

**AN EVALUATION OF THE QUALITY OF CARE MIDWIVES
PROVIDE DURING THE POSTPARTUM PERIOD IN
NORTHERN BOTSWANA.**

BY

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Dedication

Firstly, my dedication goes to my late father Mr W.L. Mabutho and my mother Mrs Balathi Mabutho, who found it necessary to give care, love and send me to school.

To my dear husband Dennis Kebalepile and daughters Buthu, Kene and son Tinaye for according me the opportunity to go for further studies, and for their valuable support, encouragement and patience throughout my study period in Norway.

Abstract

Objective: To assess the quality of care midwives provide to clients during the postpartum period.

Design: A cross sectional descriptive qualitative and quantitative survey among 65 practising registered nurse midwives. They were interviewed and observed in health institutions while examining the mother and baby prior to discharge. A convenient non-probability sampling was used to identify and select respondents from 14 primary health care facilities in northern Botswana, who were actively involved in provision of maternal health services.

Method: Direct personal interviews using semi-structured questionnaires consisting of open and closed ended questions and non-participatory observations were used to collect data from informants at their respective places of work.

Results: Of the 65 midwives interviewed, a majority were females aged between 30-39 years. Age and length of service were not significant predictors for type of service provided. Most nurses provide quality care during immediate postpartum period. A majority of nurses have good knowledge and practice in management of postpartum activities but there are some areas that are not well done. Findings further show that 9% of clinic nurses have poor knowledge in management of post delivery severe anaemia. Almost all nurses have good knowledge in promotion of breastfeeding including its benefits to mother and baby. However, a majority of nurses have good knowledge in most postpartum activities but poor practice on the same area. Almost all nurses have good knowledge in management of breast engorgement, follow-up care, counselling on family planning and pelvic exercises but have poor practice on the same elements. Most nurses provide limited information to women on the importance of the 6-8 weeks assessment. Among all facilities, a majority had sufficient supply of equipment and consumables, but less than half had family planning packs. Most clinic nurses have poor practice on examination of the baby.

Conclusion: Many nurses have good knowledge and practice, and provide quality care during immediate postpartum period but not all. The need to provide refresher courses on Safe Motherhood for all nurses involved in obstetric care to improve their skills in identified weak areas is obvious. With close supervision, in-service training and support, there is scope for improvement. With rapid trend of short hospital stay and the impact of HIV/AIDS, most mothers will most likely need follow-up care and advice on breast-feeding, safer sex, self and baby-care or other problems that may arise. This study therefore recommends the development of nursing standards, maternal health audits and re-introduction of domiciliary nursing along other strategies to improve the quality of care.

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Glossary of Terms Used:

Bed Nursing	Bachelor of Nursing Education
BP	Blood Pressure
CHN	Community Health Nurse
CL	Clinic
DHT	District Health Team
E/N	Enrolled Nurse
FWE	Family Welfare Educator
HB	Haemoglobin
HBC	Home Based Care
HF	Health Facility
HP	Health Post
HIV/AIDS	Human Immuno Virus/ Acquired Immuno Deficiency Syndrome
MCH/FP	Maternal Child Health and Family Planning
NDP	National Development Plan
PHC	Primary Health Care
PNC	Post Natal Care
PPC	Postpartum Care
RH	Referral Hospital
R/N	Registered Nurse
TBAs	Traditional Birth Attendants
TM	Traditional Midwife
UNAIDS	Joined United Nations Programme on HIV/AIDS
WHO	World Health Organization
HIP	Pregnancy Induced Hypertension

Keywords: Quality care, nurse, midwife, women, mother, baby, postpartum period, postpartum assessment, knowledge and practice.

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Chapter 1

INTRODUCTION AND BACKGROUND

1.1 Description of Postpartum Care

Postpartum care remains a vital process and service of the childbearing period. Yelland et al. (1998) states that this period is an opportunity for women to rest and recuperate following delivery, to receive guidance, support, and information on baby care. The postpartum period is a time of reflection, of relieving the birth experiences, a time of adjustment to the new roles and accommodation of the family to the new member. This period also involves the involution of the uterus back to non-pregnant state. It is a very special phase in the life of a woman and her newborn.

Nunnerley (1990) describes postpartum care as a vital part of the childbearing process that the midwife has to provide for the mother and the baby immediately following birth to the end of puerperium. Postpartum examination is very important in that it confirms the mother's recovery from effects of pregnancy, labour and delivery, or if there are problems, interventions can be done. Nfila (1995 unpublished) describes puerperium as a time of reflection of the pregnancy and the birth experiences, a time of adjustment to the new roles. Health workers who provide care to families during this transitional and disruptive period may have unique skills and expertise to offer. Information and support families receive during this period is important in augmenting the coping strategies they have used in previous times of change.

1.1.1 Postpartum Service in Botswana

In Botswana, postpartum care includes general care and assistance given to the woman after delivery, visit by the health worker within first week following discharge, and the routine postpartum examination which is done at the end of puerperium 6-8 weeks after delivery Safe Motherhood Task Force, (1992). Postpartum assessment is the last examination, which marks the end of puerperium, probably because of the assumption that mothers would have recovered from effects of pregnancy and childbirth. It aims at

achieving physical, psychological and emotional wellbeing of the mother, the baby and the family as a whole Bick and MacArthur, (1995 &1997). Available data shows that utilization of maternal health services has been steadily increasing and at present stands at 77%. Studies also show that in the recent maternal mortality survey, lack of adequate services and poor community communication system in certain areas in Botswana contributed to maternal and infant mortality (Makokha et al. 1994, Safe Motherhood Task Force 1992). This notion suggests that most women know and make use of available postpartum services. However, a few studies done in Botswana on maternal and child health services have noted the dissatisfaction among women regarding the delivery of maternity health services in general.

1.2 Background of the Study

This section describes the country's profile, especially areas that relate to the study such as administrative structure, population, economy, women's education, fertility and maternal including mortality.

1.2.1 Administration

The capital of Botswana is the City of Gaborone. The District Administration headed by a District Commissioner who is also the coordinator of all government programmes represents Central Government in each of the districts. The public health system is well established and running smoothly. It consists entirely of almost all health facilities owned by / or supported by the government as well as open to the public such as Mission and Mine Hospitals. Ministry of Local Government Lands and environment mainly offers Primary health care services through town and district councils under the supervision of District Health Teams. There are 10 districts, 9 town councils and twenty-three health regions. Primary health care services are provided though out the country at 209 staffed clinics, 314 staffed health posts, and 687 out reach services (mobile stops) fortnightly or monthly depending on availability of transport. All health facilities provide integrated services, which include maternal child health care and family planning, rehabilitation, curative, and preventive care. Ministry of health is responsible for policy formulation, its implementation, drug procurement and utilization. Central medical stores, a department within the same ministry is

responsible for ordering, storage and distribution of drugs and supplies to all government health facilities. Mission and Mine hospitals may order drugs and supplies from others suppliers other than central medical stores. There have been some improvements at primary and referral levels, and the referral system is well structured and clearly defined NDP8, (1998-2003). Patients in need of specialized care are referred from clinics to primary or district hospitals depending on the geographical set up and finally to any of the three-referral hospitals namely Nyangabwe in the north, Princess Marina and Lobatse situated on the southern part of the country respectively.

1.3 Transport and Communication

The road network has greatly improved since independence, except in very remote areas where some roads are still not yet tar-marked but upgrading is in process. There is a single-track railway line between Ramatlabama in the south and Ramokgwebana in the North East which links the country with South Africa and Zimbabwean system where patients in-need of specialized care not available within the country are mainly referred.

This provides good internal and external links, which help in provision, maintenance and coordination of primary health services throughout the country.

There are three single railway tracks, which connect small towns with other centers within the country between Sowa town, Selibe Pikwe and Palapye. In addition, regular air services connect Gaborone's Sir Seretse Kgama Airport with other major international centers through Johannesburg International Airport in South Africa. Internal air services are maintained between Gaborone, Francistown, Chobe, Gantsi and Kgalagadi districts.

This enables easy transfer and referral of patients in-need of specialized care from remote areas to any of the three-referral hospitals. In addition, local and international telecommunication links have been established in most urban centers and major villages. In most rural and remote areas, radio communication has proved to be the best means of communication. Generally, public transport in rural areas is poor, and some secondary roads are passable only with "four wheel drive" vehicles especially in

Gantsi and Kgalagadi sand dune or by use of *mokoro* (wooden boat) in Chobe district respectively.

Map 1 Shows Administrative Districts

1.4 Referral System

As already stated, with integration of services at all health facilities, patients are supposed to be able to get any service they need during a single visit to the facility. The referral system is defined and well structured. This enables patients to relatively move free of charge from the lowest health facility, a mobile stop via existing structures like clinics and district hospitals to the highest level a (referral hospital) for advanced medical care. About 86% of the population lives within 15 kilometers from the health facility. In the rural areas distances can be longer.

Table 1. Referral System in Botswana.

FACILITY	SERVICES	STAFFING	LOCATION
Mobile Stop	Limited PHC Services	Visits by staff from the clinic	Very remote area
Health posts	PHC services, FP, MCH & follow-up	Family Welfare Educators. (FWE).	Rural areas
Clinic without Maternity	MCH services, treatment of common diseases & simple lab tests	Registered and enrolled nurses, Medical doctors and Family Welfare Educator (FWE)	Rural areas, villages and towns
Clinics with Maternity	As above + deliveries	RN, EN & Midwife	As above
Primary hospitals	As at clinic + general out patient care	Medical officers, RN, EN, Midwife & paramedic staff	Rural Areas
District hospitals	Preventative, curative and rehabilitative Services	As above	Major villages and Towns
Referral Hospitals (3) including mental hospital	Specialist clinical services	Specialists. RN.EN Midwife. Medical officers & paramedics	Towns

PHC-Primary Health Care

FWE-Family Welfare Educator

FP- Family Planning

EN-Enrolled Nurse

RN- Registered Nurse

MCH-Maternal Child Health

Source: Safe Motherhood Task Force, (1992).

The majority of patients walk to health facilities. But in rural and remote areas, lack of transport and poor roads contribute to provision of inadequate care, and sometimes resulting in inefficient health care (Safe Motherhood Task Force, 1992; Makokha et al. 1994a).

1.5 Population

Botswana like any developing country is experiencing a rapid population growth as a result of a high fertility and decline in mortality rate. This is due to improved socio-economic status, availability of maternal childcare and family planning services, improved nutrition and safe water supply.

Table 2. Mortality and Health Indicators for Botswana

	1988	1996	1999
Maternal Mortality (per 100,000)	150	200	250
Infant mortality (per 1,000 live birth)	37	40	59.08
Under Five Mortality births	31	37	50/ 1,000 live
Maternal life Time Risk births			65/100,000 live
Total Fertility Rate (children born/ woman)	5.0	4.3	3.91
Population Growth Rate			1.05% annually
Birth Rate (births/ 1,000 population)			31.46

Source: UNICEF (1999) CIA-The World Fact book (1999) Botswana Family Health Survey 111, (1996) <http://www.odci.gov/cia/publications>, NDP 8 (1998-2003).

The population is fairly small at 1,464,167 relative to the size of the country, with a birth rate of 31.46 per 1,000 live births (1999). The infant mortality rate is 59.08 deaths per 1,000 live births, with a fertility rate of 3.91 children born per woman. The maternal mortality rate is estimated to be 150-250 per 100,000 live births with a population growth rate of 1.05% annually. The population is growing relatively as a result of high fertility rate and declining mortality rates. There are consequently a high proportion of children and young people. Due to the HIV/AIDS pandemic, infant mortality is increasing and life expectancy is decreasing; and the pattern of settlement is rapidly changing. However, in recent years the mortality rate started to increase from 200-250 deaths per 100,000 in 1996-1999. According to (UNAIDS/WHO 1998, NDP8, 1998-2003, CIA-The World Fact-Book Botswana, 1999) this upward trend may be associated with the advent of the HIV/AIDS pandemic.

1.5.1 Population Momentum

The medium variant shows that the population of women in the reproductive age group will increase from 46.5% in 1991 to about 52% by the year 2021. Although this percentage change appears to be small, the absolute number of women in the reproductive age group in 2021 will actually be 2.2 times their number in 1991 and more than 3 times their number in 1981. Thus the number of women entering the reproductive age group will be larger than those leaving the reproductive cycle. In addition there is a continuing young age structure due to high fertility levels and the rapidly increasing changes of survival particularly for infants and children. (NDP 8, 1998-2003), shows that as a result of the rapid population growth, the demand for reproductive health and family planning services will increase, leading to an increase in demand for quality care and health expenses.

Map 2. Distribution of the Population

1.6 Economy

In 1966 at time of independence, Botswana was one of the poorest countries in the African region, whose rural population depended mainly on agriculture. Presently, the country depends on natural resources, mainly agriculture, tourism, mining, especially

diamonds, soda ash and copper & nickel. Minerals especially diamonds contribute 80% of the natural export earnings and 60% of government revenue. Despite periodic drought, agriculture has been a predominant sector since independence. Cattle industry is almost a major export contributor because a large portion of land is suitable for beef production (NDP 8, 1998-2003).

1.7 Socio-Economic Status

Most women in Botswana have benefited from educational opportunities offered by government. Female enrolment is higher at primary levels than male, but drops sharply at secondary levels due to teenage pregnancy thereby reducing the number of women receiving tertiary education. Women comprise 62% of the participants in the adult and non-formal education system (Safe Motherhood Task Force 1992).

1.8. Fertility Levels

Botswana Family Health Survey (BFHS 111, 1996) shows a decline in total fertility rate in the country from 6.5 births in 1984 to 5.0 births in 1988, and 4.3 births in 1996. The fertility rate further decreased from 4.3 in 1988 to 3.91 children born per woman in 1999. The increase in education accounts for delay in pregnancy and decline in fertility rate. The completed family size in Botswana is also supportive of the decline in fertility. Thus children ever born to a woman 45-49 years was at 5.5 per woman in 1996 compared to 5.8 in 1988. The percentage of women pregnant decreased from 7.1% in 1988 to 4.6 % in 1996. This success in declining of fertility in the country can be attributed to changes in economic and social developments such as improved access to primary health care services, increased participation of women in labour force, urbanization and increased education among women which consequently delays child bearing.

A majority of women 87% were assisted by a medical doctor or trained nurse during delivery in 1996 compared to 77.5% in 1988. This implies that women realize the importance of primary health care programmes and make use of the available health services to improve their health and social well being BFHS 111, (1996).

Mortality is low for women with tertiary education, and where the health worker was able to visit the mother at home during the first week after delivery. Infant mortality is lowest (at 1.2%) when mother's age is 40-49 years and highest (at 5.3%) for young mother's aged less than 20 years. According to Safe Motherhood Fact Sheet (1999) the majority of women in Botswana become sexually active and falls pregnant before the age of 19 years. Most of them have little or no education, are not working and live in the rural areas where resources are limited. This exposes them to poor health and social conditions and majority may deliver without the assistance of skilled health professionals.

Table 3. Utilization of Maternal Child Health Services in Botswana.

	1988	1996
Assisted Deliveries	77.5%	87%
Ante Natal Care	92.4%%	94.1%
Postnatal Care	77.5%	87%
Tetanus Toxoid (Pregnant mothers)	84.5%	88%
DPT 3		83.3%
Polio 3		82%
Tetanus Toxoid		61%
Measles		82%

Source: WHO/ UNICEF (1998) <http://www.unicef.org/satist/country>

The Botswana Family Health Survey (BFHS111, 1996) showed a 95% utilization of antenatal services, of which, 87% deliveries were assisted by a trained health worker at birth. This reflects a substantial increase from 77.5% in 1988, with younger women being mostly assisted by trained health workers. Postpartum services received from trained health workers also show a significant increase from 71% in 1988 to 85.2% of all births in 1996. The proportion of women who receive postpartum services decreased with decrease in the level of education.

The highest number of women not receiving postpartum care was reported among women with no /or very little education. Health workers at times fail to discuss and counsel mothers on benefits of breastfeeding, nutrition and the importance of coming for review after six weeks. This may contribute to failure to come for review if both the mother and the baby do not have immediate health problems, resulting in development of serious life-long complications in future.

1.9. Postpartum Care

This pertains to care given to the mother and the baby immediately after the birth of the baby until six to eight weeks post delivery. It is as important to the mother as prenatal care. *For the purpose of this study, postpartum care is defined as care given to the mother and infant just after delivery until six to eight weeks in order to assess, identify, give support and counseling on infant breastfeeding, nutrition, immunization, safer sex and family planning.* Traditional birth attendants provide care to those who deliver at home due to shortage of transport and the long distance between levels of health facilities especially in the rural areas where roads are poor, shortage of transport and insufficient qualified health personnel Safe Motherhood Task Force, (1992).

Table 4. Provision of Postpartum Care in Developed and Developing countries

Developed Countries	90%
Developing Countries	30%
Very Poor Regions	5%

Source: WHO (1999) [http://www Safe Motherhood. Org/facts and figures/maternal health/UNIEF](http://www.SafeMotherhood.Org/factsandfigures/maternalhealth/UNIEF) (1999).

1.9.1 Professional/ Modern Care

The fundamental aspects of care take place at the health facility before the mother is discharged home. The delivered mother's vital signs should be checked, various observations done for early detection of risk factors, and treatment given where necessary to the mother or the baby. Counseling should also be done on family planning, personal hygiene, breastfeeding, and nutrition and care of the baby. The mother should be advised to come back with the baby for examination at six weeks to ascertain the return of the reproductive organs to pre-pregnancy state and give advice to the woman regarding her future reproductive activities. The baby should be given initial immunizations before discharge.

Due to limited hospital beds and over crowding in most health facilities in developing countries, some mothers may be discharged before they are adequately informed about the importance of and attendance of the 6-8 weeks examination. This may suggest why most women do not get quality postpartum care and may not adequately get postpartum services at home during the first week of deliver. Midwives are expected to do home visits within the first week following discharge from maternity to observe lochia, and uterine involution, breast-feeding habits and conduct physical examination of the mother and the baby to exclude complications.

1.9.2 Traditional Care

This pertains to general care and support mothers get from relatives and family members at home regardless of where the delivery took place. In Botswana, the mother and the baby (*motsetse*) and (*losea*) are put on confinement (*Botsetse*) in a separate hut within the compound for a period of 2-3 months where care is provided by her own mother if she is a primigravida. A stick (*mopakwana*) is placed on the ground outside the hut indicating that outsiders or menstruating girls are not allowed to enter. The *motsetse* (delivered mother) should lie on her abdomen, drinks warm water and eats softfood (*motogo* or *ting*) “soft sour porridge” in this position. This helps to restore the woman’s body to her non-pregnant figure.

The *motsetse* has to tie a (doek) cloth around her abdomen to keep abdominal muscles firm. The *motsetse* should wash daily with warm water and drinks some traditional herbs and black coffee to encourage expulsion of clots. She is treated more like a sick person and only does light duty. She is cared for by her mother, mother-in-law or an elderly woman if she is a multipara Anderson & Staugard (1986).

During this period the *motsetse* gets advice on self-care, breastfeeding, nutrition and care of the cord from an elderly person. However, it should be mentioned that the indigenous people in some parts of rural Botswana still strongly belief in using traditional methods like (cow dung) to dry the umbilical cord. During the subsequent deliveries the woman goes to her mother inlaw’s place for confinement (Anderson & Staugard, 1986; Kebiditswe, 1996 unpublished). Traditional birth attendants may visit the woman to massage her abdomen and advice her to wash with warm water to expel the clots and bath daily with some traditional herbs. The woman is also advised to lie

on the abdomen to encourage healing of the perineal tears. During this period the mother and baby are isolated from outsiders to prevent them from infection. Traditional birth attendants provide this care where family members or close relatives are not readily available.

1.9.3 Postpartum Period

A woman cannot tenderly cradle her baby whilst experiencing severe perineal pain, nor can she feel herself to be an attractive and desirable partner if she is incontinent. This implies that during this period women need care, guidance, emotional support on how to cope with new situation and advice on family planning, safer sex self and baby care and assistance to solve any medical problems.

1.9.4 Need/Purpose for the study

The Botswana Family Health (BFHS 111 1996) shows that a majority of women in Botswana 94.1% received antenatal care from trained nurses or doctors compared to 92.4% for (1988). A majority 87% of them had assisted deliveries by trained nurses or medical doctors. This reflects a substantial increase from 77.5%, which was recorded in 1988. Postnatal care received from trained nurses or medical doctor increased from 77.5% in 1988 to 87%. This seems to suggest that a majority of women are knowledgeable and utilize the available maternal health services. A study by Makokha et al. (1994) on Determinants of Home Deliveries in Botswana, found that despite substantial increase in utilization of postpartum services only 32% were visited at home. Even then, the majority did not benefit from this visit because vital activities like advice on breast-feeding, family planning and baby immunization were not performed.

The increase in utilization of maternal services is a good health indicator. However, with the serious shortage of qualified health professionals (nurses and doctors) and the integration of health services one may still wonder whether patients actually receive quality or quantity care and whether postpartum activities are actually done prior to discharge, during home visits and at 6-8 weeks assessment hence the need for study.

The study will outline various activities conducted by midwives and information given to mothers during postpartum examinations, and identify weak areas or

performance gaps in the provision of care that need to be strengthened. In addition, results of the study would contribute to the existing knowledge in the reproductive health, training of midwives and practice.

My hypothesis would be to assume that health care workers do not provide quality care, which meet the perceived needs and expectations of women during the postpartum period. This calls for a qualitative and quantitative study on postpartum care to assess the quality of care provided.

The objective of the study was to assess the quality of care midwives actually provide to clients during postpartum period in northern Botswana.

1.9.5 Statement of the problem (Discussed under 2.1)

1.9.6 Research Question.

Is the current level of postpartum services that women in Botswana receive of sufficient quality for detection and management of present problems, and client's needs and expectations after delivery?

1.9.7 Broad Objectives

To assess the quality of care midwives provide to clients during postpartum period in Northern Botswana.

1.9.8 Specific Objectives

This study intends to:

1. Observe various activities, which are actually done by the midwives during postpartum examination.
2. Assess whether services provided meet the needs of the clients with reference to examination of the breast, vagina, perineum, abdomen and detection of anaemia.
3. Ascertain the adequacy of logistics used to provide postnatal care.
4. Observe whether services provided to the baby include examination of the body, eyes, checking for immunization status, including advice on breast-feeding and nutrition.

1.9.9 Operational Definitions

- *Postpartum services* means care given to the mother and infant just after delivery until six to eight weeks in order to assess, identify, give support and counseling on infant breastfeeding, nutrition immunizations, safer sex and family planning.
- *Infant* means a child from birth to twelve months.
- *Mother* refers to any woman within the reproductive age (15-49) years who attends maternal child health care and family planning services.
- *Midwife* is most often a woman or a man trained and registered to assist other women in childbearing experience with delivery and care of pregnant women. (They are clinicians in their own right)
- *Practice* is the actual operation or application of knowledge as distinguished from mere possession of knowledge.
- *Quality* care refers to provision of care that meets the needs of the clients as well as external criteria set and requires that health care providers have adequate clinical skills and are sensitive to the women's needs.
- *Postpartum* period refers to the time just after the birth of the placenta up to six-eight weeks when the woman and the baby go to the health facility for review.
- *Traditional Birth Attendants* refers to older women in the society who are socially and culturally recognized and are capable of assisting in conducting home deliveries.
- *Referral Hospital* is the highest level of health facility, which provides specialized treatment to clients in-need of advanced care.
- Access means that services are available, suitable, and affordable and within reach of women who need them.
- *Information* (Oxford English Dictionary, 1995). In this study it means knowledge women acquire about the activities and benefits of postpartum care either before or after the examination / birth itself.
- In this study knowledge means information that health workers have acquired about the activities and benefits of postpartum care.
- *Motsetse* a setswana word used in this study, which means a delivered mother during the first 2-3 months period of confinement.
- *Losea* a setswana word that refers to newborn baby up to two months.

Chapter 2

LITERATURE REVIEW

2.0 Introduction

In this chapter, I will discuss the framework, which forms the basis for the study. This literature is based on relevant studies conducted locally, regionally and globally. Furthermore, to ascertain what is already known I examined relevant literature and analyzed assumptions, biases and findings.

2.1 Literature Review and Conceptual Framework

This was done through an intensive search from PubMed-Line and WHO web sites for relevant studies on quality care for the past decade up to May 2000. Main key words used during the search were; Quality of care, reproductive health, postpartum care and postnatal services for mothers and newborn, and barriers to maternal health

services. In addition I conducted a manual search at the University of Oslo library from various publications on Journal of Midwifery, Medical and Social Science Journals, Journal of Obstetrics and Gynaecology, World Bank and World Health Organization publications.

Literature review will be discussed under these eight sub headings.

Regional and global maternal health status

Maternal mortality

Maternal morbidity

Barriers to utilization of maternal health services

Problems encountered by women during postpartum period

Quality of care

Women's concerns

Relevance of postpartum care

2.2 Regional and Global Maternal Health Status

According to WHO/Safe Motherhood (1998), there are about sixty million women in developing countries who deliver each year without the assistance of a skilled midwife. These women either deliver alone or are assisted by a relative or traditional birth attendant who has limitations as regards identification of risk factors and management of complications. This predisposes them to many complications, which could have been avoided under assisted institutional delivery.

About 1,600 women die every day from complications of pregnancy, of which 90% occur in Asia and Sub-Saharan Africa where there is shortage of health professionals with only 1% in developed countries. In very poor countries and regions as few as 5% of women receive postpartum care as compared to 90% in developed countries. This lack of care is most life threatening during child birth and the first four hours just after delivery since this is the time when sudden, life threatening complications are most likely to arise.

A study in Bangladesh by (Li, Fortney, Kotelchuck & Glocer 1996) found that 60.6% of maternal deaths occur during the first week of the postpartum period with 45% occurring during the first four hours just after delivery. It further shows that majority of deaths 61% occurred during the postpartum period both in developing countries

and the United States 71%, and the causes of death were similar. The study concluded that mothers discharged after 24 hours should be visited at home during the 2nd and 3rd days to check on vital signs like blood pressure, pulse and postpartum bleeding.

2.3 Maternal Mortality

According to CIA-The World Fact-book-Botswana, (1999) maternal mortality in Botswana is estimated at 200-250 maternal deaths per 100,000 live births. Studies have shown that the main causes of these deaths are haemorrhage, infections, and hypertensive disorders of pregnancy, prolonged labour, pulmonary embolism and other medical conditions. A majority of these deaths could be prevented if complications are detected early and treated promptly.

Botswana Family Survey (BFHS111, 1996) has shown that maternal mortality for age group 15-19 years had almost doubled from 0.03% in 1988 to 0.06% in 1996. Women in Botswana become sexually active at an early age of 15-19 years. About 60 % of young women in Botswana fall pregnant and give birth before the age of 20. Many of these women are poor, uneducated, and live in the rural areas where access to health services is limited. A majority of them deliver at home where a relative assists them or a traditional birth attendant who lacks professional skills to manage obstetric complications. This predisposes them to considerable health risks and during pregnancy and childbirth.

Due to physiological and social factors, adolescent women are more vulnerable than older women to pregnancy-related complications, and sexually transmitted diseases including HIV/AIDS and unsafe abortion. Although adolescents are psychologically mature enough to fall pregnant, their bodies are often not fully developed to have a safe pregnancy to term. They are at particular risk for pre-eclampsia and obstructed labour due to cephalopelvic disproportion. Skeletal growth in women is not complete until the age of 18, and the birth canal is not mature until approximately 20-21 years of age. Physical immaturity increases the risk of obstructed labour and a greater risk of dying World Health Day / Safe Motherhood, (1998).

A mother's death greatly influences the health and likelihood of her surviving children. When a mother dies, her children are three to ten times more likely to die within two years than those with both living parents. In addition surviving children often do not receive adequate health care and education as they grow up. The death of a mother has an impact beyond that of her immediate family: *a productive worker, one that rears and guides the next generation, cares for the elderly and contributes stability to the community-is lost* (Safe Motherhood Out Look /WHO, Volume 16 Special Issue, 1998).

Table 5. Distribution of maternal mortality by Age in Botswana.

Age	Percentage
< 18 Years	12%
< 30 years	58%
> 30 years	30%

(Source WHO/ Safe Motherhood 1998)

2.4 Maternal Morbidity

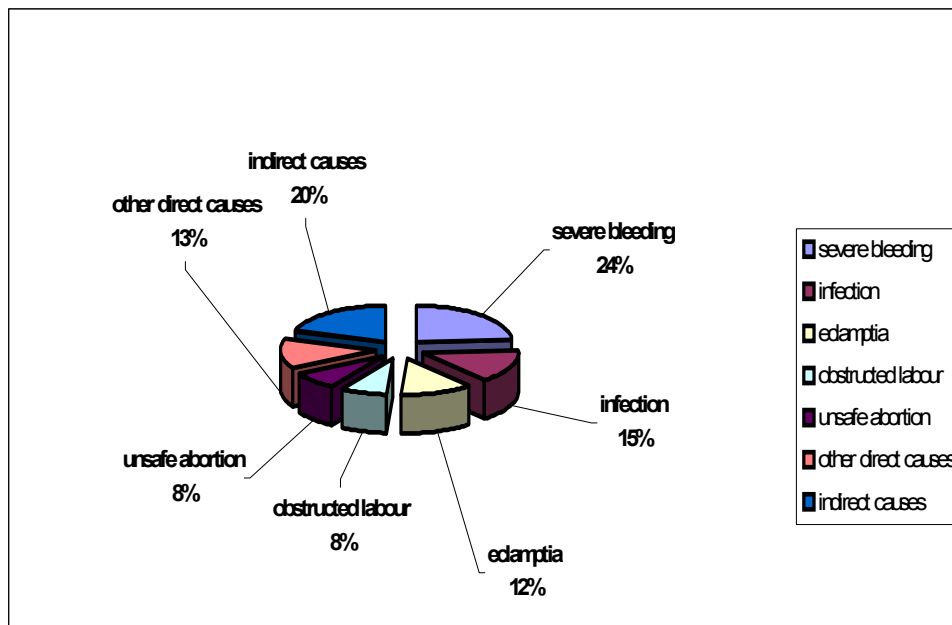
There is limited data on maternal morbidity in Botswana. These are serious conditions that do not lead to maternal death (haemorrhage, diabetes, pre-eclampsia, sepsis) and less serious conditions like mastitis, puerperal psychosis, vaginal or rectal fistulae and infertility. It is estimated that for every woman who dies as a result of pregnancy, as many as 100 suffer from short or long term illnesses with 40% of them serious enough to require a referral Safe Motherhood Task Force, (1992).

A study by Ayliffe et al. (1985b), as stated in Murray & Lopez (1998a) identified that at least 23% of women globally have complained of and reported perineal pain and low backache which could respond well to oral analgesics like paracetamols. Morbidity like vaginal discharge and problems with episiotomies were reported during postnatal check-up. These conditions could be detected during postpartum assessment even though some may persist for a longer time resulting in high

prevalence of long-term problems for the woman. Common conditions are feelings of fatigue, backache and sadness, enlarged breasts, and minor blood loss. Postpartum depression and mental stress sometimes follow childbirth. These conditions need to be addressed to promote the mother's wellbeing and avoid physical, social and psychological distress, depression and suicide.

A report by WHO/Safe Motherhood, (1998) showed that every pregnancy faces risks and any woman can suddenly develop life long threatening complications and disability. These problems could be prevented through provision of quality care during pregnancy, delivery and puerperium. But for women to have the initiative to seek care and help they should value the benefits and be satisfied with services offered. Provision of quality care during and after delivery by skilled health professionals is the single most important way of saving lives and preserving the health of the mother and the baby.

Fig 1. Causes of maternal deaths globally



Source: WHO 98.1/ Safe Motherhood Initiative, (1999).

Postpartum haemorrhage is the most common cause of maternal death. A woman who is anaemic is usually less able to cope with blood loss than a woman who is well nourished. Health providers should make efforts to ensure that the uterus is well

contracted and any bleeding is controlled through regular checking and monitoring of the woman's condition during the first four hours after delivery and there after if needed.

Table 6 Distribution of maternal mortality ratios (per 100,000 live births) by direct causes and maternal age in Bangladesh (1976-1985).

Maternal age (Years)	Maternal Mortality Ratio				
	Postpartum haemorrhage	Abortion	Hypertension complications	Infection	Obstructed labour
Others					
15-17	110.7	118.6	126.6	39.6	47.5
87.0					
20-34	87.2	64.4	60.2	31.1	29.1
72.7					
35-44	224.0	268.8	11.2	67.2	67.2
89.6					

Source: X.F. Li et al./International Journal of Gynaecology, 54 (1996) 1-10.

To reduce infant and maternal mortality, it is important to ensure that health workers are trained on diagnostic and management skills and are provided with essential drugs, supplies, equipment and that a skilled health worker assists each delivery.

Furthermore, Oakley (1981), Morse et al. (1987) argued that the postpartum period could be both exciting and frustrating as women adjust physically and emotionally to the early days of motherhood. Women need advice on self-care and nutrition to prevent infection. Studies show that women have raised their dissatisfaction with lack of assistance and staff's attitudes to individual preferences. This may suggest that patients who are discharged early soon after delivery do not receive quality care, and maternity services may need to consider ways in which care can focus on the individual needs and preferences of women.

A study by Melia RJ, Morgan, M, Wolfe, CD & Swan, AV. (1991) found that 75% of women in Britain preferred shorter hospital stay, quality care and to be provided with guidance and family planning. However, most health programmes have adopted quality improvement strategies because it is expected to increase client's satisfaction and use of services. This seems to have a positive impact on reproductive and overall

health of women. Finally, it is expected that quality care will lead to increased efficiency, improve service and reduce social and psychological trauma and difficulties women may experience (Sleep et al. 1984, MacArthur et al. 1991 &1997).

2.5 Barriers to utilization of maternal health services

Not all women use health services optionally. Reasons for this could be technical, socio-cultural, physical or logistical obstacles that exist within a system and prevent women from utilizing available services. The client's perspective is frequently lacking because services are organized around the needs of the system and providers rather than around client's needs. Women's concerns are usually dismissed and redefined as normal healing process by health care providers whom they come in contact with; and when women complain of perineal pain post delivery, midwives re-assure them and say they have "normal discomfort". This type of treatment may scare women and prevent them from using health facilities during subsequent pregnancies. Fragmented and vertical services make it difficult to focus on the totality of client's needs. This has contributed to a lot of barriers and under utilization of majority of maternal health services in developing countries. Women feel "tortured and punished" during labour and delivery when inadequate pain relief is given especially when suturing is performed by doctors who fail to understand the degree of pain and acknowledge the severity of their traumatic experiences. This type of treatment may deter women from utilizing available health facilities regardless of the health risks they may encounter (Oakley, 1993; Doyal, 1995).

Similarly AbouZah, et al. (1996) observed that midwives' failure to provide women with up-to-date information on MCH/FP services and other endemic diseases prevents them from getting quality care. Providing women with information enables them to make informed decisions and to seek care on time before complications occur. This implies that strategies to improve the quality of health care provided to women should include information on various health problems and how to prevent and treat them. However, providing women with information and the existence of a health facility within ease access is no guarantee that it will be utilized.

WHO/Safe Motherhood report of 1998 shows that a study in Zimbabwe (Mbizvo et al. 1993) identified that poor referral system resulted in a significant proportion of

maternal deaths caused by “avoidable factors” including failure by the health workers to identify women with risk factors or early signs of complications and refer to hospital for advanced care. The report further shows that another study done in Egypt found that of 718 deaths, 92% could have been prevented if good quality care had been provided. Similarly, a study in Zambia by (Mohango, 1986; Mbizvo et al. 1993) found that due to scarce resources women receive inadequate care, and suffer adverse consequences because complications are neither identified nor treated, resulting in maternal mortality and morbidity or life long disabilities. This shows how lack of skilled personnel and resources can prevent women from getting quality care.

A study in Tanzania by WHO/Safe Motherhood Fact Sheet, (1998) showed that because of health workers rudeness, 21% of women delivered at home even though they thought delivering in a health facility was safer. Studies have shown that in Ecuador, Indians do not use available and affordable services because health workers are mainly men, which is not culturally acceptable in their tradition and women in labour do not prefer birth position preferred by health providers. This implies that health professionals should have greater sensitivity to cultural and traditional barriers and the degree to which they affect health services.

A study in Nepal (Safe Motherhood Fact Sheet, 1998) identified that, mothers-in-law attend to most of the deliveries, and do not believe that antenatal care is necessary, and additional care is sought only if she decides that such care is needed. A study in Zaria, Northern Nigeria found that in most instances, husband’s permission is required for a woman to seek health services, and if he is away those present are unwilling to make a decision (Safe Motherhood Fact Sheet, 1998).

In Ghana (Safe Motherhood Fact Sheet, 1998) it was reported that women died of pregnancy related complications, and one found that 64% had sought help from a herbalist or other traditional providers before going to a health facility, and relatives thought her condition would improve. Families sited high costs and the belief that the women’s condition would be managed at home hence they did not seek medical assistance (World Health Day, 1998). This indicates the need for health professionals to consider different norms, cultural and traditional beliefs, socio-economic factors and individual needs when making strategies to improve the quality of care.

Table 7 Impact of user fees on Obstetric admissions in Zaria, Northern Nigeria.

	Obstetric services-free (1983)	Fees for some Services introduced (1985)	Increase in fees (1988)
Obstetric Admissions	7,450	5,437	3,376
Deliveries	6,535	4,377	2,991
Maternal deaths	2	1	62

Source: Safe Motherhood Fact Sheet (1998) <http://www.safemotherhood.org/facts> and figures/maternal health.

Similarly, in Côte d'Ivoire and Peru studies by WHO/Safe Motherhood (1998) found that fees deter everyone from using health facilities, but deter poor women most of all. In some developing countries, community factors like lack of trained health professional, high utilization of traditional birth attendants and use of traditional practices such as insertion of foreign objects and herbs into the vagina, predisposes the woman to developing puerperal sepsis and maternal mortality in addition to other prevailing health hazards. This shows how women can be exposed to various health risks despite having access to maternal health services.

A study by Makokha et al. (1994) on determinants of home deliveries in Botswana identified that poor roads, shortage of transport and poor communication system in the rural areas as some of the contributory factors to under utilization of health facilities.

2.6 Problems encountered during postpartum period

i) Postpartum haemorrhage is the most common cause of maternal mortality in both developing and industrialized countries. This may be due to failure of the body to adapt to the non-pregnant state, uterine atony and retained placenta. Genital tract injuries such as episiotomy, vulval haematoma and “*gishiri cuts*” carried out by some traditional practitioners in some parts of Africa, are more common and may exacerbate bleeding from other causes (World Health Organization 1989; AbouZahr et al 1996).

In most developing countries, most deaths due to haemorrhage 45% occur on the first day postpartum and 28% between 2-7days (Li et al.1996). Studies in the United Kingdom and Australia found that 17% of women experience a blood loss of more than 500 ml or more and 4% loose one litre or more during postpartum period. Prendiville, (1988) as stated in AbouZahr et al. (1996). However, a study by McDonald *et al.* (1993) found a lower incidence of postpartum haemorrhage (loss of 500cc or more) of 12 per 100 deliveries. Blood loss of 500ml of more may account for 25% of maternal death during the postpartum period. This reflects the period of high risk and the importance of early detection, treatment of anaemia and proper management of third stage of labour. Both antepartum and postpartum haemorrhage are unpredictable and difficult to assess at the population level particularly in developing countries as there are no widely accepted diagnostic criteria and ascertainment rates depend on the quality and availability of prenatal care Murray and Lopez, (1998).

ii) Uterine infection and its complications are responsible for majority of deaths from puerperal infections. Sepsis accounts for 15% of maternal deaths during the postpartum period. Most of the organisms that cause uterine infections are endogenous inhabitants of the lower genital tract. Puerperal sepsis could be due to complications of unsafe abortion, early rupture of membranes or unclean delivery practices either by the midwife, a traditional birth attendant or relatives, since a majority of women in rural areas do not have skilled attendance. Infections, including sepsis, can lead to pelvic inflammatory disease (PID), symptoms which include chronic pain, damage to the reproductive system, infertility and a range of gynaecological disorders. Women need counseling and advice on self-care and care of the wound including early signs of infection. Studies show that in the developing world, pre-existing sexually transmitted diseases and other vaginal infections; prolonged rupture of membranes; retained products of conception, caesarian section, anaemia and malnutrition including traditional practices such as insertion of foreign objects and herbs into the vagina predispose women to puerperal infection Murray and Lopez, (1998).

iii) Urinary tract infection is another common cause of puerperal sepsis. The bacteria can be introduced when the bladder is catheterized. Women need counseling from health workers to find better solutions to resolve problems that contributed to unwanted pregnancy and abortion. Because fertility returns quickly after abortion, women need information on family planning services to avoid another unwanted pregnancy, and to understand the health consequences of unsafe abortion (WHO /Safe Motherhood 94.11, 1994). Community factors which increase a woman's risk of developing puerperal sepsis and dying from it, include delivery by an untrained birth attendant; lack of transportation and resources like inadequate health facilities. A study by Younis (1993) as stated in Murray and Lopez (1998) identified that chronic shortage of equipment, drugs and supplies and long distances from the woman's home to the nearest health facility especially in rural areas, contribute to inadequate health care in most developing countries.

iv) Prolonged labour accounts for 8% of direct maternal deaths in developing countries due to uterine rupture or prolapse if the woman does not receive adequate care during labour and delivery. Obstructed labour is usually due to cephal-pelvic disproportion, malpresentation or interrupted contractions. This may lead to severe disabilities and complications such as vesico-vaginal fistula (VVF) or recto vaginal fistula (RVF), chronic pelvic pain and infertility if untreated. Studies show that up to 80,000 women develop fistulae each year that allows leakage of urine or faeces from the bladder or rectum, and sometimes makes a woman permanently incontinent for both. Many women have become social outcasts, turned out of homes and rejected by their husbands and families (Murray and Lopez, 1998, WHO/ WHD 1998).

Chronic or acute pelvic inflammatory disease (PID) occurs when an infection spreads upwards through the genital tract causing pain and discomfort, which if left untreated affects the lives of women continuously, sometimes for the rest of their lives. Women need advice and information on the importance of institutional delivery with necessary resources and training to manage common complications.

v) Psychiatric illness: The days after birth generally are considered a period of intense happiness, but problems may occur, related to birth. Emotional and

psychological disorders can occur during puerperium, and may take one of several forms, which include depressive reactions, state of confusion, affective disorders and psychosis. Usually such disorders become manifest within the first week following childbirth. The irregular care of the baby involves new tasks and uncertainties, and disturbs the night's sleep. The woman needs emotional support and reassurance as she cares for and establishes a relationship with her baby as she may find herself on her own at home. This ensures gradual adjustment to motherhood and confidence to cope with new roles (Stamp and Crowther, 1994; Kendell et al. 1989; as stated in Murray & Lopez 1998; WHO, 1998).

vi) Neonatal deaths: About 21% of neonatal deaths in developing countries are due to neonatal tetanus. Tetanus is often associated with sepsis and a substantial proportion of 320,000 newborn deaths due to sepsis are caused by unclean delivery and cord care (WHO, 1994d). There should be on going community education especially to (TBAs) and relatives on the importance of hospital delivery, cleanliness; hand washing and cord care during delivery and through out the postpartum period. This should include the use of spirit swabs to clean the cord and to avoid use of ash or cow dung on the umbilical cord.

vii) Pregnancy induced hypertension may start after 20 weeks of gestation in a previously normotensive woman and accounts for 12% of maternal deaths. MacGillivray (1983) as stated in Murray & Lopez (1998) observed that the risk is high among multiparae who have a history of hypertension during previous pregnancies compared to those who have not. The risk is also high in those with a positive family history of obesity or excessive weight gaining pregnancy. Blood pressure tends to fall in mid-pregnancy and rises again in the mid trimester. It is not entirely clear whether an absolute level of the diastolic pressure of >90mm Hg, or a rise in diastolic pressure of more than 20mm Hg, or a combination of the two is the best diagnostic and prognostic sign (WHO/ Safe Motherhood/MSM/92.4,1999). The condition may progressively deteriorate as pregnancy nears term, and result in death due to placenta abruptio, dissemination intravascular coagulopathy, adult respiratory distress syndrome, or cerebral haemorrhage.

It is not always easy during antenatal care to predict which client will encounter problems during labour and delivery or postpartum period because the woman's condition can suddenly change especially when there is failure of physiological changes to adapt to the non-pregnant state. However, women need advice and information on the benefits of early registration at antenatal clinic, hospital delivery and treatment compliance as this may reduce complications and maternal deaths occurring within the postpartum period.

2.7 Quality of Care

This is often referred to as meeting the needs of clients through achievement of predetermined goals or standards. To ensure quality the organization should have room for improvement, goals and standards should be achieved. Quality should be concerned with making health services accessible, available, appropriate and affordable, which aims to meet the needs of those who need them most, at the lowest cost to the organization.

Programmes that are customer focused should consistently involve clients in designing services (WHO/AVSC-International, 1999).

Health programmes should strive to meet the client's needs through the provision of a wide range of quality reproductive health care services International Population Development, (1994). Programmes should provide improved services to new clients and to a larger number of clients than before to increase their satisfaction. Lack of attention to quality in service-delivery process and systems operations contributes to under utilization.

2.7.1 Client's view of quality of care

For many years, the international health community and national health planners have directed efforts towards ensuring that coverage of care at antenatal delivery and postpartum increases, but less attention has been paid to area of coverage. Quality care has an impact regardless of whether and where women seek care. It is critical to women's decisions to use formal health services. Patients are willing to travel further to reach a facility that provides better quality care. Improving the quality of care is critical to improving women's health, increasing access to and using limited

resources. This implies that health workers should have necessary training and skills to give quality care whether pregnancy has complications or not.

Quality of care is often considered unaffordable for programmes with limited financial resources. However, ensuring quality care is more likely to result in more efficient use of resources because interventions should have greater health effects and benefits. The underlying philosophy for improving the quality of care should recognize the need to ensure that health care professionals have the knowledge, skills and resources in terms of supplies and equipment to monitor pregnancy and labour. Health professionals should be able to identify risk factors and make early referrals for advanced care. Moreover, they should have good attitude and be responsive to client's individual, social, cultural and medical needs. Facilities should have necessary equipment, drugs and supplies as well as structured and defined referral system. As stated earlier, studies on maternal health have repeatedly noted deficiencies in supply of drugs or functioning equipment, in skills among staff and in attitudes of health workers as contributory factors to poor quality care.

2.7.2 Various criteria to monitor quality by

i) Infrastructure and Inputs

For an organization to provide quality care it should have room to change things for the better especially where patients meet the system. Services should be made available, accessible to clients, and at a cost affordable and appropriate to all citizens. The organization should have a well-designed structure with a clearly defined referral system, good transport and communication system. Health workers should be familiar with Safe Motherhood Initiative Guidelines and Protocols. Health facilities should be staffed with qualified and skilled professionals who provide care and services at all times including continuity of care. Health workers should be able to identify danger signs and make early referrals for patients who need advanced care to prevent complications and reduce deaths. Services provided should meet and satisfy the needs of the clients who need them. Health facilities should have written criteria and treatment protocol according to national or international standards for ease of reference by health professionals.

ii) Process involves the actual activities, procedures and programmes that take place within the health facility. Each organization should have enough skilled personnel that have been trained to provide assisted skilled deliveries and MCH/FP services.

iii) Outcomes consist of measures related to health status and patient satisfaction. Outcomes measure morbidity, patient's satisfaction, coverage of services provided and attendance levels Antozack-Bouckons (1995). With good quality care there should be an increase in utilization of services and decrease in mortality. There should be quick cure or recovery rate and few deaths recorded annually. Patients should be satisfied about services rendered and show signs of less suffering by individuals.

2.7.3 Women's concerns about postpartum care

A number of studies have shown that women are generally not happy about services provided during labour and delivery. A study on 31 Filipino, Turkish & Vietnamese, women's experiences of the postnatal hospital stay in Australia, observed that overall satisfaction was low, as one out of three women who left hospital stated that she still required and needed more support and assistance with baby care and her own personal care. Women still felt they needed rest and to recuperate following delivery, to receive guidance, support and information on baby care Yelland et al. (1998).

Another study by Reading et al. (1982), on post episiotomies found that more than half of women interviewed were unhappy with the in-adequacy of preparation at the time of incision because they were not informed about the indications of the procedure before it was done. This notion implies that keeping women "in the dark" about what is expected may lead to delayed seeking of consultation and consequently a reduced ability to cope with the trauma of and adjustment to episiotomy. Preparatory counseling and information during pregnancy, labour and puerperium are essential. Women need information on the type of care and services they receive and outcome as this helps them to seek attention early and prevent complications.

Women have raised concerns regarding lack of continuity of care, quality of advice and waiting time at the health facilities. In agreement with these findings, a study by Williamson and Thompson, (1996) in Scotland found that the average number of

midwives visiting during postpartum fell from 3.7 to 2.5 and the average number of home visits fell from 6.5 to 5.7 visits. Similarly, a study by Stamp and Crowther, (1994) at Adelaide Women's Hospital in Australia, on women's perception of the usefulness postpartum care and midwives advice found that women were not informed nor given reasons for examinations done and its outcome.

Another study in a London hospital by Kirke, (1980) as stated in Stamp and Crowther (1994) found that women complained that they were not informed of the reasons for procedures such as induction of labour and caesarean section, with 65% saying they had received no information at all on breast-feeding. Furthermore, women complained that they never got any information they wanted post delivery. Although midwives provide emotional support women still complained that breast-feeding advises were unhelpful and some midwives gave conflicting advises on breast-feeding. There is a general complaint that women are neither consulted nor involved in decisions relevant to planning for their care.

As already mentioned, a study in Botswana by Makokha et al. (1994) on Determinants of Home Deliveries found that although 32% of women were visited at home during postpartum period, they still complained that they did not benefit much from the visits as most of the essential areas like physical assessment, advice on breast-feeding and family planning were not done. Basing on the above information, the author has hypothesized that women do not receive quality care, which meet their needs, and are generally dissatisfied about lack of information and services provided during postpartum period at various health facilities in Botswana.

2.8 Relevance and importance of quality postpartum care

Quality health care during and immediately after the critical period of labour and delivery is a single most important intervention for preventing maternal and newborn mortality and morbidity. As already stated care during postpartum period provides opportunities for the midwife to check how the mother and baby are doing, provides support for breast feeding, and enables the health workers to detect and manage any problems early. Poor care of the mother often means death of the child, even if the mother survives, poor maternal health care jeopardizes a newborn's chances of survival. Furthermore, poor maternal health and nutrition contribute to a low birth

weight infant, who is at greater risk for infection, malnutrition, long-term disabilities including visual and learning impairment. A mother's death makes survival and education uncertain for her children who are ten times at risk of dying than children with both parents WHO (1998 &1999).

Chapter 3

METHODOLOGY (MATERIALS AND STUDY METHODS)

3.0 Introduction

This chapter will examine the design and settings for the study, methods employed population, sample size, sampling technique and the research instruments used. It will further address data collection techniques, which include gaining access to the study areas, ethical considerations, pilot testing and the actual data collection methods used for presentation and finally study limitations.

3.1 Study Design

I have used a descriptive qualitative and quantitative non-experimental survey type of study, which seeks to determine what midwives actually do during postpartum examination. The study sought to identify the exact information midwives give or provide to delivered mothers prior to discharge, and during 6-8 weeks examination. My methodology for data collection was personal direct semi-structured interviews using questionnaire forms to collect data on quantitative information, and non-participant observation to collect data on other types of qualitative information, using a self-prepared checklist to assess same behaviours.

3.1.1 Materials and Methods

I have used several methods (triangulation) that involved direct personal interviews and non-participant observation. The use of combination of methods (triangulation) provided a more powerful strategy than reliance on a single method (see Appendix 5).

Thus I also supported the interviews with non-participant observation in health service settings.

i) Direct Personal Interviews

Interviews are methods of data collection in which the interviewer obtains responses from informants through a face-to-face encounter or through a telephone call. This method was used to collect data through direct asking of listed questions by the researcher and making provision to record the responses from the informants on the questionnaire forms. Through direct interviews I managed to address issues on knowledge and information midwives have on breast feeding, nutrition, care of the baby and self-care. This was also used to assess the exact information and advice midwives actually gave mothers after delivery and prior to discharge.

Advantages

Interviews are, as compared to questionnaires, self-completing, conversational and interactive in nature, and this enabled me to:

- i) Probe and explain some questions, which were unclear to the respondent.
- ii) Follow-up ideas, and investigate motives, which enabled them to elaborate on the topic.**
- iii) To encourage cooperation which results in higher response rate and better quality of data.**
- iv) To produce more in-depth information as informant's answers are entered directly to the interview forms.

Disadvantages

- i) Informants may give responses, which they feel the researcher wants to know but not what they actually do in the real life situation.
- ii) Informants may be unwilling or feel uncomfortable to share all the information with the researcher resulting in insufficient information being given.
- iii) Lack of skills may result may result in failure of the researcher to ask questions that evoke long narratives from the informants.

ii) Non-participant observation

This method involved actual watching of respondents at their places of work as they attended to patients. The aim was to observe various types of services rendered and how it was done in the natural environment without interfering with the respondent.

However, the informant and the patient were informed well in advance about the activity. To

comply with informant's ethical right to be informed I obtained permission and informed consent from subjects being observed. This method demands that the observer openly identifies that she/he is conducting the research and afterwards provides subjects with information about the type of data that will be collected during the study.

Using a checklist I observed various activities done and listened to information/or advice given to mothers by midwives prior to discharge from a health facility following childbirth or during the 6-8 weeks postpartum assessment. The checklist had structured and unstructured instructions/guidelines addressing practice as well as assessing client's involvement and participation in planning for their own health care including client- provider interaction. Through direct observation I hoped to discover complex client- provider interaction in the natural social setting and be able to note body language and effect in addition to the person's words.

Advantages

- a) With good precision and high level of skills, observations yield good results and I recorded the required data and the assessment of activities of nursing care.
- b) It permitted me to exert more judgment than in the use of quantitative scales.
- c) It enabled me to remain outside the phenomena being measured as objectively as possible and record the required data.
- d) It enabled me to relate what people say to what they actually do.

Disadvantages

- a) This method may demand skills and scientific vigour, and the researcher may possibly have to be checked by another observer for inaccurate observations, which is rarely possible.
- b) Observations may be recorded inaccurately if the recording form is unsuitable
- c) My presence as an observer may have caused some reactions or changes in the informants' behaviour especially by service providers who may be far more conscious of being observed.

3.1.2 Study Area

The study was conducted in the City of Francistown and Tutume Primary Hospital in northern Botswana. This is the second largest urban centre in the country with 22,7% of the urban population. In 1991 the city had a population of 88,194 and growth rate of 4.9% per annum, which is mainly due to rural-urban migration. Central Statistics Office (C.S.O) Ministry of Health, (1991 census). The City of Francistown is situated about 440 kilometers north of the capital Gaborone, on the Cape to Cairo road and lies about 80 kilometers south of Zimbabwe border and about 500 kilometers south of Maun. The town has 11 clinics and 3 health posts, which provide integrated services and also serve beyond their borders by providing services to people from nearby districts in Central and North East District, Francistown Health Annual Report (1997).

3.2 Setting for the study

The study was conducted in 11 primary health care facilities which provide maternal and child health / family planning (MCH/FP) one clinic with maternity, and postnatal wards in two hospitals. This hospital is the second largest referral centre in Botswana, which provides specialized care to patients in the northern part of the country north of the Tropic of Capricorn. The MCH/FP unit at the hospital provides services as indicated below:

- a) Ante natal care (ANC)
- b) Postnatal care. (PNC)
- c) Child welfare clinic (CWC)
- d) Family Planning (F/P)
- e) Gynecological and Infertility services
- f) Paediatric Clinic

All primary health care facilities (health posts, clinics with and without maternity units) in addition to curative and preventive care provide the following services:

- a) Ante natal care
- b) Postnatal care
- c) Child welfare clinic
- d) Family planning clinic
- e) Health education
- f) Home visiting

g) Counseling and Rehabilitation

3.2.1 Population

The study population were all accessible registered nurse-midwives who were subjects that possess some common characteristics and were currently based at any health facility in the City of Francistown and involved in the provision of maternal and child health care including postnatal services and family planning.

Another group of respondents were nurse-midwives working at the labour and postnatal wards at Nyangabwe referral and Tutume primary hospitals who were directly involved in the provision of maternal and child health services and post natal care to newly delivered mothers. The total number of informants was (N=65).

3.2.2 Exclusions

All midwives assigned to administrative duties and those working in other hospital units or departments including those involved in other health programmes that are not based at the primary health care facilities were excluded from the study. Those nurse-midwives on study leave and two nurses who had just resumed duty from study leave a month before the study was done were also excluded. In addition nurses who had not been practicing for more than one year were also excluded from the study. All midwives working for the army, police force and prisons department were excluded because they did not function as midwives *per se* but ‘officers’ as specified by their organizations. The rationale for their exclusion was that since they were not directly involved in MCH/FP activities, they may be inclined to be more theoretical than practical and may not reflect what happens in the real practical set up.

3.3 Sampling

A non-probability convenience sampling was used to identify midwives who were involved in the provision of maternal health services and on duty during the interview day. Convenience sampling in a non-probability sampling implies the selection of most readily available subjects in the study. Random sampling was not employed because the population to be included in the study was small and could be accommodated in the study within the set period without introducing any bias. A sample should consist of subsets of units that compose the population under study. In

this study I used the accessible population that refers to subjects, which were immediately available for this particular study. Although convenience non-sampling method is the weakest method, the risks of bias may be minimal and variables remain the primary area of concern.

3.3.1 Sample Size

The sample size was expected to be all eligible subjects, between 40-50 respondents. But at the end of the study period 65 respondents had been interviewed.

3.3.2 Sampling Error and Bias

An error can occur despite careful considerations in the process of obtaining the sample size; the researcher cannot fully control sampling. Sample error can occur by chance of variations while choosing the sample to represent the population. Sampling bias is the error that occurs when the samples are not carefully selected. To avoid sampling bias in this study, elements were chosen as registered nurse-midwives who were currently working at health facilities and were involved in provision of maternal child health and family planning services. Their names and marital status or years of experience were not considered. Furthermore, elements did not approach the researcher to ask if they could participate in the study.

Disadvantages

A convenience non-probability sampling does not have provision for estimating the probability each element has of being included in the study sample.

There is no assurance that every eligible individual has a chance for inclusion. The parameters of the total population of midwives in Botswana may not be known and the results may not be generalized.

3.4 Variables

i) **Background characteristics**, which examined age, sex, qualification and length of service.

ii) The dependent variable was various levels of quality of postpartum care, which is a categorical dependent variable. It was used to measure the actual activities provided by midwives during postpartum period.

iii) The independent variables are those factors assumed to cause or at least influence the level of quality of care.

a) Content of the advice given to mothers by midwives on breastfeeding, nutrition, family planning, personal hygiene and safer sex.

b) Quality of practice (actual examination) done by the midwife during postpartum care on breasts, abdomen, perineum/ vagina and early detection of anaemia.

c) Practice which is the actual examination done by the midwives on the baby with more emphasis on eyes, umbilical cord, and checking immunization status.

d) Knowledge of midwives on postpartum services and care provided to the mother and infant after delivery and throughout the postpartum period.

vi) Availability of logistics and equipment used to perform postpartum

examination a) Vaginal examination

b) Family planning pack (IUCD)

c) Family planning commodities

d) Blood pressure machine

e) Adult and baby weighing scales

f) Safe Motherhood protocol

g. Obstetric examination lamp

h) Surgical sterile gloves

i) Postnatal register

j) Examination coach

k) Surgical gloves

3.5 Instrument Development Questionnaire (See Appendix 5)

The questionnaire had three sections consisting of 41 open, and some closed ended questions, 14 items on observation of activities and 20 items of a checklist for availability of logistics, selected medical supplies and equipment.

The knowledge and practice questionnaires consisted of eight components each with sub-sections.

- a) Breast feeding: knowledge (4 items) practice (3 items)
- b) Postpartum infection: knowledge (4 items) practice (3 items)
- c) Postpartum anaemia: knowledge (5 items) practice (3 items)
- d) Postpartum Assessment Activities: knowledge (2 items) practice (4 items)
- e) Family planning and postpartum exercises: knowledge (3 items) practice (3 items)
- f) Follow-up care (Home visits): knowledge (4 items)
- g) In-service training and support: practice (3 items)
- h) Checklist on availability of selected equipment, drugs, medical supplies and logistics (20 items).

To assess knowledge and practice of midwives each item under each sub-section was given a score. An informant was considered having good knowledge and practice if he/she gave three or more standard answers to each question, and rated poor for two scores or less given for each question (see appendix 5). For observation of activities done during postpartum assessment an informant was given a score for each activity done and zero if the activity was not done. The main aim was to assess how midwives identify, perform and manage various postpartum problems, and review nurse-client interaction to identify specific areas that need improvement.

To assess availability of equipment, selected drugs and medical supplies (consumables) codes (1=Available) and (0=Not available) were used (see appendix 5). Using a checklist each informant was asked whether the named equipment or consumable was available and in a good working condition. To confirm the informant's response I then asked to be shown the equipment or consumable in question before I could give a score.

In this study my main variables are:

Knowledge

This refers to *information that a health worker has or has acquired about various activities and benefits of postpartum care she/he provides.*

Practice

This means the actual operation or application of knowledge as distinguished from mere possession of knowledge.

Knowledge questions

Addressed benefits of breastfeeding, steps in successful breastfeeding problems, postpartum infection and family planning.

Practice questions

Addressed prevention and management of postpartum infection and anaemia, advice and information on breastfeeding, nutrition, self and baby care, safer sex and immunization.

The questionnaires for health workers were drafted and finalized in English. To ensure validity, consistency and clarity of my instrument I reviewed it several times with my supervisor to maximize score components and minimize errors before a final document could be printed.

To ensure reliability, feasibility and acceptability and assess clarity of instructions, the instrument was pre-tested in North East District Council, where eight (8) midwives and eight (8) delivered mothers participated. This enabled me to assess how long it takes to conduct each interview. Pre-testing gave me a chance to identify and eliminate unclear or irrelevant and ambiguous questions and make necessary corrections before starting the actual survey. This was done to ensure that informants do not experience difficulties in understanding and answering questions during interviews. From interviews and observations I obtained consistent and precise answers, but observations yielded more accurate responses.

3.5.1 Data Collection Process

Before the actual data collection, I met management from the City of Francistown, Nyangabwe Referral Hospital and Tutume Primary Hospital to present official documents and permission to conduct the study. During the meeting we discussed the objectives, entire aspects of the study and how their organizations may benefit from the study. In addition, issues on how the results will be presented to respective areas and stakeholders were also discussed. The scheduled plan of activities was given to management for consideration to ensure that data collection does not interfere with

planned patient care and other essential activities for the mother and baby. Eligible midwives were later met and appointment dates fixed for interviews and observations. Using a questionnaire guide form, each midwife was asked open and some closed ended questions, which were developed to answer issues related to knowledge and practice in breastfeeding, sepsis, anaemia, postpartum examination, family planning and continuity of care. A checklist consisting of 23 closed ended questions was used with each midwife. This was developed to answer questions related to explanation of care, postpartum exercises, and advice on breastfeeding, family planning and nurse-client interaction. The researcher administered all direct personal interviews and observation and endorsed responses on the questionnaire guide forms.

3.6 Reliability and Validity

3.6.1 Reliability

The reliability of an instrument is the degree of consistency with which it measures the attributes it is suppose to measure and be able to give same results each time it is being used. Reliability of an instrument is a major criterion for assessing its quality and adequacy. The less variation an instrument gives in repeated measures of an attribute, the higher its reliability. An instrument is said to be reliable if its measures accurately reflect the true measures of the attributes under investigation. (Burns and Grove, 1993; Polit & Hungler, 1989 &1999). The use of one person to collect data for this study might have decreased the reliability. On the other hand the use of more than one person to record at the same time increases the reliability.

To check the reliability of my instrument I conducted a pretest and used the results to correct any inconsistencies in the instrument before starting the actual survey. In the survey questionnaires and observations I asked the same questions and used the same questions to observe informants when performing the examination. In most instances I got the same answers except on rare cases, but the content was the same. For example I asked nurses: **Q. What do you examine the mother for one hour after delivery?** I used the same question to observe nurses as they performed the examination. This helped me to check the consistency of my instrument, and also to compare and assess nurses' knowledge and practice on various postpartum activities and identify some strengths and performance gaps.

3.6.2 Validity

This refers to the degree to which an instrument measures what it is supposed to be measuring. An instrument can be reliable, without being valid, but it has to be accurate and consistent (Polit & Hungler 1999). The validity of the instrument is often very difficult to establish. As stated earlier the validity and reliability of the instrument are not totally independent quantities of an instrument. A measuring device that is not reliable cannot possibly be valid. It should however be noted that there are some variations in validity.

In this study I used triangulation of methods that involved both quantitative and qualitative approaches. Quantitative methods employed direct personal interviews of all key informants (midwives) using some open and closed-ended questions. Qualitative methods took the form of non-participant observation and I observed the informant while examining the mother and baby. (Polit and Hungler, 1999) observed that triangulation of methods is one of the best approaches of validating research findings. If one method is weak the other serves to strengthen it and that improves the validity of the instrument. I have however, not measured the degree of validity of my information. (No kappa coefficient calculated).

Furthermore, I interviewed informants to assess knowledge on examination of mother and baby and endorsed responses to each question on the survey form. This was followed by observation of the informant while examining the mother and baby. I took note and observed nurse-client interaction, and checked whether what was being said related to what was actually being done. Though precise and consistent findings from interviews were not accurate compared to those obtained from observation. I collected quantitative and qualitative data in this study from a fairly small sample in two conveniently selected districts (n=65).

3.6.3 Comments on internal validity

a) My health background as a midwife and having worked in health for nearly (20) years and in the study area, in addition to being familiar with the set-up may have negative and positive effects on the results.

- b) My health background may help me to identify certain issues that may not be easy for a non-health worker.
- c) Most informants knew me and that can alter their behaviour and they may give me information that they feel I want to know and not what takes place in the real life situation leading to invalid measures.
- d) Informants may forget what they already know during the interview and give false information to impress the researcher.
- e) During interview, informants can change their behaviour and give false information when responding to questions.
- f) Interviews and observations were not done during a single visit to the facility and that gave informants chance to get information from those who had already been observed.

3.6.4 Comments on external validity

This concerns the degree to which study results can be generalized to the entire population or to other settings and be able to produce unbiased results for a target population. Though this study used a small sample (n=65), which is not statistically representative and lacks randomization these findings could still be applicable to other settings and be generalized because they may not reflect anything different from what is happening in other parts of Botswana. However, a larger and representative sample is needed. On the other hand the instrument can be used in other related surveys with or without modifications.

3.7 Data Handling

The researcher ensured that all questionnaire forms were kept safely through out the data collection period. At the end of the day all completed questionnaire forms were re-visited and corrections done before losing such valuable information.

3.7.1 Data analysis (Statistical Aspects)

Preliminary data entry and cleaning was done in Botswana using EPI-Info version 6 (Centre of Disease Control Prevention, Atlanta, GA, and USA), at Health Research Unit. Final data analysis that involved tabulations, charts, statistical analysis and discussion was done in Norway using statistical package for social sciences (SPSS)

version 9.0 and Excel programme. A chi-square was used to analyze categorical variables for the differences, while for continuous variables a student t-test was used. All p-values presented are two tailed and were considered statistically significant if p was less than 0.05.

3.8 Limitations of the study

Due to the small sample population used this study cannot be fully replicated because it lacks standardization of elements and subject style (N=65).

As already mentioned, my background as a health worker and knowledge on how the system operates may introduce some errors, or enable me to identify some important issues, which may influence the results of this study.

The use of observations to collect data may influence the results and the external validity as the respondents may try to provide better service than they normally do as well as change their behaviour.

Some health workers were not on duty either due to illness or had to be excluded due to other commitments and/ or dropped because they did not want to be observed.

3.9 Ethical Considerations

An ethical code is a concern for acquiring and disseminating trustworthy information without causing harm to subjects. To meet this requirement, a letter requesting for permission to conduct the study was submitted to the office of the President in Botswana to which copies of the protocol and the instrument were attached. That was to ensure that the ethical committee goes through the proposal before issuing ethical clearance and approval to conduct the study (See appendices 1 & 2).

A similar application was submitted to the Norwegian international medical ethical committee at the University of Bergen for consideration, to which clearance and approval were given.

3.9.1 Informed consent (See Appendices (3 & 4))

The aims and objectives of the study were explained to ensure that respondents have a clear understanding of the study before they volunteered to participate. Respondents were asked to participate without any coercion. They were informed that they have the choice to either participate or refuse and can discontinue participation at any time from the study if they so wish. Those who agreed to participate were given a consent form to sign. Confidentiality and anonymity were maintained by ensuring that respondents' identity and names are not endorsed on the questionnaire forms.

Furthermore, respondents were informed that there were no clinical trials or risks involved in the study and that information obtained will not in any way be linked to them but will be treated as group data. This was done to safeguard the rights of the respondents to remain anonymous and to be free to answer all questions. Since observations were done on different dates, code numbers were used to ensure easy identification of questionnaires forms and continuity with data collection with the same respondent.

3.9.2 Compensation

This study did not involve any monetary compensation or any other type of compensation for informants. No application in that respect has been submitted to any organization for funding. This information was communicated to all respondents well in advance before they volunteered to participate in order to avoid the possibility of getting biased results, as subjects may try to “perform” in a manner that may fulfill the researcher expectations.

3.9.3 Potential Benefits and Dissemination of Results

Knowledge gained and the results of the study will be used to improve the quality and practice of nursing care provided to clients at various health facilities. The results may also be used to bridge the performance gaps that have been identified in the provision of postpartum care, which will contribute to improving many people's lives. The results will be disseminated to Health Research Unit in the Ministry of health and to health care providers and managers in the study area through meetings or seminar/ workshops.

Chapter 4

4.0 Introduction

This chapter will discuss findings of the study from direct personal interviews and non-participant observation. This will include background information on demographic characteristics like age, sex, length of service and qualification. These characteristics were included because they form a basis for analysis of the type of care provided by midwives under the study (N=65).

4.1 Study Constraints

Although the sample was rather small, I encountered some administrative and technical problems during fieldwork. The study collided with the annual staff movements and internal transfers from one department/ unit to another. This resulted in dropping of some respondents because they no longer met the criteria for inclusion in this study. The inconsistency of informants working schedule of morning, evening and night duty resulted in either dropping the informant or working odd hours in order to find a convenient time for the informant.

The drop out rate was 11%, which is low. The current shortage of midwives in the study area resulted in the researcher extending data collection to another hospital in the rural area where I could find midwives. One informant declined to be observed and discontinued participation, four discontinued because they felt the interview was rather long and difficult.

4.2 Background Characteristics

Table 8. Demographic distribution of informants

Characteristics	Number	%
<i>District</i>		
Rural	5	8
Urban	60	92
<i>Sex</i>		
Male	5	8
Female	60	92
<i>Age</i>		
20-29	4	6
30-39	25	39
40-49	34	52
≥50years	2	3
<i>Length of service (years)</i>		
0-4	6	9

5-9	3	5
10-14	18	28
≥15years	38	59
Qualifications		
Midwifery	52	80
Post Midwifery	13	20

Almost all midwives interviewed were females and most of them were 30-49 years old with a mean age of 39 and 40 years for hospital and clinic respectively. More than half of the midwives had worked for more than fifteen years compared to only a few who had worked under five years. Most informants were registered nurse midwives only, while those with postgraduate qualifications constituted one fifth. Just less than half 40% of informants had worked for fourteen years and below and 60% for more than fifteen years and above from clinics and hospitals respectively.

4.3 Knowledge and practice in breastfeeding and breast care

Breastfeeding - *practice*

When nurses were asked what advice they give to mothers to promote breastfeeding, 40(62%) mentioned benefits of breastfeeding and colostrum, 19(29%) said exclusive breastfeeding, 3(5%) will advice mother to breastfeed for at least 18-24 months and 3(5%) will advice mothers to avoid milk formula. Though nurses have shown less competence on the importance of breastfeeding for at least six months, more than half 40(62%) have good practice on the importance of breastfeeding.

Responding to how soon they would put the baby to the breast after a normal spontaneous vaginal delivery, a majority 64(97%) mentioned immediately or within one hour after delivery unless the baby is not well.

When asked where they will place a normal newborn baby immediately after delivery, 60(92%) will give the baby to the mother, 4(6%) will put the baby in the cot, 1(2%) will

take the baby to the nursery. The majority of nurses have demonstrated good practice in promoting breastfeeding, bonding-in, and preventing neonatal hypothermia by giving the baby to the mother immediately after delivery.

An analysis was further done to assess whether there is an association between management of breast engorgement by age, facility, length of service and qualification.

Table 9. How nurses manage breast engorgement by age, facility, length of service and qualification.

Management of breast engorgement			
—	Good Practice %	Poor Practice %	N=65
P- value			
Age			
≤ 39 years	24	76	.524
≥ 40 years and above	14	86	
Facility			
Clinic	24	76	.454
Hospital	18	82	
Length of service			
≤ 14 years	22	78	.706
≥ 15years	18	82	
Qualification			
Midwifery only	17	83	.274
Midwifery plus others	31	69	

On the whole the majority of nurses have poor practice in management of breast engorgement regardless of age, facility status, length of service and qualifications. However, nurses with extra qualifications other midwifery have demonstrated better practice on management of breast engorgement than those with midwifery qualifications only.

Breastfeeding - knowledge

To assess knowledge in breastfeeding, nurses were asked to state the ten steps to successful breastfeeding, 21(33%) mentioned practice rooming-in, and allow mother and infant to remain together 24 hours a day and encourage breastfeeding on demand, 20(32%) will inform pregnant mothers about benefits of and management of breastfeeding, give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants, and 18 (27%) will show mothers how to breastfeed and

maintain lactation even if they be separated from their infants, and 15(23%) will help mothers initiate breastfeeding within half an hour after delivery. Only 21(32%) could remember at least three steps. On the whole all nurses have performed below 50%, thus the majority of nurses have poor knowledge in steps to successful breastfeeding. An analysis was further done to assess whether there is an association between nurses' knowledge in steps to successful breastfeeding by age, length of service and facility.

Table 10. Nurses' knowledge of ten steps to successful breastfeeding by age facility and length of service.

Knowledge of steps to successful breastfeeding			
	Good knowledge %	Poor Knowledge %	P-value
<hr/>			
Age			
≤ 39 years	41	59	.298
≥ 40 years	28	72	
Facility			
Clinic	24	76	.185
Hospital	40	60	
Length of service			
≤ 14 years	22	78	.079
≥ 15 years	42	58	

Generally the majority of nurses have poor knowledge in steps to successful breastfeeding. A majority of nurses aged forty years and above, those working at the clinics and those who have worked for fourteen years and below have shown poor knowledge compared to others on the same matter. However, having worked longer and age is not related to nurses' knowledge and there is no statistical significance.

When asked to define exclusive breastfeeding 77% of the nurses were able to give a correct definition of this concept. Responding to a question on benefits of breastfeeding, 49(75%) will encourage it because it is hygienic and source of energy, 45(69%) mentioned that it contains immunoglobulins (disease fighting substances), 40(62%) stated that it is a family planning method. Just more than half 52% mentioned that breast milk provides all fluids needed by the baby and 21(32%) stated that it is cheap and readily available, and only 14 (22%) mentioned promotion of

bonding-in. Generally nurses have good knowledge on benefits of breastfeeding and will encourage mother to breastfeed.

Table 11. Nurses’ knowledge of common breastfeeding problems that mothers may experience during the first 2-3 months.

Responses	Freq	%
Sore nipples	58	82
Tender swollen breast	40	62
Insufficient milk	28	43
Baby refuses to suck	25	38
Breast abscess	24	37

Generally most nurses 69% have good knowledge regarding breastfeeding problems that mothers are likely to experience during the first 2-3 months after delivery and knew at least more than three breastfeeding problems.

4.3.1 Breast examination

When nurses were asked to state their main concerns during breast examination almost all nurses 60(92%) will look for lumps during breast examination, 50(77%) mentioned abnormality of the breast, 37(57%) stated breast engorgement and 22(34%) mentioned infections. Regarding management of breast engorgement, 40(61%) will encourage mothers to continue breastfeeding, 35(54%) will advice the mother to express after breastfeeding, 13(20%) will apply cold compress to relief pain and continue breastfeeding for at least (six months) 10(15%) will give analgesics and keep breasts clean. A majority of nurses have demonstrated poor practice in management of breast engorgement and less competence in other important areas like use of cold compress to relief pain and asking the mother if the baby has any suckling problems.

4.3.2 Postpartum Infections including Sepsis

Postpartum infections - *practice*

When asked to state how they detect postpartum infections, 62(94%) will suspect infection if the temperature is more than 38°C, 46(77%) mentioned pelvic pain and inflammation along the caesarean section area which needs further investigation, and

45(69%) mentioned the presence of a foul or abnormal vaginal discharge and only 31(47%) will suspect infection if there is poor involution within the first eight days of puerperium. Most nurses were able to state at least more than two signs and symptoms of infections, (sepsis) and have demonstrated good practice in diagnosis of postpartum infections. Pyrexia and pain are the main determining factors for nurses to suspect post delivery infections.

Responding to a question on management of postpartum infections a majority 58(89%) will give antibiotics, 30(46%) will refer to the hospital if the patient does not respond to treatment within two days, and 25(38%) would in addition to antibiotics, give intravenous fluids and antipyretics. More than half of the nurses will at least use more than one treatment modality and refer to prevent complications. Just more than half of nurses 37(57%) have shown good practice in management of postpartum infections regardless of length of service and facility status.

When nurses were asked to state measures they would take to prevent infection in a woman delivering under their care, a majority 46 (71%) mentioned use of sterile gloves during delivery, 43(66%) will use sterile delivery packs and ensure good management of third stage of labour, and 25(38%) would avoid frequent vaginal examination. On average 49(75%) of nurses have demonstrated good practice on measures to take in prevention of postpartum infections.

Postpartum infections - *knowledge*

Regarding causes of postpartum infections, almost all nurses 64(98%) mentioned unhygienic delivery procedure and poor care of the wound as major predisposing factors to postpartum infections. However, 18(27%) mentioned frequent vaginal examination, and 15(23%) stated retained products of conception as most common causes of postpartum infections. Most nurses 54(83%) have good knowledge and were able to mention at least more than three common causes of postpartum infection.

Table 12. Advice nurses will give to a mother on puerperal sepsis

Responses	Freq	%
Good personal hygiene	48	(74%)
Frequent cleaning of the vulva	45	(69%)
Frequent changing of pads	35	(54%)

When asked what advice they will give to a woman regarding puerperal infection (sepsis) 48(74%) mentioned importance of good personal hygiene, 45(69%) will discuss importance of frequent cleaning of the vulva as good measures to reduce the risk of getting infection. Just over half 54% mentioned frequent changing of pads and sitz bath. On the whole a majority of nurses have good knowledge in prevention of sepsis.

A further analysis was done to assess whether there is an association between nurses' knowledge in prevention of puerperal sepsis by age, facility and length of service. Results show that a majority of nurses working at the hospital 88% and those aged forty years and above 78% will most likely give more advice than other nurses. However the results were not statistically significant.

Responding to a question "**How do you prevent neonatal tetanus**"? 60(90%) will give anti tetanus vaccine to the mother during pregnancy, and the baby, 50(77%) mentioned cleanliness when cutting the umbilical cord, 40(63%) will encourage hospital delivery, 29(43%) will educate (TBAs) to practice hygienic measures during delivery and 21(38%) will advice mothers to avoid using cow dug on the umbilical cord. Generally nurses have demonstrated good knowledge on measures to take to prevent tetanus with a majority mentioning vaccination and good personal hygiene.

4.3.3 Postpartum Anaemia

Postpartum anaemia - *knowledge*

Responding to a question on common causes of post delivery anaemia in their area, a majority 54(83%) mentioned poor dietary habits and infections like (malaria) as major concerns, and 32(49%) stated antipartum and postpartum bleeding, and too frequent pregnancies. There was no mention of worm infestation as a common cause of anaemia in the area. Generally, all nurses have demonstrated good knowledge on causes of postpartum anaemia. However, nurses should design measures to provide mothers within appropriate information on good nutrition, and child spacing including prevention of malaria. A majority 85% of nurses new the cut-off point for severe post

delivery anaemia. A further analysis was performed to assess if there was an association between nurse' knowledge in management of post delivery severe anaemia by age, facility status, length of service and qualifications.

Table 13. Nurses' practice in management of postpartum severe anaemia
Knowledge on management of post delivery severe anaemia

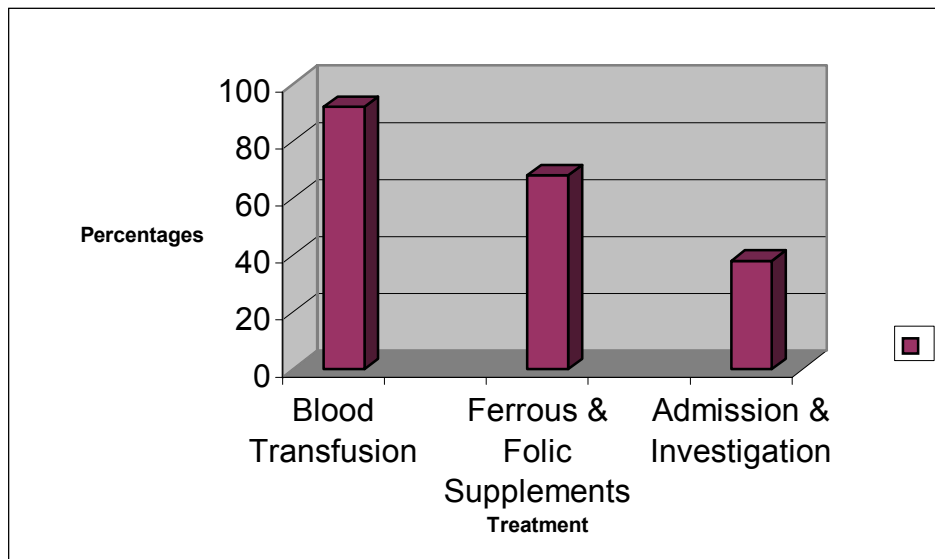
	Good knowledge %	Poor knowledge %	P-value
Age			
≤ 39 years	90	10	.555
≥ 40 years	92	8	
Facility			
Clinic	80	20	.028
Hospital	96	4	
Length of service			
≤14 years	96	4	.388
≥15	87	13	

Generally a majority more than 90% of nurses at various levels has demonstrated very good knowledge in management of postpartum severe anaemia. However, a significantly higher proportion of nurses at the hospital than at the clinics had a good knowledge in this matter. There is a degree of association between management of post delivery severe anaemia and type of facility (P=0.028).

Post delivery severe anaemia - practice

Responding to a question on signs and symptoms of anaemia, 45 (69%) stated history of antipartum or postpartum bleeding, persistent headache and pallor, 41(65%) would suspect anaemia if the woman complains of dizziness and excessive fatigue, 12(18%) if a woman gives a history of recent attack of malaria. Most nurses were able to give at least more that two signs or symptoms of anaemia and have shown competence in anaemia detection. A further analysis was done to assess if there is an association between nurses' knowledge in anaemia detection by age, length of service, facility and qualifications. Results showed no statistical association.

Fig 2. What nurses will do to manage post delivery severe anaemia



When nurses were asked to state how they manage post delivery severe anemia, almost all nurses 60(92%) will give blood transfusion. Several nurses mentioned more than one treatment modality for anaemia and 25(38%) will refer for admission and further investigation. None of them mentioned dietary treatment or screening for parasites. Almost 66% have demonstrated competence in management of severe anemia.

On detection of post delivery severe haemorrhage, 45(69%) mentioned the presence of bright red blood with or without clots, 44(68%) mentioned vaginal bleeding more than 500ml, 41(63%) mentioned increased respiration and only 19(28%) will be concerned if pulse is rapid or there is sudden drop in blood pressure and increased thirst. On the whole, only a small proportion 18(28%) of nurses have demonstrated poor knowledge.

4.3.4 Summary of management of postpartum activities.

An analysis was further done to assess whether there is an association between nurses' knowledge in management of postpartum activities by type of facility. Findings are reflected on the table below.

Table 14. Nurses' knowledge in management of postpartum activities by facility

Activity		Facility		Total %	P-value
		Clinic	Hospital		
Breast Examination	Poor	24	12	17	.229
	Good	76	88	83	
Management of breast engorgement	Poor	76	82	80	.524
	Good	24	18	20	
Management of breastfeeding problems	Poor	12	22	18	.228
	Good	88	78	82	
Causes of post delivery anaemia	Poor	52	40	45	.344
	Good	48	60	55	
Detection of anaemia	Poor	64	58	60	.603
	Good	36	42	40	
Effects of post delivery severe anaemia	Poor	44	35	38	.468
	Good	56	65	62	
Causes of puerperal sepsis	Poor	8	22	18	.129
	Good	92	78	82	
Management of puerperal sepsis	Poor	26	15	20	.202
	Good	74	85	80	
Management of postpartum severe anemia	Poor	20	3	9	.028
	Good	80	97	91	

There are significantly more activities that have good knowledge than poor for all elements. A majority of nurses have good knowledge in management of post delivery anemia but there are some who do not know. However, a significantly higher proportion of nurses at the hospital than at the clinic had a good knowledge on this matter ($p=0.028$).

4.4 Postpartum Assessment Activities

Examination of the baby and mother

This activity should start immediately after delivery; continue during puerperium and again prior to discharge.

a). To ensure that the baby receives quality care the examination should include:

- i). Checking for vaccination status and giving BCG and Hepatitis B (if there were not given).
- ii). Advice on exclusive breastfeeding.
- iii). Checking for skin condition, umbilical cord and genitalia and grasp reflex
- iv). Checking for eye infections (ophthalmic neonatorum) and jaundice.
- v). Checking for bowel motion and micturition.

- vi) Checking for head control and abnormalities (microcephaly or hydrocephaly)
- vii) Weight and giving the Under-5 Card

b) Examination of the mother should include:

- i) Blood pressure checking
- ii) Screening for haemoglobin level
- iii) Examination of the breast and advice on exclusive breast-feeding
- iv) Checking the perineum (pelvic flow) and state of the scar
- v) Discussing family planning and safer sex
- vi) Assess general condition

An informant is considered having good practice and is given a score if she/he performs three or more of these activities, and having poor practice and given zero scores if she/he performs less than three of the above mentioned activities.

4.4.1 Examination of the baby - *knowledge*

When nurses were asked, “**What do you examine the baby for just prior to discharge**”? 49(76%) will check for skin colour and congenital abnormalities, 48(74%) mentioned vaccination status, 19(23%) stated bowel motion and maturation, 10(16%) eye infections and jaundice and only 7(11%) umbilical cord. Generally, more than half of the nurses have poor knowledge in examination of the baby. Furthermore, there was no mention of other major areas like checking for breast-feeding pattern, head control, grasp reflex and weight including adaptation to extra uterine life and respiration.

Responding to a question on prevention of neonatal hypothermia, a majority 54(83%) will dry and cover the baby, 47(72%) will initiate breastfeeding immediately, 41(63%) will give the baby to the mother immediately after birth (rooming-in), and only 14(27%) would avoid bathing the baby during the first twenty-four hours. On the whole just over half 36(55%) of nurses have good knowledge in prevention of neonatal hypothermia. A further analysis was done to assess if there is an association

between nurses' knowledge in examination of the baby by age, facility, length of service and qualification.

Table 15. Nurses' knowledge in examination of the baby by age, length of service, and facility type.

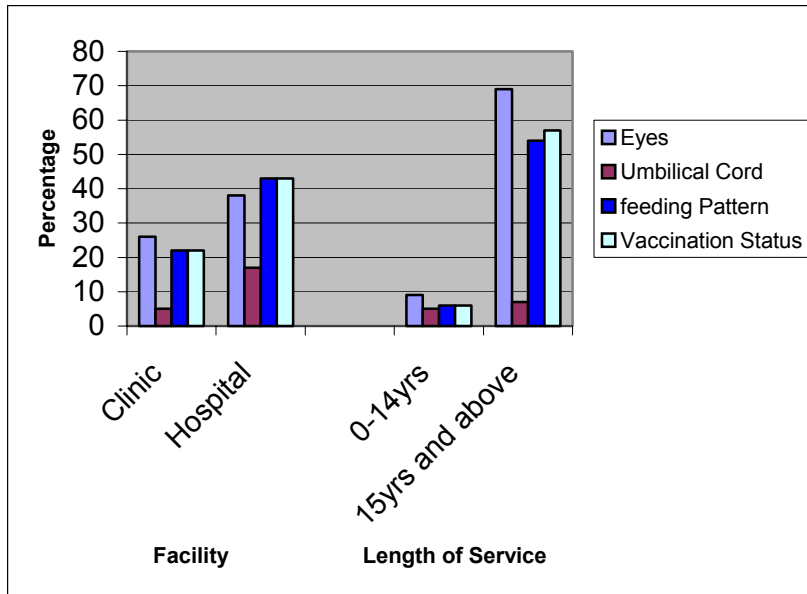
	N=65	Poor Knowledge	Good Knowledge	P-value
What do you examine the baby for just prior to discharge?		%	%	
Age	≤ 39 years ≥ 40 years	45 58	55 42	.279
Length of service	≤ 14 years ≥ 15 years	48 55	52 45	.329
Facility	Clinic Hospital	60 48	40 52	.326

There is very little difference in knowledge of examination of the baby between the two groups. Almost more than half of the nurses have poor knowledge at both places regardless of age, qualifications, and length of service and facility status. However, about 60% of nurses at the clinic have poor knowledge, and almost half of the hospital nurses.

Examination of the baby - *practice*

Findings from the non-participant observations on examination of the baby

Fig 3. Distribution of activities performed by nurses during examination of the baby prior to discharge



Results show that just more than 50% of nurses with more than fifteen years in service performed most of the examination. Generally the majority of nurses have performed poorly in all areas with regard to examination of the baby. Checking for condition of the umbilical cord has been poorly done, with just less than 20% of nurses checking for this vital area. On the whole, nurses have demonstrated poor practice in performing examination of the baby.

However, a majority of nurses confirmed with the mother whether the baby had passed urine or meconium. All babies were given BCG and Hepatitis vaccine, a birth notification form and under-5 card were issued prior to discharge if none had been given before. Most nurses confirmed the baby's weight with the mother before endorsing it on a child welfare card.

All midwives at the hospital mentioned that doing a thorough examination of the baby was not necessary because paediatricians examined all those with health problems prior to discharge. On the other hand those at the clinic felt the examination was appropriate because following discharge the baby may only come for review after two or more months.

4.4.2 Examination of the mother - *Knowledge*

Responding to a question **“What do you examine the mother for during the first hour after delivery?”** Almost all nurses 63(96%) will check perineum for condition of the scar, 63(96%) mentioned vaginal flow to assess haemorrhage, and 26(40%)

would examine breast and assess general condition of the mother. None of the nurses mentioned checking vital signs like blood pressure and pulse that may suddenly change as the body tries to adjust to the non-pregnant state. Majority of nurses 60(92%) have good knowledge in examination of the mother. An assessment was further made to assess if there is an association between nurses' knowledge in examination of the mother by length of service, qualification and facility.

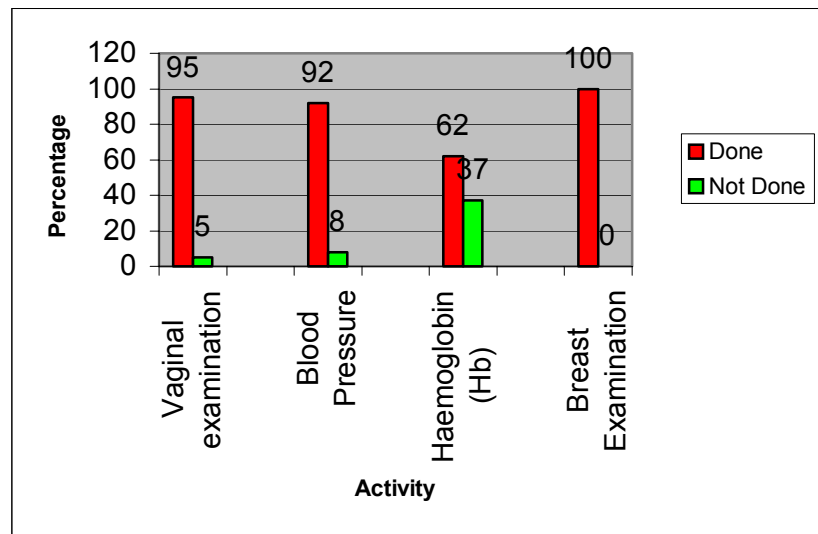
Table 16. Nurses' knowledge of examination of the mother by length of service, qualification and facility type.

	N=65	Poor practice	Good practice	P-value
What do you examine the mother for during the first hour after delivery?		%	%	
Length of service	≤14 years ≥15 years	3 10	96 90	.050
Qualifications	Midwifery only Midwifery and others	6 15	94 86	.245
Facility	Clinic Hospital	20 0	80 100	.003

A majority of nurses have good knowledge in examination of the mother post delivery. At least all hospital nurses 100% have good knowledge compared to none at the clinic (P=0.003). Thus the main determining factor for good practice is being at the hospital.

An observation was further done to assess how nurses perform the examination of the mother (see fig 4).

Fig 4. Findings from non-participant observation during examination of the



mother.

Results show that almost all nurses 92% examined the mother for more than three vital areas. A majority 98% of nurses examined the breast, 95% performed a vaginal examination to assess pelvic flow and condition of the vulva, checked blood pressure and 62% screened for haemoglobin level. Results further show that at least 37% of mothers were not screened for (Hb) level. (Screening for (Hb) level for mothers in labour should be done on admission and after delivery and results endorsed on the delivery summary sheet. No screening is done during the 6-8 weeks examination at various clinics, and this may account for the 37% reflected in (fig 4). However, a majority 80% has demonstrated good practice in examination of the mother and can manage with competence.

4.5 Postpartum Family Planning and Exercises

Family planning - Knowledge

Asked to state when they would advise a mother to start family planning after delivery, a majority 63(96%) mentioned 6-8weeks when the woman goes for the end of puerperium assessment as the ideal time. Regarding what they will discuss with mothers on child spacing, a majority 55(86%) will discuss safer sex and family planning, 50(71%) mentioned sexual life and slow return to non-pregnant state (hormonal changes), 15(21%) mentioned lack of sexual desire, and only 10(7%) will discuss gradual return of sexual feelings. Most nurses have good knowledge and would mainly discuss and give advice on safer sex and family planning including

benefits to mother and baby. However, there is knowledge deficit among nurses in discussing concepts like lack of sexual desire and gradual return to sexual life.

Family Planning - *Practice*

Findings from observation show that a high proportion 23(92%) of clinic nurses discussed and gave advice on family planning to mothers compared with 17(43%) at the hospital. However, results further show that most nurses 62% did not have time to explain various methods of family planning nor demonstrate to mothers during the examination. This means that family planning was just mentioned as a postpartum activity and not discussed in more detail. There is poor practice among hospital nurses ($P= 0.0001$). This shows a close association between practice in family planning and facility status. Thus being at the clinic is the main determining factor for good practice in family planning.

Postpartum exercises - *knowledge*

When nurses were asked, “**Do you ever discuss or teach mothers pelvic exercises**”? More than half 40(62%) responded positively, when further asked to state what they discuss or teach mothers, 20(31%) mentioned type of exercises, 16(25%) benefits of exercises, 11(16%) how to do the pelvic exercises and only 7(11%) mentioned when to do exercises. A majority of nurses 77% have demonstrated poor knowledge in all aspects related to providing mothers with advice and information on pelvic exercises.

Postpartum exercises - *Practice*

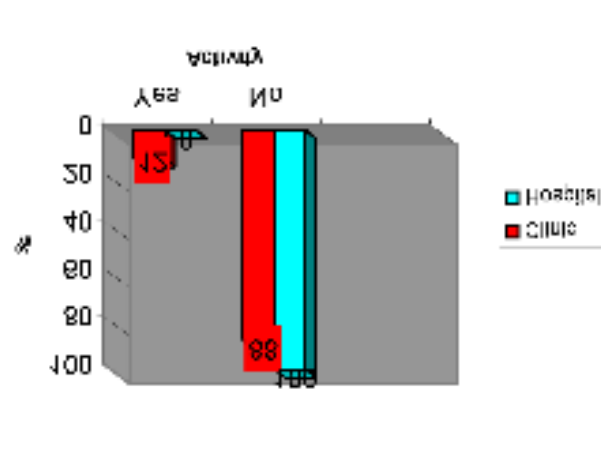
Results from observation show that a high proportion of nurses 51(79%) neither discuss nor inform mothers of the importance postpartum exercises during postpartum assessment. Further analysis indicates that a high proportion 37(93%) of hospital nurses do not discuss nor explain the importance and benefits of exercises compared to 8% at the clinic ($p=0.0001$). Thus showing that there is an association between discussing postpartum exercises and facility status. Regarding demonstration of exercises the majority 62(95%) of nurses performed poorly. On availability and provision of educational materials (leaflets/posters) to mothers, a majority 61(94%) neither had nor gave mothers such useful educational materials. Generally, nurses have demonstrated very poor practice in all aspects related to postpartum exercises.

A further analysis was done to assess if there is an association between practice in discussing postpartum exercises by length of service and facility status. Results were not statistically significant. On the whole a high proportion of nurses 96% have demonstrated poor practice in giving advice, counseling and demonstration of postpartum exercises including giving educational materials.

4.6 Follow-up Care (Home visits)

When asked about their participation in home visits, only 3(12%) of nurses from the clinics responded positively to the question. When further asked to state how soon, they all mentioned one to two weeks following discharge. Regarding problems that prevent them from following mothers at home, a majority 75% mentioned shortage of staff, 38% stated poor referral system between hospitals and clinics, 15% poor working conditions and 10% mentioned time constraint. Generally, 95% of nurses have demonstrated poor practice in conducting home visits regardless of age, length of service and facility status.

Fig 5. Distribution of home visits by facility



4.7 Advice, Information/Counseling and Support

i) Explanation of care

From 65 nurses observed as they examined the mother and baby, a majority 60(92%) explained what they were doing, 48(74%) gave advice on where to seek help in future and 39(60%) involved the mother in discussing and planning for her care. However, only 28(43%) explained the outcome of the examination to

the mother. On the whole, most nurses have demonstrated a fair practice in providing mothers with information advice and support on family planning.

ii) Advice on feeding, self and baby cares

At least 47(72%) discussed the benefits of breastfeeding, and 45(69%) gave advice on self-care (care of the wound), child welfare clinic and immunizations, and only 23(37%) gave advice on when to go for the 6-8weeks assessment. None of the nurses mentioned the importance and benefits of this assessment.

Regarding advice on baby feeding, 46(71%) briefly discussed the importance and benefits of breastfeeding to both mother and baby and 46(71%) involved mothers and allowed them to participate in making decisions on issues that affect their well-being. None of the nurses mentioned lactational amaenorrhoea method (LAM). Most nurses 49(75%) have demonstrated good knowledge in providing mothers with information on baby feeding, child welfare including immunization and care of the wound. However, there was no association between practice in giving advice on baby feeding, self-care and length of service and facility status.

4.7.1 The 6-8 week's assessment

Findings show that more than half of the nurses 40(62%) advised the mother to go to the nearest facility for the 6-8 weeks assessment and to take the postpartum summary form. Only 19(48%) advised mothers to bring their babies along, as they will also be due for assessment. None of the nurses mentioned the importance of the assessment to the mother. Most nurses have shown less competence and demonstrated poor practice in providing information to mothers on 6-8 weeks assessment. This may explain the low attendance by mothers at this particular maternal health service in Botswana.

A further analysis was done to assess whether there is an association between advice given on the 6-8 weeks examination by facility, length of service and age. Results show that more than half 40(60%) of the nurses have poor practice regardless of age, length of service and facility. A significantly high proportion 84% of nurses at the

clinics has good practice ($P= 0.003$). This implies that the main determining factor for giving advice is being at the clinic.

4.8 In-service training and support

Responding to the question “How often do you attend in-service courses within a year”? The majority 69% said they have only attended less than three while only 30% had at least attended three or more in-service courses. On the whole there is poor participation by nurses in in-service courses. When asked to state what prevents them from providing quality care, 78% mentioned shortage of staff, 12% said poor working conditions and 10% poor supervision and lack of support from managers. However, 67% mentioned that they were happy working as midwives while 37% felt unhappy at work.

4.9 Equipment, Drugs and Logistics

4.9.1 Equipment

Responses from direct personal interviews show that among all staff interviewed in a total of 14 facilities had sufficient supply of family planning packs except the two hospitals. Almost all facilities had blood pressure machines, access to a laboratory, and 83% had examination lamps. At least 60% had roadworthy ambulances, 97% had functioning telephone and 85% examination coach, 73% vaginal packs and baby weighing scales 76%. A slightly higher proportion 60% shortage of road worthy ambulance was observed at the hospital compared with only 8% at the clinic ($P=0.0001$). Thus family planning is more available at the clinics, and vehicles are at least available at one third of the clinics and hospitals respectively.

Despite shortage of family packs, which was mainly reported at the hospital, a majority of facilities had sufficient supply of equipment. Almost all nurses mentioned problems of repair and maintenance of blood pressure machines that frequently break as a major concern. ($N=65$) which is the number of nurses interviewed from each of the 14 health facilities visited.

4.9.2 Drugs

An analysis on availability of drugs shows that 79% of the facilities had oxytocic drugs, non of the nurses reported shortage of anti-hypertensives, intravenous fluids, and commonly used antibiotics like (Metronidazole and penicillin). Clinic nurses reported a significantly high proportion of shortage of oxytocic drugs of at least 14(56%). On the whole a majority of health facilities had sufficient supply of the selected drugs (P=0.000). Oxytocic drugs are mostly available at the hospital where a majority of mothers are expected to deliver.

4.9.3 Logistics

Findings show that 63% of the facilities had admission and discharge registers, 97% postnatal registers and surgical gloves, almost half 50% had safe motherhood protocol, 96% uristics, 92% staff criteria and only 42% had family planning commodities. Generally there is sufficient supply of logistics at the facilities I reviewed.

4.9.4 Summary

This chapter has analyzed and presented findings of the study. Among demographic characteristics no difference was observed between mean scores of informant's age and length of service. It has been found that a majority of nurses have demonstrated good knowledge and practice on management of postpartum activities. At least 20% of clinic nurses have poor knowledge in management of post delivery severe anaemia compared with only 3% at the hospital. However, hospital nurses are more knowledgeable in examination of mother and baby than their colleagues at the clinics. Furthermore, a majority of nurses have good knowledge in management of breastfeeding problems and giving advice on self and baby care. Most nurses have shown competence in prevention of postpartum infection, neonatal hypothermia, promoting bonding-in and examination of the mother.

A majority of nurses have demonstrated poor practice in examination of the baby, management of breast engorgement including giving advice to mothers on family planning and pelvic exercises. Furthermore, 62% of nurses have

performed poorly in providing mothers with basic information on the 6-8 weeks assessment. All nurses at the hospital neither had nor gave postpartum educational materials to mothers compared with only 3% at the clinic.

Similarly, a significantly high proportion of nurses have demonstrated poor practice in giving advice to mothers on pelvic exercises, while 93% did not give educational materials (posters) on postpartum exercises, and 79% did not discuss with mothers how to do pelvic exercises. A majority of nurses have demonstrated very poor practice in home visits as 95% of them hardly follow patients at home following hospital discharge. At least 78% mentioned shortage of staff as a contributing factor to poor quality care and 39% alluded to lack of proper referral system between hospitals and clinics regarding discharged mothers who need assistance at home as major contributing factors to their poor performance. Despite all these limitations on efforts to provide information to women, a majority of nurses have demonstrated good knowledge and practice and provide quality care to mother and baby during the immediate postpartum period. With close supervision, support and refresher courses in Safe Motherhood, the scope for improvement exists.

Chapter 5

5.0 Introduction

The aim of the study was to assess the quality of care midwives provide during postpartum period. Basing on literature review and study findings the discussion will therefore address findings as reflected in the results with special emphasis to and geared towards answering the research question. The study utilized a sample of convenience among practicing midwives (N= 65) actively involved in provision of maternal child services and family planning in twelve primary health facilities, a primary and a referral hospital in northern Botswana. Though our study is not statistically representative and only reflects what is happening in a small area, these findings could still be generalized, as they may not be very different from what is happening in various other parts of Botswana. Furthermore, results generated could be useful and beneficial to patients, health care providers and policy makers in Botswana.

This study identified that most nurses provide quality care during immediate postpartum period. A majority of nurses have good knowledge and practice in management of postpartum activities but there are some areas that are not well done. Findings further show that 9% of clinic nurses have poor knowledge in management of post delivery severe anaemia. Almost all nurses have good knowledge in promotion of breastfeeding including its benefits to mother and baby. However, a majority of nurses have good knowledge in most postpartum activities but poor practice on the same area. Almost all nurses have good knowledge in management of breast engorgement, follow-up care, counseling on family planning and pelvic exercises but have poor practice on the same elements. Most nurses provide limited information to women on the importance of the 6-8 weeks assessment. Among all facilities, a majority had sufficient supply of equipment and consumables and less than half had family planning packs.

5.1 Management of postpartum activities

Our study has shown that there are significantly more nurses that have good postpartum practice than poor. A majority 80% of midwives has good knowledge and practice on management of postpartum activities. This is highly commendable

because time during and following birth is critical to mother and baby. They need skilled health professionals who can make early detection of problems, give appropriate treatment and refer before complications occur. But there are some areas that are not well handled. Based on existing knowledge and practice among nurses, there is scope for improvement. Nurses need to be supervised and also receive in-service training to improve practice where they work

5.1.1 Breast-feeding

Findings show that nurses have generally demonstrated good knowledge and practice on most of breastfeeding activities. However, they have shown poor knowledge in steps to successful breastfeeding and practice in management of breast engorgement. Knowledge deficit on these areas implies that mothers who seek assistance from health care providers are deprived basic and appropriate information they may need during pregnancy, delivery and puerperium regarding advice and benefits of breastfeeding. Limited knowledge and skills among nurses implies that they may not provide quality care that meets breastfeeding needs of the clients. Lack of breastfeeding support is known to be one of the factors that contribute to early termination of breastfeeding. Knowledge deficit remains a concern especially for clinic midwives who mainly work alone in remote and rural areas in Botswana and have to make independent decisions on patient care in the absence of a medical doctor. Poor knowledge and skills places midwives at risk of developing lack of confidence and unaccountability for what may happen to patients in the process of their nurse-client interaction.

Studies have shown that mothers have complained of conflicting information and a preoccupation of rules postnatally Stamp and Crowther, (1994). Inaccurate and inconsistent guidance from health staff has been recognized as a major obstacle to breastfeeding WHO, (1998). Unlike Stamp and Crowther (1994), this study did not identify conflicting and inaccurate information, but found that there was lack of information because nurses had limited knowledge in steps to successful breastfeeding. Studies have shown that, women in a London hospital have also complained that they were not informed of reasons such as induction of labour and no information

at all about breastfeeding Stamp and Crowther (1994). As observed by (WHO, 1998) skilled midwives can provide safe and non-traumatic care, recognize complications and manage them effectively or refer the client for advanced level of care. Poor quality care is one most common reason women give for choosing not to use available health services, and that health workers are often poorly trained and have insensitive attitudes.

During this era of HIV/AIDS and the current AIDS pandemic particularly in Botswana, nurses should be knowledgeable in areas related to HIV and infant feeding like exclusive breast-feeding risks and benefits, and management of breast engorgement. This will enable them to empower women with relevant information in order to make informed decisions about breast-feeding. One of the roles of nurses is to assist mothers to establish a satisfactory breast-feeding practice. A well-informed and skilled health worker can achieve this role.

Breast-feeding is one of the most contributors to neonatal, infant and child health, growth and development. Reports from UNICEF “Baby friendly hospital” and Mother-Baby Package (1994) have shown that benefits are greatly enhanced if breast-feeding starts within one hour after birth, with demand feeding and no prelacteal feeds. Apart from the clear nutritional superiority of breast milk, breast-feeding protects against infant deaths and morbidity. Infants who are exclusively breast-fed are likely to suffer only one-quarter as many episodes of diarrhoea and respiratory infections as babies who are not breast-fed. It is therefore important to ensure that nurses are equipped with knowledge and skills in order to provide advice, guidance and counseling to women who need to take decisions about breastfeeding their babies. Furthermore, a report by (UNAIDS, 1988) “Bellagio Consensus Conference” recommended that infected women should receive counseling including information about risks and benefits of different breastfeeding options and methods likely to be suitable to them. This could only be achieved if health workers have good knowledge and skills, and technical competence to provide such assistance. It is therefore necessary and important to have training and refresher courses to upgrade nurses’ knowledge and skills in breastfeeding and management of breast engorgement.

Providing skills to nurses would further strengthen their existing knowledge and practice on breastfeeding.

5.1.2 Postpartum infections including sepsis

It is estimated that 15% of all direct obstetric deaths are due to sepsis. The common causes are unhygienic delivery practices and ruptured membranes WHO, (1998). A report by UNICEF (1998) shows that in Botswana, maternal mortality increased from 200-250 deaths per 100,000 live births and infant mortality increased from 40-59.08 deaths per 1,000 live births for the period 1996-1999 respectively. Most deaths from sepsis could be linked to the type of care women received during pregnancy, delivery and postpartum period at various health facilities. However, findings from this study show that the majority of nurses have good knowledge in prevention, detection of postpartum infections, but only 57% has demonstrated good practice in management of postpartum infections. This may imply that a problem exists within the midwifery training, which may call for a review of the curricula or in supervision or both.

Consistent with recommendations by (WHO, 1988) this study found that more than two thirds of the nurses mentioned strictly adherence to hygienic measures during and after delivery, proper management of third stage and use of sterile equipment as main precautions. This means that if nurses practice what they know and say the risk of infection should be greatly reduced. However, this study found that though all nurses used gloves and sterile packs during vaginal examination mainly for self-protection, the technique used to clean the vulva and actual vaginal examination could predispose the women to puerperal infections. Studies by WHO (1998.7) have shown that health workers are often poorly trained, lack basic supplies and may not observe hygienic practices during and after delivery. This often predisposes women to puerperal infections. A similar observation was made by Driessen et al. (1990) as stated in AbouZhar et al. (1996) who found that hospital studies on maternal deaths have repeatedly noted poor quality care, inadequate obstetric experience among staff and shortage of equipment as contributory factors.

To bridge the performance gap of those with good knowledge but poor practice, the entry point should be on the practical aspect. It is of utmost importance to recognize nurses' knowledge and skills that already exist and ensure that it is put into practice.

This could be achieved through close supervision, support and monitoring of deliveries and postpartum activities. Training should be done to increase nurses' exposure to information, new ideas and benefits of scientific progress. In addition, student midwives on training should be supervised by their lecturers during practical assignment to ensure close monitoring and guidance instead of being left at the mercy of the already over worked midwives who may not cope.

5.1.3 Postpartum Anaemia

WHO (1998) estimates that more than half of the pregnant women suffer from anaemia, and this is one of the most significant indirect causes of death due to haemorrhage and sepsis. This calls for health workers with appropriate skills and knowledge who can take preventative measures, make an early diagnosis, and provide appropriate treatment and prompt referral before complications occur. This study identified that nurses have good practice on management of anaemia but some have limited knowledge in basic components on common causes, dietary treatment and lacked information on preventative measures. Furthermore, the study identified that 37% of mothers attending the 6-8 weeks assessment were not screened for haemoglobin level. This service is not provided at any health facility as part of the postpartum assessment activity. This adversely affects those mothers who were anaemic during pregnancy or had postpartum haemorrhage and may need a confirmation of their haemoglobin status in order to provide adequate treatment.

This limited knowledge among nurses and lack of resources to provide appropriate care is a concern especially in Botswana where nurses have regular contact with mothers during pregnancy, labour and puerperium and are expected to provide quality care. Studies have shown that in most developing countries, curricula used to teach obstetric skills, both for midwives and physicians are often out of date and do not reflect new techniques and research. Furthermore, many curricula are adopted from developed country models, and therefore do not reflect the reality of working conditions in developing countries WHO (1998). This may suggest the need to review the current pre-service curricula to assess how adequately it prepares nurses with skills in various obstetric care. Thus, the need for training nurses in midwifery skills is obvious to provide them with appropriate skills.

Training should provide health workers with basic skills for screening haemoglobin level. Moreover, efforts should be taken to provide facilities in remote areas with haemoglobinometers that could be used especially in rural areas where laboratory health services are limited. This would ensure early screening at first contact with those patients at risk or suspected to be anaemic and take appropriate measures and save life and fatigue.

5.2 Examination of the baby

Care during the postpartum period provides opportunities to check the baby's condition, identify any abnormalities and adaptation to extra-uterine life. It also provides an opportunity to give support to breastfeeding and enables health workers to detect and manage any problems early WHO, (1998).

Findings of this study show that just over half (55%) of nurses have poor knowledge and practice in examination of the baby. Results further show that a majority of nurses have good knowledge in prevention of hypothermia and promoting bonding-in, but poor practice in examination of the baby especially (cleaning) umbilical care and giving mothers advice on cord care. This study identified that during examination of the baby a majority of nurses did not check other areas like head control, grasp reflex and congenital abnormalities like microcephaly. Examination of the chest, observation of the breathing pattern and actual counting of respiratory rate was also not done. Contrary to recommendations by AVSC International (1999) that the umbilical cord should be cleaned 4-6 times a day, this study identified that a majority of midwives 91% gave little attention to examination of this vital area. This practice shows that some procedures were inadequately done while other relevant and valuable areas were left out.

Instead of asking the mother to put the baby to the breast, most nurses only asked mothers whether the baby had any suckling problems, passed urine or meconium and did not actually observe how the baby is breast-fed nor examine the genitalia to exclude any abnormalities. Failure to perform such vital activities reflected lack of essential skills and poor practice in examination of the baby. Lack of essential clinical skills and inadequate obstetric experience has adverse affects on patients because health problems are often missed or diagnosed late when very little could be done to

save life or prevent disability. This provides evidence that midwives do not provide quality care to babies during postpartum assessment. This poor practice increases the baby's chance of readmission with complications that could be prevented if a proper examination was provided prior to discharge.

This study however, concluded that due to lack of skills, limited knowledge and inadequate obstetric experience among nurses, contact with a midwife prior to discharge is no guarantee to information and quality care. This implies that examination of the baby is a neglected area of the postpartum assessment. If this practice by midwives continues, what is already good in the provision of postpartum care may become fragmented or destroyed when clients lose confidence.

5.2.1 Examination of the mother

Health workers' contact with mothers during the first hour post delivery is of utmost importance (WHO, 1998). During this period, health workers should be able to identify problems, like haemorrhage, poor uterine involution and how the mother is coping as the body adapts to the non-pregnant state, and provide appropriate advice and support. Studies by AbouZahr et al. (1996) and Safe Motherhood Fact Sheet, (1999) found that health workers are often poorly trained and may not observe hygiene practices when conducting deliveries. Such unhygienic practices predispose women to postpartum infections and complications or serious health problems. Lack of skills has been associated with inadequate and poor quality care.

However, findings of this study show that the majority 92% of nurses have good knowledge and more than two thirds have demonstrated good practice in examination of the mother. This was significantly pronounced among hospital nurses ($p=0.003$), thus showing a close association between the hospital and good practice. These results are reassuring especially that the study was done when the health care system in Botswana is experiencing a critical shortage of health professionals (nurses) and the impact of the HIV/AIDS pandemic. The majority of nurses were able to do a vaginal and abdominal examination, check for uterine involution, examine breasts and measure blood pressure.

Consistent with findings elsewhere by Bick and MacArthur, (1995), Stamp and Crowther (1994) this study identified that some important postpartum procedures like

screening for Hb level and pap smear were not done. In this study at least one third or more of mothers attending the 6-8 weeks assessment were not screened for anaemia. Though this arrangement is a national health policy practiced in all health facilities in Botswana, this study has identified it as a utilization barrier that deprives mothers from getting quality care despite having access to and contact with a health professional.

Bick and MacArthur (1995) made similar observations in their study of 1278 women interviewed six to seven months post delivery. They found that three-quarters of them with history of low haemoglobin level and postpartum haemorrhage had no blood test done. This indicates that nurses did not relate their procedure to the health needs and obstetric history of mothers. This demonstrates that even when access to health services is not a problem, women still do not receive adequate care when they reach a facility. This indicates the inadequacies and disparities that exist within the health care delivery system in Botswana compared to developed countries where women are screened for Hb during postpartum assessment. This could support the notion that screening for anaemia during postpartum assessment is inadequately addressed in Botswana.

Failure to screen women for anaemia post delivery may be associated with lack of technical skills and appropriate equipment to perform the procedure. Similar to findings of this study, Maibolwa et al. (1997) observed that health workers with limited skills provide inadequate care, which leaves most women to suffer adverse consequences because complications are either not identified or treated. However, despite short hospital stay this study found that no woman could be discharged before her Hb results were known and this helped with early detection and treatment.

5.3 Postpartum Family Planning and Exercises

5.3.1 Postpartum family planning

One of the concerns of a woman and her partner during the postpartum period is contraception. This reflects an obvious need to provide women with accurate advice, information and counseling on safer sex and family planning prior to discharge. Information on family planning is essential especially for adolescent women who are more vulnerable than older women to pregnancy related complications, and Sexually Transmitted Diseases including HIV/AIDS, and unsafe abortion.

This study identified that the majority of nurses have good knowledge in various family planning activities but actual practice is inadequate. Findings further show that more than two thirds did not have time to explain or counsel mothers on breastfeeding, and family planning methods and benefits prior to discharge. This inadequacy in teaching and failure to advice mothers was mainly observed among hospital nurses ($P=0.0001$). This implies that family planning activities are given low priority and remain an inadequately performed activity among hospital nurses. This lack of time mainly due to the current shortage of midwives in Botswana should not be used as a reason for failing to provide quality care. It is interesting to note that a majority of nurses had good knowledge on family planning activities but failed to put that to good practice.

This disparity suggests that midwifery-training curriculum is, or could be more theoretical than practical, suggesting that it does not provide nurses with skills applicable to the current midwifery practice. Poor practice could also be associated with lack of supervision, poor working conditions and low attendance of in-service courses already alluded to by the majority of nurses in this study. Consistent with findings of this study, Stamp and Crowther (1994) observed that mothers have complained that it was rather difficult for them to get all the information they wanted postnatally. This could suggest that nurses do not have relevant information and do not want to give inconsistent and conflicting messages.

Consistent with our findings, a study in Uganda WHO, (1998) found that only 28% of midwives had participated in any refresher courses at the time of the study. Similarly, results of this study reflect that only 30% of nurses had attended three or more in-service courses during the past twelve months. Poor participation in in-service courses

may result in lack of knowledge and skills and could explain why nurses did not counsel mothers on breastfeeding and family planning.

A study by (WHO, 1998) has shown that work overload, inadequate pre-service training and refresher courses in family planning and poor staff supervision are often associated with sub-standard care. This suggests the need to improve systems for supervising health workers and providing refresher and in-service courses on family planning and maternal health to improve nurses' knowledge and skills in these areas. A study by (WHO, 1998) has shown that fertility returns quickly after abortion and a woman may fall pregnant prior to establishment of menstrual period. This means that in the absence of appropriate advice and counseling, most women are at risk of unwanted pregnancies and complications of unsafe abortion.

There is evidence that despite certain cultural norms and traditions like in Indonesia and Mali where men have the ultimate authority, women feel that contraception use is beneficial, and it allows them to give love to their families and to participate in formal community activities. In Zimbabwe a woman explained, “without family planning and the consequent child spacing and limitation there is not quality of life”(WHO-Women's Voices 1998). This implies that though women value the benefits of contraception use as one strategy to improve their lives, gender norms play a major role in determining how and to what extent women can take advantage of the opportunity it offers. However, in Botswana, women may choose non-permanent F/P methods without the consent of their spouses though some men are totally against this practice.

5.3.2 Postpartum exercises

Experience has shown that postpartum exercises help to strengthen pelvic and abdominal muscles, helps in controlling haemorrhage and ensures a speedy uterine involution and recovery to the non-pregnant weight and figure. Findings of this study reflect that the majority of nurses have good knowledge but almost all demonstrated poor practice in providing mothers with information on postpartum exercises. This implies that nurses do not relate pre-service training to obstetric practice and thus provide sub-standard care.

A similar observation by Kebiditswe (1996, unpublished) indicates that some women who attended postnatal care in Botswana complained of lack of patience and poor attitude among staff, poor communication and lack of sensitivity to cultural and traditional practices. It follows that limited knowledge and poor practice among nurses contributes to their failure to relate the activity to the needs of women, thus their expectations are not met.

This study identified that almost none of the health facilities had relevant educational materials (posters) on postpartum exercises. This came as a surprise, because Maternal and Child Health/Education Unit (1992) has prepared booklets containing information on postnatal care that should be used and made available to women during postpartum period. It was also surprising to learn that some of the nurses did not know where to get educational materials. Similarly, Kebiditswe (1996, unpublished) observed that women did not mention posters as a source of information for postnatal activities. This indicates the lack of support, guidance and limited information that currently exists among nurses who provide maternal health services in Botswana.

Consistent with these findings, WHO (1998) has shown that providing mothers with information, advice and demonstrating how to do these exercises increases their knowledge and probably their practice as well. This means that women have limited information with regard the importance and benefits of postpartum exercises. This implies that a majority of women do not perform postnatal exercises at all, suggesting that postpartum exercises remain an inadequately addressed activity in Botswana. The need is therefore obvious to strengthen systems for supervision of health care workers and provide practical guidance and re-fresher training courses on maternal health services.

5.4 Follow-up care (Home visits)

Follow-up care is necessary even among women who deliver in institutions without complications, because the mother and baby's condition could change, and complications may arise after discharge leading to serious health problems if no assistance is given. Follow-up care should enable health workers to identify problems

like infection, provide advice on baby feeding, immunization and attend to breastfeeding problems like engorgement.

Findings of this study show that over 95% of nurses do not follow-up mothers at home following discharge. As observed by Makokha et al. (1994), MacArthur et al. (1991 & 1997) and Cooke and Barclay (1998), given the trend of early discharge and shortage of midwives in a majority of health facilities, women are more likely to be discharged before they get advice and information on various postpartum activities. This implies that women may lack knowledge on common problems they are likely to encounter, how to solve them and where to seek help. This justifies the need to make follow-up visits during the first week after discharge from maternity to assess the general condition of mother and baby and give advice.

However, clinic midwives have cited lack of a referral system between hospitals and primary health facilities (clinics) for women who have delivered as contributory factors to poor follow-up. The existence of such a system should provide clinic nurses with information on patients discharged from hospitals who need assistance. Similarly, a study by Li et al. (1996) observed that mothers discharged within 24 hours should be visited during the second and third day after delivery to check on pelvic flow and their general condition. However, Makokha et al. (1994) found that only 32% of women in Botswana were visited by health workers after discharge, even then the majority did not benefit from these visits because vital activities were not performed. This raises a lot of questions on the relevance of what is actually done during follow-up visits under the current set-up. This disparity between what nurses should do and what is actually done, and the difference between nurses' knowledge and practice poses a number of challenges for supervisors and pre-service training programme.

Studies have shown that majority of postpartum deaths from haemorrhage and sepsis could be prevented through continuity of care and prompt referral. However, similar to findings of this study, Williamson and Thompson (1996) found that women raised concerns regarding the lack of continuity of care, quality of advice and waiting time at health facilities. This calls for measures to be taken to start domiciliary nursing to address this state of affair. With the current shortage of midwives it is evident that a modality should be put in place to identify those in-need of help because it may not

possible to follow all discharged women. If follow-up is not possible for all women, at least a focused follow-up should be initiated for those who have or may develop specific problems.

5.5 Advice, Counseling and Support

i) Explanation of care

Empowering women with information regarding their health problems enables them to understand and articulate their health needs and to seek assistance without delay. Failure to give information keeps women “in the dark,” and creates a barrier between the consumers and service providers. This study identified that two thirds of nurses did not explain the outcome of care to mothers.

Similarly, Kibiditswe (1996, unpublished) observed that women complained that there were not told anything from the beginning of the examination to the end made similar observations. This implies that women are denied adequate and relevant information on postpartum activities. Unlike other studies, findings of this study show that a majority 92% of nurses informed and told mothers why they were being examined. This reflects some improvements in nurses’ attitude and client interaction, which has always been, associated with poor utilization of maternal health services in Botswana.

Women want appropriate information, and to be actively involved when providing care. But most frequently these basic needs are never met (WHO, 1998). Similarly, Kenny et al. (1993) observed that women want to be well informed about benefits, risks and to participate in decisions about their care. This means that empowering women with information may increase their participation and commitment to improve their health. Studies have shown that provider-client relationship is of utmost importance to women’s health seeking behaviour. Villaroman-Bautista *et al* (1990) as stated in AbouZahr (1996) argue that health workers should desist from being insensitive to women without paying adequate attention to their concerns.

This implies that improving communication between health workers and patients could have significant benefits for the overall quality of care. Similarly, Bhatia (1995) identified that services are in most instances not utilized even though available at the

doorstep. Reasons advanced were that women have knowledge deficits on the value and importance of postpartum examination. This may explain the noncompliance with postpartum activities like family planning, postpartum exercises and low attendance at the 6-8 weeks examination currently experienced at most health facilities in Botswana.

A study by Reading et al. (1982) on post-episiotomy shows that more than half was unhappy with the in-adequacy of preparation at the time of incision because they were not informed about the indications of the procedure before it was done. However, although this study did not interview mothers, a similar observation was made when a mother asked the nurse **“why she has been done an epsiotomy when delivering her third baby yet the procedure was not done when she delivered her second child?”** This shows that keeping women “in the dark” about their health status may lead to delayed seeking consultation, consequently a reduced ability to cope. Episiotomies are no longer seen as necessary interventions in normal births (WHO: care in normal births, 1998).

It follows that denying clients information regarding their health demonstrates lack of attention to their rights and is humiliating. Women may feel pressurized and not involved in making decisions on issues affecting their lives. Midwives failure to communicate effectively prevents women from asking questions and getting accurate information on issues that affect their health and social welfare. This therefore calls for the need to identify strategies to improve nurses’ attitude and information giving in various activities of the postpartum period.

ii) Advice on breastfeeding, self and baby care

Early contact with midwives and assistance and support with baby feeding has always been viewed by women as an important component of care in the postpartum period Yelland et al. (1998). Similarly, findings of this study indicate that most nurses 70% discussed benefits and gave advice on self-care to mothers but advice on baby feeding was briefly discussed. This suggests that midwives are responsible and do not neglect women’s immediate and long-term needs. As already stated, this brief discussion on breast-feeding reflects knowledge deficit among nurses in steps to successful breastfeeding and management of breast engorgement. Studies have shown that

mothers have knowledge deficit in self and baby care including care of the wound and would like to receive guidance, support and information on baby care (Frishbein and Burggraf, 1998). With the current HIV/AIDS situation in Botswana, women need information and advice on breast-feeding to enable them to make informed decisions about infant feeding. The need for refresher courses to provide nurses with knowledge and skills in this field is therefore necessary.

iii) Educational Material

Consistent with findings by Kebiditswe (1996, unpublished), this study identified that shortage of posters and educational materials on postpartum activities especially “pelvic exercises and breastfeeding” was common in most facilities. Lack of educational materials reflects the inadequacy of care and lack of support women receive despite utilizing maternal services. This implies that making use of available services is no guarantee to getting information and support from health workers. This seems to suggest that postpartum care remains an inadequately addressed area. In some facilities posters were locked in storerooms instead of being displayed at the service area where there are mostly needed. However, opportunities still exist for midwives to address this concern by improving supervision and ensuring that health facilities have enough educational materials that should be given to women prior to discharge. These posters could be helpful to mothers as reference materials at home when they encounter problems.

5.6 The 6-8 weeks assessment

Studies have shown that globally, attendance of women at the 6-8 weeks examinations is low. One reason advanced for this poor compliance is that consultations are sometimes done by persons unknown to the women, and women are badly informed about the event during labour and without enough time and patience (WHO, 1998). Unlike findings by WHO, (1998) this study identified that lack of information and advice given to mothers were the main reasons for poor compliance and low attendance at the 6-8 weeks assessment in Botswana. Moreover, contrary to observations made by WHO, (1998) it follows that postpartum assessment in Botswana is performed by any midwife on duty at that point-in time, who may be known or unknown to women.

The practice at all facilities does not make provision for women to be consulted by family doctors or nurses, thus findings by WHO, (1998) can not be used as a reason for the non compliance and low attendance at the 6-8 weeks examination in Botswana. However, this study identified that just more than two thirds of the nurses informed mothers to go to the nearest facility for the 6-8 weeks examination but the importance of the assessment was not explained. Thus, poor compliance and low attendance at the 6-8 weeks examination is often associated with women being poorly informed about the events during labour, lack of time and patience to listen and provide information. As already mentioned some important activities like screening for Hb for those women who were anaemic or had postpartum haemorrhage, and pap smear were inadequately done or not done at all. On the other hand some unnecessary procedures without indication like vaginal examination were done for women who had caesarian section even though the woman did not want to use intra uterine device (IUCD).

Similar sentiments are equally shared by Bick and MacArthur (1995), from their survey on “attendance, content and relevance of the 6-8 weeks postnatal examination” on 1278 women who responded to a postnatal questionnaire six to seven months post delivery. Their study showed that two thirds of women with intact perineum and almost half of those delivered by caesarean section under went vaginal examination. Though indications were not explained to women in this study, this implies that nurses just perform procedures, as routine without any relevance to the immediate obstetric needs of the woman at that point in time. This demonstrates limited knowledge among nurses and lack of sensitivity to the needs of their clients.

Furthermore, Bick and MacArthur (1995) observed that some women with stress incontinence were not more likely to have had a urine test. This test rules out the possibility for urinary tract infection, which may cause loss of bladder control. The authors however, acknowledge the fact that they did not know whether women reported this symptom to doctors assessing them. However, in this study none of the women examined had stress incontinence that could warrant urine testing.

In agreement with findings by Kebiditswe (1996,unpublished) Bick and MacArthur, (1995) and Yelland et al. (1998) this study observed that less than one third of nurses

at the clinic explained the importance of the postpartum examination to women during the assessment. This study identified that women's concerns related to perineal sutures, breast discomfort, hormonal imbalance and return to their non-pregnant weight and figure were hardly discussed with mothers. This confirms a report by Ministry of Health, (1992) which stated that women in Botswana have complained about lack of patience, poor communication and lack of sensitivity to traditional practices as contributing factors to poor attendance of the 6-8 weeks assessment. Similarly, Makokha et al. (1994) observed shortage of staff and lack of information on the value of maternal services as barriers to utilizing maternal health services in Botswana.

5.7 Equipment, Drugs and Logistics

Provision of an adequate supply of drugs, equipment and consumable supplies is critical to the successful implementation of activities. Inadequate logistical systems can lead to chronic and wide spread shortages. It is therefore essential that a realist selection, procurement and distribution system be put in place to ensure reliability and sustainability of supplies WHO, (1994).

This study identified that among facilities visited, more than two thirds had sufficient equipment necessary for providing postpartum activities. However, hospitals reported 95% shortage of family planning packs compared to only 6% for clinics. Although these results are statistically significant, the difference is not a concern in this study because unlike clinics, postnatal wards do not provide family services *per se*. However, the service is offered in another unit within the hospital where this study was not done. This means that this shortage does not affect the provision of quality care in this study.

Like other studies by (WHO 1998.7) similar weakness regarding shortage of transport in most hospitals has been identified by this study. Findings reflect that unlike clinic set-up, no ambulance was allocated specifically for maternity wards. The only available ambulance was shared among other units within the hospital. This arrangement disrupts service delivery system and prevents midwives from taking prompt action to assist women who may need their assistance outside the hospital environment. There is considerable evidence that deficiency in supply of drugs and,

equipment and physical amenities deprive women from receiving quality care. Unlike findings of this study, Driessen *et al.* (1990) as stated in AbouZahr *et al.* (1996) observed that hospital studies on maternal deaths have repeatedly noted lack of drugs and supplies or non-functioning equipment as contributing factors to poor quality care.

It is however, re-assuring to note that most health facilities recorded sufficient stock of oxytocic, anti-hypertensive and other necessary drugs used during postpartum period. This indicates that postpartum care is improving although more slowly than generally expected by service consumers. In addition, skilled and trained staff that is responsive to client's needs should ensure sufficient equipment, drugs and supplies to provide quality care. But due to limited resources it is not possible to have enough equipment, drugs and consumable in any real situation. But efforts should be made to ensure that basic and simple equipment is made available in accordance with the Mother-Baby Package/WHO recommendations (1994).

5.7.1 In-service training and support

Health workers with midwifery skills can in addition to providing quality obstetric care provide social and psychological support to delivering and new mothers (Safe Motherhood, 1998). This could be achieved if health workers participate regularly in social and health related in-service courses to up-date them with latest scientific developments. However, findings of this study show that a majority of nurses had only attended two or less in-service courses during the past twelve months. This could explain the limited knowledge and practice in management of certain postpartum activities identified among some nurses. In addition nurses have alluded to lack of support, supervision and poor working conditions as contributing factors to their poor performance. However, a majority responded positively to the issue of social welfare except just more than one third who reported to be unhappy at work. But this study did not look into causes of their unhappiness.

5.8 Conclusions

The results of this study present information about the quality of care midwives provide to women during postpartum the period. The study also provides data on midwives' knowledge and practice on management of various postpartum activities including their performance gaps and barriers to quality of care. As already stated the majority of nurses 80% have good knowledge and practice in management of

immediate postpartum activities. On the other hand, there are some who have poor knowledge and practice on steps to successful breastfeeding, examination of the baby and management of breast engorgement. It is interesting to note that neither age of respondent nor length of service was not a significant predictor of the type of service rendered. Some respondents have knowledge deficit on management of postpartum activities regardless of length of service and age. Although study results reflect good performance by most midwives, on the other hand there are some weak areas that need to be strengthened to improve the quality of care.

General:

- Most nurses provide quality care during immediate postpartum period, but some elements of follow-up and continuity of care like home visits are not utilized.
- A majority of nurses are knowledgeable in various postpartum activities but do not always practice what they know.
- Most nurses are knowledgeable on causes of puerperal infections including sepsis and measures to take to prevent infection.
- Management and practice varies between facilities but remains relatively similar with regard to age, length of service and qualifications.
- Non-existence of a referral system between primary health care facilities (clinics) and hospitals with regard to discharged delivered mothers who need follow-up at home contributes to lack of continuity of care.
- Lack of participation by a majority of nurses in in-service courses in any related health issues contributes to poor knowledge and inadequate care.
- Poor nurse-client interaction and dissemination of information to mothers has been identified as a barrier to quality care.

Specific:

- Poor participation in follow-up care (home visits).
- Limited knowledge in examination of the baby by clinic nurses.

- Lack of advice, information and counseling given to mothers on family planning, breastfeeding and postpartum exercises prior to discharge.
- Lack of educational materials (posters) on postnatal care and exercises.
- Insufficient information given to women regarding attendance and importance of the 6-8 weeks examination.
- Nurses have limited knowledge in steps to successful breastfeeding and management of breast engorgement.

5.9 Recommendations

Following the launching of the Safe Motherhood Initiative in Nairobi in 1987, many countries gave more attention to maternal health services. Botswana was no exception to this commitment. Thus these recommendations are made to address issues highlighted in the findings in line with Safe Motherhood Programme. They will include long and short-term measures.

a) Short term measures

- To bridge the performance gap there is need to provide in-service training courses on Safe Motherhood for midwives involved in maternal child health services.
- Unit supervisors should design strategies to ensure that health facilities have and keep enough supplies of posters and educational materials on postpartum activities including their distribution to women prior to discharge.
- This study suggests the need to incorporate provision of advice, information, counseling and support to mothers in the current discharge procedure.
- Management should design strategies and efforts directed towards changing health workers' attitude and improving communication and understanding between them and patients as this could have significant benefits for the quality of care.

b) Long term measures

- Nursing standards should be formulated to guide practice and service delivery, which will be used to assess the quality of care institutions themselves.
- Ministry of Health and Local Government and Environment should consider establishing a Referral/Communication system on delivered mothers. This

system would link primary health care facilities and hospitals and ensure that clinics nurses are informed about discharged mothers who need follow-up in their area.

- To ensure quality of care it is recommended that health managers should consider introducing Maternal Health Audit Systems (a retrospective analysis of obstetric and perinatal adverse events including deaths) to identify and assess how health systems treat patients and guide a search for improvements.
- In this period of re-orienting Home Based Care, it may be seen as an over stretching of resources, but there are mothers who because of the HIV/AIDS pandemic will most likely need follow-up at home which is not provided under the current set-up. Thus it is recommended that Ministries of Health and Local Government and Environment should look in possibilities to re-introduce domiciliary care for selected patients in the primary health support system.
- Regarding the disparity between knowledge and practice, this study recommends that the current pre-service midwifery training curricula be reviewed to assess whether its contents provide nurses with skills relevant to the current obstetric care.
- This study recommends that screening for anaemia be included in the current postpartum activities, and that all mothers who were anaemic, and on iron supplements including those who had postpartum haemorrhage should be screened for anaemia a week before they go for the 6-8 weeks examination.

Last but not list, it is recommended that another study be conducted using a larger sample from rural and urban areas to ensure generalization of the results.

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Appendix 3.

Informed Consent A.

I hereby give my consent by signing this form to participate in the study and to be interviewed by the researcher at my place of work. I understand that I will be part of the research study that focuses on the care midwives provide to patients during the postpartum period in the City of Francistown.

I understand that I will be interviewed at my place of work, and that I shall be asked questions about the services I provide to the mother and infant after delivery, prior to discharge and at 6-8 weeks when they come for review.

I have been informed that participation is voluntary and that I can discontinue participation any time if I so wish. I understand that the study results will be shared and used as group data, and will benefit both patients and health workers in the improvement of health care. The person to be contacted is TM Kebalepile, P.O. Box 10211, Tatitown, Botswana, Southern Africa. Tel-00267-212603.

E-Mailaddress: Kebalepiletap75@hotmail.com Fax: 00267-214613.

The study will be partially supported by NORAD.

Respondent's Signature-----

Researcher's Signature-----

Date -----

Date -----

Appendix 4.

In formed Consent B

(Non- Participant Observation).

I hereby give my consent by signing this form to participate in the study, and to allow the researcher to do a non-participant observation while the midwife attends to me. I have been informed that the researcher is a nurse midwife currently studying at the University of Oslo. The researcher will neither participate nor interrupt the midwife while she/he executes any nursing duties.

I have been informed that I will not be interviewed nor asked any questions during this process, and that participation is voluntary, and I can discontinue participation at any time if I so wish. The entire aspects of the study have been explained to me. I understand that my refusal to participate in the study will not interfere nor be linked to any health service I may need from any health facility.

Respondent's Signature----- Researcher's Signature-----
Date----- Date-----

Appendix 1.

TELEPHONE: 305169
FAX: 314697
TELEGRAMS: RABONGAKA
TELE: 2818 CARE BN
REFERENCE: MH 13/18/1



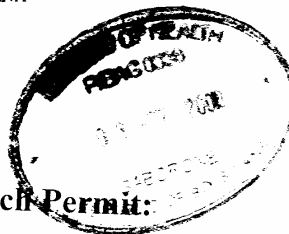
REPUBLIC OF BOTSWANA

MINISTRY OF HEALTH,
PRIVATE BAG 0038,
GABORONE.

5th July, 2000

Mrs T. M. Kebalepile
P. O Box 9932
Francistown

Dear Tapiwa Kebalepile



Grant of a Research Permit:

Your application for a research permit:

I am pleased to inform you that you have been granted permission to conduct research by Health Research Development Committee on the following studies:

"Evaluation of Care Midwives actually provide during postpartum period"

The permit does not give authority to enter any premises, private establishment or protected area without permission of concerned parties. Such permission should be negotiated with those concerned. You may also need to request permission from other relevant authorities, i.e. Hospital Management, Chiefs, Headmen, etc.

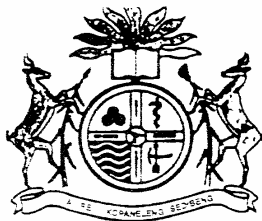
You are also requested to submit at least one copy of the findings of your study to the Ministry of Health, Health Research Unit.

Yours sincerely

Pilate Khulumani
For Permanent Secretary.

Appendix 2.

TELEGRAMS: "NORDICO"
TELEPHONE : 289242



PRIVATE BAG 4
MASUNGA
BOTSWANA

OUR REF:

YOUR REF:

**NORTH EAST
DISTRICT COUNCIL**

Ref: US 3499 I

17 March 2000

Mrs Tapiwa M. Kebalepile
P. O. Box 10211
FRANCISTOWN

Dear Madam,

**RE: REQUEST TO PRE TEST YOUR RESEARCH/STUDY TOOL IN TSAMAYA AND
TATISIDING CLINICS**

I acknowledge receipt of your letter dated 8/3/2000 on which you were requesting to use our two above mentioned clinics to pretest your study tool.

Permission is granted and we will request you to give us a copy of your tool so that we are aware of what type of information is required from us.

We wish you good luck in your studies.

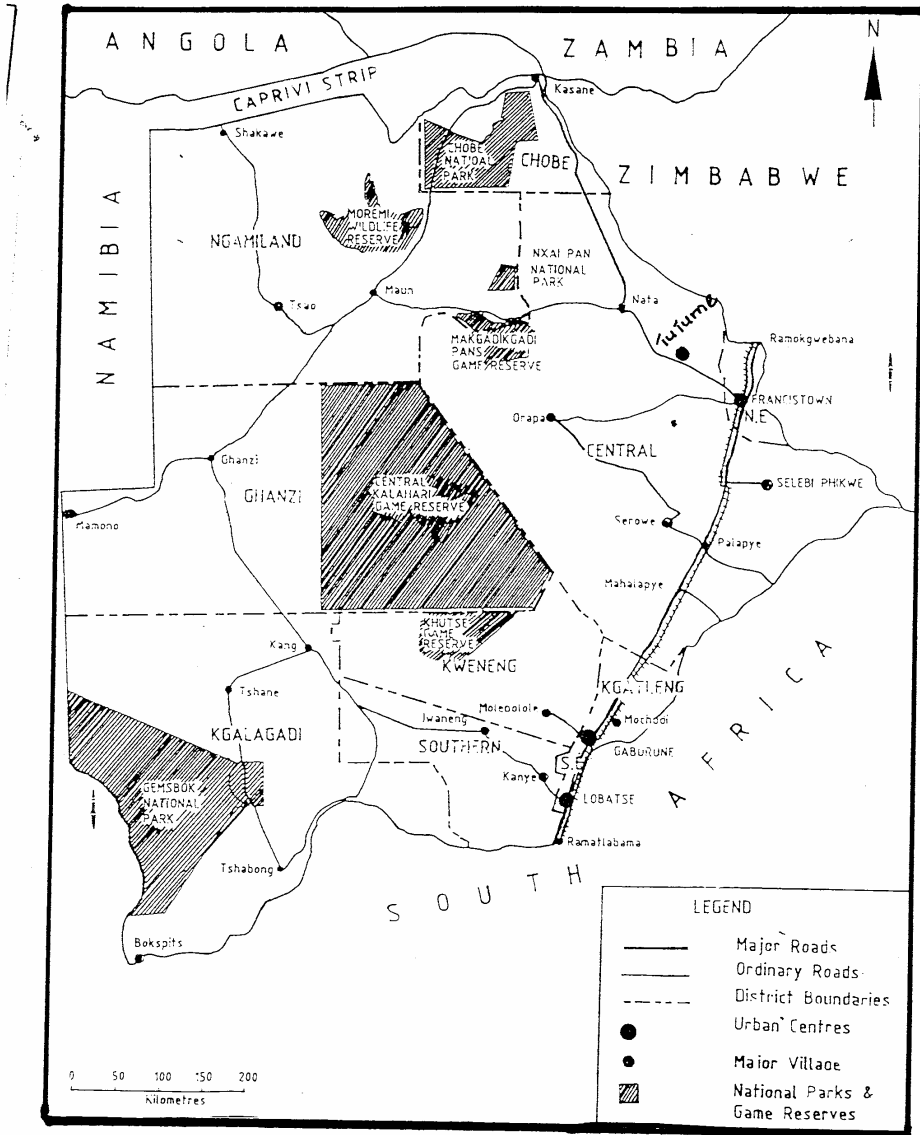
Thank you.

Yours faithfully,


.....
C.S. Mahube
for/Council Secretary

**Map 1. Republic of Botswana
Administrative Districts**

COUNTRY AND PEOPLE

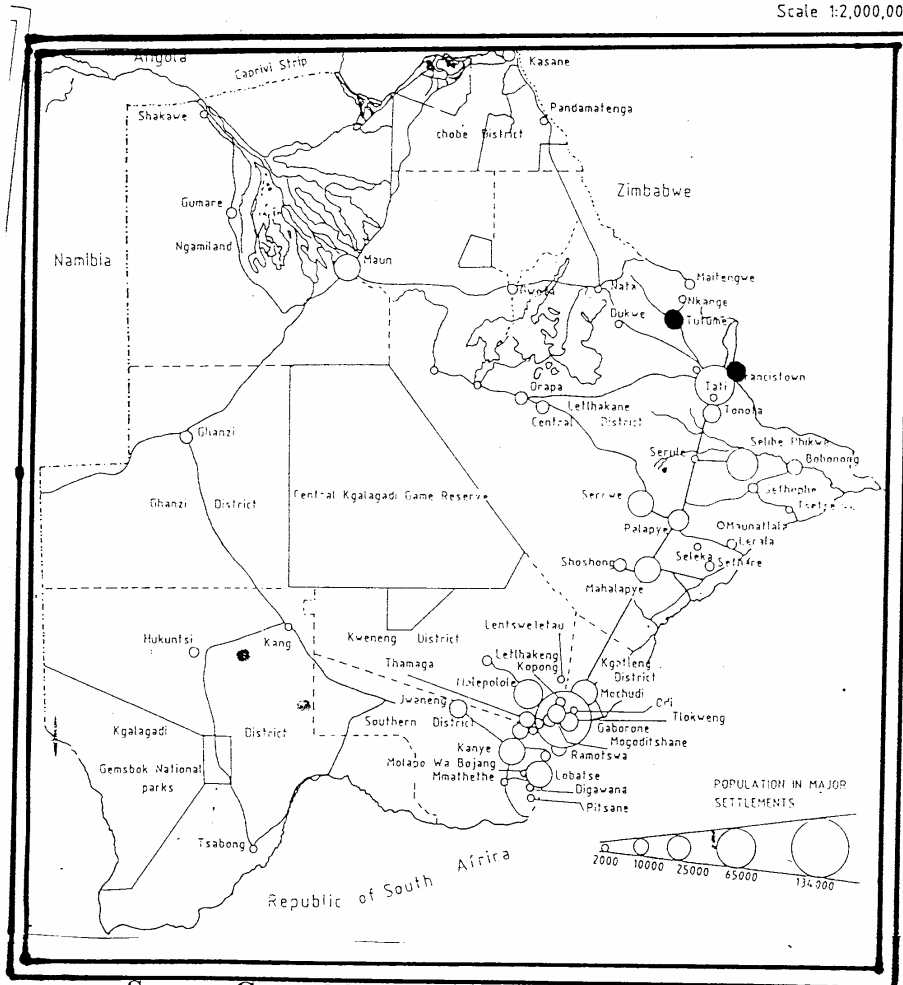


Source: Central Statistics Office (C.S.O) Gaborone, (1991).

**Map 2. Republic of Botswana
Distribution of the population**

COUNTRY AND PEOPLE

Scale 1:2,000,000



Source: Central Statistics Office (C.S.O) Gaborone, (1991).

Appendix 8: (Paper sent for Publication).

An Evaluation of the Quality of Care Midwives Provide During Postpartum Period in Northern Botswana.

T.M. Kebalepile,¹ D. R. Nyagawa,¹ F.Manneh¹ J. Sundby²

Abstract

Background: Postpartum complications are global health problems that affect the health and social well being of women. Mortality and disease pattern in Botswana have changed since the 1990s. Infectious diseases and opportunistic infections have increased markedly. Though life expectancy is at 70 years for females and 66 years for males, many healthy life years are lost, especially due to HIV/AIDS. Serious morbidities and the majority of maternal deaths occur during postpartum period. It is estimated that about 88% of deaths which occur within 4 hours post delivery are due to haemorrhage, indicating that they are a consequence of events in the 3rd stage of labour WHO, (1998.3). Latest survey shows that in Botswana, about 30% of women of child bearing age are HIV positive (<http://mbendi.co.za/land/bo-de>, 1999). The impact of HIV/AIDS morbidity and mortality is negating the improvements and gains of the utilization of maternal and child health services. Maternal mortality increased from 200 per 100,000 in 1996 to 250 per 100,000 in 1999, and infant mortality increased from 40 per 1,000 live births to 59.08 per 1,000 live births during the same period UNICEF, (1998). Most of these deaths could be linked to the type of care women receive during pregnancy, labour and postpartum period. These problems could be avoided if skilled care and early identification of problems was provided. Despite this, a number of studies in Botswana have so far been concentrated on deliveries and utilization of maternal health services. No studies have specifically looked into activities of the postpartum period. Hence, the need to take a closer look at activities performed during this period.

Objective: To assess the quality of care midwives provide to clients during the postpartum period.

Design: A cross sectional descriptive qualitative and quantitative survey among 65 practising registered nurse midwives. They were interviewed and observed in health institutions while examining the mother and baby prior to discharge. A convenient non-probability sampling was used to identify and select respondents from 14 primary health care facilities in northern Botswana, who were actively involved in provision of maternal health services.

Method: Direct personal interviews using semi-structured questionnaires consisting of open and closed ended questions and non-participatory observations were used to collect data from informants at their respective places of work.

Results: Of the 65 midwives interviewed, a majority were females aged between 30-39 years. Age and length of service were not significant predictors for type of service provided. Most nurses provide quality care during immediate postpartum period. A majority of nurses have good knowledge and practice in management of postpartum activities but there are some areas that are poorly done. Findings further show that 9% of clinic nurses have poor knowledge in management of post delivery severe anaemia. Almost all nurses have good knowledge in promotion of breastfeeding including its benefits to mother and baby. The majority of nurses have good knowledge in most postpartum activities but poor practice on the same area. Almost all nurses have good knowledge in management of breast engorgement, follow-up care, and counselling on family planning and pelvic exercises, but have poor practice on the same elements. Most nurses give limited information to women on the importance of the 6-8 weeks assessment. Among all facilities, a majority had sufficient supply of equipment and consumables.

Conclusion: Most nurses have good knowledge and practice, and provide quality care during immediate postpartum period. There is need to provide re-fresher courses on Safe Motherhood for nurses involved in obstetric care to improve their skills in identified weak areas. With close supervision, in-service training and support, there is scope for improvement. With short hospital stay and the impact of HIV/AIDS, most mothers will most likely need follow-up care. This study therefore recommends the development of nursing standards, maternal health audits and re-introduction of domiciliary nursing along other strategies to improve the quality of care.

**An Evaluation of the Quality of Care Midwives Provide During
Postpartum Period in Northern Botswana.**

T.M. Kebalepile * D.R. Nyagawa, * F. Manneh* J. Sundby. **

Background:

The postpartum period is a special phase in the life of a woman and her newborn. For women experiencing childbirth for the first time, it marks probably the most significant and life-changing event they have lived. The postpartum period (puerperium) is a time of reflection, of relieving the birth experiences, a time of adjustment to the new roles and accommodation of the family to the new member. This period also involves the involution of the uterus back to non-pregnant state. The postpartum period forms part of the normal continuum of the reproductive cycle. During this period women need quality reproductive health and child health care. Many nations have long accorded priority to the health and social welfare of mother and child. Quality postpartum services are a long-term investment in the future health of women and their newborn (WHO, 1998.3).

Even though postpartum care involves care of the mother and the baby, observations made by WHO, (1998) show that most health workers often neglect this period. This lack of care during postpartum period ignores the notion that a majority of mortalities and disabilities occur during this period. Available data and information on postpartum are mainly from developed countries, and very little is found from developing countries. Literature shows that the majority of women develop and suffer from haemorrhage, infections and complications like incontinence and infertility, which could be avoided with access to quality postpartum care WHO, (1998.3).

About sixty million women in developing countries deliver each year without the assistance of a skilled midwife. These women either deliver alone or are being assisted by a relative or a traditional birth attendant who has limitations in identification of risk factors and management of complications. This predisposes women to many complications, which could have been avoided under assisted institutional delivery. In very poor countries and regions as few as 5% of women receive postpartum care compared to 90% in developed countries. This lack of care is most life threatening during child birth and the first four hours just after delivery since this is the time when sudden, life threatening complications are most likely to arise (WHO 1998).

In literature review Yelland et al. (1998) found that overall satisfaction of women about assistance and care during postpartum period was low. The study further shows that on discharge most women still felt they needed more support and assistance with self and baby-care. Consistent with these findings, a few studies in Botswana on maternal child health services have also noted the dissatisfaction among women regarding the delivery of maternal services in general (Safe Motherhood Task Force, 1992; Makokha et al.1994). But most regrettably none of these studies took a closer look at activities midwives perform during postpartum period. It is documented that in many countries length of hospital post delivery for normal deliveries has been decreasing from 3-4 days to 24-48 hours (Makokha et al. 1994; WHO, 1998.3).

Moreover, the current shortage of nurses in Botswana and the impact of HIV/AIDS morbidity and mortality is negating the improvements and gains of the utilization of maternal and child health services. Under such circumstances, health workers may at times fail to discuss and counsel mothers on benefits of breast-feeding, safer sex and the importance of attending the 6-8 weeks assessment. This may contribute to failure to come for review if both mother and baby do not have immediate problems,

resulting in development of serious life-long complications. Despite the importance of this period, complications that occur and the life threatening conditions and serious morbidities most women experience, a number of studies in Botswana have so far been concentrated on deliveries and utilization of maternal health services and very little has specifically focused or looked into what midwives provide to clients during postpartum period. It is therefore timely to take a closer look and assess midwives' activities during this period.

Utilization of maternal health services in Botswana:

Utilization of antenatal services stands at 95%, of which 87% deliveries were assisted by a trained health worker. This reflects a substantial increase from 77.5% in 1988 to 85.2% in 1996 with younger women being mostly assisted by trained health workers. The proportion of women who received postpartum services decreased with decrease in the level of education. The increase in utilization of maternal services is a good health indicator. However, with the serious shortage of qualified health professionals (nurses and doctors) and the impact of the HIV/AIDS pandemic one may still wonder whether patients actually receive quality or quantity care and whether postpartum activities are actually done prior to discharge, during home visits and at 6-8 weeks assessment hence the need for study.

Maternal mortality in Botswana:

Maternal mortality for age group 15-19 years doubled from 0.03% in 1988 to 0.06% in 1996. Women in Botswana become sexually active at an early age of 15-19 years. About 60 % of young women in Botswana fall pregnant and give birth before the age of 20. A majority of them deliver at home where a relative assists them or a traditional birth attendant who lacks professional skills to manage obstetric complications. This predisposes them to considerable health risks during pregnancy and childbirth. Although adolescents are psychologically mature to fall pregnant, their bodies are often not fully developed to carry a safe pregnancy to term safely. They are at particular risk for pre-eclampsia and obstructed labour due to cephalopelvic disproportion. Physical immaturity increases the risk of obstructed labour and a greater risk of dying WHO (1998).

Need for the study:

There has been a gradual increase in infant and maternal mortality for the period 1996-1999 despite significant increase in the utilisation of maternal health services in Botswana. Maternal mortality increased from 200 per 100,000 in 1988 to 250 per 100,000 in 1999, and infant mortality increased from 40 per 1,000 live births to 59.08 per 1,000 live births during the same period. The primary health system has undergone remarkable changes with regard to upgrading and restructuring of health facilities including training of health workers in the area of Safe Motherhood to improve the quality of care and services rendered to women and children.

It is hoped that our study will outline various activities conducted by midwives and information given to mothers during postpartum examinations, and also identify weak areas or performance gaps in the provision of care that need to be strengthened. In addition, results of the study would contribute to the existing knowledge in the reproductive health, training of midwives and practice.

The hypothesis assumed that health care workers do not provide quality care, which meet the perceived needs and expectations of women during the postpartum period.

Materials and Methods:

Direct personal interviews using semi-structured questionnaires consisting of open and closed ended questions and non-participatory observations were used to collect data from informants at their respective places of work.

Study Design:

A cross sectional descriptive qualitative and quantitative survey among 65 practising registered nurse midwives. They were interviewed and observed in health institutions while examining the mother and baby prior to discharge. A convenient non-probability sampling was used to identify and select respondents from 14 primary care health facilities in northern Botswana, who were actively involved in provision of maternal health services.

Direct Personal interviews:

This method was used to collect data through direct asking of listed questions by the researchers and making provision to record the responses from the informants on the questionnaire forms. Through direct interviews we managed to address issues on knowledge and information midwives have on breast feeding, nutrition, care of the baby and self-care. This was also used to assess the exact information and advice midwives gave mothers prior to discharge. The use of combination of methods (triangulation) provided a more powerful strategy than reliance on a single method.

Non -Participant Observation:

This method involved actual watching of respondents as they attended to patients. The aim was to actually see various types of services rendered and how it was done in the natural environment without interfering with the informants. However, the informants and mothers were informed well in advance about the activity.

Using a checklist we observed various activities done and listened to information and advice given to mothers by midwives prior to discharge. The checklist had structured and unstructured instructions/guidelines addressing practice as well as assessing client's involvement and participation in planning for their own health care including client- provider interaction. Through direct observation we hoped to discover complex client provider interaction in the natural social setting and be able to note body language and effect in addition to the person's words.

Sampling:

A non-probability convenience sampling was used to identify midwives who were involved in the provision of maternal health services and on duty during the interview day. Random sampling was not employed because the population to be included in the study was small and could be accommodated in the study within the set period without introducing any bias. In this study we used the accessible population that refers to subjects, which were immediately available for this particular study.

Exclusions:

All midwives assigned to administrative duties and those working in other hospital units or departments including those involved in other health programmes that are not based at the primary health care facilities were excluded from the study. Those nurse-midwives on study leave who had not been practicing for more than one year were also excluded from the study.

Data Analysis: (Statistical Aspects)

Data analysis was performed using statistical Package for social sciences (SPSS) version 9.0. A chi-square test was used to analyse categorical variables for differences, while for continuous variables student t-test was used. All *p*-values presented are two-tailed and were considered statistically significant if *p*-was less than 0.05.

Ethical Considerations:

Ethical clearance and approval to conduct the study was obtained from the Norwegian international medical ethical committee at the University of Bergen and from Botswana. Health workers had a written informed consent while mothers had a verbal consent. To comply with informant's ethical right to be informed we obtained permission and informed consent from all informants.

Results:

The majority of nurses interviewed were females aged between 30-39 years. Age and length of service were not significant predictors for type of service provided. Most nurses provide quality care during immediate postpartum period. A majority 80% of nurses have good knowledge and practice in management of postpartum activities but there are some areas that are not well done.

Results further show that 9% of midwives have poor knowledge in management of post delivery severe anaemia. Almost all nurses have good knowledge in promotion of breastfeeding including its benefits to mother and baby. However, clinic nurses have poor knowledge in examination of the baby and management of post delivery severe anaemia. Almost all nurses have good knowledge in management of breast engorgement, follow-up care, advice and counselling on family planning and pelvic exercises but have poor practice on the same elements. Most nurses provide limited information to women on the importance of the 6-8 weeks assessment. Among all facilities, a majority had sufficient supply of equipment and consumables and less than half had family planning packs. Findings from interviews were consistent with results of the non-participant observation and that enabled us to validate study results.

Discussion:

Our study showed that there are significantly more nurses that have good postpartum practice than poor. More than two thirds of midwives had good knowledge and practice in management of postpartum activities but there are some areas that are not well handled. Most nurses have good knowledge in prevention of neonatal hypothermia, and benefits of breast-feeding but poor knowledge in steps to successful breast-feeding and management of breast engorgement. This remains a concern in Botswana, especially for clinics nurses who mainly work alone in remote areas and are expected to make independent decisions on patient care in the absence of a doctor.

With the current HIV/AIDS pandemic in Botswana, nurses should be knowledgeable in areas related to HIV/AIDS and infant feeding like exclusive breast-feeding to be able to empower women with relevant information to make informed decisions about breast-feeding. However, a majority of nurses had good knowledge and practice in detection and prevention of anaemia but had limited knowledge in common causes of anaemia and dietary treatment. In addition, mothers who attended the 6-8 weeks assessment at most clinics were not screened for anaemia. This practice adversely affects mothers who were anaemic during pregnancy or had postpartum haemorrhage during delivery and may need confirmation of their haemoglobin status. Bick & MacArthur (1995) made similar observations in their study of 1278 women in the United Kingdom. Efforts should be taken to train health workers and provide facilities with haemoglobinometers that could be used to in rural areas where laboratory services are limited.

Many nurses had good knowledge and practice in examination of the mother and were able to assess perineum and check vital signs and pelvic flow but demonstrated poor practice in examination of the baby. Vital areas like condition of the umbilical cord, head control, grasp reflex including observing the breathing pattern and actual counting of the respiratory rate were also not done. This implies that contact with nurses prior to discharge is no guarantee to quality care as the baby may be discharged with problems and later develop complications that could have been prevented with proper examination.

The majority of nurses had good knowledge in various family planning activities but practice was inadequate. Poor practice and failure to give advice and information to mothers was significant among hospital nurses ($P=0.0001$). This association suggests that mothers who do not practice exclusive breast-feeding and are not using family planning are at risk of having un planned pregnancies, which may lead to unsafe abortions.

Consistent with research findings in Uganda, where only 28% had attended a course in family planning, findings of this indicate that a similar percentage had attended more than three in-service courses during the last twelve months. However, unlike findings mentioned above our results are based on general in-service courses, not family planning and could not prove whether lack of in-service in family planning could have contributed to failure to give advice in that subject as several factors could have contributed to that.

An important finding that emerged in this study is that almost all nurses do not perform follow-up care despite short hospital stay by most delivered mothers. This has important implications because the first hour and one week after delivery are critical as the woman's condition can suddenly change resulting in serious morbidities like haemorrhage and eclampsia. Women and their families need accurate information on the likely effects and problems that may occur following discharge and measures to take to prevent complications and disabilities.

Unlike findings by (WHO, 1998) results of this study show that in Botswana, low attendance at the 6-8 weeks assessment is not due to service being provided by nurses not known to the mother. This is due to lack of information, educational materials and poor advice given to mothers on the importance of these events. These findings are consistent with studies elsewhere by Bhatia (1995) & Yelland et al. (1998).

Our study indicates that almost all facilities had sufficient equipment and consumables, though shortage of transport was however, reported by hospital nurses. This reflects some improvement, though more slowly than generally expected by service consumers. However, due to limited resources it is not always possible to have an ambulance for each unit within the hospital. However effort should be made to ensure that transport is made available when need arises.

Conclusion:

Although most nurses have good knowledge and practice in management of postpartum activities, they provide quality care during the immediate postpartum period. Some elements like follow-up (home visits), screening mothers for anaemia, giving advice on family planning and the 6-8 weeks assessment are not performed. In this period of re-orienting home based care, it may be seen as an over stretching of resources but, there are some mothers who because of the HIV/AIDS pandemic will most likely need follow-up at home which is not provided under the current set-up. Thus it is recommended that strategies should be designed to re-introduced domiciliary nursing into the primary health care support system along other strategies to improve quality of care.

Acknowledgements:

We wish to thank all nurses who participated in this study. Without their support our ambitions could have remained a "dream". Our sincere gratitude goes to NORAD for funding this study. Our special thanks go to women who generously participated in the study. Health Research Unit of the Ministry of health in Botswana for their guidance and technical assistance with data entry and cleaning. Dr S.H. Rajab at the postnatal ward in Nyangabwe Referral hospital for assisting in many ways to enable this work to be realized. Last but not list our sincere gratitude goes to Johanne Sundby for her constructive criticisms and professional guidance that let to the outcome of this paper.

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Appendix 5.

***Interview Form on Evaluation of the Quality of Care Midwives
Actually Provide During Postpartum Period.***

I am a nurse-midwife undertaking studies in International Community Health at the University of Oslo in Norway. I am doing a study on Quality of Postpartum Care in Francistown and Tutume as part of my studies and hope that you will be able to help me by answering the following questions.

The only way to find out is to ask you, as you are providers of such services. Your honest and correct Answers are important as they will be used to make improvements in the quality of service we provide to the community at large. I promise that I shall not reveal to anyone what you will tell me, nor in any way

Link to you. Your responses will be analyzed and treated as group data.

A. Interview Form Number. [] Facility Name-----

B. Date of Interview. []

C. Name of Interviewer. -----

D. Name of Advisor -----

E. Name of Supervisor-----

A. Education and Demographic Factors

District -----																
1. Name of Facility -----																
2. Type of facility Health Post		<input type="checkbox"/>														
Clinic																
Clinic with Maternity																
Post natal Ward																
<table border="0"> <tr> <td></td> <td style="text-align: center;">[Tick one box]</td> <td style="text-align: center;">Code</td> </tr> <tr> <td><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td style="text-align: center;">2</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td style="text-align: center;">3</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td style="text-align: center;">4</td> <td></td> </tr> </table>				[Tick one box]	Code	<input type="checkbox"/>	1		<input type="checkbox"/>	2		<input type="checkbox"/>	3		<input type="checkbox"/>	4
	[Tick one box]	Code														
<input type="checkbox"/>	1															
<input type="checkbox"/>	2															
<input type="checkbox"/>	3															
<input type="checkbox"/>	4															
[Tick where appropriate]	Male <input type="checkbox"/>	1														
	Female <input type="checkbox"/>	2														
3. Sex of Respondent																
4. Age [] years																
5. Length of service [Researcher to tick one box]																
	0-4 years <input type="checkbox"/>	1														
	5- 9 years <input type="checkbox"/>	2														
	10- 14 years <input type="checkbox"/>	3														
	15 years and above <input type="checkbox"/>	4														
6. Qualifications [Tick where appropriate]																
	RNM only <input type="checkbox"/>	1														
	RNM and others <input type="checkbox"/>	2														
B. Knowledge and Practice Breast Feeding and Breast Care																
7. After delivery what advice would you give to the mother to promote breast feeding?																
[Researcher to tick appropriate boxes]																
	Benefit of breastfeeding and colostrum <input type="checkbox"/>	<input type="checkbox"/>														
	Exclusive breast feeding for 6 months <input type="checkbox"/>															
	Give no fluids until 6 months <input type="checkbox"/>															
	Avoid baby formula <input type="checkbox"/>															
	Continue Breast feeding for 18-24 months <input type="checkbox"/>															
	Breast feed on demand <input type="checkbox"/>															
	Others <input type="checkbox"/>															
5-6 =V/good knowledge 4-3= Good knowledge (codes) 0-2= Poor knowledge																
8. After a normal spontaneous vaginal delivery how soon would you put the baby to the breast? [Researcher to tick appropriate box]																
	Within 1 hour <input type="checkbox"/>	<input type="checkbox"/>														
	After 2 hours <input type="checkbox"/>															
	After 3 hours or more <input type="checkbox"/>															
1 = Good practice 2 = poor practice (codes) 3 =Very poor practice																
9. Where would you place a normal newborn baby immediately after delivery?																
[Researcher to tick appropriate box]																
	1. Give to the mother <input type="checkbox"/>	<input type="checkbox"/>														
	2. Put on the cot <input type="checkbox"/>															

<p>3. Take to the nursery 4. Others-----</p>	
<p>1 = Very good practice 2 = Poor practice (codes) 3 = Very poor practice</p>	
<p>10. What are your main concerns midwife during breast examination? [Researcher to tick appropriate boxes]</p> <p>Breast lumps <input type="checkbox"/></p> <p>Breast engorgement <input type="checkbox"/></p> <p>Infection (Mastitis) <input type="checkbox"/></p> <p>Normality of the breast <input type="checkbox"/></p> <p>Cracked nipples <input type="checkbox"/></p> <p>Others-----</p>	<input type="checkbox"/>
<p>5-6 = V/ good practice 3-4 = Good practice (codes) 0-2 = Very poor practice</p>	
<p>11. How do you manage breast engorgement? [Researcher to tick appropriate boxes]</p> <p>Encourage mother to breast feed frequently <input type="checkbox"/></p> <p>Apply vaseline to prevent cracking & avoid drugs <input type="checkbox"/></p> <p>Encourage mother to express after breastfeeding <input type="checkbox"/></p> <p>Keep breasts clean <input type="checkbox"/></p> <p>Apply cold compress <input type="checkbox"/></p> <p>Others-----</p>	<input type="checkbox"/>
<p>5- 6= V/ good practice 3-4 = Good practice (codes) 0-2 =Very poor practice</p>	
<p>12. Could you list as many as you can recall the ten steps to successful breastfeeding. [Researcher to tick appropriate boxes]</p> <p>1. Have a written breastfeeding policy that is routinely communicated to all health workers. <input type="checkbox"/></p> <p>2. Inform all pregnant mothers about benefits and management of breastfeeding. <input type="checkbox"/></p> <p>3. Train all health workers in skills necessary to implement the policy. <input type="checkbox"/></p> <p>4. Help mothers initiate breastfeeding within half- hour after delivery. <input type="checkbox"/></p> <p>5. Show mothers how to breastfeed and how to maintain lactation even if they be separated from their infants. <input type="checkbox"/></p> <p>6. Give newborn infants no food or drink other than breast milk, unless medically indicated. <input type="checkbox"/></p> <p>7. Practice rooming-in, allow mothers and inafants to remain together 24 hours a day <input type="checkbox"/></p> <p>8 Encourage breastfeeding on demand <input type="checkbox"/></p> <p>9 Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants <input type="checkbox"/></p> <p>10 Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from hospital or clinic <input type="checkbox"/></p> <p>In addition health facilities should refuse to accept free and low-cost supplies of milk of breast-milk substitutes, feeding bottles and teats</p> <p>5-10 =very good knowledge 3-4 = good knowledge 0- 2 = very poor knowledge</p>	<input type="checkbox"/>
<p>13. What is exclusive breast-feeding? [Researcher to tick one box]</p> <p>Giving the infant only breast milk no other liquid or solids, except vitamins or mineral drops and medicine <input type="checkbox"/></p> <p>Infants should be breastfed for the first 4months <input type="checkbox"/></p>	<input type="checkbox"/>

and if possible for 6 months.	
	2 = V/ good knowledge (codes) 1 = Some knowledge 0 = No knowledge
14. Would you mention as many as you can remember feeding problems that mothers experience during the first 2-3 months. [Researcher to appropriate boxes] Sore nipples or tissue <input type="checkbox"/> Tender or swollen breast <input type="checkbox"/> Baby refuses to suck <input type="checkbox"/> Breast abscess or infection <input type="checkbox"/> Insufficient breast milk <input type="checkbox"/>	<input type="checkbox"/>
	5 =Very good knowledge 3-4 = Good knowledge 0-2= Poor knowledge (codes)
15. Could you mention as many as you can remember benefits of breast-feeding. [Researcher to tick boxes] Hygienic and source of energy <input type="checkbox"/> Contains immunoglobulins <input type="checkbox"/> Provides all fluids needed by the infant <input type="checkbox"/> Used as a family planning method (LAM) <input type="checkbox"/> Cheap and readily available <input type="checkbox"/> Promotes bonding-in <input type="checkbox"/> Others----- <input type="checkbox"/>	<input type="checkbox"/>
	5-6=Very good knowledge 3-4 = Good knowledge 0-2= No knowledge (codes)
C. Knowledge and practice on Postpartum Infections	
16. How would you know that a mother has puerperal sepsis? Poor involution of ≤ 2 cm during first 8 days <input type="checkbox"/> [Researcher to tick appropriate boxes] Pain and redness on the perineum <input type="checkbox"/> Foul vaginal discharge <input type="checkbox"/> Pelvic pain/ inflammation along the incision area <input type="checkbox"/> Temperature of more than 38.5C within <input type="checkbox"/> 10 days of delivery <input type="checkbox"/>	<input type="checkbox"/>
	5 =Very good knowledge 3-4 = good knowledge (codes) 0-2 =No knowledge
17. What are the causes of puerperal sepsis? Unhygienic delivery practices <input type="checkbox"/> [Researcher to tick appropriate boxes] Retained products of conception <input type="checkbox"/> Premature rupture of membranes <input type="checkbox"/> Frequent vaginal examinations <input type="checkbox"/> Delayed /prolonged labour <input type="checkbox"/> In-hygienic care of the wound <input type="checkbox"/> Others----- <input type="checkbox"/>	<input type="checkbox"/>

<p style="text-align: center;">5= Very good knowledge 3 - 4=Good knowledge 0- 2 =No knowledge (codes)</p>	
<p>18. What advice would you give to a mother on puerperal sepsis? [Researcher to tick appropriate boxes]</p> <p>Use cold sitz bath <input type="checkbox"/></p> <p>Good personal hygiene <input type="checkbox"/></p> <p>Frequent changing of pads <input type="checkbox"/></p> <p>Frquent cleaning of vulva <input type="checkbox"/></p> <p>Add salt to bathing water <input type="checkbox"/></p> <p>Do postnatal exercises <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: center;">5- 6 =Very good practice 3-4 =Good practice (codes) 0-2 = Poor practice</p>	
<p>19. How do you manage puerperal sepsis? [Researcher tick appropriate boxes]</p> <p>Give antibiotics according to protocol (Ampicillin 1Gm orally 6hrly x 10 days) <input type="checkbox"/></p> <p>(Metronidazole 500mg 8hrly orally x 10days) <input type="checkbox"/></p> <p>Give IV fluids if patient is in stroke. <input type="checkbox"/></p> <p>Refer to hospital if there are retained Products or no improvements within 2 days of treatment <input type="checkbox"/></p> <p>Good personal hygiene <input type="checkbox"/></p> <p>Dietary treatment <input type="checkbox"/></p> <p>Others----- <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: center;">5-6 =Very good practice 3-4 = Good practice 0-2 = Poor practice (codes)</p>	
<p>20. How do you prevent neonatal tetanus? [Researcher tick appropriate boxes]</p> <p>Give Pregnant mothers anti-tetanus vaccine <input type="checkbox"/></p> <p>Educate TBAs on clean cutting of the cord (hygienic measures) <input type="checkbox"/></p> <p>Encourage mothers to use spirit swabs <input type="checkbox"/></p> <p>Advice Community to avoid using cow dug/ ash on cord <input type="checkbox"/></p> <p>Encourage hospital delivery <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: center;">5= very good practice 3-4=Good practice (codes) 0-2 =poor practice</p>	
<p>21. How would you prevent sepsis in a woman delivering under your care? [Researcher tick appropriate boxes]</p> <p>Remove mouse after third stage <input type="checkbox"/></p> <p>Use sterile gloves during delivery <input type="checkbox"/></p> <p>Use sterile delivery pack during delivery <input type="checkbox"/></p> <p>Avoid frequent vaginal examinations <input type="checkbox"/></p> <p>Detect and treat genital infection <input type="checkbox"/></p> <p>Good management of 3rd stage of labour <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: center;">5-6 = V/good practice 3-4 = good 0-2= Poor practice practice (codes)</p>	
<p>D. Knowledge and Practice on Postpartum Anaemia</p>	

<p>22. When would suspect that a woman has or is developing postpartum haemorrhage? [Researcher to tick appropriate box]</p> <p>Increased respiration <input type="checkbox"/></p> <p>Increased thirst <input type="checkbox"/></p> <p>Vaginal bleeding \geq 500ml within 5 minutes after delivery <input type="checkbox"/></p> <p>Rapid pulse <input type="checkbox"/></p> <p>Sudden drop in blood pressure <input type="checkbox"/></p> <p>Soaking of more than one pad per hour <input type="checkbox"/></p> <p>Bright red bleeding with or without clots after deliver <input type="checkbox"/></p>	<input type="checkbox"/>
<p>5 -7 = Very good knowledge 3-4 = Good knowledge (codes) 0-2 = No knowledge</p>	
<p>23. How do you manage post delivery severe anaemia?</p> <p>Blood transfusion (Iv fluids) [Researcher to tick appropriate boxes]</p> <p>Admission for further investigation <input type="checkbox"/></p> <p>Give oxytocic drugs <input type="checkbox"/></p> <p>Give folic acid + folate 2 tablets daily for 60 days <input type="checkbox"/></p>	<input type="checkbox"/>
<p>3= Good practice 2=Moderate practice (Codes) 0-1= Poor practice</p>	
<p>24. Could please mention the common causes of anaemia in this area?</p> <p>Infections like (malaria) <input type="checkbox"/></p> <p>Ante or postpartum bleeding <input type="checkbox"/></p> <p>Poor nutrition or Dietary habits <input type="checkbox"/></p> <p>Too frequent pregnancies <input type="checkbox"/></p> <p>Others----- <input type="checkbox"/></p>	<input type="checkbox"/>
<p>5= very good 3-4 = Good knowledge (Codes) 0- 2 = Poor knowledge</p>	
<p>25. How would you prevent neonatal hypothermia?</p> <p>[Tick appropriate boxes]</p> <p>Give infant to mother immediately after birth <input type="checkbox"/></p> <p>Encourage mother-baby contact (rooming-in) <input type="checkbox"/></p> <p>Initiate breast feeding soon after birth <input type="checkbox"/></p> <p>Avoid bathing infant for 24 hours after birth <input type="checkbox"/></p> <p>Dry and cover infant/ensure warm environment <input type="checkbox"/></p>	<input type="checkbox"/>
<p>5 =Very good practice 3-4 = Good practice 0-2 = Poor practice (Codes)</p>	
<p>26. When would you suspect that a woman is anaemic?</p> <p>History of PPH <input type="checkbox"/> [Researcher to tick appropriate boxes]</p> <p>Complains of persistent headache <input type="checkbox"/></p> <p>Excessive fatigue <input type="checkbox"/></p> <p>Complains of dizziness <input type="checkbox"/></p> <p>Breathlessness <input type="checkbox"/></p>	<input type="checkbox"/>
<p>5 =Very good knowledge 3-4 = Good knowledge (Codes) 0- 2 = Poor knowledge</p>	

<p>27. Could you mention possible effects of postpartum anaemia?</p> <p>Infection <input type="checkbox"/> [Researcher to tick appropriate boxes] Haemorrhage <input type="checkbox"/> Abortion <input type="checkbox"/> Pre-term delivery <input type="checkbox"/> Maternal death <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: right;">5 = very good knowledge 3-4 = Good knowledge 0-2= Poor knowledge (Codes)</p>	
<p>28. What is the cut off point for severe anaemia in Hb (g/dl)?</p> <p>1.Hb less than 7g/dl [Researcher to tick one box] 2. Hb 8-9 g/dl</p> <p style="text-align: right;"><input type="checkbox"/> 0 = poor knowledge <input type="checkbox"/> 1= good knowledge</p>	<input type="checkbox"/>
<p>E. Postpartum Examination and Continuity of care</p>	
<p>29.What do you examine the mother for during the 1st hour after delivery? [Researcher to tick appropriate boxes]</p> <p>Condition of scar <input type="checkbox"/> Blood pressure <input type="checkbox"/> Vaginal flow/Perineum <input type="checkbox"/> Breast and milk secretion <input type="checkbox"/> Haemoglobin level <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: right;">5=Very good practice 3-4= Good practice 0-2= Poor practice (codes)</p>	
<p>30. What do you examine the baby for prior to discharge?</p> <p>Vaccination status <input type="checkbox"/> [Researcher to tick appropriate boxes] Skin colour / Congenital abnormalities <input type="checkbox"/> Feeding pattern <input type="checkbox"/> Presence of infection (eyes & jaundice) <input type="checkbox"/> Bowel motion and micturation <input type="checkbox"/> General condition <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: right;">5- 6 = Very good practice 3-4 = Good practice 0-2 = Poor practice (codes)</p>	
<p>31. Do you ever discuss/ teach postnatal exercises to mothers prior to discharge? [Researcher to tick one box]</p> <p>1. <input type="checkbox"/> Yes 2. <input type="checkbox"/> No</p>	<input type="checkbox"/>
<p>32 If yes, what do you discuss or teach?</p> <p>How to do postnatal exercises [Researcher to tick appropriate boxes] Benefits of exercises <input type="checkbox"/> Types of postnatal exercises <input type="checkbox"/> When to do exercises <input type="checkbox"/> Others <input type="checkbox"/></p>	<input type="checkbox"/>
<p style="text-align: right;">3-4 =good practice (codes) 0-2=poor practice</p>	

<p>33. Do you visit mothers at their homes following discharge? Yes 1 <input type="checkbox"/> 2 <input type="checkbox"/> [Tick one box] If No go to question number 37</p>	<input type="checkbox"/>
<p>34. If yes, how soon do you visit them? [Researcher to tick one box] 1. Within the first week <input type="checkbox"/> 2. Within one month <input type="checkbox"/> 3. After six weeks <input type="checkbox"/></p>	<input type="checkbox"/>
<p>1= Very good practice 2= Poor practice (Codes) 3= Very practice</p>	<input type="checkbox"/>
<p>35. What do you do during these visits to the mother? <input type="checkbox"/> [Tick Appropriate boxes] Check the blood pressure <input type="checkbox"/> Vaginal flow/ bleeding <input type="checkbox"/> Examine for perineal healing/ pain /redness <input type="checkbox"/> Check temperature <input type="checkbox"/> Check for vaginal Foul discharge <input type="checkbox"/> Check for condition of the breast <input type="checkbox"/> Advice on 6 weeks examination/ family planning <input type="checkbox"/></p>	<input type="checkbox"/>
<p>5-7 = very good practice 3- 4 = Good practice 0- 2 = Poor practice (Codes)</p>	<input type="checkbox"/>
<p>36. What do you do to the baby during home visit? <input type="checkbox"/> [Researcher to tick appropriate boxes] Examine the umbilical cord <input type="checkbox"/> Check for jaundice and eye infection <input type="checkbox"/> Feeding method and problems <input type="checkbox"/> Immunization status <input type="checkbox"/> Check for any abnormalities <input type="checkbox"/></p>	<input type="checkbox"/>
<p>5= very good practice 3- 4 = Good practice 0- 2 = Poor practice (Codes)</p>	<input type="checkbox"/>
<p>F. Family Planning and Advice</p>	
<p>37. At what time after delivery will you advice a woman to start family planning?</p>	<input type="checkbox"/>
<p>6-8 weeks after delivery <input type="checkbox"/> <input type="checkbox"/> 0=poor knowledge (codes) <input type="checkbox"/> 1= good knowledge</p>	<input type="checkbox"/>
<p>38. What do you discuss with mothers regarding sexual relations? Sexual life Safer sex Lack of sexual desire <input type="checkbox"/> Gradual/Slow return of sexual feelings or desires <input type="checkbox"/> Family planning methods <input type="checkbox"/></p>	<input type="checkbox"/>

3- 4 = Good practice 0- 2 = Poor practice (Codes)	
39. State two factors that prevent you from giving quality care? (1)----- (11)-----	<input type="checkbox"/>
40. How often do you attend in-service courses? 0-Never <input type="checkbox"/> 1-Once a year <input type="checkbox"/> 2-Twice a year <input type="checkbox"/> 3-Three-four times a year	<input type="checkbox"/>
0 = very poor Practice 1 = poor practice 2=good practice (codes) 3-4- very good practice	<input type="checkbox"/>
41. How do you feel working as a midwife?	
1-Very happy <input type="checkbox"/> 2-Unhappy <input type="checkbox"/>	<input type="checkbox"/>
<i>Thank you, for sparing your valuable time?</i>	

<i>Observation Of Activities Actually Provided By Midwives During Postpartum Period.</i>	Tick one Box	
	Yes 1.	No 2.
A. Explanation of Care		
1. When care was given to the mother or infant, did the midwife explain what she was doing?	<input type="checkbox"/>	<input type="checkbox"/>
2. Allow the mother to ask questions?	<input type="checkbox"/>	<input type="checkbox"/>
4. Give / Explain the outcome of the examination to the mother?	<input type="checkbox"/>	<input type="checkbox"/>
5. Did the midwife advice the mother on where to seek help in future if she experiences any problems?	<input type="checkbox"/>	<input type="checkbox"/>
6. Explain why she was giving an injection / immunization to either mother or baby?	<input type="checkbox"/>	<input type="checkbox"/>
B. Postpartum Exercises	<input type="checkbox"/>	<input type="checkbox"/>
7. Were postpartum exercises and their importance discussed with the mother?	<input type="checkbox"/>	<input type="checkbox"/>
8 Were postpartum exercises shown or demonstrated to the mother?	<input type="checkbox"/>	<input type="checkbox"/>
9. Was mother given leaflet(s) or instructions on postpartum exercises?	<input type="checkbox"/>	<input type="checkbox"/>
C. Advice and benefits of breastfeeding		
10. Was mother given advice on baby feeding or breastfeeding?	<input type="checkbox"/>	<input type="checkbox"/>
11. Did mother participate in the discussion?	<input type="checkbox"/>	<input type="checkbox"/>
12. Was mother given advice on self-care and baby care?	<input type="checkbox"/>	<input type="checkbox"/>
D. Advice on Family Planning:	<input type="checkbox"/>	<input type="checkbox"/>
13. Was mother given advice on available family planning services?	<input type="checkbox"/>	<input type="checkbox"/>
14. Was mother advised on the importance of the 6 weeks examination and	<input type="checkbox"/>	<input type="checkbox"/>

to come for assessment?	
Observer's comments----- -----	

<i>Check List for Availability of Logistics And Selected Drugs And Equipment Used During Postpartum Period.</i>		
[Tick where appropriate]	Available	Not Available
A. Equipment		
1. Vaginal Examination Pack		
2. Family planning Pack (IUCD)		
3. Adult Weighing Scale		
4. Baby Weighing scale		
5. Examination Couch		
6. Obstetric Examination Lamp		
7. Blood Pressure Machine		
8. Road Worthy Ambulance		
B. Drugs		
9. Oxytocic drugs		
10. Intravenous Fluids		
11 Anti-hypertensive drugs		
C. Logistics		
12. Safe Motherhood Protocol		
13. Functioning Telephone		
14 Postnatal Register		
15 Family Planning commodities		
16. Side Laboratory		
17. Uristix		
18 Staffing Criteria/ Structure		
19 Side Laboratory		
20 Surgical gloves		