FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR AT LILONGWE CENTRAL HOSPITAL, MALAWI

By

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DECLARATION

I declare that:

Factors associated with delayed admission of high-risk pregnant women to labour ward at Lilongwe Central Hospital, Malawi, is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Fannie Kachale: 14th October 2002

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ABSTRACT

This descriptive quantitative study was carried out at Lilongwe Central Hospital, Malawi. The purpose of the study was to describe factors associated with delayed admission of high–risk pregnant women to labour ward.

A probability sample of 130 high–risk pregnant women who reported to labour ward with cervical dilatation of 5 centimetres and above were interviewed during the months of October to December 2001. Data was collected using a questionnaire.

Findings were, that transport was one of the problems that some high–risk pregnant women had to walk for long distances for 1 – 2 hours or 3 – 4 hours in some instances. Decision – making was another factor where some women preferred to stay at home despite the fact that labour had started, or they had to wait for their husband or family member to give permission before starting off for the health facility. There was poor decision–making by some midwives at the health centre that delayed in referral of some high–risk pregnant women to the hospital.

Recommendations were that health workers should have in-service education and refresher courses on documentation, monitoring and Obstetric life saving skills to update their skills. Health workers should empower pregnant women with regard to complications in pregnancy and decision–making through information, education and communication.

Key Words:

Antenatal care, complications, delayed admission, factors associated, fetus, high – risk pregnant woman, labour, referral, risk

LIST OF ABBREVIATIONS USED

APH	Antepartum haemorrhage
BOH	Bad obstetric history
C/S	Caesarean section
CHAM	Christian Health Association of Malawi
DHO	District Health Office
EOC	Emergency Obstetric Care
HPM	Health Promotion Model
IEC	Information, education and communication
ICM	International Confederation of Midwives
LCH	Lilongwe Central Hospital
MDHS	Malawi Demographic and Health Survey
PPH	Postpartum haemorrhage
PMM	Prevention of Maternal Mortality
PHC	Primary Health Care
TBA	Traditional birth attendant

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The provision of health facilities is the function of governments and is a very important aspect of health care delivery. The available health care facilities should be accessible to the community. Communities on the other hand should make use of health facilities where necessary. But, there are situations where the community does not make use of the health facilities and if they do, they may arrive too late for the necessary treatment. Some of the facilities of importance for mother and child-care are antenatal clinics, maternity sections consisting of labour and postnatal wards.

Many reasons are indicated why people are sometimes reluctant to make use of health facilities of which some are: a perception of poor quality of health care given to patients, not user friendly health services and the communities' preference to make use of traditional healers or traditional birth attendants. Kestler (1993:356) states that long waiting times before appointments are a source of much frustration, anger and worry, and can strongly influence a woman's decision to continue attending clinics. This is of particular concern because of the strong association between lack of prenatal care and perinatal mortality. Sometimes there is lack of information on what is available, and why it is important to make use of health facilities.

Literature shows that there are comprehensive problems surrounding information of health services in general. These problems are even worse if such information is

developed out of popular culture of consumers and users but are not easily understood by the consumers. It is important that the midwife should take care to familiarise herself with the cultural, language and religious needs of the local population (Bennett & Brown, 1999:610).

All pregnant women should have access to antenatal clinics for antenatal care, hospitals to deliver their babies and postnatal clinics for postnatal care. The aim of antenatal care is to examine pregnant women at different stages of their pregnancy to assess progress of their pregnancy and to diagnose problems and possible complications that can occur. Patients must at this time, get proper health education about their pregnancy and the unborn baby. Delay to report at a health facility when in need could be disastrous for any patient. In labour specifically, it can lead to many complications for the mother and baby or even cause death of both. Once a woman is diagnosed as a high-risk case, special attention should be given to her in this regard. It is of the utmost importance because many women die as a result of childbirth. Where there is no proper system of transport in place with long distances, patients could be admitted into the hospital in advance time before the delivery (Ali, 1995:62).

At the 1986 World Health Organisation conference in Geneva, it was reported that globally; half a million women die and seven and half million are left handicapped as a result of childbirth. Of these deaths, 88 – 98% could have been avoided (Maclean, 1993:72). It is also important to note that 150,000 of the deaths occur in Africa, only 6,000 in developed countries and the rest in Asia and Latin America, (Kwast, 1993:105).

The Safe Motherhood Initiatives was launched at a conference in 1987, Nairobi with an aim of fifty percent (50%) reduction of the global maternal deaths by the year 2000 (Kwast, 1993:105).

Malawi's maternal mortality rate is estimated at 620 per 100,000 live births (Demographic and Health Survey, 1992). Latest results from Malawi Demographic and Health Survey (MDHS) show that much need to be done to reduce the maternal mortality rate. The 2000 MDHS estimated the maternal mortality rate to be 1120 per 100 000 live births, National Statistical Office (Malawi) and ORC Macro (2001:182). This estimate exceeds by some 80 percent the estimate from the 1992 MDHS.

1.2 STATEMENT OF THE PROBLEM

High-risk pregnant women report late to the labour ward making them end up with obstructed labour and associated complications like ruptured uterus, postpartum haemorrhage and vesico-vaginal fistulae (Bennett & Brown, 1999:503). The author noted that of the ten thousand and twenty one (10021) deliveries at Lilongwe Central Hospital (LCH), Malawi, from January to December 2000, forty-six (46) were maternal deaths. This was a stunningly high figure. Kanjira, Jiya, Somera, Makoka and Manna (1997:48), indicated in their study in Machinga, Malawi that 33% of high-risk antenatal mothers defaulted referrals and that, often defaulting mothers reported late at the referral hospital with complications that contribute to higher maternal death rate.

It is however not clear why high-risk pregnant women report late to the labour ward. It was in respect of this sad outcome that the author investigated factors associated with delayed admission of high-risk pregnant women to labour ward.

1.3 RESEARCH QUESTION

From the above stated information, the research question can be asked,

What are the factors associated with delayed admission of high risk pregnant women to labour ward?

1.4 PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of the study is to describe factors associated with delayed admission of high-risk pregnant women to labour ward at Lilongwe Central Hospital, Malawi and this will be achieved through the following objectives:

1.4.1 Describe the demographic profile of a high-risk pregnant woman.

1.4.2 Determine the history of the high-risk pregnant woman.

1.4.3 Determine the utilization of antenatal care during pregnancy.

1.4.4 Explain factors associated with late utilization of health facilities.

1.5 SIGNIFICANCE OF THE STUDY

Knowledge of the factors associated with delay by high-risk pregnant women in seeking health services would be of great importance. The study will be able to come out with weaknesses and strengths in the health services system contributing to delay of clients. Information obtained from the study may be used as baseline data for improving services to satisfy patients' needs and reduce the maternal mortality rate.

1.6 TERMINOLOGY

1.6.1 Pregnant woman

This refers to a woman having a developing fetus within the uterus (Tiran, 1997:220).

1.6.2 Fetus

This is the unborn off spring of a mammal (Tiran, 1997:98). For purposes of this study fetus shall mean the unborn offspring of a high-risk pregnant woman.

1.6.3 Risk

The term implies possibility of meeting danger or of suffering harm or loss. (Oxford Learner's Dictionary, 1998:1015).

1.6.4 High risk pregnant woman

This is a pregnant woman with any factors that expose her and the fetus to potential danger and complications such as ruptured uterus, postpartum haemorrhage, vesico-vaginal fistulae, neonatal asphyxia, cerebral injury and stillbirths (Nolte, 1998:385, Bennett & Brown, 1999:503).

1.6.5 Antenatal care

Care that is given to an expectant (pregnant) woman from the time that conception is confirmed until the beginning of labour (Bennett & Brown, 1999:209).

1.6.6 Factors associated

These are the things that cause or influence something. For purposes of this study, factors shall mean any situation associated with delayed admission of high- risk pregnant women to labour ward.

1.6.7 Labour

This is a process by which the fetus, placenta and membranes are expelled through the birth canal (Bennett & Brown, 1999:392).

1.6.8 First stage of labour

This is the stage of dilatation of the cervix. It begins with regular rhythmic contractions and is complete when the cervix is fully dilated (10cm) (Bennett & Brown, 1999:392).

1.6.9 Active phase of labour

Phase of acceleration in cervical dilatation and is much more rapid. Cervical dilatation proceeds at a rate of 1- 1.5 centimetres (cm) per hour (Bennett & Brown, 1999:408).
For purposes of this study active phase is from 3cm dilatation to 10cm.

1.6.10 Delayed admission

Oxford Learner's Dictionary defines delay as to be slow or late. For purposes of this study delayed admission shall refer to a high-risk pregnant woman who comes for admission to labour ward when cervical dilatation is 5cm and above.

1.6.11 Maternal death

This is the death of a woman while pregnant, or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (Feuerstein, 1993:2).

1.6.12 Maternal mortality rate

The number of women who die while pregnant as a result of pregnancy and childbirth complications per 100,000 live births in a given year (UNICEF website online, 1998).

1.7 CHAPTER ARRANGEMENTS

Chapter 1 Overview of the study

Chapter 2 Literature review and conceptual framework

Chapter 3 Methodology

Chapter 4 Analysis of the data

Chapter 5 Conclusion, limitations and recommendations

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1.8 CONCLUSION

The chapter gave an overview of the study through background to the study, statement of the problem, research question, purpose and objectives of the study, significance of the study, chapter arrangements and operational definitions. In the next chapter, literature reviewed and conceptual framework is discussed.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

The previous chapter introduced the study by stating the background, purpose and objectives, significance and terminology. This chapter will present the literature review and the conceptual framework. Literature on health facilities, human resources to deliver health services and the high-risk factors will be discussed. This is in view of the purpose of the study: to describe factors associated with delayed admission of high-risk pregnant women to labour ward.

2.2 HEALTH FACILITIES

In 1977, the World Health Assembly reaffirmed that health is a basic human right and a worldwide social goal that is essential to the satisfaction of basic human needs and quality of life, and that it is to be attained by all people (The World Health Report, 1998:140). Countries worldwide have developed strategies to transform existing health care strategies to facilitate the attainment of health for all. Narrow and Buschle, (1987:51), state that advances in knowledge and technology have resulted in complex system for delivery of health care. The World Health Report (1998:146) further cites that many health systems struggle to keep up with rising costs or are affected by national decisions to reduce expenditure on health.

2.2.1 Development of health facilities

Health services are part of a health system that includes private health practitioners, traditional health practitioners such as Traditional Birth Attendants (TBA), healers, spiritualists, and voluntary health workers based at community level. There are government health services and non-governmental hospitals that exist in many countries (Feuerstein, 1993:29). Government is reported to be the provider of majority health services in Ghana 63%, Nigeria 70% and Malawi 60% (Asenso-Okyere 1995:86, Adewunmi, 1993:347 and Malawi National Health Plan, 1999-2004:7).

Health facilities include hospitals, clinics and health centres. In Malawi, health services are provided at three levels namely primary, secondary and tertiary. Rural hospitals, health centres and health posts provide services at primary level, district hospitals and Christian Health Association of Malawi (CHAM) hospitals offer secondary level services while tertiary services are provided by Central hospitals. Currently, Central hospitals provide services similar to secondary level plus a small range of specialist surgical and medical interventions (Malawi National Health Plan, 1999-2004:8).

The Malawi government endorsed the concept of Primary Health Care (PHC) in 1979 as the main health services delivery strategy in achieving the worldwide health theme of "health for all". This was in line with the call for PHC by the Alma Alta conference of 1978. Malawi's focus was in three main areas of maternal and child health, water and sanitation and promotion of early treatment of common disease conditions (Malawi National Health Plan, 1999-2004:6).

The World Health Report (1998:144) states that to develop a health system, doctors and nurses were trained, hospitals established, infrastructures created and medicines distributed especially in towns and for populations that could afford them. The report further indicates problems faced by many countries to maintain infrastructure due to insufficient funds.

2.2.2 Distribution of health facilities

In Malawi, health facilities are distributed in such a way that there is a district hospital for each district that is supported by rural hospitals, health centers and health posts to cater for urban and rural communities. Eighty percent of the population lives within 8 kilometers walking distance of a primary health care facility (Malawi National Health Plan, 1999-2004:6). The Eastern Mediterranean is stated to have taken initiatives to ensure equitable distribution of the health infrastructure (The World Health Report, 1998:150). Studies done in Uganda, Namibia and Zambia show that there has been urban-rural disparity in distribution of health services where rural areas services are less accessible (Human development report, 2000:33).

2.2.3 Utilization of health facilities

Many European countries are reported to have made reforms to their hospitals with an aim of increasing patient satisfaction, rationalizing resources and achieving better outcomes (The World Health Report, 1998:151). Several studies done in some African countries though, cite less/late utilization of health facilities resulting in an increase in the maternal mortality rate. Iipinge, Matha, Mupunga, Tshikongo and Shangula (1992:7)

conducted a case control study on maternal deaths that occurred at both the Health Centre and in the community in the North West region of Namibia. Interviews were conducted with relatives of the deceased and their controls, as well as in charges of health facilities and health staff providing maternal health care.

Part of their findings were that 67% of the community maternal deaths were more than 3 hours walking distance from the nearest maternal health facility. This point of the hospital not being accessible because of long walking distances as the cause of maternal deaths was also echoed by rural women while urban women mentioned preference by women towards socio-cultural and traditional practices as well as negligence of health workers as a reason preventing them in utilizing maternity health facilities.

It was further discovered that communities were using TBA's for their deliveries because they did not understand the seriousness of the risky conditions they were dealing with. The TBA's perform about 39% of deliveries in the district under study but only 3% of them were referring patients with complications to the hospital while the rest dealt with complications like malpresentations, retained placenta, multiple pregnancy, eclampsia and prolonged labour on their own. Twenty-seven per cent of the health facility maternal deaths were due to ruptured uterus. The study did not find out why women prefer the TBA than the health facility that could assist in future case management.

The findings by Iipinge et al study (1992:7) were similar to a study by Kufuna, Chipukuma, Mwashekabo, Chimwaso and Malambo (1993:6) in Mongu district, Zambia

where factors contributing to maternal deaths were long distances to the health facility. Major causes of maternal deaths in the later study were haemorrhage (52%), sepsis (11%), malaria (10%) and ruptured uterus. Troskie (1997:16) in a study on 'the importance of traditional midwives in the delivery of health care in the Republic of South Africa' mentions that women go to traditional midwives for delivery of their babies because the nearest hospital is 20 kilometres far. Dey (1998:6) also cites long distance and poor communication as barriers to reaching and receiving health care.

Matekwe Phoya, Msolomba, Chawani, Jonazi, Maganga, Lazaro and Kamfose (1990:3) found in their study in Malawi that late utilization of health facilities, lack of transport at the opportune time and delayed referral contributed to most ruptured uterus cases. The study also cited that 57% of the patients ended up with operative delivery indicating that they had come to the hospital after problems had already developed. Provision of an ambulance and a telephone to health centres farthest away from the hospital were recommended to the Ministry of Health. Reason for late utilization of the health facility was however not established.

Thaddeus and Maine (1990 in Zambia Health Information Digest 1996 Vol. 3 No. 4:12) summarized factors contributing to maternal deaths in Zambia as: delay in the decision to seek care, delay in getting to a health facility and delay in the provision of adequate care at the health centre. There are more factors to each of the 3 contributory factors like distance to a facility, cost, women's status and ill staffed facilities.

Common causes of maternal deaths included obstructed labour and ruptured uterus, postpartum haemorrhage, eclampsia, postpartum infection and unsafe abortion. Studies in Zambia showed the maternal mortality rate at 730 per 100,000 live births (1996 Zambia Demographic and Health Survey, in Zambia Health Information Digest (1996) Vol 3 No. 4:12). Factors contributing to the deaths were as stated by Thaddeus and Maine (1990:12). However high levels of maternal mortality reported in Kaputa district 1997 were due to remoteness. Conclusion was that the various studies done in Zambia have shown multi-factorial determinants of maternal mortality.

Factors delaying women to seek medical care in Kumasi, Ghana were found to be transportation and health-related factors. Murray (1996:29) states that there is lack of regular transport to convey patients to health facilities with some villages relying on one vehicle that left at dawn and returned at nightfall. Health services are reported to have unhelpful, rude and impatient staff; short supply of drugs, equipment and supplies; long and tedious process involved in getting blood from the blood bank; and financial barriers in the cost of hospital fees.

Massessa, Mlekwanyuma, Mwita and Kalimanzila (1990:17) in a study on factors influencing utilization of maternal services in rural health units in Musoma, Tanzania found similar findings as those by Murray (1996:29). In their findings they state that of the 96% mothers who attended Antenatal clinic, only 37% delivered at the health facility while 18% delivered at a TBA. Among the factors influencing the utilization pattern included the poor state of health facilities, inadequate supplies and equipment, poor

accessibility to health facilities as well as poor attitudes and bad language of the health workers.

Post (1997:4) agrees with Massessa et al (1990:17) findings in attributing long admission-to-treatment intervals to shortage or lack of essential supplies and treatment. Makokha, Khulumani, Modisaotshile and Baakile (1994:45) in a study on determinants of home deliveries in Botswana found that most women delivered at home because they could not afford the fees for maternity services at health facilities nor the transport cost to the health facilities, which were not often accessible by foot. In fact most women did not see any significant difference in the quality of care between health facilities and home services. Some women avoided health facilities because of the negative attitudes of health workers and this included risk mothers who were aware of their risk to complications. Recommendations made did not mention the need for correction of attitudes so as not to scare women away from health facilities.

Findings by Carpentier, Prazuck, Vincent-Ballereau, Ouedraogo and Lafaix (1995:200) from a study done in West Burkina Faso correspond with the other studies that proximity matters in utilization of health facilities. Nearly all the patients (89%) visited a dispensary that was less than 5 kilometres from their homes.

Similary, a case study by Smith,Estrada-Claudio and Murray (1996:126) in Apelo Cruz Phillipines, on women's dislike of health services, revealed that women felt shy and frightened by hospitals and doctors. They had heard that doctors and nurses shout at

clients. Women also complained about the long periods of waiting before they were attended to, which left them worrying about the children left at home. Despite waiting for so long, nothing was explained to them.

Many women in Apelo Cruz found it difficult to read the signs in the hospital grounds and so often had problems finding their way to the right department. Inability to save money to cover delivery costs also deterred them from travelling to town for health facilities. In their study to determine and describe the factors associated with the referral of obstetric emergencies in order to reduce maternal mortality in Lesotho, Lefoka, Letseka, Molapo, Molatseli and Sekeli, (1994:6) found that women by passed the primary health facility in preference for hospital care because they believed that there was better care where there were doctors. The other reason why women preferred to deliver at home was the negative attitudes of health personnel. This study found that transport to carry patients from public health facilities was guaranteed as and when it was called for unlike the studies of Iipinge et al (1992:7) and Matekwe Phoya et al (1990:3) that had transportation problems.

Cultural beliefs

Some studies cited culture to play a role in women's decision to utilize health facilities. Tamaona, Thom, Miso, Malema and Jamu (1997:54) carried out a descriptive cross sectional study on factors that were contributing to the delayed perinatal care in Machinga District, Malawi. Their study revealed that 54% of women delayed seeking perinatal care because they had to seek permission from their husbands or had to wait for

advice from elders and parents before seeking care. Distance also contributed in that women who stayed 6 – 10 kilometers away from the health facilities delayed to seek perinatal care. These findings correspond to Dey (1998:7) where several women whose situations were critical and needed emergency obstetric care, were refused to be referred to hospitals with such facilities because their husbands did not give permission for referral. It would be worth finding out whether reasons for delay to report at the health facilities in Lilongwe are similar to those found in the Machinga, Malawi study.

Post (1997:6) cites culture and tradition as having great influence on the decision to seek care and therefore, on maternal morbidity and mortality. Many African settings require privacy and/or the custom that a male relative must accompany them while travelling therefore restricting women's use of health facilities. Use of health care services has been hindered for Saudi Arabian women where requirements are such that, care must be given by a woman (Post: 1997:6).

In Machinga district in Malawi, factors that influenced referral default of high-risk antenatal women were studied (Kanjira, Jiya, Somera, Makoka & Manna, 1997:48). Thirty-three percent (33%) of high-risk mothers defaulted referral and reasons included strong cultural beliefs regarding witchcraft and cultural practices (waiting for the paternal party to arrive before going for hospital delivery). This tallied with findings by Chiwuzie, Braimoh, Unuigbe and Olumeko (1995:405) in Nigeria where there was a belief that haemorrhage was caused by supernatural forces therefore making them not to seek health care. The community also had negative perception of care provided in modern hospitals

due to bureaucracy, lack of drugs, malfunctioning equipment, absence of doctors especially at night, unfriendly staff attitude towards patients and disorganized referral mechanism.

In Ghana, one of the factors that lead people to use traditional practitioners is the belief that some diseases are caused supernaturally and can only be cured by mystical powers that the traditional practitioners especially the fetish priests are thought to possess (Asenso-Okyere, 1995:88). Religious beliefs are reported to influence women's decisions as cited in the Pernambuco, Brazil situation where women refuse medicine on basis of their religion. Such situations can further expose women to risks of maternal death (Valungueiro, 2001:8).

The situations cited above strengthen the need for midwives and other health personnel to take note that people have different cultural beliefs that should be considered in provision of care.

2.2.4 Emergency Obstetric Care

Post (1997:3) defines Emergency Obstetric Care (EOC) as "specific interventions to manage emergency obstetric complications" and continues to state that every pregnant woman needs access to facilities with EOC otherwise the goal of reducing maternal mortality cannot be achieved if prompt care is not available for obstetric complications. The interventions may be intravenous antibiotics, oxytocics or anti-convulsants, management of abortion complications, management of postpartum bleeding, assisted

delivery for prolonged labour such as vacuum or forceps delivery, blood transfusion, and/or caesarean section. All pregnant women are said to be at risk of obstetric complications, with most life-threatening complications occurring during labour and delivery (Post, 1997:2) necessitating the need for access to health facilities with EOC.

The Prevention of Maternal Mortality (PMM) Network (Post, 1997:3) identifies the points at which delay to EOC can occur as:

- "Delay in deciding to seek care;
- Delay in reaching a first referral level facility; and
- Delay in actually receiving care after arriving at the facility."

A study in Saudi Arabia by Al-Meshari, Sisir, Chattopadhyay, Younes and Anokute, (1995:1, 9) indicated that leading causes of maternal deaths were haemorrhage (25%), pulmonary embolism (18%), ruptured uterus (15%), hypertensive disorders (13%) while home deliveries contributed (19%) of direct maternal deaths. The study concluded that Saudi Arabia's maternal mortality rate could be brought down to a minimum through improving the quality of emergency obstetric services and achieving a higher female education rate. Emergency obstetric care is so important such that Feuerstein (1993: 58) refers to EOC as the 'cornerstone' of a building providing central support to the whole structure making it necessary for first referral level to have EOC within reach of the woman who develops complications.

A hypothetical model developed to evaluate the costs of providing EOC based on a population of 300,000 for a health setting revealed that: salaries were the largest proportion of input costs (31%) followed by infrastructure improvements (16%), drugs (10%) and laboratory (9%). It is therefore important to identify the most appropriate financing and cost-recovery measures for provision of EOC in different settings (Post, 1998:13). Akalin, Birnbaum, Brown, Escandon, Kamara, Maine, Malak, McGinn and MacNamara (1996:12) state that improving EOC is not too costly as most of the costs of providing emergency obstetric care have already been paid for. Even in resource-poor areas, many health facilities already exist that may only need renovation. The staff would need some additional training focused on treatment of complications.

Nigeria, like other countries, is training its registered nurse-midwives in 'Life-saving skills' for three weeks whereby they are provided the ability and competence to deal with obstetric emergencies (Payne 1994 in Murray, 1994:128). The exposure to life-saving skills has built up a high level of competence and confidence in the midwives making them manage pregnant women more effectively.

2.3 HUMAN RESOURCES

Focus is made to midwifery being the point of concern for the current study. The International Confederation of Midwives (ICM) 1992, defined a midwife as 'a person, who, having been regularly admitted to a midwifery educational programme, duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualification to

be registered and/or legally licensed to practice midwifery. The midwife may practice in hospitals, clinics, health units or in any other service' (Bennett & Brown, 1999:4).

Midwifery is further defined as an art and science. Art because it requires a midwife to be able to understand the woman's needs, in order to encourage her and build her confidence and a science because it demands a high degree of knowledge and decision-making ability. The midwife's role therefore is to be alongside women giving birth and to share in their joy and pain. It is work that carries great responsibilities and demands skills and knowledge of a high order, necessitating that one gets a thorough education and sound learning. As an independent practitioner in her own right who may diagnose pregnancy and various related conditions, the midwife has the 'woman' and her developing fetus as her central focus of care (Bennett & Brown, 1999:13).

Jackson-Baker, (1998:52) states that the overall purpose of midwifery care is to ensure the greatest possible maintenance and improvement in the health of women in pregnancy, labour and the postnatal period, and that of their families. The author further emphasizes that midwifery care is appropriate when it focuses on meeting women's needs and recognizes the skills and knowledge of other professionals who contribute to the delivery of care.

Problems associated with human resources vary in different regions. In the Americas, the expansion of human resources has been limited by recent cutbacks in spending by the public sector while the Eastern Mediterranean region has increased the overall ratios of

human resources especially nursing and midwifery due to demographic and epidemiological changes. Africa on the other hand, has low output of health institutions and poor performance of health personnel. Brain drain continues, undermining the public sector's capacity to respond to health needs (The World Health Report, 1998:148).

The situation in Malawi is such that distribution of staff favours urban areas at the expense of rural areas due to unattractive working environment in the rural areas, that is lack of social amenities and accommodation (Malawi National Health Plan, 1999-2004:52). With the constraint of 'limited financial resources' vacancies exist at all cadres of health personnel. Kasonde and Martin, (1994:3) also cite the Zambian situation similar to Malawi where coverage of health infrastructure is in favour of the urban population and those living along the rail link.

2.4 SUMMARY AND IMPLICATIONS FOR PRESENT STUDY

High maternal mortality rate is a problem in the developing countries as shown by statistics, 150,000 deaths in Africa, only 6000 in developed countries and the rest in Asia and Latin America (Maclean, 1993:72). The literature searched has shown high maternal mortality rates in sub-Saharan region with more or less similar contributory factors (Zambia, Tanzania, Namibia, Malawi studies).

There is indeed an element of delay in women reporting to a health facility thus necessitating the need to carry out the study. Langer, Hernandez, Garcia-Barrios, Saldana-Uranga and the National Safe Motherhood Committee of Mexico, (in Berer &

Ravindvan, 2000:131) summarise key factors that contribute to delay in seeking care as the ability of the woman and/or her family to recognise that her symptoms are serious enough to justify medical care; concerns about the quality and cost of health services; and the distance they would have to travel to obtain care.

The problem of distance to a health facility has been cited in most studies. There is a gap, in that the studies have not found the reasons why women prefer traditional birth attendants despite knowing that as high risk they should access a health facility. Most studies have checked records of maternal death cases or held focus group discussions in the community. The author would like to gather information from the actual high-risk pregnant women who delay to report at a health facility. The next section deals with the conceptual framework.

2.5 CONCEPTUAL FRAMEWORK

The previous section dealt with the literature that was reviewed to search what was known about delayed admission. In this section the conceptual framework will be presented. According to Polit and Hungler, (1995:97,100), conceptual frameworks deal with abstractions (concepts) that are assembled by virtue of their relevance to a common theme with an overall purpose of making scientific findings meaningful and generalizable. This definition is similar to Mouton, (1996:195) who refers to conceptual framework as 'a typology where phenomena are classified in terms of characteristics that they have in common'. Conceptual frameworks serve as a frame of reference for observation and data collection (Mouton, 1996:196).

The current study utilized parts of Pender's Health Promotion model and Andersen's Health Belief Model.

The Health promotion model (HPM) is an attempt to depict the multidimensional nature of persons interacting with their environment as they pursue health (Pender, 1996:53). Health promotion is defined as activities directed toward the development of resources that maintain or enhance an individual's well - being. The HPM encompasses two phases: a decision – making phase and an action phase. The decision – making phase consists of cognitive – perceptual factors and modifying factors; while action phase involves both barriers and cues that trigger activity in health – promoting behaviour (Polit & Hungler, 1995:105, Pender, 1996:52).

The HPM is based on seven assumptions but the current study picked only two namely:

- Individuals in all their biopsychosocial complexity interact with the environment, progressively transforming the environment and being transformed over time.
- Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span (Pender, 1996:55).

Modifying factors are said to indirectly influence patterns of health behaviour. Selected modifying factors studied for this study were demographic characteristics, interpersonal influences and situational factors.

Andersen's Health Belief Model on the other hand, identifies three types of individual factors that are likely to influence health service use namely: predisposing factors,

enabling resources and need. Predisposing factors include age and maturity. Enabling resources, which are the means to use health care services are availability of services, affordability and accessability of services (Polit & Hungler, 1995:109, New Zealand's 1997 Abstracts: 2). Need characteristics on the other hand, explain perceived requirement to use services.

The health belief model states that there are positive and negative factors, where positive factors are assumed to promote entry into prenatal care, while negative factors are associated with late entry into prenatal care. Selected factors utilized were: predisposing factors, enabling factors, socio demographic factors, personal barriers and system barriers that would influence admission into labour ward. These factors were incorporated into the questionnaire for the study.

From the literature reviewed, distance to a health facility has been associated with the use of services (Iipinge et al, 1992:7, Tamaona et al, 1997:54 and Dey, 1998:6). In the current study it is assumed that having a high-risk pregnancy is the reason women should seek care and report early for admission to labour ward.

For purposes of this study, concepts will be described under three categories of high-risk woman during pregnancy, antenatal care and complications during labour.

2.6 HIGH RISK WOMAN DURING PREGNANCY

High-risk mothers are referred to a specialist so that the baby should be delivered at a regional hospital where sophisticated monitoring equipment and laboratory tests are available, and specially trained personnel can attend to the needs of the mother and her infant (Miller & Keane, 1978:816). The following conditions are the most common conditions that could classify a pregnant woman as high- risk.

2.6.1 Pre-eclampsia

The condition occurs in the second half of pregnancy and is manifested by an elevated blood pressure over 140/90mmHg, generalized oedema and proteinuria. Pre-eclampsia, if not recognized early, treated promptly and effectively could lead to the death of the mother and the fetus (Bennett & Brown, 1999:220). Pre-eclampsia is also termed as pregnancy-induced hypertension and is classified into mild, moderate and severe. Mild pre-eclampsia is manifested with generalized oedema, diastolic blood pressure less than 100 millimeters mercury (mmHg); moderate with generalized oedema, diastolic blood pressure less than 100 mmHg or more; while in severe pre-eclampsia there is generalized oedema, diastolic blood pressure 100mmHg or more and proteinuria (Mackay, 1986:169-175).

Mackay, (1986:175) further states that pre-eclampsia is common in nulliparas but the disease can be severe and of sudden onset in multiparas. Maternal death may result from haemorrhage and/or shock. Severe pre-eclampsia can lead to permanent kidney damage as the condition involves brain, liver, placenta and kidneys. Fetal death occurs in 2-5% of patients usually due to combination of prematurity and intrauterine hypoxia caused by

placental insufficiency. One of the important objectives in cases of severe hypertension in pregnancy is to reduce blood pressure in order to avoid hypertensive encephalopathy and cerebral haemorrhage. Blood pressure should be kept below dangerous levels of 110/70mmHg adequate circulating blood volume should be maintained.

Owing to the gravity of pre-eclampsia as shown by literature cited above, it is important that early diagnosis is made to ensure prompt treatment and prevent complications. Dekker and Sibai (2001:209-215) state that prevention can be primary, secondary or tertiary. Primary prevention refers to avoiding occurrence of the disease, secondary implies breaking off the disease process before emergence of clinically recognizable disease, while tertiary prevention means prevention of complications caused by the disease process, and is thus more or less synonymous with treatment.

2.6.2 Multiple pregnancy

Where more than one fetus are in utero, the risks during pregnancy and labour increase. Therefore these women should deliver in a hospital with the necessary facilities to care for mother and baby (Bennett & Brown, 1999:351). Antenatally, minor discomforts of pregnancy are exaggerated, especially pressure symptoms such as varicose veins and dyspnoea. The incidence of pre-eclampsia and anaemia is increased and labour often starts prematurely. The woman is advised on the need for extra rest especially during the third trimester to reduce the risk of premature labour (Sweet, 1984:139). Cord prolapse may occur especially after birth of the first baby when the pelvis is empty and the membranes of the second twin rupture. Sweet further states that there is a greatly

increased incidence of postpartum haemorrhage due to a large placental site and overstretched uterine muscles. There is raised stillbirth and neonatal morbidity and mortality especially with the second twin due to a reduction in the placental circulation when the volume of the uterus is reduced after the birth of the first twin (Sellers, 1997:1149).

Sellers (1997:1150) further states other complications common with multiple gestation being: malpresentation and the accompanying complications particularly prolonged labour; intrapartum haemorrhage from early placental separation, uterine constriction ring developing after birth of first twin and active retention of second twin.

2.6.3 Teenage pregnancy

A teenager means a young woman who has reached puberty with the age ranging between thirteen (13) years and nineteen (19) years old. There is an increase in teenage pregnancies in communities. The pregnant teenager (adolescent) faces a tremendous challenge at a time when her physical growth may still be incomplete, she has not yet completed the developmental tasks of adolescence, her available support systems may be limited, and her education is unfinished (Ladewig, London & Olds, 1998:222 and Mbizvo, Kasule, Gupta, Rusakaniko, Gumbo, Kinoti, Mpanju-Shumbusho, Ziwa, Mwateba & Padayachy, 1995:346). Mbizvo et al, (1995:346) in their study in Zimbabwe also found that few pupils had correct knowledge on when a girl was most likely to get pregnant in a menstrual cycle and fewer male than female students knew that pregnancy could occur in a girl during her first sexual encounter.

Teenagers usually become pregnant while they are at school and they have a tendency of hiding their pregnancy until late, when the abdominal girth grows bigger and becomes visible. It is reported that, because they hide their pregnancy, they usually do not attend antenatal clinic and if they do, they fail to cooperate with recommendations that they receive (Dlamini, 1997:16, Sellers 1997:1717 and Ladewig, London & Olds, 1998:223). Though teenagers may default antenatal care, it is the critical factor that most influences pregnancy outcome in the teenager.

Teenage pregnancies are associated with numerous pregnancy-related complications namely: pre-eclampsia, preterm births, low- birth-weight, cephalo-pelvic disproportion and iron deficiency anaemia. An increasing incidence of pre-eclampsia in teenagers has been observed amongst those in the Kwa-Zulu Natal province in Natal, South Africa (Dlamini, 1997:16).

2.6.4 Bad obstetric history

A woman who has a history of abortions or stillbirths and has no living child needs proper care during pregnancy and delivery to ensure a normal outcome of a live baby.

2.6.5 Grande multipara

A woman of high parity (usually one who has given birth five times or more) has a weakened lower uterine segment and loss of abdominal muscle tone due to the high rate of deliveries. This makes the woman prone to hypertensive disease in pregnancy, postpartum haemorrhage and cord prolapse (Alexander et al, 1997:65, Sellers, 1997:1239

and Bennett & Brown, 1999:480). With increased number of deliveries, fibrous tissue replaces muscle fibres of the uterus reducing its contractility, and therefore causing postpartum haemorrhage. Great parity is also associated with malpresentation presumably related to a pendulous abdomen, laxity of maternal abdominal muscular support and therefore loss of the normal vertical orientation of the uterine cavity (Sellers, 1997:1239, Gabbe, Niebyl & Simpson, 1999:187).

2.6.6 Elderly primigravida

A woman over the age of thirty-five years who is pregnant for the first time is at risk of fetal abnormalities like Downs syndrome (Bennett & Brown, 1999:373). Other complications include miscarriage, diabetes mellitus, preterm delivery, uterine fibroids, malpresentation, antepartum haemorrhage and hypertensive disorders as cited in a study done at University of Ilorin Teaching Hospital, Nigeria (Ojo & Briggs, 1982:142, Anate & Akeredolu, 1996:551). Maternal mortality occurs due to increased complications of pregnancy (Nel, 1995:112).

2.6.7 Previous caesarean section scar

A woman who previously had an obstetric operation whereby the fetus was extracted from the uterus through an incision made in the abdominal and uterine walls is at a greater risk of uterine rupture especially if the uterus has been scarred twice (Bennett & Brown, 1999:557). These women need proper advice on the mode of delivery depending on whether it is one or two previous scars. A study done at Jimma Hospital, South -

Western Ethiopia indicated that 16% (16) women had repeat caesarean section therefore the need for proper examination and advice (Ali, 1995:62).

2.6.8 Diabetes mellitus

Diabetes mellitus, a metabolic disorder characterized by hyperglycaemia, which comes as a result of defective insulin production, secretion or utilization (Nettina, 1996:742) is a high - risk state for both the pregnant woman and her fetus. There is a risk of congenital malformation, poly-hydramnios and pre- eclampsia. Late intrauterine fetal death can occur in the last 4 to 6 weeks of pregnancy due to maternal acidosis and placental insufficiency (Sellers, 1997:1031). Fasting plasma glucose levels greater than 6.2millimols per litre is indicative of impaired glucose metabolism suggestive of diabetes mellitus (Meij & Van Papendorp, 1999:93). If complications should arise before term, the baby is delivered at about 38 weeks gestation.

A diabetic infant is prone to hypoglycaemia because the fetus is no longer in the raised glucose intrauterine medium of the diabetic mother; hypocalcaemia with carpopedal spasms; hyperbilirubinaemia due to reduced enzymes and therefore reduced conjugation of the direct bilirubin; respiratory distress and skin infections (Sellers, 1997:1033).

2.6.9 Anaemia

Anaemia, a condition where there is a reduction in the oxygen- carrying capacity of the blood can be due to a reduced number of red blood cells, a low concentration of haemoglobin or a combination of both. Fifty per cent of the women in developing

countries are anaemic and this contributes to a high maternal mortality rate with haemoglobin level of 10.5 grammes per decilitre.

Anaemia is classified into mild, moderate and severe states. Mild anaemia is manifested by haemoglobin level of 9-10 grams per decilitre and slightly pink mucus membranes; moderate anaemia being haemoglobin level of 7-8.9 grams per decilitre and slightly pale mucus membranes, and the severe state having haemoglobin level of less than 7 grams per decilitre and pale mucus membranes (Bokosi, Chodzadza, Hiwa, Jonazi, Kumwenda, Makawa, Ngoleka, Matekwe Phoya, Rashidi, Chawani, Kazembe & Mbweza, 1999:47). Any degree of anaemia will reduce the body's resistance to infection and its capacity for healing (Bennett & Brown, 1999:290).

Complications are rendered more severe or occur more frequently with anaemia as the general health of the pregnant woman is undermined. There is an increase in preterm labour due to poor uterine blood supply and intrauterine growth retardation occurs because the reduction in oxygen and nutrients interferes with fetal growth (Sellers, 1997:1023).

2.7 ANTENATAL CARE

Antenatal care aims to monitor the progress of pregnancy in order to ensure maternal health and normal fetal development. Professional supervision throughout pregnancy helps to achieve a normal labour and delivery of a mature healthy baby (Sweet, 1984:61; Gabbe, Niebyl & Simpson, 1999:3).

2.7.1 Antenatal Visits

For purposes of this study antenatal visit shall refer to each time a pregnant woman comes to the hospital for an antenatal examination during which deviations from the normal are detected. Management and treatment of identified problems can be provided as required (Bennett & Brown, 1999:210).

2.7.2 Screening

Special examination carried out on pregnant women to detect any fetal and maternal abnormalities (Martin, 1998:590). Screening enables the midwife/ doctor to make an early diagnosis of high-risk women and ensure proper treatment.

2.7.3 Referral

For purposes of this study, referral shall mean the action of taking a pregnant woman with identified or suspected problems to the next level of care to ensure prompt and effective treatment.

2.8 COMPLICATIONS DURING LABOUR

Complications may arise at any time during labour that could endanger the life of mother and fetus. The following complications can set in:

2.8.1 Prolonged labour

Prolonged labour (lasting more than 12 hours of established labour) is common in primgravidae and may be caused by ineffective uterine contractions, cephalopelvic

disproportion and occipitoposterio position (Bennett & Brown, 1999:497). It is important to determine the cause of prolonged labour so as to institute proper management.

2.8.2 Obstructed labour

Labour is obstructed when there is no advance of the presenting part despite strong uterine contractions. This may result from disparity between the sizes of the mother's pelvis and the fetus (cephalopelvic disproportion). Gabbe, Niebyl and Simpson, (1999:250) further explain that cephalopelvic disproportion occurs due to problems in the '3 Ps' namely: relatively large fetus (passenger), relatively small pelvis (passage) and relatively insufficient or inefficient uterine contractions (powers). Obstructed labour can be prevented by proper assessment of the pregnant woman antenatally (Bennett & Brown, 1999:501).

2.8.3 Haemorrhages

Bleeding from the genital tract is classified into antepartum and postpartum haemorrhage. Antepartum haemorrhage refers to bleeding after 24 weeks gestation and before onset of labour. Postpartum haemorrhage is excessive bleeding from birth of baby to 6 weeks after delivery (Tiran, 1997:116). Antepartum haemorrhage is mainly attributed to placenta praevia and abruptio placenta. The later frequently stimulates the clotting cascade resulting in disseminated intravascular coagulation (Gabbe, Niebyl & Simpson, 1999:230). Haemorrhage increases the fetal and maternal mortality and morbidity rates and should be prevented (Bennett & Brown, 1999:255).

2.8.4 Ruptured uterus

Tearing of the wall of the uterus owing to excessive thinning of the lower uterine segment or, trauma. It can occur in cases of high parity, obstructed labour and previous caesarean section. Ruptured uterus is often fatal for the fetus and may also be responsible for the death of the mother. This complication can be avoided with effective antenatal and intrapartum care (Bennett & Brown, 1999:574).

2.8.5 Operative interventions

When complications arise, surgical procedures are done to ease delivery. For example, in obstructed labour, a caesarean section would be done to deliver the baby.

2.8.6 Malpresentations

Presentation of the fetus other than the vertex (e.g. breech presentation) places the pregnant woman at high risk. There is an ill-fitting nature of the presenting part to the cervix therefore raising the possibility of cord prolapse and fetal asphyxia (Bennett & Brown, 1999:567). Other malpresentations would be where the fetal spine or long axis crosses that of the mother (transverse) or oblique lie resulting in a shoulder or arm presentation (Gabbe, Niebyl & Simpson, 1999:189). These complications will need intervention to save the life of the baby. Factors associated with malpresentation include: diminished vertical polarity of the uterine cavity; increased or decreased fetal mobility; and obstructed pelvic inlet. Placentation high in the fundus or low in the pelvis diminishes the likelihood of a fetus comfortably assuming a longitudinal axis (Gabbe, Niebyl & Simpson, 1999:187)

2.8.7 Puerperal sepsis

Infection occurring in the genital tract during the puerperium (after delivery to 6 weeks period) can lead to septic shock especially when there is an over-whelming infection from Gram-negative organisms. Infection control should be observed since the placental site is the main point of infection entry (Bennett & Brown, 1999:582).

2.8.8 Eclampsia

This condition, where one or more convulsions occur in association with the syndrome of pre-eclampsia (Bennett & Brown, 1999:323) places the pregnant woman and the fetus in danger. Eclampsia, a very serious complication of pre-eclampsia occurs because there is brain hypoxia, brought about by intense vasospasm and partly by oedema (Mackay, 1986:175). Hypoxia can lead to an underlying cerebral dysrhythmia resulting in fitting. Efforts of care are aimed at prevention of further convulsions to save the life of the mother.

2.8.9 Fetal distress

Proper monitoring of the fetal condition should be done to detect fetal distress early. In this condition, the fetus suffers oxygen deprivation and becomes hypoxic. Severe hypoxia may result in the fetus being stillborn, or the baby may be asphyxiated at birth and suffer brain damage (Bennett & Brown, 1999:423).

2.8.10 Maternal distress

This is a condition of mental and physical exhaustion occurring in a woman in labour which is characterized by a raised temperature 37.2 degrees Celsius and over, pulse rate of 90 to 120 beats per minute or more and respirations of 24 breaths per minute and over; dehydration, oliguria and ketosis (Ojo & Briggs, 1982:257 and Sweet, 1984:232). Signs of dehydration include dry furred tongue, dry skin, the presence of acetone in the breath and in urine, restlessness, sweating, vomiting at times and distension of bowels with gas. Maternal distress is an indication that labour should be terminated. Attempts should be made to prevent the high-risk pregnant woman from maternal distress as this may put the life of the fetus in danger.

2.9 CONCLUSION

This chapter discussed the literature reviewed and the conceptual framework for the study. Selected factors from the health promotion model and health belief model were utilized. Conditions classifying a pregnant woman as high risk included pre-eclampsia, multiple pregnancy, teenage pregnancy, grand multipara, elderly primgravida and previous caesarean section scar. Proper management and treatment of identified problems antenatally was reported as necessary to prevent some complications that may arise in labour like obstructed labour and ruptured uterus. The next chapter will present the methodology of the study.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

The previous chapter dealt with literature review and the conceptual framework. Literature review focused on development, distribution and utilization of health services with focus on maternal health while conceptual framework presented the classification of concepts used in delayed admission of high-risk pregnant women. High-risk woman during pregnancy, antenatal care and complications during labour were covered. This chapter presents the methodology applied to the study. Research methodology is the total set of means that scientists employ in reaching their goal of valid knowledge, that is route and means of transportation, (Mouton, 1996:35).

The current study aimed at finding answers to the following research question as depicted in 1.3 of Chapter 1:

What are the factors associated with delayed admission of high-risk pregnant women in labour ward?

3.2 RESEARCH STRATEGY

The study is a descriptive survey. The quantitative approach was used. Quantitative research involves the systematic collection of numerical information and the analysis of that information using statistical procedures, (Polit & Hungler, 1995:15). The purpose of descriptive survey is to observe, describe and document aspects of a situation as it naturally occurs (Polit & Hungler, 1995:178). Mouton, (1996:102) further supports this

definition in stating that 'descriptive statements make claims about how things are, what the actual state of affairs or fact of the matter is'. The descriptive survey was chosen, as it would allow description of the phenomena of delayed admission of high-risk pregnant women to labour ward.

3.3 TARGET POPULATION AND CRITERIA FOR INCLUSION

Population refers to the aggregate or totality of all the objects, subjects, or members that conform to a designated set of criteria (Polit & Hungler, 1995:229). The target population is the aggregate of cases about which the researcher would like to make generalizations (Polit & Hungler, 1995:230).

The study population consisted of high-risk pregnant women in labour that reported late for admission at Lilongwe Central Hospital, Malawi from October 2001 to December 2001.As indicated earlier in chapter 1.6.4, a high-risk pregnant woman is a pregnant woman with any factors that expose her and the fetus to potential danger and complications such as ruptured uterus, postpartum haemorrhage, vesico-vaginal fistulae, neonatal asphyxia, cerebral injury and stillbirths (Nolte, 1998:385, Bennett & Brown, 1999:503). The inclusion criteria meant that the high-risk pregnant woman must have a cervical dilatation of 5 centimetres and above.

3.4 SAMPLE SELECTION AND SAMPLING PROCEDURES

Brink (2000:133) refers to a sample as a selected group of the elements or units from a defined population while sampling is the process of selecting the sample from a population in order to obtain information regarding a phenomenon.

Probability sampling was used to select the sample. The term probability refers to the fact that every member (element) of the population has a probability higher than zero of being selected for the sample (Burns & Grove, 1993:298). Probability sampling also known as random sampling was chosen because it is more likely to be representative of the population.

Simple random sampling method was used to determine the actual period of data collection. This was achieved through dividing the year 2001 into four quarters namely: January to March, April to June, July to September and October to December. Four papers on which the four quarters were written were put into a hat, shaken well to mix them and then the researcher picked one paper from the hat. The quarter October to December was picked, hence data collection during this period.

Data were collected every day during the months of October to December by the researcher and one research assisstant. During this period every high- risk woman with (>5cm cervical dilatation) was interviewed. A total of 130 respondents met this criteria and were subsequently interviewed. Questionnaires were administered to all high-risk

pregnant women who reported late for admission in labour to Lilongwe Central Hospital, with cervical dilatation of 5 centimetres and above.

Table 3.1 Population, sample and research technique

POPULATION	SAMPLE	TECHNIQUE
All high risk women in labour who reported late for admission at Lilongwe Central Hospital	Probability sample	Structured questionnaire and interview

3.5 DEVELOPMENT AND DESIGN OF THE INSTRUMENT

No specific tool was found in the literature searched. A survey instrument as shown in Appendix E was therefore developed utilizing the principles of questionnaire construction as cited in literature (Cormack, 1996:238, De Vos, 1998:152-159 and Brink, 2000:154-157). Focus was on formulating questions that addressed delayed admission into labour ward. Some questions on demographic characteristics, interpersonal influences and situational factors were formulated so as to relate to the selected modifying factors from Pender's Health promotion model and Andersen's Health belief model.

A questionnaire was constructed in English and translated into the Chichewa language, which is the national language for Malawi, to cater for both literate and illiterate high-risk pregnant women. The questionnaire consisted of both open and closed ended questions. There were three sections on the instrument namely A, B and C which was on demographic data, information from records concerning health seeking behaviour and antenatal, labour and delivery information respectively.

3.6 STRATEGIES TO ENSURE RELIABILITY AND VALIDITY

3.6.1 Validity

Validity was ensured through broad literature review to come out with the essential aspects of content to be included in the questionnaire. After the questionnaire was constructed, it was offered to experts in the field to evaluate its content validity. The experts comprised of the authors' research advisor, one senior midwife, two associate lecturers in midwifery and an obstetrician. This was to determine whether the items in the data collection instrument were representative of what they should measure. Their comments focused on restructure of items 13, 22, 30 and 34. A borderline was set for Apgar score for question 22. There was some bias in the question on TBA consultation that was rephrased so as not to be offensive (question 30). A time frame was put to question 34 that was earlier open making it a close-ended question.

No existing instrument was found therefore it was difficult to do criterion – related validity. Inter- rater bias was excluded by training the research assistant on how to use the instrument so as to eliminate any biases that could arise due to different persons collecting the data.

3.6.2 Reliability

Two people interviewed the same subject and afterwards the findings were correlated to check if the answers were the same. There were no differences in the answers, indicating reliability of the instrument.

3.7 PILOT STUDY

A pilot study of 3 high-risk pregnant women who reported late in labour was done on 9th October 2001 at Nkhoma Mission Hospital, Lilongwe Malawi. The sample consisted of all high-risk pregnant women who reported late in labour with a cervical dilatation of 5cm and above. These women were chosen because they had characteristics similar to the main sample and they would not be used in the main study. A pilot study is a small-scale version or trial run of the major study that ensures that errors and ambiguities are eliminated thus ascertaining the stability of the instrument (Brink, 2000:60) and (De Vos, 1998:158).

All items in the instrument were answered without need to further clarify them ruling out ambiguity. Item 30 on seeking services of the traditional birth attendant was answered by one woman who had been referred by a TBA for breech presentation in labour. This reflected that even with the main study, only those women that had sought the services of a TBA would answer item number 30. Section for code that was omitted initially was put on the front page to the right on top in the instrument for the main study.

3.8 DATA COLLECTION

The author and 1 research assistant collected the data from October 2001 to December 2001. The assistant was a registered midwife who had a one-day training to familiarize her with the study so as to reduce possibility of bias in data collection. Interviewing and recording techniques were discussed with the research assistant as part of the study familiarization.

A covering letter was written and combined with the consent form that was given to the respondent prior to administration of the questionnaire. The covering letter introduced the author, purpose and importance of the study, ethical considerations and the principle of beneficence (freedom from harm) as advocated in research (Polit & Hungler, 1995:119).

An interview was conducted in Chichewa language using the questionnaire with the assistant filling in the responses for those high-risk women who were not able to write.

This was taking into consideration the about 48% of women in Malawi who are functionally illiterate or have not attended school (Malawi National Health Plan, 1999-2004). The interview was done from 4 to 48 hours after delivery in the high-risk postnatal ward depending on the high-risk woman's condition. This was to give the woman a chance to rest after delivery. Initially the woman's records (file) were checked to ensure that she fell into the target population.

Each woman was interviewed once for a period of 25 to 30 minutes and in most cases the women could not fill in the questionnaire themselves due to illiteracy. Those women who had undergone caesarean section could not fill in their questionnaires in most cases because they had an intravenous infusion fixed on the writing (right) hand which was painful and so could not write.

3.9 ETHICAL CONSIDERATIONS

Polit and Hungler (1995:117) state that great care must be exercised in ensuring that the human rights are protected when humans are used as subjects in scientific investigations. The author ensured ethical consideration by applying the three primary ethical principles of beneficence, respect for human dignity and justice as stipulated by Polit and Hungler (1995:119) and Brink (2000:39).

3.9.1 ***The principle of beneficence,*** which states that above all do no harm ensures absence of both physical and psychological harm. Respondents were assured of their safety in the covering letter provided by the author (see Appendix D).

3.9.2 ***The principle of respect for human dignity,*** includes the right to self-determination and the right to full disclosure. This was ensured through respect of the respondents and explanation of the purpose of the study.

3.9.3 ***The principle of justice,*** which includes the subjects' right to fair treatment and their right to privacy was observed by maintenance of anonymity.

Several steps were followed to ensure adherence to ethical considerations and these included:

- Health Sciences clearance was sought from the Health Research Committee of the Ministry of Health and Population, Malawi after research approval from the Senate of the University of Namibia.

Institutional clearances to conduct pilot study as well as main study were also sought and granted from the Hospital Directors of Nkhoma Mission Hospital and Lilongwe Central Hospital in Malawi respectively (see Appendix A, C).

- Informed consent was obtained from the subjects before the interview. The purpose of the study and how the results of the study would benefit other patients in future was explained. A subject who accepted to participate in the study was asked to put her signature or thumb print on the consent form if she did not know how to write. The consent form was signed by the guardian for those high-risk women under the age of 18 years since they were minors.

- Subjects were assured of anonymity in that numbers (codes) were used instead of names. Confidentiality of the information was ensured by the fact that the author and advisors used the information only.

- Subjects were informed that they had the right to refuse to be interviewed or to leave some questions unanswered if they chose. This would not affect the type of care that they were going to receive in the ward. Subjects were also informed that they had the right to withdraw from the study anytime they wished to do so.

3.10 CONCLUSION

This chapter presented the research methodology that comprised of the research design, target population, sample selection, research instrument, strategies to ensure validity and reliability, data collection and ethical considerations. A descriptive quantitative survey was applied in the study. The next chapter presents the analysis of data.

CHAPTER 4

ANALYSIS OF THE DATA

4.1 INTRODUCTION

The previous chapter dealt with the methodology that was followed to accomplish the study purpose and objectives. In this chapter, the focus is on the presentation of the study findings.

The raw data collected was organised through analysis in order to provide answers to the research question. Brink, (2000:178) states that data analysis entails categorizing, ordering, manipulating and summarizing the data and describing them in meaningful terms. The type of analysis strategy or method used depends on the research design, the type of variables, the method of sampling and the method by which the data was collected and measured (Brink, 2000:178).

Descriptive statistics were used to describe the data in the current study through frequency distributions and correlation coefficients. The findings are presented according to the three sections in which the instrument was organised. Major observations were on items 11, 12 and 17 that had empty cells because the procedures in question (vital signs and haemoglobin) were not done.

4.2 SECTION A: DEMOGRAPHIC DATA

Item 4.2.1 Age Distribution

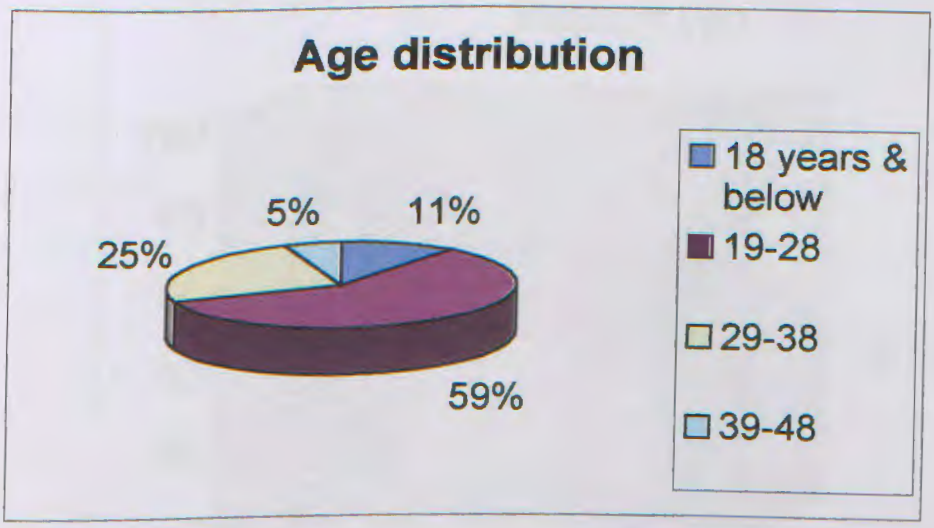

Figure 4.1 Age Distribution of respondents (N=130)

The ages of respondents were grouped into four age groups, namely: 18years and below, 19-28, 29-38, and 39-48. Figure 4.1 reflects that most respondents 77(59%) were in the19-28 age group, and the least respondents 7 (5%) were from the 39-48 years age group. Thirty -two (25%) respondents, were from the 29-38 age group. It was also found that 14 (11%) of the respondents were below the age of 18 years meaning they are teenagers. According to Dlamini (1997:16) and Sellers (1997:1717), many teenagers have a tendency to hide their pregnancy until late, and this poses a problem because complications cannot be diagnosed in time for proper monitoring and management.

Item 4.2.3 Ethnic background

The results on ethnic background of the respondents showed that the majority of the respondents 104 (80.0%) were of Chewa background as indicated in table 4.1 below. The other ethnic backgrounds were in small numbers.

Table 4.1 Ethnic Background of respondents (N= 130)

Ethnic background	Frequency	Percent (%)
Chewa	104	80.0
Yao	10	7.7
Tumbuka	4	3.1
Ngoni	8	6.2
Tonga	3	2.3
Lomwe	1	0.8
Total	**130**	**100.0**

Item 4.2.4 Religion of the respondents

This item determined to identify the religion of the respondents. As reflected in table 4.2 below, 118 (90.8%) of the respondents were Christians and 12 (99.2%) were Muslims.

Table 4.2 Religion of respondents (N= 130)

Religion	Frequency	Percent (%)
Christian	114	87.7
Muslim	12	9.2
Jehovah's Witness	4	3.1
Total	**130**	**100.0**

Item 4.2.5 Educational level attained

Data reflected in figure 4.3 below depicts that 40 (31%) respondents had no education at all, 70 (53%) had primary school education, 15 (12%) Junior certificate level and only 5 (4%) went as far as senior certificate level. The larger percentage lies in respondents who have had primary education and no formal education, tallying well with 2000 MDHS findings, National Statistical Office Malawi and ORC Macro (2001:23). Massessa et al (1990:17) in a study on factors influencing utilization of maternal services in rural areas of Tanzania cited that mothers with more than 5 years of education utilized the health facility more than those with less than 5 years of education confirming the findings of the current study.

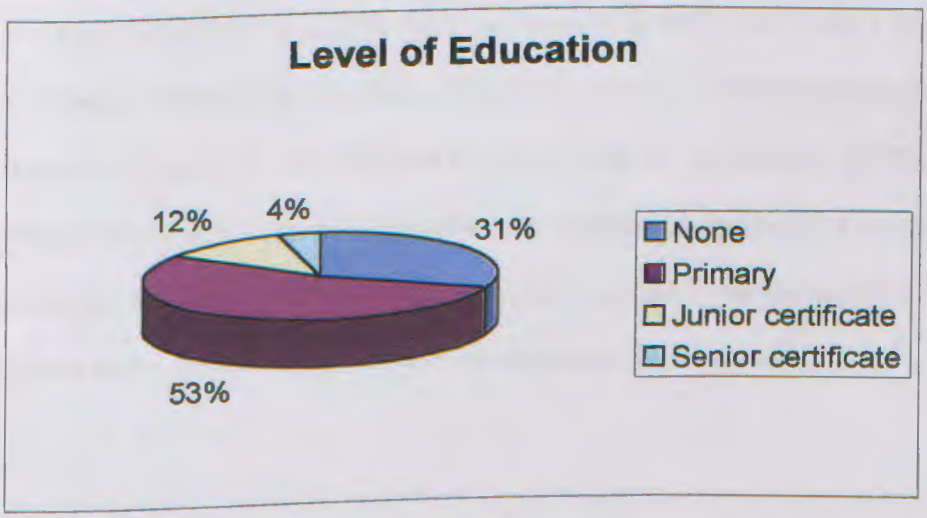

Figure 4.3 Educational levels of respondents (N= 130)

Item 4.2.6 Employment status of respondents

This item sought to determine the employment status of the respondents. The results as depicted by table 4.3 show that majority 123 (94.6%) of the respondents were unemployed with only 7 (5.4%) employed.

Table 4.3 Employment statuses of respondents (N= 130)

Employment status	Frequency	Percent (%)
Unemployed	123	94.6
Employed	7	5.4
Total	**130**	**100.0**

For those employed, 3 (2.3%) were self-employed and had hawkers where they sold assorted groceries; 2 (1.5%) were salespersons while 1 (0.8%) each were house-worker, farmer and teacher. It was indicated in a study done by Makokha et al (1994:45) that one of the reasons why women do not make use of maternity services is because they can not afford the fees for services and transport costs. Similarly, the unemployed women in the current study cited having problems with affording transport costs.

Item 4.2.7 Distance from nearest health facility

Table 4.4 Distance from nearest health facility of respondents (N= 130)

Distance (km)	Frequency	Percent (%)
1-8	87	66.9
9-16	28	21.5
17-24	14	10.8
>24	1	0.8
Total	**130**	**100.0**

Data as reflected in table 4.4 above, indicates that majority of the respondents, 87 (66.9%) stayed at a distance of 1-8 kilometres from the nearest health facility. However some respondents stayed far from a health facility; 28 (21.5%) stayed within 9-16 kilometres, 14 (10.8%) within 17-24 kilometres while 1 (0.8%) stayed more than 24 kilometres away. The acceptable distance to a health care facility in Malawi is a walking distance of 8kilometres (Malawi National Health Plan, 1999-2004:6) meaning that 87 (66.9%) of the respondents met this distance.

Tamaona et al (1997:54) found in their study that most women who stayed 6-10 kilometres away from health facilities delayed to seek perinatal care. Another study by Iipinge et al (1993:7) found out that 67% of the women in their study were more than 3 hours walking distance from the nearest health facility. It is reported that many women with obstetric complications die while trying to reach a health facility owing to the distance that are often too long (Feuerstein, 1993:41).

Item 4.2.8 Means of transport to the nearest health facility

Findings in table 4.5 below indicate the means of transport utilised by respondents to get to the nearest health facility. Majority of the respondents, 88 (67.7%) use slow means of transportation by walking or using bicycle/oxcart. Others use public transport 33 (25.3%) or private cars 8 (6.2%). Only one respondent (0.8%) stated that she uses the ambulance. Those women who used private cars complained of exorbitant charges especially when transport was used at night.

This mode of transportation corresponds with research findings as stated by Feuerstein (1993:42) in which women are carried by men in hammocks, public bus, animal - drawn carts and less by ambulance. Feuerstein further states that such travel conditions often cause deterioration in the woman's condition reducing her likelihood of reaching the hospital in reasonable condition. Lack of transportation is featured as a negative factor of factors that influence entry into prenatal care (Polit & Hungler, 1995:109).

Table 4.5 Means of transport to the nearest health facility (N= 130)

Transport	Frequency	Percent (%)
Walking/bicycle/oxcart	88	67.7
Ambulance	1	0.8
Public transport	33	25.3
Private car	8	6.2
Total	**130**	**100.0**

SECTION B: INFORMATION FROM RECORDS

Item 4.2.9 Gestational age of pregnancy on admission

Table 4.6 Gestational age of respondent on admission (N= 130)

Gestation (weeks)	Frequency	Percent (%)
34 - 36	25	19.2
37 - 40	105	80.8
Total	**130**	**100.0**

Table 4.6 reflects that 25 (19.2%) had pre-term labour (34-36 weeks) while 105 (80.8%) had their labour at term (37-40 weeks). The more pre-term the foetus, the greater the risks from labour and delivery (Bennett & Brown, 1999:424). Bobak and Jensen (1993:1120) state that a pre-term infant's survival may be in a compromised state since it does not possess the growth and development necessary for uncomplicated adjustment to extra-uterine life. A term infant's organs have matured more than a pre-term infant's putting the term infant at an advantage, for example, ability to regulate heat (Bennett & Brown, 1999:668, 688 and 754).

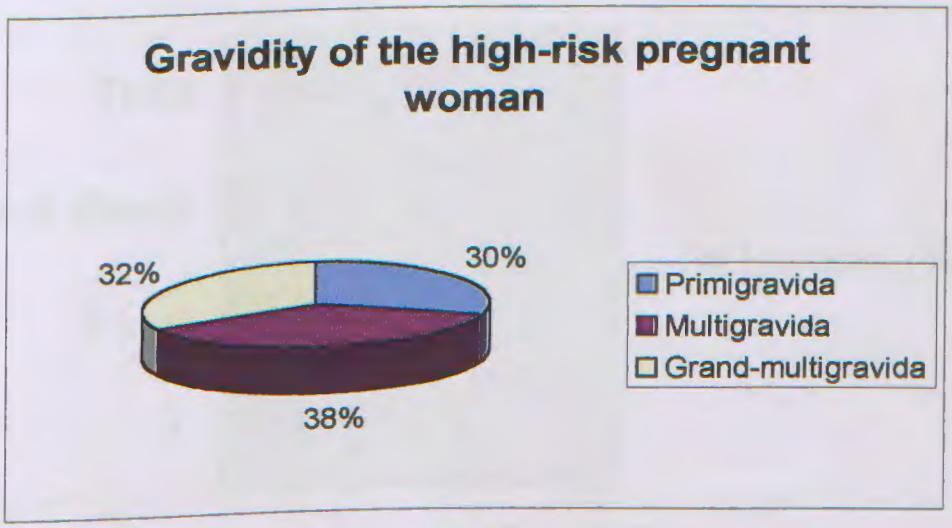

Figure 4.4 Gravidity of the high – risk pregnant woman (N= 130)

As indicated by figure 4.4 above, 39 (30%) of the respondents were primigravida, 49 (38%) multigravida, that is gravida 2-4, and 42 (32%) grand-multigravida, gravida 5 and above. There is a high risk of complications like post partum haemorrhage, cord prolapse and uterine rupture for a woman who has had more than five previous births (Bennett & Brown, 1999:214, 255 and Alexander et al, 1997:65).

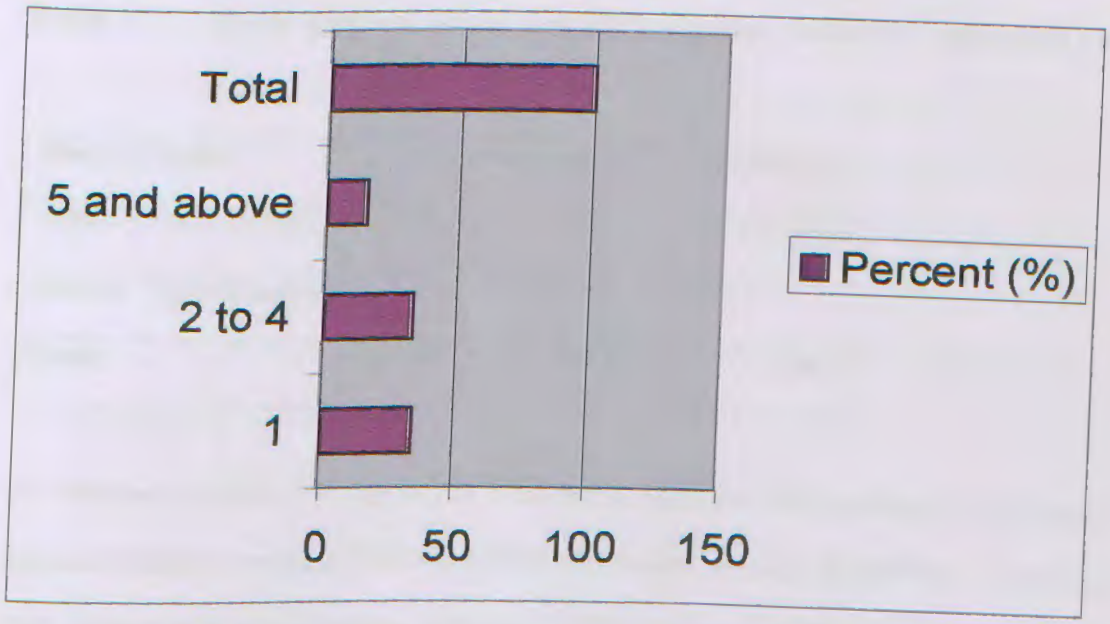

Figure 4.5 Parity of the high-risk pregnant woman (N= 130)

Figure 4.5 depicts that 45 (35%) women were primparae, 44 (34%) multiparae and 41 (31%) were grand multiparae. High parity predisposes women to postpartum haemorrhage because fibrous tissue replaces muscle fibres in the uterus reducing the uterus ability to contract. Multiparous women are also prone to complications like cord prolapse, malpresentations and cord prolapse (Bennett & Brown, 1999:480, 567).

Item 4.2.11 Vital signs of the respondents on admission

This item sought to identify the vital signs of the high-risk pregnant woman on admission to labour ward. The findings were as shown by tables 4.7, 4.8, 4.9 and figure 4.6.

Table 4.7 Blood pressure of the high-risk pregnant woman on admission (N= 130)

Blood pressure	Frequency	Percent (%)
90/60 –130/80mmHg	124	95.4
130/90 – 170/100mmHg	6	4.6
Total	**130**	**100.0**

As reflected in table 4.7 above 124 (95.4%) women were normotensive with blood pressure within the range of 90/60 to 130/80 millimetres mercury. Six (4.6%) women had mild hypertension with readings between 130/90mmHg and 170/100mmHg. Churchill and Beevers (1999:4) state that stillbirth rate has been noted to rise significantly in women whose diastolic blood pressure exceeds 90 millimetres mercury. The current study differs from Churchill and Beevers in that of the 21 women that had stillbirth, only 3 were hypertensive with blood pressure readings of 130/90 to 150/100mmHg.

Table 4.8 Temperature of the respondents (N= 130)

Temperature (celsius)	Frequency	Percent (%)
Less than 35.0	3	2.3
35.0 – 37.4	103	79.2
37.5 and above	4	3.1
Subtotal	110	84.6
Missing	20	15.4
Total	**130**	**100.0**

According to table 4.8, 3 (2.3%) women were hypothermic with a temperature of 35 degrees Celsius, 103 (79.2%) women had normal temperature (between 35-37.5°C) while 4 (3.1%) women had a raised temperature above 37.5 degrees Celsius (Black & Jacobs, 1997:236). Twenty (15.4%) women's temperatures were not recorded. This was a high figure of respondents whose temperature was not recorded making it difficult to determine any deviation from normal. Pyrexia is indicative of infection or ketosis, (Bennett & Brown, 1999:416).

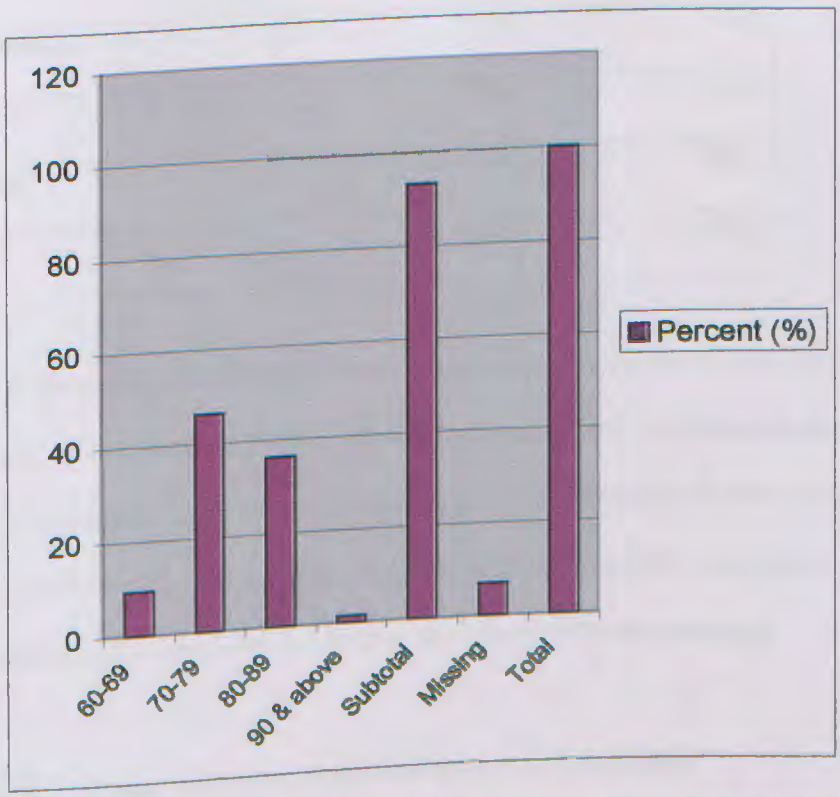

Figure 4.6 Pulse rate of the high-risk pregnant woman on admission (N= 130)

As reflected by figure 4.6 above, 121 (93.1%) women had normal pulse rate while 9 (6.9%) women's pulse rate was not recorded. Steady pulse rate is an indication that the woman is in good condition while pulse rate of more than 100 beats per minute may be indicative of infection (Bennett & Brown, 1999:416).

Table 4.9 Respirations of the high-risk pregnant woman on admission (N= 130)

Respirations	Frequency	Percent (%)
14 - 20	87	66.9
21 and above	9	6.9
Subtotal	96	73.8
Missing	34	26.2
Total	**130**	**100.0**

Table 4.9 depicts that 87 (66.9%) women had normal respirations of between 14 to 20 breaths per minute while 9 (6.9%) women hyperventilated. Hyperventilation occurs as a result of progesterone affecting the respiratory centre (Bennett & Brown, 1999:177). Some thirty- four (26.2%) women did not have their respirations recorded which was too large a number of respondents not to have their respiratory rate checked.

Item 4.2.12 Haemoglobin level of respondents on admission

This item sought to determine the haemoglobin level of the high-risk pregnant women on admission to labour ward. Data as shown by table 4.10 below, reflected that only 7

(5.4%) women had their haemoglobin checked on admission. The results of 4 women (3.1%) were not yet out on the day of the interview. Two women (1.5%) had severe anaemia with haemoglobin level below 6 grams per decilitre while one (0.8%) woman had moderate anaemia. One hundred and twenty-three women did not have their haemoglobin level checked. This could be partly attributed to the fact that the haemoglobin machine for Lilongwe Central Hospital Laboratory was out of order in the month of October and first half of November 2001. Pregnant women are usually screened for anaemia at their first antenatal visit (Bennett & Brown, 1999:291). It is however important to check haemoglobin levels considering that 50% of women in developing countries are anaemic (Bennett & Brown, 1999:291).

Table 4.10 Haemoglobin level of respondents on admission (N= 130)

Haemoglobin (g/dl)	**Frequency**	**Percent (%)**
Not done	123	94.6
1.2	1	0.8
3.9	1	0.8
6.0	1	0.8
Results not yet in from laboratory	4	3.1
Total	**130**	**100.0**

Item 4.2.13 Nature of the high-risk factor

Findings in table 4.11 below indicate that the most common high-risk factors that the women presented with were previous caesarean section 27 (20.8%), malpresentation 26 (20%) and grand multigravida 25 (19.2%). There were also young primgravida below the age of 18 years, 12 (9.2%). A woman who previously had an obstetric operation whereby the fetus was extracted through an incision in the abdominal wall is at a greater risk of uterine rupture, especially if the uterus has been scarred twice (Bennett & Brown, 1999:557). Teenage pregnancies are dangerous especially where mothers are in poor health and beyond the reach of good obstetric care (Feuerstein, 1993:17). It is further stated that there is a rise in maternal mortality rates after the fourth delivery (Feuerstein, 1993:17). Cord prolapse and fetal asphyxia are common in malpresentation (Bennett & Brown, 1999:567).

Table 4.11 Nature of the high-risk factor (N= 130)

High-risk factor	Frequency	Percent (%)
Young primgravida <18 years	12	9.2
Pre-eclampsia/ eclampsia	2	1.5
Prolonged first stage of labour	10	7.7
Cephalopelvic disproportion/ obstructed labour	15	11.5
Haemorrhages (APH and PPH)	6	4.6
Grand multigravida	25	19.2
Previous caesarean section	27	20.8
Malpresentation (breech, multiple gestation, transverse lie)	26	20
Other factors (BOH, polio, vacuum, ruptured uterus)	7	5.4
Total	**130**	**100.0**

Item 4.2.14 Cervical dilatation on arrival

Table 4.12 Cervical dilatation of respondents on arrival (N= 130)

Dilatation (cm)	Frequency	Percent (%)
< 4	4	3.1
5 – 7	70	53.8
8 – 10	53	40.8
Subtotal	127	97.7
Not done	3	2.3
Total	**130**	**100.0**

According to table 4.12 above, 4 (3.1%) women reported in labour with cervical dilatation of below 5centimetres. The study classifies any woman who reports after cervix is 5 centimetres as delayed so 123 (94.6%) women delayed in arrival to labour ward (i.e. 70+53=123). Women's labour should be properly monitored following the recommended partograph to detect normal from abnormal progress in labour (Bennett & Brown, 1999:408). Three women (2.3%) did not have their cervical dilatation checked because of antepartum haemorrhage that is a contraindication. The four women with cervical dilatation less than 5 centimetres were not meant to be included as the study targeted those who were above 5 centimetres dilated. However the research assistant included these women as they had had the cervix dilated at the same state for 3 consecutive readings. Their partograph had already crossed the alert line, which is a sign indicating potential danger. According to the management protocol for the partograph,

women whose cervical dilatation moves to the 'transfer zone', the area between the Alert and Action lines, should be transferred (Kwast in Murray, 1994:15).

Item 4.2.15 Mode of delivery

This item sought to determine the mode of delivery of the high-risk pregnant women. Findings as shown in table 4.13 below, indicated that most women 83 (63.8%) delivered by lower uterine segment caesarean section, 27 (20.8%) had spontaneous vertex delivery, 12 (9.2%) had vacuum extraction and 8 (6.2%) had assisted breech delivery. It was only proper for these women to deliver in hospital with the expertise and equipment owing to the complications associated with the deliveries (Bennett & Brown, 1999:532, 557).

Table 4.13 Mode of delivery (N= 130)

Mode of delivery	Frequency	Percent (%)
Spontaneous vertex delivery	27	20.8
Lower uterine segment C/S	83	63.8
Vacuum extraction	12	9.2
Assisted breech delivery	8	6.2
Total	**130**	**100.0**

Item 4.2.16 Personnel performing delivery

The results on personnel who performed delivery are presented in table 4.14 below. Midwives performed delivery on 39 (30%) women while the rest 89 (68.5%) were by clinicians/ doctors. However, 2 (1.5%) women had self- delivery. One woman stated that

she delivered on her own because she could not wait for the 2 midwives on duty who were performing other deliveries that time, while the other woman stated that nobody came to her assistance when she called that she was in need of help. Feuerstein, (1993:86) states that the hands that deliver the baby also tend to the mother therefore the outcome really depends on the techniques applied, citing puerperal infection and infected cord to be the result of dirty and untrained hands.

Table 4.14 Personnel performing delivery (N= 130)

Delivery performed by	Frequency	Percent (%)
Self	2	1.5
Midwife	39	30.0
Clinician/ doctor	89	68.5
Total	**130**	**100.0**

Item 4.2.17 Vital signs after delivery

This item aimed to determine the vital signs of the high-risk pregnant woman after delivery. Findings were as depicted by tables 4.15, 4.16, 4.17 and 4.18.

Table 4.15 Blood pressure of respondents after delivery (N= 130)

Blood pressure	Frequency	Percent (%)
80/40mmHg	1	0.8
90/60 – 120/80mmHg	123	94.6
130/90mmHg and above	4	3.1
Missing	2	1.5
Total	**130**	**100.0**

As depicted by table 4.15, 1 (0.8%) woman had a blood pressure below normal 80/40mmHg, 123 (94.6%) women had normal blood pressure and 4 (3.1%) women had blood pressure raised between 130/90 and 170/100. Bennett and Brown (1999:596) cite the need to continue observing blood pressure in pre-eclamptic patients post delivery, as there is potential for eclampsia and maternal death.

Table 4.16 Temperature of respondents after delivery (N= 130)

Temperature	Frequency	Percent (%)
Below 35.0°C	1	0.8
35 – 37.4°C	94	72.3
37.5°C and above	15	11.5
Subtotal	110	84.6
Missing	20	15.4
Total	**130**	**100.0**

Table 4.16 reflects temperature readings of the respondents after delivery. Results show that 1 (0.8%) woman was hypothermic, 94 (72.3%) women had normal temperature, 15 (11.5%) women were hyperthermic and 20 (15.4%) women's readings were missing. This number of respondents whose temperature was not taken is large and this is risky, as onset of infection would not be detected early. Bennett and Brown (1999:596) state that temperature exceeding 37.4 degrees Celsius may be indicative of infection of the genital tract or urinary tract, breast engorgement or inflammation within the venous system.

Table 4.17 Pulse rate of respondents after delivery

Pulse rate	Frequency	Percent (%)
60 –69	3	2.3
70 – 79	48	36.9
80 – 89	67	51.6
90 and above	2	1.5
Subtotal	120	92.3
Missing	10	7.7
Total	**130**	**100.0**

Table 4.17 shows the pulse rate of the high-risk pregnant women. Findings indicate that 120 (92.3%) women had normal pulse rate and 10 (7.7%) women had their readings missing meaning that the pulse rate could have been omitted. Any tachycardia, especially when accompanied by a raised temperature may be indicative of excessive bleeding or of a developing puerperal infection (Bennett & Brown, 1999:596).

Table 4.18 Respirations of respondents after delivery (N= 130)

Breaths per minute	Frequency	Percent (%)
16 - 20	83	63.9
21 and above	18	13.8
Subtotal	101	77.7
Missing	29	22.3
Total	**130**	**100.0**

Physiologically, the respiratory rate should return to the pre-pregnant level as the circulatory haemodilution of pregnancy subsides and with the release of the upward pressure on the diaphragm following delivery of the baby. Respiratory rate can be altered because of muscular strain, as a response to infection, severe haemorrhage or pulmonary embolism (Bennett & Brown, 1999:596). As table 4.18 depicts, 83 (63.9%) women had normal respirations, 18 (13.8%) women had raised respirations above 20 breaths per minute and 29 (22.3%) women's readings were missing. This number of missing readings is equally too large which is dangerous as developing complications could be easily missed.

Item 4.2.18 Condition of the uterus after delivery

Data reflected in table 4.19 below show that 120 (92.3%) women had contracted uterus after delivery that is normally expected, 2 (1.5%) had the uterus not contracted while 8 (6.2%) had the uterus removed. The uterus is supposed to be contracted with minimal fresh blood loss after delivery of the placenta (Bennett & Brown, 1999:475).

Table 4.19 Condition of the uterus after delivery (N= 130)

Uterus condition	Frequency	Percent (%)
Contracted	120	92.3
Not contracted	2	1.5
Uterus removed	8	6.2
Total	**130**	**100.0**

Item 4.2.19 Amount of blood loss at delivery

Table 4.20 Estimated blood loss at delivery

Blood loss (ml)	Frequency	Percent (%)
Less than 250	62	47.7
250 - 500	61	47.0
Above 500	7	5.3
Total	**130**	**100.0**

Findings on amount of blood loss at delivery were as depicted in table 4.20 above. It indicates that 62 (47.7%) women had blood loss less than 250 millilitres and 61 (47.0%) lost 250 – 500 millilitres of blood. Seven (5.3%) women lost more than 500 millilitres that is postpartum haemorrhage. Blood loss of 500 millilitres and more should be treated as postpartum haemorrhage and this adversely affects the mother's condition (Bennett & Brown, 1999:479). Anaemic women are not able to tolerate blood loss to the same extent as healthy women (Feuerstein, 1993:60).

Item 4.2.20 Spontaneous delivery of the placenta

As table 4.21 below reflects, 48 (36.9%) women delivered their placenta spontaneously while 82 (63.1%) did not. The placenta separates from the placental site due to retraction of the uterine muscles, allowing the placenta to descend and be delivered spontaneously (Bennett & Brown, 1999:466).

Eighty-two (63.1%) women had manual extraction of the placenta that involves sideways slicing movement of the hand to detach the placenta. The placenta is delivered through the abdominal incision for caesarean section cases (Bennett & Brown, 1999:559).

Table 4. 21 Delivery of the placenta (N=130)

Spontaneous Delivery	Frequency	Percent (%)
Yes	48	36.9
No	82	63.1
Total	**130**	**100.0**

Item 4.2.21 State of placenta and membranes on examination

According to table 4.22 below, all the women 130 (100%) had their placenta and membranes complete. Complete expulsion of placenta and membranes facilitates normal involution so that the uterus returns to its pre-pregnant state. It also prevents postpartum haemorrhage that occurs with a uterus not contracted when membranes are incomplete (Bennett & Brown, 1999:478, 597).

Table 4.22 State of placenta and membranes (N= 130)

State	Frequency	Percent (%)
Complete	130	100.0
Incomplete	0	0
Total	**130**	**100.0**

Item 4.2.22 Neonatal outcome

This item aimed at determining the neonatal outcome in terms of Apgar score at one and five minutes. Findings were as shown in table 4.23 below that reflects that 22 (16.9%) babies were stillborn while 34 (26.1%) babies had Apgar score below normal 7/10. At 5 minutes, 15 (11.5%) babies still were below normal while 93 (71.6%) had Apgar score above 7/10. Bennett and Brown, (1999:673) indicate that Apgar score of 7/10 to 10/10 shows that the baby is in good condition.

Table 4.23 Apgar score at 1 and 5 minutes (N= 130)

Score	Frequency at 1 minute	Percent (%)	Frequency at 5 minutes	Percent (%)
0/10	22	16.9	22	16.9
1/10-6/10	34	26.1	15	11.5
7/10-10/10	74	57.0	93	71.6
Total	**130**	**100.0**	**130**	**100.0**

Item 4.2.23 Condition of baby at birth

Table 4.24 presents outcome of babies with low Apgar score. It shows that 10 (7.7%) babies were managed for asphyxia, 1 (0.8%) baby for prematurity while 4 (3.1%) babies were observed for 4 hours before being given to their mothers. A baby who has suffered a large subdural haemorrhage is likely to have severe asphyxia thus the need to manage the baby and prevent further complications (Bennett & Brown, 1999:784).

Table 4.24 Condition of baby (N= 130)

Baby alive	Frequency	Percent (%)
Yes	107	82.3
No	23	17.7
Asphyxiated	10	7.7
Treated for prematurity	4	3.1
Total	**130**	**100.0**

SECTION C: ANTENATAL CARE, LABOUR AND DELIVERY

Item 4.2.24 Antenatal care attendance

This item sought to determine the high-risk women's antenatal care attendance. Findings were as reflected in tables 4.25, 4.26, 4.27 and 4.28 below.

Table 4.25 Attended antenatal care (N= 130)

Attended	Frequency	Percent (%)
Yes	129	99.2
No	1	0.8
Total	**130**	**100.0**

Majority 129 (99.2) of women attended antenatal care while only one (0.8%) woman never attended antenatal care. It was noted that the woman who did not attend antenatal care stayed a distance of 19-24 km from the health facility. She also started off for the health facility a day after onset of labour, as she had to wait for an ox-cart to take her to the health facility. This respondent was among the women that had stillbirth.

The findings in table 4.25 show that most women access and use antenatal services. In the 2000 MDHS, Lilongwe district was found to have 7% lack of antenatal care

attendance as compared to 1% for Blantyre district (National Statistical Office (Malawi) and ORC Macro, 2001:105).

Table 4.26 Facility of antenatal care attendance (N= 130)

Facility	Frequency	Percent (%)
Hospital	28	21.5
Clinic	98	75.4
TBA	3	2.3
Subtotal	129	99.2
Non-attendance	1	0.8
Total	**130**	**100.0**

Table 4.26 reflects that most women 98 (75.4%) attended antenatal care at clinics, followed by hospital 28 (21.5%). Three women (2.3%) attended antenatal at a trained TBA. This information tallies with the results of the 2000 MDHS that indicate that 3% of the women interviewed attended antenatal care at a TBA (National Statistical Office (Malawi) and ORC Macro, 2001:105).

Table 4.27 Total antenatal care visits (N= 130)

Number of visits	Frequency	Percent (%)
1 – 3	24	18.5
4 – 6	85	65.4
7 and above	19	14.5
Did not attend	1	0.8
Not indicated	1	0.8
Total	**130**	**100.0**

Table 4.27 indicates that 1(0.8%) woman did not attend antenatal, 1 (0.8%) woman did not indicate how many visits she made, 24 (18.4%) women made 1 to 3 visits, while 104 (80%) women made 4 visits or more. The findings imply that 80% women who made 4 or more antenatal care visits are in line with Malawi's recommendation that is a minimum of 4 visits (National Statistical Office (Malawi) and ORC Macro, 2001:106).

Table 4.28 Reasons for not attending antenatal care (N= 130)

Reason	Frequency	Percent (%)
No money to attend	1	0.8
Attended	129	99.2
Total	**130**	**100.0**

Table 4.28 indicates the reason why the only woman who did not attend antenatal care as she had no money to attend. Smith et al (1996:126) cited lack of money to cover delivery costs as a deterring factor for some women to travel to town for health services. Other factors that women could delay or not attend antenatal care include distance, negative attitude of health personnel and cultural beliefs like seeking advice from the elders (Tamaona et al, 1997:54; Dey, 1998:7).

Item 4.2.25 Stage of pregnancy at starting antenatal care attendance

Table 4.29 Stage of pregnancy at start of antenatal care (N= 130)

Stage (months)	Frequency	Percent (%)
3	5	3.8
4	17	13.1
5	30	23.1
6	46	35.4
7	21	16.2
8	9	6.9
9	1	0.8
Subtotal	129	99.2
Non-attender	1	0.8
Total	**130**	**100.0**

According to Table 4.29, 5 (3.8%) women made the first antenatal care attendance below four months that was within the first trimester. Forty -seven (36.1%) women made their first attendance within 4-5 months of pregnancy (i.e. those that started at 4 and 5 months). However, delayed attendance was shown by 67 (51.6%) women who made their first attendance when the pregnancy was 6-7 months and 10 (7.7%) women who made their first visit at 8 months and more. Delayed use of services makes it difficult for the optimum benefits of antenatal care to be realised (National Statistical Office (Malawi) and ORC Macro, 2001:107) and to identify risk factors at an early stage of pregnancy.

Item 4.2.26 Problems experienced during present pregnancy

Table 4.30 Problems experienced during present pregnancy (N= 130)

Problems	Frequency	Percent (%)
Yes	22	16.9
No	108	83.1
Total	**130**	**100.0**

As depicted in Table 4.30 above, 22 (16.9%) experienced problems with their pregnancy while 108 (83.1%) women had no problems at all.

Table 4.31 Type of problems experienced (N = 130)

Problem	Frequency	Percent (%)
Malpresentations	7	5.4
Malaria	2	1.5
Minor disorders	5	3.8
Vaginal sores	1	0.8
Swollen feet and heart palpitations	7	5.4
Subtotal	22	16.9
No problems experienced	108	83.1
Total	**130**	**100.0**

This item sought to identify the problems experienced by the high-risk pregnant women. As indicated by Table 4.31, 7 (5.4%) women had malpresentations as a problem, 2 (1.5%) had malaria, 5 (3.8%) had minor disorders of pregnancy, 1 (0.8%) had vaginal sores while 7 (5.4%) complained of heart palpitations and swollen legs. Bennett and Brown (1999:204-205) cites increased progesterone levels to cause sluggish circulation

and affecting some systems leading to minor disorders such as varicose veins, vomiting and increased vaginal discharge.

Item 4.2.27 Informed about high-risk status

Table 4.32 Informed about high-risk status (N= 130)

Informed	Frequency	Percent (%)
Yes	85	65.4
No	42	32.3
Subtotal	127	97.7
Missing	3	2.3
Total	**130**	**100.0**

Results in Table 4.32 above, indicate that 85 (65.4%) women acknowledged to have been informed about their high-risk status while 42 (32.3%) were not. However, 3 (2.3%) women did not indicate whether they were informed or not. Smith et al (1996:126) states that women in Apelo Cruz complained of nothing being explained to them despite waiting for so long at the health services in town. In another study by Thom et al (1997:52) it was also found that women were not well informed about risk factors and danger signs during pregnancy and child- birth due to ineffective communication channels, which was confirmed by this study.

Table 4.33 Information given on high-risk status

Reason	Frequency	Percent (%)
Malpresentation	20	15.4
Previous caesarean section scar	17	13.1
First pregnancy and big baby	16	12.3
Grandemultigravida	14	10.8
No reason/ in case of problems	10	7.7
Hypertension	3	2.3
Previous neonatal deaths	2	1.5
Epilepsy	1	0.8
No problems	47	36.2
Total	**130**	**100.0**

Table 4.33 above reflects that the most common information given to women was to deliver in hospital since they had malpresentations 20 (15.4%), previous scar 17 (13.1%), first pregnancy and big baby 16 (12.3%) and grand multigravida 14 (10.8%). Ten (7.7%) women stated that no reason was given only that they should deliver in hospital in case of problems. It is important to give information concerning one's health as cited in the Apelo Cruz study (Smith et al, 1996:126) where women complained that nothing was explained to them.

Item 4.2.28 Previous home deliveries

This item sought to determine if the high-risk women had previous home deliveries and the results were as presented in tables 4.34 and 4.35.

Table 4.34 Previous home delivery (N= 130)

Home delivery	Frequency	Percent (%)
Yes	31	23.8
No	99	76.2
Total	**130**	**100.0**

According to table 4.34 above, 31 (23.8%) women indicated to have had previous home deliveries while 99 (76.2%) had never delivered at home. This depicts 76% use of health facility for delivery, which is good. Massessa et al (1990:17) in a study in Tanzania, differed from the current study findings in that, they indicated that of the 96% of mothers that attended antenatal services at a health facility, only 37% of these mothers delivered at a health facility.

Table 4.35 Reasons for previous home deliveries (N= 130)

Reason for previous home deliveries	Frequency	Percent (%)
Ignorance, first pregnancy	4	3.1
My choice, previous deliveries were normal	6	4.6
Hospital far	3	2.3
Labour was at night and precipitate	12	9.2
Transport problems	4	3.1
Not indicated	2	1.5
Never delivered at home	99	76.1
Total	**130**	**100.0**

Table 4.35 reflects that the majority of high- risk pregnant women, who delivered at home, gave the reason being labour starting at night and having been precipitate 12 (9.2%). Six (4.6%) women stated that the previous deliveries were normal that is why they delivered at home. Makokha et al (1994:45) in a study on determinants of home deliveries in Botswana, found the reason to be that some women could not afford transport costs to a health facility that often was not accessible by foot, which agrees with results of the current study.

Item 4.2.29 Facility used when labour pains started

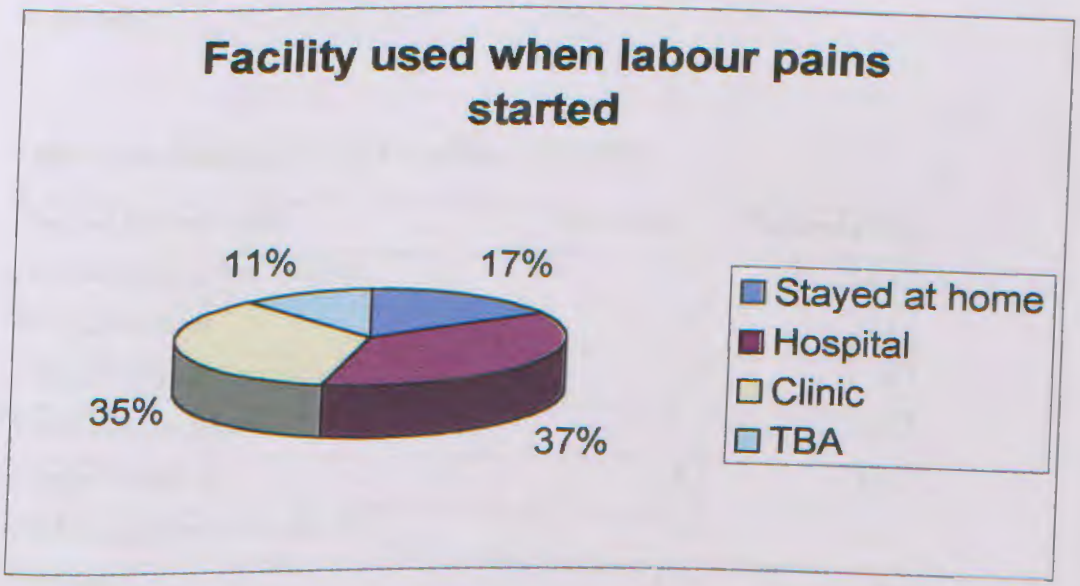

Figure 4.7 Facility used when labour pains started (N= 130)

Findings as reflected by figure 4.7 show that 48 (37%) women went to hospital when labour started, 46 (35%) went to clinic and 14 (11%) went to a TBA. Some twenty- two (17%) women stayed at home before going to any facility for assistance. The findings

correspond with study results in Musoma Tanzania (Massessa et al, 1990:17) that indicates that of the 96% women who attended antenatal care, 37% delivered at a health facility while 18% delivered at a TBA.

Item 4.2.30 Reasons why TBA referred the high-risk pregnant woman

According to table 4.36 below, the TBA referred 7 (5.4%) women who did not deliver after 12 hours, 2 (1.5%) women who had vaginal bleeding and 1 (0.8%) woman who ruptured her uterus. One (0.8%) primigravida was referred immediately on arrival for being a primigravida. Two (1.5%) women stated that the TBA was reluctant to refer them to hospital.

Table 4.36 Reasons for TBA's referral (N= 130)

Reason for referral	Frequency	Percent (%)
Not delivering after 12 hours	7	5.4
Ruptured uterus	1	0.8
Immediately due to primigravida	1	0.8
Hand was coming out	1	0.8
Vaginal bleeding	2	1.5
TBA was reluctant to refer me	2	1.5
Subtotal	14	10.8
Never went to a TBA	116	89.2
Total	**130**	**100.0**

Table 4.37 Reasons for choosing TBA (N= 130)

Reason	Frequency	Percent (%)
Closer to home than health facility	11	8.5
To confirm labour	1	0.8
Night time and closer to home	1	0.8
Mother- in-law's choice	1	0.8
Subtotal	14	10.8
Never went to TBA	116	89.2
Total	**130**	**100.0**

Table 4.37 reflects 11 (8.5%) of the 14 women chose the TBA because she was closer to them than the health facility. Dey (1998:3) in factors influencing maternal mortality in Bangladesh from a gender perspective indicates that about 98% of deliveries take place in homes and only 2% in institutions, which differs from the results of this study.

Item 4.2.31 Onset of labour

Table 4.38 Onset of labour (N= 130)

Time labour pains started	Frequency	Percent (%)
1-8 hours before delivery	43	33.1
9-18 hours before delivery	65	50.0
19-24 hours before delivery	18	13.8
Longer	3	2.3
Subtotal	129	99.2
Missing	1	0.8
Total	**130**	**100.0**

Table 4.38 shows onset of labour as 1-8 hours before delivery in 43 (33.1%) women, 9-18 hours before delivery in 65 (50.0%) women and 19-24 hours before delivery in 18 (13.8%) women. Onset for 1 (0.8%) woman was missing. Those women that delivered 19-24 hours after onset of labour, constituted a larger percentage of the respondents, which was bad as this indicates prolonged labour. Prolonged labour can lead to keto-acidosis, hypokalaemia, hypotonia and subsequent postpartum haemorrhage, therefore increasing the risk of increased maternal morbidity and mortality (Nolte, 1998:379).

Item 4.2.32 Time departed for chosen place of delivery

Table 4.39 Time of departure to chosen place of delivery (N= 130)

Time of departure	Frequency	Percent (%)
Immediately	61	46.9
Walked 1-2 hours	28	21.5
Walked 3-4 hours	13	10.0
Started off later (6-24 hours)	13	10.0
Labour started on the way to hospital	1	0.8
Waiting case in hospital long before labour started	14	10.8
Total	**130**	**100.0**

As Table 4.39 depicts, 61 (46.9%) women departed immediately for the chosen place of delivery. Fourteen (10.8%) women were waiting cases in the hospital long before labour started. Thirteen (10%) women walked long distance for 3-4 hours while 13 (10%) waited for almost 24 hours before starting off for their chosen place of delivery.

Item 4.2.33 Decision to start off for the health facility

Table 4.40 Decision maker to start off for the health facility

Decision maker	Frequency	Percent (%)
Self	92	70.8
Husband	12	9.2
TBA	1	0.8
Mother/ father/mother in-law	19	14.6
Relative/ friend	6	4.6
Total	**130**	**100.0**

According to Table 4.40 above, 92 (70.8%) women decided on their own, to start off for the health facility. The rest relied on husband, 12 (9.2%), mother/father, 19 (14.6%) and relatives, 6 (4.6%). A study in Machinga, Malawi, found that 54% of women delayed seeking perinatal care because they had to seek permission from husbands, or had to wait for advice from elders and parents before seeking health care (Tamaona et al, 1997:54). Pender (1996:71) states that families (parents or siblings), peers and health care providers are the three primary sources of interpersonal influences on health – promoting behaviours citing an example where some cultures may place more emphasis on interpersonal influences than others. This confirms findings by Tamaona et al (1997:54).

Item 4.2.34 Time it took to be attended to at hospital

Table 4.41 Time it took to be attended to at hospital (N= 130)

Time taken	Frequency	Percent (%)
Within 1 hour	105	80.8
1-2 hours	11	8.5
Longer than 2 hours	13	10.0
Subtotal	129	99.2
Missing	1	0.8
Total	**130**	**100.0**

Item 4.2.34 sought to determine time it took before the high-risk pregnant woman was attended to at the hospital. Findings indicate that majority 105 (80.8%) women were attended to within 1 hour. Eleven (8.5%) were attended within 1-2 hours while 13 (10.0%) women were attended after more than 2 hours. It is important that clients are attended to promptly as they tend to complain if attention is delayed. After waiting for long hours before attention, women got worried if the children they had left at home were being taken care of (Smith et al, 1996:126). Similarly, the 13 women (10%) that were attended to after more than 2 hours in the current study, expressed unhappiness on the delay to be attended to.

Item 4.2.35 Main reason for arriving late at hospital

Table 4.42 Main reason for arriving late at hospital

Reason	Frequency	Percent (%)
Waiting for labour to be well established	38	29.2
Delayed by midwife at health centre	23	17.7
Labour was very fast	6	4.6
Ambulance/transport problems	33	25.4
Delayed at TBA	4	3.1
Waited for it to dawn	5	3.8
Personnal (sickness, informing friend)	5	3.8
Severe bleeding	1	0.8
Felt that they arrived in time	2	1.5
Waiting case in hospital	8	6.2
No electricity at health centre	1	0.8
Total	126	96.9
Missing	4	3.1
Total	**130**	**100.0**

As reflected in table 4.42, most cited reasons for arriving late at hospital were: waiting for labour to be well established 38 (29.2%), ambulance problems 33 (25.4%) and delayed by midwife at the health centre 23 (17.7%). Health Centre, as first referral level is considered the 'cornerstone' of maternal health services and should have Emergency obstetric care (EOC) within reach of the women who develop complications (Feuerstein,

1993:58). It was surprising to note that 8 (6.2%) women delayed to arrive in labour ward despite the fact that they were a stone throw away, in the hospital's waiting area.

ITEM 4.2.36 Description of care received in labour ward

Table 4.43 Description of care received in labour ward (N= 130)

Description of care	Frequency	Percent (%)
Well cared for	112	86.2
Neglected	15	11.5
Fair	3	2.3
Total	**130**	**100.0**

This item sought to determine the description of care received in labour ward and the results were as shown in table 4.43 above. One hundred and twelve (86.2%) women stated that they were well cared for, 15 (11.5%) neglected while 3 (2.3%) women stated that they received fair care. Neglect was interpreted to mean lack of care by the midwives, as the respondents stated that they were left on their own without any monitoring, and were only attended to when problems had been noted on them.

4.3 CORRELATIONS

The next step taken involved cross tabulation of selected variables to come out with correlations. Several variables were tested but only significant findings are reported. Dempsey, (1992:104) states that correlation statistics measures relation between two variables often called measures of association. The closer a correlation coefficient is to

either -1 or +1, the stronger the relationship is between the variables being studied. Correlation of maternal age was made against several variables as presented in table 4.44 below.

Table 4.44 Correlations of maternal age against gestation, gravidity, parity, nature of high-risk status, marital status and educational level attained (N= 130)

Aspect	Maternal age
Maternal age Pearson Correlation	1.000
Gestation Pearson Correlation	.179*
Gravidity Pearson Correlation	.396*
Parity Pearson Correlation	.375**
Nature of high-risk factor Pearson Correlation	-.059
Marital status Pearson Correlation	-.106
Educational level attained Pearson Correlation	-.227

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at 0.01 level (2-tailed).

As reflected in table 4.44:

- Correlation was significant at the 0.05 level (2-tailed) for gestation against maternal age with a Pearson correlation of 0.179*.
- Gravidity against maternal age had significant correlation at the 0.01level (2-tailed) with positive Pearson correlation of 0.396**. This implied that the less the

number of pregnancies, the younger the maternal age and the more the number of pregnancies, the older the maternal age.

- Correlation was significant at the 0.01level (2-tailed) for parity against maternal age with a Pearson correlation of 0.375**. This positive correlation means that parity and maternal age tend to increase or decrease together.
- There was no significance for nature of high-risk factor and marital status against maternal age.
- There was significance on educational level attained against maternal age with a negative Pearson correlation of –0.227**. The study found out that the older the high-risk pregnant woman, the less educated they were. Brink (2000:188) states that 'a negative correlation denotes an inverse relationship and indicates that as one variable increases, the other variable decreases'.
- Gestation versus informed about high-risk status had a significant negative Pearson correlation of -.199* at 0.05 level.

4.4 CONCLUSION

This chapter presented the analysis of the data. Raw data was analysed and presented as descriptive statistics of frequency distributions and correlation coefficient. There were significant correlations in the variable of maternal age versus gestation, gravidity, parity and educational level attained. The following chapter focuses on: conclusions, recommendations and limitations.

CHAPTER 5

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter dealt with analysis of the data utilizing descriptive statistics. Frequency distributions were produced after processing the data to come out with results of the questionnaire administered. Cross tabulations were made to express the magnitude and direction of association between selected variables using Pearson's correlation coefficient.

This chapter will focus on conclusions drawn on the study, limitations encountered and the suggested recommendations.

5.2 PURPOSE OF THE STUDY

As described in Chapter 1, the purpose of this study was to describe factors associated with delayed admission of high-risk pregnant women to labour ward, Lilongwe Central Hospital, Malawi.

5.3 CONCLUSIONS

Conclusions were drawn according to the research objectives of the study as cited in Chapter 1.4.

5.3.1 The first objective was to determine the demographic profile of a high-risk pregnant woman.

On demographic profile of the high- risk pregnant women, the study found that majority 77 (59%) of the women were of 19-28 years age group and the least respondents were in the 39-48 years age group, 7 (5%). This tallies with findings of a study on factors associated with stillbirths and 24-hour neonatal deaths in Nairobi, Kenya (Obwaka & Ruminjo, 1998:454) where majority respondents were of age 20-29 years 65.8 % (n=400). One hundred and twenty (92.3%) were married and 104 (80%) were of Chewa tribe.

Majority of the high-risk pregnant women were lowly educated or did not have any formal education at all. Highest level of education attained was primary with 70 respondents (53%). A fairly larger number of women 40 (31%) had no education at all corresponding to the statistics of the 1999-2004 Malawi National Health Plan that cites 48% women as functionally illiterate. Most women were not employed 123 (94.6%).

The distance from the nearest health facility was 1-8 kilometres of the majority, 87 (66.9%) with walking, bicycle and ox-cart as the means of transportation. However, some respondents lived far from the nearest health facility, 15 (11.6%) with a distance of 17-24 kilometres or more. This information tallies with findings from other studies (Feuerstein, 1993:41, Iipinge et al, 1993:7, Tamaona et al, 1997:54 and Murray, 1996:29).

5.3.2 The second objective aimed to identify the history of the high-risk pregnant woman.

To conclude, the history of the high-risk pregnant women was:

- On gestational age- majority 105 (80.8%) delivered at term while 25 (19.2%) were preterm. A study on pregnancy outcome in elderly primgravidae at University of Ilorin Teaching Hospital, Nigeria (Anate and Akeredolu, 1996:549) found that there were more preterm deliveries 19 (15.8%) in the elderly patients than the younger ones. These findings differed from the current study in that more preterm deliveries occurred in the younger age that is, the19-28 age group.
- There was slight difference noted in gravidity of the pregnant women with primgravida 39 (30%), multigravida 49 (38%) and grand multigravida 42 (32%). This was the state of affairs with parity as well where the respondents' parity was 45 (35%) for primpara, 44 (34%) for multipara and it was 41 (31%) for grand multipara.
- Blood pressure was the only vital sign that was recorded fully for all respondents. Temperature, pulse rate and respirations were not done in some cases accounting for missing data in this item (items 4.11 and 4.17).
- Haemoglobin level on admission was done for only 7 (5.4%). This tallies with findings of a study in Nairobi, Kenya (Obwaka & Ruminjo, 1998: 455) where 22 of the 400 (5.5%) mothers in the study population had known haemoglobin level at the time of delivery. Although haemoglobin

level is an important investigation that contributes to outcome of the pregnancy, it was deficient in the current study.

- Most featured high- risk factors were previous caesarean section scar 27 (20.8%), malpresentations 26 (20%), grand multipara 25 (19.2%) and cephalo-pelvic disproportion 15 (11.5%). The number of young primgravida below 18 years was fairly high as well, 12 (9.2%).
- An extreme number of the respondents 123 (94.6%) delayed as they came to labour ward after cervical dilatation more than 5 centimetres.
- There were 107 (82.3%) live babies in the current study with 22 (16.9%) stillbirths. One baby was a neonatal death 4 hours after delivery making the number of dead babies 23 (17.7%). This was an appallingly high rate of stillbirths.

5.3.3 The third objective was to: determine the utilization of antenatal care during pregnancy. It was concluded on utilization of antenatal care that larger number of high-risk pregnant women 129 (99.2%) attended antenatal care. Most respondents had antenatal care at the clinic 98 (75.4%) with 104 (80%) having made 4 or more antenatal visits. Obwaka & Ruminjo (1998:456) found in their study in Nairobi, Kenya that poor or no antenatal attendance was associated with increased risk in perinatal mortality, therefore the value of antenatal clinic attendance cannot be over emphasised.

5.3.4 The fourth and last objective was to: explain factors associated with late utilization of health facilities.

It was concluded that the following factors were associated with late utilization of health facilities:

Outside health facility factors

- Some women preferred to stay at home despite the fact that labour had started while others were waiting for labour to be established.
- Transport was a problem such that there were long distances to cover with some pregnant women walking for 1-2 hours or 3-4 hours.
- Some women were waiting for permission from husband or family members to go to the hospital. This was also true in a Machinga, Malawi study by Tamaona et al (1997:54) where it was cited that 54% women were waiting for their husbands before seeking perinatal care.

Factors within the hospital institution

- It was however important to note that 8 (6.2%) women who were waiting cases in the waiting area of Lilongwe Central Hospital delayed to arrive in the labour ward. The women stated that they did not want to toil for hours in labour, as they would admire others who would be delivering. They stayed in the waiting area till late so that they should deliver immediately after arrival into labour ward. This dangerous decision could have a fatal outcome in case of problems.

- Negligence in hospital with no regular attendance to the women's needs during labour was cited. Fifteen (11.5%) women indicated that no attention was given to them till only when there was trouble-shooting and a complication had developed.

- Poor decision-making by the midwives at the health centre that delayed in referral of some pregnant women to the hospital.

Because of these factors in late utilization of health facilities, 8 (6.2%) women had the uterus removed through total abdominal hysterectomy (TAH) because the uterus had ruptured in labour. Bennett and Brown, (1999:574) state that ruptured uterus (RU) occurs in cases of high parity, obstructed labour and previous caesarean section, and that RU is often fatal for the fetus and the mother. This study agrees with the cited literature in that the outcome for the women that had TAH was that they all had SB.

5.4 LIMITATIONS

The current study had the following limitations:

- The study was done at Lilongwe Central Hospital labour ward, Malawi so the results are generalised to that population only.

- Item 30 on seeking TBA assistance was only applicable to 14 (10.8%) women who had sought TBA services otherwise it was not applicable to the rest of the respondents.

5.5 RECOMMENDATIONS

Recommendations were made bearing in mind that health professionals constitute a part of the interpersonal environment which exerts influence on persons throughout their life span as stated by Pender (1996:55).

- In-service education for all midwives at Lilongwe Central Hospital should be done with emphasis on:
  - Documentation of all vital signs of pregnant women in maternity to detect deviation from normal early, and provide proper treatment promptly.
  - Monitoring of high-risk pregnant women in the waiting area should be done at scheduled times to prevent complications.
  - There is need for District Health Office (DHO) Lilongwe to send midwives at the health centres for training or refresher course on Obstetric Life Saving Skills to bring them up to date therefore ensuring appropriate management and early referral of high-risk cases.

- Health workers should empower pregnant women through Information, Education and Communication (IEC) at the antenatal clinic and mass media on matters regarding:

- Starting antenatal care early within first trimester to allow enough time for monitoring of pregnancy, detection of risk factors and provision of advice.
- Decision making to start off for the health facility so as to prevent avoidable complications. This is to cater for the problem of delay while waiting for established labour or for the significant others before seeking maternal health services.
- Importance of early seeking of maternal health care services when in labour for early detection of problems, early treatment and reduction in maternal morbidity and mortality. Emphasis should be put on signs of labour and complications.

Empowerment of the pregnant women is in consideration with the fact that: individuals in all their bio-psychosocial complexity interact with the environment, progressively transforming the environment and being transformed over time (Pender, 1996:55).

- The author will disseminate findings of the current research to the Principal Secretary for Ministry of Health and Population Lilongwe and advocate that Ministry should improve transportation by ensuring that ambulances at the first level are functioning and have fuel so as to be readily available.
- There is need for the author to conduct further research on delayed admission of high-risk pregnant women but there should be a control group. The study should be done in two or more facilities (funds permitting) to compare findings and determine the magnitude of the problem.

5.6 CONCLUSION

This chapter presented summary of the findings as sought by the objectives of the study. It was concluded that antenatal care attendance was good with 99.2% attendance. There were problems with the high-risk pregnant women regards decision making as when to start off for the health facility when labour commenced accounting for 35 (26.9%) of the women who delayed. Reasons for arriving late at hospital were waiting for labour to be established, 38 (29.2%), ambulance / transport problems, 33 (25.4%) and delayed by midwife at the health centre, 23 (17.7%).

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List of Appendices

APPENDIX A

REQUEST FOR PERMIT TO CARRY STUDY AN DPERMIT FROM RESEARCH UNIT TECHNICAL COMMITTEE

MINISTRY OF HEALTH AND POPULATION, MALAWI

3rd ----------September 2001

The Chairman
Research Unit Technical Committee
Ministry of Health and Population
P.O. Box 30377
Lilongwe 3
Malawi

Through: The Director
Lilongwe Central Hospital
P.O. Box 149
Lilongwe
Malawi

Dear Sir,

CLEARANCE TO CONDUCT A RESEARCH STUDY ON FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL

I am a principal nursing officer at Lilongwe Central Hospital currently studying for a Masters in Nursing Science degree at the University of Namibia. I am expected to conduct a research study in fulfilment of the programme. I intend to investigate factors associated with delayed admission of high-risk pregnant women in labour to Lilongwe Central Hospital.

Data collection is scheduled for October, November and December 2001.
Please find enclosed a research proposal, which has been submitted to Senate at the University of Namibia and the letter of approval.

I would therefore like to ask for permission to conduct the pilot study and the main research study in Malawi.
Looking forward to your favourable response.

Yours faithfully,

FANNIE KACHALE (MRS)

PRINCIPAL INVESTIGATOR

MALAWI GOVERNMENT
GENERAL RECEIPT

No. A247467

Date 7/09/01

268 - Health

Mrs F. Kachale

LCH Box 149 Lilongwe

Five hundred

only

Cash

Contribution towards National Health Science Research Committee

K	
500	

OFFICIAL RECEIPT

SECRETARY FOR HEALTH
2001 -09- 07
P.O. BOX 30377, LILONGWE 3

for Malawi Government

J Banda

Telegrams: MINMED. Lilongwe
Telephone: 789 400
Fax: 789 431

Communications should be addressed to:
The Secretary for Health and Population

In reply please quote No. .....

MINISTRY OF HEALTH AND POPULATION
P.O. BOX 30377
CAPITAL CITY
LILONGWE 3
MALAWI

MED 4/36/C

Mrs. Fannie Kachale
Lilongwe Central Hospital
P.O Box 149
Lilongwe.

12th September, 2001

Dear Madam,

A STUDY ON FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL

I am pleased to inform you that the National Health Sciences Research Committee at their recent meeting approved the above study proposal which you submitted for consideration.

It is the requirement of the National Health Sciences Research Committee that you make a 10% contribution to cover institutional over-heads which should be paid before the study starts to Ministry of Health and Population.

Yours faithfully

B.F.L Matatiyo
For: **SECRETARY FOR HEALTH & POPULATION**

APPENDIX B

REQUEST TO USE NKHOMA MISSION HOSPITAL AS SITE FOR PILOT STUDY AND PERMIT

3rd
----------September 2001
The Director
Nkhoma Mission Hospital,
P.O. Box 45
Nkhoma
Malawi

Through: The Director
Lilongwe Central Hospital
P.O. Box 149
Lilongwe
Malawi

Dear Sir,

REQUEST TO USE NKHOMA MISSION HOSPITAL AS A SITE FOR RESEARCH STUDY ON FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL

My name is Fannie Kachale and I am currently studying for a Masters in Nursing Science degree at the University of Namibia. I am expected to conduct a research study in fulfilment of the programme.

I write to ask for permission to use your hospital as a pilot study site whose purpose is to determine factors associated with delayed admission of high-risk pregnant women in labour.

A questionnaire will be utilised for data collection. Participants will be high-risk women from 4 to 48 hours after delivery depending on the high-risk woman's condition. Their responses will be treated with total confidentiality. There are no risks involved in this study.

Thank you for your cooperation and assistance.

Yours faithfully,

FANNIE KACHALE (MRS)

PRINCIPAL INVESTIGATOR

Nkhoma Hospital
P.O. Box 48
NKHOMA

24th September 2001

TO : Miss F. Kachale

THROUGH : The Director
Lilongwe Central Hospital
P.O. Box 149
LILONGWE

Dear Madam

RE: REQUEST TO USE NKHOMA HOSPITAL AS A SITE FOR RESEARCH STUDY ON FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL.

Thank you for above request. You are most welcome to Nkhoma Hospital. But you have not mentioned the date when you will be coming to our hospital, also you haven't mentioned about food and accommodation.

Please may you enlighten us.

Yours faithfully,

G. Simbaba
FOR : THE MEDICAL DIRECTOR

APPENDIX C

REQUEST TO USE LILONGWE CENTRAL HOSPITAL FOR THE STUDY AND PERMIT

APPENDIX C

3rd

----------September 2001

The Director
Lilongwe Central Hospital
P.O. Box 149
Lilongwe
Malawi

Dear Sir,

REQUEST TO USE LILONGWE CENTRAL HOSPITAL AS A RESEARCH SITE FOR THE RESEARCH ENTITLED "FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL

I am a principal nursing officer at Lilongwe Central Hospital, currently studying for a Masters in Nursing Science degree at the University of Namibia. I am expected to conduct a research study in fulfilment of the programme and would like to carry out a research study on factors associated with delayed admission of high-risk pregnant women in labour at Lilongwe Central Hospital.

It is hoped that the findings will be baseline data for improving services to satisfy patients' needs and reduce the maternal mortality.

There will be 100 participants and data will be collected using questionnaires. Ensuring that identification numbers are used and not names of subjects will maintain anonymity.

The purpose of this letter Sir is to seek permission to use your hospital as a study site. Thanking you in anticipation.

Yours faithfully,

FANNIE KACHALE (MRS)

PRINCIPAL INVESTIGATOR

Ref. No.: LCH/ Surg./
Telephone No.: (265) 753 555
Telefax No.: (265) 756 380

Correspondence to be address to:
Hospital Director

E-mail: lch@sdnp.org.mw

MINISTRY OF HEALTH AND POPULATION
LILONGWE CENTRAL HOSPITAL
P. O. BOX 149
LILONGWE
MALAWI

REF.NO.LCH/C2/25 25th October 2001

Mrs. F. Kachale
Lilongwe Central Hospital
P.O. Box 149
LILONGWE

Dear Madam,

Permission to use Lilongwe Central hospital as a site for Research Study

Please be informed that permission has been granted for you to conduct your research study at Lilongwe Central Hospital. We would be pleased to know the results of the study.

Best wishes

MINISTRY OF HEALTH
LILONGWE CENTRAL HOSPITAL
PRINCIPAL NURSING OFFICER
26 OCT 2001
P.O. BOX 149, LILONGWE.

Mrs. G. Manda
For: DIRECTOR

APPENDIX D

INDIVIDUAL CONSENT LETTER

APPENDIX D

CONSENT FORM

Dear Participant

A RESEARCH STUDY ON FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL

My name is Fannie Kachale and I am currently studying for a Master in Nursing Science degree at the University of Namibia. This research study is a requirement for completion of the programme.

The purpose of the research is to determine factors associated with delayed admission of high-risk pregnant women in labour. Although the study will not benefit you directly, it will provide baseline data of the problems experienced by high-risk pregnant women in labour therefore provide room for improvement.

Senate at the University of Namibia and the Research Unit Technical Committee at the Ministry of Health and population, Lilongwe Malawi, have approved the study.

There are no risks or harm associated with the study. There will be written questions that you are expected to answer voluntarily by filling in. The researcher or research assistants will assist you to fill in if you are not able to write. The participant is free to withdraw consent and discontinue participation at any time without penalty. You may also refuse to answer any specific questions.

Identification numbers instead of names will be used on questionnaires to ensure anonymity. The completed questionnaires will be stored in a locked filling cabinet and will not be shared to any other person without your permission.

If you have any questions relating to the study, you can contact Fannie Kachale at Lilongwe Central Hospital, P.O. Box 149, Lilongwe or at phone numbers **753555**(office) and **794017**(home).

I, (the participant) have read the information above and I am satisfied with the information given. I agree to participate in this study, realising that I may withdraw at anytime without any penalty. I agree that the data gathered for this study may be published provided that I am not identifiable.

Participant---------- Date ----------

Researcher---------- Date ----------

Or Research Assistant---------- Date ----------

CONSENT FORM

Dear Participant

A RESEARCH STUDY ON FACTORS ASSOCIATED WITH DELAYED ADMISSION OF HIGH-RISK PREGNANT WOMEN IN LABOUR TO LILONGWE CENTRAL HOSPITAL

My name is Fannie Kachale and I am currently studying for a Master in Nursing Science degree at the University of Namibia. This research study is a requirement for completion of the programme.

The purpose of the research is to determine factors associated with delayed admission of high-risk pregnant women in labour. Although the study will not benefit you directly, it will provide baseline data of the problems experienced by high-risk pregnant women in labour therefore provide room for improvement.

Senate at the University of Namibia and the Research Unit Technical Committee at the Ministry of Health and population, Lilongwe Malawi, have approved the study.

There are no risks or harm associated with the study. There will be written questions that you are expected to answer voluntarily by filling in. The researcher or research assistants will assist you to fill in if you are not able to write. The participant is free to withdraw consent and discontinue participation at any time without penalty. You may also refuse to answer any specific questions.

Identification numbers instead of names will be used on questionnaires to ensure anonymity. The completed questionnaires will be stored in a locked filling cabinet and will not be shared to any other person without your permission.

If you have any questions relating to the study, you can contact Fannie Kachale at Lilongwe Central Hospital, P.O. Box 149, Lilongwe or at phone numbers 753555(office) and 794017(home).

I the undersigned have read the above information and understand it fully I wish my daughter to participate in the study realising that she may withdraw at anytime without any penalty. I agree that the data gathered for this study may be published provided my daughter is not identifiable.

Guardian's signature ---------- Date ----------

Researcher/ Research Assistant---------- Date ----------

APPENDIX E

QUESTIONNAIRE FOR DATA COLLECTION

APPENDIX E

DATE---------- CODE----------

QUESTIONNAIRE FOR DATA COLLECTION

FOR USE BY INTERVIEWEE

SECTION A: PERSONAL BACKGROUND

This section covers questions concerning your background. Please indicate your answer with a tick in the box or write in the space provided where applicable.

1. What is your age?

   18years and below ☐
   19- 28 ☐
   29- 38 ☐
   39- 48 ☐
   49 and older ☐

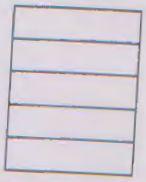
2. What is your marital status?
   Married ☐
   Single ☐
   Divorced ☐
   Other, specify ---------- ☐

3. What is your ethnic background?

   Chewa ☐
   Yao ☐
   Tumbuka ☐
   Other, specify ☐

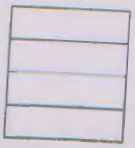
4. What is your religion?
Christian
Hindu
Muslim
Jehovah's Witness
Other, specify ----------

5. What is the highest level of education that you attained?
None
Primary certificate
Junior certificate
Senior certificate
Higher , specify



6. What type of occupation do you have?

Unemployed
Employed
If employed, state the profession.....



7. How far do you stay from the nearest health facility? {If the patient does not know the distance, ask for time of walking 5km/hour}

1-8kilometres (km)
9 - 16km
17- 24km
more than 24km

8. How do you get to the nearest health facility?
Walking
Car
Public transport
Other, specify----------

FOR USE BY INTERVIEWER

SECTION B

The researcher will identify the following information from the subject's records:

9. Gestational age of the pregnancy.
---------- weeks

10. Gravida Parity

11. State the vital signs of the high-risk pregnant woman on admission.

Blood pressure	
temperature	
Pulse rate	
respirations	

12. State the haemoglobin level on admission----------g%

Not done

13. What was the nature of the high-risk factor?

Preeclampsia/Eclampsia
Antepartum haemorrhage
Multiple gestation
Grandemultigravida
Previous caesarean section/Uterus repair
Young Primigravida <18 years
Other, specify ----------

14. State the cervical dilatation of the high-risk pregnant woman on arrival to Lilongwe Central Hospital labour ward.
---------- centimetres.

15. Outcome of the pregnancy
Maternal outcome

Mode of delivery

Spontaneous vertex delivery	
Lower uterine segment caesarean section	
Vacuum extraction	
Assisted Breech Delivery	
Other, specify	

16. Delivery performed by:

Self delivery	
Midwife	
Clinician/Doctor	

17. State the vital signs after delivery.

Blood pressure	
Temperature	
Pulse rate	
Respirations	

18. What was the condition of the uterus after delivery?

contracted	
Not contracted	

19. What was the amount of estimated blood loss at delivery?
----------millilitres

20. Was the placenta delivered spontaneously?

Yes	
No	

If no, specify----------

21. i. On examination, what was the state of placenta and membranes?

Complete	
Incomplete	

ii. If incomplete, evacuation done

Yes	
No	

22. Neonatal outcome

i. Apgar score

1 minute	
5 minutes	

ii. If low Apgar score {5/10 or <}, state the outcome ----------
---
---

23. Baby alive

Yes	
No	

FOR USE BY INTERVIEWEE

SECTION C: ANTENATAL CARE, LABOUR & DELIVERY

Please indicate your answer with a tick in the box or write in the space provided where applicable.

24. i. Did you attend antenatal care?

Yes	
No	

ii. If yes, where

Hospital	
Clinic	
TBA	

iii. If yes, how many antenatal visits did you make?

---

iv. If no, state the reasons why you did not attend antenatal care ----------

---

---

25. At how many months of pregnancy did you start attending antenatal care?

---

26. i. Did you experience any problems during this pregnancy?

Yes	
No	

ii. If yes, explain----------

---

27. i. Were you informed about your high-risk status during your antenatal visits?

Yes	
No	

ii. If yes, what information was given to you ----------

---

28. i. Have you ever had a home delivery?

Yes	
No	

ii. If yes, state the reason for your decision ----------

---

29. Where did you go when your labour pains commenced ?

Stayed at home	
Hospital	
Clinic	
TBA	

30. If you went to a TBA

i. Did she refer you to the hospital and why----------

---

ii. Why did you choose a TBA to attend to you----------

This section deals with your care during labour. Please indicate your answer with a tick in the box or write in the space provided where applicable.

31. What time did your labour pains commence?

1-8hours before delivery	
9-18hours before delivery	
19-24hours before delivery	
More/longer	

32. When did you depart from your house to your chosen place of delivery?

Immediately	
Walked 1-2hours	
Walked 3-4hours	

Other,specify----------

33. Who made the decision for you to start off for the hospital?

Self
Husband
Other, specify ----------

34. When you arrived at Lilongwe Central Hospital, how long did it take before your first attention by a midwife, clinical officer or doctor?

Within 1 hour	
1-2 hours	
Longer than 2 hours	

35. What was the main reason for arriving at the hospital late?

---

36. How can you describe the care that you received in labour ward?
