health Assembly (WHA) drew attention to people that were practicing traditional medicine (Mothibe & Sibanda, 2019:2). Two years after that at the International Conference in Alma Ata, the WHO made a statement that "traditional medicine and traditional healers are important partners for the attainment of the objectives and encouraged their promotion in communities and in Africa. The aim of this was to ensure no one was denied a right to

health and to create regulations and policies for traditional practitioners (Mothibe & Sibanda, 2019:2).

In 2001 the WHO African Regional Strategy on Traditional Medicine was adopted by the Organization of African Unity (OAU) and the period between 2002 to 2010 was declared as the Decade for African Traditional Medicine (Mothibe & Sibanda, 2019:26). The 31st of August was then declared as the Annual African Traditional Medicine Day, which is celebrated yearly. Between the year 2002 and 2005 the WHO developed a framework for action to promote the use of traditional medicine in reducing mortality and morbidity in impoverishing nations. The strategy had four objectives, namely:

- To promote the use of traditional medicine that is safe in an appropriate manner by traditional healers.
- To integrate traditional medicine into a national healthcare system.
- To promote the safety and efficacy and quality of traditional medicine.
- To increase the availability and affordability of traditional medicine (Mothibe & Sibanda, 2019:2)

In 2003 the first regional workshop was held in South Africa to set guidelines for the registration of traditional medicine and there was registration of WHA56,31 on Traditional Medicine (WHO, 2004:1). Then the strategy for 2014-2023 was released in 2012 which was planned to support the member states in promoting the safe and effective use of traditional medicine and to train traditional practitioners (Mothibe & Sibanda, 2019:2-3).

2.9. REASONS FOR THE USE OF TRADITIONAL MEDICINE IN NEONATES AND ITS EFFECTS

The use of traditional substances in developing countries is growing, together with the exposure of neonates to traditional substances of which the safety profile is unknown. It is believed to subject neonates to potential toxic substances (Tengia-Kessy & Msalale, 2021:2).

Western doctors state that the use of substances may be potentially harmful, due to lack of understanding of infection techniques and no strength for doses (Lekgothoane & Ross, 2017:4). According to de Villiers and Ledwaba (2003) Western doctors state that neonates present with complications on readmission that are caused by traditional

customs and practices. An example is the cuts on the skin of a neonate using a razor blade to remove the 'bad blood' circulating in the neonate's body and then rubbing herbal medication in the fresh scar, which might lead to infection, sepsis, and severe liver and kidney damage due to herbal toxins. This is confirmed by the study done by Lekgothoane and Ross (2017:4).

Lupariello (2019:1) explains that skin lesions performed in traditional practices with intentions of using herbal or traditional medicine on a neonate might not exclude child abuse and the decision to report such lesions should be done by a multidisciplinary team after a full assessment and evaluation is done.

In treatment of neonatal jaundice due to increased bilirubin levels, mothers often use traditional substances which may cause harm. A study reported by James, Wardle, Steel and Adams (2018:10) among outpatients found a relatively high prevalence of traditional substances side effects of 9% when it is used alone, such as nausea, vomiting, diarrhoea and abdominal pains. It showed a prevalence of 2% side effects when used in combination with conventional medicine. Nwaiwu and Oyelade (2016:42) conducted a study in Nigeria where 72% of the mothers indicated that they use traditional substances in treating their neonates when they have jaundice. Vomiting was reported in 4% of these neonates.

In South Africa the most common conditions affecting the neonates amongst the African societies are Ibalala, Inkaba/Inongwane, Inyoni,inyamazane and ishashazi and it is the most common indications for taking neonates to the traditional healers according to the mothers.

Regardless of health education, mothers are still consulting traditional healers when they are not well and when they feel some threats that might be present in their unborn infants. Traditional healers also feel that there must be collaboration between them and the healthcare workers to deal effectively with the illnesses especially in African rural areas. They believe that this collaboration will assist the nurses in understanding the indications for the use of traditional substances during pregnancy and in neonates (Musie, Mulaudzi, Anokwuru & Bhana-Pema, 2021:7). Contradicting information exists regarding the use of traditional substances which makes it difficult to rule out if the use of substances is appropriate or not.

2.9.1. Ibala/rigoni

Ibala is defined as the localized red spot or birth mark on the occiput of the neonate (also known as rigoni in Limpopo Province). It is believed that it affects the child whose mother was having a sexually transmitted infection during delivery. The clinical presentation of the child will be poor eye contact and gazing at the roof, vomiting, crying and irritability, stiff or retracted neck and sunken fontanelle (Lekgothoane & Ross, 2017:3).

2.9.2. Inkaba/inongwane

The study by Mashile, Tshisikhwane and Masevhe (2019:26) reports that Inkaba is the abdominal cramps and sounds due to weak intestines of the baby after the umbilical cord stump has been removed or has fallen. The treatment for inkaba is *Allum Sativum*, *S. occidentatis* and *Fallopia convolvulus*.

2.9.3. Inyoni/khakhayi

Inyoni is described as the condition where the neonate has a bulging or sunken fontanelle that is regarded as a soft spot for the infant that can be entered by evil spirits. It is believed to be because of the evil spirits from being in contact with someone who had an abortion, who has spiritual illness or who is from the funeral (the condition is described as ukuhabula). The neonate presents with disturbing crying and screaming (Mashile & Tshisikhwane, 2019:26).

Traditional medicine may be offering many modalities to promote recovery according to the literature review that was done. With all the evidence and the suggestions, it appears that not all the neonates that are exposed to traditional substances are readmitted to the hospital with gastro-intestinal problems. The neonates that do get readmitted presenting with gastro-intestinal signs and symptoms preceded by evidence of use of traditional medicine, may be affected due to the lack of insight of the traditional healers that may be related to safety of the medicines they are prescribing, its strength and ethical considerations. Additionally, there is not enough documented literature relating to traditional practices on neonates and the effects of traditional medicine.

2.10. GASTRO-INTESTINAL EFFECTS OF TRADITIONAL SUBSTANCES

The use of traditional substances globally is documented to some extent in adults, pregnant women, breastfeeding mothers and the general population. However, few

studies have focused on the use of traditional substances in neonates and infants less than 6 months of age (Nwaiwu & Oyelade 2016:40).

It is very important to identify the traditional substances that are used during the neonatal stage because it adds to existing knowledge and it is useful for future scientific studies (Nwaiwu & Oyelade 2016:41). Despite the criticism that is present, the use of traditional substances is broad and diverse. Different societies embraced many forms of indigenous healing methods that are captured under the broad concept of traditional substances e.g. African traditional medicine (Abdullahi 2011:115).

The use of African traditional substances is divided into components like birth delivery, child health, mental care and so on. Traditional substances are used as recipes like water, oils, minerals animal parts that are used in treatment of various diseases (Kasilo, Wambebe, Nkiema & Nabyonga-Orem, 2019:2). Contradictions are noted between the researchers, scientists and healthcare workers regarding the use of traditional substances. Others suggest that the use of traditional substances is safe as a result of long history of use in treatment of conditions based on knowledge passed from generation to generation. They report that, there are rare fatalities from use of traditional substances due to systematic selection of plants that are used, while thousands of people die each year from supposedly “safe” over the counter medication or hospitalisation (Mansah, Komlaga, Forkuo, Firempong, Anning & Dickson, 2019:67).

Meanwhile other studies suggest some traditional substances are “toxic” due to improper identification of herbs, mislabelling of plant material, contamination with microorganisms, contamination with pesticides and heavy metals and interaction with conventional drugs, improper processing and inadequate standardization. They argue that the concern is not only use but their safety too (Sharwan, Jain, Pandey, & Shukla, 2015:82).

Toxic refers to relative ability of a substance to cause adverse effect/s in a living organisms. Toxicity can be classified as acute, subacute/ sub chronic and chronic and the effect depends on quantity and duration of administration (Mansah, Komlaga, Forkuo, Firempong, Anning & Dickson, 2019:66).

The use of traditional substances is based on experience and knowledge gained over long history of treating the diseases. The work as a mixture of various components, correspond to multi-target approach with therapeutic effects that are clinically confirmed without analytically defined mechanism (Ahn, 2017:113). There is evidence of traditional

health practitioners that use substances that can cause irritation of the gut which may lead to nausea and vomiting if given orally and they may have devastating consequences if the mode of administration is rectally (Street, Kabera & Connolly, 2018:188).

In the study done by Nwaiwu and Oyelade (2016:40) in Nigeria 72% of mothers agreed they used traditional substances in neonates while 100% perceived herbs to be effective. Most of these mothers 96% did not report or notice adverse outcomes on their neonates but 4% of them reported vomiting a common adverse outcome.

Hakeem, Lohana, Urooj and Ahmed (2020:2) provide evidence that the excessive use of traditional substances can lead to mechanical obstruction of gastro-intestinal tract due to bezoar formation in the intestines. This good management and guidance of mothers may help prevent the 25% of neonates that are presenting at the hospitals with functional gastro-intestinal disorders like constipation, infantile colic and functional constipation.

Vomiting is the result of irritation of the lining of the stomach in neonates and it may lead to dehydration and electrolyte imbalance in neonates.

Diarhoeal conditions can lead to serious complications if not treated well and may lead to hypovolemic shock, failure to thrive, electrolyte imbalances, dehydration and abnormal vital signs (Sajid, Riaz & Riaz, Safdar, 2019:1). Inadequate fluid intake can also lead to renal failure in neonates (Ahmad, Medhat, Zaidi, Farooq & Tabraiz, 2018:206). Reassurance, good guidance and nutritional treatment might be effective interventions in management of gastro-intestinal problems and other conditions (Vandenplas, Gerlier, Caekelbergh & Possner, 2021:10).

2.11. CONCLUSION

In this chapter we were looking at the literature review and discussing the issues that have been identified regarding the use of traditional substances in neonates. The next chapter will focus on research design and methodology.

3.1. INTRODUCTION

The previous chapter discussed the literature review of the effects of traditional substances and use on the gastro-intestinal system, the use of traditional substances and the history of traditional substances. Chapter three focuses on the research design and methodology used in this study and discussions include the research design and research methods related to data collection and data analysis.

3.2. RESEARCH AIM AND OBJECTIVES

The aim of this research study was to determine the gastro-intestinal effects of neonates who were readmitted during the neonatal period after exposure to traditional substances and the objectives are as follows:

- To describe the use of traditional substances for neonates who are readmitted to the neonatal wards of the particular two hospitals.
- To describe the gastro-intestinal signs and symptoms of neonates who are readmitted to the neonatal wards after exposure to traditional substances.
- To describe the results of investigations related to gastro-intestinal effects of neonates who are readmitted to the neonatal wards after exposure to traditional substances.

3.3. RESEARCH METHODOLOGY AND DESIGN

A research methodology and design are providing information about the steps of constructing a research plan to conduct a study and make available recommendations to the research problem (Haviz & Maris, 2018:235). Research methodology is also regarded as the path the researcher needs to follow in conducting research (Mouatasim, Hadid & Sileyew 2019:1). This study followed a retrospective quantitative approach.

3.4. RETROSPECTIVE QUANTITATIVE APPROACH

A retrospective quantitative approach adopts structured procedures and formal instruments for data collection in an objective and systematic manner while using existing data that have been recorded for reasons other than research (Almeida, Superior, Gaya, Queirós & Faria, 2017:370). This study focused on the gastro-intestinal effects of

traditional substances on neonates, including physiological changes measured by interpretation of blood results from the laboratory, abdominal X-rays and clinical presentation of neonates during readmission as recorded in the hospital files.

3.5. STUDY SETTING

The study was conducted in two hospitals in Mpumalanga Province, where neonates were often readmitted with gastro-intestinal complaints like diarrhoea, vomiting and dehydration. In most of these cases there was evidence of the use of traditional substances and some of the parents admitted that they consulted traditional healers. The issue was discussed several times during the perinatal meetings held at the hospitals, which created an interest in finding the effects of the traditional medicine in these neonates. The study setting is described in more details in Chapter 1.

3.6. UNIT OF ANALYSIS AND SAMPLING

The unit of analysis included the hospital files of neonates who were readmitted with gastro-intestinal problems or complaints and having signs and symptoms of dehydration, vomiting and diarrhoea after the use of traditional substances as reported by the mother during history taking. Observations made by the nursing staff of incisions or body marks on the neonate during assessment were also included.

A sample size of at least 30 files of neonates that were readmitted in the two hospitals who met the inclusion criteria in the last 6 months' period, was targeted. In consultation with the statistician, it was decided that files over a longer period would be included, should the sample size not be met (view Annexure B).

The inclusion criteria were as follows for the files to be selected:

- The neonate whose file it was, was readmitted within 28 days' post-delivery; and
- The information included notes from nurses, clinical associates, or doctors' notes with an indication of any history of traditional substances being given to the neonate before the readmission, or signs and symptoms such as diarrhoea and vomiting associated with the use of traditional medicine use, were recorded.

Initially, the researcher collected 40 files from the administrative offices of the hospitals with permission from the CEO of the two hospital, of which 8 were excluded due to having a diagnosis that did not relate to the gastro-intestinal system although there was evidence of use of traditional substances. Moreover, files that were excluded are those that had

limited information. In the end, the researcher was left with 32 files that met the inclusion criteria, meaning the total number of the population was 32 (N=32).

3.7. DATA COLLECTION

The study used an audit tool to retrospectively collect data from the files of neonates who were readmitted and met the inclusion criteria.

3.7.1. Development of the audit tool

For a study to be insightful, the researcher is required to develop an audit tool to enhance the credibility and the validity of their study. Thus, in this study the audit tool was developed with sections A to F (Annexure B). One of the purposes of the tool was to understand the backgrounds of the neonates readmitted through obtaining demographic data to develop/create realistic and applicable measures to understand the response of these neonates to traditional substances.

Moreover, the tool was developed by identifying the need to ascertain evidence of use of traditional substances, type of substance used, route of administration and frequency of use, to determine which of these substances have an effect on the gastro-intestinal system and how the route of administration influences the effect. By identifying the common signs and symptoms the neonates presented with, the researcher aimed to observe whether, indeed a link exists between the use of traditional substances and the presenting gastro-intestinal signs.

Lastly, the tool came about by recognizing the need to visualize the gastro-intestinal abnormalities that might have been the result of use of traditional substances through X-ray imaging, to note other related abnormalities outside the gastro-intestinal system such as electrolyte imbalances, and the need to determine the length of hospitalization and outcome of the neonates.

Section A - Demographic data: This section contained demographic data of importance to clarify the background related to the neonates. For confidentiality reasons the researcher decided to use participant codes such as B1, B2, etc., and not to use the patients' names or hospital file number. The demographic data included age (number of days), race, number of days at home between discharge and readmission, and the geographical areas where the neonates were from. This section was developed to understand the background of the neonates to develop/ create realistic measures (or

applicable measures) to better understand the response of these neonates to traditional substances. This has provided us with some information of how and what type of traditional substances were used by different races based on their settlement i.e. rural and urban

Section B - Use of traditional substances: This section was developed to assist with identifying the evidence of traditional substances use that could be found on neonates during assessment. It's also providing us with information about the type or name of traditional substance that was used, the route of administration and the frequency. This information assisted with knowledge about the use of the substances in the particular setting.

Section C - Gastro-intestinal signs and symptoms: This section contained information regarding the symptoms that were present in neonates when the neonate was brought to the hospital. The symptoms might be diarrhoea, vomiting, abdominal pain, constipation, hydration status and poor feeding captured as mild, moderate, severe or none.

Section D - X-ray report: The abdominal X-ray is one of the important investigations that was done to identify abnormalities in the abdominal area related to air levels or bowel obstruction linked to the use of traditional substances in neonates.

Section E - Special investigations: Special investigation like blood results to monitor electrolyte imbalance, urea, creatinine abnormalities were important in identifying the effect of the medication or substances that were used.

Section F – Outcomes: This section contained the number of readmission days of hospitalisation and the final outcome, which would have been one of the three: discharge to home, transfer to another facility, or demised.

The tool allowed additional information to be added that could contribute to answer the objectives. The audit tool contributed to the generation of visual statistics of the results. The audit tool was used to prevent ambiguity in reports by making sure that there was no confusion by providing clear trends regarding the different aspects of gastro-intestinal effects.

3.7.2. Pre-testing of the audit tool

Pre-testing is used in evaluation of attitudes or participation relative to an event or to assess comfort in applying the information presented on the presentation of new concept of the study. It allows for statistical analysis of data using established statistical methods (Stratton, 2019:574).

The aim of the pre-test was to ensure that the audit tool was suitable to capture the required data to provide meaningful results. The files for the pre-test were collected with the permission from the hospitals' executive management and the CEO of the hospitals after the researcher presented the research proposal at a perinatal meeting.

The pre-testing of the audit tool was done on 21-23 May 2021 by the researcher using five hospital files of neonates that were readmitted and met the inclusion criteria. With the permission from the administrative manager the files were collected from the administrative office. The researcher used the hospitals' boardrooms to capture the data. The files were returned to the administrative office after the data had been captured. This was done to ensure confidentiality and privacy of the patients. It took three days to collect the data from the selected files (see Table 3.1).

TABLE 3.1: PRE-TESTING OF AUDIT TOOL

Date	Number of files	Time used to complete audit
21/05/2021	02	6 hours
22/05/2021	02	5 hours
24/05/2021	01	3 hours

The audit tool proofed to be user-friendly and suitable to collect the needed data, except for one question that was removed. The question that was removed was related to the reason/s why parents used the specific traditional substance, as this answer could not be retrieved from the retrospective records.

The data captured on the audit tools were kept in a lockable cupboard, and the data was not included in the main study.

3.7.3. Data collection of the main study

In the main study 32 files were captured from the files of neonates who were readmitted and who met the inclusion criteria. The same process was followed to retrieve and return

the files as with the pre-testing. Data was collected over a period of six months from 1 November 2021 to 31 May 2022 using the data collection tool in (Annexure B). The researcher captured the data without assistance of a field worker as an attempt to capture it as consistent as possible. The capturing was done in the hospitals' boardrooms, which provided privacy and a conducive environment while the files did not leave the hospital premises.

3.8. DATA MANAGEMENT AND ANALYSIS

The data were captured by the researcher on printed copies of the data collection instrument (Annexure B), and was then transferred to an Excel spreadsheet in the format agreed with the statistician. The hard copies were kept in a lockable cupboard once completed and the electronic data was kept on a computer that was password-protected. The hard copies will be stored in the locked cupboard for 15 years.

Descriptive statistics were utilized to describe the traditional substances used and the gastro-intestinal effects on neonates who were readmitted after exposure to it, with the assistance of a biostatistician. The principle of "data governance" during data collection, storage and processing was followed when conducting this study to prevent the violation of patients' rights to privacy, confidentiality and to protect them from any harm as suggested by Maseme (2022:1) and discussed as ethical considerations in Chapter 1.

The statistics were used as follows:

Objective1: To describe the use of traditional substances on neonates who were readmitted to the neonatal wards of particular two hospitals. To present the statistics for this objective, a pie chart was used to convey evidence of use of traditional substances in the neonates included in the study. The type of statistic used here was percentage, and the use of a pie chart was feasible as it represents data as a fractional part of a whole and was an efficient method of communication even for an uninformed audience.

Objective 2: To describe the gastro-intestinal signs and symptoms of neonates who were readmitted to the neonatal wards after exposure to traditional substances. A bar graph was utilised to describe the statistics of the varying gastro-intestinal signs and symptoms the neonates presented with, and the type of statistic used here was frequency. This is due to its feasibility to interpret in terms of recognizing how many neonates presented

with which sign/symptom, thus proving the existence of a link between the use traditional substances and development of gastro-intestinal signs and symptoms.

Objective 3: To describe the results of investigations related to gastro-intestinal effects of neonates who were readmitted to the neonatal wards after exposure to traditional substances. To present the statistics relating to investigations carried on the neonates, a pie chart was used to describe the abnormalities discovered. Yet again, this form of data presentation is uncomplicated to analyse and draw up a conclusion to a wide variety of audience, and the type of statistic was also percentage.

The results and the discussion thereof are included in Chapter 4.

3.9. VALIDITY AND RELIABILITY

Validity is the extent to which a test measures what it claims to measure in a research study (Lakshmi & Mohideen, 2013:2755). In this study content validity, construct validity, face validity and internal validity were enhanced as far as possible.

Content validity refers to the method the content of the scale is examined (Bahariniya, Ezatiasar & Madadzadeh, 2021:100). In this study specific information was collected from the hospital files of neonates who were readmitted with evidence of traditional substance use and who had gastro-intestinal problems. As aforementioned in section [3.6.1](#), to enhance the content validity of the study, the researcher developed the audit tool that was used on all the files that met the inclusion criteria. To ensure content validity, the researcher sought expert advice from supervisors regarding the tool after it was developed and statistical methods from the statistician.

Construct validity refers to the degree of efficiency of the scale and seeks to answer whether the results presented by the tool in question are consistent with theoretical evidence (Bahariniya, et al., 2021:101). After the tool was developed for this study, the researcher reviews the results after doing a pre-test, and to confirm the validity. The result from the pre-test were showing the tool is relevant for capturing the data. To ensure construct validity, the researcher developed the audit tool in such a way that it measures the gastro-intestinal signs and symptoms that neonates presented with after being admitted post admiration of traditional substances, which is the main concept of the study. The tool was designed to only measure signs and symptoms of the gastro-intestinal

system, and not of any other system, therefore ensuring that the results from the tool are controlled.

Face validity is the appearance of the tool, and its aim is to consider the tool to be valid or not (Bahariniya, et al., 2021:101). Face validity is based solely on the thoughts and opinions of the researcher and therefore should not be regarded as a marker of validity according to the researcher. However, the viewing and assessment of the audit tool was done by the statistician and the supervisors, and it was considered to be a valid tool.

Internal validity is defined as the extent to which the observed results represent the truth in the population we are studying and, thus, are not due to methodological errors. To enhance internal validity, the researcher should make sure that the study is planned carefully and that there are enough quality control and implementation strategies, including recruitment strategies, data collection, data analysis, and sample size (Patino & Ferreira, 2018:183). The researcher – a professional nurse with 5 years' experience in maternity ranging from antenatal care, labour and birth, postnatal care and neonatal care – used files from two hospitals where the neonates who were readmitted came from a particular geographical area to which the researcher is a local resident. The sample size was determined by a statistician based on the average number of neonates being readmitted over a period of time, to ensure that the data is sufficient. The researcher is familiar with the lay-out and meaning of the information, and he recorded and captured the data himself to enhance consistency in interpretation.

Reliability refers to the degree to which measures are free from error and therefore yield constant results providing consistency of the test scores (Lakshmi & Mohideen, 2013:2751). To ensure reliability of the study, a pre-test of the audit tool was done. However, there is a limitation to the reliability of this study as it will only produce consistent results when used in third world countries as these are the countries in which the population uses traditional substances. Should the study or audit tool be used in developed countries, it may not produce consistent results due to the lack on use of traditional substances on those countries.

3.10. ETHICAL CONSIDERATIONS

Ethical considerations were addressed in Chapter 1. Specific principles such as privacy and confidentiality during data collection were explained in sections in this Chapter. The

data collected in this study were only used for recommendations formulated for the setting that was selected. Data will not be used for further studies.

3.11. CONCLUSION

This chapter discussed the methodology that was used in the study as well as data collection and analysis. The next chapter focuses on presentation, discussion, and interpretation of the results in graphs and pie charts.

<p style="text-align: center;">CHAPTER 4: PRESENTATION AND DISCUSSION OF THE RESEARCH RESULTS</p>

4.1. INTRODUCTION

The previous chapter included a discussion of the research design and methodology used in this study. This chapter will be focusing on the presentation and discussion of the research results.

4.2. AIM AND OBJECTIVES OF THE STUDY

The aim of this research study was to determine the gastro-intestinal effects of neonates who were readmitted during the neonatal period after exposure to traditional substances and the objectives are as follows:

- To describe the use of traditional substances for neonates who are readmitted to the neonatal wards of the particular two hospitals.
- To describe the gastro-intestinal signs and symptoms of neonates who are readmitted to the neonatal wards after exposure to traditional substances.
- To describe the results of investigations related to gastro-intestinal effects of neonates who are readmitted to the neonatal wards after exposure to traditional substances.

4.3. RESEARCH RESULTS

Section A: Demographic Data

The section of demographic data was divided into six subsections, from hospital distribution to neonatal outcomes.

- **Hospital distribution**

In a period of 6 months, from 01 November 2021 to 31 May 2022, a total of 32 files (N=32) were collected from two hospitals – namely Hospital 1 and Hospital 2 – that met the inclusion criteria (see chapter 3). Of the 32 files, 23 were collected from Hospital 1 and 9 from Hospital 2. The two hospitals are serving the same population from rural areas and are managed by the same CEO.

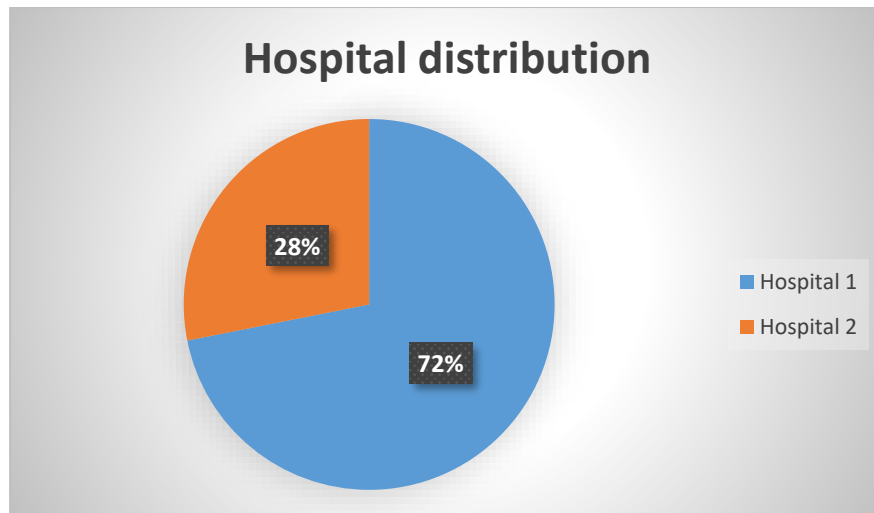


Figure 4.1: Hospital Distribution

- **Age distribution**

As demonstrated in Figure 4.2, it was observed by the researcher that a majority of the neonates that were affected by the use of traditional medicine were those at the beginning of the neonatal period (2 to 7 days) and those at the end of the period (22 to 28 days). The chart represents the number of days the neonates, with the minimum being 2 days and the maximum was 28 days old.

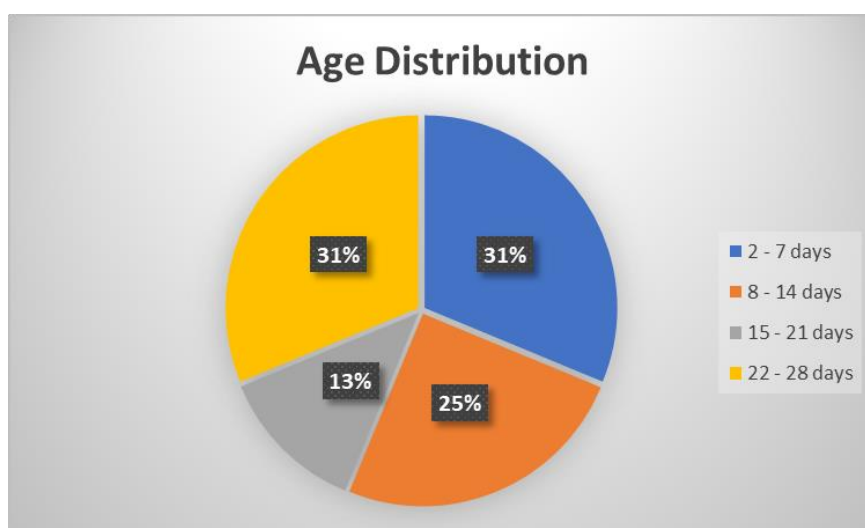


Figure 4.2: Age Distribution

- **Number of days at home**

There is a variety of reasons for the use of traditional substances in rural areas, ranging from welcoming the newborn babies at home, to preventing the neonate from rejecting the family and contracting evil spirits, and also to treating minor ailments such as those aforementioned (inyoni, inkaba and ibala) in the study (Lekgothoane & Ross, 2017:2). Another reason for the use of these traditional substances is the lack of access to the healthcare services in rural areas in comparison to urban areas due to infrastructure challenges (Nelson & Potter 2021:1). With the number of days, the neonates in this study spent at home before readmission, the researcher hypothesized the reasons of use of traditional substances. As seen on the graph below, majority of the neonates remained at home for 9 days before being readmitted, implying that the possible reason of use of traditional substance could have been the treatment of minor ailments, as the time for initiation of the newborn baby into the family would have long passed by day 9.

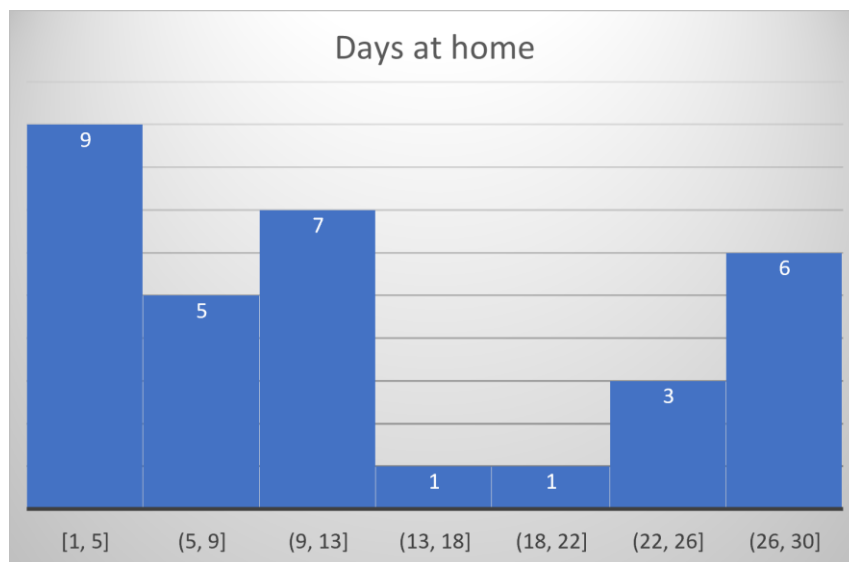


Figure 4.3: Days at home

- **Gender, race and settlement**

With these subsections of demography, the researcher established that most of the neonates that develop adverse gastro-intestinal reactions to the traditional substances

were the male gender, and all of the neonates were of black ethnicity and were based in rural settlements.

The traditional substances were administered to both male neonates and female neonates. On the collected data 15 (47%) were males and 17 (53%) were females. At the moment there is no information gathered relating to the use of traditional substances based on the gender from the literature and the parents during history taking. The results showed that 32 (100%) of the neonates that were readmitted were from the African/Black families. This might be due to the fact that 90% of the population is black and the hospital is attending to 95% of the black community members. The data that was collected indicates that 32 (100%) of the neonates that were readmitted were from rural areas and this is because the hospitals are surrounded by many farms.

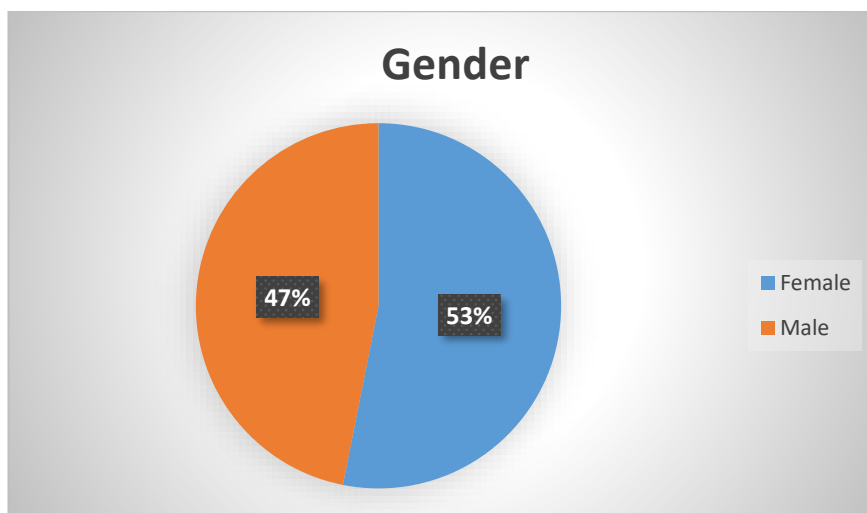


Figure 4.4: Gender

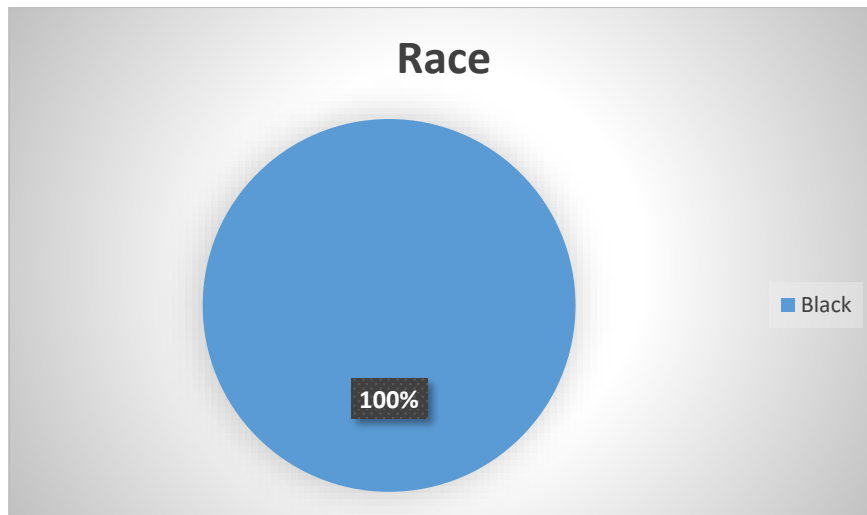


Figure 4.5: Race

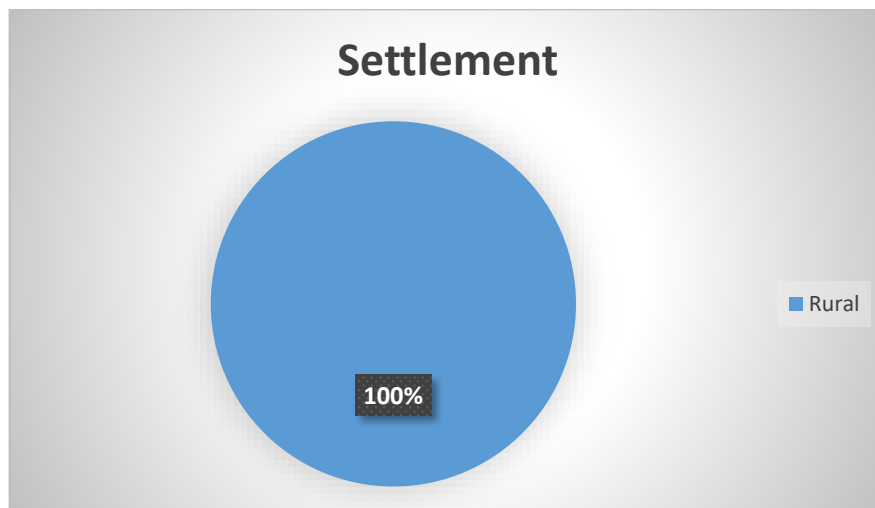


Figure 4.6: Settlement

Section B: Use of traditional substances

This section focused on the evidence of use of traditional substances, types of traditional substances used in the neonates, their route of administration and frequency of use of the substances.

- **Evidence of traditional substance use notice (on admission and in the ward)**

The total number of neonates that were readmitted in both hospitals with the evidence of traditional substance use was 32 (100%) as supported by the information given by the parents during the initial history taking in emergency department / casualty and out-

patient department. The sociographic characteristics of mothers using traditional substances are reported to be more on lower socioeconomic status according to many studies (James, Wardle, Steel & Adams, 2018:7). The mothers who used traditional substances sometime fail to disclose the use of traditional substances in emergency departments and state that it is because of fear having improper care, lack of support and understanding from the healthcare workers. Then some of the mothers are reporting negative attitude leading to mistrust from the healthcare workers (James, et al., 2018:9).

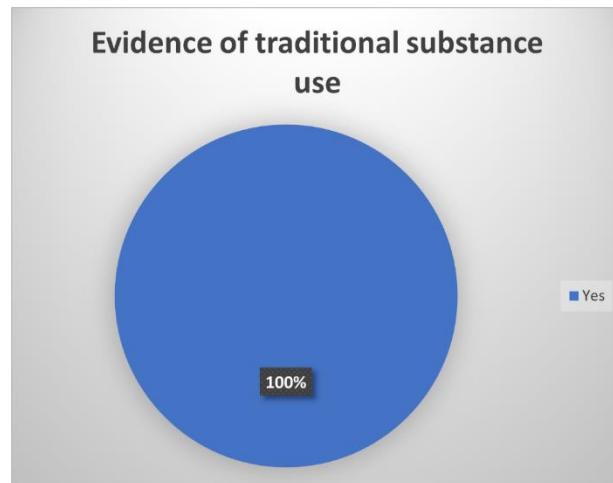


Figure 4.7: Evidence of traditional substance use

- **Types of traditional substances used**

The data used in this study was captured from hospital files as aforementioned. Therefore, researcher encountered limitations in acquiring the exact types and names of the substances used, as that data was not recorded in the files. However, there is evidence in one neonate in the study that was given a radiation substance, potassium permanganate, simultaneously and later was diagnosed with a hepatic condition and renal impairment, which was recovered because of a good use of referral system and availability of medical testing equipment.

- **Route of administration**

The mode of administration for traditional substances differs according to age, presenting sickness, communities and generational knowledge. The mode ranges from oral, rectal, topical, to a combination of all of the above-mentioned modes/routes (Tugume & Nyakoojo, 2019:7). The total of 19 (60%) neonates received the traditional substances through the oral route of administration, and therefore this is the common route seen during readmission. This may be because it is believed to be the safest administration

route for the neonate compared to the other routes depending on the reason for administration or use.

The study by Street, Kabera and Connolly (2018:187) suggests that 42% of traditional healers preferred oral administration although this may cause nausea and vomiting, in mild cases; and burns and ulceration of the mouth, oesophagus and stomach in severe cases. Furthermore, 10 (31.25%) of neonates received rectal traditional substances. This route is commonly used when the neonates are presenting with abdominal discomfort or constipation. The other 3 (9.38%) received the substances through a combination of routes of administration at the same time. The preparation of the herbs and administration differs and depends on the illness, nature of herb and the plants that are used (Okello & Kang 2019:21). In some cases, mothers chew the leaves and spit the resulting mixture into the neonate's mouth or mix the herbal mixture with breastmilk and most of the respondents suggest that oral administration of the traditional substances was the most convenient for neonates (Tugume & Nyakoojo, 2019:7).

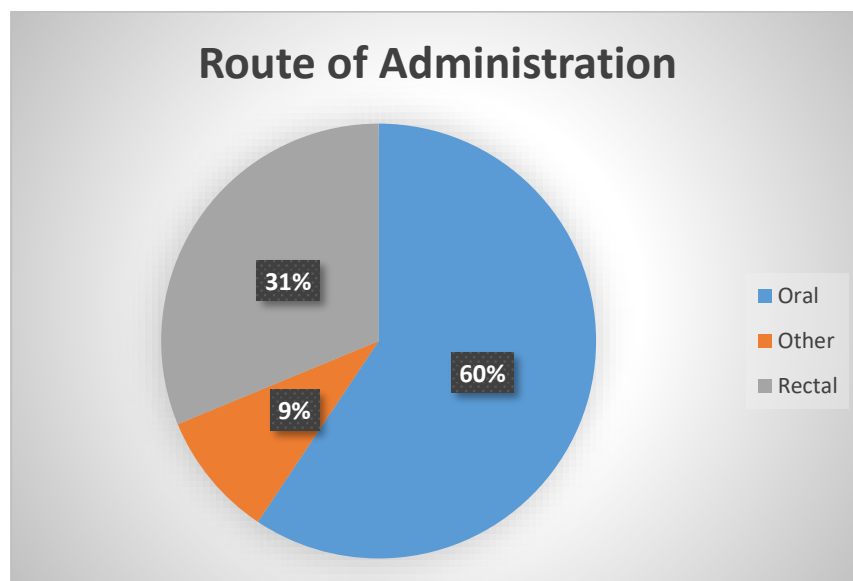


Figure 4.8: Route of Administration

- **Frequency of use**

The frequency of use the traditional substances was not recorded in the files audited and therefore the researcher did not discover any data on that subject.

Section C: Gastro-intestinal signs and symptoms

In the mist of the auditing the files that met the inclusion criteria, the researcher observed some common signs and symptoms the neonates were presenting with. These

incorporated diarrhoea, vomiting, abdominal distension, abdominal pain, constipation, dehydration and poor feeding. These signs are discussed below.

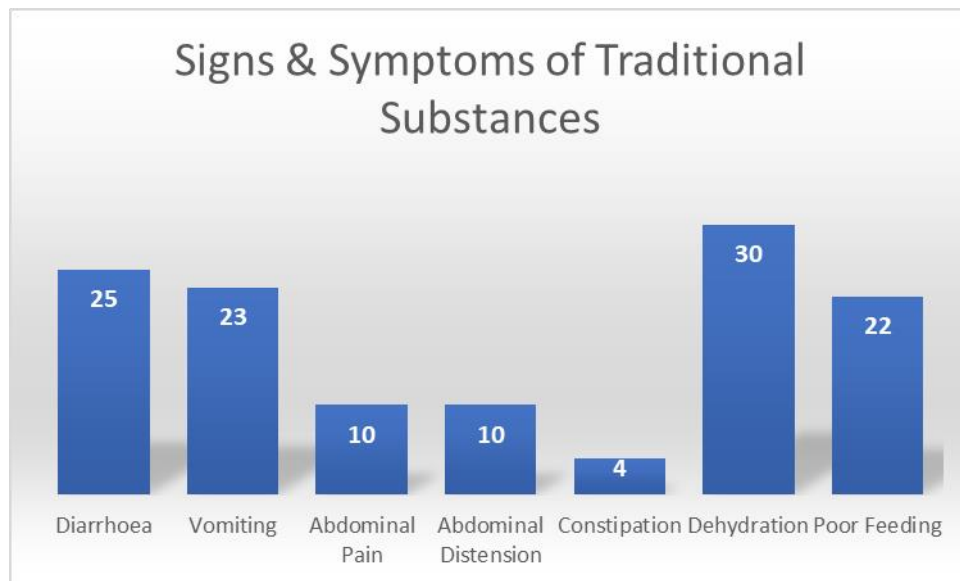


Figure 4.9: Signs and Symptoms of Traditional Substances

As demonstrated on the graph above, all the neonates included in the study presented with most or all of the signs and symptoms mentioned above. As a result, the researcher can describe gastro-intestinal effects following the use of traditional substances as seen in figure 4.10. The neonates that were given enema presented with diarrhoea. Lethargy, poor feeding and refusal of feeds was noted in neonates that were presenting with vomiting.

- **Diarrhoea**

The majority of neonates presented with diarrhoea after the use of traditional substances. According to the data collected 11 (34%) presented with mild diarrhoea, 6 (19%) with moderate diarrhoea and lastly 8 (25%) with severe diarrhoea. The remaining 7 (22%) did not have diarrhoea, but the data indicated they had other abdominal related complaints like constipation and abdominal distension. The study by Msomi and Simelane (2018:220) support that they are safety concerns regarding the oral administration of traditional substances and it may lead to diarrhoea, hematologic, cardiac and gastro-intestinal effects.

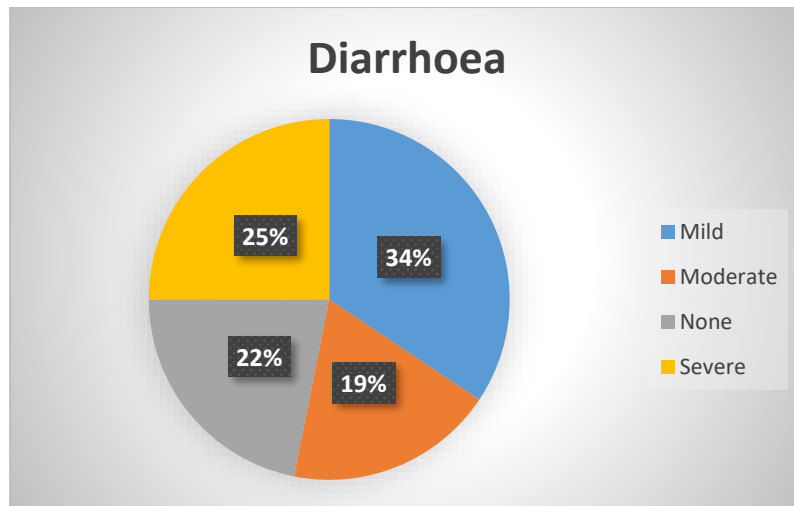


Figure 4.10: Diarrhoea

- **Vomiting**

Vomiting is the result of irritation of the lining of the stomach in neonates and it may lead to dehydration and electrolyte imbalance in neonates (Gürol, Taplak & Polat, 2019:3). More than half of neonates presented with vomiting after the use of traditional substances, and they did not feed well. The total of 14 (44%) neonates had mild vomiting and 3 (9%) were moderate. On admission, 6 (19%) of the neonates vomited severely. Nine (28%) did not vomit.

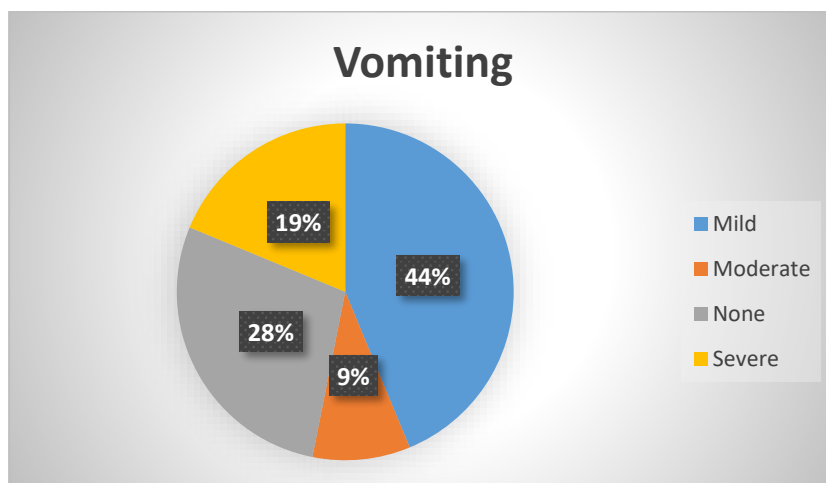


Figure 4.11: Vomiting

In the study done by Nwaiwu and Oyelade (2016:40) in Nigeria, 72% of mothers indicated they used traditional substances in neonates while 100% perceived herbs to be effective. Most of these mothers 96% did not report or notice adverse outcomes on their neonates but 4% of them reported vomiting as a common adverse outcome.

- **Abdominal distension**

According to the reports more than half of the neonates, 22 (69%) out of 32, presented with abdominal distension, while 10 (31%) did not present with distension of the abdomen. Not much literature is present regarding abdominal distention with the use of traditional substances.

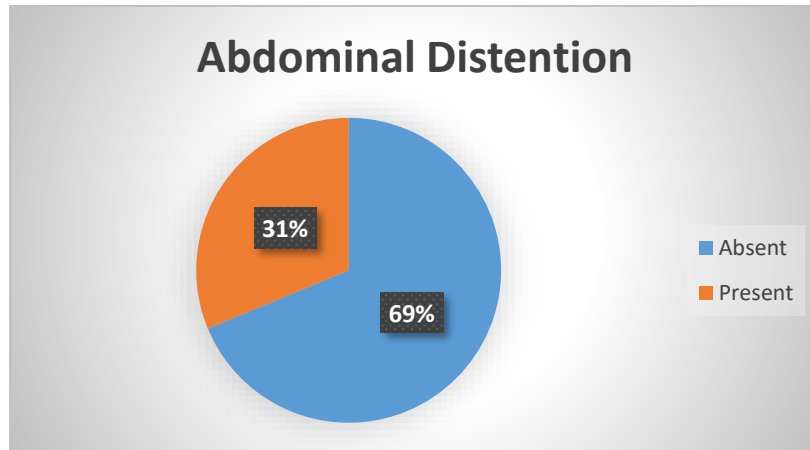


Figure 4.12: Abdominal Distention

- **Abdominal pain**

According to the data collected, 4 (13%) of the files did not include information regarding abdominal pain, 10 (31%) of the neonates presented with abdominal pain on assessment. The remaining 18 (56%) did not present with signs of abdominal pain.

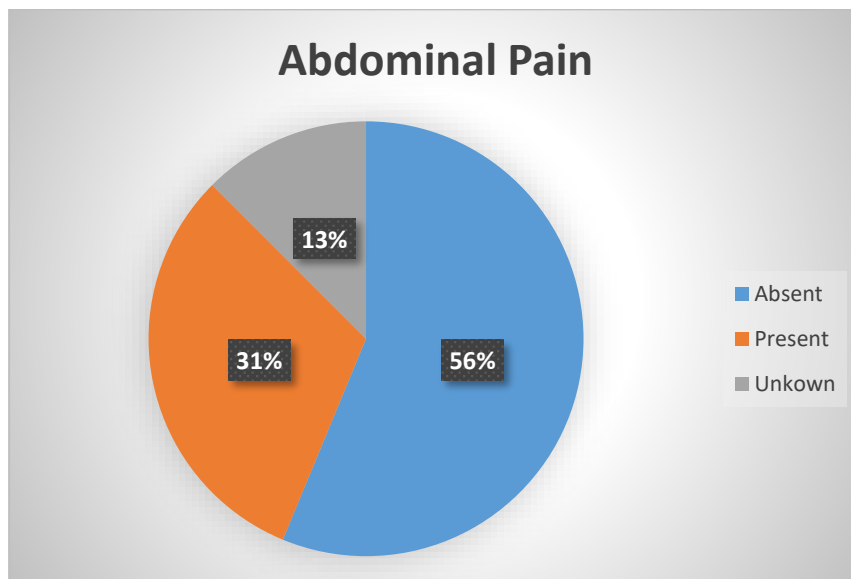


Figure 4.13: Abdominal Pain

The use traditional substances like Echinacea purpurea and Valeriana officinalis which is used for treatment of certain conditions can lead to adverse effect like abdominal pains, nausea and pruritis (Msomi & Simelane, 2018:217)

- **Constipation after using traditional substances**

Constipation is one of the reasons for the use of enemas by parents and traditional healers in neonates. In other instances, constipation is a result of mixed feeding; mothers combine formula feeds with breastfeeding. In this study 28 (88%) of the neonates did not have constipation, 2 (6%) had mild constipation, 1 (3%) moderately and 1 (3%) severely.

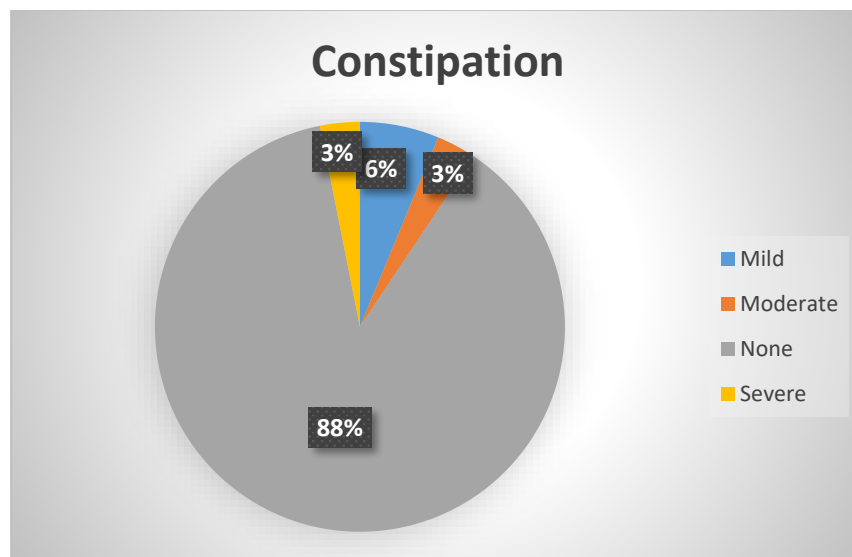


Figure 4.14: Constipation

Several studies suggested that traditional substances are often effective in treatment of constipation in neonates. According to the study by Sherkatolabbasieh, Bahmani and Hamidi (2021:91), some of the traditional substances are important and effective medical plants for treatment of neonatal disorders like constipation and abdominal pain.

In Turkey, 27% of parents use traditional substances in their children's first year of life to relieve symptoms such as constipation and gas pain without a doctor's recommendation (Gürol, Taplak & Polat, 2019:2)

- **Dehydration**

Water is essential carrier of substances necessary for metabolism, synthesis and excretion functions (Bertschi, 2020:52). Dehydration is commonly associated with fluid loss in the body like diarrhoea and vomiting and can lead to several complications like

hypovolemic shock and electrolyte imbalances (Bennet, Khosandian, Perrotte & Zenhausern, 2021:2). In this study, 2 (6%) of the neonates were not dehydrated. Fifteen (47%) of the neonates presented with mild dehydration, 8 (25%) were moderately dehydrated and 7 (22%) were severely dehydrated. Vomiting and diarrhoea leads to dehydration. Most of our neonates presented with diarrhoea and vomiting as main major complains and this might be the main cause of dehydration in 30 (92%) of the neonates.

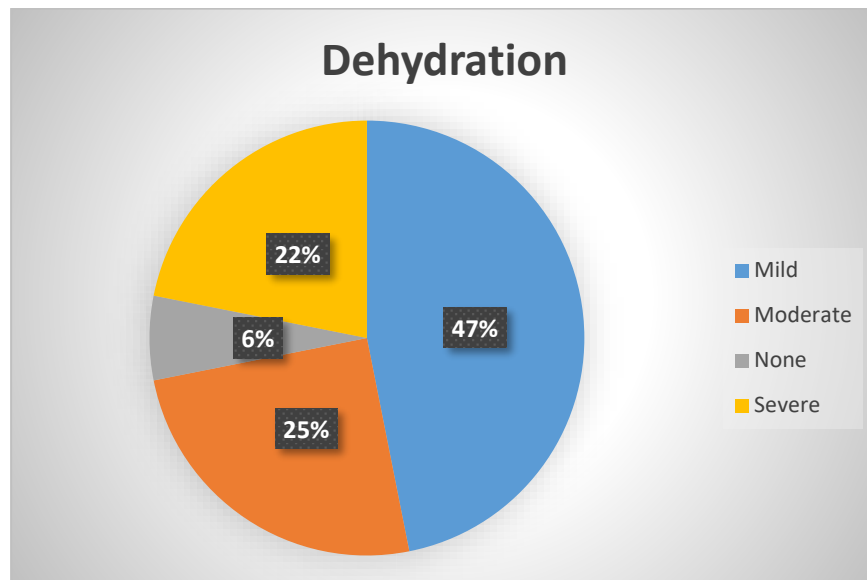


Figure 4.15: Dehydration

- **Poor feeding**

As common with gastro-intestinal disturbances, the prevalent symptom is poor feeding. Out of the 32 in the study, 22 neonates presented with poor feeding and lethargy. A total of 14 (44%) out of 22 presented with lethargy and 8 (25%) refused feeds. A total of 10 (31%) neonates did not present with any feeding problems. About 1 to 5% of neonates in developing countries present with poor feeding that is accompanied by other signs of gastro-intestinal disturbance, and this is according to a retrospective report named Neonatal Hypernatremic Dehydration by Sarin, et al. (2019:198).

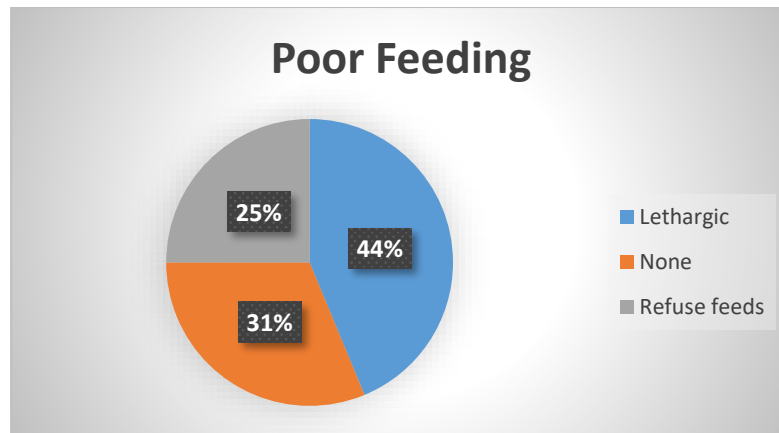


Figure 4.16: Poor Feeding

Section D: X-ray Report

- **Abdominal Abnormality**

The study that was done by Hakeem, Lohana, Urooj and Ahmed (2020:2) provides evidence that the excessive use of traditional substances can lead to mechanical obstruction of the gastro-intestinal tract due to bezoar or packed mass of undigested particles in the intestines. This obstruction is commonly diagnosed by taking an abdominal X-ray and it shows air fluid levels. The use of an X-ray may assist in confirming the diagnosis and can improve and assist in a patient's care strategy or plan.

Due to the limited availability and operating times at X-ray department, some neonates did not go through X-ray imaging. As a result, 8 (29%) of the neonates did not have X-ray results. 19 (68%) of the neonates did not show any abnormalities on the X-ray image, as opposed to 1 (3%) neonate that showed hepatorenal syndrome. This, however, may not be related to the administration of traditional substances and their link to gastro-intestinal disturbances. The graph conveying this information is below.

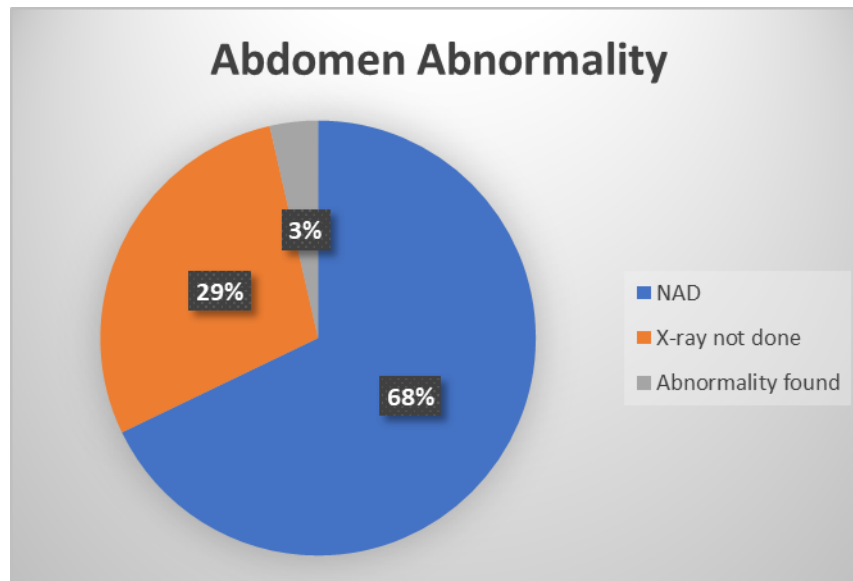


Figure 4.17: Abdomen Abnormality

- **Electrolyte abnormalities**

The common electrolyte imbalances seen with signs such as vomiting and diarrhoea include hyponatraemia, hypokalaemia and hypomagnesaemia. However, certain traditional substances used contained potassium permanganate as recorded in the neonates' files, and in those neonates, hyperkalaemia – as opposed to hypokalaemia – was noted on the blood work. With hyponatraemia the sodium levels were below the normal ranges of 139-162 mEq/L; the levels of potassium were below the normal range of 5,0-7,7 mEq/L with hypokalaemia and lastly the level of magnesium was below the normal ranges of 0,81-1,05 mmol/L. In hyperkalaemia the level of potassium was above 7,7 mEq/L. The result of electrolyte imbalances like hypernatremia and hypokalaemia may be restlessness, lethargy, drowsiness and comatose in neonates, which may result to admission in the ward or neonatal intensive care unit (Shahid, Ahmed, Kabir, Huq, Shahunja, Faruque, Rahman, Islam & Chisti, 2019:2). Neonates improved quick after receiving intravenous fluids, oral rehydrating solutions to counteract the effects of diarrhoea and vomiting.

Electrolyte imbalances were present in 20 (63%) of the neonates readmitted, whereas blood work was not done in 12 (37%) of the neonates probably due to limited laboratory facilities. This presented the researcher with a limitation of inability to determine whether these neonates had or did not have electrolyte imbalances. Some neonates' blood tests were not done because of limited laboratory facilities.

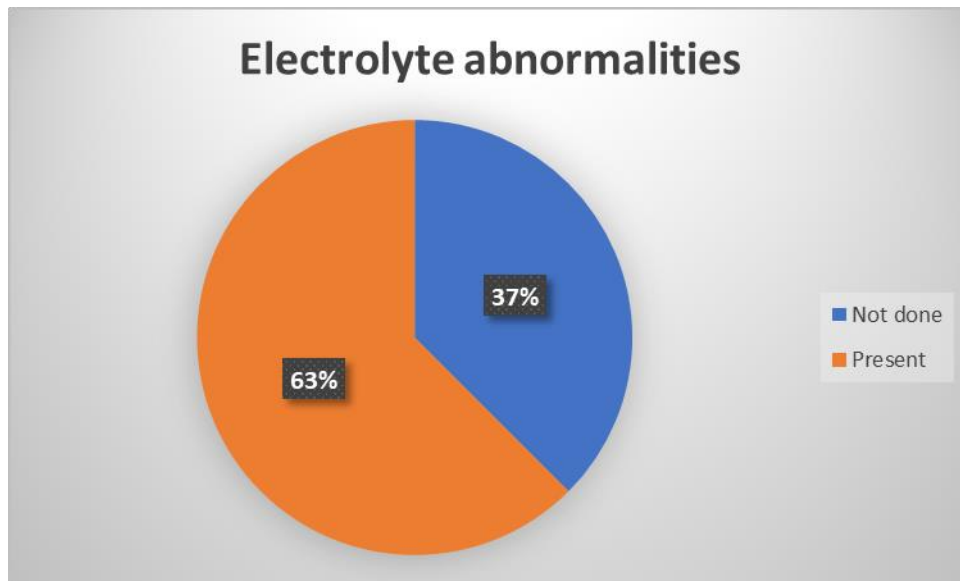


Figure 4.18: Electrolyte abnormalities

- **Number of days in hospital**

The number of days for hospitalisation was between 1 day and 23 days in hospital. The admitted neonates were all treated with gastro-intestinal problems such as diarrhoea, vomiting, abdominal pain and distention. There is no literature to support the number of days in hospital after the use of traditional substances, but the researcher noted that neonates with mild signs were discharged earlier than the neonates with severe complications. Some of them were transferred to tertiary institutions.

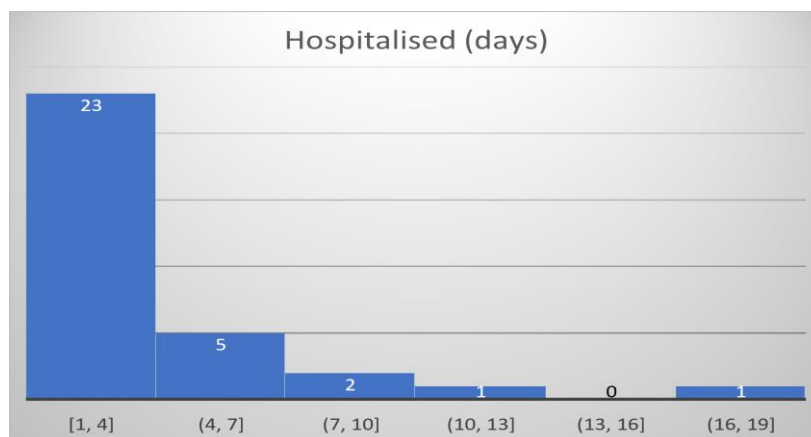


Figure 4.19: Number of days hospitalised

- **Final outcome**

The final outcome of the neonates indicates that 3 (9%) neonates demised after being treated at the hospital and 5 (16%) were transferred to tertiary institutions for advanced

management. The other 24 (75%) were discharged home after treatment. Some neonates were admitted more than twice with the evidence of traditional substances use after neonatal period (information recovered from some files).

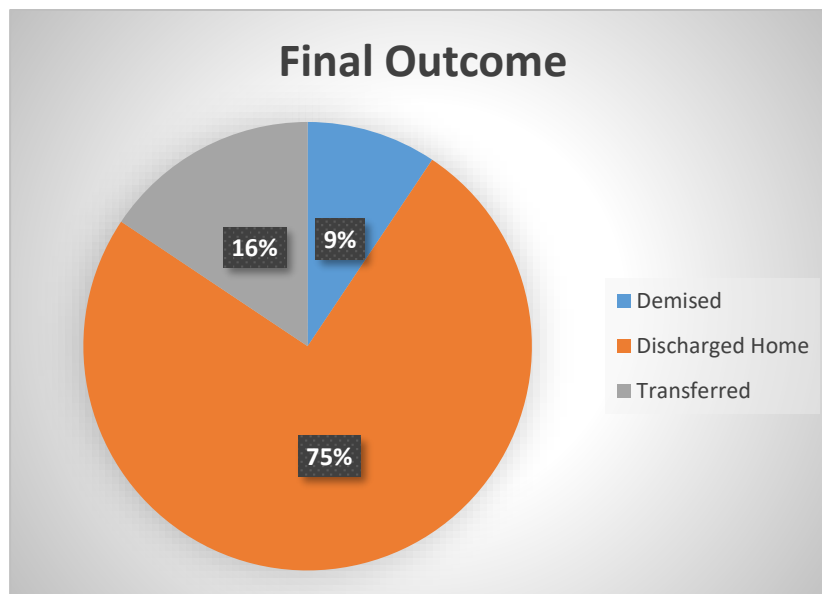


Figure 4.20: Final Outcome

Neonatal danger signs are clinical signs that indicates high risk of neonatal morbidity and mortality and are needed for early therapeutic intervention. The study that was done by Getachew, Assebe, Dheresa, Eyeberu and Gereziher (2020:2) supports that, early detection of neonatal illness through identifying neonatal danger signs is an important step towards improving newborn survival.

4.4. CONCLUSION

Diarrhoea, vomiting, dehydration, electrolyte imbalances and hypovolemic shock were the main signs and complication that were noted on the neonates that were readmitted after the use of traditional substances. On this chapter we did the analysis of the data that was collected. The next chapter will discuss the implications and recommendations of the study

<p style="text-align: center;">CHAPTER 5: DISCUSSION OF THE IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS, AND CONCLUSION</p>

5.1. INTRODUCTION

On the previous chapter the focus was on the analysis of the research findings and this chapter will focus on the implications, limitations, recommendations and conclusion.

5.2. AIMS AND OBJECTIVES OF THE STUDY

The aim of the study was to determine the gastro-intestinal effects of neonates being readmitted during the neonatal period after exposure to traditional substances. The objectives of the study were as follows:

- To describe the use of traditional substances for neonates who were readmitted to the neonatal wards of the particular two hospitals;
- To describe the gastro-intestinal signs and symptoms of neonates who were readmitted to the neonatal wards after exposure to traditional substances;
- To describe the results of investigations related to gastro-intestinal effects of neonates who were readmitted to the neonatal wards after exposure to traditional substances.

5.3. SUMMARY OF THE RESEARCH RESULTS

The results are discussed according to the findings, which are conveyed in more detail in Chapter 4.

5.3.1. SECTION A: DEMOGRAPHIC DATA

Both hospitals where the study was conducted were in a particular rural area in Mpumalanga Province and patients that were treated were from two sections of the rural area, which were mainly farms. The total number of neonates that were readmitted in both hospitals were N=32 (100%).

All of them (N=32) were Black/Africans, which might contribute to the belief in and relying on traditional substances and customs. As described by Lekgothoane and Ross (2017:7), traditional substances that were given to neonates were probably given based on instructions from the grandparents as they would be perceived to have more knowledge

regarding traditional substances and customs. Parents therefore would tend to observe and follow the instructions from their elders and the way things are done in the community regarding the treatment of traditional ailments. This might surprise people who are not familiar to these customs that traditional substances are given to neonates without the knowledge of the side effects, strength, dose and harm that the medicine might bring to neonates.

The use of the traditional substances was not gender specific related to the neonates. The medication is given either oral, topical through incisions, rectally through enema because it is the way things are done in their community to treat the conditions, and it may have been working for them for many years.

There are a number of reasons that Africans use traditional substances on neonates. The most prominent reasons are to welcome or initiate the neonate into the family they are born into, to treat minor ailments such as inyoni, ibala, and inkaba and lastly to prevent the neonate from being invaded by evil spirits. In most cases the use of traditional substances is common among African people in treatment of many illnesses, including prematurity. Parents reported using the substances using different routes of administration like oral, rectal and topical administration. The use is influenced by household or community members and some of the mothers are concerned about risks of hepatotoxicity, diarrhoea, vomiting and other complications (Adama, Sundin & Bayes, 2021:459).

5.3.2. SECTION B: USE OF TRADITIONAL SUBSTANCES

All the files that were included in the study were those of neonates with evidence of traditional substance use. Sixty percent of the neonates received the traditional substances through oral administration, whereas 31% received it through rectal administration and the other 9% received through a combination of herbs and enema. Some of the neonates presented with cuts and strings on their waists and / or wrists, which was believed to be protection against evil spirits. The frequently used routes of administrations were found to be, as indicated above, oral, rectal and topical; where the topical use was always in combination with another route.

The traditional substances were either administered by the traditional healer or the parent at home after the consultation. All the files included demonstrated gastro-intestinal complaints after the use of traditional substances.

5.3.3. SECTION C: GASTRO-INTESTINAL SIGNS AND SYMPTOMS

Dehydration, diarrhoea and vomiting were the most common signs that were observed in neonates after the use of traditional substances. Thirty of the 32 neonates presented with dehydration, whereas 25 of the 32 presented with diarrhoea and 23 of the 32 with vomiting (see figure 4.9). This might be related to the mode of administration or because of the neonatal body's way of reacting and rejecting the foreign substances that were given orally or rectally; leading to poor feeding, electrolyte imbalances and other complication like kidney injury.

The neonates that were given enema mostly presented with diarrhoea, 9 out of 10. The neonates that were presenting with vomiting were lethargic or having poor feeding/refuses feeds.

The constipation seen in some neonates, 4 out of 32, may have been a result of receiving traditional substances in the form of enema, or of reasons such as mix feeding or formula feeding. Furthermore, there is evidence in one neonate in the study that was given a radiation substance, potassium permanganate, simultaneously and later was diagnosed with a hepatic condition and renal impairment, which was recovered because of a good use of referral system and availability of medical testing equipment which will be discussed in the following Section (D).

5.3.4. SECTION D: X-RAY REPORT

The advantage of doing diagnostic tests or investigations is ideal and it is done to identify and to confirm what is found or was suspected during the assessment of the neonate.

This is evidenced by one neonate that was having "air levels" and was frothing after the enema was given at home. Without the X-ray done the air levels were not going to be detected/known.

5.3.5. SECTION E: SPECIAL INVESTIGATIONS

The special investigations executed on the neonates included performing a blood work to determine electrolyte imbalances and abnormalities of urea levels. In some of the neonates no blood work was done at all. However, in the neonates' files where the blood work was available, the following electrolyte imbalances were observed by the researcher: hyponatraemia, which is a low sodium level below 139 mEq/L

(milliequivalents per litre); hypokalaemia, a low potassium level below 5 mEq/L and lastly hypomagnesemia which is a level of magnesium below 0,81 mmol/L (millimoles per litre). This decrease in electrolyte may have been due to diarrhoea and vomiting.

There was an exception, however, with one neonate that had an increased potassium level (hyperkalaemia) due to having been given a traditional substance that constituted of potassium permanganate. In addition, it was also noted that infants were improving quick after receiving intravenous fluids, oral rehydrating solutions to counteract the effects of diarrhoea and vomiting.

5.3.6. SECTION F: OUTCOMES

More than 75% the neonates that were readmitted recovered after they were treated with antibiotics and intravenous fluids. Even though some files showed that other neonates were re-admitted more than once after the neonatal period with the same history of herbal intoxication, this happened after the health education that was given to them, regarding the use of traditional substances to their neonates. A total of 75% neonates that were readmitted were discharged home. Due to infrastructural challenges and lack of medical equipment for treatment like abdominal ultrasound machines, about 16% of the neonates were transferred to other. A total of 9% neonates lost their lives or were demised.

5.4. IMPLICATIONS OF THE STUDY

One of the core fundamentals of a study is the impact it has on future research and the development of new evidence. In this study the researcher described the effects of traditional substances on the gastro-intestinal system of the neonates. This calls for collaboration between the healthcare sector and the traditional healers. In this way, further research can follow determining the exact type of substances used to be able to discover an antidote that will reverse the side effects of the traditional substances if needed for neonates that do react adversely to the exposure of the substances.

Furthermore, it will be beneficial for healthcare workers to realize that the use of traditional substances is a continuing matter as native people still possess strong belief in the use of traditional substance and its ability to cure certain ailment and expel evil spirits. This is especially true in rural areas as the people residing in the type of settlement tend to be less educated and uninformed. Therefore, healthcare workers need to recognize that

neonates who are readmitted in hospitals, could have been exposed to traditional substances prior to admission.

In addition, the Department of Health might be able to note from the study the importance of forming outreach teams that will reach the people in the rural areas and farms to provide them with evidence-based health education that in turn might assist them in realizing the pros and cons of the use of traditional substances.

5.5. LIMITATIONS OF THE STUDY

There were several limitations the researcher encountered. Firstly, the study was conducted in two hospitals only, with a small sample size, and the researcher was therefore limited from making generalisations. Moreover, the researcher could not interview the mothers of the neonates that were readmitted to discover more information but had to rely on the information captured in the files retrieved. The reason for the use of traditional substances and the frequency thereof were not stipulated in the files, which limited the auditing process. Since both the hospitals were based in rural settlements, the laboratory was not within proximity, therefore some investigations could not be executed, such as blood tests, further limiting the researcher from making definite analyses.

5.6. RECOMMENDATIONS

Education-related recommendations

- It is recommended that training institutions incorporate a module educating their students more about the cultural beliefs, practices and activities occurring in the communities with which they live.

Practice-related recommendations

- Clear protocols should be implemented for management of herbal intoxication in neonates.
- Healthcare workers should have deep understanding about history taking and documentation during assessment and history-taking.
- Involvement of traditional birth attendants and traditional healers can help to make them understand the effects and impact of using some medicine without knowledge and understanding of the side effects, strength and dose e.g. Paracetamol 125 mg remains the same strength and dose around the world.

Research-related recommendations

- Collaboration between the healthcare sector and traditional sector can be of assistance in adopting a mutual understanding between the two sectors regarding the use of medications and traditional substances. The collaboration will also help future research by assisting future researchers to discover an antidote for neonates that react to traditional substances.

5.7. CONCLUSION

In this study, the purpose of the researcher was to describe whether or not a link exists between the administration of traditional substances in neonates and presentation of gastro-intestinal signs and symptoms. A 100% of the neonates included in the study did present with most, if not all, of the gastro-intestinal signs and symptoms in the inclusion criteria. Of the 7 symptoms; which are diarrhoea, vomiting, abdominal distension, abdominal pain, constipation, dehydration and poor feeding; all the neonates presented with at least 4 out the 7 signs/symptoms. Therefore, the researcher, concluded that there is a link between the administration of traditional substances in neonates and gastro-intestinal disturbances.

The lesson learned from the study is that whatever we fight, we strengthen and what we ignore persist. The use of traditional substances is increasing globally and the implication is that healthcare workers are required to develop more ways of educating mothers regarding the dangers of using traditional substances without proper understanding of its constituents as this may cause harm to neonates as a result of underdeveloped immune systems during the neonatal period. This will assist in reducing the use of traditional substances that have not been declared safe to use by the Federal Drug Association (FDA). Hence, a collaboration between the FDA, the healthcare system, the traditional healers and traditional birth attendants needs to be adopted to also assist in reducing neonatal mortality and morbidity.

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ANNEXURE A: DECLARATION OF ORIGINALITY

Full names of student: Bongani Sizwe Mabutho Thabede

Student number: 13141474

Topic of work: Relationship between the use of traditional / alternative medicine and gastro-intestinal effects of neonates being readmitted during the neonatal period

Declaration:

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this proposal is my own original work. Where other people's work has been used (either from a printed source, Internet, or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.
3. I have not used work previously produced by another student or any other person to hand in as my own.
4. I have not allowed and will not allow anyone to copy my work with the intention of passing it off as his or her own work.

SIGNATURE: BSM Thabede

ANNEXURE B: DATA COLLECTION TOOL

Section A: Demographic data				Office use only	
0	Participant number			A0	
1	Hospital	1		A1	
		2			
2	Age	1	Number of days	A2	
3	Number of days at home	1	Number of days	A3	
4	Gender	1	Male	A4	
		2	Female		
5	Race	1	Black	A5	
		2	Asian		
		3	Coloured		
		4	White		
6	Settlement	1	Rural	A6	
		2	Urban		
Comments:					
Section B: Use of alternative / traditional medicine					
1	Evidence of traditional or alternative medicine use	1	Yes	B1	
		2	No		
2	Type(s) / Name(s) (specify)			B2	
3	Route of administration	1	Oral	B3	
		2	Topical/dermal (cuts/incisions)		
		3	Rectal		
		4	Other (specify):		
4	Frequency	1	Once only	B4	
		2	Daily		

		3	More than once a day:		
		4	Continuous		
		5	Other (specify)		
Comments:					
Section C: Gastro-intestinal signs and symptoms					
1	Weight in kilograms	1	At birth:	C1	
		2	At discharge:		
		3	On readmission:		
		4	Weight gain / loss per day at home:		
		5	Blood glucose		
2	Diarrhoea	1	None	C2	
		2	Mild		
		3	Moderate		
		4	Severe		
3	Vomiting	1	None	C3	
		2	Mild		
		3	Moderate		
		4	Severe		
4	Abdominal distention	1	Absent	C4	
		2	Present		
5	Abdominal pain / discomfort	1	Absent / Unknown	C5	
		2	Present		
6	Constipation	1	None	C6	
		2	Mild		
		3	Moderate		
		4	Severe		
		2	Present		
7	Dehydration	1	None	C7	
		2	Mild		

		3	Moderate		
		4	Severe		
8	Poor feeding	1	None (take feeds well)	C8	
		2	Lethargic		
		3	Refuse feeds		
Comments:					
Section D: X-ray report					
1	Abdominal abnormalities identified	1	Specify:	D1	
Comments:					
Section E: Special investigations					
1	Electrolyte abnormalities	1	Specify:	E1	
2	Urea / creatinine abnormalities	1	Specify:	E2	
3	Other results	1	Specify:	E3	
Comments:					
Section F: Outcomes					
1	Number of days hospitalised after readmission	1	Specify:	F1	
2	Final outcome	1	Discharged home	F2	
		2	Transferred to other health facility / unit (specify):		
		3	Demised		
Comments:					

ANNEXURE C: CONSENT TO USE HEALTH RECORDS AND INFORMATION FOR RESEARCH

Title: RELATIONSHIP BETWEEN THE USE OF TRADITIONAL / ALTERNATIVE MEDICINE AND GASTRO-INTESTINAL EFFECTS OF NEONATES BEING READMITTED DURING THE NEONATAL PERIOD

Dear Hospital CEO

Elsie Ballot and Amajuba Memorial Hospital

I am Bongani Thabede, working in the maternity section.

I would like to ask your permission to use medical records of neonates (babies less than 28 days) who had been readmitted to the neonatal wards after being discharged home.

The purpose will be to describe the relationship between gastro-intestinal effects of traditional / alternative medicine in neonates. We therefore would need to access the following types of information: demographic data, the use of alternative / traditional medicine, gastro-intestinal signs and symptoms X-ray report, special investigations, and outcomes of the babies.

The hospital will not benefit directly, but the findings of the study is intended to develop education material for the caregivers prior to discharge of a neonate to promote culturally sensitive safe practices with the use of traditional / alternative medicine in our communities.

Privacy and Confidentiality

The patients' privacy will be respected, and all reasonable efforts will be made to protect their information. All the data used for this study will be de-identified, which means that information such as their name and medical record number, will not be used.

Ethics approval

This proposal was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, telephone numbers 012 356 3084 / 012 356 3085 and written approval has been granted by that committee. The study has been

structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding doctors in biomedical research involving human/subjects.

For More Information

The final results of the study will be made available to the management of the hospital. If you have any questions, you may speak to me, or any other person involved in the study.

If you give permission for the use of the hospital records, I kindly ask that you sign the next page.

Consent Statement

- I have read the information in this consent form.
- I understand the purpose and procedures and the possible risks and benefits of the study.
- I was given sufficient time to think about it.
- I had the opportunity to ask questions and have received satisfactory answers.
- I give permission to the use and disclosure of the de-identified information collected for use in this study, as described in this form.
- I understand that by signing this document I do not waive any of my legal rights.
- I will be given a signed copy of this consent form.

Name of CEO (please print)

CEO signature

Date

__BSM Thabede _____

Name of investigator

Investigator signature

Date

ANNEXURE D: STATISTICAL SUPPORT



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo lsa Dihlalefi

DEPARTMENT OF STATISTICS

LETTER OF STATISTICAL SUPPORT

Date: 24 August 2020

This letter is to confirm that **Mr BSM Thabede**, studying at the University of Pretoria, discussed the project with the title **“The gastro-intestinal effects of traditional/alternative medicine in neonates readmitted during the neonatal period”** with me.

I hereby confirm that I am aware of the project and I also undertake to assist with the statistical analysis of the data generated from the project.

The data will be collected from the files of neonates that have been re-admitted to the hospital with gastro-intestinal problems and where there are indications of traditional/herbal medication use. It is envisaged that over a period of 6 months the data from at least 30 neonates who meet the inclusion criteria will be collected.

The data analysis will consist of frequencies, cross-tabulations and descriptive statistics such as means, standard deviations and quartiles.

Ms JC Jordaan
Research Consultant
Internal Statistical Consultation Service
Department of Statistics
Email address: joyce.jordaan@up.ac.za

ANNEXURE E: APPROVAL FROM ETHICS COMMITTEE



Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 22 May 2002 and Expires 03/20/2022.
- IORG #: IORG0001762 OMB No. 0990-0279 Approved for use through February 28, 2022 and Expires: 03/04/2023.

Faculty of Health Sciences Research Ethics Committee

26 November 2021

Approval Certificate New Application

Dear Mr BSM Thabede

Ethics Reference No.: 498/2021

Title: The gastro-intestinal effects of traditional medicine in neonates readmitted during neonatal period

The **New Application** as supported by documents received between 2021-08-25 and 2021-11-24 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2021-11-24 as resolved by its quorate meeting.

Please note the following about your ethics approval:

- Ethics Approval is valid for 1 year and needs to be renewed annually by 2022-11-26.
- Please remember to use your protocol number (498/2021) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:

- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

On behalf of the FHS REC, Dr R Sommers

MBChB, MMed (Int), MPharmMed, PhD

Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

*The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)

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Lefapha la Disaense Sa Maphelo