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## The development and evaluation of a childbirth education program for Malawian women

Address M. Malata  
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**THE DEVELOPMENT AND EVALUATION OF  
A CHILDBIRTH EDUCATION PROGRAM FOR  
MALAWIAN WOMEN**

EDITH COWAN UNIVERSITY  
LIBRARY

**By Address Malata**

**BSc Nursing (University of Malawi)**

**MSc Nursing (Edith Cowan University)**

A Thesis submitted in Fulfilment of the Requirements for the Award of

**Doctor of Philosophy (Nursing)**

Faculty of Computing, Health and Science,

Edith Cowan University

Western Australia

Date of Submission: June 2004.

## USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

## Abstract

Childbirth education provided to women is an integral aspect of the childbirth experience. In Malawi, midwives face a major challenge because one of their major roles is to provide childbirth information to women. However, there are no existing Childbirth Education Programs to facilitate this process. The purpose of this study was, therefore, threefold. First, it explored childbirth information needs of Malawian mothers from the perspectives of both mothers and midwives, as well as strategies that would be appropriate to disseminate this childbirth information to Malawian women. Second, it developed a Childbirth Educational Program (CEP) to meet the specific needs of Malawian women as previously identified. Third, the CEP was implemented and evaluated for its effectiveness in increasing Malawian women's knowledge of childbirth.

The study was conducted in three phases. In Phase One, childbirth information needs of Malawian women were determined using findings from previous studies, focus groups and individual interviews of Malawian midwives. In Phase Two, data obtained from Phase One was used to develop a CEP as well as a pretest/posttest questionnaire. In Phase Three, a quasi-experimental study using sequential sampling was conducted to implement and evaluate the CEP. Participants included pregnant women who attended antenatal clinics at the Ndirande and Limbe Health Centres in Blantyre (Malawi). Following informed consent, 125 women from the Ndirande Health Centre were invited to participate in the study and recruited to a control group. Another 125 women were also recruited to an intervention group at Limbe Health centre. A pretest was administered to both groups of women to determine their childbirth knowledge prior to implementation of the study.

Women in the control group were exposed to routine antenatal education from both hospital and traditional non-hospital sources. Therefore, an increase in childbirth knowledge was anticipated. Additionally, women in the intervention group were exposed to both routine antenatal education as well as a systematic and comprehensive CEP. It was anticipated the degree to which knowledge increased in this group would be higher than in the control group, thus demonstrating the effectiveness of the CEP.

Phase One findings described the childbirth information needs of Malawian women as perceived by midwives. The main emphasis of the content was on information regarding physiological changes in the process of childbirth, what could go wrong, and what measures mothers could take to manage these problems. Malawian midwives also offered suggestions for strategies that could be used in the delivery of delivery of this information. Malawian midwives expressed, however, that there were many challenges to providing childbirth information to mothers, and that it would be necessary to address these issues for the effective implementation of a childbirth program. Findings from a previous study on “Labour and birth information needs of first time mothers in Malawi” were also used in Phase One to describe Malawian women’s perceptions of childbirth information needs.

The CEP developed in Phase Two included information, teaching strategies, as well as a schedule for program implementation. A questionnaire was also developed, based on the CEP content to evaluate the effectiveness of the CEP. Both the CEP and the questionnaire comprised the domains of antenatal, labour and postnatal care.

In Phase Three, findings revealed that in the control group, there were no differences between pretest and posttest scores for most of the items in each domain. Overall, in each of the three domains there were no differences between pretest and posttest scores. In the intervention group, however, there were significant increases in knowledge for most items as well as for each of the three domains.

This study used a quasi-experimental design with sequential sampling and therefore randomisation was not undertaken. This was done to avoid contamination if women from the two groups shared information. Therefore, it was possible that confounding variables affected the outcomes of the study. However, post hoc analyses revealed that maternal age, gestation, gravidity and mothers’ education did not have any confounding effect on the differences shown between the groups in all domains, using linear regression analyses.

The study findings have implications for improving childbirth education for Malawian women. Recommendations emphasise the need for implementation of a Childbirth Education Program in Malawi as one approach to potentially address the high maternal mortality and morbidity. Recommendations are also made for midwifery practice, education and research.

## DECLARATION

*I certify that this thesis does not, to the best of my knowledge and belief,*

- (i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;*
- (ii) contain nay material previously published or written by another person except where due reference is made in the text; or*
- (iii) contain any defamatory material*

Signed:..

Date:..01/12/04



## DEDICATION

This work is dedicated to Stewart, Esther and Angela with fond love.

Stewart and our two lovely daughters, Esther and Angela persevered the long separation during the time I pursued my studies. Angela and I left home coming to Australia to study. Angela was unwell a couple of times and spent days in hospital. Stewart looked after Esther in Malawi the time I was studying. I am grateful to God for the support and love from Stewart, Esther and Angela. I love you all.

## ACKNOWLEDEMENTS

My grateful thanks and acknowledgments are owed to many people, without whom this doctoral work would not have been possible.

I would like to extend my appreciation to the Malawian women and midwives who participated in this study. Their input generated valuable data, which can be used to improve midwifery care in Malawi.

I am greatly thankful to my Principal supervisor, Dr Yvonne Hauck, Associate supervisors, Dr Leanne Monterosso and Kieran McCaul who consistently worked with me throughout the entire research process. They encouraged me to move forward and also supported me when my daughter was unwell. My sincere thanks to Dr Carol Thorogood who was part of the supervisory team during proposal writing.

I am greatly indebted to Professor Linda Kristjansen, Associate Dean, Research and Higher Degrees, Edith Cowan University. Linda gave me advice in my work and also supported me when my daughter Angela was unwell. Linda is an inspiration to me.

My thanks to Maggie Kadangwe who expertly transcribed the tapes for the midwives data and Esther Walusa who assisted in quantitative data entry. My thanks to Aurora Popescu who assisted me with management of data in SPSS, and Dr Lynn Oldham who taught me how to use NUDI\*ST. Additionally, the midwives who participated in the administration of the questionnaire as well as those who implemented the program.

I appreciate all the support and of my friends, Harriet, Chikondi, Leonie, Mary, Ellen, Kaye and Anna as well as staff and colleagues at Edith Cowan University. I am grateful to God for such friendships.

I also wish to thank Edith Cowan University for providing me with the International Postgraduate Research Scholarship, which enabled me to pursue my studies as well as, collect data in Malawi. This contribution was made not only to me, but also to the women of Malawi.

Lastly I wish to thank my Dad and Mum, brothers and sisters, and in-laws for the support they gave me throughout the time I pursued my studies.

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# CHAPTER 1

## INTRODUCTION

### Background

Many mothers die needlessly in Malawi because of complications of pregnancy and childbirth. Each day, 20 women die and 200 are left permanently disabled from complications of childbirth in Malawi (National Statistical Office, 2000). Therefore, each time a Malawian woman becomes pregnant, her risk for untimely death increases. In Malawi, there are many underlying causes of childbirth complications which may lead to maternal deaths, such as the lack of access to essential health services, poverty which contributes to poor health, high fertility rates, unsafe cultural practices, and inadequate knowledge about childbirth and its complications (Ashwood-Smith, Simpson, Ssembatya-Lule, & Matinga, 1998; National Statistical Office, 1996, 2000).

The current study specifically addressed Malawian women's inadequate knowledge about childbirth. Although there is no guarantee that providing adequate and appropriate information about childbirth to pregnant women will lead to behavioural changes (Thassri et al., 2000), previous studies conducted in developed countries have shown that providing information prepares women both physically, and emotionally for childbirth (Creedy, 1995; Gould, 1995). It has also been shown that provision of childbirth information may increase women's awareness of potential childbirth complications, thus, leading them to seek medical attention as early as possible. This can potentially prevent some childbirth complications that may lead to maternal deaths (Ashwood-Smith, 2000a; Geelhoed, 2003; Kwast, 1991).

Given the high mortality rate of Malawian women from complications of childbirth, it is imperative that studies be undertaken to explore the childbirth information needs of Malawian women as a basis for developing strategies for improving the dissemination of information to these women. One possible strategy used in this study was to develop a Childbirth Education Program (CEP). This three-phase study was based on evidence that supports this premise.

In Phase One, a review of the literature was conducted to identify earlier studies that had identified women's childbirth information needs in developed and developing countries. Importantly, Phase One of the current study built on a previous work conducted by the researcher (in fulfilment of a Master of Nursing Degree at Edith Cowan University), that explored the labour and birth information needs of Malawian first time mothers and their satisfaction with the information provided (Malata, 1997). In addition, individual interviews with key informants and focus group interviews were conducted to identify childbirth information needs of Malawian mothers as perceived by Malawian midwives, as well as the most effective strategies that could be used to disseminate the information. Consequently, the opinions of both mothers and midwives were sought to provide insight into the childbirth information needs of Malawian women.

In Phase Two, results from Phase One were used as the foundation for developing a CEP for Malawian women. Once the CEP was developed, a questionnaire was designed to assess Malawian women's knowledge of childbirth information at baseline and post implementation of the CEP.

In Phase Three, following informed consent, pregnant women from Ndirande antenatal clinic were allocated to a control group, and pregnant women from the Limbe antenatal clinic to an intervention group. Both clinics were located in Blantyre City in the Southern region of Malawi.

A pre-test was administered to women in both groups at the first antenatal visit. Women in the control group were recruited first and received routine antenatal care for six weeks. Women in the intervention group were recruited after the control group had completed study procedures. Women in the intervention group underwent both routine antenatal care as well as the CEP for six weeks. A post-test was administered to both groups of women at completion of six weeks. This sequential sampling approach was used to minimise the potential for contamination by sharing information between women in both groups, if they were recruited simultaneously.

It was anticipated that if findings demonstrated a greater increase in knowledge about childbirth in the intervention group, it would demonstrate the CEP effectively increased women's awareness of possible childbirth complications. Given that women were more aware of potential childbirth complications, it was further anticipated they would report to hospital earlier, therefore, preventing complications which may lead to maternal deaths (Ashwood-Smith, 2001; Geelhoed, 2003).

## **Brief Background of Malawi and Health Services**

Malawi is a landlocked country located in Southern Africa as shown in Figure 1.1. Administratively, it is divided into three regions; north, central and south. Malawi is one of the poorest countries in the world with a Gross National Product per capita of US\$ 170. Poverty levels are high with over 50 percent of the population living below the poverty line. The poverty line in Malawi is measured as the proportion of people earning less than US\$20 per month. The Human Development Index, which is another measure for quality of life, is 0.320 compared with an average of 0.380 for the sub-Saharan region, and 0.576 for other developing countries. This indicates the majority of Malawians are poor and unable to afford basic needs such as food, shelter and clothing (Ministry of Finance, 1993).





The Malawi population is currently estimated at 9.9 million with an annual population growth rate of 1.9% (National Statistical Office, 2001). Population growth is predominantly due to a, which stands at 6.7 babies per woman. The high total fertility rate is due to early marriage, low literacy levels and an early age at first pregnancy. Malawi's health indicators are among the worst in the world. In 1992, life expectancy at birth was 41 years for males and 44 years for females, but it has since reduced to 36 years in males and 37 years in females, as a result of the HIV/AIDS epidemic (National Statistical Office, 2001). These figures are alarming in comparison with developed countries like Australia, where the fertility rate is as low as 1.75 babies per woman, and life expectancy is 77.4 years for males and 82.6 years for females (Australian Bureau of Statistics, 2002).

Maternal and child health issues are considered to be integral to the overall social and economic development of Malawi because of the high maternal and infant mortality rates. The maternal mortality rate is 1120 deaths per 100,000 live births, and the infant mortality rate is 104 births per 1,000 live births (Ministry of Health, 2001; National Statistical Office, 1992b, 2000). The high mortality rates are associated with low socioeconomic status, inadequate maternal education, short intervals between births, low utilisation of maternal and child health services and unsafe cultural practices (National Statistical Office, 2000). These figures are also alarming in comparison with developed countries such as Australia where the infant mortality rate is at 5.0 deaths per 1,000 live births, while the maternal mortality rate is at 5.5 deaths per 100,000 live births (Australian Bureau of Statistics, 2002).

In response to the Malawi government's acknowledgment of high maternal and infant mortality rates, low utilisation of health services and unsafe cultural practices, the first National Health Plan was developed in 1973 (Ministry of Health and Population, 1986-1995). One of the main goals of the National Health Plan was to expand the range and quality of maternal and child health services. The Family Planning Program was the first service to be introduced as part of the Maternal and Child Health (MCH) services with a broad objective of reducing the total fertility rate. To complement family planning, the Malawi government also introduced other programs such as the Safe Motherhood Initiative (SMI) which consists of the following, four components: family planning, antenatal care, clean and safe delivery and essential obstetric care. The Malawi SMI implemented a special project in the southern region of Malawi in January 1998, that aims to improve public awareness of the main danger signs in pregnancy and childbirth (Ministry of Health and Population, 1997).

Furthermore, in 2001, in an attempt to support the concept of comprehensive reproductive health, the Ministry of Health and Population developed a Malawi National reproductive healthy policy, as well as guidelines for various components of reproductive health. The components include quality of care, counselling, client assessment, infection prevention, family planning, reproductive health, sexually transmitted infections (STI's), HIV/AIDS, maternal and neonatal health, infertility, and unsafe practices (Ministry of Health, 2001).

The use of available health services such as antenatal, labour and delivery care in Malawi is low, especially in rural communities. Statistics show that nearly 50 percent of the population living in rural communities, seek traditional medical services provided by traditional healers, or relatives and friends who have knowledge about traditional medicines. Furthermore, 44 percent of pregnant women seek traditional services provided by traditional birth attendants and other relatives or friends (National Statistical Office, 2000). The choice of services is dependent upon personal preference, availability of the services, previous experience, as well as other factors such as trust. For example, a woman may have to walk a distance of over five kilometres to the nearest health facility, and yet, there could be a traditional birth attendant within a distance of less than two kilometres. Another frequently reported problem is when high-risk mothers such as primigravidae choose to visit a traditional birth attendant despite being advised to go to a hospital, often resulting in complicated deliveries (Ministry of Health and Population, 1997). Sometimes a mother is kept at a traditional attendant's home for several days while in labour because of transportation problems, or because of traditional beliefs such as the view that prolonged labour may be seen as a sign of unfaithfulness by the woman (Malata, 1997).

In Malawi, providers of childbirth information include: midwives, traditional birth attendants, traditional counsellors (who may or may not be traditional birth attendants), relatives, peers, media, and friends. Midwives are usually trained at enrolled and state registered level and practice midwifery according to guidelines outlined by the Nurses and Midwives Council of Malawi. The midwives practice in both the hospitals and communities (Ministry of Health and Population, 1999-2004).

Information from midwives is offered in a highly structured manner during the first hour of each antenatal visit and then as required during labour and postnatal periods. As many as 300 mothers sit in a hall as a group as large as 300 according to how busy the clinic is. Information topics are determined on an ad hoc basis by the midwife who decides which topic to teach at any given session. Information given by midwives consists of what they consider to be important, and is based on

their nursing and midwifery educational background. The information is given on a clinic day to the whole group of mothers attending the clinic regardless of their parity. There are no standard guidelines regarding when and what information should be covered, and the topics covered at particular clinics are not recorded. Therefore, women are likely to be exposed to repeated topics or, potentially miss essential topics depending upon their attendance dates. There is no system in place to ensure that essential topics are covered in a logical sequence to ensure that women are exposed to all relevant childbirth information.

The extent, therefore, to which women receive information at antenatal clinics is dependent on the number of antenatal visits they attend during pregnancy, as well as topics that are actually taught. Statistics on attendance at antenatal clinics in Malawi indicated that 63 percent of pregnant women attended more than four times, 28 percent attended between two and three times, 2% attended once 7% of women did not attend any antenatal clinics (National Statistical Office, 1992a).

Conversely, the traditional birth attendants are experienced mothers who are usually elderly, and well known in their communities. The people in the community either nominate them, or, they inherit the responsibility from their mothers, grandmothers or aunts. Their status is usually derived from a lengthy apprenticeship with a person who has been a traditional birth attendant for some years (Malata, 1997).

Traditional counsellors are usually elderly women in communities who have the responsibility of counselling girls when they reach adolescence, or women during their first pregnancy and following the birth of their child. Information provided by traditional counsellors, traditional birth attendants, relatives and friends is based on what these individuals consider to be important. Information often reflects various cultural beliefs and values, and is given at specially organised sessions in the communities (Malata, 1997).

The role the media plays in providing information about childbirth in Malawi is not well understood. Although studies conducted by the Safe Motherhood Initiative Project in the Southern Region of Malawi indicated that some people obtained information from the radio, it is still not clear how much childbirth information women are exposed to through the media. There are certain confounding factors such as the availability of radios, particularly among the rural community, as well as the ability to read print media (Hussein, 1998; Ministry of Health, 1999-2004).

In summary, Malawian women face many risk factors during childbirth. No current Childbirth Education Program exists in Malawi despite the clear need for childbirth information. Furthermore, Malawian women receive ad hoc information

regarding childbirth from numerous sources such as midwives, traditional birth attendants, family and friends. There are no standard guidelines for midwives to refer to when giving childbirth information, and there is no system to monitor and evaluate the information that is being given to Malawian women.

### **The Significance of the Study**

Given the challenges associated with high maternal and infant mortality rates, low utilisation of services, potentially unsafe cultural practices, the lack of essential reproductive health information, and care that Malawi as a Nation is facing, it is necessary to establish baseline data and develop intervention strategies for dealing with these problems. As previously stated, one strategy would be the development of a childbirth education program based on identified childbirth educational needs. This would ensure that mothers are given information that is likely to increase their awareness of childbirth and its possible complications. It is further anticipated these women would then seek medical attention earlier in pregnancy, which could lead to early identification of actual and potential complications, thereby reducing maternal mortality (Hussein, 1998).

Many studies have been conducted on antenatal education and information needs during the perinatal period in western countries such as Australia, the United States of America and the United Kingdom (Alexander, Candridge, & Moore, 1993; Bramadat & Driedger, 1993; Freda, Anderson, Damus, & Merkatz, 1993; Gould, 1995; McKeller, Pincombe, & Hendreson, 2002). However, no childbirth education studies have been undertaken in developing countries such as Malawi, since no available organised childbirth education program has existed. A decade ago, a booklet entitled 'Health Talks for Antenatal Clinics' was published by the Ministry of Health, Health Education Section in collaboration with Barbra Kwast. This booklet is no longer used in Malawian antenatal clinics and the researcher was unable to determine the reasons for which it is no longer used. This highlighted the urgent need to develop a childbirth education program for Malawian women, which includes guidelines for midwives to use when providing childbirth education.

However, some studies have been conducted on specific reproductive health information issues such as factors that influence early prenatal care enrolment among rural Malawian pregnant women (Matekwe Phoya, 1993), labour and birth information needs (Malata, 2000), and clinical awareness of obstetric complications among providers, users and non-users of services (Ashwood-Smith, 2000b). This

obvious gap in knowledge about childbirth education in developing countries highlighted the significance of this study within the Malawian context. Furthermore, the current study provided additional information about Malawian women's childbirth information needs as perceived by midwives. The effectiveness of the CEP in increasing Malawian women's knowledge was evaluated by comparing knowledge levels of childbirth both before and after implementation of the CEP.

Women in the control group of this study were exposed to routine antenatal education from both hospital and non hospital sources. Therefore, it was anticipated there would be an increase in childbirth knowledge in this group. However, women in the intervention group were exposed to both routine antenatal education as well as a systematic, comprehensive Childbirth Education Program. It was, therefore, anticipated the degree to which knowledge increased in this group would be higher than in the control group. This would demonstrate the effectiveness of the CEP. Ultimately, it was anticipated the CEP would be considered for implementation in Malawi if the findings of this study showed the CEP to be effective in increasing Malawian women's knowledge of childbirth.

### **Statement of Purpose**

Therefore, the purpose of this study was threefold. First, it explored childbirth information needs of Malawian mothers from the perspective of both mothers and midwives, as well as strategies that would be appropriate to disseminate this childbirth information to Malawian women. The second purpose was to develop a Childbirth Educational Program (CEP) that met the specific needs of Malawian women. In addition, a questionnaire was developed to assess the knowledge level of Malawian women prior to and post completion of study procedures. Third, the CEP was implemented and evaluated for its effectiveness in increasing Malawian women's knowledge of childbirth.

## **Primary Research Questions**

The primary research questions that guided this study were:

1. What are childbirth information needs of women as described in the literature?
2. What are childbirth information needs of women as described by Malawian women?
3. What are childbirth information needs of women as described by Malawian midwives?
4. What is the level of childbirth knowledge of Malawian women?
5. Would development and implementation of a Childbirth Education Program based on the current literature, and Malawian women and midwives' perceptions of childbirth information needs increase Malawian women's knowledge of childbirth?

## **Secondary Research Questions**

The secondary research questions guiding this study were:

1. What would be the most effective strategies for implementation of the CEP to Malawian women?
2. What cultural issues should be considered in the development and implementation of the CEP?
3. What other factors should be considered in the development and implementation of the CEP?
4. What differences exist in a CEP developed for use in a developing country such as Malawi compared with programs used in developed countries?

## Definitions of Terms

The following definitions were adopted for the purpose of this study (Dickason, Schult, & Silverman, 1990; Nichols & Humenick, 2000; Wilberg, 1992):

**Antenatal mothers:** Women who are pregnant.

**Childbirth information:** Information regarding pregnancy, labour and birth, and postpartum period.

**Antenatal period:** The period from conception to time of delivery of the baby.

**Labour period:** The period from when true labour begins to the complete delivery of placenta and membranes, and one hour post delivery.

**Postnatal period:** The time from one hour post delivery of the baby to a period of six completed weeks. This is also referred to as puerperium

**Low risk mothers:** Mothers who do not have any risk factors at any time during pregnancy, labour and delivery and post partum periods.

**High-risk mothers:** Mothers who have risk factors at any time during pregnancy, labour and delivery, and the post partum period.

**Primigravida:** A woman who is expecting her first baby.

**Multigravida:** A woman who has had more than one pregnancy.

**Grandmultiparous:** A woman who has had more than five pregnancies.

## Summary of Chapter and Organisation of Thesis

This initial chapter has provided the introduction to the study, a brief cultural background of Malawi and current health services, the significance of study, the statement of purpose, and a definition of terms. Chapter 2 will present the relevant literature. This will be followed by a description of the conceptual model in Chapter 3. Chapter 4 will describe the methodology for all three phases of the study. Chapter 5 will present findings for Phase 1 of the study. Chapter 6 will outline findings for Phase 2 of the study, and Chapter 7 will describe findings for Phase 3 of the study. Chapter 8 will present the discussion of the findings. Finally, Conclusions, implications and recommendations are outlined in Chapter 9.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **Introduction**

Childbirth education has been part of the childbirth experience for women since the beginning of time. Childbirth education has evolved from an informal structure to a more formal one, following a response to the need for improved and systematic prenatal care in order to improve maternal and infant outcomes (Zwelling, 1996). Although most of the existing literature is based on studies undertaken in Western countries, it was relevant to examine this literature for this study because it formed the basis for the development of the Childbirth Education Program for Malawian women.

The literature review includes the following sections: childbirth education programs, childbirth information needs, effects of childbirth education, childbirth expectations and childbirth education, childbirth experiences and childbirth education, and satisfaction with childbirth education.

#### **Childbirth Education Programs**

Antenatal classes have been in existence in developed countries for a century. Childbearing experience is a challenging experience for parents, particularly mothers. Antenatal classes are believed to assist parents with this experience. In developed countries, organised antenatal classes are referred to as childbirth education programs (Williams & Booth, 1980). This section will discuss in detail some childbirth education programs that have been implemented in developed countries.

In response to a high maternal mortality rate (249 deaths per 100, 000 livebirths), Thassri et al. (2000) developed and evaluated a childbirth education program in Thailand. The study was conducted in a regional hospital in Thailand where there was a systematic and well-planned health education program in place for pregnant women. The primary aim was to design a program using input from the hospital's health care professionals. The secondary aim was to evaluate the outcomes of the program using a pretest/posttest, that was administered to 214



women. The results revealed significant changes in women's behaviours in preparing for pregnancy and delivery, and in the postpartum period. There was no change in nutritional intake during pregnancy and postpartum periods. However, there were high levels of satisfaction reported with the preparation for delivery topic, moderate level of satisfaction reported with preparation for pregnancy, nutrition and breastfeeding topics and a low level of satisfaction with information on preparation for the postpartum period. Women were also satisfied with the teaching methods used for the study. Findings from this study were applicable to the current study aimed to develop a childbirth education program to improve women's knowledge of childbirth even though outcome measures were satisfaction and behaviour change. The current study aimed to develop a childbirth education program for Malawian women and assess women's knowledge regarding childbirth prior to and after attending the program.

Similarly, Ketler (2000) presented the experience of childbirth education courses offered in two settings in Italy (Consultorio and Sant'Elena). This study examined the social processes and interactions that promoted women's experiential knowledge of birth. The study used a field research method where observation and individual interviews were undertaken. Findings of the study demonstrated that childbirth education courses were a means through which women acquired biomedical knowledge about childbirth. Social processes, however, were shown to influence this knowledge and encouraged women to share their experiences. These processes were also shown to be equally valuable and helped to develop relationships among the women. Interaction was shown to be different at the two settings. At the Consultorio, there was little participation from participants, unlike at Sant'Elena where spontaneous participation occurred. The rationale for this difference was cited as the Sant'Elena's course being organised in such a way that participants were encouraged to actively participate in the classes. These results had implications for developing a childbirth program and influenced the focus for this study as mothers, who are considered adult learners, have rich experiences, which can be shared during childbirth classes. Hence, interaction was encouraged in the Childbirth Education Program.

There has been a recent move towards developing family-centred, hospital-based perinatal education programs that place emphasis on consumer information, health enhancement and family autonomy (Westmoreland & Zwelling, 2000). In 1997, Kennestone Hospital in Atlanta contracted a women's consulting firm to assist them in developing a philosophy for women's care, build a new women's centre, and

develop an educational program for women and their families. It is interesting to note that the program was able to offer courses encompassing the whole childbearing year, and this gave an opportunity for families to obtain information at any time during that period. In order to meet the changing needs of families during the childbearing year, education was offered during early pregnancy, mid pregnancy and late pregnancy classes. The long-term emotional significance of the childbearing experience was also addressed in all courses. Classes reflected the cultural needs of participants. Teachers used diverse teaching strategies to meet the different needs of learners. Classes included discussion of consumer rights and responsibilities for making informed choices based on knowledge of alternative care options. Family input and evaluation of class content and process was actively sought and used to improve the classes. Even though this program was family-centred, the results are of significance and aspects from this study such as encouraging participation were applied to the current study. In addition, the researchers suggested that during development of new perinatal education programs, the following issues be considered: assessment of market and community needs, involvement of administrators, marketing of the program, and use of a coordinator for the program. Limitations of the study included lack of sample size, and how the program was implemented. This information may have been useful in the current study particularly on how the program was implemented.

Similarly, Rolls and Cuttis (2001) investigated the effectiveness of a new approach to education classes conducted during the antenatal period for both partners at a metropolitan maternity hospital in Melbourne, Australia. This was a prospective longitudinal experimental study that used pretest/posttest procedures. Seventy first-time pregnant women and their partners were recruited into the study and were randomly allocated to either a control group or an experimental group. Participants completed several questionnaires assessing their knowledge of pregnancy, labour and early parenthood. Findings indicated an increase in knowledge about pregnancy, labour, birth and the postnatal period for the women in the intervention group. These findings are significant and support the need for an organised approach to education classes.

In summary, the childbirth programs discussed in this section originated from developed countries. However, the current study incorporated some of the significant findings such as encouraging participation during the teaching sessions, appropriate content for the classes, and assessing clients' information needs. Prior to the current study, there were no known childbirth education programs in Malawi.

Therefore, experiences from these described studies were considered useful in the development of the Childbirth Education Program for Malawi.

### **Childbirth Information Needs**

Knowledge of childbirth information needs is critical for the development of intervention strategies for pregnant women. Most studies undertaken in developed countries describe the needs of women, together with those of their families. Knowing the mothers' needs forms a basis for planning a childbirth program.

Mothers' experience of childbirth is a critical issue, as it is a time of major physical, social and emotional change. Blackford, Richardson, and Grieve (2000) conducted a qualitative study with eight mothers suffering from various chronic illnesses in north-eastern Ontario, in Canada. The primary aim of the study was to determine how educationally prepared prenatal nurse educators were to meet learning needs of mothers with chronic illnesses. In general, mothers reported they received insufficient and inappropriate information about pregnancy, as well as information related to their chronic illnesses. The results of this study emphasised the need for the identification of women's information needs to ensure they are provided with appropriate and adequate information. The current study addressed the issue by identifying childbirth learning needs of Malawian women.

In a similar study, Flessig (1993) explored the views of British women regarding information given to them by staff during labour and delivery. Twenty registration districts in England and Wales were chosen for the study. Women were sent questionnaires 6 months after the birth of their infant. Seventy six percent of mothers responded. Of these, 22% were primiparous. The results showed that 81% of mothers felt they had received sufficient information about labour and delivery, while 18% wanted more information. The results also revealed that age, parity, and marital status were associated with the views women held about the information given by midwives and doctors during their labour and delivery. Married primiparous and multiparous women under 30 years of age, as well as unmarried women of similar age, felt they did not receive adequate information. Procedures related to the women's views about the amount of information given to them by staff included: emergency caesarean section, use of enemas, and pain relief other than epidural. Women explained they wanted more information about how labour was progressing and details about procedures performed during labour and delivery. The results of this study are of great interest but may not be generalisable to settings such as Malawi, because usually the midwife patient ratio in labour is 1:20,

while the doctor-patient ratio is 1:100. Time and staff constraints in Malawi prevent midwives from explaining about labour and birth during labour, hence this information must be provided during the antenatal period (Ministry of Health, 1976-1995).

Another perspective associated with ascertaining information needs is that of comparing what pregnant women want to know, with what health professionals think should be taught. In a study by Freda et al. (1993), 385 women and 32 nurses and physicians from an inner city community, in the northeast United States of America were surveyed. Participants were asked to rate their interest in 38 topics. The results showed significant differences between clients and their information providers, and had major implications for how nurses assess women's needs for specific perinatal information. For instance, women reported the greatest interest in topics such as foetal development, nutrition, vitamins, travel, bottle feeding, danger signs during pregnancy, when to go to hospital, medicines in labour, how to know when labour starts, effects of stress on pregnancy, rest and activities, discomforts in pregnancy, anaesthesia, natural childbirth, birth defects, bleeding in pregnancy and breast-feeding.

Providers on the other hand, felt clients would be more interested in topics such as use of forceps, breast-feeding, family violence, and when to go to the hospital. Interestingly, primiparous women expressed interest for all topics, while multiparous clients expressed interest in selected topics. It is, however, important to note the study did not address the origin of the interest, nor lack of interest. Freda et al. (1993) argued that understanding the relationship between pregnant women's and providers' perceptions could help prenatal health educators to meet clients' needs better, while responsibly teaching about topics they know are necessary and desirable. It is, therefore, necessary to determine midwives' perceptions of women's needs, as undertaken in the current study. Despite potential discrepancies between midwives and women's insights into cultural and organisational contexts within which childbirth education must take place, these insights were used to guide the design and delivery of the CEP for this study.

Parents, in particular mothers, have preconceived expectations about what they want to know about childbirth. This notion has been examined before, and previous studies have revealed that parents/mothers need the following: information about all stages of labour (Jacoby, 1988); what happens during labour and birth (Copeland, 1979); anatomy and physiology of the reproductive system; normal labour and birth; caesarean birth; labour; delivery; drugs and their effects; relaxation and breathing techniques (Avery & Olson, 1987); birthing options (O'Callaghan,

1995; Whelan, 1995); a sense of control during labour; bodily care; pain relief; and being assured of a safe outcome for both the baby and the mother (McKay & Yager Smith, 1993).

In summary, the literature has shown that health professionals have traditionally have determined the content of childbirth classes. However, parents and in particular women, have their own perceptions regarding the childbirth information they require. It was important, therefore, that information needs of Malawian women were considered when developing a CEP for the current study. For this reason, as previously stated, findings from the researcher's previous study were used when developing the CEP (Malata, 1997).

### **Effects of Childbirth Education**

The effects of childbirth education is another important issue that must be considered when developing childbirth education programs, because it can influence the outcome of any program and is essential for improving quality of care (O'Meara, 1993a). Since the turn of the century, studies that examined antenatal education indicate that childbirth education decreases fears associated with childbirth, decreases maternal anxiety and contributes to positive birth outcomes (Hetherington, 1990; Lumley & Brown, 1993).

Hallgren, Kihlgren, Norberg, and Forslin (1995) conducted a qualitative study to identify women's' perceptions of childbirth and childbirth education after birth in Sweden. Eleven women and their partners expecting their first child were involved in the study. The women used the provided childbirth education in different ways. Fear, as well as unreflected knowledge, was shown to influence acquisition of new knowledge. Lack of, or inconsistent information, led to a worse childbirth experience. In contrast, increased knowledge about childbirth contributed to a better experience. While these findings can not be generalised, they show the need to consider women's' perception of childbirth and childbirth education when developing and implementing a childbirth education program.

Earlier, Halstead and Fredrickson (1978) examined the effects of a structured childbirth education program on the outcome of labour. The program included seven two-hour sessions during the last trimester to meet the needs of couples desiring natural childbirth. Random selection of the medical records of 205 mothers from a total of 1000 was undertaken. The results are of interest because the prenatal education had a greater than expected influence in reducing risk

factors. However, the amount of prenatal education did not significantly affect the length of labour. More mothers in the educated group did not smoke, and more mothers chose to breast-feed.

In another study by Hart and Foster (1996), a correlational survey using a pretest/posttest was conducted using 119 couples from those who enrolled in a 6 week childbirth education program in Georgia, USA. The results showed childbirth education affected the couples anticipated levels of control during labour and delivery. Furthermore, couples who experienced normal labour and delivery were more satisfied with the labour experience than those who had assisted deliveries such as Caesarean section. These results had implications for developing childbirth programs such as that used for this study. The labour and birth component of a childbirth education should focus on assisting participants to feel in control during childbirth, as well as to identify emergency situations during which control must be relinquished to the health care team. In Malawi, men are currently not involved in childbirth education, with the exception of a few in private hospitals. It was not considered appropriate to encourage husbands' involvement because of cultural differences in Malawi, where childbirth is still believed to be "women's affair".

Other studies have indicated that mothers or couples who attend childbirth classes were better able to cope with pain in labour, used less drugs in labour, and had fewer operative deliveries compared with those who did not attend (Fiscella, 1995; Hetherington, 1990; MacLeod & Weaver, 2002; Palkovitz, 1987; Rogers & Schiff, 1996; Simkin, 1991, 1992). Perry (1992), however, challenged the belief that expectant parents who participate in prenatal education courses are more likely to have positive birth outcomes. The author argued other factors that may influence birth outcomes include: genetic factors, personal values and beliefs, access to resources, and availability of support structures. Perry (1992) emphasised that childbirth classes should be viewed as both complex and interrelated. This information is important to consider, as developing a childbirth program does not guarantee that women will have positive childbirth outcomes.

Other problems that may also lead to negative effects of childbirth education include: lack of continuity of care; lack of adequate information given to the clients; and giving conflicting information (Bryar, 1988; Fridh & Gaston-Johansson, 1990; Henderson & Brouse, 1991; Hillan, 1992; Nicholas, 1995).

In summary, the reviewed studies that have described issues related to the effects of antenatal childbirth education were conducted in developed countries with

varied socioeconomic and cultural contexts. There are no published studies on organised childbirth education to date from developing countries such as Malawi. This underscores a gap in knowledge and emphasised the need for undertaking the current study. There is limited information regarding studies that have focused on assessing the childbirth knowledge level of women, as well as programs developed for developing countries such as Malawi. This demonstrates the significance of the CEP that was developed for the current study.

### **Childbirth Expectations and Childbirth Education**

This section examines the literature on parental childbirth expectations that may develop during a woman's pregnancy. Clinical experience in developing countries shows that many parents view childbirth with positive expectations. This is significant because it has been shown that maternal childbirth expectations play an important role in determining a woman's response to her childbirth experience (Barclay, Everitt, Rogan, Schmied, & Wylie, 1997; Brayanton, Fraser-Davey, & Sullivan, 1983; Callaghan, Jones, & Leonard, 2001; Gibbins & Thomson, 2001; Ho & Holroyd, 2002; Koehn, 1993; Moore & Hopper, 1995).

Some studies have indicated that meeting a patient's expectations requires "staying close to the customer" (Spitzer, 1988). A study by Green, Coupland, and Kitzinger (1990) that explored women's expectations of childbirth among 825 women booked for delivery in six hospitals in the south of England, revealed interesting information about women's expectations of childbirth. Green et al. (1990) found that the more educated a woman was, the more knowledgeable she was about labour and birth and the more confident she was in her approach to childbirth.

There was also a strong relationship between a higher level of education and attending antenatal classes, being informed about the advantages and disadvantages of pain relieving drugs, and claiming to be knowledgeable about the delivery of the placenta. The more educated the woman was, the more emphasis she put on the importance of being well informed about childbirth. Obstetric interventions that women experienced during labour were not shown to be related to their level of education.

The study also showed that women with less education had lower expectations regarding their input in decision. The level of education was, however, not associated with fulfilment, satisfaction, and emotional well-being except for women's ability to describe the characteristics of their baby. Well-educated women were more able to describe the characteristics of their baby than less educated

women. The findings of this study provide insight about the impact that the level of education may have on the women's expectations of their childbirth experience, and has implications for the manner in which childbirth information is given to women. The level of education of Malawian women was considered in the current study, as the majority of women in Malawi have either a low level of education or no education (National Statistics Office, 1992). Content for the program was delivered in Chichewa language to ensure that women understood the content.

Beaton and Gupton (1990) conducted in-depth interviews with a sample of 11 urban Canadian primigravid women. Findings revealed that half of the women reported having mixed feelings about their impending birth experience. These women expressed they viewed labour as a time of nervous excitement, were anxious, and expected to be out of control. They admitted they did not really know how to imagine the extent of pain, or, how they expected to cope. The women expected their husbands to be busy, active participants during labour, while the midwife was expected to be monitoring labour progress and the doctor was expected to be present during the birth. The women also had expectations about procedures such as shaving, having an enema, the performance of an episiotomy, use of intravenous infusions, and use of analgesics or anaesthetics. The women expected to be consulted about these procedures, and expressed they would prefer little or no intervention. Findings from this study have implications for giving childbirth information to women in ensuring how maternal expectations can be met. It was fortunate that expectations were realistic. It must be noted, however, that problems may occur where expectations are not realistic because mothers may become frustrated by the inability of health professionals to meet their expectations (Mackay, 1990; O'Meara, 1993c).

Studies on women's preparation for childbirth experience found similar results as those of the previous research (Creedy, 1995; Gould, 1995; Hallway & Bruff, 1994; Mackay, 1990). As previously stated, mothers develop expectations throughout the duration of pregnancy. Most mothers expect their expectations to be met by the end of the childbirth experience. If expectations are not met, mothers may become frustrated. It was, however, clear from these studies that women wanted to take an active role in the control of their labour, and wanted to well informed about their labour and birth.

In summary, these studies have shown that mothers want information so that they can develop realistic and achievable expectations. Developing and implementing a Childbirth Education Program such as used in his study may assist in helping mothers develop expectations that are realistic and achievable.



## **Childbirth Experiences and Childbirth Education**

This section will discuss the effects of childbirth experiences on childbirth education. Childbirth experiences have great physical, social and emotional effects on parents (Simkin, 1991). Research studies performed worldwide indicate there is a strong relationship between preparation for childbirth, and experiences that the parents developed during pregnancy (Driedger, 1993; Kojo-Austin, Malin, & Hemminki, 1993; Lamprell, 1991; Mackay, 1990; Walker, Hall, & Thomas, 1995).

A grounded theory approach was used by Creedy (1995) to explore women's birthing experiences in both hospital (n = 5) and home (n = 5) environments in Australia. In depth interviews revealed insights into maternal perceptions, beliefs, values and behaviours in response to the birthing experience. Findings from this study indicated pre-birth expectations of birthing revolve around three main issues: obtaining information; articulating the information, discussing options for turning points during birth, and working through previous trauma, dissatisfaction and fears. Women in this study expressed importance in being able to cope with fear in relation to birthing. However, women who had a hospital birth were not given opportunities to work through these fears before or during the actual birth. The provision of information, open discussions of issues and the development of strategies through the midwife-woman relationship enabled some women to focus more and use personal resources to confront fears of birthing. Furthermore, several women felt issues of trauma, the experience of pain, consultation and dignity were crucial. Finally, all the women expressed the need to have a debriefing of their birthing experience (Creedy, 1995).

Similarly, Gould (1995) conducted a study in 1994 that explored Australian women's childbirth experiences and the meanings that women attached to these experiences. Five primiparous women, who were 4-6 months postpartum, were interviewed using a phenomenological approach. Gould (1995) believed that giving women opportunities to tell their experiences would give midwives a greater understanding of women's birthing experiences and how these affect them. This information could help midwives to provide adequate childbirth preparation especially to first time women.

Evidence from a study conducted in Iceland by Halldorsdottir and Karlsdottir (1996) supported the previous research findings, and revealed that giving birth is a powerful experience. The purpose of this study was to explore the essential structure of the lived experience of childbearing in fourteen mothers in the provinces of Akureyri and Reykjavik. The study findings indicated that when a woman

commenced her journey through labour and birth, circumstances in her life, as well as her personal childbirth expectations affected her birthing experience. The woman's parity also influenced her birthing experience. The influence of expectations included issues such as whether a woman expected labour to be easy or difficult. A sense of self during the journey was also important. This comprised a woman's sense of being in a private world, as well as her perception of needs during the journey. The needs included the need for a sense of control, the need for caring and understanding, and the need for a sense of security. Labour and birth were considered to be the journey itself. The woman's perception of the journey through labour was comprised of her perception of pain and hard work. The perception of the actual birth process seemed to vary. Some women in the study felt a relief when they were able to give birth, while others felt it was the most difficult time and perhaps felt it was "dying time". The final category was the mother's experience after the birth of a baby. Notwithstanding the inability to generalise these qualitative findings, the results were considered important and were used during the current study

Some research studies have indicated that positive childbirth experiences are associated with: personal control; perceived support; feeling informed; having choices; making decisions; having options in a supportive environment; having someone to promote self-confidence (Price, 1995; Walker et al., 1995); dealing with expectations of pain and pain relief (Green et al., 1990); support and communication received during childbirth (Jabunathan & Stewart, 1995); keeping women informed during labour about what to expect thus giving informational support (McKay & Yager Smith, 1993); feeling in control; having self confidence and positive esteem; good memories about doctors and nurses (Simkin, 1991); knowledge of childbirth; fears regarding pregnancy; locus of control; state of anxiety; expectation of pain; and confidence in the ability to control pain (Crowe & Baeyer, 1989).

In summary, the results of these studies reveal a number of factors that can lead to a positive childbirth experience. Midwifery in Malawi strives to achieve this goal. The issues discussed in this review (such as giving information about the birthing process) were worth considering if Malawian women were to be satisfied with their childbirth experience. In particular, it is apparent from these previous studies that provision of adequate information is the core to a positive childbirth experience.

## **Satisfaction with Childbirth Education**

Although satisfaction was not a focus of the current study, this section discusses literature on satisfaction with care particularly related to childbirth information and its measurement. It is important that satisfaction with information is discussed, as women's satisfaction with childbirth information they receive influences their satisfaction with care. Studies on satisfaction have mainly focused on factors associated with satisfaction, as well as issues to be considered when measuring satisfaction

### **Factors Associated with Satisfaction with Childbirth information**

Central to the dissatisfaction reported by many maternity patients is a perceived lack of information and participation in the decision making process. Data on satisfaction with care in labour was collected in a survey conducted in conjunction with a review of maternity services in Victoria, Australia (Lumley & Brown, 1993). All women who gave birth during a period of one week in 1989, were mailed questionnaires eight to nine weeks after the birth. The factors that highly correlated with dissatisfaction with intrapartum care included: the lack of involvement in decision making, insufficient information, a higher use of obstetric interventions, and the perception that caregivers were not helpful. No association was found between satisfaction and maternal age, marital status, total family income, country of birth or health insurance status (Lumley & Brown, 1993). Although this study was conducted in a developed country, it is important to note the issue of lack of information is common factor worldwide. This emphasises the need to give appropriate information to women.

In the previous descriptive correctional study conducted by the researcher (Malata, 1997), one hundred and fifty first time mothers in Malawi, were asked how satisfied they were with the labour and birth information they received. This question only applied to items about which the mothers stated they had received information. There were four response categories ranging from extremely dissatisfied to extremely satisfied. The results indicated that the information which participants were most satisfied with was "the onset of labour". Of the 150 participants, 130 were given information about how to recognise the onset of labour, while 20 were not given this information. Women expressed dissatisfaction with the amount of information they received on all the other topics such as: the labour process, coping with pain in labour; what is expected of the mother by the midwives during labour and birth; use of medications during labour; and why a caesarean

section would be performed (Malata, 1997). Of major concern was an item on options and rights during labour and birth, which only one mother indicated that she received information. Generally, it was clear from the findings that Malawian women were not satisfied with the amount information they received, particularly at the hospitals and clinics. These findings emphasised the need to find ways for providing adequate childbirth information to Malawian women in an effort to improve their satisfaction with the childbirth information they receive, hence justifying the need for the current study.

Although undertaken in the Tasmanian state of Australia, Turnbull (1984) conducted a survey of patients attending an antenatal clinic in a culturally diverse area of this state. The aim of the study was to ascertain the opinions of mothers about the adequacy of information gained at the antenatal clinic. The degree to which age or parity had influenced their perception was also determined. In addition, the subjects were given the opportunity to comment on care they received at the antenatal clinics. Of the 151 respondents, 48% were from primiparous women. The respondents expressed dissatisfaction with care particularly relating to lack of adequate education and long waiting times. The majority of respondents (76%) indicated their knowledge about pregnancy had been obtained from family, friends, books and magazines. The mothers' perception of information about pregnancy showed they were not satisfied with the information given at antenatal clinics. Most women were concerned they were not even given the opportunity to ask questions. Some findings from this study such as the issue of getting information from books and magazines are not considered relevant to Malawi because of the low literacy level of mothers and lack of print media. There is high dependency on verbal instruction rather than use of printed media in developing countries like Malawi. However, the findings related to giving women the opportunity to ask questions during education sessions could be applicable to developing countries such as Malawi. This also has implications for the mode of giving information to promote satisfaction with the childbirth information that women receive.

Alexander et al. (1993) contributed to the knowledge on patient satisfaction with care in their study on satisfaction with maternity services in Texas, USA. This study used a convenience sample of 152 participants that were recruited from among mothers who had delivered vaginally at the University of Texas Medical Branch. Three instruments were used to collect data: maternal demographic and background data records; maternity services assessment questionnaire; and a patient satisfaction with maternity services questionnaire. The findings indicated

that patient satisfaction was not influenced by maternal demographic characteristics, but rather by the services being offered. From the findings, the researchers argued that if patient satisfaction was to be used as an indicator of quality care and the need for change in midwifery practice, it was important that data be a true representation of patients' perceptions of hospital services.

Furthermore, a similar study was conducted by Seguin, Therrien, Champagne, and Larouche (1989) on 1790 women from the Montreal area of Canada. Women who had given birth four to seven months prior to study commencement were posted a questionnaire. Factor analysis revealed five dimensions to women's satisfaction with childbirth: the delivery itself, medical/nursing interventions, information received, participation in the decision-making process, and physical aspects of the labour and birth rooms. Participation in the decision-making process was the first component of satisfaction with medical care. Information received appeared to be the major component of their satisfaction with nursing care. The physical environment did not affect women's satisfaction with obstetric care. The issue of decision making was also critical. In Malawi, women are not actively involved in decision-making regarding their care. Giving women appropriate childbirth information would potentially empower them to participate in decision making for their care.

Other studies have also reported similar results and factors that influenced satisfaction with childbirth include: giving, type of birth, foetal monitoring, pain relief, birthing traditions, feelings of personal control over the birthing experience, social support (Windor-Richards & Gillies, 1988); parity, institution and social status (Green et al., 1990); interventions and use of technology (Cartwright, 1987; Green et al., 1990); social support (Mercer, 1985); the art of care, technical competence of the care giver, continuity of care giver and the atmosphere and physical environment of the setting (Handler, Raube, Michele, & Grachello, 1996).

### **Measurement of satisfaction with care**

There are a number of issues to consider when discussing satisfaction with care. Measurement of patient satisfaction with care has become increasingly important as a practical gauge to quantify the effectiveness and efficiency of care. Authors that have shared the same opinion have argued that determining patient expectations and evaluating patient outcomes, including level of satisfaction was essential in the provision of quality and patient centred care (Bond & Thomas, 1992; Everitt, 1995; La Monica, Obsert, Madea, & Wolf, 1986; Munro, Jacobsen, & Brooten, 1994). Patients' satisfaction with care is of considerable concern to health

professionals interested in monitoring care quality and studying the effectiveness of specific interventions.

Patients' views of their care, summarised as satisfaction, is the most widely used unspecified measure of outcome. Measurement of patients' satisfaction fulfils several distinct functions. These functions include: evaluation of the quality of care, effectiveness of educational interventions for nurses, effectiveness of an educational intervention for patients, effectiveness of an educational intervention, and evaluation of the performance of the nurse practitioner (Bond and Thomas, 1992).

Findings of other research studies have indicated that timing of the actual measurement of satisfaction also appears to be crucial. Some patients may not feel free to criticise the care if they are still in hospital (Locker & Dunt, 1978; Lumley, 1988; Shearer, 1993; Sullivan & Beeman, 1982), and, therefore, suggested that information about satisfaction should be elicited only when it becomes possible for patients to discriminate between a happy experience of childbirth and the care actually received. These findings emphasise the need to ensure proper timing during data collection of studies on satisfaction with care.

Bramadat and Driedger's (1993) results of a study on satisfaction with childbirth found there were methodological issues that required consideration when measuring satisfaction with childbirth. The first part of the study used quantitative approaches and measured satisfaction with labour and birth in 91 postpartum women in Manitoba, Canada. In addition, different aspects of the experience were described. In the second part of the study conceptual issues of women's satisfaction with childbirth using semi-structured interviews with nine postpartum women were examined. Both studies found support for a discrepancy theory of satisfaction. Researchers found that a major problem in measuring satisfaction was understanding what it actually meant, because most women had difficulty describing what they meant when they said they were satisfied or not satisfied.

Finally, another obstacle in measuring satisfaction is the participants' level of education. The ability to understand and/or recall information, as well as the ability to communicate effectively with health personnel can be affected by the level of education (Higgins, Murray, & Williams, 1994). The ability to understand and recall information causes problems in assessing the quality of care given. This concept contrasts with the results of a study by Green et al. (1990) whose findings did not support this view. The level of education did not influence women's satisfaction with care.

Eriksen (1987) provided yet another contrasting view on patients' satisfaction as an indicator of quality care. Eriksen (1987) conducted a study to ascertain if

there was a relationship between the quality of nursing care and patient satisfaction with nursing care in Houston, Texas. The quality of nursing care and patient satisfaction with nursing care were measured using 136 randomly selected subjects. Results of this study did not support the hypothesis that there is a positive and significant relationship between the quality of care and patient satisfaction with care. The author concluded that reports of dissatisfaction should be carefully considered because there could be other factors influencing the responses.

In summary, while there may be some confounding factors, it is evident that information about childbirth received by women influences their satisfaction with maternity care. It is, therefore, critical that women are provided with sufficient and relevant childbirth information to improve their satisfaction with care.

### **Summary of Chapter**

In summarising the existing literature, several interesting issues have emerged. First, the majority of the literature reveals that childbirth education classes aimed at preparing parents for their childbirth experience are carried out in many developed countries worldwide. The effects of these classes have been found to be helpful to most women. Literature also indicates there are a wide range of research studies that have examined childbirth experiences and expectations in relation to childbirth education. It is apparent that childbirth expectations are developed by parents during or prior to pregnancy, and that parents expect their expectations to be met. Failure to meet these expectations can lead to dissatisfaction with care. Mothers are able to recall their experiences, which usually these have a lasting and life long impact. Finally, literature suggests that the amount of childbirth information women receive impacts on their satisfaction with information received, as well as the care they received.

From the literature review it is clear that the many studies performed on these issues have been conducted in developed countries, and there is insufficient information from developing countries such as Malawi. It is important to conduct research studies on childbirth education in developing countries because some issues are different, such as literacy levels, access to health care, and availability of human and material resources in the health care system.

Given the restrictions of a doctoral study, the current study focused solely on the perceived inadequate childbirth information Malawian women received, and the fact that currently no childbirth program existed in Malawi at the time of this study.



## **CHAPTER 3**

### **CONCEPTUAL FRAMEWORK GUIDING THE STUDY**

The overall purpose of the current study was to identify childbirth information needs of Malawian women as perceived by Malawian mothers and midwives. A Childbirth Education Program (CEP) was then developed based on a review of childbirth education literature and childbirth information needs identified by the findings from Malawian mothers and midwives. A questionnaire that would be used to evaluate the effectiveness of the Childbirth Education Program was also developed.

The conceptual framework that guided this study was developed from the literature review, as well as childbirth information needs obtained from Malawian women and midwives. Childbirth education programs have been in existence for many years, however, it is predominantly women and their families in developed countries that have benefited from these programs (Ketler, 2000; Rolls & Cuttis, 2001; Thassri et al., 2000). Findings from international research studies on childbirth education have revealed that CEP's are an important aspect of childbirth care given to women and their families (Gardner, Cliver, McNeal, & Goldernberg, 1996; Lumley & Brown, 1993; McKeller et al., 2002; Nicholas, 1995; Schneider, 2002).

In addition, women usually have their own perceptions about the content of childbirth information they believe they require. Some of these needs differ from the information that providers consider to be important for the mothers to know (Bester & Nolte, 1992; Dumas, 2002; Freda et al., 1993; Jacoby, 1988; Sullivan, 1993).

Other studies conducted on childbirth expectations indicate that parents have expectations that are developed during pregnancy regarding the childbirth experience. These expectations are determined by factors such as information they have received (Beaton & Gupton, 1990; Green et al., 1990; Spitzer, 1988). These experiences have a lasting influence on mothers throughout their lives (Crowe & Baeyer, 1989; Flessig, 1993; Halldorsdottir & Karlsdottir, 1996; Ip, Chien, & Chan, 2003; McKay & Yager Smith, 1993; Simkin, 1991; Walker et al., 1995).

Informational and emotional childbirth support is an important aspect of childbirth care given to mothers. The providers of the childbirth support include

family and health professionals but research indicates that mothers are sometimes dissatisfied with the support they receive (Gagnon & Waghorn, 1996; Hodnett & Osborne, 1989; Jabunathan & Stewart, 1995; McNiven, Hodnett, & O'Brien-Pallas, 1992).

Satisfaction with maternity care is essential for evaluating the efficiency and effectiveness of care. As well, childbirth information received by mothers influence their satisfaction with care (Alexander et al., 1993; Bond & Thomas, 1992; Higgins et al., 1994; Lumley & Brown, 1993; Malata, 1997; Malata, 2000; Waldenstrom & Nilsson, 1993).

The majority of studies that have been reviewed were carried out in developed countries. Few studies of this nature have been conducted in developing countries such as Malawi. Furthermore, in certain cases, it is difficult to apply the findings of these studies because of diverse cultural, economic and social differences. This study will fill the gap in knowledge that exists for developing countries such as Malawi.

The conceptual framework for this study was developed from the reviewed literature and includes four main concepts: Malawian women's perception of childbirth education, Malawian midwives perception of childbirth education, development of a Childbirth Education Program, and evaluation of the Childbirth Education Program.

The concept of Malawian women's perception of childbirth education included the profile of Malawian childbearing women who took part in the previous study by Malata (1997) as well as that provided by the current study. The other factors underlying this Concept were Malawian women's perceived information needs, ideas for improvement suggested by the Malawian women, and information about childbirth that Malawian women receive. This information was necessary to describe the profile of first time mothers in Malawi, as well as identify the needs and suggestions that were included in the development of the Childbirth Education Program.

The factors underlying the Concept 'Malawian midwives' perception of childbirth education' included midwives' profiles, challenges that midwives currently face when giving childbirth information, the importance of giving childbirth information, the strategies for giving information, and the way forward.

The factors underlying the Concept 'Development of a childbirth education program' were the processes involved in developing the childbirth program, implementing the program, the training of the midwives who implemented the

program, the schedule for the program, and challenges faced during implementation of the program

Finally, the factors underlying the concepts 'Evaluation of the childbirth program' included measurement issues, the two groups at baseline, the differences between and within the groups and limitations and strengths of the study. Implications for midwifery practice, education and research were also discussed.

The conceptual framework guiding the study is illustrated in Figure 3.1. In the figure the four Concepts and the factors influencing them have been presented. However, it is important to note that a study to determine maternal satisfaction after implementation of the program was beyond the scope of the current study.

Concept 1 discussed factors that influence Malawian women's perceptions of childbirth education and this related to Malawian midwives perceptions of childbirth education. These two Concepts were related as they influenced each other and highlighted the similarities and differences between midwives and mothers perceived childbirth information needs. These Concepts were then considered in the development of the CEP. However, there were other factors that influenced the development of the CEP as described in Concept 3 such as training of midwives. Implementation of the CEP was conducted and factors such as measurement issues in Concept 4 were addressed during the evaluation of the CEP. Following the evaluation, implications for midwifery practice, education and research were then identified.

A diagonal relationship existed between Concept 1 and 2. There was a longitudinal relationship between Concept 1, 2 and 3 then Concept 3 and Concept 4. The reason this occurred was because Malawian women and midwives' perceptions of childbirth education were the basis for CEP. However, the CEP's importance could not be justified without evaluating its effectiveness in increasing Malawian, women's knowledge of childbirth.

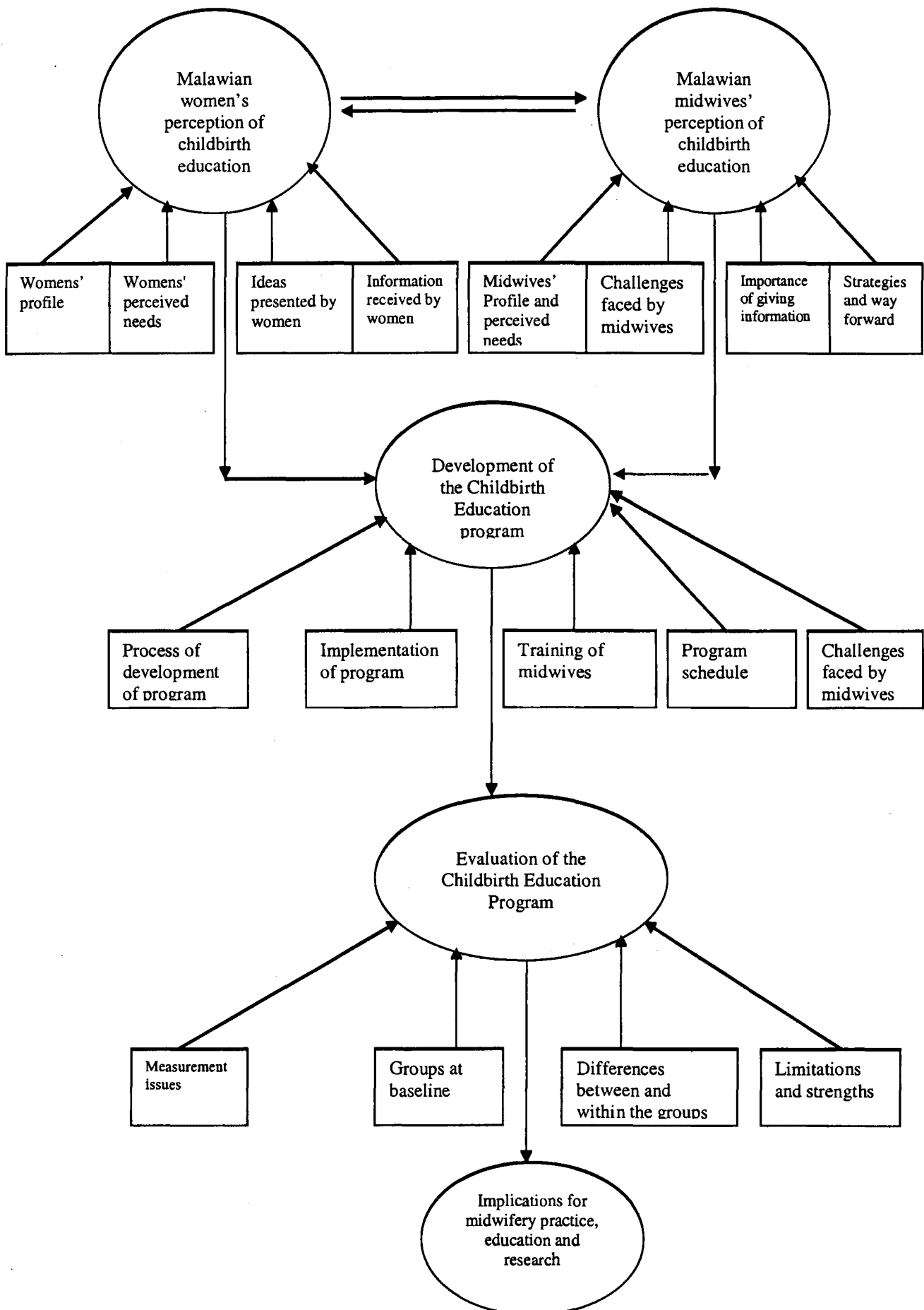


Figure 2. Conceptual framework guiding the study

## **CHAPTER 4**

### **METHOD**

#### **Introduction**

In this chapter, methods and procedures used to conduct Phase 1, Phase 2 and Phase 3 are discussed. Details of methods and procedures used in each phase of the study will be presented individually.

As mentioned earlier, the purpose of this study was threefold. Firstly, it aimed to identify childbirth information needs of Malawian mothers. This was undertaken during Phase One of the study. Literature describing research studies regarding childbirth information needs of women was reviewed. Focus groups and individual interviews to determine childbirth information needs of women as perceived by Malawian midwives followed were then conducted.

The information obtained from Phase One was used in the development of a Childbirth Education Program (CEP) for Malawian women in Phase Two. In addition, a questionnaire to assess Malawian women's knowledge of childbirth information was developed, based on Phase One findings. The study's second aim was to implement the CEP. Malawian mothers' level of childbirth knowledge prior to implementation of the proposed childbirth education program was determined.

In Phase Three, two samples of women were drawn from two residential areas in Blantyre that were attending antenatal clinics. The first sample comprised the control group and was obtained from Ndirande Health Centre. The second sample comprised the intervention group, which was drawn from the Limbe Health Centre. A pre-test was given to all women in both groups to determine level of childbirth knowledge at baseline. Women in the control group were recruited first and received routine antenatal care for 6 weeks. Women in the intervention group were recruited after the control group and received routine antenatal care in addition to the CEP for 6 weeks. This sequential method of sampling was used to prevent possible contamination through sharing of information between participants of both groups if they underwent antenatal care during the same time period.

Finally, the third purpose of this study was to determine the effectiveness of the proposed education program in increasing Malawian women's knowledge of childbirth. This was achieved by administering the questionnaire to women in both groups at 6 weeks to assess their level of childbirth knowledge at this time. The three phases of this study are presented below in Figure 4.1.

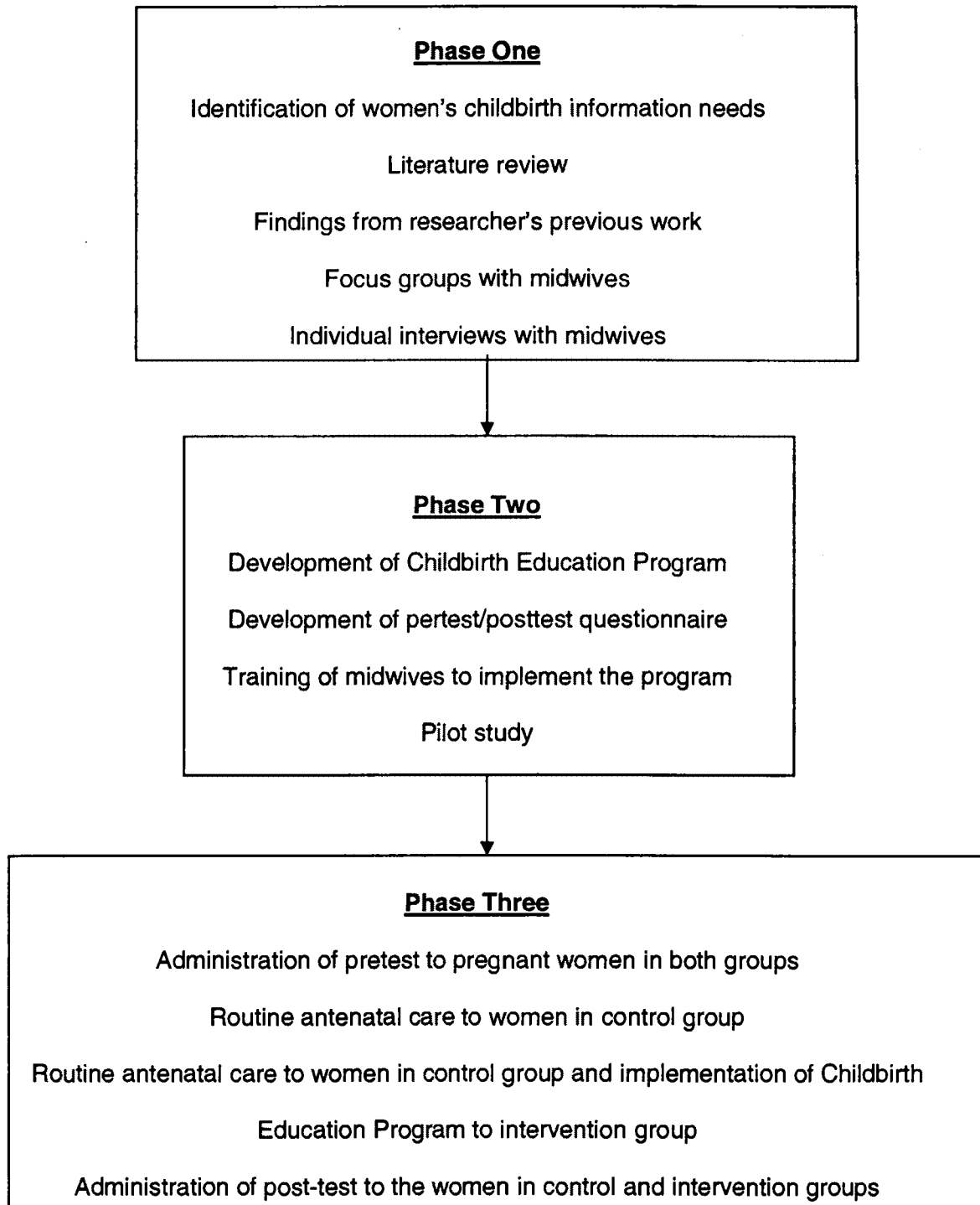


Figure 4.1. Flow chart of study design

## **Phase One**

### **Design**

An exploratory, descriptive qualitative design was used to determine Malawian women's childbirth information needs. A literature review was conducted to identify findings from previous studies on the childbirth information needs of women. This built upon results of a previous study conducted by the researcher, that identified Malawian women's perceived labour and birth information needs (Malata, 1997). In the current study, four focus group interviews were then conducted with four different groups of midwives to identify their perceptions of the childbirth information needs of Malawian women. The participants included midwifery educators and clinicians from four settings within Malawi. Focus groups have previously been used to explore specific issues on a predefined and limited topic (Murdaugh, Russell, & Sowell, 2000). Focus groups help participants explore and clarify issues that are important to them. Focus groups are particularly useful as a data gathering tool in the development of educational interventions (Robinson, 1999). In this study, midwives were asked to discuss their opinions of the childbirth information needs of Malawian women. In addition, they were asked to make recommendations about strategies for implementing a childbirth education program in the country.

In addition, individual interviews were conducted with ten experienced midwives who held key positions in government and non-governmental health organisations. Individual interviews yield rich insights into peoples' experiences, opinions, attitudes and feelings, which are sometimes difficult to elicit in group discussions (May, 1997). The interviewer is able to explore the interviewee's own framework of meaning. This may include discovering new ideas or areas that may not have been anticipated at the start of the study.

Findings from the literature review and data obtained from focus group and individual interviews formed the basis for developing the proposed Childbirth Education Program.

### **Setting and Sample**

This phase was conducted at several sites ranging from a district hospital to Malawi's primary tertiary teaching hospitals. Focus group interviews took place at one school of nursing, one district hospital and two central hospitals. These sites

were chosen to elicit a broad range of perspectives of the childbirth information needs of Malawian women, and assist in increasing the validity of the study's findings (Morse, 1991). Participants selected for the focus groups were midwives currently working in the clinical area or teaching midwifery and who had midwifery clinical experience of not less than two years. As recommended by Murdaugh et al. (2000), each of the focus groups comprised between 6 to 10 participants who were invited by the researcher to take part in the study. This number is recommended because focus groups must be small enough to ensure all participants have an opportunity to share insights, yet large enough to allow for expression of diverse opinions.

**Focus groups.** The first focus group was conducted at the Kamuzu College of Nursing with midwives who were currently teaching midwifery students. The Kamuzu College of Nursing is the only college that offers nurses and midwives a Bachelor of Nursing Degree and a University Certificate in Midwifery in Malawi. It also offers a post-basic Bachelor of Science in Nursing/Midwifery. The graduates later work in various hospitals as state registered nurses and midwives. The lecturers were invited to participate in the study through the Vice Principal and Coordinator of Maternal and Child Health Department at the College. Initially, twelve lecturers were invited. Due to other commitments, only eight were available and agreed to participate in the focus group session.

The second focus group interview took place at Queen Elizabeth Central Hospital (Gogo Chatinkha Maternity Wing). This is a referral hospital situated in Malawi's commercial city. The Gogo Chatinkha Maternity Wing has an antenatal clinic and ward, labour ward, postnatal ward, as well as family planning, and under five children clinics. Most of the women who attend this facility live in small townships in the city, and some travel from villages that surround the city. Midwives were identified by the Senior Matron at Gogo Chatinkha Maternity Wing. Twenty-one midwives were invited to participate, but only nine were available and agreed to participate in the focus group session.

The third focus group interview occurred at Mulanje District Hospital. This is a smaller hospital compared with Queen Elizabeth Central Hospital. Mulanje District Hospital is situated 160 kilometres from Blantyre City. The maternity unit has an antenatal, clinic and ward, labour ward, postnatal ward, as well as, family planning, and under five-year children clinics. This facility was chosen because it was a district hospital with limited resources and catered largely for a rural community.



Although the majority of the women who attended this facility lived in the township, other women came from the surrounding villages. The midwives, who work in the hospital's clinic including those who conduct mobile clinics, were invited to participate in the focus group. Midwives working in the maternity ward were also invited to participate in the study. The Matron in-charge identified potential midwives at Mulanje District Hospital. Thirteen midwives were invited to participate, but only six were available and agreed to participate in the focus group session.

The fourth focus group interview was conducted at Lilongwe Central Hospital (Bottom Hospital). This hospital is based in the capital city of Malawi. The maternity wing is busy and has similar facilities to those at Gogo Chatinkha Maternity Wing. Most of the mothers who attended this facility live within small townships of the city and some travel from villages surrounding the city. The midwives who were invited to participate were those working in this clinical area and who have midwifery work experience of more than two years. The Matron of Lilongwe Central Hospital (Bottom Hospital) identified these midwives. Twenty midwives were invited to participate but only ten were available and agreed to participate, in the focus group session.

***Individual interviews.*** Individual interviews with key informants took place in a variety of settings at the participants' work places. The informants were senior and experienced midwives who had also worked in the clinical areas although most of them are now involved in midwifery education or administration. These midwives held key positions in both government and non-governmental organisations. The following key informants were invited to participate in an interview: the Controller of Preventive Health Services- Ministry of Health- Lilongwe; the Program Manager for Safe Motherhood Initiative (SMI)- Ministry of Health- Lilongwe; the Program Manager for SMI (Southern Region project- Blantyre); the Training Officer at Nurses and Midwives Council of Malawi Nurses and Midwives Council of Malawi - Lilongwe city; a Senior Lecturer and Lecturer in the Maternal and Child Health Department- Kamuzu College- Blantyre Campus; a Senior Lecturer in the Medical and Surgical Nursing Department at Kamuzu College of Nursing, Blantyre Campus; a Senior Matron from Gogo Chatinkha Maternity Wing; a Senior Matron- Bottom Hospital Maternity Wing, and the Matron for Mulanje District Hospital. In all, ten key informants were invited and all agreed to participate in the study.

## **Instruments/Materials**

A focus group guide with semi-structured questions was used in the focus group interviews (Appendix A). The questions were based on the literature review and the researcher's experience as a midwifery educator and clinician. The questions focused on childbirth education content and effective strategies for dissemination of information.

An individual interview guide with semi-structured, open-ended questions was used to facilitate the individual interviews (Appendix B). As before, these questions were derived from the literature review, as well as, the researcher's experience as a midwifery educator and clinician.

## **Procedure**

Following approval from the Ethics Committee of Edith Cowan University (Appendix C) and the Health Research Committee of the College of Medicine and Kamuzu College of Nursing (Appendix D), letters were sent to heads of the Institutions where the focus group interviews were to take place, seeking their approval to proceed with the research (Appendix E). Once approval had been received from the heads of these institutions, two research assistants (qualified midwives) were recruited to the study. The research assistants were given information about the study and its purpose, and were trained to assist in focus group interviews. Although the principal researcher led the focus groups, the research assistants took notes, participated in the discussions, and ensured that all interviews were audiotaped. This allowed the principal researcher an opportunity to focus solely on the conduct of the actual interviews, while the research assistants paid attention to interview proceedings (including group dynamics), as well as identifying participants' responses and recording what was said during the interview.

Visits were made to the school of nursing and the hospitals by the principal researcher and the research assistants. At Kamuzu College of Nursing, the Principal Researcher identified potential participants with the assistance of the Vice Principal. At the hospitals, potential participants were identified by the Matron in-charge. An Information Sheet about the study was given to potential participants (Appendix F). Participants were informed that they should read the Information Sheet, and that a date would be set for the focus group discussion. They were informed that if they would like to participate in the study, they should arrive at the stated venue on the date and time given. They were also informed that the

interviews would be audiotaped. Those who agreed to participate were asked to sign an informed consent form when they came for the focus groups (Appendix G).

Similarly, upon approval of the committees outlined above, letters were sent to ten individual key informants inviting them to participate in the study (Appendix H). They too were sent an Information Sheet with details of the study (Appendix I). They were also informed that the interviews would be audiotaped. Appointment dates were when they responded to the letter. These participants were asked to sign a consent form before they were interviewed to indicate their willingness to participate (Appendix J). Interviews took place at a time and date convenient to the key informants and these were conducted either in the hospital or within their offices in the institutions where they worked.

### **Validity and Reliability**

Issues of validity and reliability in the focus group and individual interviews were considered important by the researcher. In this study, specific measures were taken to address these issues (Sandelowski, 1986). Credibility was obtained through peer review where interpretations of the data was discussed with colleagues at Kamuzu College of Nursing, midwives in the clinical area, as well as research supervisors at Edith Cowan University. The data were reviewed and comments regarding the plausibility of the emerging findings were sought. The reviewers were provided printed extracts from the interviews and given an opportunity to listen to some of the tapes. The identity of Interviewees identities was not revealed.

Confirmability was addressed by obtaining data from multiple sources such as midwives from the College of Nursing, clinical areas, and other key informants in Malawi. This approach is known as data triangulation. Data triangulation uses the strategy of multiple sources of data to confirm emerging findings and minimise researcher bias (Morse, 1991; Sandelowski, 1986).

Fittingness was improved by subjecting the inferences derived from data to external peer and colleague review. Detailed documentation of data collection and data analysis was undertaken to ensure auditability.

### **Data Analysis**

The following steps, with some modifications, were adopted from Burnard (1991) to analyse the data from individual and focus group interviews:

- The audiotapes were transcribed verbatim by a professional typist;

- Each typed transcript was checked against the audiotape by the researcher;
- The written transcripts from each interview were read and key words and significant statements were highlighted throughout the transcript;
- The identified themes that emerged from each interview were reviewed by the researcher, and similar themes were grouped together;
- Significant statements for each theme were identified; and
- The researcher ensured that opinions, which differed from those of the group, were described.

The Q.S.R NUDI\*ST (Non-numeric Unstructured Data Indexing, Searching and Theorising) computer package was used to manage qualitative data.

### **Interview questions and approach**

The use of open-ended questions is advocated to guide interviews in qualitative research (Patton, 1990). Semi-structured interview guides were used to guide the focus group and individual in-depth interviews (See Appendix A and B). This type of interview guide allowed for flexibility in response patterns and probing tactics. The interview guide focused on the following issues: What do you think is the most important information about **pregnancy, labour and birth and the puerperium** that Malawian women should know? What information are women given at home and the hospital? What strategies should be used to give information effectively? Probes were used to get more information such as: Tell me more about that? Can you explain? How do you feel about that? Patton (1990) emphasises the use of probes in this way:

Probes are used to deepen the response to a question, increase richness and depth of responses, and give cues to the interviewee about the level of response that is desired. The word probe is usually best avoided in interviews-a little too proctological...Quite simply, a probe is a follow-up question used to go deeper into interview responses. As such, probes should be conversational, offered in a natural style and voice, and used to follow up initial responses (p.372).

## **Transcript preparation and analysis**

The audiotapes were transcribed as soon as each interview had taken place. A qualified typist performed all transcriptions. All transcripts were checked for any errors by the principal researcher. All names were replaced with the following codes: EM representing a midwife from the education sector; MM representing a midwife in a management position - policy level; CM representing midwife in the clinical setting; EDFG representing a focus group in the education setting; C1, 2,FG representing focus groups in the clinical area, and C3FG representing a district hospital focus group. The Q.S.R. Non-numerical Unstructured Data: Indexing, Searching, and Theorising (NUD:IST) was used to manage data from focus groups and individual interviews. The program assists in managing a database of transcripts.

## **Ethical Considerations**

There were no known risks to the midwives who participated in the study. Ethical approval to conduct this study was obtained from the Committees for Conduct of Ethical Research at Edith Cowan University, the Health Research Committee of the College of Medicine, and the Kamuzu College of Nursing in Malawi. Each participant included in the focus groups and individual interviews received an Information Sheet as previously described. Informed consent was obtained from each participant. All names were replaced with a number code. No name related data was used, therefore, confidentiality was ensured. Sources of raw data, questionnaires and computer diskettes were secured in a locked filing cabinet in the office of the principal researcher at Kamuzu College of Nursing in Malawi, and at Edith Cowan University when the researcher returned from data collection in Malawi. Signed consent forms were secured in a locked filing cabinet in the office of the researcher at Kamuzu College of Nursing in Malawi. Access to raw data files on the computer was protected by a password known only to the Principal Investigator. No other personnel have access to confidential materials. All records will be stored for a period of five years after publication of the study findings. At this time, paper records will be shredded and diskettes and computer files will be erased.

## **Phase Two**

This section describes the development of the childbirth program as well as the questionnaires that were used for the current study. Content used in the CEP was derived from: the literature, results from the researcher's previous "Labour and Birth Information Needs of First Time Mothers in Malawi and Satisfaction with Information Received" study (Malata, 1997), and data from indepth individual, and focus group interviews and with Malawian midwives undertaken in Phase One.

### **Development of the Childbirth Education Program**

As previously stated, the Childbirth Education program was developed from literature and data obtained from Malawian women and midwives. The draft CEP comprised proposed content to be covered in the teaching program, as well as the schedule and suggestions for teaching methods to be used.

Five experienced midwives examined this draft program for content. Midwives suggested removal of the topic "Reproductive Health" because midwives felt the content covered in the program already contained areas of reproductive health and hence no need for a specific topic. Midwives stated they thought important areas of content included: "danger signs during pregnancy", "labour and after birth", "the labour process", and "postnatal care for mother and baby". They also suggested that cultural beliefs and taboos of childbirth in Malawi should not be presented as a specific topic, but should be incorporated within topics such as "Self care". Cultural beliefs and taboos normally vary according to different districts in Malawi. Hence, the midwives would have to address these issues as they applied to the population they were dealing with, rather than generalising to all women. The midwives also suggested that topics be translated into Chichewa, the official language of Malawi, prior to implementation as it would be difficult for midwives to use it in English as the majority of the women would not benefit because of high illiteracy rate. Translation into Chichewa of the specific topics was therefore undertaken with the help of a Chichewa expert.

The CEP manual comprised three sections as follows:

**Section One.** The first section addressed antenatal care, self-care during pregnancy, nutrition during pregnancy, cultural issues related to pregnancy,

common discomforts of pregnancy, danger signs in pregnancy, sexually transmitted diseases including HIV/AIDS, and preparation for delivery.

**Section Two.** The second section addressed the labour process, possible complications during labour and birth, caesarean birth, and non-pharmaceutical pain relief measures in labour.

**Section Three.** The third section comprised the following topics: self-care during postnatal period, exclusive breast-feeding, care of the newborn baby, danger signs of the puerperium, care of the newborn baby and family planning.

### **Training of midwives to implement the childbirth program**

Four midwives with a teaching background were trained to implement the program. These midwives were identified through colleagues teaching at the College of Nursing. Three of the midwives had just completed a Bachelor in Nursing program and were teaching at Blantyre School of Nursing. One midwife was working at Limbe Health Centre Clinic but had undergone Community Nursing program and had teaching skills. A one-day training session was undertaken with midwives. The researcher and the midwives went through both the English version and Chichewa version of the content to be taught. The schedule for implementation was done collaboratively, and topics were distributed among the midwives. These midwives were not involved in the recruitment of the participants in order to avoid potential bias.

### **Schedule for the Childbirth Program**

The schedule for the program was made in consultation with the midwives at the clinic. The midwives were trained to participate in the implementation of the program. The schedule was as follows:

#### **Week 1 Program**

- Recruitment of participants
- Administration of pretest

- Topic: Antenatal care
- Initial physical assessment

### **Week 2 Program**

- Review week 1 content
- Topics: Pregnancy, nutrition in pregnancy, and common disorders of pregnancy
- Physical assessment if required
- Individual counselling
- Treatment and referral if required

### **Week 3 Program**

- Review week 2 content
- Topics: Risk factors and common complications of pregnancy, danger signs of pregnancy, and sexually transmitted infections
- Individual counselling
- Physical assessment if required
- Treatment and referral if required

### **Week 4 Program**

- Review week 3 content
- Topics: The labour process, danger signs of labour, caesarean birth, and pain relief in labour
- Individual counselling
- Physical assessment if required
- Treatment and referral if required



### **Week 5 Program**

- Review week 4 content
- Topics: Self care during postpartum period, exclusive breast-feeding, care of the newborn, and family planning
- Individual counselling
- Physical assessment if required
- Treatment and referral if required

### **Week 6 Program**

- Review week all content
- Individual counselling
- Physical assessment if required
- Treatment and referral if required
- Administration of posttest

### **Development of the pretest/posttest Questionnaire**

The questionnaire was developed from the content of the Childbirth Education Program. A copy of the questionnaire is presented in Appendix K. The questionnaire consisted of three domains (antenatal, labour and birth and postnatal), as well as a demographic questionnaire.

***Antenatal Domain.*** There were ten items in the Antenatal (pregnancy) domain. These items related to signs of pregnancy, when to start antenatal care, nutrition, minor disorders of pregnancy, danger signs in pregnancy and HIV/AIDS.

***Labour and Birth Domain.*** There were eight items in the Labour and Birth Domain. The questions addressed issues of preparation for birth, pain relief in labour, and what could go wrong with the mother and baby.

**Postnatal Domain.** There were 12 items in the Postnatal Domain. The questions addressed issues of prevention of infection during postpartum period, danger signs for mother and baby during this period, breastfeeding and family planning.

**Demographic section.** The final section comprised questions about demographic characteristics of the mothers. These questions were asked at the end of the interview because it was discovered during a pilot study that mothers felt more comfortable to give personal information at the end of the interview rather than at the beginning.

### **Pilot study**

A pilot study was conducted at the Ndirande Health centre in Blantyre. The purpose of the pilot study was to test the questionnaire for feasibility as well as to train of midwives who were to administer the instrument.

Ten women who were less than 30 weeks gestation were identified by the sister-in charge at the clinic, agreed to participate in the pilot study. These women were given information about the study through an Information Sheet (Appendix L) that had been translated into the native Chichewa language. The women who agreed to participate signed an Informed Consent Form (Appendix M), and those who could not write were asked to provide an imprint of their right thumb on the consent form in place of a signature. This procedure had received ethical clearance as method for obtaining consent from women who could not write, from the Ethics committee in Malawi.

### **Clarity, content validity and apparent internal consistency**

Prior to implementation of the CEP, the questionnaire was assessed to determine whether it measured the attributes it was intended to measure. Six midwifery experts were asked to critique the instrument for clarity, content validity, and apparent internal consistency. According to Lynn, (1986), a panel of six raters is required to ensure 83% (i.e., five of six raters) agreement for validity assessment to be achieved. To preserve the context of the data and accuracy of meaning, the raters were drawn from the context within which the original data originated (Aamodt, 1982). This justifies the use of Malawian midwives to undertake the process.

**Clarity.** Six Malawian midwifery experts were asked to review the instrument. Instructions and a response format were provided that asked them whether each item was clear or unclear (Appendix N). Space for comments was also provided for each item. Before data collection, a priori criterion of 83% agreement for individual items and for the whole instrument, significant at  $p < 0.05$  was set for clarity. The whole instrument and individual items achieved preset criteria. All but one midwife suggested that Question 2 be reworded, as it was not clear.

**Content Validity.** To ensure content validity, the six Malawian midwifery experts were asked to assess the extent to which items in the instrument fit the domain of interest. A label: 'The Development and Evaluation of a Childbirth Education Program for Malawian Women' was given followed by the definition. The midwives were asked if the label and the definition fitted the whole set of questions in the survey and also if each question fit the label and definition (Appendix O). There was space provided for any comments they had. They were further asked if each question was unique and not repetitive. They were also asked to write any questions that they thought should be added to the survey. Generally, midwifery experts suggested that all questions that asked mothers to mention danger signs should be followed by a question about what they could do if they experienced these danger signs. A priori criterion of 83% agreement for individual items and for the whole instrument, significant at  $p < 0.05$ , was set before data collection, thus five out of six midwifery experts agreed (Nunnally, 1978). All items met the criterion of 83% agreement.

**Apparent internal consistency.** Nunnally and Berstein (1994) explained that internal consistency is a requirement for both reliability and Concept validity. The Malawian midwifery experts were asked: "Do these items generally belong together?" and "Does each item belong to the sub scale." (Appendix P). All items met the priori criterion which was maintained at 83% (five out of six raters agreed.). However one expert felt that two questions about HIV/AIDS that were placed in the "Antenatal domain" did not necessarily belong to this domain. However, the researcher decided to include the two items on HIV/AIDS after further consultation with an expert midwife, because of their perceived importance.

## **Training of midwives to administer Questionnaire**

Midwives who were identified and approached to participate in the data collection procedure had just completed their post registration Bachelor of Science in nursing program, and were waiting posting to their new work places. Three midwives were recruited for this role. They were chosen on the basis of having knowledge of research, which they had developed as part of their BSc in Nursing Program and they were considered suitable to undertake data collection.

One day of theoretical training and another day of clinical training were undertaken. Training covered the following areas: introduction to the study and its purpose, method of data collection, administration of the questionnaire, and use of Chichewa language during interview sessions. The questionnaire had been translated into Chichewa language. Interviewing and recording procedures were discussed. The midwives were asked to record responses on behalf of participants. They were asked to tick only what the women stated and not to show them responses as outlined in the questionnaire. The training session highlighted the importance of the establishing trust with participants in order to elicit full disclosure, and the importance of accuracy in interpretation of subject responses, as well as techniques to ensure they did not influence the participant's responses. Clinical training was designed to ensure that the midwives had clear understanding of the issues covered during theoretical training. During this session, each midwife interviewed five participants in the presence of the principal researcher. These midwives were different from those who implemented the CEP, to avoid potential bias.

### **Phase Three**

#### **Design**

Initially, the researcher planned to undertake a randomised controlled trial (RCT). However, an RCT design was not considered appropriate in the current study because of the potential for contamination between control and intervention groups if participants interacted within the communities, and shared knowledge. This was likely to occur because of cultural nature of interaction among women in Malawi. To avoid this, a sequential quasi-experimental design was employed. The

control group was recruited first. The questionnaire was administered to participants at their first antenatal visit. The participants then received routine antenatal care for 6 weeks at the end of which the questionnaire was re-administered.

To avoid contamination, following completion of this phase, participants were recruited to the intervention group. The questionnaire was administered to these participants at the first antenatal visit. The Childbirth Education Program and routine antenatal care was then administered to these participants for 6 weeks. Participants attended 6 antenatal Childbirth Education sessions on a weekly basis. Upon completion of the CEP, the questionnaire was re-administered to these participants.

Traditionally, Malawian women receive childbirth information from other sources such as family, and friends, therefore it was difficult to control for this. Assuming that the childbirth information given by other sources remained stable over the study period, a quasi-experimental study with a sequential design was the most trustworthy approach (Roberts, 1989).

### **Sample and Setting**

The settings for the study were the Ndirande and Limbe Health Centres in Blantyre City, Malawi. The control group was recruited from the Ndirande Health centre and the intervention group at Limbe Health Centre. These clinics are located in two different suburbs in Blantyre. The majority of women in these suburbs attend antenatal care at these clinics. This was done to minimise the possibility of women meeting and sharing information. Each health centre caters for outpatients with a wide range of illnesses and has a maternity unit with antenatal clinic, labour and postnatal wards and family planning clinic and so were ideal for the study.

The target population for this study included both primigravid and multigravid pregnant women receiving antenatal care for the first time. Women were selected using convenience sampling. Exclusion of women was performed on the basis of the following predefined exclusionary criteria: more than 30 weeks gestation, presence of medical illnesses such as diabetes, hypertension, and tuberculosis.

It was not possible to calculate the sample size prior to commencement of this study because there was no existing data available that described the level of childbirth knowledge of Malawian mothers. This would have meant undertaking a pilot study for 6 weeks and using the findings for calculation of sample size. This

was not possible given the time restrictions of this PhD study. While it was not possible to perform a sample size calculation prior to the commencement of the study, it would appear that an adequate sample was recruited. In the analyses, of the main effect of the intervention, all tests resulted in p-values well below 0.05.

A total of 172 pregnant women who were less than 30 weeks gestation were approached to participate at the Ndirande Health Centre. A total of 125 women consented to participate and were recruited and allocated to a control group (n=125). Similarly, a total of 187 pregnant women at less than 30 weeks gestation were approached to participate at the Limbe Health Centre. A total of 125 women consented to participate and were recruited and allocated to an intervention group (n=125). Those women who chose not participate either did not meet the criteria, or refused to participate for personal unknown reasons.

The final sample size therefore, consisted a total of 125 pregnant women (primigravid and multigravid) in each group as shown in figure 4.2. If women developed complications such as preeclampsia, premature labour, and or infection of any type during the course of the study they were withdrawn from the sample. At the end of the program, 104, in the control group and 105 in the intervention group remained in the study, representing at a retention rate of over 80%.

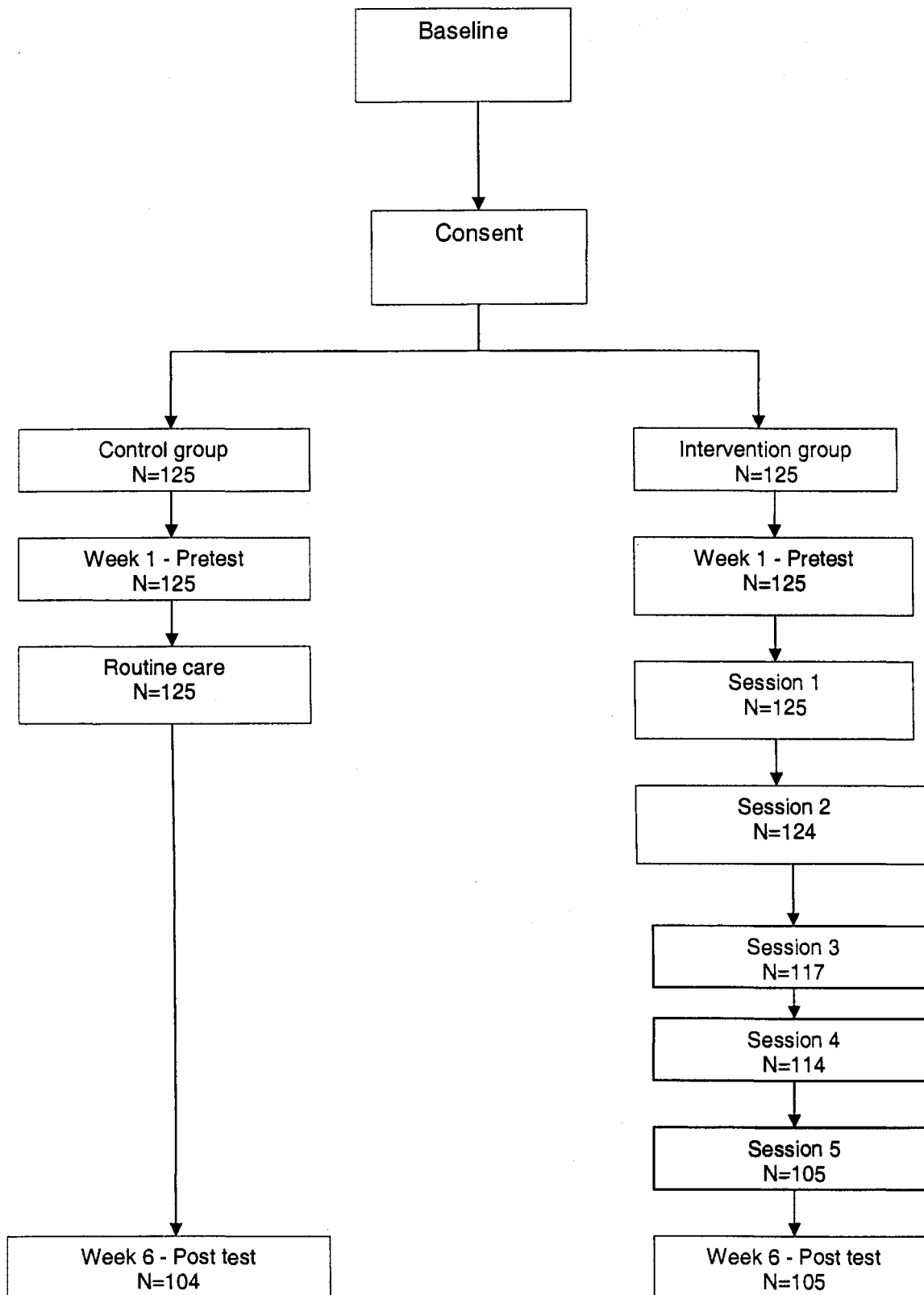


Figure 4.2. Study protocol

Prior to selection of potential participants, all women were informed about the study purpose. Clinical staff in the Ndirande and Chiromoni Health Centres were asked to assist with identification of potential participants. This was done using the women's antenatal cards. Women who participated in the control group were recruited first. The women who were identified were informed about the study, its purpose, and how the study would be conducted using an Information Sheet (Appendix Q). Those women who chose to participate did so of their own free will. Additionally, women who decided not to participate were assured that their antenatal care would not be compromised. Women who accepted and met the criteria for inclusion were asked to sign an informed consent form. If they were not able to write, they placed their right thumb on a stamp pad to make an imprint on the consent form indicating they have agreed to participate in the study (Appendix R).

Women were recruited to participate in the intervention group after completion of the control group phase. The women who were identified were informed about the study, its purpose and how the study would be conducted using an Information Sheet (Appendix S). Those women who chose to participate did so of their own free will. Additionally, women who decided not to participate were assured that their antenatal care would not be compromised. Women who accepted and met the criteria for inclusion had to sign an informed consent form. If they were not able to write, they placed their right thumb on a stamp pad to make an imprint on the consent form indicating they had agreed to participate in the study (Appendix T).

### **Instruments/Materials**

A structured questionnaire was used in this phase to measure the level of maternal knowledge. The questionnaire consisted of three domains (antenatal, labour and birth, and postnatal), as well as demographic questions. There were ten items included in the Antenatal (pregnancy) domain. These items related to signs of pregnancy, when to start antenatal care, nutrition, minor disorders of pregnancy, danger signs in pregnancy and HIV/AIDS. There were eight items in the Labour and Birth Domain. The questions addressed issues of preparation for birth, pain relief in labour, and what could go wrong with the mother and baby. There were 12 questions in the Postnatal Domain. The questions addressed issues of prevention of infection during postpartum period, danger signs for mother and baby during this period, breastfeeding and family planning. The final section comprised questions



about demographic characteristics of the mothers. The process of development of the questionnaire is already described in the previous section under subheading 'Development of the pretest/posttest Questionnaire.'

The Childbirth Education Program (CEP) was the intervention used in this phase of the study. The CEP had three sections. The first section addressed: antenatal care, self-care during pregnancy, nutrition during pregnancy, cultural issues related to pregnancy, common discomforts of pregnancy, danger signs in pregnancy, sexually transmitted diseases including HIV/AIDS and preparation for delivery. The second section addressed the labour process, possible complications during labour and birth, caesarean birth, and non-pharmaceutical relief measures in labour. The third section comprised the following topics: self-care during postnatal period; exclusive breast-feeding, care of the newborn baby; danger signs of the puerperium, care of the newborn baby and family planning.

The midwives were asked to record the information that had been provided to the mothers during group and individual sessions on a record sheet (Appendix U). The midwives also had a record sheet on which they recorded their own general perception of the classes, as well as any issues that arose during the class sessions and general comments on how the session went (Appendix W). Names of women in each group were recorded on a master sheet and replaced by number codes. Pre and posttest questionnaires were precoded to ensure that participants' pre and posttests could be matched.

### **Procedure**

Following approval from the Ethics Committee of Edith Cowan University and the Health Research Committee of Ministry of Health in Malawi through the College of Medicine and Kamuzu College of Nursing Research Committee, letters were sent to Health Coordinator for City of Blantyre seeking permission to use the Ndirande Health Centre as one of the study sites. The letter comprised information about the purpose of the study, study design, as well as planned duration (Appendix X). A similar letter was also sent to the Southern Region Health Officer (Appendix Y) seeking permission to use the Limbe Health Centre as a study site.

Visits were made to the sites by the researcher and the research assistants when permission had been received to brief the staff about the study and its purpose, and how they would be involved. Any questions or concerns were answered. It was anticipated that recruitment of participants would take two weeks.

The clinical staff, research assistants and the researcher were to check through the women's antenatal cards to see if they met the inclusion criteria.

**Control Group.** As previously stated in the 'Design Section', the control group was recruited first. A pretest questionnaire was administered to women prior to receiving routine antenatal care for 6 weeks, followed by a posttest questionnaire at 6 weeks.

**Intervention Group.** Following completion of the control group's study procedures, an intervention group was recruited. The pretest, which was used in the control group, was also administered to the women in this group on the first antenatal visit. Participants received routine antenatal care as well as, the Childbirth Education Program, for 6 weeks.

The women in the Childbirth Education Program were given an appointment date on the day they were recruited to receive the first CEP session. The Childbirth Education Program started the week after the recruitment. Participants were given an appointment day every week as a return visit day. The Research midwives conducted a class session at each a weekly visit and examined the women if required, which was part of routine antenatal care. The women had an opportunity to discuss with the midwife various childbirth topics including cultural issues. Each participant was given a record sheet on which the midwife recorded the date and topic covered at each session. During these activities the midwife also provided any information that was specific to the woman's individual needs. The midwives were then asked to record the information that was given, and the reasons why it was given, on the record sheet. The midwives also had a record sheet where they will recorded their perception of the classes, and any issues that arose during the class sessions and general comments on how the session went.

After completing the CEP, a post-test was given to the participants. The data collected at this point was used to evaluate the effectiveness of the Childbirth Educational Program in increasing Malawian mothers' knowledge of childbirth.

### **Data analyses plan**

Scoring of items on the questionnaire was done by giving a single score to each item the woman stated in response to each of the questions. For each of the 30 questions, a total score was done and then overall for antenatal, labour and postnatal domains for each participant in the control and intervention groups. Data were entered and analysed using the Statistical Package for Social Sciences (SPSS for Windows Release, Version 11). Data recording, screening and categorisation were undertaken before data analysis. Data were cleaned and checked for

normality using descriptive statistics. Skewness and Kurtosis values were obtained to check distribution of scores for the two groups. An alpha level of 0.05 significance was set for use throughout data analyses. Demographic data were analysed using descriptive statistics. Equivalence of categorical variables between the two groups was compared using the Chi square test for independence, was used to compare categorical demographic variables between the groups. The Fisher's Exact test was used when necessary. Differences in mean knowledge scores within the groups were tested using the Wilcoxon Signed Ranks test while the differences between the groups were tested using the Mann-Whitney U test (Mann & Whitney, 1947; Wilcoxon, 1945). The possible confounding effects of selected demographic variables were then assessed using linear regression (Pallant, 2001).

### **Ethical Considerations for Phase 3**

As already stated, ethical approval to conduct this study was obtained from the Committees for Conduct of Ethical Research at Edith Cowan University, Health Research Committee of the College of Medicine, and Kamuzu College of Nursing in Malawi.

#### **Consent**

Those mothers participating in the control and intervention groups were given a Chichewa translated version of an Information Sheet, which was read to them by the research assistants. Those mothers who agreed to participate signed their name on the consent form and those that could not write signed using their right thumb as described earlier. No name related data was used, therefore, confidentiality was ensured. All names were replaced with a number code. Sources of raw data, questionnaires and computer diskettes were secured in a locked filing cabinet in the office of the Principal researcher at Kamuzu College of Nursing in Malawi and at Edith Cowan University when the researcher was back from data collection in Malawi. Signed consent forms are secured in a locked filing cabinet in the office of the researcher at Kamuzu College of Nursing in Malawi. Access to raw data files on the computer is protected by a password known only to the Principal Investigator. No other personnel have access to confidential materials. All records will be stored for a period of five years after the completion of the study and

publication of findings. Following this time, paper records will be shredded and discs and computer files will be erased.

### **Risks and benefits**

There were no known risks to women in the control or intervention groups. Women in the control group received routine antenatal care but those in the intervention group received routine antenatal care plus the CEP.

### **Summary of Chapter**

This chapter presented the method and procedures for the three Phases of the study. Phase One formed basis for Phase Two and finally, Phase Three used data from Phase Two. Issues of Ethical consideration were also addressed.

## CHAPTER 5

# PHASE 1 FINDINGS: MALAWIAN WOMEN'S AND MIDWIVES' PERCEPTION OF CHILDBIRTH EDUCATION

### Introduction

This chapter presents the findings for Phase One of the study. The first objective of this study was to explore the childbirth information needs of Malawian women. The findings of a previous study conducted by the researcher, (Malata, 1997), which explored labour and birth information needs of first time mothers in Malawi and their satisfaction with information, provided the preliminary knowledge on this topic. Further data were derived in the current study from four focus group interviews, which were conducted with midwifery clinicians, educators and managers in Malawi. Individual in-depth interviews were also conducted with four midwifery clinicians, two educators and four managers.

The majority of data in this chapter are presented in a qualitative manner and therefore the following conventions will be used: **Italics** are used to identify words spoken by a participant. .. **Two full stops** indicate a pause in the conversation during a story. **Ellipse** indicates that words have been omitted from the transcript without altering the meaning of the text. Study 1 refers to previous study conducted by Malata (1997) and Study 2: Phase One findings refer to findings of Phase One of the current study.

### Study 1 Findings

In a study conducted by Malata (1997), a total of 150 first time Malawian mothers who had given birth within the past eight weeks participated in a study to determine labour and birth information needs of first time mothers and their perceived satisfaction with the information. The age of mothers who participated in

the study ranged between 13 and 30 years with a mean age of 19 years. The majority of the participants (76%) were married and living with their husbands. Most participants (74%) achieved lower primary education and were not working. The majority of the mothers (77%) had attended antenatal clinic 3 to 4 times during their pregnancy.

The first part of the questionnaire used in study 1 asked the following questions: 1 During pregnancy and birth, what information were you given about labour and birth at the hospital? 2. During pregnancy and birth, what information were you given about labour and birth at home? 3. What other information would you like to know about labour and birth? 4. What suggestions do you have for improving the giving of labour and birth information to mothers?

### **Labour and birth information provided at the hospital**

The responses to the question regarding labour and birth information provided at the hospital were varied and after content analysis, the responses were clustered into four themes: “information for before labour”, “information for during labour”, “information for birth” and “information for after birth”. The four themes had subthemes, which are presented in Table 5.1. It is important to note that at the hospital the emphasis was placed on “signs of onset of labour”, but other topics were poorly covered such as “process of labour”.

In addition, in Table 5.1, information for birth that few women received information on included: positions during labour, crying during labour, what could go wrong during labour, assistance that can be given during labour and the process of labour. These topics are important and mothers felt they needed to be covered during childbirth education. In the current study, these topics were included in the content for the CEP.

Only one topic was covered on information for after birth and this was “breast-feeding” but there other topics which mothers felt needed to be covered such as “care of mother and baby after birth”.

Table 5-1

**Labour and Birth Information Received at the Hospital**


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**Themes and Subthemes**


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***Information for before labour***

Signs of onset of labour

Preparation for labour and birth

Need for rest and exercise

Importance of hospital birth

***Information for during birth***

Positions during labour

Crying during labour

Breathing exercises during labour

What could go wrong during labour

Nutrition during labour

Monitoring labour progress

Assistance that can be given during labour

Process of labour

***Information for birth***

Bearing down during birth

How actual birth occurs

***Information for after birth***

Initial breast-feeding

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Note. Adapted from "Labour and Birth Information Needs of First Time Mothers in Malawi and Satisfaction with Information Received," by A. M. Malata, 1997, MSc Thesis, p.92.

## **Labour and birth information provided at home**

The mothers also discussed cultural based information which was presented at home by traditional counsellors, family and friends and these mainly comprised what the woman should or should not do during pregnancy. After content analysis the information was clustered into three themes: "Actions which prolong labour", "Actions causing poor outcome for baby" and "Actions which enhance labour". These themes were further categorised into subthemes.

The theme "Actions which prolong labour" had subthemes such as: 'standing or sitting at the door', 'walking in forward direction all the time' and 'a sneak look through the window'. These actions were considered to have a negative effect on the progress of labour. Women were encouraged to avoid anything that would delay the progress of labour.

The theme "Actions which enhance labour" had subthemes such as: 'taking traditional medicine like 'mwana mphepo' which is believed to facilitate labour'. Women take this drug usually at home before they get to the hospital to facilitate labour but are usually advised not to reveal to hospital staff that they have taken it to avoid being chastised.

The theme "Actions causing poor outcome for baby" had subthemes such as 'if a pregnant woman swallows saliva when she sees a lame person, should give birth to a baby with some form of disability'. Therefore, the women were discouraged from such an action by traditional counsellors, friends, or family members to prevent poor outcome of the baby.

It is important to note that most of the information provided was related to taboos and beliefs about the explanation for mishaps during pregnancy and birth. This information could potentially instil fear in first time mothers. However, although there is no scientific rationale for this information some women follow these guidelines even if they do not believe in them, as they need support from family and friends hence do not want to jeopardise losing that essential support. A summary of some of the subthemes is presented in Table 5.2 together with an explanation of the effects of a wrong action.



Table 5-2

## Labour and Birth Information Received at Home

Subtheme	Effect/Reason
<b><i>Actions which prolong labour</i></b>	
Standing or sitting at the door during pregnancy	This would lead to prolonged labour
Walking in forward direction all the time	This would prevent obstructed labour
Avoiding laziness during pregnancy	Laziness would lead to prolonged labour as the baby would be lazy to come out
Avoiding depression and quarrels during pregnancy	This may result in misfortune during birth such as giving birth to a dead baby
Not to cry during labour	As one cries she takes in cold air which would chock the unborn baby
Avoid peeping through the window during pregnancy	There would be prolonged labour. The baby would appear and return during birth
Unfaithfulness during pregnancy	This would lead to failure to give birth vaginally
Avoiding tying a knot on <sup>1</sup> Chitenje/cloth during pregnancy	It would tie her labour and would not give birth until that knot is removed
<b><i>Actions which enhance labour</i></b>	
Taking traditional medicine called 'mwanamphepo'	She would have fast labour but not to reveal to midwives.
Eating Okra during pregnancy	She should more okra as it promotes fast labour and birth
Avoiding drinking water while standing	The unborn baby would vomit in the uterus and may end up chocking
Avoiding carrying two parcels	She may end up birthing twins
Not telling people that labour has started	She would not give birth till those people have come to see her at the hospital
<b><i>Actions causing poor baby outcome</i></b>	
Sallowing saliva when she sees a lame person	If she swallows saliva, she would give birth to a lame baby

Note. Adapted from "Labour and Birth Information Needs of First Time Mothers in Malawi and Satisfaction with Information Received," by A. M. Malata, 1997, MSc Thesis, p.99-106.

<sup>1</sup> Chitenje is a cloth wrapper that women wear.

### **Information Malawian women wanted to know**

When Malawian mothers were asked about what other information they would like to know, they gave a list of topics and these are presented in Table 5.3. The topics related to three main areas which were identified as themes: 'Information of the mother', 'Information for labour and birth,' and 'Information for the new born.'

Malawian women also identified a considerable number of topics as shown in Table 5.3, topics that were highly rated such as: "Their rights during labour and birth" and "The process of labour and birth". The women also identified a considerable number of topics that received a moderate or minor rating such as: "What could go wrong during labour and birth", "Indications for interventions with focus on Caesarean birth", "The process of labour", and "Pain relieving measures." These topics were important so that women were prepared for the labour and birth experience and were therefore, included in the developed CEP.

It was interesting to note that women identified a variety of topics indicating that some of them felt the information they received did not cover all areas mothers perceived as important. The women interviewed in the first study were first time mothers and they indicated that they also wanted information on: "The looks of the newborn baby" and "What the baby is capable of doing".

**Table 5-3****Information women wanted to know**


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<b>Theme and subthemes</b>
<b><i>Information of mother</i></b> The rights of the mother during labour
<b><i>The process of labour and birth</i></b> The process of labour and birth
Admission procedure for woman during labour
What could go wrong during labour and birth
Indications for interventions during labour
Labour pains and pain relieving measures available
Options that a mother can have during labour and birth
Positions during labour and birth
Physical needs of the mother during labour
Bearing down techniques
Emotional needs of the mother during labour
Cultural beliefs and taboos about labour and birth
The use of medications during labour
What is expected of the mother during labour and birth
Onset of labour
Initial baby care
How to prepare for labour and birth
Deep breathing exercises
<b><i>The newborn</i></b> How the newborn looks
What the newborn is capable of doing

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Note. Adapted from "Labour and Birth Information Needs of First Time Mothers in Malawi and Satisfaction with Information Received," by A. M. Malata, 1997, MSc Thesis, p.109.

## Malawian women's ideas for improvement

Finally, Malawian mothers gave suggestions for improving ways of giving information by midwives. As shown in Table 5.4, the majority of the women wanted to be given a chance to ask questions when they are being given childbirth information. Women also wanted detailed information about labour and birth. Currently in Malawi's antenatal clinics, information on labour and birth only focuses on what materials the mother should put together before labour starts.

It was interesting to note that women advocated use of both group and individual teaching in antenatal education. They thought, individual teaching should be used for sensitive topics such as sexuality or any issues that mothers could not share in a group comfortably. Mothers also suggested that antenatal education be organised so that there should not be repetition of topics as sometimes they came to the clinic for three times and the same topic was being taught.

**Table 5-4**

### Suggestions for Improving the Giving of Labour and Birth Information

Theme
Giving opportunities to ask questions
Giving detailed information about labour and birth
Using individual and group teaching
Using simple language
Organising manner of giving information
Consider that not every mother is given labour and birth information at home
Information providers at home should take more time
Midwives should give emotional support

Note. Adapted from "Labour and Birth Information Needs of First Time Mothers in Malawi and Satisfaction with Information Received," by A. M. Malata, 1997, MSc Thesis, p.113.

## **Summary of key findings in Study 1**

Four main issues emerged from Study 1. First, midwives at the hospital gave Malawian mothers some information about labour and birth. Although the information covered a wide range of labour and birth information, the main emphasis was on signs of onset of labour however, mothers were not satisfied with the amount of information given. Second, Malawian women were given a lot of cultural labour and birth information by traditional counsellors, traditional birth attendants, female relatives and friends. This information, although not always dangerous, was given to inform women about traditional beliefs and practices related to childbirth. Finally, Malawian mothers wanted more information regarding labour and birth. They identified gaps in the current practice, and made suggestions for improving the way information was being presented.

These results indicated the need for further studies in the area of childbirth education for Malawian women and were used as a basis for this current study. Data from Malata (1997) were also used to develop the interview guide for midwives' interviews as well as the questionnaire that was used to assess Malawian mothers' knowledge about childbirth before and after implementation of the CEP. Data were also used to develop the CEP that was subsequently evaluated for its effectiveness in increasing Malawian women's knowledge of childbirth. Content in the CEP included the topics women suggested and also, considered the fact that labour and birth content and postnatal content was not well covered in the current antenatal education. These topics were therefore, included in the CEP. Cultural issues were also incorporated in the program and were discussed with women during the implementation of the CEP.

## **Study 2: Phase One Findings**

### **The profile of informants**

A total of thirty-three midwives participated in the focus groups, and ten midwives participated in the individual in-depth interviews. The informants' ages ranged from 35 to 55 years. Midwives were selected on the basis of their experience in midwifery and were either enrolled nurse/midwives, or registered nurse midwives. They had completed Malawian secondary school education before

pursuing their general nursing education. They had undertaken midwifery as a post basic education program. Five midwives had undertaken an Advanced Diploma in Midwifery in South Africa in the 1980's. Amongst the informants there were some who had achieved a Master of Nursing degree in South Africa, United States of America and the United Kingdom. The individual informants had all worked in the clinical setting for more than 10 years and now held different positions in the reproductive health field in Malawi. Three were educators of midwifery in Malawi and had been teaching midwifery for more than ten years. There were three clinical specialists of midwifery who had worked as midwives for more that ten years and four were managers in reproductive health.

Data from midwives is organised under various nodes, which are headings as described in Chapter 4. The qualitative data for the current study were analysed by the researcher and recorded in NUD\*IST nodes as described in Table 5.5.

**Table 5-5**

**Themes from Midwives Individual and Focus Group Interviews**

<b>Theme</b>
Information for before, during and after pregnancy
Importance of giving childbirth information
Information giving strategies
The way forward
Challenges faced by midwives

**Interview Responses**

This section addresses the themes that emerged from the focus group and individual interviews with Malawian midwives.

## **Theme: Information for before, during and after pregnancy**

All midwives in the focus groups and individual in-depth interviews argued that Malawian childbearing women needed to be given information about childbirth. The midwives specified that information needed to be given according to three categories: before pregnancy, during pregnancy and after pregnancy.

***Information for before pregnancy.*** The majority of the midwives explained that it was important for Malawian women to be well informed about childbirth before they became pregnant. It was clear that midwives felt that women should be informed about pregnancy and childbirth so that they would get pregnant when they were ready and that they should also know the risks associated with pregnancy and child bearing. This information would prepare them for pregnancy and childbirth. Examples of such responses included:

*I think if you look at a woman, a woman starts as early as a girl child does. So when you want to prepare teaching material for a pregnant woman start them as way back as how they take of themselves as young girls. So I would say start talking about them understanding who they are as women, knowing their body, the parts, how they function... (EM2)*

Malawian midwives therefore identified topics, which they felt should be part of the Childbirth Education Program but could also be given to women before they become pregnant through alternative programs. *“For example we could start giving co-education so that boys and girls know about adolescence, pregnancy, sexuality and HIV/AIDS” (EFG).* It was interesting that midwives identified the topic, ‘Girl child’ and they wanted information regarding challenges that girls face in Malawi such as early marriages, and dropping out from school to be included in the CEP. The midwives also suggested that issues of sexuality be included in the CEP to allow women to talk about decision-making processes as well as challenges they meet. Topics for before pregnancy that were identified by Malawian midwives are presented as subthemes in Table 5.6. The subthemes are presented in order of those most frequently mentioned to the least frequently mentioned.

Table 5-6

**Subthemes of Information for Before Pregnancy**

<b>Subtheme</b>
HIV/AIDS
The female body
Puberty and menstrual cycle
Adolescence
The girl child
Sexuality

**Information for pregnancy.** All participants emphasised the need for giving information regarding pregnancy to women. They recognised that although there were challenges in Malawi associated with giving information about pregnancy, it was important that the CEP comprised content regarding pregnancy. Midwives outlined some content they felt should be given to Malawian women regarding pregnancy. Table 5.7 presents topics for pregnancy that midwives felt should be given to Malawian Mothers. The subthemes are presented in order of the most frequently mentioned to the least frequently mentioned.



**Table 5-7****Subthemes for Information for Pregnancy**

Subtheme
Pregnancy
Physiological changes during pregnancy
Psychological changes during pregnancy
Minor disorders of pregnancy
Possible complications during pregnancy
Danger signs of pregnancy
Nutrition during pregnancy
Self care during pregnancy
Antenatal care
Cultural beliefs and taboos of childbirth
Sexually transmitted diseases and HIV/AIDS
Malaria during pregnancy
Sexuality during pregnancy
Preparation for birth

Malawian midwives felt that women should be given information about pregnancy which included the physiological and psychological changes that take place during pregnancy. *"I think all women should be informed about pregnancy and normal changes that happen..."(MM1)*. The information about minor disorders of pregnancy such as nausea and vomiting was also regarded as important as well as what women can do to alleviate these disorders.

One midwife clearly emphasised the need to cover topics that related to pregnancy. *"I feel the first important information is they should know, actually is what occurs during pregnancy, antenatal care, sexuality issues and HIV/AIDS..."(EM1)*. Most midwives in the focus groups also explained that mothers needed to know information about nutrition such as what types and amount of food the women should eat when they are pregnant. Examples of midwives' responses in this area were:

*What type of food to eat, for instance like the proteins thus for bodybuilding, lots of vitamins thus protective and also even carbohydrates she needs the energy to go through. So nutrition is important... (C2FG).*

*They also need to know that when they are pregnant there will be demands on their bodies by the growing foetus and the several changes that are associated with that. Mostly, about nutrition, that they need to eat like for two people, the types of food that they need to eat. That is very important because we do not want the pregnant women to be eating anyhow without considering the nutritional value of the foods that they eat. (MM1).*

Malawian midwives also felt that mothers in Malawi need information regarding danger signs when they are pregnant. *"They also need to know about danger signs, the ones that we have identified in the Safe Motherhood Initiative like bleeding, oedema, anaemia, and high blood pressure" (EM4).* The most commonly mentioned danger signs were bleeding, severe headache, swelling of feet, and fever. Malawi has a very high maternal mortality rate (620/100,000 per live births). The lack of information about dangers during childbirth has contributed to the high mortality rate (National Statistical Office, 2000). One clinical midwife in the focus group said:

*Basically, priority areas should be looked into like bleeding, if this woman observes any bleeding at whatever trimester; this person should come because it's a sign of danger to this woman or even early signs of like hypertension, oedema, any sign of that; she should come to report, and, early rupture of membranes, because we really want to prevent sepsis for this lady so she should come to report. (C1FG)*

Malaria is one of the major causes of maternal mortality in Malawi. One participant commented that:

*"...like malaria that's killing most of our women, I think its information that our women need to know. And of course emphasising to them that they need to take the ante-malarial otherwise if they don't do that then if they suffer from malaria they may not make it because of the dangers of pregnancy" (CM3).*

Midwives frequently brought up the issue of HIV/AIDS. They felt that Malawian women needed to be given information about HIV/AIDS as it was a major health problem with 139 Malawians dying of AIDS related diseases everyday, more than a million Malawians living with HIV, and 250 Malawians, becoming infected daily (National AIDS Commission, 2003). If women were already pregnant, they needed to know that they could still go for an HIV test. They also need to know that if they are HIV positive, they have to make decisions about breast-feeding. Some midwives expressed their views in this way:

*At least now the current RH policy says that anybody should be tested during pregnancy. May be we should just teach them that HIV-AIDS is there, how it is transmitted and what policies are there and what rights they have I relation to*

*HIV-AIDS because it is very sensitive. So just give them the information, they should make their own decisions on what they should do later on. Otherwise, all of them will go away from the Antenatal if we don't approach it properly. (MM1)*

*It's very disappointing to see how very little people know. Much as this problem is vast people don't know this. And here we are nurses because we know we think they know. Why should they not know when we know, very unfair? Women are ignorant regarding HIV-AIDS, they don't even know their rights, they don't know they can pursue to prevent themselves, they don't have know they have a right to have a faithful husband. If the husband is not faithful they have something they can do. (ED2)*

Sexuality also came up with midwives mentioning that it was important that mothers are given information about this issue and also given opportunities to discuss sexuality issues with the midwives at the clinic. The midwives were however quick to point out that most of them were not comfortable discussing sexuality issues because of cultural beliefs and practices. They said this is a common problem at the hospitals and clinics, as some midwives do not feel comfortable to discuss these issues openly with women. The midwives, however, recognised the need to deal with this problem, as it would lead to women not being well informed about issues related to sexuality. One midwife stated that:

*I was thinking about sexuality in pregnancy, that's part of the education which is missing our society, we don't talk about sex in public, so a lot of women have got questions about sexuality or sexual intercourse while they are pregnant. Because there are a lot of taboos associated with it, for example if a child is born with a lot of vernix, they would say you were still having sex till the last day, some of the nurses will even shout at the patients, why were you doing this...(MM2)*

The midwives also suggested that information regarding sexually transmitted infections; the importance of antenatal care, and self-care during pregnancy should be included in the CEP. They noted that information on preparation for birth was currently discussed but the midwives argued that the emphasis was on what materials the women should obtain in readiness for labour such as clothes for the baby, a candle in case there is a problem with electricity during labour, matches for lighting the candle, and some money in case women are required to use public transportation when going to the hospital. *"I find that at antenatal clinic, women are advised on what to bring when labour starts such as materials for her and baby" (CM2)*

In addition to pregnancy information, midwives felt that information about labour and birth must to be included in the CEP. In the current system, no labour and birth information was given at antenatal clinics other than information regarding

preparation for birth, which are the materials women should ensure they have before the onset of labour. Midwives felt this to be deficit in the antenatal education currently offered to women. There were comments such as:

*I wonder whether in our antenatals... because remember those scheduled healthy education topics whether we really do a lot of teaching on labour, now that I am on the other side of the ocean, I think most of the topics are antenatal topics emphasising just on the pregnancy but I think I rarely see anything being discussed on labour (EFG).*

Malawian women do not have access to labour information at the hospitals. Although some women are traditionally counselled at home, most of the information given relates to taboos and beliefs about birthing (Malata, 1997). Topics that Malawian midwives identified as essential information for labour and birth are presented in Table 5.8. The subthemes are presented in order of the most frequently mentioned to the least frequently mentioned.

**Table 5-8**

**Subthemes for information for labour and birth**

<b>Subtheme</b>
The labour process
What is expected of the mothers during labour and birth
Pain relief during labour
Possible complications during labour
Danger signs of labour
Nutrition during labour
Why a Caesarean birth?
The role of the midwife during labour

Malawian midwives identified the process of labour as one of the topics to be covered in the CEP as long as the material was simplified. If mothers understood that labour was a normal process and that as long as there were no complications,

they would be capable of going through this process. The midwives felt this would help to reduce anxiety among the women particularly first time mothers:

*Labour and birth, I feel we also leave out the aspect of the process of labour...but may be the process of labour and how they are supposed to respond during labour. Because you see so many women coming they take traditional medications because they don't understand that labour is a natural process. If things go wrong it's because there are other aspects which have gone with the mother or the baby. There will also be other problems but the process of labour they should understand (EM1).*

Nutrition in labour was another important topic that was discussed. Midwives acknowledged that mothers have been left without specific guidance on what they can drink or eat during labour. Midwives indicated that mothers in labour were given the impression that eating was not allowed during labour. *"...Most women will have something in their bag, but the midwives will insist, don't eat because you are in labour" (EFG).*

The midwives also agreed that it was important to inform mothers about what behaviours were expected of them during labour and birth. In this regard, they argued that some mothers were uncooperative. They felt mothers needed to follow and adhere to what they were guided to do during labour and birth *"For example some women may take traditional medicine and yet will not accept if asked and problems may occur due to that..." (MM3)*. Complications such as precipitate labour may occur and yet the woman may not cooperate in providing information that would have helped prevent such occurrences.

The Safe Motherhood Initiative in Malawi embarked on a project of teaching midwives and other health personnel about danger signs of pregnancy (Ashwood-Smith, 2000a). This has been a critical issue, since it is thought that if mothers knew what could go wrong during pregnancy and labour, they would be able to seek help earlier and prevent serious complications from arising. The Malawian midwives, therefore, felt that other information should be presented concerning the danger signs of pregnancy and labour. *"They start draining liquor and think that it is normal and wait until next antenatal visit" (MM1)*. Most midwives who participated in these interviews confirmed this was an important issue.

Pain relief options in labour was also information that midwives felt mothers needed to know. This involved what both labouring women can do, as well as what the midwives could do to help relieve pain during labour. *"They should be advised on how to cope with pain in labour...at least in a simple manner" (EFG)*. It appeared that most midwives were not supportive of the labouring woman if she screamed. These women are told that they are just wasting their energy. At home, women

were actually advised not to scream loudly by family, traditional counsellors, or friends, as it was a sign of being weak.

Malawian women have negative impressions about caesarean birth. “ *Giving birth through caesarean section is sometimes considered a failure to give birth normally and therefore a weakness on part of the mother*” (C2FG). One participant discussed an experience that highlighted this negative impression: “*A woman wanted to run away when she was told that her labour had delayed and she would have to go for a caesarean birth*” (MM3). This information was very important and the topic on why a caesarean birth is sometimes required was included in the developed CEP.

Some midwives also felt that it important for mothers to understand the role of the midwife during labour and birth. The midwife is required to offer information to mothers and provide physical and psychological support to the labouring woman: Malawian women are not specifically informed about this role. Midwives thought that this knowledge would potentially empower the women to ask for the support they are entitled to receive from their midwife. *In Malawi, our women are not informed about the role of the midwife and therefore they can not ask the midwife if they do not receive that care*” (C3FG).

***Information for the puerperium.*** Malawian midwives discussed several topics that could be given to mothers after the birth of the baby. The midwives felt that sometimes mothers are neglected after giving birth and not much information is given. They said it was important that mothers be given information regarding post birth issues during their pregnancy which could then be reinforced after the mothers have given birth. The information is summarised in Table 5.9. The subthemes are presented in order of those most frequently mentioned, to those least frequently mentioned.

Table 5-9

## Subthemes for information for after birth

Subtheme
Physiological changes during the puerperium
Psychological changes during puerperium
Self care during puerperium
Danger signs of the mother during puerperium
Exclusive breastfeeding
Danger signs of the baby during puerperium
Family planning
The role of the midwife during puerperium
Baby care

Malawian midwives also wanted mothers to know about the physiological and psychological body changes that take place after the birth. They wanted mothers to know what was considered normal so that if there were problems, the mothers would be able to identify it and take appropriate early action. One midwife said this:

*Also postnatally, I think women should be given adequate information pertaining to whatever they should expect in terms of physical changes that happen, you know, there are those things like may be postnatal blues and whatever. Some of those women in some cases, may be able to overcome those things if they understand the process and then know that those are some of the things that they should expect. (CM1)*

Malawian midwives also felt that mothers should be told about the danger signs of the puerperium. These included bleeding, fever, and severe headache. Furthermore, mothers must also be aware of the need to return to the hospital as soon as possible if any of the danger signs appeared as revealed by these midwives comments:

*There is also the issue of danger signs, you know they may be prone to infection or you don't know where they have delivered, may be they had some tears that need some care, may be issues of secondary Postpartum haemorrhage. All these can occur. There are also issues of may be breast-feeding, problems of the baby. So therefore is need to check this woman, immediately after the birth, one hour if it's a health facility then again if the*

*woman is discharged she needs to come back in a weeks' time to assist her then in six weeks. (C3FG)*

*...but she should be informed of the danger signs, issues of fever that can indicate that she has some infection, issues of heavy lochia that may indicate as secondary PHH or some other problems all these issues we need to give the information to this woman so that she can detect all these symptoms and come back to the health facility although it's not yet one week or six weeks but she needs to know them so that she can be able to return as soon as possible. (C1FG)*

The issue of family planning was felt to be critical as Malawian women have a high fertility rate. The Malawi population is estimated at 9.9 million with an annual population growth rate of 1.9% (National Statistical Office, 2001). Population growth is predominantly due to a high total fertility rate, which stands at 6.3. The average age of sexual debut in Malawi is 16 to 17 years of age. Consequently, there is a high occurrence of pregnancy and childbirth among adolescent girls, as well as unexpected pregnancies amongst adult women. *"It is very important that information about family planning is given to mothers so that they can make informed decision about the number of children they want to have and when they want to have them"* (MM1). One midwife explained that at the antenatal clinic, it was important to discuss family planning. *"I think that is the opportune time to start talking about Family Planning issues, spacing their children, even deciding upon the size of the family that they need to have"* (C3FG). Another midwife said:

*When we usher this woman into Family Planning because we don't want this woman to have gone through this, in no time she goes through it again, they need to know methods of prevention of pregnancy until when this baby is a little independent and they can now plan for another baby, have time for that baby for both psychologically, financially, physically, everything. (CM1)*

The issue of breast-feeding is also critical in midwifery care in Malawi, particularly because of the protective nature of breast milk for the infant. There has been much emphasis on the topic in most clinics in Malawi and even in the media with emphasis placed on exclusive breast-feeding. Midwives felt that this needs to be strengthened during antenatal care to ensure that women breast feed their babies. Two midwives stated that:

*I strongly feel the issue of exclusive breastfeeding should be strengthened in our clinics and mothers should be encouraged to breastfeed their babies as soon as they are born. Mothers should be informed about advantages of exclusive breastfeeding (CM2).*



*Then after that postnatally, then what is it that they expect you know issues related to the first breast milk, they need to know about that, when they need to start feeding the baby, they need to know that, I mean feeding in terms of not just breast-feeding but when do they start also mixed feed, information like that (MM4).*

Midwives also felt the need to address the issue of HIV/AIDS and breastfeeding. They felt guidelines on this issue need to be clarified by the Ministry of Health in Malawi. The midwives argued that should a mother be found with HIV and yet has no resources to afford artificial milk, they were unsure of what advice to offer the mother.

Participants noted that information regarding psychological changes during the puerperium should also be included. *"They need to know what is happening psychologically"* (ED2). The midwives felt psychological changes during puerperium are ignored because problems such as postnatal depression or puerperal psychosis have not been critically studied in the Malawian setting. A contributing factor is the lack of accurate records to validate the incidence and prevalence of these concerns in Malawi.

Participants agreed that self care should also be included in the CEP. Topics that were suggested to be included were hygiene, diet, exercise and rest during the puerperium. *"These can contribute to the wellbeing of the woman during puerperium"* (MM3).

Infant related danger signs were also mentioned as being important. These included signs that indicated that something was seriously wrong with the baby such as excessive crying, fever, irritability, and convulsions. The midwives felt that mothers needed to be informed about these potential problems so that they could seek help early. *"The woman should be able to know that something is wrong with the baby like if the baby developed fever"* (MM4). Furthermore, the midwives also felt mothers should be informed about the care of their baby such as care of the cord stump, bathing the baby, immunisations, and the importance of attending Under-Five clinics to monitor the baby's growth and wellbeing.

### **Summary of theme: Information for before pregnancy, labour and birth and puerperium**

Malawian midwives outlined topics that should be included in the Childbirth Education Program. These were in three groups: information for before pregnancy, information for pregnancy, information for labour and birth and information for after birth. Midwives felt that all the three areas are important and had to be included in the Childbirth Education Program.

It is interesting to note that there are differences and similarities between topics identified by Malawian women and Malawian midwives. Examples of topics that were similar included: nutrition in pregnancy, danger signs of pregnancy and birth, and the process of labour. Topics such as puberty and menstrual cycle, adolescence and sexuality were only identified by midwives.

It is also important to note that Malawian women's childbirth information needs as identified by midwives are similar to those of women in developed countries however there unique challenges that confront Malawian such as availability of resources as well as cultural taboos and beliefs.

### **Theme: Strategies for giving information**

The midwives interviewed in the study offered suggestions for strategies to provide information to Malawian mothers. They felt that although information may be available, it is important that appropriate strategies are used to deliver the information so that it can be effective in increasing Malawian mothers' knowledge about childbirth.

**Group versus individual teaching.** The first issue raised was the effectiveness of providing information in a group versus one on one. The midwives expressed it was impossible to provide information to individual mothers due to inadequate human and material resources. They felt that it was still important to give information in a group format as the first event in the morning when mothers come to the antenatal clinic. This could be followed by providing individual information while the mother was being examined or if there was a confidential issue that was identified and needed attention following the group presentations:

*Sometimes the problem that will come in apart from the culture is that women may not open up if that type of information is given in a group or an open air. So may be it would be better for that particular one if it would be one to one in the cubicle to be more effective than on the open, people may switch off their minds, since we are having women of various categories. (EFG)*

*Those messages that can be delivered in a group, in that way, I do not think that there would be need to separate them but then you need to have the message delivery on one to one then that would be like individual messages. The reason that I can give for that is that if you are going to talk about breast-feeding for example, every pregnant woman needs information breast-feeding whether they are having their first time pregnancy or not.. Nutrition, they all need nutrition, even though our tendency is to think that someone who is having the first time pregnancy might not be knowledgeable about what foods*

*to eat only, but in our setting even those who have had so many babies they lack the information. But also when you are teaching in a group, those who have had information already would share with others during the discussions. (EFG)*

This information was useful as both individual and group teaching was used in the Childbirth Education Program. In the CEP, women attended an antenatal education group session at the beginning of their visit and then individual counselling and teaching was offered thereafter.

***Primigravida versus multigravida.*** Midwives had differing views about providing information separately to primigravid and multigravid women. There were two views. One view supported separating the two groups because midwives felt first time mothers would be “more free” in an environment where they knew everyone was having a first time experience:

*The two types of mothers like the primigravidas, they need different type of information because as I said earlier they have never given birth, you know. So they need to know about the pregnancy itself, what changes are there in their own bodies and that's the whole body, the breasts, you know, what they see, the changes coming in and the abdomen itself and the minor ailments, all those they need to know. Coming to the multigravidas, we should be selective may be on the problems that we are seeing in multigravidas and one of them still is the family planning one but also the importance of coming to the hospital in good time. Multigravidas sometimes relax because they think they are experienced and so when labour starts they still sit at home, and not come to the hospital, but they must know the importance of coming to the hospital and the disadvantage of staying at home when labour starts. (MM1)*

*I feel the primigravidas are losing out, the way we are giving the talks nowadays. Because we take them as all of them are experienced or they know something about pregnancy and childbirth. But if you take primigravidas as a special group, and may be give them more information as compared to the multiparas. (EM1)*

The other view advocated managing the two groups the same way. “*I think there is no need to differentiate the groups as they have similar information needs*” (MM4). Some midwives argued that it was not true that multigravidas were more knowledgeable about childbirth than primigravidas:

*In my view, both first time mothers and the multigravidas need that information but also even those who are not multigravidas but women who have had negative pregnancy outcomes before. I think those also need the information. (EM3)*

*I think there is no need to differentiate because of now, we are trying to shift away from the issue of risk approach and we know that although the primigravida is important, she is pregnant for the first time, but I don't think there*

*is need to differentiate the groups as we are giving the information because even the other ones are also at high risk. The person you regard as being low risk will tend to develop complications at any time. Therefore, I don't see any problems in mixing them. The only thing is as you are aware may be when discussing with this group you also need to identify individual needs so you can address them separately but if it is just a matter of giving information, I don't see any point in separating them (MM3).*

In the Childbirth Education Program, primigravid and multigravid women attended the same sessions. It was not practical to manage the two groups separately given the resources available. Women introduced themselves and stated whether they were primigravid or multigravid at beginning of the sessions. Midwives who implemented the program were encouraged to pay attention to primigravidas by encouraging them to ask questions. Multigravid women were also asked to share their experiences.

**Organisation of teaching.** Malawian midwives also noted that there was a need to schedule topics to ensure that nothing is either repeated or missed. *“Sometimes you find you don't have the schedule for giving the information like we used to have the health education talks in the past” (EM3).* Midwives explained that topics presented depended on who was on duty and what the midwife was competent to teach. If there were a current study or campaign on something like breastfeeding, midwives would concentrate solely on that particular topic. Therefore, a woman could attend the clinic four times and on each occasion, the focus would be breast-feeding. Most of the clinics did not have schedules for health education talks:

*I think that every session should start with health education before the women get tired and should be scheduled. As long as we have adequate members of staff to ensure that once we have given the health education then the women are seen very quickly and they go home. So I think that we need to have that session given early in the morning but I also think, the infrastructure within the Antenatal Clinic must allow for individual counselling. There should be facilities for privacy to enable the one to one discussions with women within the cubicles. (EM4)*

To avoid the problem of repetition, in the developed Childbirth Education Program, topics were scheduled to avoid this and to make sure that all identified topics were discussed. At the end of each session in the CEP, women were informed about the topics to be covered at the next session to ensure they knew they would cover material that had not been covered before during the program.

***Making information simple.*** Midwives highlighted that information should be presented in a simple manner using proper language that did not include English words. Affordable examples should be given rather than only mentioning things that most women can not afford such as foods like beef, fish but also including affordable foods like <sup>2</sup>bwanoni, mafulufute which are very rich in proteins. *“Sometimes midwives teach as if they are teaching nursing students. It is important to keep information as simple as possible and considering that most of our women are not educated (CM1).*

The content in the CEP was also translated into Chichewa to ensure that women understood what was being taught. Affordable food examples were also used in the CEP.

### **Summary for Theme: Strategies for giving information**

In conclusion, under the theme: Strategies for giving information, Malawian midwives discussed critical issues that must be considered for effective provision of childbirth information. The issues included individual versus group teaching, organisation of teaching, primigravid versus multigravid women and making information appropriate for the educational level of the average Malawian woman. This information was used in the CEP such as using both group and individual teaching and translating the content into <sup>3</sup>Chichewa so that women could easily understand what was being taught.

### **Theme: Importance of giving childbirth information**

The majority of midwives indicated that giving childbirth information is very important and forms an integral part of midwifery care. The midwives felt that if midwives understood the importance of providing information, they would do the best they could with limited resources to give information to Malawian women. Some of the issues raised are presented.

***Empowerment of women.*** Malawian midwives suggested that providing information to women would empower them. If women knew about their health and relevant issues of reproductive health, they would be more inclined know what actions to take. For example in the following two quotes the midwives discussed the power on women’s issues such as dependency, schooling and well-being:

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<sup>2</sup> Bwanoni and mafulufute are local foods in the group of grasshoppers but rich in protein and fat

<sup>3</sup> Chichewa is the official local language for Malawi but there are other local languages.

*We know in any case information is like knowledge and we say knowledge is power. Women need to be given adequate information pertaining to Childbirth and this will empower them. I think women should be told a lot of things, I know like in our case there are some things that we have taken for granted like in our Malawian context, most women are so dependent on men and we think if they are like empowered whatever its economically or whatever or may be if they go to school or something, they could be in a position may be to make decisions (MM4).*

*Information is in form of empowerment because if we talk of women being empowered with knowledge, skills and attitudes, to make their own decisions concerning pregnancy, so that women do know what they are supposed to do when ever they have problems. Then information must be given to them. So a way of promoting the well-being of mothers and... (CM1).*

By providing information through the CEP, Malawian women would be empowered. This strategy would contribute to the measures the government of Malawi through the Ministry of Health is taking to reduce maternal mortality and morbidity (Ministry of Health and Population, 2001).

**Decision making.** The Safe Motherhood Initiative project in the Southern Region of Malawi found that decision making in relation to health seeking behaviour has implications for the outcome of each pregnancy (Ashwood-Smith, 2000b). It is known that cultural norms influence decision making among Malawian women (National Statistical Office, 1996). Malawian midwives, therefore, expressed that if women and significant others are given information about childbirth, cultural norms that underpin prompt decision making will be sidelined in favour of practices that ensure safe birth and delivery. For example informing mothers and their families about danger signs of pregnancy would help them make quick decisions if the mother developed any of the risk factors such as swelling of feet, severe headaches, and bleeding.

*They could be in a position may be to make decisions because for some women to be able to say okay, this is the time I need to go to the Antenatal Clinic or this time I think I am due I should go for delivery. It requires some one to know so we should give them information so that they can make decisions about their care (MM4).*

*May be even educate the people who are giving care to her. So they should know these issues so that we can assist then in making decisions so that they can report early to the health facility and receive assistance in good time but also may be as a way of preventing or even further before the complications occur because in health facilities then you can monitor labour progress, take appropriate action on time (MM2).*

By providing information through the CEP, Malawian women were provided with valuable information, which could assist them with decision making in a timely manner. In the CEP women are encouraged to make appropriate and timely decisions particularly when they experience danger signs.

**Promotes self care.** Malawian midwives wanted mothers to be able to take care of themselves during pregnancy and childbirth. *“It also promotes self care among women. (C1FG ).* However, they felt that the mothers would not be able to take care of themselves unless they have the right information about childbirth. Hygiene, nutrition and exercise were issues that midwives considered important for self care.

*I think its very important for women to have that information because, one, you are raising awareness of what goes on in the process of childbearing and we can not take it for granted that everybody knows. I think information is the necessary for the women, because if we want them to promote their own self-care, they should have the right practices during pregnancy then we should give them the information... So a way of promoting the well being of mothers and babies, they need the information (CM2).*

The CEP could provide Malawian women with valuable information, which could promote self-care among Malawian women. Issues of self-care such as hygiene, nutrition, rest and exercise were therefore included in the CEP.

**It is their right.** Midwives also felt that it was the right of women to get information. Midwives were concerned that sometimes they gave the impression to mothers that information given to them was a privilege:

*I think that the women who come to us for service have a right to information that pertains to their pregnancy, to their labour and delivery. I think because of those rights, we have an obligation to give them the information. And also I think they would be an improvement in the quality of care because if a woman knows what to expect then if that care is not given, she would be in a position to ask for that care. (EM2)*

This finding is similar to findings the previous study by the researcher (Malata, 1997, 2000) which found that mothers were not given information about their rights and options during childbirth. In the CEP, women were informed that they had right to information and that if the information was not provided they were encouraged to ask the midwives.

### **Summary of theme: Importance of giving information**

Findings revealed that, Malawian midwives appreciated the need and importance of giving information to Malawian women. If midwives do not appreciate the need for giving information, it can be difficult to motivate them to do so, and this is important for successful implementation of any Childbirth Education Program. In the CEP, it was assumed that if women were provided with information, they would be empowered, and would be able to make timely decisions. This would contribute to early identification and management of problems. Eventually this could contribute to a reduction of the maternal mortality and morbidity rates for Malawian mothers.

### **Theme: Challenges faced by Malawian midwives**

Midwives in Malawi revealed there were challenges in their role of providing childbirth information to mothers. They suggested these challenges must be considered for successful implementation of a Childbirth Education Program.

***High illiteracy rate among Malawian women.*** The ability to read is an important personal asset as it increases opportunities in life. The adult illiteracy rate among Malawian females aged 15 years or more was 54% in the year 2000 (World Health Organisation, 2002). This creates a significant challenge to midwives when they are giving information to women. It also has implications for the use of printed material. This highlights the importance of verbal delivery of information and the use of teaching tools such as posters with simple diagrams to get a message across.

*We are dealing with a community, which is basically illiterate. I would say I cannot remember the actual percentages but a bigger percentage goes to those who have not been to school. So in any case when you are dealing with some one who has not been to school it becomes a problem and that is a challenge because you would like to give information to a person and if that person is unable to interpret that information and then go out with clear interpretation then it is difficult (MM4).*

*Another challenge which we are currently facing as midwives especially down in villages even here right in the city is the lack of education or I can say illiteracy rate is very high and that is also having an impact on the information because you might decide brochures but if somebody is not able to read it's a waste of time because if may be if it has go up to the government policy to say all the people have to go to school if it was compulsory then at least we would be operating at a certain level... (EFG).*



Midwives also pointed out the fact that the variety of the languages spoken in Malawi becomes a problem with translation. Some midwives felt incorrect translation can affect information as the message becomes distorted. If documents are translated into local languages, then experts of the languages should check them before they are used:

*There are many languages spoken by Malawians and some words are different in different ethnic groups and translation of information can be a problem if experts are not used. Even translating from English to Chichewa sometimes it becomes difficult and information can be distorted in the process if not well explained. So language should be clear and understandable language. am just basing this from my students' experience (EM1).*

In the CEP, the issue of illiteracy was considered resulting in translating the content into Chichewa. In addition, midwives discussed the content to ensure uniformity when presenting the material. Chichewa is the language spoken by the majority of Malawians; however, this could pose a problem if the CEP is implemented in areas where Chichewa is not commonly spoken like in the rural areas of Northern region of Malawi. If the CEP was evaluated to be effective and was adopted in other districts in Malawi, it would be important to consider translating the content of the CEP into other languages that local people speak and understand.

***Staff feeling inadequately prepared for an information giving role.***

Some midwives expressed that sometimes they felt inadequately prepared for the role of information giving. *“Personally, I feel the counselling and teaching component is not adequate in our midwives. They are not properly prepared...”* (EFG). This was particularly true regarding new or changing knowledge. When knowledge changes according to scientific advances and research, midwives may not be aware of the new information. In addition, when new policies and guidelines are implemented, midwives are not always informed, and therefore, may not have the confidence to implement or use them. Those midwives involved in education felt their graduates were not fully equipped with teaching and counselling skills:

*The midwives we teach here, because they come in year five, and we believe that in the general nursing they must have learnt about giving health education talks..., but from what I have observed I think this is not very adequate. May be at our level we should again tackle this, even looking at the lesson plan, what is on the lesson plan and what they are going to present they are not the same. They will write technical language on the lesson plan and yet they are going to*

*give the talk to women who are wont even understand this technical language.  
(EM3)*

This perception of inadequate preparation in an educational role has implications for midwifery education and professional development for staff who may participate in the CEP. Education and ongoing professional development of midwives providing information to mothers is very important. The midwives who participated in the implementation of the program were trained prior to implementation of the CEP, as well as being involved with ongoing meetings with other midwives involved with the CEP.

**Staffing problems.** Only 56% of Malawian women are attended to by trained health personnel during pregnancy (National Statistical Office, 2000). Malawian midwives are faced with the challenge of having to care for large numbers of women during antenatal visits. These women walk long distances such as 5 to 10 kilometres or more to visit the clinic or hospital.

*The other issue is when you are working at the healthy centre you have to look at the distance from where this woman is coming from, you find that some women leave home as early as 4.30 in the morning so that they get to the hospital and they get back, and if you detain that mother until 3.00 p.m., it means she will be getting home around 7.00 p.m. which is also not safe (EM1).*

Sometimes there is one midwife in a clinic who is responsible for the care of all antenatal mothers. On average, there may be 100 women attending an antenatal clinic on a particular day.

*You find that in a healthy centre there is one midwife and with this new system whereby a midwife is supposed to provide an integrated service, there is a mother waiting with a child she has come for family planning, another one she has come for postnatal and another one has come for antenatal. These mothers are just so many, she has got only two patients in the labour ward and she is the only one on duty. I don't think it's practical for her to spend 20 minutes with one woman, she will say it means I will take the whole day (EM2).*

*Again another challenge is the current staffing levels, you know we have critical shortages in most of our health facilities, therefore, if you went may be in a facility to do a simple study to check how much time that health worker is spending with a client or patient, you will be shocked because it is very minimal time, very short time. Therefore, for this health worker to have enough time to impart knowledge to the client or patient, it is like almost impossible. There is only one nurse may be looking after 100 patients or 200 patients, therefore, the interaction time is very limited. (EFG)*

One midwife pointed out that the government has to seriously look into the issue of staffing, as this was a challenge to midwives because they could not always provide appropriate care:

*Shortage of staff is not a one person issue, it has to go to government priorities because a healthy nation means people are healthy, hospitals have got facilities. A lot of people who are running away from the government hospitals not because they don't want to work in the government hospitals but because of the conditions in the set up or available at the moment in the hospitals and not only conditions but also conditions of services. (C2FG)*

Midwives may not have adequate time to provide thorough assessment, education and counselling to the woman. Furthermore, there may not be adequate staff to provide supervision of midwives to monitor the care provided to women. It is clear, therefore, that if the staff numbers are limited, there is less supervision.

*The other challenges is because of that then we also have the problem of inadequate supervision because then you don't have the supervisors, the supervisors are not supervising the people they are supposed to carry out the work to see whether they are doing the right things or not. (MM3).*

*I think to improve on that, because what has weakened in our system mostly is supervision. Because most these midwives are working without being adequately supervised. So whatever they do in the clinics, much as they can have the knowledge on how to do the job but the actual performance is different. And if you come to other clinics you cannot even follow what talks they have given for that month and who is giving it, they don't even plan for. If they were supervised, these would have been enforced adequately (CM4).*

Efficiency and effectiveness in the provision of information would be challenging with limited staff. Three midwives were employed to specifically implement the CEP together with a midwife working for the clinic. However it was clear from the process of implementation, that if such a program was considered for implementation in Malawi, there would be a need to increase the workforce by three fold as was done in the CEP.

**Cultural information.** Malawian women receive cultural information from traditional attendants, family, and friends related to childbirth within their villages and communities. The information mainly comprises cultural beliefs, taboos and practices regarding childbirth. Midwives felt this information does affect the behaviours of women during childbirth. If there are discrepancies between information sources women find themselves in a dilemma, as they do not know

whether to believe information offered at the hospital or information offered at home. *“Usually most of the cultural customs that I have heard about, most of them have got to do with nutrition” (CM2).* For example, the pregnant women are advised by traditional counsellors not to eat eggs as the baby will be born without hair. As well, if they are pregnant, they should not greet somebody who is disabled, as the baby will be born with a disability. Pregnant women are advised not to stand in the doorway because they will have obstructed labour. Additionally, women are not allowed to eat piripiri because the baby will be born with red eyes.

Midwives further added that in their homes, mothers were not allowed to eat food with a lot of spices and if they did, the baby would be born with rash on the face. They are also advised by traditional counsellors and friends to take certain medications, which could assist the woman to have quick labour. The medication is called, ‘mwana mphepo’.<sup>4</sup> Mothers also believe that if a woman has oedematous feet, she may be having an extramarital relationship. They also believe that if a woman is in labour, and she carries a stone on her back as if she is carrying a baby, then she will not deliver on the way to the hospital, but will actually reach the hospital in time. They also believe that if a woman had problems conceiving, she is given a medicinal string to put around her waist called <sup>5</sup>‘mkuzi’. When she conceives, she must wear that string, but once labour starts, the string must be removed otherwise, she will not be able to deliver. They also believe that women who are pregnant should not continue having sexual intercourse after the seventh month because, again, they believe that intercourse may harm the baby. Therefore, women are advised to stop having sexual intercourse after the seventh month. *“Actually, they believe that if a baby is born with vernix for example that means the woman had continued to have sexual intercourse up to the last month” (EFG).* There are many beliefs and tabos regarding several issues. The following quote provides further examples relating to colostrum, Caesarean section and traditional medicines:

*There is need to address the challenge of traditional beliefs and taboos. There are misconceptions and beliefs such as that: Fansidar (SP) leads to abortion; traditional practices such as taking traditional medicine in labour is important as it is believed that it speeds up labour; belief that colostrum is not good for babies as it may cause diarrhoea; belief that if you report to the labour ward early, it takes long before one delivers; belief that if a mother had a previous Caesarean sections, she should wait at home for the cervix to dilate so that she*

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<sup>4</sup> Mwana mphepo is a traditional medicine that women may drink during pregnancy and in labour. It is believed to prevent complications and sometimes facilitates labour.

<sup>5</sup> Mkuzi is a string which has beads all around and the woman wears around her waist. The beads are traditional medicine to help with conception and also to keep a pregnancy

*can be delivered vaginally; putting local medicine on the fontanelle and umbilicus of the baby to speed up the closing and healing process (EM3).*

One midwife pointed out that not all cultural information is bad. Sometimes midwives give the impression to mothers that all traditional issues are wrong. *“May be some of these things, not all cultural practices are bad, but may be we should explore them what cultural practices are ok may be which they can be practicing during this period if that is okay” (CM1).* One can not ignore the importance and significance of cultural beliefs. Midwives were encouraged to explore cultural beliefs related to specific topics and discuss them with the women during the CEP.

**Accessibility:** Midwives discussed the issue of accessibility to antenatal care as one of the challenges. *“I am also looking at accessibility, there are some people who would like to go to these, may be, antenatal clinics to get information but may be they have problems with roads, problems with communication or may be it is an out reach clinic, it will not be there that week” (MM1).* Services are not always available for mothers to get adequate information. There are limited resources in terms of mothers having to walk long distances to get to a health care institution which hinders them from gaining access to information. Sometimes during the rainy season, when it has been raining heavily, mothers may miss antenatal care because they cannot easily access a health care institution.

*The issue of accessibility becomes a problem. For example here at a district hospital mothers have to travel long distances to get services. By time they arrive at a healthy facility perhaps they have missed health education. They may have questions but can not ask because they have to travel back and perhaps the midwives do not even have time for that. (C3FG)*

This research could not address this challenge as the CEP was only provided to woman who did attend antenatal care. However the Ministry of Health in Malawi is attempting to address this challenge through use mobile clinics (National Statistical Office, 2000).

**Lack of material resources.** Malawian midwives complained that the clinics and wards lack material resources for use for the provision of information such as flip charts and materials for physical assessment such as Blood Pressure machines, which would be used to identify risk factors so midwives can offer appropriate advice and education. *“One of the problems facing midwives in Malawi is lack of materials to use. There are no reference materials for midwives. Not enough pictures to use as illustrations when giving information” (EFG).* There is a

need for basic materials and resources that enable information to be offered appropriately and effectively. *“ I feel most of the clinics, the nurses have no references, they just give talks whatever they have memorised long time ago. They should have references. If there is new information, it should be there well explained, so that they can be able to give the right information” (MM4).*

Some of the materials used as illustrations in the CEP were obtained from the Safe Motherhood Office in Blantyre. Sometimes, it is a matter of identifying where the materials are and collecting them. However, this was an administrative issue where information regarding existing resources was not effectively communicated at all levels. There is however, a need to develop more materials such as pictures and illustrations as these can help to enhance learning.

Infrastructure at the health care institutions was also noted to be a problem. There wasn't an appropriate physical space for the delivery of information to pregnant women. One midwife said: *“the infrastructure is not conducive for giving information as mothers are mostly sitting on the floor in big numbers and sometimes even outside the building”.* (MM2). Unfortunately, overcoming such an issue was not within the scope of this study but the researcher is aware that the Ministry of Health is, currently renovating some health institutions in Malawi.

**Lack of client motivation.** Midwives noted that sometimes women were not motivated to participate when being given information. The midwives said this could be as a result of the way information is conveyed, as there was limited variety in presentation techniques as there has historically been minimal client participation and assessment of prior knowledge.

*The other challenge is to motivate the women, to motivate the women, especially as I mentioned already in the group. To motivate women and make them feel that they really need this information is another challenge and it requires the technique in terms of how to present the talk. (EM2).*

As previously mentioned, topics were scheduled to avoid repetition and a variety of teaching methods were also employed in the CEP. There was time for singing and dancing where information was taught through songs to motivate the women during implementation of the program. In addition, women were encouraged to participate by asking questions and sharing their experiences.

**Decision making.** In regard to maternal involvement in decision making, Malawian midwives noted that a woman relies on her husband, mother in-law or

uncle and other significant people to decide whether she can go for medical care. *“In our culture, there is a problem of who makes a decision about childbirth. It is not the woman but the husband or the uncle or others. This means she can be denied information by not coming to the healthy facility”* (EFG). Therefore, this presents another barrier to access of information because when a husband is located far away or other significant relatives are not available, a woman is forced to wait for their permission to access midwifery care. The same applies during labour because if a woman is delivering at home or the traditional birth attendant’s home, and she has a problem, they (husband and family members) have to decide prior to taking her to the hospital. For example if a pregnant woman is bleeding and has to wait for a husband who is may be two districts or three districts away, it means she may die before receiving appropriate care.

Midwives felt these issues require urgent sensitisation so that pregnant women can learn to be assertive and be able to negotiate with these significant persons to access medical care at the right time. This issue was beyond the scope of this research however, it is hoped that with an ongoing CEP, over time, childbirth knowledge level of Malawian women would increase and this issue would gradually be addressed.

### **Summary of theme: Challenges faced by midwives**

It is interesting to note that midwives appreciated the fact that there were challenges to giving childbirth information in Malawi. Unless these challenges were considered through ongoing Malawian programs, it would be difficult to successfully implement any health program in Malawi. Addressing some of the issues raised such as staffing, infrastructure, and accessibility were beyond the scope of the current study however, these issues are known by the Ministry of Health and are currently being addressed (National Statistical Office, 2000). It is therefore essential that the findings of this study are presented to the Ministry of Health in Malawi to inform ongoing and future health priorities in Malawi. Some of the challenges were addressed in the CEP like using teaching strategies that would promote client motivation and enhance learning plus incorporating cultural issues within content areas.

### **Theme: The way forward.**

Finally, Malawian midwives offered suggestions for the way forward. These were suggestions for dealing with some of the challenges they currently face

regarding giving information. They argued that, any Childbirth Education Program could not be effective if these issues were ignored. It is worthy noting that several strategies need to be implemented to address the challenges and it is hoped that the CEP would be one of the strategies.

**Education and training of midwives.** Malawian midwives felt there was a need to strengthen the education and training of midwives in the area of education and counselling. Midwifery educators noted that there was a need to strengthen this area in Midwifery curriculum as they noted that sometimes students were not prepared to provide women with information. There was also a suggestion that in-service education should be conducted in all hospitals in the area of childbirth education to give evidence-based information to midwives to ensure midwives convey updated information to women:

*I think we need to look at the training and education of midwives both in pre-service and those that are already in service. The need to be adequately prepared for information giving role. They should have teaching skills as well as counselling skills... (MM3).*

*Perhaps even for Registered Nurses and midwives we need to revisit the program and see whether we are teaching adequate teaching and counselling skills to our students. So there is still room to re-visit the teaching methodology, how do we approach, how much time do we give them to exercise before they can even go and counsel and teach patients. Think of those midwives that have qualified and are in practice. How much time do they have to go for in-service in these areas? (ED3).*

It was essential that midwives responsible for implementing the CEP were trained prior to implementation. There is, however, the need for improving on-going education of midwives and strengthening midwifery curricula for all groups of midwives to ensure that midwifery graduates are adequately prepared for the provision of information to women.

**Use of media.** Malawian midwives felt that perhaps it was time to start using media to give childbirth information such as radio to give information about childbirth. This is debatable as not many people can afford a radio. However, since some mothers do have radios, it is still important to use that form of media. This view also held for use of television that operates for few hours during the day. There was an observation that some form of information was provided through the radio:



*Of late, on our radios there have been jingles prepared by Safe Motherhood Project and one interesting thing that I learned from the jingles was that there was a woman who was like in labour but this woman could not be moved even an inch because the husband was not present (MM4).*

*The Media are also important in giving information and if we can develop that partnership with the Media, I am sure there can be an organisation or a group of people who can impart the information to the general public. But of course what is most crucial is that they need to be oriented on the issues that you want them to be writing on or publicising on the radio or whatever. So you need to develop may be a Media toolkit where you have like the basic information, and of course, Orient them using that toolkit that you wish to develop so that you can develop that partnership between yourselves and the Media (CM1.)*

Some midwives made this observation regarding use of the radio: *"From what I have heard on radio one, mostly they are focusing on issues concerning maternal mortality and mobility" (MM2).* So the focus on radio was on high-risk pregnancy not just the normal things which a normal pregnant woman should do. This can probably be explained because the programs were sometimes sponsored by certain organisations that focus on the issues they deal with. For example if the program is on prevention of polio, you hear about polio on the radio program. Therefore, although the programs are in place, they are not necessarily addressing the needs of all the women. However, this study did not address the use of media such as radio as it focused on provision of information at the antenatal clinics.

***Development of a childbirth guide and other materials.*** All midwives advocated development of a Childbirth Education Guide for midwives to use. *"I remember when I was a student, we had a guide and the talks were organized into nine or ten sessions" (EM3).* Most midwives talked about a previous green booklet that was used in the past and but is no longer used and they thought that it was an important booklet and wanted something like that developed. The previous green booklet was developed by the Ministry of Health in consultation with Babra kwast and was found in most antenatal clinics a decade ago. The researcher did not manage to find out why the booklet was no longer used. *"It could have topics and content covering antenatal, labour and puerperium" (C1FG).* In emphasising the need for a Childbirth Education Program, one midwife reinforced the importance of a guide:

*I think your research should help us to develop may be a teaching manual or a health education manual for the midwives so that they can use in the clinics. Because may be the time for a proper preparation can not be there but if you are giving a talk on Malaria and Pregnancy, mention to guide them, that can also help in terms of improving the giving of information and some in-service*

*here and there. Because we believe that to give a talk is very easy, it's not. Learn some in-services, or the new techniques, communication...(EM1).*

The representative of the Nurses and Midwives Council of Malawi's point of view was that it was very important to develop guidelines for giving childbirth information to women. She further suggested that the guidelines should be standardised and used in all health institutions. The idea was to ensure that the Malawian population of pregnant women would be getting similar information:

*I think we need to have guidelines, I have noted that in some places there are protocols which have been developed and they have assisted. Right now, the Council is in the process of standardising, most of the guidelines or procedure manuals or protocols. We have actually written the institutions, requesting them to send us what they have right now, so that we can standardise this. So indeed it will be a good idea may be apart from the Council developing rules and regulations for midwives because those are there. So that we can have a clear guideline may be depicting what a midwife needs to do, what kind of information a midwife should give, may be to a woman who has come may be for the first visit, second visit, any other subsequent visits in labour, postnatally and maybe even when this woman starts coming for family planning services. I believe that would help and if its standardised, what it means is we would be thinking that all midwives are doing the same. So that not just a portion of our population benefit but that the whole population benefit (MM4).*

One of the objectives of the current study was to develop the CEP, which would be used as a guide for midwives to use when giving childbirth information to Malawian women.

**Improved accessibility.** As previously explained, Malawian midwives wanted services to be accessible to all women. As well as the need for flexibility on the part of midwives when giving antenatal care for example, not being rigid in the way care is given. It was beyond the scope of this study to address all aspects of this issue however, this was what two midwives said this to emphasise the point:

*I believe that if we also work on the issue of accessibility then people should be able to know that if this week the people who were supposed to come for may be an out of reach clinic, if they have failed, then may be, they will be able to come next week; communication, so that may be, the women should not lose hope and interest in whatever is happening (MM4).*

*Of course the policy says the services should be flexible. If they were flexible may be the women could be coming in large numbers the way they do. That's why the nurse and midwives becomes so overwhelmed, if I just spend giving 10 minutes giving a talk here I will not knock off on time. But if women got it that services are flexible, if you have a service in the morning and service in the afternoon, the less numbers and having more time to talk to them and may be*

*giving them the information. And if they are building new hospitals, infrastructure should be improved (CM2).*

**Increasing human resource.** As previously described, Malawian midwives appreciated that that unless there was an improvement in staffing levels, it would be difficult to implement a Childbirth Education Program. The more midwives were available, the easier it would be to have time for giving childbirth information to mothers:

*I know the issue of human resources because that is also something that I mentioned, the Government, right now is trying to plan, I know Nurses Council is part of that Human Resource Committee and we are trying our best and the goodness is that there are some donors and some organisations which are interested to make sure that the training of nurses is important, so we hope that somehow may be that is going to improve (MM4).*

*The first thing is re-orientation of midwives, the second thing is making sure that the Ante-natal Clinic is well equipped with adequate members of staff because the excuse that the people get now is that the shortage of staff. So I think that we need to have more people in the antenatal clinic so that women benefit from the number of visits that they have made (EM3).*

It is important to appreciate the fact that the issue of human resource is extremely complex. There are related issues of staff training, staff turnover as well as staff retention that can not be addressed by the Ministry of Health alone. It requires a Multi-sectoral approach. It is, however, important to note that if the CEP can be effectively implemented in a pilot area and there are outcomes that indicate its success, then a need for extra staff could be argued for.

**Increasing male involvement.** Midwives felt it was timely that men became more involved in childbirth particularly in their exposure to information because they have key to decision making. For many years men have been left out of childbirth issues as a culturally accepted norm. It is, however, now realised that men should know about childbirth so that not only should they appreciate what women go through, but they could also assist in the prevention of maternal mortality and morbidity in Malawi:

*And also we should make sure that our women know that Childbirth is not just for the women but that men should also be involved. I think if we in-still this in them then it means that whatever it takes to make decisions like taking them to hospital or whatever, men will be in the fore front because they will know that they are part and parcel of the childbirth process (MM2).*

*I would also like to suggest that we can look at it by may be involving men. Remember, I mentioned that earlier on that male involvement is something that we have always left aside but I always believe that it is something very important because we need that support may be when we start getting that support, men will feel they are part of it and if they indeed start feeling that they are part of it if there are some barriers that have come across because of the men like the cultural factors that I explained then, may be, we may be heading somewhere. (CM1)*

The CEP does not address the issue of male involvement, however, in future this could be considered since more male involvement would ensure a greater understanding of childbirth issues among men, which in turn, may help them to be more supportive of women.

***Integration of culture into childbirth information given at the hospital.***

Malawian midwives also felt there was a need to integrate culture in Malawian childbirth education. There should be an allocated time in the antenatal clinic when issues of beliefs and taboos about childbirth in Malawi could be discussed. This would ensure that mothers felt free to discuss such issues. Additionally, midwives can discourage dangerous practices and encourage safe practices that pose no danger to the mother and child. This strategy was adopted in the CEP. Some of the views were as follows:

*I think what has been said, culturally, I also agree with that pregnancy is not taken as sickness and those cultural taboos, beliefs or practices are there to ensure that the mother delivers a healthy baby and she also herself remains healthy. So I think if we want to integrate with culture what we need to do is to identify those aspects that are harmful to the pregnancy because what they are trying to do is to preserve the pregnancy but by so doing they have these other cultural practices that are restrict but they don't have any impact like the not standing on the door, we all know if you stand at the door it's not going to lead to obstructed labour, I mean, they are just restricting the mother (EFG).*

One midwife pointed out that their culture had to be considered when developing a Childbirth Education Program. It is important that in the CEP, issues of culture should be included so that midwives can be reminded about them and ensure that they are discussed. Midwives also felt that it is important that significant others like traditional counsellors be given childbirth information so that they can also assist in giving information apart from what they already counsel mothers on. *"Those who give information at home should be given childbirth information that is given at clinics so those women can benefit from the counselling sessions at home"* (C3FG). This issue was not addressed as it was beyond the scope of this study but in future it may be necessary for consideration as traditional

counsellors and traditional birth attendants participate in childbirth education. This was also emphasised by another midwife:

*It has start with people in the village, people who are close to these pregnant women, it might be the grannies, it might be the aunts, these ones are the ones that we need to empower the right information because we can not say that at the hospital or here as an institution we give them all the information, no, it has to start from those who are close to them, whether it's the <sup>6</sup>Anankungwi's, who so ever may have to be empowered with this information about childbirth and then from there I feel we might be moving on the right truck, giving the right information (C3FG).*

### **Summary of theme: The way forward**

Midwives in Malawi suggested possible solutions to challenges they face when giving childbirth information. Integration of culture in childbirth education was a critical area that would enhance client motivation, as well as, encourage mothers to feel that Malawian culture is important and not to be ignored. Midwives also emphasised the need for a childbirth guide which midwives could use to give information. The CEP was developed with content and teaching strategies for midwives to use. The issue of male involvement was raised, but was not addressed as it was beyond the scope of the current study.

## **Summary of Chapter**

This chapter presented findings from individual in-depth interviews and focus group interviews. Childbirth information needs of Malawian women and strategies for giving information were identified. The chapter also presented critical findings from a previous study by (Malata, 1997) which explored labour and birth information needs of first time mothers in Malawi and their satisfaction with information received. These results contributed in the development of a Childbirth Education Program for Malawian women. Issues raised from the in-depth interviews with midwives such as content, teaching strategies and the challenges faced by midwives were considered when developing the CEP. The CEP, therefore, reflected the Malawian mothers' and midwives' perceptions of childbirth education at the time of the study.

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<sup>6</sup> Anamkungwi are traditional counsellors and sometimes referred to as Alangizi.

## **CHAPTER 6**

### **PHASE 2 FINDINGS: DEVELOPMENT OF THE CHILDBIRTH EDUCATION PROGRAM**

#### **Introduction**

This chapter describes the development of the Childbirth Education Program (CEP). Content used in the CEP was derived from three sources: literature, the results from the researcher's previous study that explored the labour and birth information needs of Malawian first time mothers and their satisfaction with the information (Malata, 1997), and data from in-depth individual and focus group interviews conducted with 43 midwives in Malawi. This chapter will describe the process of development of the CEP, the training of midwives who implemented the CEP, and implementation of the CEP.

#### **The Process of Development of the Childbirth Education Program**

##### **The Content**

A draft CEP was developed using the three domains of: antenatal, labour and birth, and postnatal care. The following topics were included in the Antenatal Domain: antenatal care, pregnancy, nutrition in pregnancy, common disorders of pregnancy, risk factors and common complications of pregnancy, danger signs of pregnancy, sexually transmitted infections, and HIV/AIDS. In the Labour and Birth Domain, the following topics were included: the labour process, danger signs of labour, caesarean birth, and pain relief in labour. Finally, in the Postnatal Domain, the following topics were included; self care during postpartum period, exclusive breast-feeding, care for the newborn, and family planning. Teaching methods as well as objectives for each topic were also developed to ensure the consistency and effective delivery of the CEP.

Upon completion, the draft program was given to five expert midwives to review the content and make suggestions for improvement. Midwives suggested removal of the topic on "Reproductive Health". They also suggested the addition of content such as care of the newborn that was missing from the initial draft. It was also suggested that cultural beliefs and taboos of childbirth in Malawi, should not be presented as a specific topic but that it should be incorporated within topics such as nutrition, self care, and family planning as taboos vary according to the different districts. Consequently, the midwives would have to address issues that apply to the particular population they would be dealing with, at any given time. Appropriate changes were made according to these suggestions. The topics in the CEP were then translated into Chichewa with the help of a Chichewa expert. This was undertaken because it would be difficult for midwives to use English version of the content, as the majority of the women would not benefit because of the high illiteracy rate.

### **The Childbirth Education Program Structure**

The CEP included a Title page, Acknowledgments, an Introduction, a Table of contents, and the actual program with objectives, content and suggested teaching methods for each topic. The CEP is presented as an attached compact disk Addendum.

### **Training of Midwives to Implement the CEP**

Four midwives were trained to implement the program. Three of the midwives were educators at the Blantyre School of Nursing, and were identified by midwifery colleagues teaching at the Kamuzu College of Nursing. One midwife was identified by the researcher. Training sessions were undertaken for one full day. The researcher and the midwives went through both the English version and Chichewa versions of the topics in the CEP. Since these midwives had a teaching background and one was working in the clinic where the program was to be implemented, teaching skills were reviewed to be certain of the ability of the midwives to impart knowledge. The schedule for implementation of the CEP was made collaboratively and topics were distributed evenly among the midwives according to experience and knowledge. These midwives were not involved in the administration of the pretest and posttest to avoid bias.

## Implementation of the CEP

### attending an individual session

#### Group and individual sessions

Six group sessions were held for the women in the intervention group over a period of six weeks. Sessions were held by two midwives each Monday, Tuesday and Friday. These days were identified as most appropriate to capture the greatest sample of women after consultation with the nurse in-charge of the clinic and the midwives implementing the program. Women were allocated to three groups. In the group sessions, the midwives provided information using mostly lecture/discussion methods. The group sessions followed by individual sessions. Figure 6.1 shows women waiting for a group session.



Figure 6.1. Women waiting for a group session

As stated earlier, individual sessions were offered to women after group sessions. All women requested individual sessions as they had issues they did not want to discuss in a group. Group sessions lasted 2 to 2 hrs 45 minutes. Individual sessions varied from 5 to 15 minutes. Midwives used the individual sessions to reinforce content covered during group sessions as well as to address individual issues. Group One had 41 women, Group Two had 42 women, and Group Three had 42 women. A total of 125 women were recruited and took the pretest. However, over the six week period, 20 women dropped out due to absenteeism and



illnesses (n=20). Finally 105 took the posttest (n=105). Figure 6.2 shows a woman attending an individual session.



Figure 6.2. A pregnant woman with a midwife during an individual session

## **Details of group sessions during implementation of CEP**

The following section presents the activities of the CEP over the period of six weeks as well as attendance of the women in each week.

### **Week 1 Program**

The following activities were performed during the first day of the CEP:

- Recruitment of participants;
- Administration of pretest;
- Teaching of topic: Antenatal care; and
- Initial physical assessment

This was the day women were recruited and group teaching conducted focused upon antenatal care. Attendance on this day was 100% as it was the recruitment day. All women had an individual session, as this was the day they had an initial physical assessment. Attendance was as follows in this week: Group 1=41, Group 2=42, and Group 3=42. The total number of women who attended was 125 on this day.

### **Week 2 Program**

The following activities were performed during the second week of the CEP:

- Review week 1 content;
- Teaching of topics: pregnancy, nutrition in pregnancy, and common disorders of pregnancy;
- Individual counselling; and
- Treatment and referral if required.

Attendance was as follows in this week: Group 1=41, Group 2=41, and Group 3=42. The total attendance on this day was 124.

### **Week 3 Program**

The following activities were performed during the third week of the CEP:

- Review week 2 content;
- Teaching of topics: risk factors and common complications of pregnancy, danger signs of pregnancy, and sexually transmitted infections;
- Individual counselling; and
- Treatment and referral if required

Attendance was as follows in this week: Group 1=39, Group 2=40, and Group 3=38. The total number of women who attended in this week was 117.

### **Week 4 Program**

The following activities were done in the fourth week of the CEP:

- Review week 3 content;
- Teaching of topics: the labour process, danger signs of labour, caesarean birth, and pain relief in labour;
- Individual counselling; and
- Treatment and referral if required

Attendance was as follows in this week: Group 1=39, Group 2=38, and Group 3=37. The total number of women who attended in this week was 114.

### **Week 5 Program**

The following activities were performed during the fifth week of the CEP:

- Review week 4 content;
- Teaching of topics: self care during postpartum period, exclusive breast-feeding, care of the newborn, and family planning
- Individual counselling; and
- Treatment and referral if required.

Attendance was as follows in this week: Group 1=35, Group 2=36, and Group 3=34. The total number of women who attended was 105.

### **Week 6 Program**

The following activities were performed during the sixth week of the CEP:

- Review week all content;
- Individual counselling;
- Treatment and referral if required; and
- Administration of post test.

Attendance was as follows in this week: Group 1=35, Group 2=36, and Group 3=34. The total number of women who attended on the last day was 105.

### **Summary of Chapter**

This chapter has presented the process followed during the development and implementation of the Childbirth Education Program. Details of content, teaching strategies and objectives are presented in the attached compact disk Addendum of the Childbirth Education Program (CEP).

## CHAPTER 7

### PHASE 3 FINDINGS: EVALUATION OF THE CHILDBIRTH EDUCATION PROGRAM

#### Introduction

This chapter presents results from the two principal research objectives: first, to determine the Malawian women's knowledge level of childbirth; and second to evaluate the effectiveness of the Childbirth Education Program in increasing Malawian women's knowledge of childbirth. Descriptive data is presented first, followed by baseline data for the control and intervention groups. Finally, data for differences for both between and within the groups are described.

#### Descriptive Analysis

The population consisted of Malawian pregnant women of less than 30 weeks gestation who attended the Ndirande Health centre (control group=125), and the Limbe Health centre (intervention group=125). Informed consent was obtained from all women.

#### Demographic variables.

There were no significant differences between the control and intervention groups at baseline for age group, gravidity, marital status, religion, education, and occupation (see Table 7.1). The majority of the women were aged between 19 to 24 years, married, multigravid, were Christian, had primary education and were not employed. There was, however, a significant difference for the variable 'gestation'. At baseline, most women (67.2%), in the intervention group were between 4-6 months of gestation, while in the control group the majority of women (55.2%) were at 7 months gestation or more ( $p < 0.001$ ). This significance finding needs to be viewed cautiously as the baseline issue is that more women in both groups started attending antenatal clinic either in the second or third trimester. This is not an unusual finding in this population, as clinical experience has shown that multigravid women start antenatal care in the second or third trimester.

Table 7-1

**Baseline comparison of women's characteristics in the control and intervention Groups (n=125 control group and 125 intervention group)**

Variable	Control n(%)	Intervention n(%)	p
Age Group			
13-18	22(17.6)	26(20.8)	0.707
19-24	62(49.6)	57(45.6)	
25-30	34(27.2)	36(28.8)	
31-36	7(5.6)	4(3.2)	
37+	0(0)	1(0.8)	
Gestation (months)*			
1 - 3 months	1(0.8)	4(3.2)	<0.001
4 – 6 months	55(44.0)	84(67.2)	
7 months or more	69(55.2)	37(29.6)	
Gravidity			
primigravida	53(42.4)	37(29.8)	0.101
multigravida	66(52.8)	82(66.1)	
grandmultiparity	6(4.8)	5(4.0)	
Marital Status			
single	10(8.0)	14(11.2)	0.520
married	114(92.0)	111(88.8)	
Religion			
Christian	87(69.6)	89(71.2)	0.094
Moslem	18(14.4)	26(20.8)	
Other	20(16.0)	10(8.0)	
Education			
Primary	75(60.0)	78(62.4)	0.923
Secondary	39(31.2)	37(29.6)	
None	11(8.8)	10(8.0)	
Occupation*			
Unemployed	118(94.4)	115(92.0)	0.160
Employed	6(4.8)	4(3.2)	
Small business	1(0.8)	6(4.8)	

\*Fisher's exact test used when expected count less than 5.

Comparative information for women in both groups regarding living arrangement and sources of childbirth information are presented in Table 7.2.

**Table 7-2**

**Baseline comparison of residential status and sources of information (n=125 control group and 125 intervention group)**

Variable	Control n(%)	Intervention n(%)	p
Whom living with			
husband	71(56.8)	105(84.0)	<0.001
other relatives	10(8.0)	15(12.0)	
husband+other	44(35.2)	5(4.0)	
Sources of information*			
Relatives only	77(61.6)	70(56.0)	<0.001
Traditional only	11(8.8)	4(3.2)	
nurse/midwife only	6(4.8)	9(7.2)	
media	4(3.2)	3(2.4)	
none	25(20.0)	15(12.0)	
relatives+ traditional	1(0.8)	4(3.2)	
traditional+ nurse	0(.0)	4(3.2)	
relatives+ nurse	1(0.8)	16(12.8)	

\*Fisher's exact test used when expected count less than 5.

There was a significant difference between the groups for the person/s with whom the women were living ( $p < 0.001$ ). Fifty seven percent of the women in the control group (92%) were living with their husbands, while 88% in the intervention group were living with their husbands. This could have occurred because of interpretation of the response 'husband and other' as more women (35.2%) indicated they lived with husband and other persons while few women (4.0%) stated the same in the intervention group.

There was also a significant difference between the groups for sources of childbirth information during this pregnancy ( $p < 0.001$ ). The difference probably occurred because more women in the control group received information from traditional sources (n=11, 9%) compared with intervention group (n=4, 3%). The main source of childbirth information was obtained from relatives only in both the

control (61.6%), and in the intervention groups (56.0%). Few women received information from nurse/midwives in the control group (4.8%), and in the intervention group (7.2%). The difference could however be due to small numbers in some of the responses as well as a large difference between the response 'relatives and nurse' which had more women in the intervention group (12.8%) and one women in the control group (0.8%) indicating the same. In the control group there was only one nurse/midwife allocated to the antenatal clinic while there were four nurse/midwives allocated at the intervention site. The limited number of nurse/midwives allocated in the clinics had implications for information provided by the midwives particularly at the control group site, as the patient/staff ratio is very high. Traditionally, women in Malawi are also given information by relatives and traditional counsellors in the communities (National Statistical Office, 2000).

### **Baseline Data for Each Domain (antenatal, labour and postnatal)**

There were 10 items in the antenatal domain, 8 items in labour domain, and 12 items in the postnatal domain. For each item in each domain, there were a number of possible responses and women could choose more than one response. For clarity, in each domain, items have been listed with their title and the number of possible responses. For each item, results will be reported for responses where there was a significant difference between the control and intervention groups. Exact *p* values will be presented, however, due to small numbers in some of the possible responses, significant values should be viewed cautiously.



### Antenatal domain – baseline data

#### Item 1 “How does one know that she is pregnant? - 10 possible responses

There was a significant difference between the groups for the response of “Growing abdomen” ( $p=0.021$ ). There was a trend toward a difference for the responses: “Nausea” ( $p=0.068$ ), “Fatigue” ( $p=0.072$ ), and “Don’t know” ( $p=0.071$ ). There were no differences between the groups for any of the other possible responses. The results are presented in Table 7.3.

**Table 7-3**

**Baseline Comparison for Item 1 “How does one know that she is pregnant?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Missed period	119(95.2)	110(88.0)	0.068
Nausea	16(12.8)	28(22.4)	0.068
Vomiting	22(17.6)	31(24.8)	0.216
Micturition*	3(2.4)	4(3.2)	1.00
Fatigue*	1(0.8)	7(5.6)	0.072
Weight gain	14(11.2)	25(20.0)	0.081
Appetite changes	13(10.4)	13(10.4)	1.00
Growing abdomen	15(12.0)	30(24.0)	0.021
Don't know*	5(4.0)	0(0)	0.071

\*Fisher's exact test used when expected count less than 5.

**Item 2 “When should a pregnant woman start attending antenatal care?” - 4 possible responses**

There was a significant difference between the groups for the responses of “Within three months of pregnancy” ( $p < 0.001$ ) and “Don’t know” ( $p = 0.016$ ). There were no differences between the groups for the other possible responses. The results are presented in Table 7.4.

**Table 7-4**

**Baseline Comparison for Item 2 “When should a pregnant woman start attending antenatal care?” (n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
As soon as she knows	10(8.0)	14(11.2)	0.520
Within 3 months	42(33.6)	64(51.2)	0.007
Any time	55(44.0)	41(32.8)	0.091
Don’t know	24(19.2)	10(8.0)	0.016

### Item 3 “Why should a pregnant woman attend antenatal clinic?” - 4 possible responses

There was no significant difference for the three of the four responses. There was a significant difference for the response item “Monitor pregnancy” ( $p=0.035$ ). The majority of women in both the control group ( $n=71$ , 56.8%) and in the intervention group ( $n=88$ , 70.4%) indicated that one of the reasons for attending antenatal care was to monitor pregnancy. Results are presented in Table 7.5.

**Table 7-5**

**Baseline Comparison for Item 3 “Why should a pregnant woman attend antenatal clinic?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	$p$
	$n(\%)$	$n(\%)$	
Monitor pregnancy	71(56.8)	88(70.4)	0.035
Identify risk factors	41(32.8)	31(24.8)	0.209
Get information	20(16.0)	22(17.6)	0.866
Don't know	5(4.0)	8(6.4)	0.569

**Item 4 “Mention three types of food that a pregnant woman should eat?” - 4 possible responses**

There was a significant difference between the groups for the responses of “Food group 1 (proteins)” ( $p < 0.022$ ), “Food group 3 (vitamins)” ( $p < 0.011$ ) and, “Don’t know” ( $p = 0.025$ ). There was a trend toward a difference for the response “Food group 2 (energy giving)” ( $p = 0.051$ ). The results are presented in Table 7.6.

**Table 7-6**

**Baseline Comparison for Item 4 “Mention three types of food that a pregnant woman should eat?” (n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Food group 1 (proteins)	32(25.6)	50(40.0)	0.022
Food group 2 (energy)	40(32.0)	56(55.2)	0.051
Food group 3 (vitamins)	48(38.4)	69(55.2)	0.011
Don’t know	27(21.6)	44(35.2)	0.025

**Item 5 “What should a pregnant woman do to promote a healthy pregnancy and positive outcome?” - 7 possible responses.**

There were no significant differences between the groups for most of the items. However, there was a significant difference for the response item “Having a balanced diet” ( $p=0.043$ ). Table 7.7 presents results for this item.

**Table 7-7**

**Baseline Comparison for Item 5 “What should a pregnant woman do to promote a healthy pregnancy and positive outcome?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Eat a balanced diet	76(60.8)	92(73.6)	0.043
Do antenatal exercises	20(16.0)	20(16.0)	1.00
Have adequate rest and sleep	13(10.4)	17(13.6)	0.559
Take prophylaxis drugs	4(3.2)	1(0.8)	0.366
Early antenatal care	22(17.6)	15(12.0)	0.285
Report any risk factors	11(8.9)	12(9.6)	1.00
Don't know	18(14.4)	18(14.4)	0.605

**Item 6 “What are some of the problems that could cause complications during pregnancy and birth?” - 18 possible responses.**

There was no significant difference between the groups for sixteen items. However, there were significant differences for the responses “High blood pressure” ( $p=0.021$ ) and “Infections” ( $p=0.019$ ), and the difference approached a significance for the response “Bleeding” ( $p=0.053$ ). Of much concern was that few women in both groups were able to list some of the major risk factors such as: age, parity, short height, deformity of legs and pelvis, and previous childbirth complications. Results are presented in Table 7.8 on next page.

Table 7-8

**Baseline Comparison for Item 6 “What are some of the problems that could cause complications during pregnancy and birth?” (n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Age*	0(0)	1(0.8)	
Primigravidity*	0(0)	0(.0)	
Grandimultiparity*	0(0)	0(0.)	
Birth interval->2 years*	0(0)	1(0.8)	
Very short*	0(0)	0(.0)	
Deformed legs/ pelvis*	0(0)	1(0.8)	1.00
Previous childbirth complications*	0(0)	1(0.8)	1.00
Twin pregnancy*	0(0)	0(.0)	
Breech presentation*	0(0)	0(.0)	
Smoking*	1(0.8)	0(.0)	1.00
Alcoholism*	2(1.6)	1(0.8)	1.00
Bleeding	7(5.6)	17(13.6)	0.053
High blood pressure	19(15.3)	7(5.6)	0.021
Diabetes	8(6.4)	2(1.6)	0.107
Infections	18(14.4)	34(27.2)	0.019
Watery discharge	4(3.2)	6(4.8)	0.747
Anaemia	34(27.2)	32(25.6)	0.886
Don't know	38(30.4)	49(39.2)	0.184

\*Fisher's exact test used when expected count less than 5.

**Item 7 “What are some of the common discomforts of pregnancy?” - 14 possible responses.**

There was a significant difference for the responses “Shortness of breath” ( $p < 0.001$ ) and “Don’t know” ( $p < 0.001$ ). There was a trend toward a difference for the response “Leg cramps” ( $p = 0.071$ ). No women in either group mentioned any of these minor disorders: increased vaginal discharge, bleeding gums, heartburn and passing urine frequently. Details are presented in Table 7.9.

**Table 7-9**

**Baseline Comparison for Item 7 “What are some of the common discomforts of pregnancy?” (n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Nausea	14(11.2)	6(4.8)	0.103
Vomiting	12(9.6)	7(5.6)	0.340
Backache*	1(0.8)	0(.0)	1.00
Constipation	10(8.0)	13(10.4)	0.662
Swelling of feet	6(4.8)	2(1.6)	0.281
Shortness of breath	36(28.8)	2(1.6)	0.000
Increased vaginal discharge*	0(.0)	0(.0)	
Bleeding gums*	0(.0)	0(.0)	
Breast tenderness*	0(.0)	0(.0)	
Heart burn*	0(.0)	0(.0)	
Passing urine frequently*	0(.0)	0(.0)	
Leg cramps*	5(4.0)	0(.0)	0.071
Backache	62(49.6)	58(46.4)	0.704
Don't know	35(28.0)	56(48.8)	0.009

\*Fisher’s exact test used when expected count less than 5.

**Item 8 “What danger signs should immediately bring a pregnant woman to the hospital? - 13 possible responses.**

There were no significant differences between the groups for most responses, except for “Watery vaginal discharge” ( $p = <0.001$ ). Of concern were that no women in both groups identified painful micturition, and visual disturbances as danger signs. Furthermore, few women in either group identified dizziness, puffiness of face, feet and hands, itchy vaginal discharge, and persistent severe headache as danger signs of pregnancy. Details are presented in Table 7.10.

**Table 7-10**

**Baseline comparison for”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Fever	11(8.8)	17(13.6)	0.316
Vaginal bleeding	49(39.2)	61(48.8)	0.161
Severe abdominal pains	26(20.8)	18(14.4)	0.245
Painful urination*	0(0)	2(1.6)	0.478
Dizziness*	3(2.4)	5(4.0)	0.719
Visual disturbances*	0(0)	1(0.8)	1.00
Puffiness of face, feet and hands*	4(3.2)	9(7.2)	0.255
Reduction of fetal movements*	2(1.6)	3(2.4)	1.00
Watery vaginal discharge	27(21.6)	51(40.8)	0.002
Itchy vaginal discharge*	2(1.6)	4(3.2)	0.679
Persistent severe headache*	3(2.4)	4(3.2)	1.00
Severe heart palpitations	30(24.0)	28(22.4)	0.881
Don't know	21(16.8)	28(22.4)	0.313

\*Fisher's exact test used when expected count less than 5.



**Item 9 “How can one acquire HIV/AIDS?” - 6 possible responses.**

There were no significant differences between the groups for most responses except for “Contact with infected blood” ( $p=0.002$ ). It is of great concern that this response, which is the actual cause of HIV/AIDS spread, was not a popular choice amongst the possible responses. However, there was a trend toward a difference for the response “Sharp utensils - pricking” ( $p=0.066$ ). Details are presented in Table 7.11.

**Table 7-11**

**Baseline Comparison for Item 9 “How can one acquire HIV/AIDS?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Blood transfusion	8(6.4)	9(7.2)	1.00
Mother to child*	10(8.0)	3(2.4)	0.087
Sharp utensils -pricking	87(69.6)	72(57.6)	0.066
Sexual intercourse	111(88.8)	117(93.6)	0.264
Contact with infected blood	10(8.0)	29(23.2)	0.002
Don't know*	6(4.8%)	2(1.6%)	0.281

\*Fisher's exact test used when expected count less than 5.

### Item 10 “What should people do to avoid getting HIV/AIDS?” - 8 possible responses

There were no significant differences for any of the responses in this item. However, there was a trend toward a difference for the response “Knowing status and no breastfeeding if positive” ( $p=0.051$ ). The results indicated that women were exposed to considerable amount of information regarding prevention of HIV/AIDS and this was shown through their good performance in this item. It is therefore, justifiable to argue that if Malawian women were given adequate information about issues of childbirth, their knowledge level was likely to improve. Details are presented in Table 7.12.

**Table 7-12**

#### **Baseline Comparison for Item 10 “What should people do to avoid getting HIV/AIDS?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Sex with one partner	67(53.6)	78(62.4)	0.200
Avoid individuals at risk	30(24.0)	21(16.8)	0.209
Care of sharp utensils	47(37.6)	39(31.2)	0.351
Use of condoms	33(26.4)	46(36.8)	0.103
Use of gloves*	1(0.8)	1(0.8)	1.00
Avoid sharing tooth brushes	12(9.6)	10(8.0)	0.823
Know status (MTC)	3(2.4)	11(8.8)	0.054
Don't know	10(8.0)	5(4.0)	0.287

\*Fisher's exact test used when expected count less than 5.

## Labour and birth domain baseline data

### Item 11 “What should a pregnant woman prepare for birth?” –6 possible responses

There was a significant difference between the control and intervention groups for the responses “toiletries” ( $p < 0.001$ ) and “don’t know” ( $p = 0.010$ ). The results indicated that most women well informed about this topic. Details are presented in Table 7.13.

**Table 7-13**

**Baseline Comparison for Item 11 “What should a pregnant woman prepare for birth?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Clothes for baby	86(68.8)	87(69.6)	1.00
Clothes for mother	54(43.2)	65(52.0)	0.205
Razor blade	75(60.0)	61(48.8)	0.109
Toiletries	36(28.8)	82(65.6)	0.000
Bath, candles	73(58.4)	68(54.4)	0.610
Don't know*	4(3.2)	16(12.8)	0.010

\*Fisher’s exact test used when expected count less than 5.

**Item 12 “How would a pregnant woman know that labour has started?” - 5 possible responses**

There was no significant difference between groups for all five possible responses, however, a large proportion of women in both groups said they did not know (n=26, 20.8% control group, and n=21, 16.8% intervention group). Details of responses for item 12 are presented in Table 7.14.

**Table 7-14**

**Baseline Comparison for Item 12 “How would a pregnant woman know that labour has started?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Bloody discharge	27(21.6)	26(20.8)	1.00
Contractions	74(59.2)	70(56.0)	0.701
Leaking water	52(41.6)	58(46.4)	0.524
Backache	44(35.2)	58(46.4)	0.094
Don't know	26(20.8)	21(16.8)	0.517

**Item 13 “What should a woman do when labour starts?” 6 possible responses.**

There was no significant difference between groups for all the six responses. The majority of women in both groups (n=121, 96.8% control group, and n=119, 95.2% intervention group) stated they would report to the hospital. Details are presented in Table 7.15.

**Table 7-15**

**Baseline Comparison for Item 13 “What should a woman do when labour starts?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Report to hospital	121(96.8)	119(95.2)	0.747
Antenatal card	12(9.6)	14(11.2)	0.836
Have an escort*	2(1.6)	5(4.0)	0.443
Take a bath*	3(2.4)	8(6.4)	0.217
Eat porridge*	5(4.0)	2(1.6)	0.442
Don't know*	1(0.8)	4(3.2)	0.366

\*Fisher's exact test used when expected count less than 5.

### Item 14 “How can a woman cope with pain in labour?” – 6 possible responses

There were no significant differences between the groups for all responses. It is interesting to note that many women stated that “Bearing the pain” was a way of coping with pain (n=33, 26.4% control group, compared with n=44 35.2%, intervention group). Bearing the pain meant persevering and not expressing how they felt in any way such as crying. The most important finding was that the majority of women indicated they didn’t know (n=74, 59.2% control group, and n=66, 52.8% intervention group). Details are presented in Table 7.16.

**Table 7-16**

#### Baseline Comparison for Item 14 “How can a woman cope with pain in labour?”(n=125 control group and 125 intervention group)

Item response	Control n(%)	Intervention n(%)	p
Deep breathing*	1(0.8)	1(0.8)	1.00
Change positions*	2(1.6)	6(4.8)	0.281
Relaxation*	0(0)	0(0)	1.00
Drugs*	1(0.8)	2(1.6)	1.00
Bear it	33(26.4)	44(35.2)	0.171
Don't know	74(59.2)	66(52.8)	0.372

\*Fisher’s exact test used when expected count less than 5.

### Item 15 “What could go wrong with the mother during labour?” – 8 possible responses

There were no significant differences between the groups for any of the responses. More than half of the women in each group (n=65, 52.0% control group; n=66, 52.8% intervention group) indicated that they did not know what could go wrong with the mother. This is of great concern, as women need to be aware of danger signs so they can report to the hospital as soon as possible. Details are presented in Table 7.17.

**Table 7-17**

#### Baseline Comparison for Item 15 “What could go wrong with the mother during labour?”(n=125 control group and 125 intervention group)

Item response	Control n(%)	Intervention n(%)	p
Prolonged labour	11(8.8)	5(4.0)	0.196
Obstructed labour	17(13.6)	10(8.0)	0.221
Bleeding	20(16.0)	18(14.4)	0.860
Retained placenta*	3(2.4)	5(4.0)	0.719
Rise in blood pressure*	3(2.4)	2(1.6)	1.00
Cord prolapse*	1(0.8)	2(1.6)	1.00
Ruptured Uterus	20(16.0)	30(24.2)	0.146
Don't know	65(52.0)	66(52.8)	1.00

**Item 16 “What could go wrong with the baby during labour?” – 4 possible responses**

There were no significant differences between groups for all possible responses. However, of concern, a high number of women in each group (n=60, 52.0% control group; n= 69, 52.8% intervention group) indicated they did not know. Details are presented in Table 7.18.

**Table 7-18**

**Baseline Comparison for Item 16 “What could go wrong with the baby during labour?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Distress of baby	32(25.6)	24(19.2)	0.288
Death of baby	29(23.2)	25(20.0)	0.645
Injuries	14(11.2)	12(9.6)	0.679
Don't know	60(48.0)	69(55.2)	0.311



### Item 17 “Why would a caesarean section be done?” – 10 possible responses

There was no significant difference between the groups for the nine of the ten responses whereas, there was a significant difference for responses; “Abnormal position” ( $p=0.014$ ). Generally, women lacked knowledge about why a caesarean section would be performed. Few women in both groups identified distress of unborn baby, breech delivery, previous scar, bleeding, cord prolapse and diseases such as heart conditions as some of the indications for a Caesarean birth. Details are presented in Table 7.19.

**Table 7-19**

**Baseline Comparison for Item 17 “Why would a caesarean section be done?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Difficult labour	15(12.0%)	22(17.6%)	.285
Distress of baby*	2(1.6%)	5(3.2%)	.443
Breech delivery*	2(1.6%)	4(3.2%)	.679
Previous scars*	1(0.8%)	2(1.6%)	1.00
Bleeding*	4(3.2%)	1(0.8%)	.366
Abnormal position	23(18.4%)	9(7.2%)	.014
Cord prolapse*	2(1.6%)	1(0.8%)	1.00
Some diseases like heart disease*	0(.0%)	3(2.4%)	.245
Blood pressure	78(62.4%)	78(62.4%)	1.00
Don't know	23(18.4%)	25(20.0%)	.872

\*Fisher's exact test used when expected count less than 5.

**Item 18 “What could ‘mwana mphepo’ do to a woman in labour?” – 5 possible responses.**

Finally, item 18 in this domain asked about side effects of a traditional drug called <sup>7</sup>“mwanamphepo” could do during labour. This traditional medicine is sometimes taken by women to start or accelerate labour. However, it can lead to precipitate labour, or even a ruptured uterus in severe cases. It may also affect the unborn baby. There was no significant difference between the groups for any of the responses. The probable reason why most women indicated “Don’t know” (n=90, 50%, control group, and n= 90, 50%, intervention group) is because hospital staff are very negative about this medicine, and why women are asked about use of the drug. They often say they do not know it. If they do, they did not take it. Details are presented in Table 7.20.

**Table 7-20**

**Baseline Comparison for Item 18 “What could ‘mwana mphepo’ do to a woman in labour?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Accelerate labour	10(8.0)	4(3.2)	0.169
Precipitate labour*	1(0.8)	5(4.0)	0.215
Ruptured uterus*	3(2.4)	1(0.8)	0.614
Baby distress	19(15.2)	26(20.8)	0.323
Don’t know	90(50)	90(50)	1.00

\*Fisher’s exact test used when expected count less than 5.

<sup>7</sup> Mwanamphepo is a traditional mixture that women may take to accelerate labour.

### Postnatal domain baseline data

#### Item 19 “What measures should a woman take to prevent infection in herself during the postpartum period?” – 10 possible responses

There were no significant differences between the groups for nine responses but there was a significant difference for the response, “Don’t know” ( $p=0.003$ ). It is also important to note that very few women in both groups knew about measures such as changing pads frequently, perineal care, exercise, nutrition, episiotomy care and talking about worries. No women in either group identified rest and sleep. Details are presented in Table 7.21.

**Table 7-21**

**Baseline Comparison for Item 19 “What measures should a woman take to prevent infection in herself during the postpartum period?” (n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Bathing	37(29.6)	30(24.0)	0.392
Change pads	6(4.8)	10(8.0)	0.438
Perineal care*	5(4.0)	1(0.8)	0.215
Exercise*	3(2.4)	1(0.8)	0.614
Fluid intake	20(16.0)	16(12.8)	0.589
Balanced diet	7(5.6)	2(1.6)	0.178
Episiotomy care*	1(0.8)	1(0.8)	1.00
Rest and sleep*	0(0)	1(0.8)	1.00
Share worries	11(8.8)	4(3.2)	0.110
Don't know	57(45.6)	81(64.8)	0.003

\*Fisher’s exact test used when expected count less than 5.

**Item 20 “What are danger signs of the mother during puerperium?” - 10 possible responses.**

There were no significant differences between the groups for any of the responses. The only commonly identified item in both groups was bleeding (n=45, 36.0%, control group, and n=48, 38.4%, intervention group). Details are presented in Table 7.22.

**Table 7-22**

**Baseline Comparison for Item 20 “What are danger signs of the mother during puerperium?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Fever	8(6.4)	8(6.4)	1.00
Foul discharge*	1(0.8)	1(0.8)	1.00
Bleeding	45(36.0)	48(38.4)	0.794
Womb size*	4(3.2)	0(.0)	0.130
Abdominal pains	11(8.8)	17(13.6)	0.316
Episiotomy-sore*	3(2.4)	3(2.4)	1.00
Urination-painful	7(5.6)	5(4.0)	0.767
Depression*	1(0.8)	2(1.6)	0.561
Weakness	22(17.6)	25(20.0)	0.746
Don't know	46(36.8)	46(36.8)	1.00

\*Fisher's exact test used when expected count less than 5.

**Item 21“What action should a woman take if she experiences any of the danger signs?” - 3 possible responses.**

There were no significant differences between the groups for any of the responses. Details are presented in Table 7.23.

**Table 7-23**

**Baseline Comparison for Item 21“What action should a woman take if she experiences any of the danger signs?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Report to hospital	103(82.4)	101(80.8)	0.870
Take medicine*	4(3.2)	8(6.4)	0.375
Don't know	12(9.6)	17(13.6)	0.430

\*Fisher's exact test used when expected count less than 5.

**Item 22 “What are the advantages of exclusive breast-feeding?” – 11 possible responses**

There was a significant difference for the response item, “Don’t know” ( $p < 0.001$ ) with more women ( $n=28, 22.4\%$ ) in the intervention group and fewer women ( $n=6, 4.8\%$ ), in the control group choosing this response. However, there was a trend toward a difference for the response “Right temperature” ( $p=0.071$ ). Details are presented in Table 7.24.

**Table 7-24**

**Baseline Comparison for Item 22 “What are the advantages of exclusive breast-feeding?” ( $n=125$  control group and  $125$  intervention group)**

Item response	Control <u>n(%)</u>	Intervention <u>n(%)</u>	<u>p</u>
Antibodies	49(39.2)	41(32.8)	0.356
Cheap*	3(2.4)	2(1.6)	1.00
Bonding*	1(0.8)	0(.0)	1.00
Nutritious	17(13.6)	17(13.6)	1.00
Right temperature*	0(.0)	5(4.0)	0.071
Easily digested*	4(3.2)	0(.0)	0.130
Gastroenteritis*	4(3.2)	1(0.8)	0.366
Contraception*	2(1.6)	0(.0)	0.478
Hygienic*	11(8.8)	4(3.2)	0.110
Rapid growth	70(56.0)	57(45.6)	0.129
Don’t know	6(4.8)	28(22.4)	0.000

\*Fisher’s exact test used when expected count less than 5.

**Item 23 “What measures should a mother take to promote successful breast-feeding?” - 7 possible responses**

There was no significant difference between the groups for any of the responses. However, there was a trend toward a difference for the response “Breast feed as soon as possible” ( $p=0.064$ ). However, few women identified measures such as feeding baby on demand, or proper placement of baby on the breast. Details are presented in Table 7.25.

**Table 7-25**

**Baseline Comparison for Item 23 “What measures should a mother take to promote successful breast-feeding?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Breast feed as soon as possible	9(7.2)	2(1.6)	0.064
Eat balanced diet	49(39.2)	63(50.4)	0.098
Feed baby on demand	10(8.0)	4(4.0)	0.169
Proper placement on breast*	4(3.2)	5(4.0)	1.00
Comfortable position*	4(4.0)	7(5.6)	0.537
Increased fluid intake	22(17.6)	24(19.2)	0.870
Don't know	37(29.6)	37(29.6)	1.00

\*Fisher's exact test used when expected count less than 5.

**Item 24 “What measures should be taken to promote healing of the cord stump?” - 5 possible responses**

There was no significant difference between the groups for any of the responses. Of note a significant number of women in each group said they did not know (n=53, 42.4% control group; n=59, 47.2% intervention group). Details are presented in Table 7.26.

**Table 7-26**

**Baseline Comparison for Item 24 “What measures should be taken to promote healing of the cord stump?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Keep stump clean and dry*	4(3.2)	1(0.8)	0.366
Clean with cotton wool/cloth	44(35.2)	33(26.4)	0.171
Not applying cow dung	7(5.6)	3(2.4)	0.333
Using spirit	26(20.8)	35(28.0)	0.239
Do not know	53(42.4)	59(47.2)	0.525

\*Fisher's exact test used when expected count less than 5.



**Item 25 “What are danger signs that there is a problem with the new born?” -  
11 possible responses**

There were no significant differences between the groups for any of the responses. No women in either group identified “Bloody stools” as a danger sign. Few women in both groups identified “Yellow skin colouration”, “Foul odour from the stump”, “Vomiting”, or “Bleeding from the cord stump” as danger signs in the newborn. Details are presented in Table 7.27.

**Table 7-27**

**Baseline Comparison for Item 25 “What are danger signs that there is a problem with the new born?”(n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
Crying excessively	59(47.2)	62(49.6)	0.800
Refusing to feed	16(12.8)	23(18.4)	0.296
Fever	82(65.6)	78(62.4)	0.693
Yellow skin colouration*	2(1.6)	5(4.0)	0.443
Foul odour from stump*	4(3.2)	4(3.2)	1.00
Vomiting	9(7.2)	9(7.2)	1.00
Diarrhoea	11(8.8)	8(6.4)	0.474
Bloody stools*	0(0)	0(0)	1.00
Cord stump bleeding	1(0.8)	2(1.6)	1.00
Weakness	31(24.8)	31(24.8)	1.00
Don't know	12(9.6)	20(16.0)	0.185

\*Fisher's exact test used when expected count less than 5.

**Item 26 “What should a mother do if the baby has any of the danger signs?” 3 possible responses**

There were no significant differences between the groups for any of the responses. The majority of the women in the control group (n=121, 96.8%) and intervention group (n=119, 95.2%) said they would take the baby to the hospital if the baby presented with any danger signs. Details are presented in Table 7.28.

**Table 7-28**

**Baseline Comparison for Item 26 “What should a mother do if the baby has any of the danger signs?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Go to hospital	121(96.8)	119(95.2)	0.747
Give medication*	1(0.8)	1(0.8)	1.00
Don't know*	1(0.8)	6(4.8)	0.125

\*Fisher's exact test used when expected count less than 5.

**Item 27 “What immunisations is the baby supposed to receive in the first year of life?” - 6 possible responses**

There was a significant difference between the groups for the response item “New booster vaccine” ( $p < 0.001$ ). This was a booster vaccine which had just been introduced and that is why there could have been a discrepancy as the Ministry of Health in Malawi was still educating women about it. There was a trend toward a difference for the responses “Polio” ( $p = 0.076$ ), and Measles ( $p = 0.076$ ). Details are presented in Table 7.29.

**Table 7-29**

**Baseline Comparison for Item 27 “What immunisations is the baby supposed to receive in the first year of life?” (n=125 control group and 125 intervention group)**

Item response	Control n(%)	Intervention n(%)	p
BCG	20(16.0)	19(15.2)	1.00
Polio	53(42.4)	68(54.4)	0.076
DPT	28(22.4)	40(32.0)	0.118
Measles	66(52.8)	51(40.8)	0.076
New booster vaccine	20(16.0)	5(4.0)	0.003
Don't know	34(27.2)	42(33.6)	0.336

### Item 28 “What are the advantages of family planning?” – 8 possible responses

There was significant difference for the response “Prevents male promiscuity” ( $p < 0.01$ ). There were also significant differences for responses “Keeps family healthy” ( $p = 0.023$ ), and “Couples can afford to provide for their children” ( $p = 0.027$ ). Details are presented in Table 7.30.

**Table 7-30**

#### Baseline Comparison for Item 28 “What are the advantages of family planning?” (n=125 control group and 125 intervention group)

Item response	Control	Intervention	p
	n(%)	n(%)	
Protects from pregnancy*	3(2.4)	3(2.4)	1.00
Condoms protect from STI's*	2(1.6)	2(1.6)	1.00
Births are spaced	34(27.2)	41(32.8)	0.408
Keeps family healthy	75(60.0)	56(44.8)	0.023
Couples afford to provide for children	20(16.0)	8(6.4)	0.027
Couples participate in community	22(17.6)	13(10.4)	0.145
Prevents male promiscuity	17(13.6)	35(28.0)	0.008
Don't know	11(8.8)	13(10.4)	0.830

\*Fisher's exact test used when expected count less than 5.

**Item 29 “Mention modern family planning methods that you know?” -11 possible responses**

There were no significant differences between the groups for ten of the eleven responses, except for “Permanent male sterilisation” ( $p=0.029$ ). There was a trend toward a difference for the response “Spermicides” ( $p=0.054$ ). Details are presented in Table 7.31.

**Table 7-31**

**Baseline Comparison for Item 29 “Mention modern family planning methods that you know?”(n=125 control group and 125 intervention group)**

Item response	Control	Intervention	p
	n(%)	n(%)	
Lactational amenorrhoea*	2(1.6)	2(1.6)	1.00
Pill	95(76.0)	90(72.0)	0.564
Depo-provera	104(83.2)	106(84.8)	0.863
Natural*	4(3.2)	1(0.8)	0.366
Permanent- men	17(13.6)	6(4.8)	0.029
Permanent- female	14(11.2)	13(10.4)	1.00
Barrier	36(28.8)	49(39.2)	0.109
Spermicides*	11(8.8)	3(2.4)	0.054
Loop	49(39.2)	51(40.8)	0.897
Norplant	25(20.0)	19(15.2)	0.406
Don't know	13(10.4)	12(9.6)	1.00

\*Fisher's exact test used when expected count less than 5.

**Item 30 “When can a woman resume sexual intercourse post giving birth?” 3 possible responses**

There were no significant differences between the groups for two of the responses but there was a significant difference for the response “After 6 weeks” ( $p < 0.001$ ). No woman in the control group mentioned this response item ( $n=0$ , 0%) while seven women ( $n=7$ , 5.6%) in the intervention group mentioned the response item. Some women stated that they did not know ( $n=24$ , 19.2%, control group and  $n=22$ , 17.6%, intervention group). Details are presented in Table 7.32.

**Table 7-32**

**Baseline Comparison for Item 30 “When can a woman resume sexual intercourse post giving birth?” ( $n=125$  control group and 125 intervention group)**

Item response	Control <i>n</i> (%)	Intervention <i>n</i> (%)	<i>p</i>
After 6 weeks*	0(.0)	7(5.6)	0.02 1
After 3-6 months	84(67.2)	96(76.8)	0.12 1
Don't know	24(19.2)	22(17.6)	0.87 0

\*Fisher's exact test used when expected count less than 5.

**Summary on baseline data for control and intervention groups**

At baseline, the analyses showed no significant differences between the control and intervention groups for demographic variables of age group, gravidity, marital status, religion, education, and occupation. There were, however, significant differences for the demographic variable of gestation. For the majority of the 30 items in the antenatal, labour and postnatal domains, in the pretest at baseline, there were no differences between the groups. The few differences that did occur need to be viewed cautiously because of the multiple possible responses for some items as well as the small numbers for some responses.

In conclusion, it is noted that both groups' baseline knowledge level was similar. Both groups lacked knowledge in critical areas such as risk factors and possible complications during pregnancy, danger signs of pregnancy, labour, and puerperium.

### **Univariate Comparison of Changes Between and Within the Groups**

This section presents univariate comparisons of differences in mean scores between, and within the control and intervention groups. The comparison of descriptives such as mean, median and standard deviations between the groups are presented, including the difference within and between the groups in the pretest and post-test for the control and intervention groups.

The difference within groups was tested using the Wilcoxon Signed Ranks test. The difference between the groups was tested using Mann-Whitney U test (Mann & Whitney, 1947; Wilcoxon, 1945). Individual items in each domain are presented first, followed by total antenatal, labour and postnatal domain scores.

## Antenatal domain

### Item 1 “How does one know that she is pregnant?”

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p < 0.01$ ,  $p < 0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.54, posttest=1.83) was much smaller than for the intervention group (pretest=1.76, posttest=3.47).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p = < 0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.29, compared with 1.70 for the intervention group. The results are presented in Table 7.33.

**Table 7-33**

**Differences within and between the groups for Item 1 “How does one know that she is pregnant?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
	Pretest	Post-test	Pretest	Posttest
within groups				
Mean	1.54	1.83	1.76	3.47
SD	0.76	0.86	1.04	1.14
Median	1.00	2.00	1.00	3.00
p-value	<0.01		<0.01	
between groups				
	Pre - Post		Pre - Post	
Mean	0.29		1.70	
SD	1.00		1.38	
Median	0		2	
p-value	<0.01			



### Item 2 “When should a pregnant woman start attending antenatal clinic?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.41$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). The difference in the mean scores for the control group was 0.39 for the pretest and 0.35 for posttest, while the difference in mean scores for the intervention group was 0.63 for the pretest, and 1.14 for the posttest.

There was a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The mean difference in the pretest and posttest scores for the control group was -0.05, compared with 0.51 for the intervention group.

**Table 7-34**

**Differences within and between the groups for Item 2 “When should a pregnant woman start attending antenatal clinic?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	0.39	0.35	0.63	1.14
SD	0.49	0.48	0.51	0.51
Median	0	0	1.00	1.00
p-value	0.41		<0.01	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	-0.05		0.51	
SD	0.60		0.71	
Median	0		0	
p-value			<0.01	

### Item 3 “Why should a pregnant woman attend antenatal care?”

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p < 0.01$ ,  $p < 0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.54, posttest=1.83) was much smaller than for the intervention group (pretest=1.76, posttest=3.47).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p < 0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.05$ , compared with  $0.27$  for the intervention group. Results are presented in Table 7.35.

**Table 7-35**

**Differences within and between the groups for Item 3 “Why should a pregnant woman attend antenatal care?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	1.54	1.83	1.76	3.47
SD	0.76	0.75	1.09	1.29
Median	1.00	2.00	1.00	3.00
p-value	<0.001		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	-0.05		0.27	
SD	0.63		0.65	
Median	0		0	
p-value			<0.001	

#### Item 4 “Mention the three food groups that a pregnant woman should eat?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.43$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). The difference in mean scores for the control group was 0.91 for the pretest, and 1.00 for the posttest while the difference in mean scores for the intervention group was 1.35 for the pretest, and 1.98 for the posttest.

There was a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The mean difference in the pretest and posttest scores for the control group was 0.09, compared with 0.63 for the intervention group. Results are presented in Table 7.36.

**Table 7-36**

**Differences within and between the groups for Item 4 “Mention the three food groups that a pregnant woman should eat?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
	Pretest	Post-test	Pretest	Posttest
<b>within groups</b>				
Mean	0.91	1.00	1.35	1.98
SD	1.03	1.24	1.08	1.13
Median	1.00	0	1.00	2.00
p-value	0.43		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.09		0.63	
SD	1.31		1.33	
Median	0		1.00	
p-value			<0.001	

**Item 5 “What should a pregnant woman do to promote a healthy pregnancy and positive outcome?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.12$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). The difference in mean scores for the control group was 1.10 for the pretest, and 1.11 for the posttest while in the intervention group, it was 1.24 for the pretest, and 2.36 for the posttest.

There was a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The mean difference in the pretest and posttest scores for the control group was 0.14, compared with 1.24 for the intervention group. Details for Item five are presented in Table 7.37.

**Table 7-37**

**Differences within and between the groups for Item 5 “What should a pregnant woman do to promote a healthy pregnancy and positive outcome?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	1.10	1.11	1.24	2.36
SD	0.78	0.73	0.79	1.10
Median	1.00	1.00	1.00	2.00
p-value	0.12		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.14		1.24	
SD	0.87		1.21	
Median	0		1.00	
p-value			<0.001	

**Item 6 “What are some of the problems that could cause complications during pregnancy and birth?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.18$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). The difference in mean scores for the control group was 0.48 for the pretest, and 0.68 for the posttest, while the difference in mean scores for the intervention group was 0.68 for the pretest and 2.52 for the posttest.

There was a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The mean difference in the pretest and posttest scores for the control group was 0.20, compared with 0.1.98 for the intervention group. Details for Item 6 are presented in Table 7.38.

**Table 7-38**

**Differences within and between the groups for Item 6 “What are some of the problems that could cause complications during pregnancy and birth?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.48	0.68	0.68	2.52
SD	0.61	0.79	1.31	2.03
Median	0	0	0	2.00
p-value	0.18		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.20		1.98	
SD	1.32		2.04	
Median	0		1.00	
p-value			<0.001	

### Item 7 “What are some of the common discomforts of pregnancy?”

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p < 0.01$ ,  $p < 0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.67, posttest=0.16) was much smaller than for the intervention group (pretest=0.23, posttest=1.58).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p = < 0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.51$ , compared with  $1.34$  for the intervention group. Results are presented in Table 7.39.

**Table 7-39**

**Differences within and between the groups for Item 7 “What are some of the common discomforts of pregnancy?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	0.67	0.16	0.23	1.58
SD	0.77	0.36	0.53	1.71
Median	1.00	0	0	1.00
p-value	<0.001		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	-0.51		1.34	
SD	0.83		1.66	
Median	0		1.00	
p-value	<0.001			

### Item 8 “What danger signs should immediately bring a pregnant woman to the hospital?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.92$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.03, posttest=1.02) was much smaller than for the intervention group (pretest=1.34, posttest=2.78).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.01$ , compared with 1.44 for the intervention group. Results are presented in Table 7.40.

**Table 7-40**

**Differences within and between the groups for Item 8 “What danger signs should immediately bring a pregnant woman to the hospital?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	1.03	1.02	1.34	2.78
SD	0.72	0.87	1.12	1.49
Median	1.00	1.00	1.00	2.50
p-value	0.92		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	-0.01		1.44	
SD	0.96		1.72	
Median	0		1.00	
p-value			<0.001	

### Item 9 “How can one acquire HIV/AIDS?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.14$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.74, posttest=1.84) was much smaller than for the intervention group (pretest=1.63, posttest=2.26).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.10, compared with 0.63 for the intervention group. Results are presented in Table 7.41.

**Table 7-41**

**Differences within and between the groups for Item 9 “How can one acquire HIV/AIDS?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	1.74	1.84	1.63	2.26
SD	0.57	0.46	0.65	0.69
Median	2.00	2.00	2.00	2.00
p-value	0.14		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.10		0.63	
SD	0.65		0.81	
Median	0		1.00	
p-value			<0.001	



### Item 10 “What should people do to avoid getting HIV/AIDS?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.05$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.53, posttest=1.71) was much smaller than for the intervention group (pretest=1.64, posttest=2.57).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.18, compared with 0.93 for the intervention group. Results are presented in Table 7.42.

**Table 7-42**

**Differences within and between the groups for Item 10 “What should people do to avoid getting HIV/AIDS?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	1.53	1.71	1.64	2.57
SD	0.80	0.65	0.71	1.25
Median	1.00	2.00	2.00	2.00
p-value	0.05		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.18		0.93	
SD	0.91		1.37	
Median	0		1.00	
p-value			<0.001	

## Labour and birth domain

### Item 11 “What should a pregnant woman prepare for birth?”

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p < 0.01$ ,  $p < 0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=2.22, posttest=2.69) was much smaller than for the intervention group (pretest=2.34, posttest=3.33).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p = < 0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.47, compared with 0.99 for the intervention group. The results are shown in Table 7.43.

**Table 7-43**

**Differences within and between the groups for Item 11 “What should a pregnant woman prepare for birth?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	2.22	2.69	2.34	3.33
SD	2.21	2.39	1.28	0.77
Median	2.00	3.00	2.00	3.00
p-value	0.01		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.47		0.99	
SD	3.19		1.44	
Median	0		1.00	
p-value	0.04			

### Item 12 “How would a pregnant woman know that labour has started?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.76$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.22, posttest=1.25) was much smaller than for the intervention group (pretest=1.20, posttest=1.76).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.03, compared with 0.56 for the intervention group. Results are presented in Table 7.44.

**Table 7-44**

**Differences within and between the groups for Item 12 “How would a pregnant woman know that labour has started?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	1.22	1.25	1.20	1.76
SD	0.95	0.90	0.96	0.92
Median	1.00	1.00	1.00	2.00
p-value	0.76		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.03		0.56	
SD	1.03		1.23	
Median	0		1.00	
p-value			<0.001	

### Item 13 “What should a woman do when labour starts?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.29$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.11, posttest=1.19) was much smaller than for the intervention group (pretest=1.16, posttest=2.65).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.09, compared with 1.49 for the intervention group. Results are presented in Table 7.45.

**Table 7-45**

**Differences within and between the groups for Item 13 “What should a woman do when labour starts?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	1.11	1.19	1.16	2.65
SD	0.44	0.61	0.62	0.76
Median	1.00	1.00	1.00	3.00
p-value	0.29		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.09		1.49	
SD	0.79		0.95	
Median	0		2.00	
p-value			<0.001	

#### Item 14 “How can a woman cope with pain in labour?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.74$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.04, posttest=0.05) was much smaller than for the intervention group (pretest=0.08, posttest=1.31).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.01, compared with 1.24 for the intervention group. Results are presented in Table 7.46.

**Table 7-46**

**Differences within and between the groups for Item 14 “How can a woman cope with pain in labour?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	0.04	0.05	0.08	1.31
SD	0.19	0.22	0.30	0.86
Median	0	0	0	1.00
p-value	0.74		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.01		1.24	
SD	0.30		0.91	
Median	0		1.00	
p-value			<0.001	

**Item 15 “What could go wrong with the mother during labour?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.46$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.44, posttest=0.50) was much smaller than for the intervention group (pretest=0.33, posttest=1.42).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.06, compared with 1.09 for the intervention group. Results are presented in Table 7.47.

**Table 7-47**

**Differences within and between the groups for Item 15 “What could go wrong with the mother during labour?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.44	0.50	0.33	1.42
SD	0.68	0.64	0.60	1.23
Median	0	0	0	1.00
p-value	0.46		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.06		1.09	
SD	0.80		1.26	
Median	0		1.00	
p-value			<0.001	

### Item 16 “What could go wrong with the baby during labour?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.94$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.46, posttest=0.47) was much smaller than for the intervention group (pretest=0.36, posttest=1.21).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.01, compared with 0.85 for the intervention group. Results are presented in Table 7.48.

**Table 7-48**

**Differences within and between the groups for Item 16 “What could go wrong with the baby during labour?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.46	0.47	0.36	1.21
SD	0.67	0.62	0.50	0.84
Median	0	0	0	1.00
p-value	0.94		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.01		0.85	
SD	0.81		0.95	
Median	0		1.00	
p-value	<0.001			

**Item 17 “Why would a caesarean section be done?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.38$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.39, posttest=0.34) was much smaller than for the intervention group (pretest=0.34, posttest=2.04).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.06$ , compared with  $1.70$  for the intervention group. Results are presented in Table 7.49.

**Table 7-49**

**Differences within and between the groups for Item 17 “Why would a caesarean section be done?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.39	0.34	0.34	2.04
SD	0.55	0.51	0.66	1.29
Median	0	0	0	2.00
p-value	0.38		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	-0.06		1.70	
SD	0.67		1.41	
Median	0		2.00	
p-value			<0.001	



### Item 18 “What could ‘mwana-mphepo’ do to a woman in labour?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.71$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.29, posttest=0.27) was much smaller than for the intervention group (pretest=0.28, posttest=1.49).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.02$ , compared with  $1.21$  for the intervention group. Results are presented in Table 7.50.

**Table 7-50**

**Differences within and between the groups for Item 18 “What could ‘mwana-mphepo’ do to a woman in labour?”(n=104 control group and 105 intervention group)**

	Control Group		Intervention Group	
	Pretest	Post-test	Pretest	Posttest
within groups				
Mean	0.29	0.27	0.28	1.49
SD	0.47	0.47	0.79	0.91
Median	0	0	0	2.00
p-value	0.71		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	-0.02		1.21	
SD	0.52		0.94	
Median	0		1.00	
p-value			<0.001	

## Postnatal domain

### Item 19 “What measures should a woman take to prevent infection in herself during postpartum period?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.41$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.61, posttest=0.67) was much smaller than for the intervention group (pretest=0.46, posttest=2.57).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.07, compared with 2.07 for the intervention group. Results are presented in Table 7.51.

**Table 7-51**

**Differences within and between the groups for Item 19 “What measures should a woman take to prevent infection in herself during postpartum period?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.61	0.67	0.46	2.57
SD	0.79	0.82	0.75	1.25
Median	0	0	0	2.00
p-value	0.41		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.07		2.07	
SD	0.94		1.35	
Median	0		2.00	
p-value			<0.001	

### Item 20 “What are danger signs in the mother during puerperium?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.35$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.63, posttest=0.70) was much smaller than for the intervention group (pretest=0.66, posttest=2.16).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.08, compared with 1.50 for the intervention group. Results are presented in Table 7.52.

**Table 7-52**

**Differences within and between the groups for Item 20 “What are danger signs in the mother during puerperium?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
	Pretest	Post-test	Pretest	Posttest
within groups				
Mean	0.63	0.70	0.66	2.16
SD	0.66	0.67	0.65	1.17
Median	1.00	1.00	1.00	2.00
p-value	0.35		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.08		1.50	
SD	0.77		1.25	
Median	0		1.00	
p-value			<0.001	

**Item 21 “What should a woman do if she experiences any of the danger signs?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.48$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.82, posttest=0.78) was much smaller than for the intervention group (pretest=0.81, posttest=2.13).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.04$ , compared with  $1.32$  for the intervention group. Results are presented in Table 7.53.

**Table 7-53**

**Differences within and between the groups for Item 21 “What should a woman do if she experiences any of the danger signs?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.82	0.78	0.81	2.13
SD	0.38	0.42	0.40	11.8
Median	1.00	1.00	1.00	1.00
p-value	0.48		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	-0.04		1.32	
SD	0.56		11.7	
Median	0		0	
p-value			<0.001	

**Item 22 “What are advantages of exclusive breast-feeding?”**

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p=0.04$ ,  $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.96, posttest=0.60) was much smaller than for the intervention group (pretest=0.53, posttest=2.28).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.37$ , compared with  $1.74$  for the intervention group. Results are presented in Table 7.54.

**Table 7-54**

**Differences within and between the groups for Item 22 “What are the advantages of exclusive breast-feeding?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.96	0.60	0.53	2.28
SD	2.22	0.62	0.59	1.52
Median	1.00	1.00	0	2.00
p-value	0.04		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	-0.37		1.74	
SD	2.30		1.57	
Median	0		1.00	
p-value			<0.001	

**Item 23 “What measures should a mother take to promote successful breast-feeding?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.77$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.62, posttest=0.76) was much smaller than for the intervention group (pretest=0.63, posttest=1.76).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.02, compared with 1.10 for the intervention group. Results are presented in Table 7.55.

**Table 7-55**

**Differences within and between the groups for Item 23 “What measures should a mother take to promote successful breast-feeding?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	0.62	0.76	0.63	1.76
SD	0.60	0.60	0.54	1.26
Median	1.00	1.00	1.00	1.00
p-value	0.77		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.02		1.10	
SD	0.71		1.33	
Median	0		1.00	
p-value			<0.001	

### Item 24 “What measures should be taken to promote healing of the cord stump?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.19$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.44, posttest=0.51) was much smaller than for the intervention group (pretest=0.29, posttest=1.37).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.07, compared with 1.09 for the intervention group. Results are presented in Table 7.56.

**Table 7-56**

**Differences within and between the groups for Item 24 “What measures should be taken to promote healing of the cord stump?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	0.44	0.51	0.29	1.37
SD	0.55	0.50	0.45	0.67
Median	0	1.00	0	1.00
p-value	0.19		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.07		1.09	
SD	0.53		0.69	
Median	0		1.00	
p-value			<0.001	

**Item 25 “What are the danger signs that there is a problem with the newborn?”**

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p < 0.01$ ,  $p < 0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.45, posttest=1.71) was much smaller than for the intervention group (pretest=1.74, posttest=3.15).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p = < 0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.26, compared with 1.40 for the intervention group. The results are presented in Table 7.57.

**Table 7-57**

**Differences within and between the groups for Item 25 “What are the danger signs that there is a problem with the newborn?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups	Pretest	Post-test	Pretest	Posttest
Mean	1.45	1.71	1.74	3.15
SD	0.88	0.77	2.32	1.54
Median	1.50	2.00	2.00	3.00
p-value	<0.01		<0.01	
between groups	Pre - Post		Pre - Post	
Mean	0.26		1.40	
SD	1.00		2.62	
Median	0		2.00	
p-value	<0.001			



**Item 26 “What should a mother do if the baby has any of the danger signs?”**

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.71$ ), however, there was a significant difference within the intervention group ( $p=0.04$ ). Of note, the extent of the difference between mean scores for the control group (pretest=0.96, posttest=0.97) was much smaller than for the intervention group (pretest=0.94, posttest= 1.18).

There was however, no significant difference between the control and intervention groups for mean pretest and posttest scores ( $p=0.20$ ). The difference in mean pretest and posttest scores for the control group was 0.01, and 0.24 for the intervention group. The results are presented in Table 7.58.

**Table 7-58**

**Differences within and between the groups for Item 26 “What should a mother do if the baby has any of the danger signs?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	0.96	0.97	0.94	1.18
SD	0.19	0.17	0.23	1.96
Median	1.00	1.00	1.00	1.00
p-value	0.71		0.04	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.01		0.24	
SD	0.26		1.96	
Median	0		0	
p-value	0.20			

**Item 27 “What immunisations is the baby supposed to receive in the first year of life?”**

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p < 0.01$ ,  $p < 0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.32, posttest=1.61) was much smaller than for the intervention group (pretest=1.40, posttest=2.65).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p = < 0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.29, compared with 1.25 for the intervention group. The results are presented in Table 7.59.

**Table 7-59**

**Differences within and between the groups for Item 27 “What immunisations is the baby supposed to receive in the first year of life?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	1.32	1.61	1.40	2.65
SD	1.05	1.11	1.30	1.12
Median	1.00	2.00	1.00	3.00
p-value	<0.01		<0.01	
between groups				
	Pre - Post		Pre - Post	
Mean	0.29		1.25	
SD	1.12		1.41	
Median	0		1.00	
p-value	<0.001			

### Item 28 “What are advantages of family planning?”

There were significant differences between pretest and posttest mean scores within both the control and intervention groups ( $p=0.05$ ,  $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=1.24, posttest=1.07) was much smaller than for the intervention group (pretest=0.99, posttest=2.08).

There was also a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was  $-0.17$ , compared with  $1.09$  for the intervention group. The results are presented in Table 7.60.

**Table 7-60**

**Differences within and between the groups for Item 28 “What are advantages of family planning?” (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	1.24	1.07	0.99	2.08
SD	0.76	0.71	0.69	1.18
Median	1.00	1.00	1.00	2.00
p-value	0.05		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	-0.17		1.09	
SD	0.93		1.38	
Median	0		1.00	
p-value			<0.001	

### Item 29 "Mention modern family planning methods that you know?"

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.28$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the extent of the difference between mean scores for the control group (pretest=2.72, posttest=2.85) was much smaller than for the intervention group (pretest=2.58, posttest=4.32).

There was however, there was a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.13, and 1.74 for the intervention group. The results are presented in Table 7.61.

**Table 7-61**

**Differences within and between the groups for Item 29 "Mention modern family planning methods that you know?" (n=104 control group and 105 intervention group)**

	Control group		Intervention group	
within groups				
	Pretest	Post-test	Pretest	Posttest
Mean	2.72	2.85	2.58	4.32
SD	1.29	1.26	0.79	4.00
Median	3.00	3.00	1.00	1.70
p-value	0.28		<0.001	
between groups				
	Pre - Post		Pre - Post	
Mean	0.13		1.74	
SD	1.23		1.89	
Median	0		2.00	
p-value			<0.001	

### Item 30 “When should a woman resume sexual activity after giving birth?”

There was no significant difference in pretest and posttest mean scores within the control group ( $p=0.08$ ), however, there was a significant difference within the intervention group ( $p<0.01$ ). Of note, the mean for pretest for control and intervention groups was the same ( $p=0.03$ ,  $p=0.03$ ) however, posttest means for the control and intervention groups were very different ( $p=0.06$ ,  $p=0.51$ ).

There was, there was a significant difference between the control and intervention groups for mean pretest and posttest scores ( $p<0.01$ ). The difference in mean pretest and posttest scores for the control group was 0.03, and 0.46 for the intervention group. The results are presented in Table 7.62.

**Table 7-62**

**Differences within and between the groups for Item 30 “When should a woman resume sexual activity after giving birth?”(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	0.03	0.06	0.03	0.51
SD	0.17	0.23	0.17	0.50
Median	0	0	0	1.00
p-value	0.08		<0.001	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.03		0.46	
SD	0.17		0.54	
Median	0		0	
p-value			<0.001	

### **Differences between and within the groups for total scores in each domain (antenatal, labour and postnatal)**

This section presents the total mean scores for each domain (i.e total score for all items in each domain). Differences within groups for total mean scores were analysed using the Wilcoxon Signed Ranks test (Wilcoxon, 1945). Differences between groups for total mean scores were analysed using Mann-Whitney U test (Mann & Whitney, 1947). Results for each domain will now be described.

### Total Antenatal Domain

There was no significance difference between within the control group ( $p=0.406$ ) for total mean pretest and posttest scores. This indicated there no significant increase in antenatal knowledge in the control group. In contrast, there was a significant difference within the intervention group ( $p<0.01$ ). This was further demonstrated by a significant difference between the groups for total mean pretest and posttest score ( $p<0.01$ ). These findings indicated that use of the CEP led to significant increase in women's antenatal knowledge. The results are shown in Table 7.63. Figure 7.1 shows the distribution of total mean scores for the antenatal domain for each item (Control group). Figure 7.2 shows the distribution of total mean scores for the antenatal domain for each item (Intervention group).

**Table 7-63**

**Differences within and between the groups of Total Antenatal Scores?"(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	10.30	10.73	11.17	22.11
SD	3.27	3.47	3.97	8.07
Median	11.00	11.00	11.00	21.00
p-value	0.406		<0.01	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.424		10.94	
SD	3.93		7.70	
Median	0.00		9.00	
p-value			<0.01	

### Mean total pretest scores for Antenatal Domain

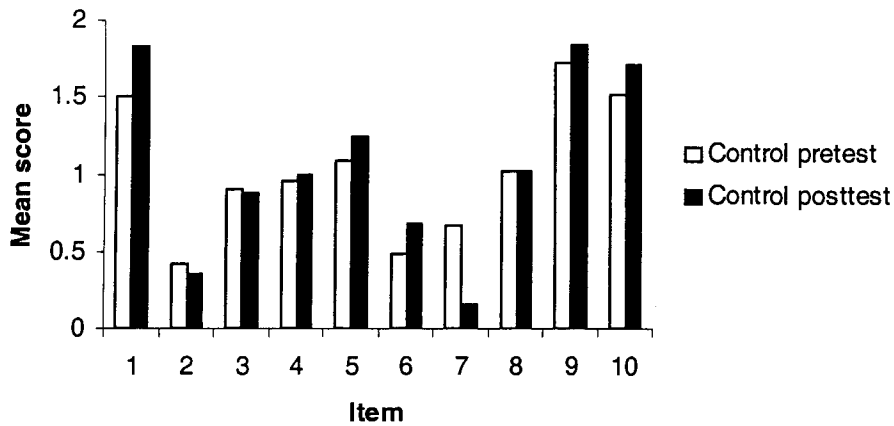


Figure 7.1. The distribution of mean scores in the control group

### Mean total pretest scores for Antenatal Domain

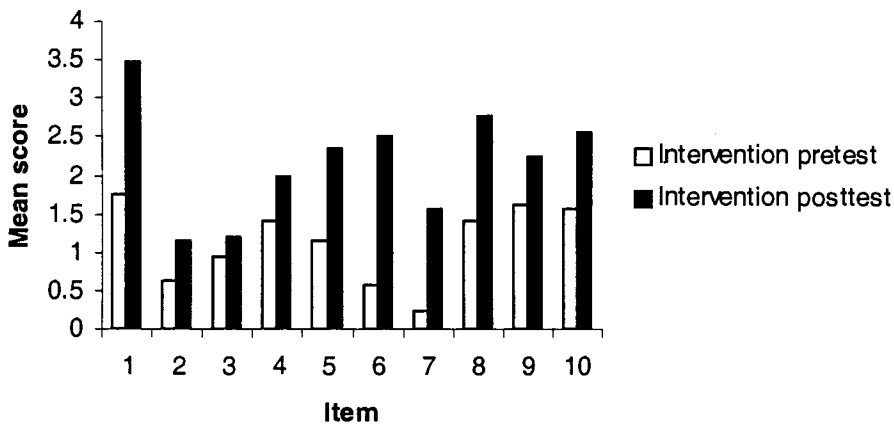


Figure 7.2. The distribution of mean scores in the intervention group

The distribution of antenatal domain posttest scores for the intervention group shows clear improvement compared to posttest scores in the control group.



### Total Labour Domain

There was no significance difference between within the control group ( $p=0.08$ ) for total mean pretest and posttest scores. This indicated there no significant increase in labour knowledge in the control group. In contrast, there was a significant difference within the intervention group ( $p<0.01$ ). This was further demonstrated by a significant difference between the groups for total mean pretest and posttest score ( $p<0.01$ ). These findings indicated that the use of the CEP led to significant increase in women's labour knowledge. The results are shown in Table 7.63. Figure 7.3 shows the distribution of total mean scores for the labour domain for each item (Control group). Figure 7.4 shows the distribution of total mean scores for the labour domain for each item (Intervention group).

**Table 7-64**

**Differences within and between the groups of Total Labour Scores?"(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<b>within groups</b>				
	Pretest	Post-test	Pretest	Posttest
Mean	6.17	6.76	6.10	15.21
SD	3.37	3.33	2.84	5.04
Median	6.00	6.00	6.00	15.00
p-value	0.08		<0.01	
<b>between groups</b>				
	Pre - Post		Pre - Post	
Mean	0.42		10.94	
SD	3.93		7.70	
Median	0.00		9.00	
p-value			<0.01	

### Mean total pretest scores for Labour Domain

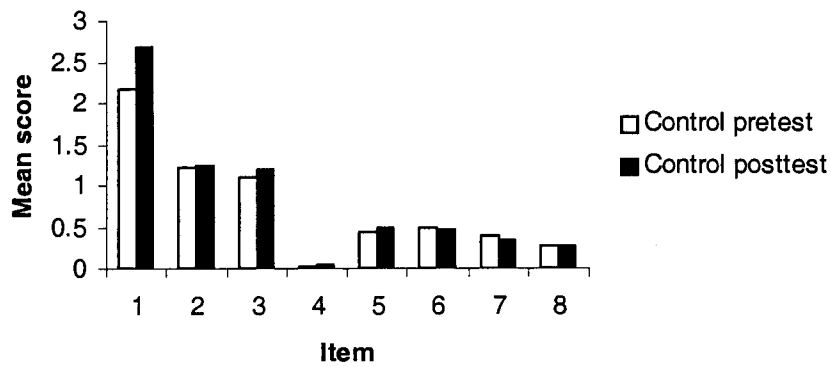


Figure 7.3. The distribution for the mean scores in the control group

### Mean total pretest scores for Labour Domain

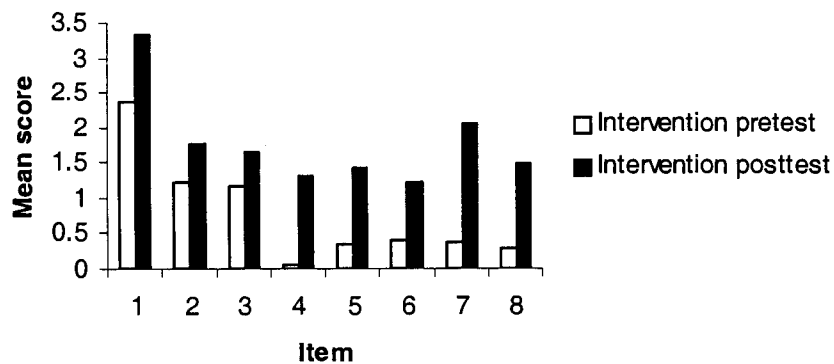


Figure 7.4. The distribution for mean scores in the intervention group

The distribution of labour domain posttest scores for the intervention group shows clear improvement compared to posttest scores in the control group.

### Total Postnatal Domain

There was no significance difference between within the control group ( $p=0.08$ ) for total mean pretest and posttest scores. This indicated there no significant increase in postnatal knowledge in the control group. In contrast, there was a significant difference within the intervention group ( $p<0.01$ ). This was further demonstrated by a significant difference between the groups for total mean pretest and posttest score ( $p<0.01$ ). These findings indicated that the use of the CEP led to significant increase in women's postnatal knowledge. The results are shown in Table 7.63. Figure 7.5 shows the distribution of total mean scores for the postnatal domain for each item (Control group). Figure 7.6 shows the distribution of total mean scores for the postnatal domain for each item (Intervention group).

**Table 7-65**

**Differences within and between the groups of Total Postnatal Scores?"(n=104 control group and 105 intervention group)**

	Control group		Intervention group	
<i>within groups</i>				
	Pretest	Post-test	Pretest	Posttest
Mean	11.76	12.13	11.07	26.18
SD	4.64	3.86	4.69	16.13
Median	11.00	12.00	11.00	24.00
p-value	0.08		<0.01	
<i>between groups</i>				
	Pre - Post		Pre - Post	
Mean	0.37		15.12	
SD	4.09		15.85	
Median	1.00		12.00	
p-value			<0.01	

### Mean total pretest scores for postnatal domain

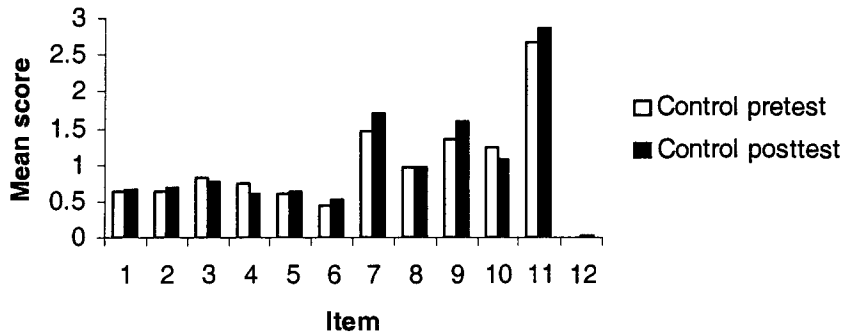


Figure 7.5. The distribution of mean scores in the control group

### Mean total pretest scores for postnatal domain

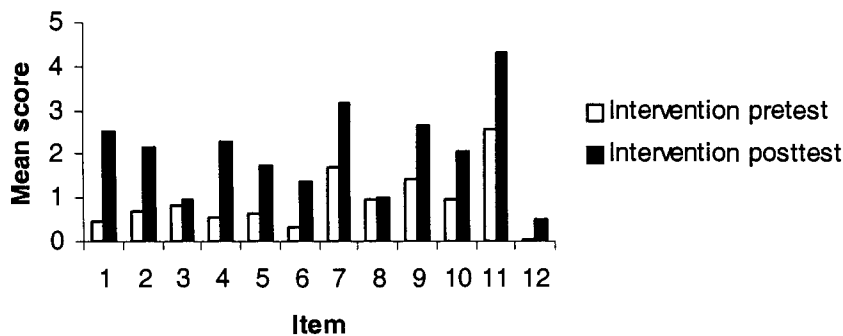


Figure 7.6. The distribution of mean scores in the intervention group

The distribution of postnatal domain posttest scores for the intervention group shows clear improvement compared to posttest scores in the control group.

## **Summary of differences between and within the groups**

In the control group, there generally no differences between pretest and posttest scores for most of the items. Overall there were no differences, for each of the three domains (antenatal, labour and postnatal). In the intervention group however, there were significant increases in knowledge for most items, as well as overall, for each domain.

## **Post-hoc Analysis**

### **Modelling effects of selected demographic variables on the outcomes**

This study used a quasi-experimental design, because it was not possible to perform a Randomised Controlled Trial. A sequential design was used, therefore randomisation was not undertaken and it was possible that confounding variables may have affected the outcomes of the study. Prior analyses have considered the effect of the CEP, without consideration of possible confounding effects of variables. The effect of the intervention on total antenatal, total labour and total postnatal scores could possibly have confounded in part by differences in maternal age, gestational age, gravidity and mothers' education.

To test for the possibility that confounding variables did affect the study's findings, a series of three regression analyses were conducted. Initially, a model was fitted using the effect of the CEP alone (Model 0). For each of the potential confounding factors, another model was fitted which contained an interaction between each factor and the intervention group (Model 1). This model tested whether the effect of the intervention was different for different levels of the potential confounding factor. If no evidence of interaction was shown, a second model (Model 2) was fitted which estimated the effect of the intervention after it was adjusted for the effect of the potential confounding factor. The results of these regression analyses for total scores in the Antenatal domain are shown in Table

7.66. Total scores in the Labour domain are shown in Table 7.67. Total scores in the Postnatal domain are shown in Table 7.68.

Using Model 2, no significant interaction effects for any of the potential confounding variables in any of the three domains was shown. This indicated that any differences in the effect of the intervention by the variables of maternal age, gestational age, gravidity, or mothers' education were no greater than one would have expected to occur by chance alone.

To assess the confounding effect of each of the potential confounding variables, the size of the effect of the intervention after adjustment (Model 2) was compared to size of the intervention effect unadjusted (Model 1). In Tables 7.66 to 7.68, for each model, "Constant" is the change in the control group and "Constant" + "Site" is the change in the intervention group. Therefore, "Site" is the difference between the control and intervention groups.

For example, the effect of the intervention was to increase knowledge in the Antenatal domain by an average of 10.5 points (Model 0, Table 7.66). After adjustment for "Age", the intervention effect was 10.6 indicating little confounding due to age.

Table 7-66

**Regression of Effect for Age, Gestation, Gravidity and Education on Antenatal Domain**

		$\beta$	SE	t value	p value.
Model 0	Constant	0.4	0.61	0.69	0.49
	Site	10.5	0.87	12.1	<0.001
Model 1	Constant	0.4	0.62	0.65	0.52
	Site	10.6	0.87	12.1	<0.001
	Age	<0.001	0.14	0.35	0.72
	Age by Site	<0.001	0.19	0.14	0.89
Model 2	Constant	0.4	1.38	0.63	0.52
	Site	10.6	0.87	12.1	<0.001
	Age	<0.001	0.09	0.68	0.5
Model 1	Constant	0.42	0.62	0.68	0.5
	Site	10.5	0.88	11.9	<0.001
	Gravidity	<0.001	1.08	-0.08	0.94
	Gravidity by Site	0.49	1.59	0.31	0.76
Model 2	Constant	0.43	0.62	0.7	0.49
	Site	10.5	0.88	12	<0.001
	Gravidity	0.14	0.79	0.18	0.86
Model 1	Constant	0.53	0.63	0.83	0.41
	Site	10.3	0.92	11.3	<0.001
	Gestation	-0.88	1.19	-0.74	0.46
	Gestation by Site	0.48	1.73	0.28	0.78
Model 2	Constant	0.5	0.63	0.7	0.42
	Site	10.3	0.91	12	<0.001
	Gestation	-0.66	0.86	0.18	0.45
Model 1	Constant	0.2	1.95	0.1	0.92
	Site	9.93	2.93	3.39	0.001
	Education 1	0.28	2.12	0.13	0.89
	Education 2	0.19	2.25	0.08	0.93
	Education 1 by Site	0.27	3.14	0.09	0.93
	Education 2 by Site	1.37	3.33	0.41	0.68
Model 2	Constant	<0.001	1.5	-0.04	0.97
	Site	10.5	0.87	12.1	<0.001
	Education 1	0.38	1.56	0.24	0.81
	Education 2	0.84	1.65	0.51	0.61

Table 7-67

**Regression of Effect for Age, Gestation, Gravidity and Education on Labour Domain**

		$\beta$	SE	t value	p value.
Model 0	Constant	0.6	0.46	1.28	0.20
	Site	8.53	0.65	13.2	<0.001
Model 1	Constant	0.62	0.46	-7.68	0.18
	Site	8.51	0.65	13.1	<0.001
	Age	-0.13	0.1	-1.42	0.21
	Age by Site	0.19	0.14	1.37	0.17
Model 2	Constant	0.59	0.46	1.29	0.2
	Site	8.51	0.65	13.1	<0.001
	Age	<0.001	0.07	-0.38	0.71
Model 1	Constant	0.55	0.46	1.2	0.23
	Site	8.5	0.65	13	<0.001
	Gravidity	-0.54	0.8	-0.67	0.5
	Gravidity by Site	1.88	1.18	1.59	0.11
Model 2	Constant	0.61	0.46	1.31	0.19
	Site	8.5	0.66	13	<0.001
	Gravidity	0.31	0.59	0.53	0.6
Model 1	Constant	0.55	0.46	1.2	0.23
	Site	8.5	0.65	13	<0.001
	Gestation	-0.54	0.8	-0.67	0.5
	Gestation by Site	1.88	1.18	1.59	0.11
Model 2	Constant	0.65	0.47	1.4	0.16
	Site	8.37	0.68	12.4	<0.001
	Gestation	-0.52	0.64	-0.81	0.42
Model 1	Constant	-1.7	1.48	-1.15	0.25
	Site	9.81	2.15	4.57	<0.001
	Education 1	2.73	1.6	1.71	0.09
	Education 2	2.17	1.68	1.29	0.2
	Education 1 by Site	-1.91	2.31	-0.83	0.41
	Education 2 by Site	-0.53	2.44	-0.22	0.83
Model 2	Constant	-1.08	1.11	-0.97	0.33
	Site	8.51	0.65	13.2	<0.001
	Education 1	1.8	1.15	1.57	0.12
	Education 2	1.93	1.22	1.59	0.11



Table 7-68

**Regression of Effect for Age, Gestation, Gravidity and Education on Postnatal Domain**

		$\beta$	SE	t value	p value.
Model 0	Constant	0.37	1.33	0.32	0.75
	Site	14.8	1.61	9.19	<0.001
Model 1	Constant	0.37	1.13	0.33	0.75
	Site	14.8	1.61	9.21	<0.001
	Age	<0.001	0.26	-0.05	0.96
	Age by Site	0.34	0.35	0.97	0.33
Model 2	Constant	0.38	2.54	-5.71	<0.001
	Site	14.8	1.61	9.22	<0.001
	Age	0.17	0.18	0.96	0.34
Model 1	Constant	0.35	1.14	0.31	0.76
	Site	14.5	1.62	8.95	<0.001
	Gravidity	-0.18	1.97	-0.09	0.93
	Gravidity by Site	3.08	2.94	1.05	0.3
Model 2	Constant	0.44	1.14	0.39	0.7
	Site	14.5	1.62	8.95	<0.001
	Gravidity	1.18	1.46	0.81	0.42
Model 1	Constant	0.5	1.17	0.43	0.67
	Site	14.5	1.69	8.56	<0.001
	Gestation	-1.04	2.2	-0.48	0.64
	Gestation by Site	0.39	3.18	0.12	0.9
Model 2	Constant	0.48	1.15	0.41	0.68
	Site	14.5	1.69	8.6	<0.001
	Gestation	-0.86	1.59	-0.54	0.59
Model 1	Constant	0.4	3.69	0.11	0.91
	Site	13.2	5.36	2.46	0.02
	Education 1	0.1	3.98	0.03	0.98
	Education 2	-0.28	4.19	-0.07	0.95
	Education 1 by Site	1.97	5.76	0.34	0.73
	Education 2 by Site	1.29	6.08	0.21	0.83
Model 2	Constant	-0.35	2.77	-0.13	0.9
	Site	14.7	1.61	9.13	<0.001
	Education 1	1.05	2.86	0.37	0.71
	Education 2	0.33	3.02	0.11	0.91

### **Summary of Post hoc analysis**

The final analyses indicated that the significant difference in knowledge shown in the intervention group couldn't be explained by differences in age, education, gravidity or gestational age.

### **Summary of Chapter**

At baseline, the analyses showed no significant differences between the control and intervention groups for demographic variables of age group, gravidity, marital status, religion, education, and occupation. There were, however, significant differences for the demographic variables of gestation. Similarly, for the 30 items on the questionnaire, there were no differences at baseline for the majority of responses. There were, however, a few differences for some of the responses, which were viewed cautiously. This was expected as each item had several possible responses, and women were asked to select as many responses as felt appropriate. This led to some responses having few numbers. In conclusion, it is noted that both groups' baseline knowledge level was similar. Both groups lacked knowledge in critical areas such as risk factors and possible complications during pregnancy, danger signs of pregnancy, labour, and puerperium.

Findings also showed that in the control group, there generally no differences between pretest and posttest scores for most of the items, and overall, for each of the three domains (antenatal, labour and postnatal). In the intervention group however, there were significant increases in knowledge for most items and overall, for each domain.

This study used a quasi-experimental design, because it was not possible to perform a Randomised Controlled Trial. A sequential design was used to avoid contamination by women sharing information, therefore, randomisation was not undertaken. Post hoc analyses revealed that maternal age, gestation, gravidity and mothers' education did not have any confounding effect on the differences shown between the groups in the Antenatal, Labour and Postnatal domains using regression analyses.

## **CHAPTER 8**

### **DISCUSSION**

#### **Introduction**

The purpose of this study was to determine the childbirth information needs of Malawian women, and to develop a Childbirth Education Program that would meet these needs. Childbirth information needs of Malawian women were determined through an extensive literature review, as well as in-depth individual and focus group interviews with Malawian midwives to determine their perceptions of Malawian women's childbirth needs. The results of a previous study conducted by the researcher, (Malata, 1997) which explored labour and birth information needs of first time mothers in Malawi and their satisfaction with this information were also used. This three way approach provided the most comprehensive review of Malawian women's needs as possible. The Childbirth Education Program CEP was then developed and was based on the identified needs. In the final phase of the study, the effectiveness of the CEP in increasing mothers' knowledge of childbirth was examined. This chapter presents the discussion, which is based on the study findings. In the discussion, Study 1 refers to the previous study conducted by the researcher (Malata, 1997), and Study 2 refers to this current doctoral study.

#### **Summary of Findings for Study 1**

It was apparent from the researcher's previous study that a first time mother in Malawi was most likely to be an adolescent who was married, living with her husband, and had a Christian religious affiliation (Malata, 1997). She would most likely be a housewife involved in subsistence farming, having only attended lower primary school education. During her pregnancy, she would have started attending a hospital antenatal clinic in the second trimester of pregnancy, and would have visited the clinic approximately three to four times prior to giving birth at the hospital (Malata, 1997). These findings are theoretically supported by findings of a study done by Matekwe Phoya (1993) who explored factors that early prenatal care

enrolment among rural Malawian pregnant women and found that most women started antenatal care late.

Findings of the study indicated that first time mothers in Malawi received labour and birth information both at the hospital and at home. The information in the hospital was predominantly provided by midwives at the antenatal clinic, and again during the labour and birth period. The midwives' information mainly focused on the onset of labour, breathing techniques, and expected behaviours of the mother during pregnancy and/or labour. Information received at home was given usually by a combination of traditional counsellors, traditional birth attendants, and female relatives. The information provided at home comprised both cultural beliefs and taboos about childbirth. These findings are supported by findings of the Malawi Demographic and Health Surveys (National Statistical Office, 1992b, 2000).

First time mothers had developed their own perceptions of the labour and birth information they wished to receive, including topics such as the rights of the mother during labour and birth, and the process of labour. The main sources of labour and birth information were provided by the midwife and traditional counsellor/traditional birth attendants. Overall, mothers felt they did not receive adequate informational and emotional support from midwives, however, they expressed that traditional helpers and family provided most of the informational support they required. These findings concur with findings of a study done in South Africa by Bester and Norte (1992) who found that primigravid women were not given adequate information about childbirth.

Furthermore, there were positive relationships between the total information the mothers' received, and overall satisfaction with information; total information and professional sources of information; and overall satisfaction with information from health professionals. In other words, the more information the mother received, the more satisfied she was with the total labour and birth information she received in preparing her for labour and birth. In addition, the more information the mother received from health professionals such as midwives, the more total information she received about labour and birth. Finally, mothers were more satisfied with the amount of information received from health professionals, than information received from family and traditional helpers.

In conclusion, the mothers suggested that midwives should allow more opportunities for first time mothers to ask questions during antenatal visits and during labour and birth, and they required more detailed information about the actual process of labour and birth.

## Summary of Findings for Study 2

### Phase 1

In the current study, Phase 1 described the childbirth information needs of Malawian women as perceived by midwives. A total of forty-five midwives participated in a series of focus groups and individual in-depth interviews. Midwives were either Enrolled or State Registered midwives. These midwives were either employed as senior managers, midwifery educators, or clinicians.

The midwives who were interviewed identified information they felt was important to provide to Malawian women in a CEP before, during, and after childbirth. The main emphasis of the content was on information regarding physiological changes in the process of childbirth, what could go wrong, and what measures mothers could take to manage these problems.

Malawian midwives also gave suggestions for strategies that could be used in the delivery of childbirth information. Midwives felt that any CEP should address issues such as the delivering of childbirth information to groups, as well as to individual mothers. Furthermore, during group sessions, first time mothers required more attention because they were having their first childbirth experience. The midwives also felt childbirth information should be well organised and not repetitious. It was also emphasised that information should be given in a simple manner because of the low level of education among the majority of Malawian mothers.

Midwives also emphasised it was important to give information to mothers because it helped to empower them, as well as assist them in making more informed decisions. Childbirth information offered mothers an opportunity to care for themselves. Importantly, it was the mother's right to be provided with information.

Malawian midwives, however, expressed there were many challenges to providing childbirth information to mothers, and that it would be necessary to address these issues for the effective implementation of a childbirth program. Examples of the stated challenges were: inadequate material resources, the high illiteracy level of women, cultural beliefs and values, poor staffing levels, as well as staff not always being adequately prepared for their education role. These issues are theoretically supported by literature on childbirth education to enhance effective education outcomes (Redman, 1993; Schneider, 2001; Williams & Booth, 1980).

Finally, midwives suggested that: more emphasis be given to the education of midwives to prepare them for their role in providing information; childbirth guides

and other material resources be developed to assist midwives in their teaching role; accessibility to hospital resources be improved; integration of culture in childbirth education be undertaken; and involvement of the male partner be promoted.

A review of literature revealed a number of interesting issues. First, childbirth education classes that were aimed at preparing parents for their childbirth experience were carried out in many developed countries worldwide. These classes were found to be helpful to most women. These findings concur with previous study findings that emphasise the need for childbirth education classes (Hart & Foster, 1996; Hetherington, 1990; Simkin, 1990).

Second, literature revealed that traditionally, health professionals determined the content of childbirth classes (Grieve, 2000). However, parents, in particular women, had their own perspective regarding the childbirth information they required (Flessig, 1993). It was important, therefore, that information needs of women were considered when developing a CEP. Malawian women's childbirth information needs were similar to those of women in developed countries, however, the challenges that confront women in developing countries such as Malawi differed significantly and included: cultural beliefs and taboos, illiteracy, the patrilineal and matrilineal systems of marriage, and low socio economic status differed significantly. For example, women in Malawi required information about why a Caesarean section birth could be necessary. However, culturally some women view this type of birth as a sign of failure and therefore, women sometimes are unwilling to undergo a Caesarean section birth. This contrasts significantly with a developed countries where, for example, caesarean rate is very high (25%) (Cohen & Atkins, 2001; Health Department of Western Australia, 2001).

On the part of midwives, lack of staffing and other resources, and physical constraints are some of the great challenges faced on a daily basis. Midwives in developing countries rarely face this challenge as staff patient ratio is low (Health Department of Western Australia, 2001).

A wide range of reported studies examined childbirth experiences and expectations in relation to childbirth education. It was apparent that parents developed childbirth expectations both during, and prior to pregnancy, and that parents believed their expectations would be met and these issues are supported by previous findings (Ho & Holroyd, 2002; Kitzinger, 1990; Koehen, 1993; Moore & Hopper, 1995). Failure to meet these expectations led to dissatisfaction with care (Lumley & Brown, 1993). Mothers were able to recall their experiences and usually, these had a lasting impact on their lives. Finally, the amount of childbirth

information women received impacted on their satisfaction with information received, as well as well as the care they received. This concurs with Alexander et al. (1993) who found that patient satisfaction with maternity care was influenced by care they received.

## **Phase 2**

The Childbirth Education Program (CEP) developed during Phase 2 included both information, teaching strategies, as well as, a schedule for program implementation and delivery. As previously stated, the content was derived from published literature, results from Study One which explored the labour and birth information needs of Malawian first time mothers (Malata, 1997), and data collected from in-depth individual and focus group interviews with midwives in Malawi.

The CEP manual comprised three sections. Section 1 addressed antenatal care, self-care during pregnancy, nutrition during pregnancy, cultural issues related to pregnancy, common discomforts of pregnancy, danger signs in pregnancy, sexually transmitted diseases including HIV/AIDS and, preparation for delivery. Section 2 included the labour process, possible complications during labour and birth, caesarean birth, and, non-pharmaceutical pain relief measures in labour. Section 3 comprised the topics: self-care during postnatal period, exclusive breastfeeding, care of the newborn baby, danger signs of the puerperium, care of the newborn baby and, family planning. (See Addendum).

A questionnaire was also developed and based on the CEP content. The questionnaire comprised three domains. The Antenatal domain that had 10 items related to signs of pregnancy, when to start antenatal care, nutrition, minor disorders of pregnancy, danger signs in pregnancy, and HIV/AIDS. The Labour and Birth domain included eight items addressing issues of preparation for birth, pain relief in labour and what could go wrong with the mother and baby. Finally, the Postnatal domain had 12 items, that addressed issues of prevention of infection during postpartum period, danger signs of mother and baby during this period, breastfeeding, and family planning.

### Phase 3

During this phase, the CEP was implemented and evaluated. A summary of the descriptive characteristics of women at baseline indicated the maternal age ranged from 15-35 years with a mean of 23 years ( $SD = 4.6$ ) in the control group and from 12-38 years with a mean of 22 years ( $SD = 4.6$ ) in the intervention group. These findings are consistent with the two previous Malawi national demographic studies which found that Malawian women start having children at an early age (National Statistical Office, 1992b, 2000).

The analyses revealed no significant difference between the control and intervention groups at baseline for demographic variables of age group, gravidity, marital status, religion, education, and occupation. At baseline, the majority of the women were, aged between 19 - 24 years ( $n=119$ ), married, multigravid, were Christian, had primary education, and were not employed. There were, however, significant differences for the demographic variables of gestation. In the intervention group most women ( $n= 84$ ) started antenatal care when they were between 4-6 months of gestation, while in the control group the majority of women ( $n=69$ ) commenced at 7 months gestation or more. This is probably attributable to the fact the majority of these women in both groups were multigravid. This is not an unusual finding in most parts of Malawi, as multigravid women usually start attending antenatal clinic in the second or even third trimesters. These findings concur with findings of a study done by Matekwe Phoya (1993) who explored factors that early prenatal care enrolment among rural Malawian pregnant women. Findings indicated that most multigravid women started attending antenatal care during second and third trimester.

To compare baseline data regarding the level of childbirth knowledge for both groups, a pretest was given to women in both the control and intervention groups. As previously mentioned, the questionnaire consisted of three domains: antenatal (pregnancy) which had ten items; labour and birth which had eight items; and postnatal which had twelve items. Chi square tests were used to compare baseline data between the control and intervention groups. The possible response for each item was either "yes" or "no" but women could choose several responses. Data were analysed using Chi-square test for independence. The findings indicated that the groups were similar at baseline (Pallant, 2001).

For the 30 items on the questionnaire, there were no differences at baseline for the majority of the responses. There were, however, a few differences on some



of the responses, which were viewed cautiously because each item had several responses, and women were asked to select as many responses as they felt appropriate. This led to some responses having few numbers. It was however, noted that both groups' baseline knowledge level was similar. Both groups lacked knowledge in critical areas such as risk factors and possible complications during pregnancy, danger signs of pregnancy, labour, and puerperium. Ashwood-Smith (2001) similarly found that women in Mangochi district in Malawi did not know danger signs of pregnancy and labour as well as of postpartum period.

Findings of the current study showed that in the control group, there were no differences between pretest and posttest scores for most of the items, and overall, for each of the three domains (antenatal, labour and postnatal). In the intervention group however, there were significant increases in knowledge for most items and overall, for each domain.

This study used a quasi-experimental design, because it was not possible to perform a Randomised Controlled Trial. A sequential design was used to avoid contamination if women shared information, therefore, randomisation was not undertaken. Post hoc analyses revealed that maternal age, gestation, gravidity and mothers' education did not have any confounding effect on the differences shown between the groups in Antenatal, Labour and Postnatal domains using linear regression analyses (Pallant, 1992).

The conceptual framework that guided this study was developed from literature related to childbirth information needs, as well as the development and evaluation of the Childbirth Education Program (CEP). Therefore, interpretation of the findings will, now be discussed in relation to the conceptual framework that guided this study as well as literature.

The conceptual framework had four Concepts, which further comprised several concepts. The four Concepts were: Malawian women's perspective of childbirth education; Malawian midwives' perspective of childbirth education; Development of the CEP, and Evaluation of the Childbirth Education Program. For clarity, the figure showing the conceptual framework is presented once again in this section (See Figure 2). The chapter concludes with a summary of the strengths and limitations of this study.

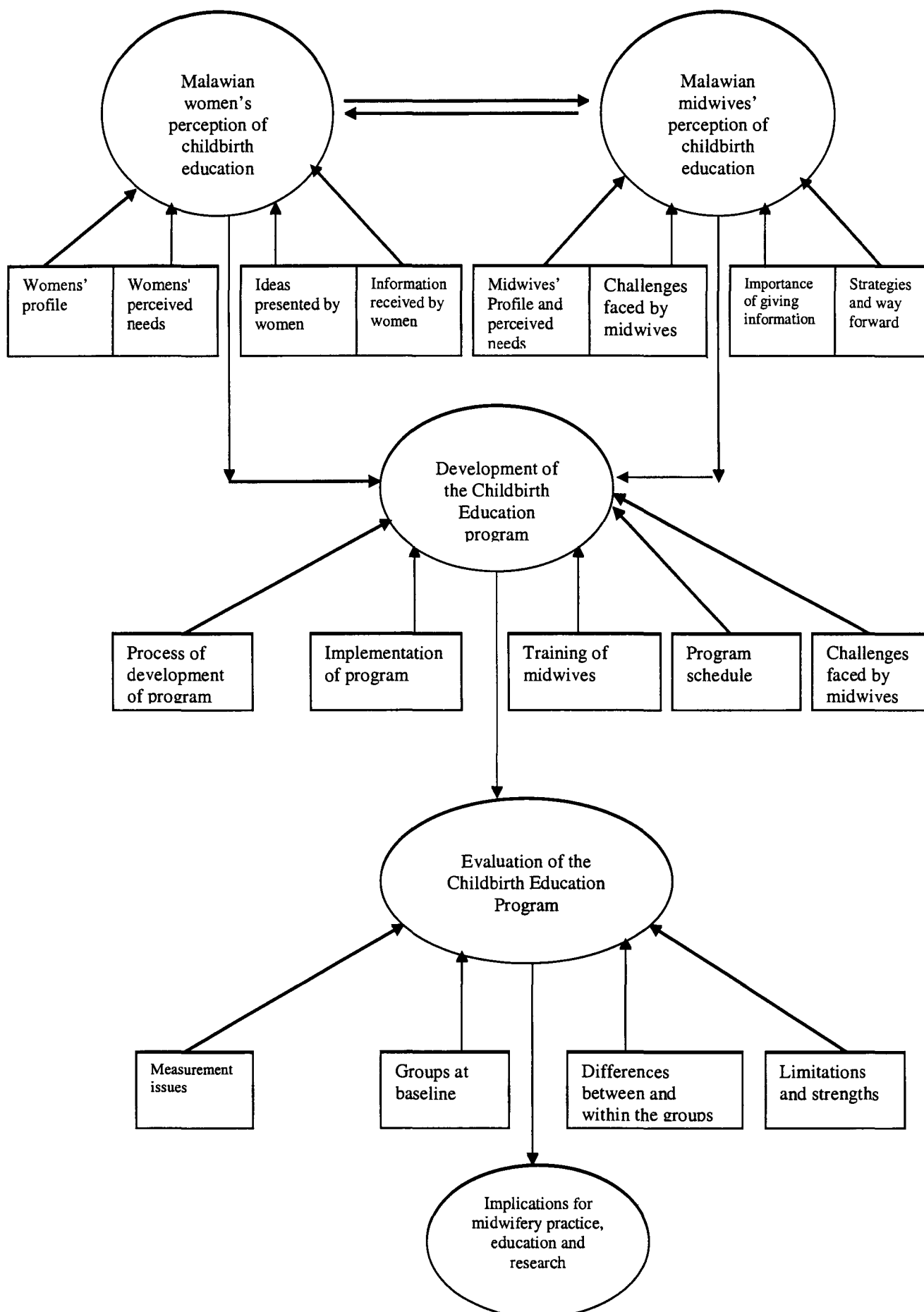


Figure 2. Conceptual framework guiding the study

## **Concept: Malawian Women's' Perspective of Childbirth Education**

This section addresses the Concept of Malawian women's' perspective of childbirth education in Malawi. The factors underpinning this Concept included the women's profile, information received, information needs and suggestions for improvement. A profile of a typical subject followed by detailed discussion of the factors will be presented.

### **Women's' profile**

**Maternal age.** The findings of this study showed that the age at which women commence child bearing is an important demographic and social indicator in the Malawian society. In Study 1, study although the age of subjects ranged from 13 to 30 years, the majority of the subjects were less than 20 years of age (Malata, 1997). Similarly in the current study, the maternal age ranged from 15-35 years in the control group, and 12-38 years in the intervention group. This finding presents important information that recognises a pregnant mother in Malawi is most likely to be aged in her 20s or may even be an adolescent. It is important to note this finding is consistent with the findings of a Demographic and Health Survey conducted nation wide in 1992 in Malawi (National Statistical Office, 1992b). In the survey, 1413 urban and 4393 rural households were randomly selected with 4849 eligible women being selected and interviewed. The results indicated that marriage and childbirth among Malawian women starts at an early age. The average age at first childbirth was 18.9 years (National Statistical Office, 1992b, 2000). These findings have implications for the Childbirth Education Program. It is vitally important, that issues of adolescence are considered in future such as tailoring the programs to be more friendly to younger women, who left school because of unexpected pregnancies.

As previously stated, many studies have been undertaken in developed countries that have examined adolescent pregnancies and childbirth. Findings of such studies have indicated that the mothers in this age group are at greater risk for pregnancy, labour and postpartum complications (Breedlove, 2001; Flemming, 1990; O'Sullivan & Jacobsen, 1992; Sarah, Hurrell, & Towns, 1995). Consistent with this finding, the findings of the current study have implications for providing age appropriate information to adolescent mothers. This is crucial in order to meet the complex developmental needs of adolescent women as well as, physical,

psychological, and sociological needs of pregnancy, labour, birth and the postpartum period. It is important for adolescent mothers to be well informed about the process of pregnancy, labour and birth during pregnancy, so they can seek medical assistance should anything unexpected should occur. If these young women can understand the “normal,” they will more likely know when something is “going wrong”. Early reporting of the abnormal may assist in decreasing the previously described high risk of morbidity and mortality that adolescent women face in Malawi.

***Ethnicity.*** Malawi's society is diverse and complex with many different ethnic, linguistic, and cultural groups. Traditional beliefs, customs and taboos have a powerful influence on any society because they influence social relationships, decision making patterns, acceptability of new ideas and modern practices in the area of education, health, sanitation, and family planning. The ethnic structure, particularly in Malawi, has a significant impact on the health of mothers, especially cultural beliefs, practices, taboos and decision making in childbirth. Traditionally, ethnic groups use different methods to educate their young men and women in beliefs, taboos and practises pertaining to birth, marriage, and death. Initiation in some ethnic groups encourages early marriage, and child bearing, which often prevents girls from attending regular school and, therefore contributes to higher attrition rates (Ministry of Finance, 1993). These findings are theoretically supported by findings of a study done by the National Statistical Office of Malawi (2000) who found that traditional practices and values influence health seeking behaviours among Malawians.

In studies 1 and 2, the majority of the participants belonged to the Lomwe tribe. The remainder belonged to the Chewa, Ngoni, Yao, Tumbuka and Sena tribes. This was an expected finding because in the districts where the study was undertaken, these tribes are commonly found. Lomwes, Senas and Yaos originate from the southern part of Malawi, while the Chewas and Ngonis originate from the central part. Tumbuka's originate from the northern part of Malawi. There are nine major tribal groups in the country, hence, not all tribal groups are represented in this study (Ministry of Health, 1976-1995).

***Marital Status and Residency.*** In study 2, the majority of women in both groups were married (92% control, and 89% intervention). These findings are similar to findings of study 1 where 76% were married, although only 45% were living with their husbands (Malata, 2000). This discrepancy was probably due to travelling required since most husbands look for work in towns while the wives live in villages. These findings are theoretically supported by findings of a study done by

the National Statistical Office of Malawi (2000) who found that most Malawian women are married but are sometimes left in the village as their husbands leave for towns to seek employment.

Malawi's society is characterised by a patrilineal system of marriage in the northern part, and in Chikwawa and Nsanje districts in the southern part. A matrilineal system exists in the central region, and the remaining districts in the southern region. Each system has its own set of roles. After marriage, the family is expected to live together, but in some situations, the husband moves to the town or city in search of employment. The extended family, therefore, remains the main source of emotional and informational support to the mother, whereas, the man is seen as the main financial provider. The findings of this study support findings of previous surveys reflecting the marital and residency status of most Malawian women (Ministry of Health, 1999-2004, 2000, 2001; National Statistical Office, 1992a, 1996, 2000). The implications of this finding relate to information giving to mothers recognising the emotional and informational support they receive from the family. For example, there is merit in the possibility for encouraging more involvement of the family especially during birth. At the present time, none of the family members come to see the mother during labour in the hospital. It may be necessary to consider allowing at least one of the family members to be with the mother during labour and birth. This view is supported by previous studies investigating the role of support during childbirth (Beaton & Gupton, 1990; Jabunathan & Stewart, 1995; Percival, 1995; Tarkka & Pavnonen, 1996).

**Religion.** In the current study, the majority of women in both the control group (70%) and intervention group (71%) were Christians, while the remainder were Moslems, or belonged to other religions. Religious beliefs have a diverse effect on people's beliefs and customs. Some religious beliefs such as the Yao in Moslems encourage early marriage and childbirth while other Christian religions like the Roman Catholic Church advocate natural methods of family planning (National Statistical Office, 1992b, 1996).

**Educational Level.** In study 2, the majority of the women in the control group (60%) and in the intervention groups (62%) had only attained primary education, while the majority of the mothers (74%) in the previous study conducted by Malata, (2000) had attended lower primary school education. The numbers for secondary education were lower with 31% and 30% in both control and intervention groups, having attended secondary education. This was even lower (6%) in the previous study (Malata, 2000). The current study showed similarities to those who had never been to school with the previous study, showing 9% in control group and

8% in intervention group had not gone to school, while 13% of participants in Study 1 (Malata, 1997) had not attended school. The MDH Survey (1992) found that, among the 4849 child bearing women, 47% had received no education at all, 25% had attended lower primary school education (standard 1-4), 24% had attended upper primary school education (standard 5-8), and 4% had attended secondary school and above. Findings of the current study reflected slightly higher educational levels than in the previous studies (National Statistical Office, 1992b, 1996), however, it was apparent from the findings of the MDH Survey that the literacy level in Malawi is very low, with more boys attending school than girls. There is also a higher school attrition rate among girls (12%) than among boys (6%). Approximately half the children who enter school withdraw before acquiring a minimal level of literacy. Therefore, only 39% of the adult population was able to read or write (National Statistical Office, 1996, 2000).

The high level of illiteracy in Malawi may be attributed to ethnic and religious beliefs, which discourage education and encourage early marriage and child bearing among girls. Another reason may be the lack of financial resources to cover school fees. This is a common problem since 90% of Malawians are classified as poor (Ministry of Finance, 1993). It is important to mention that school fees were stopped in 1995, with the purpose of encouraging more school attendance especially among girls. There have also been projects introduced by the government to encourage girls to attend school such as Girls' Attainment in Basic Literacy Education (Ministry of Finance, 1993). This program may have been effective given the fact that the levels of education of women in the current study show a slight improvement compared to ten years ago.

The education level of women was a major consideration in the development and implementation of the Childbirth Education Program (CEP). The CEP was developed for midwives using the English language, but the content was translated into the Chichewa language for easy dissemination of content to women. The content was presented in a simple manner that was understood by Malawian women. Educational level was also considered important because it influences the ability to seek, understand, and appreciate the information received. These findings are theoretically supported by findings of a study done by the National Statistical Office of Malawi (2000) who found that educational level influences health seeking behaviour.

Understanding the importance of attending antenatal classes, and accepting advice such as the need for hospital care despite other influences, such as cultural beliefs, is strongly determined by a mother's educational level. This has implications

for the preparation of the educational materials to be used in hospitals in the future. There is need for midwives who provide information to consider using teaching methods suitable for teaching mothers with minimal or no education.

Information provided to mothers must not require them to be able to read and, therefore, should include the use of pictures, diagrams and models in simple lay terms in either a one to one teaching session or with group teaching. The midwives should also take time to explain issues related to childbirth because if they teach at too fast a pace, mothers may have problems assimilating what is being taught and be reluctant to ask questions. For this reason, a strategy was used in the CEP that provided instructions for use of illustrations and pictures that the midwives when giving information to mothers.

Although these mothers are young, they are also considered to be adult learners, therefore, it was important that midwives giving information should integrate the well documented assumptions of adult learners (Knowles, 1990; Maloney, 1985; O'Meara, 1993a; Rice, 1994). These assumptions include the fact that adults learn more if they can clearly see the importance of the material being taught, and use past experience. Adults also learn more from use of simple to more complex concepts, and are actively involved in their learning.

Midwives, therefore, need to consider emphasising the reasons why mothers need to know the information being taught, and allow them to share their experiences about what they have heard or seen related to labour and birth. Although some mothers have already experienced labour and birth, they may have experiences that would benefit other mothers, or have heard of other mothers' experiences, and this strategy would also enhance their participation. During the implementation of the program, women were encouraged to share their experiences during class sessions in view of this important issue.

**Occupation.** In the current study, the majority of the women in both the control group (n=118) and intervention group (n=115) were unemployed, and therefore, were dependent on their spouses or family for financial support. Few women were employed or involved in small-scale business. This finding concurs with previous study findings that revealed, that the majority of Malawian mothers were housewives, who were involved in subsistence farming. The remaining mothers were involved in small scale business, domestic work, office cleaning, nursing aid, primary school teaching or office management (Malata, 1997; National Statistical Office, 2000, 2001). Only a small proportion of the labour force is employed in the paid work force sector. Women are most affected by this problem because of their lower educational level. It could be concluded that the findings of

this study apply to mothers with low socioeconomic status. The poor socioeconomic status of these women also has implications for childbirth. First time mothers should be provided with the necessary support and information in preparation for their first childbirth experience, particularly considering they lack adequate financial resources which limit their ability to access information.

### **Perceived childbirth information needs**

During pregnancy, mothers develop expectations concerning their anticipated labour and birth. These expectations play an important role in determining mothers' responses to the childbirth experience (Beger & Beaman, 1996; Evans & Jeffrey, 1995; Spitzer, 1988). Malata (1997) asked Malawian women what information they would have liked to know about childbirth. Mothers identified the following topics: rights and options during labour and birth, the process of labour and birth, admission procedure for a woman in labour, what could go wrong during labour and birth, indications for interventions during labour and birth, the nature of labour pains, and pain relieving measures available. Sullivan (1993) and Wolley and Roberts (1995) argued that although most prenatal education programs claim to be based on learning needs of pregnant women, in reality the learning needs are based on the perceptions of health professionals. The researcher felt it was important, therefore, that the Malawian mother's perceptions be incorporated in the development of the CEP.

Other studies conducted in developed countries support the findings of the researcher's previous study (Malata, 1997) and the current study regarding information needs of women. The content of childbirth information identified by these studies include: anatomy and physiology of the reproductive system, normal labour and delivery process, caesarean birth, labour and birth drugs and their effects, relaxation and breathing techniques (Avery & Olson, 1987; O'Brien-Pallas, 1992); pain and pain relief, normal progress of labour and role of the woman in labour (Hallgren et al., 1995); pain and pain relief (Green, 1993); coping with the stress of labour (Maloney, 1985; Simkin, 1991); labour and delivery, breathing and relaxation, maternity tour, hospital procedures and legal information (Mollart, 1995); and stages of labour (Jacoby, 1988).



### **Ideas presented by women for improving current methods of providing information**

Malawian women were also asked if they had any suggestions for improving the current methods of giving labour and birth information. The mothers identified several issues which focused on the practical methods of giving labour and birth information and on the content of the information. Themes were identified from the responses and included: giving the mothers opportunities to ask questions, giving detailed information about labour and birth, use of individual and group teaching, use of simple language, organising the manner of giving information, taking more time to give information at home, and providing emotional support. These strategies are also recommended in the education literature to enhance effective education outcomes (Redman, 1993; Schneider, 2001; Williams & Booth, 1980).

These suggestions were incorporated during development and implementation of the Childbirth Education Program (CEP) for Malawian women. For example, the CEP contained specific information on labour and birth, and both individual and group teaching methods were used (Gagnon & Waghorn, 2004). Additionally, during training of the midwives who conducted the CEP they were advised to provide opportunities for questions to be asked, and to use language that would be appropriate for the mothers rather than technical or medical terminology (Renkert & Nutbeam, 2001).

### **Information received by women**

In this section, the concept of 'Childbirth information women receive' will be discussed. This concept is based on the study conducted by Malata (1997). Women were asked: "What labour and birth information were you given at a hospital?" Overall the mothers' responses were clustered into 18 themes. The majority of the mothers (74%) stated that they were given labour and birth information about the onset of labour. Other themes that were identified by between one third and half the mothers were: bearing down during birth, lying positions during labour and birth, crying during labour, cooperating with midwives during labour, and breathing exercises in labour. Less than 10% of the mothers identified themes such as: what could go wrong during labour and birth, what to eat during labour and birth, how the progress of labour is monitored, how the actual birth occurs, assistance that can be given to the mother during labour and birth, initial breast-feeding, the effect of taking traditional medicine during labour and birth, the process of labour; the need for exercises and rest in preparation for labour and birth,

and the importance of hospital birth. Of concern was the finding that 9% of women stated that they were not given any specific information about labour and birth. Other studies from developed countries have also identified similar information needs (Callaghan et al., 2001; Corwin, 1995; Evans & Jeffrey, 1995; Flessig, 1993; Halldorsdottir & Karlsdottir, 1996; McIntosh, 1988; Walker et al., 1995).

In order to validate these findings, mothers were further asked to respond to a list of items by choosing one out of four response categories indicating the amount of information received. There were distinct similarities between the responses to the open-ended question and the closed-ended question. In this section, information about the onset of labour had the highest scores with the majority of the mothers (87%) stating that they received this information.

In the current study, women were asked 30 questions about childbirth. There were 10 items in the antenatal domain, 8 items in labour domain, and 12 items in the postnatal domain. For each item in each domain, there were a number of possible responses and women could choose more than one response. This was done to find out the level of childbirth knowledge at baseline. It was noted that both groups' baseline knowledge level was similar and knowledge was low as described in Chapter 7. Both groups lacked knowledge in critical areas such as risk factors and possible complications during pregnancy, danger signs of pregnancy, labour, and puerperium. As stated earlier, similar studies from developed countries have also identified similar information needs (Callaghan et al., 2001; Corwin, 1995; Evans & Jeffrey, 1995; Flessig, 1993; Halldorsdottir & Karlsdottir, 1996; McIntosh, 1988; Walker et al., 1995).

It was clear from the current study that information that women received mainly focussed on HIV/AIDS and its prevention, as well as preparation for birth (i.e. materials the women had to put aside in preparation for the delivery such as baby's clothes and candles in case lights went off). It was clear from the results of the previous study (Malata, 2000) that, only one aspect of labour and birth information: 'onset of labour' received a high degree of emphasis from information providers of labour and birth information, particularly midwives. The remainder of labour and birth information received little or no attention at all (Malata, 2000).

These findings from study 1 were considered when developing the Childbirth Education Program (CEP). Important areas such as content on labour and birth were included in the CEP. These findings are supported by other previous studies. A study by Bester and Nolte (1992), in Johannesburg in South Africa, found that primigravid women had insufficient knowledge of childbirth, and this was due to poor

attendance at the antenatal clinic and inadequate professional counselling. The results of their study indicated that a large gap existed in the primigravid women's preparation for labour and birth. Other studies from developed countries have also reinforced the need for mothers to be adequately prepared for labour and birth through the provision of essential information (Beaton, 1990; Callaghan et al., 2001; Corwin, 1995; Evans & Jeffrey, 1995; Flessig, 1993; Halldorsdottir & Karlsdottir, 1996; McIntosh, 1988; Walker et al., 1995).

Furthermore, in this study as well as the researcher's previous study, mothers were also asked the question: "What labour and birth information were you given at home?" In contrast with information given at the hospital, the information given at home focused on cultural beliefs, myths and taboos about labour and birth. Themes identified from mothers responses' to this question focused on what the mother was expected to do or not do to ensure an uncomplicated birth.

It is apparent from the findings that some of the information given to the mothers was helpful, even though the rationale may have been questionable. For example, during labour the mother was allowed to walk around when she was able to. From the medical, perspective, it is believed that ambulation encourages the progress of labour (Enkin, Keirse, Renfrew & Neilson, 1995; Beischer, Mackay, & Purcal, 1989). The cultural rationale for walking about during labour was to prevent the baby from delaying its birth because it will be idle and lazy during the birth process.

Some of the information given to mothers at home had potential to cause maternal anxiety. For example, mothers were told to avoid the sitting or standing at a door because the baby would stop at the birth pathway and would not descend to be born. Field notes taken by the researcher indicated that some midwives encouraged beliefs in traditional information. One mother told a story of a midwife at an antenatal visit who told her to move away from a door where she was standing because it believed this would cause obstructed labour. The midwife asked the mother whether she had been given information at home about standing or sitting at a door. Since everyday life involves the constant walking through different types of doors, complying with this belief could be very difficult for the mother. If the mother went on to experience prolonged labour, she may believe that her behaviour attributed to this. Ashwood-Smith (2001) similarly identifies that there were many childbirth cultural beliefs and taboos among Malawian women.

Another example was "having a sneak look through a window or door" during pregnancy. Culturally, it is believed that such behaviour can lead to prolonged labour as the baby will constantly be appearing and disappearing at the birth

pathway during birth. However, such behaviour is also difficult to avoid because sometimes one has to do this before they open the door for safety reasons. Such a belief could put the mother and her partner at risk because they would be forced to open doors before checking who was outside. Overall, while not directly harmful, this kind of information may cause anxiety.

Furthermore, some of the information given may have been harmful to the mother such as the use of a traditional medicine called 'mwanamphepo.' The strength and composition of the drug is not known, and unless a scientific study is undertaken on the drug, it is difficult to advocate or discourage use of the drug. Anecdotal evidence from midwives indicates that some mothers who drink the drug have a precipitate labour and/or ruptured uterus.

The mothers were also advised to stop having sex between 5 to 7 months during pregnancy because it is believed that the baby could be born with "whitish stuff" around its body, which was considered to be a disgrace to society. Loss of intimacy may cause difficulty in the relationship and perhaps lead husbands into being unfaithful. This is a particularly high-risk behaviour, which may further contribute to the problem of AIDS, which is increasing in Malawi (Ministry of Health, 2001).

There are several implications from these findings. First, there was an obligation for cultural labour and birth information to be incorporated in the development of the Childbirth Education Program. Second, midwives needed to be aware of the content of labour and birth information given at home, and its impact on the mothers. Third, unsafe practices needed to be discouraged, but other practices, which were not harmful, could be continued because they did not cause any known negative effects on the mother. Sometimes health professionals fall into the trap of thinking every traditional belief or act is evil. However, there is a requirement to maintain "cultural sensitivity" (Ho & Holroyd, 2002; Leininger, 1978). In addition, knowing the content of traditional information may help midwives avoid asking mothers why they behave as if they had not been counselled at home, because some mothers expressed this was a common question asked by midwives during labour and birth. There was an urgency to incorporate cultural information in the Childbirth Education Program and this was undertaken.

Finally, these results indicated the urgent need to conduct research into some of the traditional practises, and their effects on child birth, such as use of the

traditional medicine 'mwanamphepo,' and use of <sup>8</sup>nkhata' and mtondo' for bearing down during childbirth. Unless such studies are done, there is no basis for discouraging mothers from the use of these practices. Evidence based practice may prove they are effective, and their use could be promoted and/or adopted in other contexts.

### **Summary of Concept**

The current study's profile of Malawian childbearing women was similar to the current profile of childbearing women in Malawi (National Statistical Office, 1992a, 1992b, 1996, 2000), adding support to the generalisability of the findings to childbearing women in the southern region of Malawi.

In this factor, the mothers' perspective of information received at home and hospital was discussed. Results from the researcher's previous study and the current study were used to identify women's perceptions of childbirth information needs. Information given at the hospital focused mainly on preparation for birth, onset of labour, and little or no attention was given to other childbirth information. Information given at home was based on traditional beliefs, myths and practices related to childbirth. The information given at home can be classified into three categories: potentially anxiety producing, harmful, and not harmful. This information was used when developing the Childbirth Education Program.

Malawian mothers also identified their informational needs. Their priorities were for information on pregnancy, possible complications, danger signs, the labour process, and information on rights and options during labour and birth. The content of the Childbirth Education Program included these issues. In addition, some of the suggestions mothers gave were incorporated during training of midwives during the implementation of the program such as being given opportunities to ask questions and using simple language. These findings support theoretical work previously done on information needs (Flessig,1993; Freda et al.1993).

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<sup>8</sup> Nkhata is a round band made of cloth or other materials like glass and Mtondo is made of wood designed with a round opening at the top and narrow and closed bottom. These were used in the past to assist during delivery of baby and the mother sat on them and beared down.

## **Concept: Malawian Midwives' Perspective of Childbirth Education**

In this Concept, the midwives' perspective of Malawian women's childbirth education are discussed within the following factors: midwives' profile, perceived needs, importance of giving information, challenges faced by midwives, strategies for giving information and the way forward.

### **Midwives profile**

A total of thirty 33 midwives participated in focus groups, while ten midwives participated in individual in-depth interviews. The midwives selected to participate in focus groups and individual in-depth interviews were considered midwifery experts, as they were either clinicians or educators of midwifery. Some also held key managerial positions in Safe Motherhood, Reproductive Health and the Ministry of Health, as well as Nurse and Midwives Council of Malawi. This ensured that midwives gave a perspective of their experience in childbirth education based upon their extensive experience. Their experience was critical for the development as well as implementation of the Childbirth Education Program. The role of health professionals in developing childbirth programs can not be underestimated, because they are responsible for implementation of the programs. It is recommended that midwives' input always be incorporated in the development of the programs (Gardner, Cliver, McNeal, & Goldernberg, 1996; Lumley & Brown, 1993; McKeller et al., 2002; Nicholas, 1995; Schneider, 2002).

### **Women's information needs**

Malawian midwives emphasised that Malawian women need to be given information about childbirth. The midwives identified information to be given before, during, and after pregnancy. Most of the content that midwives discussed was incorporated in the developed Childbirth Education Program (CEP). Many topics concurred with those previously identified by women in other studies (Beger & Beaman, 1996; Cronin & McCarthy, 2003; McKeller et al., 2002; Spinelli, Baglio, Donati, Grandolfo, & Osborn, 2003; Thassri et al., 2000). There were however, other topics that were not included in the CEP such as: 'the girl child', 'sexuality'; and 'the female body.' These topics were not included because of the time constraints, as the program could only be delivered over a six week period. Therefore, it would not be possible to cover these areas.

### **Challenges faced by midwives**

For effective implementation of the developed Childbirth Education Program, it was essential that some of the challenges discussed by Malawian midwives were addressed. Midwives noted that there was high level of illiteracy among Malawian women (National Statistical Office, 2000). This explained why the information was delivered using the local language, as women would have struggled if teaching was done in English. Although the original program was developed in English, the midwives were able to use it and present the actual information in Chichewa. The briefing sessions before each session also helped to clarify any language problems, as there are some differences with interpretation of some Chichewa words.

Midwives had pointed out that they sometimes did not feel adequately prepared for their teaching role. This problem was acknowledged as important by the researcher and training was undertaken with midwives who implemented the program to ensure they were able to consistently implement the CEP. This has, however, implications for the future if the CEP were to be adopted. It also has implications for midwifery educational institutions in Malawi as there would be a recommendation to review current curricula in order to improve midwifery student's teaching and counselling skills. Although patient education and counselling is part of the Kamuzu College of Nursing curriculum, in practice, educators felt students did not gain adequate skills in patient education and counselling. In the midwifery curriculum, antenatal education is not covered as content in class, however, students are offered opportunities to teach women at antenatal clinics during their antenatal placement. A review of curriculum content for Indonesia similarly reveals that education and counselling are not covered as content within the midwifery curricular (John Hopkins Program for International Education in Reproductive Health, 2001).

Findings from the current study revealed that staffing problems were a critical issue. This program was implemented using staff available, as well as, extra staff were also recruited because it was impossible to implement the CEP where there were only three midwives managing an antenatal clinic with more than 200 mothers at each visit. Additionally, these same midwives were expected to care for mothers in labour ward, the postnatal ward, and also to provide family planning and under-five services. Three external midwives and one midwife from within the clinic were recruited to assist with implementation of the program. This has implications for future implementation of the CEP, as it would be extremely difficult to implement such a program in some settings in Malawi because of low staffing levels. To

successfully implement an ongoing Childbirth Education Program in Malawi, a government commitment to increase midwifery staffing levels would be essential.

The issue of cultural information previously discussed under the Concept: 'Mother's perception of childbirth' is critical and was considered when developing the CEP. During each session, the CEP was designed so that mothers and midwives could discuss common cultural beliefs and practices. Anecdotal notes taken by midwives indicated this helped alleviate anxiety, (particularly among first time mothers) as well as, discourage practices that were considered unsafe to the mothers and their babies. These findings concur with studies done in other countries where issues of culture are significant factors influencing childbirth practices (Afsana & Rashid, 2000; Bester & Nolte, 1992).

It was not possible to deal with the issue of accessibility to antenatal care and education during the implementation of the CEP, and some of the issues raised were beyond control of the researcher. For example, there were days in the clinics when women could not come for antenatal care. Some women were sent back if they came on such days. This is a policy issue but feedback from this study will be given to influential policy makers in Malawi for consideration.

Lack of material resources was another challenge faced during the implementation of the CEP. Although, it was not possible to deal with issue of limited resources during the implementation of the CEP, there is a clear need to give feedback to the Ministry of Health in Malawi to assist with future planning to ensure that, essential materials that were absent in clinics (such as BP machines), but which are vital could be made available. Sometimes, this occurs due to lack of communication regarding resources not available at the clinics. As well, midwives may not know where to source materials. For example, the Safe Motherhood Initiative (SMI) in Malawi has developed posters for use in teaching some topics, however, these were not available at the clinics but were available in the SMI office or in District offices. Williams and Booth (1980) emphasised the need to have materials for teaching such as pictures and diagrams in advance and that materials used should be those that are available. These materials helped to clarify issues or emphasise points during the CEP sessions.

Redman (1993) explained that goals of learning have been classified into cognitive, affective and psychomotor domains and that information providers must address these domains. It is very important that participants are motivated to learn. In the CEP, different teaching methods were used such as discussion, role playing, use of songs and pictures to encourage client motivation. Midwives commented that mothers did participate and asked questions. When implementing an education



intervention, issues such as identifying learners' needs, the emotional context in which learning occurs, and health care provider's experiences must be considered (Farrell, Bushnell, & Haag-Heitman, 1998).

### **Importance of giving information**

It is interesting to note that Malawian midwives appreciated the need for giving information to mothers. This is very important, as it is a motivating factor for midwives to give childbirth information. Midwives knew that receiving information and being able to make informed decisions is the right for all mothers. Furthermore, information promotes self-care as it enables the mothers to make appropriate decisions regarding their own care. Malawian women need to be empowered, and to do so they require knowledge about childbirth. They are better able to make decisions if they have knowledge concerning childbirth.

### **Strategies for giving information and the way forward**

It was important that Malawian midwives made suggestions for strategies to be used in the implementation of the program given their knowledge and experience of antenatal education within the Malawian context. The midwives suggested that both group and individual teaching be used in the CEP because not only was this practical, but there were not enough midwives to use individual teaching as well as give mothers an opportunity to share information in a group. There were sensitive issues which could not be handled in a group, hence the need for individual teaching (Williams & Booth, 1980). Mothers were taught initially in a group but were later seen individually if they had a specific need or the issue under discussion was sensitive. The use of groups is supported by Redman (1993) who explained that group teaching could be an economical way to teach several individuals at one time, and the experience of having the support of a group may be the most likely way for patients to meet their objectives.

Some Malawian midwives suggested that primigravid women should be separated from multigravid women. This was not incorporated in the CEP because of a lack of resources such as rooms and staff to handle two different groups. However, in contrast, some midwives felt there was no need to separate them, as they all needed the same information. During the implementation of the CEP both primigravid and multigravid women benefited from mixed group sessions. The findings indicated that both groups benefited equally as far as increasing knowledge level.

Midwives pointed out that there was a need to organise teaching of the content to avoid repetition. The program was organised in such a way that there was no repetition of the material covered each week. Mothers were informed about the content for the coming week so they knew they were going to learn new material. The content taught was translated into Chichewa with the help of a Chichewa expert, and midwives had a briefing session before each session to ensure that everyone understood the material. Use of the Chichewa language was appropriate and ensured that the material was presented in a language that women could understand. Although the study was conducted in a multiethnic society, Chichewa is considered the main language, and is understood by the majority of the population. Other authors support the idea of organising teaching (Dumas & de Montigny, 1999; England & Horowitz, 2000; Podgurski, 2000).

Malawian midwives suggested that training and education of midwives be strengthened to ensure that students who finish their midwifery training are fully equipped with teaching and counselling skills. It was interesting to note that both clinicians and educators agreed on this issue. These findings will be presented to Midwifery educators in Malawi who may consider the issues when they review midwifery curricular.

Generally, all midwives suggested that a written childbirth guide be developed to accompany the CEP for midwives to utilise when implementing the CEP. The midwives who were interviewed were informed that the CEP developed would also comprise a guide for childbirth education, because it would consist of both content as well teaching methodologies.

Other issues discussed such as improved accessibility, infrastructure and staffing could not be addressed during this study. However, it is the intention of the researcher to inform the Ministry of Health in Malawi of these issues for use in future planning and policy development. Midwives also felt that there was a need for increased male/partner involvement in childbirth. This was not addressed, as it was beyond the scope of the current study, but may be considered by the Ministry of Health. However, this would also have implications for resources as well as cultural beliefs and practices.

### **Summary of Concept**

This Concept addressed childbirth education issues described by Malawian midwives. Many issues were addressed during this study, however, some could not be addressed given the purpose and scope of this research. These will be shared

with the Ministry of Health in Malawi, as well as relevant publications will be undertaken as part of the dissemination process.

### **Concept: Development of the Childbirth Education Program (CEP)**

This Concept discusses the Childbirth Education Program (CEP) and the factors related to issues of development of the CEP including training of midwives who implemented the program, scheduling of the program, and development of the tool that was later used to test the program.

#### **Process of development of the CEP**

As discussed in the "Methods and Results" Chapters, a Childbirth Education Program was developed in Phase 2 of the study. The process required an extensive literature review on childbirth education, which formed the basis for the content of the program. Data from Study 1, which explored labour and birth Information needs of Malawian women and their satisfaction with information received Malata (1997), was also used in the development of the program. This previous study's findings reflected Malawian women's views of childbirth education. It was important that Malawian women's views be incorporated in the program, as it would not be educationally sound to formulate a program that only used midwives' views. It is always important to identify need for learning in order to capture the learner's interest as previously supported in the literature (Ho & Holroyd, 2002; Redman, 1993; Renkert & Nutbeam, 2001; Sullivan, 1993). The beneficiaries of the program would be the Malawian women and therefore, their perceptions were central to the program. Therefore, needs of Malawian women were important in the development of the CEP.

Furthermore, in Phase 1 of the current study, midwives' perspectives of childbirth education were explored and have been presented in Chapter 5. As midwives would be implementing the CEP, their views were also equally important in the development of the program. Views of midwives were incorporated in the development of the content for the CEP as well as the strategies for implementation of the program. The inclusion of health professionals' views in teaching interventions has been recommended in other studies (Cronin & McCarthy, 2003; Hallgren et al., 1994; Renkert & Nutbeam, 2001).

It was also necessary that expert midwives review the program before it was implemented to ensure that all important content was covered and that the program was clear and user friendly. These midwives understood the context and were

knowledgeable about the current status quo, and what would be realistic for the Malawian setting. Their suggestions are presented in 'Methods' Chapter. Their involvement was important as it ensured their participation in the development process. The literature also suggests that participation in development of education programs increases commitment of the mothers and their partners (Cleeton, 2001; Hotelling, 2001; Ip et al., 2003).

### **Implementation of the CEP**

The program contained mainly content as well as suggested teaching methodologies that midwives could use. The program needed to cover all areas of pregnancy and childbirth, as these are the issues that mothers wanted to know (Ho & Holroyd, 2002; Ip et al., 2003; Sullivan, 1993). It was, however, discovered that not all content could be presented in one program so only critical areas were included in the actual implementation of the CEP. Topics that were commonly identified by midwives and women were considered as well as content that related to danger signs and complications (Geelhoed, 2003; Gennaro, Dugyi, Doud, & Kershbaumer, 2002).

During the program, apart from giving the actual content during the group teaching sessions, the midwives were also gave individual counselling at the end of each session. Most issues covered were sensitive such as 'sexually transmitted infections'. The midwives also undertook assessments for any complaints apart from the normal antenatal assessments. They prescribed drugs or referred the mothers to a clinical officer if they could not manage the problem. It was necessary that midwives gave total care to these women although this was time consuming. The individual counselling and assessments were conducted after group sessions, and each woman's needs were met before she left the clinic. Individual sessions impacted on waiting periods as they took 5 to 15 minutes on average. This may have implications for maternal satisfaction as pointed out by Bond and Thomas (1992) and may be an area for possible research if such a program was implemented.

### **Training midwives**

The three midwives who were identified to implement the program received training on how to use the program. Literature suggested that providers of antenatal education be well trained for this role to ensure quality control (Dumas, 2002; Laryea, 1998; Lauzon & Hodnett, 2003; Lavender, Walkinshaw, & Walton, 1999; MacLeod & Weaver, 2002; Redman, 1993; Richter, 2002; Schmied, Myers, Wills, &

Cooke, 2002). Translation of the actual teaching content into Chichewa was done by the researcher with assistance of a Chichewa expert and briefing sessions were undertaken before every session to discuss their understanding of the content. This was carried out to ensure that midwives were comfortable with implementation of the program. This has implications for possible future adoption of the CEP as midwives would need to undergo training on how to use the program to ensure quality and consistency.

Debriefing sessions were undertaken at the end of each session as well as at the end of the program. Feedback from midwives indicated this was an important program and would like it to be considered for future implementation. The purpose of the briefing sessions was to ensure uniformity among the midwives and clarify any issues that the midwives were not sure about (Jeffers, 1993; Redman, 1993).

### **Program schedule**

The CEP was scheduled over period of six weeks and all topics, which were chosen as critical, were covered. This was found to be practical. Initially it was intended that the program be implemented over eight weeks. Midwifery experts in Malawi thought this period was too long, as most women would not finish the program. Women have to walk long distances to come to the clinic or have to pay for the bus fare. The topics were spread over 6 weeks, which was practical with the resources currently available. Most antenatal education programs developed in developed countries run for varying periods. The duration of programs run is often not highlighted. Some programs are implemented for time periods as short as short as 6 weeks, but others for as long as seven months (Callaghan et al., 2001; Carrington et al., 1994; Finks, Hill, & Clark, 1993; Friedman, 1986; Hallgren et al., 1995; Halstead & Fredrickson, 1978). It is believed that if a program is too long, there will usually be a high drop out rate. It is, however, advocated that teaching should be ongoing until the postpartum period as family members learn when it is most needed (Perry, 1992; Peterson & Peterson, 1993).

### **Challenges faced by midwives**

Although the drop out rate for this study was 20%, it was found that every week a group of women who were not recruited in the study joined the teaching and counselling sessions. These women were asked why they came and they said they heard from their friends that they were being given valuable information about childbirth. They were encouraged to attend the sessions but were not included in the study. The reason they could not be included in the study was explained to them.

The impact of teaching sessions on the women in the program was revealed from information shared with other women attending antenatal care at the intervention site through word of mouth. This sharing of information further justified the decision to use a sequential design of sampling for this study as it showed how powerful "word of mouth" was. Word of mouth plays a role in inviting people to participate in a program as previously found by Ministry of Health and Population (2000).

There was no actual room space for the teaching sessions to be held within the clinic, therefore, sessions were conducted in an open space behind the clinic. At this time, construction work was taking place at the clinic and hence there were men working on the site. Normally the antenatal education sessions are held in the veranda of the antenatal clinic. Sometimes midwives had to adjust the volume of their voices to avoid men from hearing the talk, as culturally men are not supposed to hear childbirth issues. The program was held outside the clinic and away from the construction, as we did not want men to interfere with the activities of the program.

There was a long waiting time after the initial teaching session as midwives had to attend to each woman individually since this was their first day at the clinic and the midwife had to take detailed history as well. This was a challenge as women would come in the morning and some would leave after five eight or more hours. Experience showed that women usually look forward mainly to the physical examination and were not interested in the teaching that takes place. Previous studies done on satisfaction with maternity care indicate that waiting time influences quality of care and it was important that this issue be addressed (Bond & Thomas, 1992; Lumley & Brown, 1994).

### **Summary of Concept**

In this Concept, factors relating to issues of development and implementation of the program, training of midwives who implemented the program, scheduling of the program as well as challenges faced during implementation of program were discussed. If such a program would be used in Malawi, some of the issues raised such as infrastructure and staffing would have to be addressed.

## **Concept: Evaluation of the Childbirth Education Program**

This Concept addresses issues concerning the evaluation of the CEP. The measurement tool used in the assessment will also be discussed as well as findings at baseline and differences between and within the groups. Ovretveit (1998) argued that it was important to evaluate health interventions to judge the importance and value of the interventions although it is a complex process. Similarly, Richter (2002) argued that there was a need to develop valid standards for perinatal education programs. It was emphasised that there should be a philosophy for any perinatal education. As well, socio-economic status of clients had to be considered. The facilitators for antenatal education had to be prepared to provide information and the curriculum adapted to meet clients' needs. The developed CEP for Malawi addressed these issues. Schneider (2002) held similar views and proposed a comprehensive review of the philosophy, content, delivery and evaluation of current childbirth programs.

Intervention programs have been evaluated world wide to examine the impact of antenatal education as was undertaken in the current study. There have been varying outcomes from such programs (Beger & Beaman, 1996; Callaghan et al., 2001; Carrington et al., 1994; Donko & Hoyer, 2003; Fiscella, 1995; Flessig, 1993; Gunn, Fisher, Lloyd, & O'Donnell, 1983; Halstead & Fredrickson, 1978; Ho & Holroyd, 2002; McKeller et al., 2002; O'Meara, 1993a, 1993b; Schneider, 2001).

### **Measurement issues**

The questionnaire used for the pretest and posttest was developed from the content in the CEP. The questionnaire tested knowledge of women at baseline and at 6 weeks. The measure used was simple and easy to interpret to assist in its implementation by midwives. This tool was used for the first time, and therefore, clarity, content validity and apparent internal consistency measures were carried out.

Although, Chapter 6 indicated that the instrument was a reliable and valid measure of childbirth knowledge of Malawian women, it is important that a further analysis on the instrument be undertaken at a later stage in order to establish if this instrument tested all important aspects of childbirth education. Further research work using the tool may also be necessary for refinement of the tool using a larger sample. This re-testing would make the tool more reliable and valid (Coakes & Steed, 1996; Pallant, 2001; Tabachnick & Fidell, 1996).

Furthermore, each item (question) had been given equal weight in the analyses. Clearly, the childbirth information given to women is not of equal weight. Some areas such as 'danger signs' could be considered more important than others. In addition, the women were allowed to mention as many responses as they knew for each particular question and this led to multiple responses. During analyses, at times there were significant findings because of the multiple responses and yet some had few numbers of women who identified such responses. This implies that the questionnaire requires reconstruction to improve this aspect.

Spitzer (1988) emphasised that measurement issues are critical in any research. They explain that measurement issues should address the following issues: participant characteristics, cultural context, historical context, research goals and administration issues. The reason for developing a new instrument was that efforts to identify an existing tool failed, as most tools were designed to measure behaviour change rather than knowledge.

To prevent potential bias, a separate group of three midwives administered the questionnaire, rather than the midwives who implemented the CEP. Initially it was intended that two midwives be recruited however, one more was required to assist with administration of the questionnaire. These midwives had finished their Bachelor of Nursing Program in which they had covered research methodology. They were chosen on the basis of their basic research knowledge. This ensured that midwives appreciated the data collection process as being essential and consistently followed all guidelines (Jenkinson, 1997; Ovretveit, 1998).

### **Groups at baseline**

At baseline, the analyses revealed no significant difference between the control and intervention groups for the demographic variables of age group; gravidity; marital status; religion; education and occupation. There were, however, significant differences for demographic variables of gestation. This could be attributable to the fact that the majority of these women in the intervention group were multigravid women who came to the clinic on the recruitment day. They came from an area where multigravid women started antenatal care in second or third trimester. This was not an unusual finding among most Malawian multigravid women who traditionally prefer starting attending antenatal clinic in the second or even third trimesters.

Baseline data for all the thirty items for both the control and intervention groups indicated women had similar knowledge levels. Similarly, baseline data



formed the basis for comparison for the control and intervention group. Both groups revealed Malawian women lacked knowledge regarding more important topics such as danger signs in pregnancy, labour and postnatal care as well as information regarding possible complications. These results are similar to previous findings of studies conducted by the Safe Motherhood in Malawi which identified that women did not know these danger signs and therefore could not always seek medical attention if they experienced them (Ashwood-Smith, 2000a; National Statistical Office, 1996, 2000). It was, therefore, important that these topics be included in the CEP. Existing literature suggests that, worldwide, women's childbirth literacy should be improved through antenatal education (Hetherington, 1990; Renkert & Nutbeam, 2001; Rice, 1994).

### **Differences between and within the groups**

As presented in Chapter 7, findings addressed the differences between both the groups, and within the groups at baseline and at posttest. Findings indicated that in the control group, there generally were no differences between pretest and posttest scores for most of the items, and overall, for each of the three domains (antenatal, labour and postnatal). In the intervention group however, there were significant increases in knowledge for most items and overall, for each domain, following the participation in the Childbirth Education Program.

These findings are supported by findings of a study conducted by Rolls and Cuttis (2001) in Melbourne, Australia who investigated a new approach to education on classes for expectant parents. A prospective longitudinal experimental design was employed with seventy first time pregnant women and their partners recruited to a control and intervention group. The experimental group participated in an antenatal education program that was designed to support, educate, and address pregnancy, labour, birth and postnatal fears of expectant parents. Although this study used both parents, it is interesting to note that similar to the findings of the Malawi study, pregnancy, labour, birth and postnatal knowledge of women in the experimental group increased (Rolls & Cuttis, 2001).

These findings reinforce the need for organised childbirth programs to meet clients' needs. Although there have been varying discussions about the effects of childbirth programs, many studies have supported the argument that properly organised childbirth program produce better outcomes (Hetherington, 1990; Ho & Holroyd, 2002; Jeffers, 1993; Renkert & Nutbeam, 2001; Spiby, Hendreson, Slade, Escott, & Fraser, 1999; Spinelli et al., 2003; Westmoreland & Zwelling, 2000)

## **Post-hoc analysis**

Post-hoc analysis revealed that selected demographic variables did not have an impact on the outcomes (Total antenatal, labour and postnatal scores were used). Age, gestation, gravidity and education did not have an effect on childbirth knowledge in the antenatal, labour and birth, and postnatal domain in both groups. This finding is supported by findings from previous studies which found no differences in outcomes from antenatal education based on demographic data (Michie, Marteau, & Kidd, 1990; Mollart, 1995; Rolls & Cuttis, 2001; Smoke & Grace, 1988). However, some literature suggests that some demographic factors such as education do have an impact on the outcomes of childbirth programs (Gunn et al., 1983; Hutton, Boyle, Lyman, & Ellias, 1982; Nolan, 1995; Woollett & Dosanjh-Matwala, 1990).

## **Limitations and strengths**

### **Limitations**

Limitations of the study relate to four issues. First, a quasi-experimental design with sequential sampling was used for phase 3 of the study, Randomisation was, therefore, not undertaken and hence there was potential for contamination if participants exchanged information. Second, as Phase 3 of the study was conducted in Southern Region of Malawi, it would be difficult to generalise the findings to the other two regions of Malawi as the educational needs of Malawian women in the other two regions may differ due to factors such as cultural influences, or availability of antenatal education. Third, since the measurement tool was used for the first time, replication would strengthen the validity and reliability of the tool. Finally, this CEP may not be applicable for other contexts outside Malawi, or within other developing countries.

### **Strengths**

The limitations were balanced by several strengths. The quasi-experimental design used sequential sampling, which means subjects for the control, and intervention groups were recruited at different times, to minimise the chance of subjects sharing information. The clinics used are also separated by a distance of

over eight kilometres which meant that women in these groups were not likely meet socially, as these women were unlikely to travel this distance. Women would only share information if they knew each other. There were also separate groups of midwives for different roles. One group of midwives was involved in administering the questionnaires during the pretest and posttest. The other group implemented the CEP. There was no interaction between the activities of the two groups of midwives to avoid potential influence.

Having a woman centred focus meaning both mothers and midwives in Malawi provided input in the program is strength of the study. In addition, demographic characteristics of women in the Study 1 by Malata (1997), are similar to those in the current study. Therefore, the results have the potential to be generalisable within the Malawian context. Finally, this study provided an opportunity to develop and test a Childbirth Education Program (CEP), which may be considered for future adoption in Malawi.

### **Summary of Chapter**

Given the strengths of the study, the findings contribute to midwifery practice and knowledge. It is clear that Malawian women require more childbirth information that is sensitive to their cultural, economic and social needs. A Childbirth Education Program was developed, implemented, and tested in Malawi. The findings of the study revealed that women, who participated in the CEP, had an increase in childbirth knowledge compared to those women in the control group. Implications will be presented in Chapter 9.

## **CHAPTER 9**

### **IMPLICATIONS AND RECOMMENDATIONS**

#### **Introduction**

This three-phase study developed and evaluated a Childbirth Education Program (CEP) for Malawian women. The CEP was based upon an extensive literature review, midwives data, as well as information from a previous study which explored the labour and birth information needs of Malawian women (Malata, 1997). In Phase 1, of the current study, Malawian midwives provided their perception of the childbirth education needs for Malawian women. The midwives' views were congruent with those of the Malawian women.

In Phase 2 of the study, the Childbirth Education Program was developed. It included a schedule that outlined the content and means for giving information to mothers. A questionnaire based on the content in the program was also developed and utilised as a pretest/posttest measure of maternal childbirth knowledge. The questionnaire was designed to measure maternal childbirth knowledge and due to low literacy rate, midwives completed the responses on behalf of the mothers. It was also translated into Chichewa language. Phase 3 confirmed that women who underwent routine antenatal care plus the CEP gained more knowledge regarding childbirth than women who only received routine antenatal care.

The findings contribute to the theoretical knowledge base and practice for midwifery, particularly for developing countries such as Malawi. It is anticipated that CEP program could be considered for implementation in Malawi by the Ministry of Health, as well as in other developing countries. This Chapter presents implications for nurse/midwifery practice, education, management and research. It finally presents a summary of recommendations.

#### **Implications for Nursing/Midwifery Practice**

The implications of this study for nursing/midwifery practice are presented in a format based on the conceptual framework. In the Concept of the mother's profile, some of the characteristics identified cannot be changed such as ethnic group, and

nationality or religion. However, nurses and midwives in Malawi can use opportunities they have during school visits to encourage girls to continue with school and postpone marriage and child bearing until they finish school. This may be helpful in reducing adolescent pregnancies as well as ensuring a more educated community. A better educated community may be able to appreciate what is taught and may more easily understand the content of childbirth education offered at the hospitals. Furthermore, midwives and nurses through their professional bodies, can become involved in media and/or educational campaigns that inform young women of their options such as completing school, and the effective use of contraceptives to plan their pregnancies.

The results of this study have shown that appropriate organisation and scheduling of a CEP, can ensure that critical areas of childbirth (antenatal, labour, birth and postpartum) are effectively covered during education in the antenatal clinic. This also ensures the avoidance of repetition. Malawian women had complained that sometimes they go to the antenatal clinic three times and hear the same topic on each occasion. In addition, predetermining the schedule of topics and making them known to women using posters and announcing the topics for the coming week can enable them to make a decision when to attend a clinic.

Malawian midwives who implemented the CEP, ensured that the content was delivered in consideration of the educational level of mothers. In this study, the use of simple non-medical language, pictures and group discussion to allow sharing of ideas was made in an attempt to effectively increase mothers' childbirth knowledge.

For the successful implementation of such a program in Malawi, it is very clear from the findings of this study that, there is an urgency to reorganise the current human and material resources. This may require additional resources and/or the development of more creative strategies to effectively use the available resources. There is an urgent need for influential agencies within Malawi (such as the Ministry of Health) to be made aware the deficiencies in existing resources so effective planning can be made in relation to the provision of health care resources.

## **Implications for Nursing/Midwifery Education**

### **Nursing education**

It was apparent from the findings that in the schools of nursing and midwifery in Malawi, there is need to ensure that students are well prepared for their role in patient education and, specifically, the provision of childbirth information to mothers. This means that students should continue to be given opportunities to practise giving antenatal teaching sessions to mothers. This calls for a review of the current midwifery curriculum for nurses and midwives in Malawi to ensure that childbirth education is well covered in relation to content and educational strategies in its delivery. The curriculum should include not only the content that could be provided to prospective mothers, but also the education strategies that would be effective in the presentation of childbirth information.

Furthermore, the students should be oriented to the content of childbirth education given to women in the home environment so that they are aware of what the mother may have been taught. This could be achieved by inviting traditional counsellors/traditional birth attendants to explain to the students about information they give mothers with emphasis on the methods used when delivering the information. This will give them a clear picture of issues that women are taught so they can discourage use of unsafe practices as well as alleviate anxiety for information that can make a mother anxious and fearful.

### **Professional development.**

In-service staff development should be offered to nurses and midwives who provide childbirth education, in order to update their knowledge of evidence based practice. It was clear from the midwives in this study that sometimes they felt inadequately prepared for childbirth information giving. Issues such as information given at home by traditional counsellors and traditional birth attendants could also be covered during these sessions.

There is also a need for refresher courses on these issues for midwives who have been in the clinical area for many years. These midwives may have forgotten some important aspects of childbirth education and may be required to update their knowledge on current issues as well as basic issues of childbirth education. This information could not only deal with content areas for childbirth education, but should also include educational strategies for effective means of delivering this information to individual mothers and/or groups.

Conducting professional development workshops and evidence based research workshops would be another strategy of conveying mothers' concerns about the way midwives give information. The results of this study and other studies of this nature could be shared with other health professionals through workshops. Information could also be disseminated through publication of studies conducted in this area, as well as through conference presentations.

In Malawi, traditional birth attendants are currently being traced and trained so that their performance can be more productive. This needs to continue since there are issues such as women being given information that is based on traditional beliefs and taboos which may be dangerous, or, which may cause unwarranted fear and anxiety. The cadre of traditional counsellors (alangizi) who may not be traditional birth attendants has been neglected in Malawi. Therefore, there is a need to include these resources and commence training sessions for them, as they also have a major influence on mothers because of the information they provide.

### **Implications for Nursing/Midwifery Management**

There are many areas where management might effect change to improve the current provision of childbirth information. It was very clear from the findings that the development and implementation of a Childbirth Education Program in Malawi has been effective in increasing women's childbirth knowledge. There findings suggest it may be timely for the Ministry of Health in Malawi to consider implementing the CEP and continuing to review its effectiveness in improving the provision of antenatal care in maternity hospitals, and, ultimately its impact upon maternal health outcomes.

It was also shown that for such a program to be implemented, a recruitment process for nurses and midwives might have to be considered. There is evidence of a high patient-staff ratio in Malawi (1 to 100 clients or greater at times) (National Statistical Office, 1992a, 1992b). The Ministry of Health in Malawi is aware of this problem and has been looking at ways of dealing with it (Ministry of Health, 1999-2004, 2000, 2001).

There are also issues of infrastructure such as inadequate space that were noted in the current study. On a longer term basis, the Ministry of Health may need to consider soliciting funds to reconstruct some of the antenatal clinics, which do not have room for classes to be held, as well as rooms for individual client counselling. In this study, midwives were conducting individual counselling outside the clinic

because every room was occupied. The researcher is, however, aware that some clinics are being reconstructed in Malawi.

### **Implications for Nursing/Midwifery Research**

The CEP should be retested using a larger sample, and focusing upon not only maternal childbirth knowledge, but also behavioural change, and maternal satisfaction with information provided. This would further help to refine the program and make it more “user friendly”. Use of a larger sample was not possible in this study because of limitations of a doctoral study.

This was the first study in Malawi to include midwives’ perspective in the development of a childbirth education strategy. There is need to replicate this study. There is also a requirement to look at the provider’s perspective of the CEP. Data from midwives used in this study is only based on anecdotal evidence through ad-hoc meetings held with the midwives who implemented the program during their training and throughout the implementation of the program. Actual evaluation of midwives’ perceptions of the CEP through research is recommended. This would require asking the midwives who implement the program to evaluate it.

Further work on the instrument used in this study should be conducted to refine the instrument and make it more valid and reliable. This could be undertaken through further analysis of the data focusing on the instrument as well as using data from replication study to retest and further refine the instrument. The instrument can be used for further studies to address the issue of knowledge of childbirth education.

Specific studies on traditional practices such as use of the drug ‘mwanamphepo,’ to explore their effectiveness would provide essential information regarding these practices. These practices are still common in Malawi, particularly in rural areas although mothers may not feel comfortable revealing their use of the drug due to cultural expectations. Research in this area may provide the basis for either modifying use and/or encouraging or discouraging women from using them.



## Summary of Recommendations

On the basis of this study's results, it is recommended that:

1. Nursing/midwifery curriculums address childbirth education by including evidence-based content and educational strategies to assist future midwives to provide effective childbirth information to mothers.
2. Nurse/midwifery curriculums should incorporate the content of childbirth education that is provided at home by traditional folk and family.
3. Traditional counsellors and birth attendants should undergo training on the provision of childbirth information to ensure they give safe information to first time mothers.
4. Schools of midwifery should educate more midwives to increase the number of qualified midwives who can be employed by both the Ministry of Health, and private hospitals.
5. Recruitment of more midwives should be considered at ministerial level to ensure that clinics and wards are appropriately staffed.
6. Research should be undertaken to replicate this study in order to refine the Childbirth Education Program by conducting the study on a wider basis that covers all three regions of Malawi.
7. Research should be undertaken to explore the effectiveness of traditional practices such as the use of 'mwanamphepo'.
8. Professional development for practising nurses and midwives should be conducted at both hospital and national levels to discuss childbirth education content as well as strategies for the provision of information.
9. There should be collaboration and improved communication between midwives and traditional birth attendants/traditional counsellors. This could be accomplished through frequent meetings between the groups. These meetings could be arranged by community health workers and district development committees.
10. Policy makers in the Ministry of Health in Malawi should consider implementation of a Childbirth Education Program, as currently there is no existing program.

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Focus Group Interview Guide for Midwives

**Title: The Development and Evaluation of a Childbirth Education Program for  
Malawian Women**

**Investigator: Address Mauakowa Malata**

I am interested to know your perceptions of childbirth information needs of women and strategies that can be used to effectively give childbirth information to women in Malawi. In this focus group session, we will discuss these issues. The information obtained from the discussions will be used as a basis for developing a childbirth education program.

1. What do you think is the most important information about pregnancy that pregnant women should know?
2. What do you think is the most important information about labour and birth that pregnant women should know?
3. What do you think is the most important information about the puerperium that pregnant women should know?
4. What other information should be given to the pregnant women at the antenatal clinic?
5. What information have you heard that is given to pregnant women during pregnancy at home regarding childbirth?
6. Why is it important that women are given information regarding childbirth at antenatal clinic?
7. Which special groups of women require information about childbirth? (Use probes such as first time mothers, multiparas).
8. Why you think it would be necessary to give information to the two groups differently? (First time mothers and multiparas as separate groups)?
9. Who would be best able to organize information given to women at antenatal clinics?
10. Who are the best persons to give childbirth information to women?
11. What strategies would be most effective in giving childbirth information to women?
12. How can antenatal care in Malawi be improved? (particularly the aspect of giving information to women)
13. What are the existing strengths of giving childbirth information in Malawi?
14. What are the existing barriers to giving childbirth information to women?
15. What are the potential barriers to giving childbirth education to women?



Note: Non-directive probes such as these will be used throughout to gain additional details and clarify responses.

- a) Tell me more about that?
- b) Can you explain?
- c) Give me an example
- d) How do you feel about that?
- e) Anything else?

At the end of the focus group, participants will be given an opportunity to ask questions or comment on anything that relates to the discussion.

Individual Interview Guide for Key Informants**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women****Investigator: Address Mauakowa Malata**

I want to know your perceptions of childbirth information needs of women and strategies that can effectively be used to give childbirth education to women in Malawi. In this interview, we will discuss these issues. The information obtained will be used in developing a childbirth education program.

1. What do you think is the most important information about pregnancy that pregnant women should know?
2. What do you think is the most important information about labour and birth that pregnant women should know?
3. What do you think is the most important information about the puerperium that pregnant women should know?
4. What other information should be given to the pregnant women at the antenatal clinic?
5. What information have you heard that is given to pregnant women during pregnancy at home regarding childbirth?
6. Why is it important that women are given information regarding childbirth at antenatal clinic?
7. Which special groups of women require information about childbirth? (Use probes such as first time mothers, multiparas).
8. Why you think it would be necessary to give information to the two groups differently? (First time mothers and multiparas as separate groups)?
9. Who would be best able to organize information given to women at antenatal clinics?
10. Who are the best persons to give childbirth information to women?
11. What strategies would be most effective in giving childbirth information to women?
12. How can antenatal care in Malawi be improved? (particularly the aspect of giving information to women)
13. What are the existing strengths of giving childbirth information in Malawi?
14. What are the existing barriers to giving childbirth information to women?
15. What are the potential barriers to giving childbirth education to women?

Note: Non-directive probes such as these will be used throughout to gain additional details and clarify responses.

- a) Tell me more about that?
- b) Can you explain?
- c) Give me an example
- d) How do you feel about that?
- e) Anything else?

At the end of the interview, participants will be given an opportunity to ask questions or comment on anything that relates to the discussion.

## Appendix C

Letter of Approval from ECU Ethics Committee

EDITH COWAN  
UNIVERSITY

PERTH WESTERN AUSTRALIA  
CHURCHLANDS CAMPUS

Pearson Street, Churchlands  
Western Australia 6018  
Telephone (08) 9273 8333  
Facsimile (08) 9387 7095

ABN 54 361 485 361

8<sup>th</sup> November 2001

**Human Research Ethics Committee**

Ms A M Malata  
School of Nursing & Public Health (Student # 0959177)  
Churchlands Campus

Dear Ms Malata

**Code:** 01-177

**Project Title:** *The Development and Evaluation of Childbirth Education Program for Malawian Women*

This proposal was reviewed by the members of the Human Research Ethics Committee at its meeting on 2<sup>nd</sup> November 2001.

I am pleased to advise that the proposal complies with the provisions contained in the University's policy for the conduct of ethical research, and your application for ethics clearance has been approved.

Period of approval: **From** 8<sup>th</sup> November 2001 **To** 31<sup>st</sup> December 2002

Please note that your research proposal must be approved by the Research Students and Scholarships Committee before you commence any data collection. The Graduate School will inform you in writing as soon as your research proposal has been accepted.

With best wishes for success in your work.

Yours sincerely

Marilyn Beresford  
EXECUTIVE OFFICER  
Phone 9273 8170  
Fax: 9273 8661  
Email: m.beresford@cowan.edu.au

cc. Dr Y Huack, Supervisor  
Mrs Karen Leckie, Executive Officer, Graduate School

## Appendix D

Letter of Approval from Malawi College of Medicine Research Committee**UNIVERSITY OF MALAWI**

Principal

Prof. J.D. Chipangwi MBChB (Aberd) M. Med (Mak) FRCOG (UK)

Our Ref.:

Your Ref.:

College of Medicine  
Private Bag 360  
Chichisi  
Blantyre 3  
Malawi  
Telephone: 677 245

677 291  
Fax: 674 700  
Telex: 43744

November 26, 2001

Mrs M. Malata  
Kamuzu College of Nursing  
Blantyre Campus  
Blantyre

Dear Mrs Malata

**RE: P00/01/128 – DEVELOPMENT AND EVALUATION OF CHILDBIRTH  
EDUCATION PROGRAM FOR MALAWIAN WOMEN**

I would like to inform you that at its recent meeting held on November 21, 2001 COMRC approved the above mentioned research proposal which you submitted.

As you proceed with the implementation of the research study, I would like to draw your attention to the COM requirements for all COMRC approved research studies.

Prof. J.J. Wirima  
**CHAIRMAN - COMRC**

Seeking approval to conduct focus groups

**Title: The Development and Evaluation of a Childbirth Education Program for  
Malawian Women**

**Investigator: Address Mauakowa Malata**

The Administrator

Through: The Principal  
Kamuzu College of Nursing  
Private Bag 1  
Lilongwe  
MALAWI

Dear Sir/Madam

**REQUEST TO USE AS A SITE FOR FOCUS GROUP INTERVIEW IN A RESEARCH  
PROJECT ENTITLED 'THE DEVELOPMENT AND EVALUATION OF A CHILDBIRTH EDUCATION  
PROGRAM FOR MALAWAN WOMEN'**

My name is Address Malata. I am a midwife, currently studying at Edith Cowan University in Australia.

As part of data collection of a research study on the development and evaluation of a Childbirth Education Program, I plan to conduct focus group discussions with midwives at your institution. I write to ask for permission to use your institution as one of the sites for the focus group interviews. The purpose of the study is to identify childbirth information needs of Malawian women. The information obtained will be used to develop a childbirth education program.

A focus group interview guide will be utilised to guide the discussions. Participants will be midwives teaching midwifery or working in the clinical area. Data obtained will be treated with total confidentiality.

There are no risks involved in this study and the results will be used only for the intended purpose.

Thank you for your co-operation and assistance.

PRINCIPAL INVESTIGATOR  
Mrs A M Malata  
Edith Cowan University  
Pearson Street  
Churchlands  
Western Australia 6018

PRINCIPAL SUPERVISOR  
Carol Thorogood  
Edith Cowan University  
Pearson Street  
Churchlands  
Western Australia

.....  
Date:

.....  
Date:

## Appendix F

Information sheet for midwives in focus group**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women****Investigator: Address Mauakowa Malata**

I am seeking midwives to participate in one part of a research project on the development and evaluation of a Childbirth Education Program for Malawian women. Part of the study will involve conducting focus groups among midwives to identify childbirth information needs of Malawian women and suggest strategies for giving this information to women. The midwives working in the clinical area and in the teaching institutions are frequently challenged with issues surrounding information giving on childbirth. At the moment in Malawi there is no properly organised childbirth education program. There is also little information about what women need to know about childbirth and even their level of knowledge is not known.

I believe that knowing about childbirth information needs of women is necessary and will be useful in developing a Childbirth Education Program for the women. Knowing the women's level of childbirth knowledge prior to and after the implementation of childbirth program will also assist in determining the effectiveness of the program.

**What is the aim of this study?**

The aim of this study is to identify the childbirth information needs of Malawian women. The study will use this information to develop a Childbirth Education Program. To determine the effectiveness of the program, Malawian women's childbirth knowledge level before and after implementation of a childbirth program will be assessed.

**Who is doing this study?**

The study is being conducted by Mrs Address Malata a lecturer at Kamuzu College of Nursing who is currently studying at Edith Cowan University (ECU) in Western Australia.

**What will be expected of you during this study?**

If you decide to participate in this study, you will be asked to participate in focus group discussions, which will take about one hour and will be tape-recorded.

**How will your privacy be protected?**

To protect your privacy and ensure your personal details are kept confidential, I will take the following steps:

1. Only the researcher will have access to the tapes and transcripts of the focus groups. They will be kept in a locked cabinet in my office at Kamuzu College of Nursing and Edith Cowan University. These tapes and the transcribed notes will be erased and shredded after five years.
2. You will not be identifiable in any way during the study, or in reports published following completion of the study.

**Voluntary participation and your right to refuse.**

It is important for you to know that participation in this study is voluntary. If, after agreeing, you later change your mind, you may withdraw your consent at any time, simply by telling Address Malata.

**Are there any risks involved in this study?**

There are no known risks to you in this study.

**Who can you contact if you have questions about the study?**

Address Malata at Kamuzu College of Nursing. My telephone number is 674644 or 830260 or visit me at Kamuzu College of Nursing (Blantyre Campus).

**Who has given permission for this study to proceed?**

The Edith Cowan University *Committee for the Conduct of Ethical Research* and the Malawi College of Medicine and College of Nursing Research Committee have approved this project. If you have any concerns you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing.

Thank you for taking the time to read this information sheet.





Appendix H

Invitation Letter to Key Informants

**Title: The Development and Evaluation of a Childbirth Education Program for  
Malawian Women**

**Investigator: Address Mauakowa Malata**

To:

Through: The Principal  
Kamuzu College of Nursing  
Private Bag 1  
Lilongwe  
MALAWI

Dear Madam

**INVITATION TO PARTICIPATE IN A STUDY ON THE DEVELOPMENT AND  
EVALUATION OF A CHILDBIRTH EDUCATION PROGRAM**

My name is Address Malata. I am a midwife currently studying at Edith Cowan University in Australia.

As part of data collection of a study on the development and evaluation of a Childbirth Education Program, I plan to conduct individual interviews with selected midwives in Malawi. You have been identified as an experienced midwife conversant with midwifery issues in Malawi. I would therefore like to invite you to be one of the key informants in the study. The purpose of the study is to identify the childbirth information needs of Malawian women. The information obtained will be used to develop a childbirth education program. Details of the study are presented in the attached Information Sheet. Please read the Information Sheet and if you have any questions or are willing to be interviewed you can contact me on these telephone numbers; 671644 or 830260. You can also write to me (KCN, PO BOX 415, BLANTYRE).

PRINCIPAL INVESTIGATOR  
Mrs A M Malata  
Edith Cowan University  
Pearson Street  
Churchlands  
Western Australia 6018

PRINCIPAL SUPERVISOR  
Carol Thorogood  
Edith Cowan University  
Pearson Street  
Churchlands  
Western Australia

.....  
Date:

.....  
Date:

## Appendix I

Information Sheet for Key Informants**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women****Investigator: Address Mauakowa Malata**

I am seeking midwives to participate in one aspect of a research project on the development and evaluation of a Childbirth Education Program for Malawian Women. Part of the study will involve conducting individual interviews with some of the key midwives in Malawi to identify the childbirth information needs of Malawian women, and strategies for giving information to women. The informants will be senior and experienced midwives who have also worked in the clinical areas although most will now be involved in midwifery education or administration. The midwives will hold key positions in government and non-governmental organisations.

At the moment in Malawi there is no properly organised childbirth education program. There is also limited information about what women need to know about childbirth as well as their level of knowledge. I believe that knowing childbirth information needs of women is necessary as this information will be useful in developing an appropriate Childbirth Education Program for the women. Knowing the women's level of childbirth knowledge prior to and after the implementation of childbirth program will also assist in determining the effectiveness of the program.

**What is the aim of this study?**

The aim of this study is to identify the childbirth information needs of Malawian women. The study also aims at developing a childbirth education program. To determine the effectiveness of the Childbirth Education Program, Malawian women's childbirth knowledge level before and after implementation of a childbirth program will be assessed.

**Who is doing this study?**

The study is being conducted by Mrs Address Malata a lecturer at Kamuzu College of Nursing who is currently studying at Edith Cowan University (ECU) in Western Australia.

**What will be expected of you during this study?**

If you decide to participate in this study, you will be asked to be interviewed by the researcher at your convenient time and place. The interview will take approximately one hour.

**How will your privacy be protected?**

To protect your privacy and ensure that your personal details remain confidential, I will take the following steps:

1. Only the Principal Researcher will have access to the tapes of the individual interviews. The tapes will be kept in a locked cabinet in the Principal Researcher's office at Kamuzu College of Nursing and Edith Cowan University. These tapes will be erased and the transcribed notes will be shredded after five years.
2. You will not be identifiable in any way during the study, or in reports published following completion of the study.

**Voluntary participation and your right to refuse.**

It is important for you to know that participation in this study is voluntary. If, after agreeing, you later change your mind, you may withdraw your consent at any time, simply by telling the Principal Researcher

**Are there any risks involved in this study?**

There are no known risks to you in this study.

**Who can you contact if you have questions about the study?**

Address Malata at Kamuzu College of Nursing. My telephone number is 674644 or 830260 or visit me at Kamuzu College of Nursing (Blantyre Campus).

**Who has given permission for this study to proceed?**

The Edith Cowan University *Committee for the Conduct of Ethical Research* and the Malawi College of Medicine and College of Nursing Research Committee have approved this project. If you have any concerns you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing.

Thank you for taking the time to read this information sheet.

**THE DEVELOPMENT AND EVALUATION OF CHILDBIRTH EDUCATION PROGRAM FOR MALAWIAN WOMEN.**

**FORM OF CONSENT FOR KEY INFORMANTS**

**Investigator: Address Mauakowa Malata**

I ..... have read  
Given Names Surname

the Information Sheet explaining the study entitled *The Development and Evaluation of Childbirth Education Program for Malawian Women.*

I have read and understood the information given to me. Any questions I have asked have been answered to my satisfaction.

I agree that research data gathered from the results of this study may be published, provided that names are not used.

Dated ..... day of ..... 2002

Signature .....

Dated ..... day of ..... 2002

Appendix K

Study number:

Date.....

**The Development and Evaluation of a Childbirth Education Program for  
Malawian women**

***Thank you for accepting to participate in the development and evaluation of a childbirth program research project. This questionnaire will take about 30 minutes to complete. The research assistant will ask you the questions and will record the responses on your behalf. If you have any further comments please feel free to share them at any point during the interview.***

**DOMAIN ONE: ANTENATAL CARE**

1. How would one know that she is pregnant?

- Missed period
- Nausea and vomiting
- Frequency of micturition
- Fatigue
- Weight gain
- Appetite changes (craving for certain foods)
- Other
- Don't know

2. Do you anything that could cause problems during pregnancy and birth?

- Age (below 18 and above 35)
- First pregnancy
- Pregnant for more than five times
- Birth interval of less than two years
- Very short
- Having deformed legs or hips
- Previous childbearing complications such as bleeding, spontaneous abortion, premature birth, retained placenta, blood pressure neonatal death.
- Twin pregnancy
- Breech pregnancy
- Smoking
- Alcoholism
- Bleeding
- High blood pressure
- Diabetes
- Infections such as malaria, urinary tract infection, sexually transmitted diseases
- Leaking fluid from vagina
- Poverty
- Other
- Don't know

3. When should a pregnant woman start attending antenatal clinic?

- As soon as she notices that she is pregnant
- Within the first three months of pregnancy
- Don't know

4. Why should a pregnant woman attend antenatal clinic?

- The progress of her pregnancy should be monitored
- The identification of any risk factors can be done as early as possible
- Other
- Don't know

5. Mention three types of foods that a pregnant woman should eat? (Give two examples of each type of food)

- Foods that help to build new body tissues such as beans, peas, meat, fish
- Foods that gives energy such as nsima, rice, cassava, potatoes, fat

- Foods that help protect body from infections such as green vegetables and fruits   
 Don't know

6. What are some of the common discomforts of pregnancy?

- Nausea and vomiting   
 Backache   
 Constipation   
 Swelling of feet   
 Shortness of breath   
 Increased vaginal discharge   
 Bleeding gums   
 Breast tenderness and enlargement   
 Heart burn   
 Passing urine frequently   
 Leg clamps   
 Other   
 Don't know

7. What are the major complications of pregnancy?

- Abortion   
 Premature labour   
 Anaemia   
 High blood pressure   
 Vaginal bleeding   
 Infections such as malaria, urinary tract infection   
 Other   
 Don't know

8. What warning signs should immediately bring a pregnant woman to the hospital?

- Fever   
 Vaginal bleeding   
 Severe abdominal pains   
 Painful burning urination   
 Dizziness   
 Visual disturbance such as seeing spots   
 Puffiness of feet, hands and face   
 Reduction in fetal movements   
 Fluid leaking from vagina   
 Itchy vaginal discharge   
 Persistent headache   
 Other   
 Don't know

9. How can one acquire HIV/Aids?

- Blood transfusion   
 Mother to child during pregnancy and breast feeding   
 Using sharp utensils that are contaminated such as razor blade, needles   
 Sexual intercourse   
 Other   
 Don't know



10. What should people do to avoid getting HIV/Aids?

- Having sex with one partner
- Avoid having sex with individuals at risk of having sexually transmitted diseases such as sex workers
- Avoid using already used sharp utensils such as razor blades and needles
- Use condoms
- Use of gloves when caring for relatives with HIV/Aids
- Other
- Don't know

### DOMAIN TWO: LABOUR AND DELIVERY

11. How would you know that labour has started?

- Seeing bloody discharge from vagina
- Regular uterine contractions
- Leaking of fluid from the vagina
- Other
- Don't know

12. What should a woman do when labour starts?

- Report to the nearest hospital as soon as possible
- Carry the antenatal card and materials for the baby and herself such as chitenje, razor blade, clothes for the baby if she can afford
- Have someone to escort them to the hospital
- Other
- Don't know

13. What could go wrong with the mother during labour?

- Prolonged labour
- Obstructed labour
- Bleeding
- The placenta and or membranes could retain
- Sudden rise in blood pressure
- The unborn baby's cord can prolapse
- Other
- Don't know

14. What could go wrong with the baby during labour?

- Distress of the unborn baby
- Death of the unborn baby
- Other
- Don't know

15. Why would a Caesarean section be done?

- Difficult labour such as prolonged or obstructed labour
- Fetal distress
- Breech delivery
- Previous Caesarean section (two or more)
- Bleeding
- Unusual position
- Cord prolapse
- Diseases such as of heart or kidney
- Other
- Don't know

16. What could 'mwana-mphepo' do to your labour?

- Accelerating labour
- Precipitate labour and delivery leading to complications such as tears and head injury to the newborn
- Don't know

### DOMAIN THREE: POSTNATAL CARE

17. What measures should a woman take to prevent infection during the postpartum period?

- Take a bath atleast twice daily with good perineal toilet
- Change materials used as pads frequently
- Wipe perineum after bowel movement and voiding from front to back
- Early ambulation and exercise
- Taking increase amount of fluids (more than 8 cups daily)
- Eating balanced diet
- If has episiotomy, having sitz baths 4-6 times daily
- Having rest
- Other
- Don't know

18. What are the warning signs during puerperium?

- Fever
- Bleeding from vagina
- Womb not reducing in size
- Severe abdominal pains
- Red, warm and swollen episiotomy
- Painful and frequent urination
- Feeling depressed
- Other
- Don't know

19. What are the advantages of exclusive breast-feeding?

- Breast milk contains antibodies that help to protect child from infections
- It does not require money to buy
- It promotes bonding between mother and child
- It satisfies the infants nutritional needs
- The temperature is always right
- It is easily digested
- The risk for gastroenteritis is greatly reduced
- It provides contraceptive benefit to the mother

- It is hygienic
- Other
- Don't know

20. What measures should a mother take to promote successful breast-feeding?

- Breast feed the baby as soon as possible after birth
- The mother should take a balanced diet with plenty of fluids
- Feed baby on demand
- Properly place the baby on the breast (whole nipple and areola into mouth)
- Mother should always sit in comfortable position and support the breast
- Other
- Don't know

21. What measures should be taken to promote healing of the cord stump?

- Keep the cord stump clean and dry
- Clean with cotton wool or clean pieces of cloth atleast twice a day
- Do not apply cowdung to enhance healing
- Other
- Don't know

22. What are the warning signs in the newborn?

- Crying excessively
- Refusing to feed
- Fever
- Yellow colouring of the skin
- Foul odour on the cord stump
- Vomiting
- Diarrhoea
- Bloody stools
- Bleeding from the cord stump
- Other
- Don't know

23. What immunisations is the baby supposed to receive in the first year of life? (Indicate when they are supposed to be given)

- BCG at birth
- Polio at 1, 2, 3 months
- DPT at 1, 2, 3 months
- Measles at 9 months
- Don't know

24. What are advantages of family planning?

- It protects from unwanted pregnancies
- Condoms help to prevent HIV/AIDS
- Children births are spaced hence prevent poor pregnancy outcomes
- It helps to keep family healthy
- Couples can provide for the children
- Couples can participate in nation development
- Other
- Don't know

25. Mention modern family planning methods that you know?

- |  |                          |
|--|--------------------------|
| Lactational amenorrhoea                                | <input type="checkbox"/> |
| Pill   | <input type="checkbox"/> |
| Depo provera   | <input type="checkbox"/> |
| Natural  | <input type="checkbox"/> |
| Permanent contraception (tubal ligation and vasectomy) | <input type="checkbox"/> |
| Barriers such as condoms                               | <input type="checkbox"/> |
| Spermicides  | <input type="checkbox"/> |
| Loop (IUCD)  | <input type="checkbox"/> |
| Other  | <input type="checkbox"/> |
| Don't know   | <input type="checkbox"/> |

### DEMOGRAPHIC PROFILE

Finally I will ask you some information about your background which will be useful when looking at the results of this study.

#### Demographic Data

29. What is your age?

Actual years

If not sure (estimated years) \_\_\_\_\_

37. How many months pregnant are you now? \_\_\_\_\_

31. What is your home district?

- |                |                          |
|----------------|--------------------------|
| Blantyre       | <input type="checkbox"/> |
| Mulanje        | <input type="checkbox"/> |
| Mwanza         | <input type="checkbox"/> |
| Mangochi       | <input type="checkbox"/> |
| Chikwawa       | <input type="checkbox"/> |
| Other, specify | <input type="checkbox"/> |

31. What is your tribe?

- |                |                          |
|----------------|--------------------------|
| Chewa          | <input type="checkbox"/> |
| Ngoni          | <input type="checkbox"/> |
| Lomwe          | <input type="checkbox"/> |
| Yao            | <input type="checkbox"/> |
| Tumbuka        | <input type="checkbox"/> |
| Other, specify | <input type="checkbox"/> |

33. What is your marital status?

- |                |                          |
|----------------|--------------------------|
| Married        | <input type="checkbox"/> |
| Single         | <input type="checkbox"/> |
| Engaged        | <input type="checkbox"/> |
| Divorced       | <input type="checkbox"/> |
| Widow          | <input type="checkbox"/> |
| Other, specify | <input type="checkbox"/> |

34. What is your religion?

- Roman Catholic
- CCAP( Presbyterian)
- Seventh Day
- Anglican
- Islam
- None
- Other, specify

35. What is the highest level of education you have attained?

- Never went to School
- Standard 1- 5
- Standard 6- 8
- Secondary school education
- Tertiary education

36. What is your occupation?

- House Wife
- Teacher
- Farmer
- Clerk
- Business
- Unemployed
- Other, specify

37. Whom do you live with?

- Husband
- Both parents
- Mother
- Father
- Aunt
- Grand parents
- Mother and Father in-law
- Other, specify

11. Describe the information you were given in the community?

Describe the information you were given at the hospital or clinic?

**USE THIS SPACE FOR EXTRA NOTES OR ANECTODAL NOTES**

Thank you very much for agreeing to answer the questions. I appreciate the time you have offered.

Information Sheet for Women in Pilot Study**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women****Investigator: Address Mauakowa Malata**

I am developing a Childbirth Education Program for Malawian women. I have been a midwife in Malawi for thirteen years and I am very interested in helping women learn about childbirth in Malawi. To help me with the design of the Childbirth Education Program, I need 10 pregnant women less than thirty weeks pregnant who are having a normal pregnancy to participate in a pilot trial of the program. Anything you tell me or the research midwives will be strictly confidential. I do not think there will be any possible risks for you if you decide to help me develop this program.

**Who is doing this study?**

My name is Mrs Address Malata and I will be doing this study. I am a lecturer at Kamuzu College of Nursing and I am studying at a University in Western Australia (Edith Cowan University).

**What will you need to do for this study?**

If you decide to help with the study, a midwife will ask you some questions about childbirth. As well, you will be asked to come to an information class about childbirth that will be run by a midwife. This class will last for about one hour. The midwife will also conduct your antenatal assessment.

**How will your privacy be maintained?**

1. I will be the only other person to see your personal details and the answers you give to the midwife. Your records will be kept in a locked cupboard at Kamuzu College of Nursing and Edith Cowan University. After five years your records will be destroyed (paper will be shredded and computer disks erased).
2. Your name will be replaced by a number and you will not be identifiable at all during or after the study, or in reports that may be published.

**Voluntary participation and your right to refuse.**

It is important for you to know that you do not have to agree to help with this study. If you decide to help, you may withdraw at any time by telling me so or telling the midwife at the clinic. If you do not decide to help with the study, or if you withdraw from the study after agreeing to take part, I would like to reassure you that your care during your pregnancy would not be affected in any way.

**Are there any risks involved in the study?**

There are no known possible risks that I am aware of.

**Who can you contact if you have any questions about this study?**

Mrs Address Malata at the Kamuzu College of Nursing. My telephone number is 674644. You could also visit me at the college if you wish (Blantyre Campus).

**Who has given permission for me to go ahead with this study?**

The research and ethics committees of the Malawi College of Medicine and College of Nursing as well as Edith Cowan University have given their approval for this study. If you have any worries you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing on 674644. Thankyou for taking the time to read or listen to the information.





Code No.

## Checklist A - Clarity

**Instructions****Instructions**

Read the entire survey first.

(a) Are the survey instructions clear? Circle either yes or no on the next line.

**YES**                      **NO**

(b) Read each question in the survey separately and respond to the same number on the response sheet. Beside each question number on the response sheet circle **C (clear)** or **U (unclear)** to indicate whether the question is **clear** or **unclear** to you.

After you finish you may wish discuss your comments with the researcher.

Thankyou for your assistance.

Please indicate whether each question is **C (clear)** or **U (unclear)** to you.

1.     C     U \_\_\_\_\_

2.     C     U \_\_\_\_\_

3.     C     U \_\_\_\_\_

4.     C     U \_\_\_\_\_

5.     C     U \_\_\_\_\_

6.     C     U \_\_\_\_\_

7.     C     U \_\_\_\_\_

8.     C     U \_\_\_\_\_

9.     C     U \_\_\_\_\_

10.    C     U \_\_\_\_\_

11    C     U \_\_\_\_\_

12    C     U \_\_\_\_\_

13	C	U	_____
14	C	U	_____
15	C	U	_____
16	C	U	_____
17	C	U	_____
18	C	U	_____
19	C	U	_____
20	C	U	_____
21	C	U	_____
22	C	U	_____
23	C	U	_____
24	C	U	_____
25	C	U	_____
26	C	U	_____
27	C	U	_____
28	C	U	_____
29	C	U	_____
30	C	U	_____

## Checklist B – Content Validity

**Instructions**

In this section, you are asked to look at the questions in the survey and decide if you think they seem to flow easily in a logical order.

Read the entire survey first. After you finish reading the survey, answer question (a) at the top of the response sheet – either **YES** or **NO**. Then answer question (b) for each question in the survey. Answer by circling the response you choose under question (b) – either **Y (YES)** or **N (NO)**. Please add any relevant comments you wish to explain your answers.

Thankyou for your assistance.

**Response Sheet: Checklist B**

**Label:** The development and evaluation of a Childbirth Education Program for Malawian women

**Definition:** The survey is intended to measure childbirth knowledge level of Malawian women before and after implementation of a Childbirth Education Program. There will be two groups of women. The first group will be the control group and these will receive routine antenatal care for 6 weeks. The second group will be the intervention group and these will receive routine antenatal care plus the Childbirth Education Program for six weeks. Both groups will be asked questions at first week and then at the end of the six weeks.

(a) In general, do the label and definition fit the whole set of questions in the survey? Answer once for the whole survey by circling either **YES** or **NO** on the next line.

(b) Does each question fit the label and definition? Please circle **Y (YES)** or **N (NO)**.

- |     |   |   |       |
|-----|---|---|-------|
| 1.  | Y | N | _____ |
| 2.  | Y | N | _____ |
| 3.  | Y | N | _____ |
| 4.  | Y | N | _____ |
| 5.  | Y | N | _____ |
| 6.  | Y | N | _____ |
| 7.  | Y | N | _____ |
| 8.  | Y | N | _____ |
| 9.  | Y | N | _____ |
| 10. | Y | N | _____ |

11. Y N \_\_\_\_\_
12. Y N \_\_\_\_\_
13. Y N \_\_\_\_\_
14. Y N \_\_\_\_\_
15. Y N \_\_\_\_\_
16. Y N \_\_\_\_\_
17. Y N \_\_\_\_\_
18. Y N \_\_\_\_\_
19. Y N \_\_\_\_\_
20. Y N \_\_\_\_\_
21. Y N \_\_\_\_\_
22. Y N \_\_\_\_\_
23. Y N \_\_\_\_\_
24. Y N \_\_\_\_\_
25. Y N \_\_\_\_\_
26. Y N \_\_\_\_\_
27. Y N \_\_\_\_\_
28. Y N \_\_\_\_\_
29. Y N \_\_\_\_\_
30. Y N \_\_\_\_\_

Code \_\_\_\_\_

(c) Is the question unique, ie not repetitive? Please circle Y (YES) or N (NO).

1. Y N \_\_\_\_\_
2. Y N \_\_\_\_\_
3. Y N \_\_\_\_\_
4. Y N \_\_\_\_\_
5. Y N \_\_\_\_\_
6. Y N \_\_\_\_\_
7. Y N \_\_\_\_\_
8. Y N \_\_\_\_\_
9. Y N \_\_\_\_\_
10. Y N \_\_\_\_\_
11. Y N \_\_\_\_\_
12. Y N \_\_\_\_\_
13. Y N \_\_\_\_\_
14. Y N \_\_\_\_\_
15. Y N \_\_\_\_\_
16. Y N \_\_\_\_\_
17. Y N \_\_\_\_\_
18. Y N \_\_\_\_\_
19. Y N \_\_\_\_\_
20. Y N \_\_\_\_\_
21. Y N \_\_\_\_\_
22. Y N \_\_\_\_\_
23. Y N \_\_\_\_\_
24. Y N \_\_\_\_\_
25. Y N \_\_\_\_\_
26. Y N \_\_\_\_\_
27. Y N \_\_\_\_\_
28. Y N \_\_\_\_\_



## Checklist C – Internal Consistency

**Instructions**

In this section, you are being asked to look at the questions in the survey and decide if you think they seem to belong together.

Read the entire survey first. After you finish reading the survey, answer question (a) at the top of the Response Sheet, then answer the following question (b) for each question in the survey. Answer by circling the response you choose under question (b). Add any comments you wish to explain your answers.

Thankyou for your assistance.

(a) Do these questions generally belong together?

(b) Does each question belong in the survey?

	<b>Please circle</b>		<b>Comments</b>
1.	Y	N	_____
2.	Y	N	_____
3.	Y	N	_____
4.	Y	N	_____
5.	Y	N	_____
6.	Y	N	_____
7.	Y	N	_____
8.	Y	N	_____
9.	Y	N	_____
10.	Y	N	_____
11.	Y	N	_____
12.	Y	N	_____
13.	Y	N	_____
14.	Y	N	_____
15.	Y	N	_____
16.	Y	N	_____

17	Y	N	_____
18	Y	N	_____
19	Y	N	_____
20	Y	N	_____
21	Y	N	_____
22	Y	N	_____
23	Y	N	_____
24	Y	N	_____
25	Y	N	_____
26	Y	N	_____
27	Y	N	_____
28	Y	N	_____
29	Y	N	_____
30	Y	N	_____



Information Sheet for Women in Control group (Phase 3)

**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women**

**Investigator: Address Mauakowa Malata**

I am developing a Childbirth Education Program for Malawian women. I have been a midwife in Malawi for thirteen years and I am very interested in helping women learn about childbirth in Malawi. To help me with the design of the Childbirth Education Program, I need pregnant women less than thirty weeks pregnant who are having a normal pregnancy to participate in a study. Anything you tell me or the research midwife will be strictly confidential. I do not think there will be any possible risks for you if you decide to help me develop this program.

**What is the aim of this study?**

The aim of this study is to identify the childbirth information needs of Malawian women. The study also aims at developing a childbirth education program for Malawian Women.

**Who is doing this study?**

The study is being conducted by Mrs Address Malata a lecturer at Kamuzu College of Nursing who is currently studying at Edith Cowan University (ECU) in Western Australia.

**What will be expected of you during this study?**

If you decide to participate in this study, you will be expected to answer questions from a questionnaire at the beginning of the study and again after two and a half months. During this period you will continue receiving the usual antenatal care.

**How will your privacy be protected?**

To protect your privacy and ensure that personal details are kept confidential, I will take the following steps:

1. Only the researcher will have access to the research information (questionnaires and consent forms and record sheets). These will be kept in a locked cabinet in the Principal Researcher's office at Kamuzu College of Nursing and Edith Cowan University when she returns to Australia. The questionnaires, record sheets and consent forms will be shredded after five years.
2. You will not be identifiable in any way during the study, or in reports published following completion of the study.

**Voluntary participation and your right to refuse.**

It is important for you to know that participation in this study is voluntary. If, after agreeing, you later change your mind, you may withdraw your consent at any time, simply by telling me or the midwife at the clinic. Your care will not be comprised if you decide not to participate in the study.

**Are there any risks involved in this study?**

There are no known risks to you in this study.

**Who can you contact if you have questions about the study?**

Address Malata at Kamuzu College of Nursing. My telephone is 674644 or 830260 or visit me at Kamuzu College of Nursing (Blantyre Campus).

**Who has given permission for this study to proceed?**

The Edith Cowan University *Committee for the Conduct of Ethical Research* and the Malawi College of Medicine and College of Nursing Research Committee have approved this project. If you have any concerns you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing.

Thank you for taking the time to read this information sheet or to listen to the researcher giving you this information.



Information Sheet for Women in Intervention Group (Phase 3)**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women****Investigator: Address Mauakowa Malata**

I am developing a Childbirth Education Program for Malawian women. I have been a midwife in Malawi for thirteen years and I am very interested in helping women learn about childbirth in Malawi. I need pregnant women who are less than thirty weeks pregnant, having a normal pregnancy to take part in the Childbirth Education Program.

**Who is doing this study?**

My name is Mrs Address Malata and I will be doing this study. I am a lecturer at Kamuzu College of Nursing who is studying at a university in Western Australia (Edith Cowan University).

**What will you need to do for this study?**

1. If you decide to help with the study, a midwife will ask you some questions about childbirth and your personal details at the beginning of the study.
2. You will also be invited to attend a childbirth education session over two and half months which will be held every two weeks. Each session will last about one hour. The midwife who will hold the childbirth session will also examine you every month. The sessions will be held here at the clinic.

**How will your privacy be maintained?**

1. I will be the only other person to see your personal details and the answers you give to the midwife. Your records will be kept in a locked cupboard at Kamuzu College of Nursing and Edith Cowan University. After five years your records will be destroyed (paper will be shredded and computer disks erased).
2. Your name will be replaced by a number and you will not be identifiable at all during or after the study, or in reports that may be published.

**Voluntary participation and your right to refuse.**

It is important for you to know that you do not have to agree to help with this study. If you do decide to help, you may withdraw at any time by telling me so or the midwife at the clinic. If you do not decide to help with the study, or if you withdraw from the study after agreeing to take part, I would like to reassure you that your care during your pregnancy would not be affected in any way.

**Are there any risks involved in the study?**

There are no known possible risks that I am aware of.

**Who can you contact if you have any questions about this study?**

Mrs Address Malata at the Kamuzu College of Nursing. My telephone number is 674644. You could also visit me at the college if you wish (Blantyre Campus).

**Who has given permission for me to go ahead with this study?**

The research and ethics committees of the Malawi College of Medicine and College of Nursing as well as Edith Cowan University have given their approval for this study. If you have any worries you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing on 674644.

Thankyou for taking the time to read or listen to the information.







Seeking permission for Pilot Study site

**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women**

**Investigator: Address Mauakowa Malata**

The Administrator

Through: The Principal  
Kamuzu College of Nursing  
Private Bag 1  
Lilongwe  
MALAWI

Dear Sir/Madam

**REQUEST TO USE AS A SITE FOR PILOT STUDY FOR A RESEARCH PROJECT ENTITLED 'THE DEVELOPMENT AND EVALUATION OF A CHILDBIRTH EDUCATION PROGRAM FOR MALAWAN WOMEN'**

My name is Address Malata. I am a midwife, currently studying at Edith Cowan University in Australia.

I write to seek permission to use your health centre as a site for pilot study for an ongoing research project on the development and evaluation a childbirth education program for Malawian Women. The study has three phases. The first phase involved identifying childbirth information needs of Malawian women. The second phase involved developing a childbirth education program based on the findings in Phase I. A pretest/post-test was developed to determine childbirth knowledge of Malawian women. In the third phase, in which your institution has been identified as a potential pilot study site, a pretest/post-test will be administered to twenty women to check whether the instrument is measuring what is supposed to measure. During this time, two midwives who will be research assistants will also be given an opportunity to administer the instrument to identify any potential problems that may occur during the actual study. Two other research assistants will also have an opportunity to practice teaching women using the education program. We plan to be in your institution for two days (Dates will be given). Participants in the pilot study will be twenty pregnant women of less than 30 weeks gestation who have no actual or potential complications. Data obtained will be treated with total confidentiality. There are no risks involved in this study and the results will be used only for the intended purpose

The study has been approved by the Ministry of Health through the Malawi College of Medicine and Kamuzu College of Nursing Research Committee. If you have any questions regarding approval you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing (Blantyre Campus- Tel 671644). I write to ask for permission to use your institution as one of the sites.



***Thank you for your co-operation and assistance.***

PRINCIPAL INVESTIGATOR  
Mrs A M Malata  
Edith Cowan University  
Pearson Street  
Churchlands  
Western Australia 6018

PRINCIPAL SUPERVISOR  
Carol Thorogood  
Edith Cowan University  
Pearson Street  
Churchlands  
Western Australia

.....  
Date:

.....  
Date:

Seeking permission to use site for the study (Phase 3)

**Title: The Development and Evaluation of a Childbirth Education Program for Malawian Women**

**Investigator: Address Mauakowa Malata**

The Administrator

Through: The Principal  
Kamuzu College of Nursing  
Private Bag 1  
Lilongwe  
MALAWI

Dear Sir/Madam

**REQUEST TO USE AS A SITE FOR PHASE THREE OF A RESEARCH PROJECT ENTITLED 'THE DEVELOPMENT AND EVALUATION OF A CHILDBIRTH EDUCATION PROGRAM FOR MALAWAN WOMEN'**

My name is Address Malata, a midwife, and I am currently studying at Edith Cowan University in Australia. I am conducting a study on the development and evaluation of a Childbirth Education Program.

The study has three phases. The first phase involved identifying childbirth information needs of Malawian mothers. The second phase involved developing a childbirth education program based on the findings in Phase I. A pretest/ post-test was developed to determine childbirth knowledge of Malawian women. In the third phase, in which your institution has been identified as a potential study site, two groups of women will be asked to voluntarily participate in the study. Following informed written consent, the first group of sixty women will be assigned to a control group and asked questions concerning childbirth and their details. Then the women will receive routine antenatal care for 10 weeks. At the 10<sup>th</sup> week visit the same questionnaire will be administered. After this, another group of sixty women will be invited to participate in the study. These women will also be asked the same questions as those asked to the women in the first group. Then these women will receive the developed Childbirth Education Program for 10 weeks. During this period the research midwives will also do antenatal assessments every 4 weeks for these women. Upon completion of the education program, the women will be given a post-test. This study will take approximately 6 months. Participants will be pregnant women of less than 30 weeks gestation who have no actual or potential complications. Data obtained will be treated with total confidentiality. There are no risks involved in this study and the results will be used only for the intended purpose. I would therefore like to seek permission to use your institution as one of the study sites and also have access to the women's antenatal cards.

The study has been approved by the Ministry of Health through the Malawi College of Medicine and Kamuzu College of Nursing Research Committee. If you have any questions regarding approval you can contact the Chairperson of the Research and Publication Committee at Kamuzu College of Nursing (Blantyre Campus- Tel 671644). I write to ask for permission to use your institution as one of the sites.

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Carol Thorogood  
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Churchlands  
Western Australia

.....  
Date:

.....  
Date:

**PROMOTING WOMEN'S  
REPRODUCTIVE HEALTH**

**CHILDBIRTH EDUCATION PROGRAM FOR  
MALAWIAN WOMEN**

*A GUIDE FOR MALAWIAN MIDWIVES*

**(ADDENDUM)**

**ADDRESS MALATA**

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## **PREFACE**

Childbearing is one of the valued roles of a woman, yet sometimes it can be a dangerous activity leading to serious health and social problems. Many women in developing countries such as Malawi die or develop long-term physical and psychosocial problems due to causes related to pregnancy and childbearing. Most of the causes of these problems are preventable. Governments and health care personnel need to establish strategies to deal with problems related to childbearing. One possible strategy is to promote selfcare in pregnant women by giving them childbirth information. Health education, therefore, is a fundamental key to ensure the delivery of appropriate information in the present and future care of women and their families.

Nurse-midwives in developing countries such as Malawi have the important task of providing health education to mothers and their families. Most of the time they work under difficult conditions with inadequate resources to guide them as they prepare to teach women and their families in different settings. This childbirth education program has been prepared to assist them with this role. The manual has been prepared after an extensive literature review and consultation with faculty at Edith Cowan University, as well as information from expert midwives and mothers from Malawi. The content has been simplified to facilitate easy translation into the local language- Chichewa, which is used most during the teaching.

It is my hope and desire that this childbirth education program will gain acceptance and application. All efforts are dedicated towards promoting reproductive health of women in Malawi.

### **ACKNOWLEDGEMENTS**

I would like to acknowledge women from several research studies whose information has been used to develop this program, including women of Malawi who participated in a previous study titled, "Labour and Birth Information needs of Malawian Women" (Malata, 1997) and the current study "Development and Evaluation of a Childbirth Education Program for Malawian Women" conducted by myself. I would also like to express my appreciation to the input of expert Midwives from Malawi who assisted in the refining process of the program.

I would like to thank Dr Yvonne Hauck and Dr Leanne Monterosso for all the support and guidance during the preparation of this Childbirth Education Program. I also wish to acknowledge Dr Carol Thorogood who was part of my PhD supervisory panel at the time of proposal development for this study. To my friend Ellen Mbweza I grateful for the materials she developed and allowed me to use in this program.

The Malawian Childbirth Education Program has been developed by Address Mauakowa Malata (Lecturer/midwife- Kamuzu College of Nursing, Malawi) now currently studying for a PhD in Nursing at Edith Cowan University in Western Australia

## **WEEK I PROGRAM**

- **Initial history taking**
- **Initial physical assessment**
- **Topic:**

**Introduction to antenatal care**

**\*Note: This first day's activities take time and, therefore no other information can be covered on this day. The first activity at the first day's clinic is the group teaching.**



**TOPIC ONE: ANTENATAL CARE****BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Explain the aims of antenatal care.**
- **State the appropriate time when a woman should attend antenatal care.**
- **Identify the components of antenatal care.**
- **Explain activities performed at initial and subsequent antenatal visits.**

**TEACHING METHODS** – lecture – discussion, question and answer

**TEACHING AIDS** – poster of a healthy pregnant mother, sample of antenatal card, equipment used during examination (scale, BP machine, tape measure, stethoscope, and foetalscope).

**CONTENT****AIMS OF ANTENATAL CARE**

- To monitor the progress of pregnancy in order to ensure maternal health and normal foetal development – hence promoting a favourable pregnancy outcome for the mother and unborn infant.
- To ensure that the mother is emotionally prepared for her delivery
- To prepare the mother for the parenting role.

**WHEN TO ATTEND ANTENATAL CARE**

- Attend antenatal care **as soon as** you notice that you are pregnant – starting antenatal care in the first three months of pregnancy is important for proper monitoring of maternal and foetal well-being.
- Subsequent visits – monthly basis up to 28<sup>th</sup> week (7<sup>th</sup> month), then two weekly visits until 36 week (8<sup>th</sup> month), and weekly until delivery.

## COMPONENTS OF ANTENATAL CARE

### 1. Risk identification

To identify any factors which are likely to lead to complications during pregnancy and delivery.

### RISKS ARE IDENTIFIED THROUGH HISTORY AND PHYSICAL EXAMINATION

### 2. Interventions

To minimise/prevent risks or treat any problems – medical or surgical interventions, laboratory tests, and immunisations.

### 3. Health promotion

Teaching and counselling on issues related to self-care during pregnancy – nutrition, relief of minor discomforts, and preparing for childbirth.

## ACTIVITIES AT INITIAL ANTENATAL VISIT

### (a) History taking

**Personal history** – name, address – for identity, anticipated transport problems if woman comes from far, and any risks related to age.

**Social history** – to identify support system for the pregnant mother – relationship with husband, available family support, source of economic support, spiritual support, and religious issues related to pregnancy.

**Menstrual history** - ascertain approximate date on which baby was conceived – to predict date of confinement.

Calculate gestational age at any point and compare actual size with expected size (monitor foetal growth)

**Past childbearing experiences** – these have an important role to play in predicting the likely outcome of the present pregnancy.

- Primigravida – needs closer observation.
- Women who have been pregnant before – the nurse-midwife would confirm pregnancy, significant problems with each pregnancy, mode of delivery, and any repeated abortions as these will help in making appropriate plans for the present pregnancy (screening techniques, frequency of antenatal visits).

**Medical history** – anaemia, asthma, epilepsy, psychiatric disorders, hypertension, and diabetes – can lead to complications during the pregnancy

**Family history** - some conditions have familial predisposition – diabetes, sickle cell anaemia, hypertension, twins,

**Other history related to present concerns** - general well being, any problems with present pregnancy (vaginal bleeding), minor discomforts (nausea, vomiting heartburn).

**REMEMBER – COMPREHENSIVE HISTORY IS THE BASIS FOR APPROPRIATE PLAN OF CARE. WOMEN SHOULD BE ADVISED ABOUT THE IMPORTANCE OF GIVING ACCURATE AND COMPLETE HISTORY**

**(b) Physical examination**

**Height** - greater than 150 cm or 5 feet – indication of normal sized pelvis.

**150 < 150 cm** – small sized pelvis – risk for obstructed labour

**Weight** - to obtain baseline for subsequent monitoring of normal weight gain indicating normal foetal growth. Excessive weight gain-oedema. Inadequate weight gain – intrauterine growth retardation, poor nutrition.

**Blood pressure** - to ascertain normality and provide baseline reading for comparison throughout pregnancy.

**General physical examination** – head to toe – assessing for anaemia, thyroid enlargement, breast problems, cardiopulmonary problems, varicosities, kidney problems, vaginal discharges, elimination problems, and oedema – all are risk factors.

**Abdominal examination** - to assess gestation by palpation, presence of previous scar, lie, presentation and listen to foetal heart tones to ascertain foetal well being.

**Laboratory tests** - blood and urine tests are done depending on specific indications.

Other tests include – X-ray and Ultrasound – done when there is an indication.

**Every woman gets tetanus toxoid vaccine, iron and malarial tablets.**

- (c) **Health promotion** – Health education and counselling is done according to the woman's needs.

#### **SUBSEQUENT ANTENATAL VISITS**

Maternal foetal well being continues to be monitored.

#### **Risk assessment**

Each visit the nurse-midwife will ask about the woman's well being, inquire about any risk factors, and conduct a systematic examination.

**Health promotion** – Teaching and counselling is done accordingly.

**Interventions** - teaching and immunisations are given as routine. Laboratory tests, x-ray and ultrasound are done according to specific indications.

**TEACHING GUIDELINES**

**THE TOPIC IS LONG THEREFORE IT MAY BE DIFFICULT TO MAINTAIN WOMEN'S ATTENTION DURING THE TEACHING. EMPHASIS MUST BE PUT ON AIMS OF ANTENATAL CARE, WHEN TO ATTEND ANTENATAL CARE, AND IMPORTANCE OF SUBSEQUENT ANTENATAL VISITS. BRIEFLY, EXPLAIN THE RATIONALE FOR THE ACTIVITIES DONE AT THE INITIAL AND SUBSEQUENT VISITS.**

## **WEEK 2 PROGRAM**

- **Review of week 1 content**
- **Topics:**
  - Pregnancy**
  - Nutrition during pregnancy**
  - Common discomforts of pregnancy**
- **Individual teaching and counselling**
- **Physical assessment if need be**
- **Treatment or referral if need be**

**TOPIC TWO: PREGNANCY****BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Identify the major female reproductive organs.**
- **Define normal pregnancy.**
- **Briefly describe the menstrual cycle.**
- **State when pregnancy occurs in relation to the menstrual cycle.**
- **State length of normal pregnancy.**
- **State signs and symptoms of pregnancy**

**TEACHING METHODS** - lecture, question and answer.

**TEACHING AIDS** - birth atlas, flip chart on pregnancy, posters of foetal growth and development

**CONTENT****FEMALE REPRDUCTIVE ORGANS**

Vulva – external genitalia

Vagina – receives penis during and ejected sperms during intercourse.

Cervix – opening into the womb.

Uterus (womb) – shelters the foetus during pregnancy.

Fallopian tubes – site for fertilisation.

Ovaries – produces ova (eggs) and hormones estrogens and progesterone.

Pelvis – bony passage for the foetus.

**PREGNANCY**

- A condition of having a developing embryo in the body. Normal pregnancy occurs in the uterus (womb), but it might occur in the fallopian tube, abdomen (which has unfavourable outcome).

- Pregnancy occurs after union of the ova (female egg) and sperm (male egg) during intercourse.

### **MENSTRUAL CYCLE**

- Each woman has an individual cycle, which varies in length, but average cycle is 28 days.
- The first day of the cycle is the day when menstruation (period) begins.
- Each month the uterus prepares itself for pregnancy.
- Ovaries produce eggs, which grow gradually. One egg matures and it is released about the 14<sup>th</sup> day of the cycle.
- The egg can survive for 2-3 days after ovulation. Fertilization is most likely to occur when intercourse takes place not more than 48 hours before or 24 hours after ovulation.
- Most fertile days are days 12-16.
- Menstruation takes place when fertilisation has not occurred.
- Menstruation lasts 3-5 days.

### **WHEN PREGNANCY OCCURS**

14 days before the next period is due.

Pregnancy may occur once menstruation begins in an average female if sexually active.

### **LENGTH OF NORMAL PREGNANCY**

Lasts 284 days or 40 weeks or 9 months. The embryo/foetus grows and develops gradually during the months.

### **SIGNS AND SYMPTOMS OF PREGNANCY**

- Missed period.
- Associated symptoms – nausea and vomiting (morning hours), breast fullness or tenderness, nipple tenderness, frequency or urination, fatigue, lassitude, constipation, weight gain, appetite changes (craving for certain foods).



## TEACHING GUIDELINES

THE AIM OF PRESENTING THIS TOPIC IS TO HELP WOMEN UNDERSTAND HOW THEIR BODIES FUNCTION IN RELATION TO MENTRUATION AND HOW PREGNANCY OCCURS. THE CONCEPTS MIGHT BE DIFFICULT TO EXPLAIN. FOR EASIER UNDERSTANDING, TEACHING SHOULD INVOLVE A LOT OF LECTURING AND USE OF PICTURES. CULTURAL MYTHS RELATED TO MENSTRUATION AND FERTILITY NEED TO BE EXPLORED AND CLARIFIED.

## TOPIC THREE: NUTRITION DURING PREGNANCY

### BEHAVIOURAL OBJECTIVES

The client will be able to:

- Explain the importance of good nutrition during pregnancy
- Identify nutritional requirements during pregnancy.
- Identify cheap and available foods to take care of nutritional requirements

**TEACHING METHODS** – lecture -discussion

**TEACHING AIDS** – Posters of different foods

### CONTENT

#### IMPORTANCE OF GOOD NUTRITION DURING PREGNANCY

- Nutritional intake accounts for the health of the woman herself as well as the needs of the growing foetus.
- It is not only how much a mother eats but what she eats that is crucial for her baby's development.

#### NUTRITIONAL REQUIREMENTS AND SOURCES

**Proteins** - building blocks for all body tissues. They are necessary for foetal growth – certain types of grasshoppers such as bwanoni, rainy season insects such as inswa, mafulufute, meat, fish, eggs, groundnuts, and beans. Peas milk and milk products.

**Carbohydrates** – provide energy – cassava, maize, yams, potatoes.

**Fats** - concentrated source of energy – oils, margarine, groundnuts, cooking fat, vegetable oil.

**Fruits and vegetables** – provide necessary vitamins and minerals for body functions including protecting the body from infections, formation of red blood cells – oranges, tomatoes, mangoes, pears, peaches dark green vegetables) provide local names)

Water – necessary for body functions – drink 6 to 8 glasses of water everyday.

#### **NOTE FOR NURSE –MIDWIFE**

Advise women to – avoid dieting during pregnancy

- Eat small frequent meals
- Avoid non-nutritious foods.
- Try to eat a balanced meal everyday (depending what on what she can afford).

#### **NUTRITIONAL ASSESSMENT**

It is important to do a nutritional assessment before advising women about appropriate diet.

##### **Factors to consider in nutritional assessment:**

Risk factors – primigravida, anaemia, multiple gestations.

Season – what foods are commonly available.

Socio-economic status – what are sources of foods, what food can she can afford to buy.

Size of family – how many people does she share food with.

Cultural taboos – what are cultural restrictions on different foods.

Food preference – what foods does she prefer, any pica, nausea and vomiting, heartburn.

Religious restrictions associated with foods.

Eating styles – number of meals per day.

Food preparation styles – any unsafe food preparation methods like overcooking vegetables.

## TEACHING GUIDELINES

IT IS IMPORTANT TO DO A NUTRITIONAL ASSESSMENT IN ORDER TO GIVE APPROPRIATE ADVICE ON DIET DURING PREGNANCY. THEREFORE THIS TOPOIC CAN BE BETTER PRESENTED THROUGH INDIVIDUAL TEACHING AND COUNSELLING

### TOPIC FOUR: COMMON DISCOMFORTS OF PREGNANCY

#### Behavioural Objectives

The client will be able to:

- Briefly explain the basis for common discomforts of pregnancy.
- Explain relief measures for common discomforts of pregnancy.

**TEACHING METHODS** – lecture-discussion, demonstration

**TEACHING AIDS** – posters on different self-care activities.

## CONTENT

### DISCOMFORTS OF PREGNANCY

- Various minor symptoms the woman experiences during pregnancy as her body is trying to cope with the pregnancy.
- Generally there is no risk associated with the mother and foetus.

### DISCOMFORTS OF PREGNANCY AND RELIEF MEASURES

#### BACKACHE

- Pain in the lower back is due to the relaxation of the ligaments supporting the spinal column. During first half of pregnancy, the baby rests of the hipbones, which are strong enough to support a great deal of weight. As long as abdominal muscles pull the baby in towards the body, hips can support the weight. If abdominal muscles are weak, they will sag allow the baby's weight to drop forward. The spine is pulled forward, causing the swayback so often seen in pregnant women.
- Backache is made worse by bad posture, excessive exercise, excessive weight gain, and previous back injury.

### **RELIEF MEASURES**

- Avoid excessive weight gain.
- Practice correct body mechanics – when lifting objects bend the knees and not back, keep shoulders forward, do not stoop when doing housework, try to do some tasks while sitting.
- Avoid doing anything that makes your back arch like wearing high-heeled shoes, standing for long periods, or lying flat on your back.
- Avoid carrying heavy loads on the head.
- Use cushion to support lower back.
- Apply heat or cold to the area that hurts.
- Pelvic tilting exercises.
- Use firm mattress on the bed.

### **BLEEDING GUMS**

- Gums are enlarged and painful, bleed easily after eating and tooth brushing.

#### **Relief Measures**

- Avoid excessive brushing of teeth
- Eat a well balanced diet with fruits and vegetables.
- Hard foods such as apples, guavas, should be cut into small pieces before chewing.

### **BRAXTON HICKS CONTRACTIONS**

- Painless uterine contractions periodically through out pregnancy. There is a feeling of abdominal tightness or pressure usually after four months. It occurs at irregular intervals.
- Walking and exercise makes the contractions disappear.
- These are normal.

#### **Relief Measures**

The important thing is to know the difference between true labour and braxiton hicks contractions.

**TRUE LABOUR CONTRACTIONS**

- ◆ Occur at regular intervals.
- ◆ Intervals shorten.
- ◆ Located chiefly at the back.
- ◆ Intensity gradually increases.
- ◆ Intensified by walking.
- ◆ Show-blood discharge mixed with mucous usually present.

**BRAXITON HICKS CONTRACTIONS**

- ◆ Irregular Intervals.
- ◆ Intervals remain long.
- ◆ Located chiefly in the abdomen.
- ◆ Intensity remains the same.
- ◆ Walking may or not provide relief.
- ◆ Show-none.

**BREAST TENDERNESS AND ENLARGEMENT**

- ◆ Progressive enlargement and sensitivity of breasts beginning around second month of pregnancy.

**Relief Measures**

- ◆ This is a normal change occurring in pregnancy.
- ◆ Avoid use of cream or ointments as these may cause nipples to crack.
- ◆ Gentle washing with warm water and minimal soap and dry.

**CONSTIPATION**

- ◆ Infrequent or difficult evacuation of faeces, the faeces are usually hard.

**Relief Measures**

- ◆ Drink adequate amounts of fluids particularly water daily.
- ◆ Eat high fibre foods – fruits and vegetables.

**DEPENDANT OEDEMA**

- ◆ Swelling of feet or legs during the course of the day-greatest late in the day, resolving at night while sleeping.
- ◆ This is related to increased amount of blood in the body during pregnancy.

**Relief Measures**

- Avoid prolonged standing or sitting, restrictive clothing (pants, knee high socks).
- Resting with feet and hips at the same level.
- Rest on the left side - promotes blood circulation.

**Precaution** – Generalised puffiness of the hands and or face can be indicative of hypertensive disorders of pregnancy and this requires immediate medical attention.

**DYSPNEA**

- Experience of breathlessness, shortness of breath, difficulty in breathing, and or conscious need to breathe either at rest or with activity.
- As baby grows in the uterus, it takes up more space and pushes stomach and other organs upward, taking away room for lungs and diaphragm – breathing becomes difficult.

**Relief Measures**

- Avoid heavy meals.
- Avoid lying flat – use extra pillow in order to be in a half – sitting position.
- Spontaneous relief occurs with lightening in primigravid women (descent of baby in the pelvis 2 to 3 weeks before beginning of first stage of labour).

## **EPISTAXIS**

Bleeding from the nose due to increased blood volume.

### **Relief Measures**

- Apply pressure to the bleeding nostril for 15 minutes.
- Place ice pack or cold cloth over nose bridge.
- Lie supine for 15 to 30 minutes.
- Minimise nose blowing.

## **HEADACHE**

- Common in the first trimester.
- Mild to moderate headache is normal
- Often related to stress

### **Relief**

- Rest.
- Mild pain relief medication – panadol (Paracetamol)

**Precaution** Severe persistent headache might be related to high blood pressure. This requires immediate medical attention.

## **HEARTBURN**

- Stomach muscles relax, growing uterus presses against the stomach, and food tends to go back up.
- There is a burning sensation in the throat or substernal area, which worsens during meals.

### **Relief measures**

- Avoid greasy, fried foods or other foods, which can irritate the stomach.
- Eat small meals per day instead of three large meals to avoid overly full stomach.
- Avoid lying down shortly after eating.
- Sleep with propped up pillow at night.
- Avoid bending over whilst housekeeping (if possible).

- An antacid can be prescribed if worse – Magnesium Tricilate.

### **HEMORRHOIDS (PILES)**

- Swellings around the anal area – may disappear after baby is born.

#### **Relief**

- Avoid constipation by eating high fiber foods, drink plenty of fluids.
- Heed the urge to defecate and make the habit of going to the bathroom to defecate everyday.
- Warm sitz baths 3 times a day may help.
- Medications – stool softeners, local pain relief – prescribed by the doctor.

### **LEUCORRHEA**

- Increased vaginal discharge – thick whitish which accumulates in underpants.

#### **Relief**

- Maintain good hygiene with frequent washing of the perineum.
- Use clean wash cloths.
- Wipe from front to back after urinating and defecating.
- Wear cotton underpants.
- Encourage sexual partner to be as clean as possible.

### **NASAL STUFFINESS**

Feeling of not being able to breathe through the nose as a result of dilated blood vessels.

#### **Relief**

- Can breathe through the mouth.
- Avoid use of nasal decongestants.

### **NAUSEA AND VOMITING**

Common in the first three months of pregnancy – may occur early in the morning or any other time or all day.

#### **Relief Measures**

- Eat snacks before getting out of bed such as uncooked cassava.
- Get out of bed slowly – avoid sudden movement.



- Eat small, frequent, and bland meals (5 to 6 times a day).
- Sit upright after eating or drinking to aid digestion.
- Drink liquids between meals only.
- Drink plenty of fluids

**Precaution** – Persistent nausea and vomiting requires immediate medical attention. It might be an abnormal condition of pregnancy or infection. It usually disappears after 3 months.

### **SKIN ITCHING**

An uncomfortable sensation of itching.

#### **Relief**

- Avoid things, which tend to increase dryness – harsh soap, face powder.
- Wear cotton underwear.
- Maintain adequate hydration.

### **ITCHING VULVA**

Occurs due to increased cervical or vaginal secretions.

#### **Relief**

- Clean perineal area daily with warm water and mild soap.
- Wear cotton underwear.
- Avoid rubbing or scratching the vulva, as this will prolong pruritus.

### **ROUND LIGAMENT PAIN**

- Sharp, intermittent abdominal pain, usually in the lower left side, disappears as abruptly as it comes.
- Rest to alleviate pain.
- Apply heat, warm bath.

#### **Relief**

- Rest to alleviate pain.
- Apply heat, warm bath.

**URINARY FREQUENCY**

Urination at short intervals – common in the first 3 months and last three months.

**Relief**

- Decreases fluid intake at night.
- Watch for signs and symptoms of urinary tract infection.
- Kegel's exercises – simply tighten and relax the muscles around the opening of the vagina as if you were trying to hold back urine – help to keep muscles strong

**VARICOSTITIES OF LEGS**

Dilated veins on the legs due to thinning and stretching of blood vessels walls.

**Relief**

- Sit with legs elevated – same level as hips.
- Use pressure bandage to improve circulation and limit swelling.
- Avoid tight restrictive clothing.
- Avoid crossing legs at knees when sitting.
- Watch for symptoms of thrombophlebitis – painful calves, redness.
- Have frequent rest periods.

**INSOMNIA**

Sleep disturbances

**Relief**

- Have rest periods – avoid standing when you can sit and never sit when you can lie.
- Measures to promote sleep – bathing before going to bed.

**FAINTING (LIGHTHEADEDNESS)**

Can be due to low blood sugar or pressure or growing uterus on blood vessels supplying blood to the heart and brain.

**Relief**

- Avoid lying on the back for more than a few minutes especially after the fourth month  
– lie on the side as much as possible.
- After lying down, rise up slowly, rolling to side and pushing up to sitting.
- Eat properly – avoid missing meals.
- Avoid hot and stuffy rooms.

**HIP PAIN**

Sharp pains and pressure or aching in the hips or buttocks – especially in late pregnancy. This is caused by the compression of a nerve in the back as hip bones relax and baby's position shifts – more pain is felt on side where baby lies heavily.

**Relief**

- Lie with pillow under the hip.
- Heat and massage.

**LEG CRAMPS**

Sharp, grabbing pain in the calf occurring as a result of muscle spasms – may occur while sleeping at night or as you stretch legs before getting out of bed.

**Relief**

- Flex or stretch the muscles in the opposite way.
- Sit with legs outstretched to the side, gently press the knee down with one hand and gently pull the upper part of the foot toward you with the other hand (do this each day before going to bed).

**PTYALISM**

Excessive salivation during pregnancy

**Relief**

Take water and juices.

Proper oral hygiene.

**FATIGUE**

Most women feel tired later in pregnancy, caused by slowed circulation, shortness of breath, and baby's increasing weight.

**Relief**

- Balanced diet and regular exercise.
- Adequate rest.

**TEACHING GUIDELINES**

**EXPLORE MYTHS AND BELIEFS ABOUT SOME OF THE COMMON DISORDERS, ONLY THE COMMONEST MINOR DISORDERS NEED TO BE PRESENTED DURING GROUP TEACHING. THE REST CAN BE TAUGHT ACCORDING TO INDIVIDUAL NEEDS.**

### **WEEK 3 PROGRAM**

- **Review of week 2 content**
- **Topics:**
  - Common complications of pregnancy**
  - Danger signs of pregnancy**
  - Sexually transmitted diseases including HIV/AIDS**
- **Individual teaching and counselling**
- **Physical assessment if need be**
- **Treatment or referral if need be**

**TOPIC FIVE: HIGH RISK FACTORS****BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Define risks factors**
- **Identify women at risk for problems during pregnancy and delivery.**
- **Explain 4 important things, which women with high risk factors should do.**

**TEACHING METHODS** – lecture-discussion.

**TEACHING AIDS-** posters depicting women with high risk factors.

**CONTENT****RISK FACTORS**

- Any characteristics or factors, which are associated with problems or complications during pregnancy and delivery.
- Examples of the likely problems during pregnancy or delivery: neonatal death, intrauterine death, abortion, maternal death, intrauterine growth restriction, and premature labour.
- Risk factors are related to the following: social or life style, medical conditions, past childbearing experiences, or family medical conditions.

**WOMEN AT RISK FOR COMPLICATIONS DURING PREGNANCY AND DELIVERY**

- Age 16 years or less – high blood pressure leading to fits, anaemia in pregnancy, unsafe induced abortion because of unwanted pregnancy, obstructed labour.
- Age 35 years or more – miscarriage, high blood pressure leading to fits, baby malposition (breech or transverse).
- Pregnant for the first time.
- Five births or more – weakened uterine muscles leading to prolonged labour or ruptured uterus, postpartum haemorrhage.
- Birth interval less than two years – anaemia, premature labour.

- Very short or having deformed legs or hips – obstructed labour because the birth canal is small.
- Previous childbearing complications-premature deliveries (2 or more), severe bleeding, stillbirth, spontaneous abortions, retained placenta, high blood pressure, fits, and neonatal death. These complications may repeat themselves.
- Twin pregnancy – premature labour and high blood pressure.
- Smoking, alcoholism, use of illegal drugs – premature labour, small babies, and addicted babies.
- Previous caesarean section – weak uterus leading to rupture.
- Bleeding during pregnancy – can lead to maternal and foetal death.
- Leaking of fluid before starts – can lead to cord prolapse, intrauterine infection, and foetal death.

### **Medical Conditions**

- High blood pressure – small babies, fits, and stillbirth.
- Diabetes – big babies, premature labour, and operative delivery.
- Urinary tract infections – premature labour.
- Sexually transmitted diseases – foetal death, infection can be transmitted to the unborn baby.
- Family medical disorders – some disorders run in families like diabetes, high blood pressure, genetic disorders (sickle cell), and heart problems.
- Low socio-economic status – inadequate nutrition, anaemia, premature labour, and inadequate prenatal care.

### **WHAT SHOULD WOMEN WITH RISK FACTORS DO**

- Attend prenatal care during the whole pregnancy (as scheduled) for close monitoring or the well being of the mother and unborn baby.
- Maintain good health during the pregnancy – complying with advice given by the nurse-midwife or doctor.
- Always seek medical attention when not feeling well or notice something unusual.

- Deliver in the hospital under care of trained health personnel.

**REMEMBER – ALL WOMEN CAN DEVELOP THE COMPLICATIONS AS DESCRIBED  
BUT PREVENTION IS BETTER THAN CURE!**

#### **TEACHING GUIDELINES**

**IT IS IMPORTANT TO THOROUGHLY EXPLAIN THE IMPACT OF RISK FACTORS ON PREGNANCY AND DELIVERY. THIS WILL HELP WOMEN TO UNDERSTAND THE IMPORTANCE OF ANTENATAL CARE AND HOSPITAL DELIVERY. ENCOURAGE SHARING OF EXPERIENCES DURING THE TEACHING TO HELP WOMEN APPRECIATE THE REALTY OF THE HIGH RISK CONCEPT. EXPLORE AND DISCUSS CULTURAL BELIEFS ABOUT SOME OF THE ISSUES.**

#### **TOPIC 6: COMMON COMPLICATIONS OF PREGNANCY**

##### **BEHAVIOURAL OBJECTIVES**

The client will be able to:

- Describe common complications of pregnancy
- Identify major warning signs of pregnancy

**TEACHING METHODS -** lecture -discussion

**TEACHING AIDS –** Posters depicting various complications during pregnancy.

##### **CONTENT**

Complications of pregnancy indicate problems, which can lead to compromise foetal and maternal conditions. They can occur at time during the course of pregnancy. It is important for the pregnant mother to recognise signs and symptoms of these problems for any intervention, which can reduce the adverse outcome.



## PREMATURE LABOUR

Labour, which starts before the 9<sup>th</sup> month of pregnancy. Babies born prematurely have problems because their lungs and body systems are not mature therefore they face various problems after birth. To allow the baby more time to grow and mature in the uterus, it is important that labour is stopped.

## SIGNS OF PREMATURE LABOUR

Painful abdominal cramps, tightening on top of the uterus, pain in the lower back or thighs that comes and goes, pressure or pain in the vagina.

Slight bleeding.

Rupture of membranes.

## CAUSES OF PREMATURE LABOUR

Urinary tract infections, multiple pregnancy, polyhydramnios, anaemia, and malaria (fever).

## What to do

Report to the hospital immediately if you have signs of premature labour.

Preventive measures – adequate rest, eat properly, take malarial prophylactic medications as prescribed, watch for infections and have them treated.

## ANEMIA IN PREGNANCY

- “Lack of blood” (local translation) to meet body requirements. Mostly caused by lack of iron in the blood.
- **Signs** - pale colour of the eyelids, tongue, gums, palms, or soles of feet, feeling tired most of the time, feeling breathless after only a little work or exercise.
- **Causes** – Demands for iron, which is necessary for red blood cell formation, are increased during pregnancy. The following are predisposing factors to developing anaemia in pregnancy:
  - Poor diet that does not contain enough iron and protein.
  - Diseases that take away iron in the blood-malaria, hookworm, Bilharzia, and sickle cell anaemia.

- Many births close together (less than two years apart)

**COMPLICATIONS** – Anaemia can lead to miscarriage, premature labour, congestive cardiac failure, intrauterine death, and intrauterine growth restriction.

#### **PREVENTION**

- Eat balanced meals, including foods high in iron-liver, fish \, dark green vegetables.
- Take iron tablets daily
- Early prenatal care for adequate monitoring

**PRECAUTION** – All women who have anaemia or have been treated for anaemia during pregnancy should deliver in the hospital.

#### **HYPERTENTIVE DISORDERS**

Sometimes pregnancy is complicated by high blood pressure. This can lead to: -

Pre-eclampsia – A condition characterised by hypertension, oedema and protein in urine.

Eclampsia – convulsions or fits caused by high blood pressure during pregnancy.

#### **SIGNS**

- Generalised oedema – especially face, hands (wedding ring no longer)
- Rapid weight gain in one or two weeks.

**DANGER SIGNS** – Visual disturbances – double visions, persistent headache, dizziness, nausea, vomiting, decreased urination, and epigastric pain.

**COMPLICATIONS** - reduced blood flow to the baby leading to intrauterine growth restriction, intrauterine foetal death, early separation of the placenta, premature labour, birth asphyxia, and maternal death.

**PRECAUTION** – The pregnant mother should report to the hospital any time she notices the above signs. Do not wait until the problem gets worse

#### **VAGINAL BLEEDING**

Even a small amount of vaginal bleeding is dangerous. It can be indicative of the following:

**ABRUPTIO PLACENTA** – Premature separation of the placenta from the uterine wall. It is associated with hypertensive disorders, multiparity, and trauma. Starts with acute abdominal pain with or without vaginal bleeding. There is tenderness and hardening of the abdomen. It can lead to intrauterine foetal death.

**PLACENTA PRAEVIA** – The placenta is located low in the uterus close to or over the cervix, which puts the woman at risk for premature separation of the placenta. It is associated with painless vaginal bleeding not associated with uterine contractions, no abdominal tenderness or rigidity.

**SPONTANEOUS MISCARRIAGE** – Pregnancy ends by itself usually within the first three months (definition depends on the place). Starts with vaginal spotting, mild abdominal cramping or backache. This can progress into loss of the products of conception (foetus, placenta and membranes). The abortion might be incomplete, leading to infection. Signs of infection are: high fever, very heavy bleeding or bleeding that does not stop after a few days, severe pain or tenderness in the abdomen, discharge (fluid) from the vagina that smells. Seek help if these occur.

**ECTOPTIC PREGNANCY** – Development of the foetus in any place other than the uterus. It is dangerous because the baby will not have enough room to grow. At the beginning the pregnancy will seem to be normal. Signs of ectopic pregnancy are: -

- Abdominal pains – severe, sudden, sharp or dull, constant or intermittent.
- Bleeding from the vagina (not always)
- Episodes of faintness.

**PRECAUTION** – The woman should go to the hospital immediately if develops any of these signs. Without surgical intervention she will bleed inside the abdomen and may die.

### **DANGER SIGNS OF PREGNANCY**

The warning signs have already been mentioned in the discussion on complications of pregnancy, however, they need to be reinforced. A lot of problems associated with maternal/perinatal mortality and morbidity are because women do not seek medical attention in good time. Women need to report to the hospital if they notice the following:

<b>FEVER</b>	<b>VAGINAL BLEEDING</b>
<b>PERSISTENT NAUSEA AND VOMITING</b>	<b>PUFFINESS OF HAND AND OR FACE</b>
<b>IRRITATING VAGINAL DISCHARGE</b>	<b>SEVERE PERSISTENT HEADACHE</b>
<b>PAINFUL BURNING ON URINATION</b>	<b>DIZZINESS</b>
<b>SEVERE ABDOMINAL PAIN</b>	<b>VISUAL DISTURBANCES</b>
<b>FLUID LEAKING FROM VAGINA</b>	<b>REDUCTION IN FETAL MOVEMENT</b>

### **TEACHING GUIDELINES**

**IT IS CRUCIAL THAT WOMEN SHOULD BE ABLE TO RECOGNISE SIGNS AND SYMPTOMS OF THE COMMON COMPLICATIONS OF PREGNANCY. DURING TEACHING, MAKE SURE THAT SIGNS AND SYMPTOMS ARE CLEARLY PRESENTED. POSTERS DEPICTING THIS CAN ENHANCE LEARNING. EXPLORE AND DISCUSS CULTURAL BELIEFS AND TABOOS ABOUT SOME OF THE DANGER SIGNS.**

### **TOPIC SEVEN: SEXUALLY TRANSMITTED INFECTIONS**

#### **BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Describe the effects of sexually transmitted diseases on pregnancy outcome.**
- **Describe signs and symptoms of common sexually transmitted diseases**

**TEACHING METHODS** – Discussion, question and answer.

**TEACHING AIDS** – Posters depicting signs and symptoms of sexually transmitted diseases.

## **CONTENT**

Sexually transmitted diseases are diseases that affect the genital area and reproductive organs – vagina, uterus, and fallopian tubes. They are transmitted through sexual activity.

## **EFFECTS ON PREGNANCY**

Some sexually transmitted diseases can lead to: -

- Transfer of the infection to the unborn baby – baby can be born with the infection, eye infection, pneumonia, can cause blindness, sometimes intrauterine foetal death, and intrauterine growth restriction.
- Premature labour.
- Abortion.
- Some infections can lead to infertility

## **SIGNS AND SYMPTOMS**

Sometimes the signs and symptoms are not always there, some may take weeks, months, and years to occur. Signs and symptoms vary according to specific disease. The goal of the teaching is to help women recognise the signs and symptoms and seek treatment as early as possible. The following are various signs and symptoms:

**Discharge or pus from the vagina – which can be:**

- Itchy, yellowish-green and frothy – (Trichomonas vaginalis)
- Non itchy watery and unpleasant, fishy smell which intensifies after sexual contact (bacterial vaginosis)
- Thick and concentrated appearing like cream or milk (gonorrhoea)
- Watery and mucoid (Chlamydia)

**Sores, wounds or blisters on external genitalia, anus, in vagina**

- One or more sores, round, feels hard, painless, with swollen and painless lymph glands (syphilis)

- Itching and painful blisters, they burst to form wounds, and lymph glands may be swollen and painful – may be associated with aching, fever, and vaginal bleeding (herpes)
- Painful, dirty, soft wounds, swollen and painful lymph glands (chancroid).
- Swollen, painful, soft glands in the groin, joined to form one big swelling (lymphogranuloma venereum).
- Finger like, rough swellings on the on the external genitalia and near anus (genital warts)

**Other symptoms include: -**

Skin rash, lower abdominal pain during intercourse, pain with urination

**PREVENTIVE MEASURES**

- Avoid having sex with more than one partner.
- Avoid sexual contact with individuals who have symptoms of sexually transmitted diseases.
- Practice safe sex – use of condoms.
- Seek medical attention for sexually transmitted diseases comply with the treatment, and partners should be treated as well.

**AIDS/HIV**

AIDS stands for Acquired Immune Deficiency syndrome. It is caused by a virus Human Immunodeficiency Syndrome. There is no cure for AIDS.

**TRANSMISSION**

- **Sexual intercourse with an infected person** – virus is carried in the semen of the man, fluids inside the vagina.
- **Getting the blood of an infected person in the body** – blood transfusion, injections with unclean needles, tribal markings.

- **Mother to child** – if a pregnant mother is infected with HIV, the unborn child has a chance of getting the virus from her.
- **AIDS is not transmitted through** hugging, touching someone with AIDS, sharing food or water, using same latrine, insect bites.

### **SIGNS AND SYMPTOMS**

- MAJOR:**
- Diarrhoea for more than a month
  - Fever on and off for more than a month
  - Unexplained weight loss

- MINOR:**
- Oral thrush
  - Cough more than a month
  - Generalised rash
  - Enlarged lymph glands, herpes zoster

### **PRECAUTIONS**

Safe sex practices – use of condoms, have one partner.

Pregnant women with HIV/AIDS need close monitoring during pregnancy – early prenatal and supportive care.

Issue of breast feeding needs to be discussed with them.

### **TEACHING GUIDELINES**

**SEXUALLY TRANSMITTED DISEASES ARE ASSOCIATED WITH A LOT OF CULTURAL MISCONCEPTIONS AND THESE NEED TO BE EXPLORED DURING THE TEACHING. YOU ALSO NEED TO EMPHASISE ON THE PREVENTIVE MEASURES. DISCUSS BREASTFEEDING AND HIV AS WELL.**

## **WEEK 4 PROGRAM**

- **Review of week 3 content**
- **Topics:**
  - The labour process**
  - Danger signs of labour**
  - Caesarean birth**
  - Pain relief in labour**
- **Individual teaching and counselling**
- **Physical assessment if need be**
- **Treatment or referral if need be**



**SECTION TWO: PROMOTING REPRODUCTIVE HEALTH DURING LABOUR AND DELIVERY**

**TOPIC EIGHT: LABOUR PROCESS**

**BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Define labour.**
- **List signs and symptoms of labour.**
- **State the difference between true labour and false labour.**
- **Describe the stages of labour.**
- **Explain self care activities related to labour and delivery**

**TEACHING METHODS** - discussion, question and answer.

**TEACHING AIDS** - graphic on cervical dilatation, birth atlas.

**CONTENT**

**DEFINITION OF LABOUR**

- Labour is the process of giving birth – the baby and afterbirth products (placenta and membranes) are born (expelled through the birth canal).

**SIGNS AND SYMPTOMS OF LABOUR**

- (a) There are signs you are going to observe indicating that the body is getting ready for labour, but they tell nothing about exactly when labour will start. These are:
- Increased vaginal discharge, usually clear but sometimes tinged with brown or pink.
  - Engagement or dropping (lightening) – This occurs in women who are about to give birth for the first time. The baby settles down so its presenting part (part that will be born first), usually the head, enters the pelvis. This might

occur two weeks before labour starts. This change in the baby's position takes some pressure off the lungs, giving you more room to breathe. If heartburn was a problem, there will be some relief since there will be less pressure on the stomach. However, there will be urine frequently because the uterus rests right on top of the bladder.

- Increased Braxton – Hicks contractions – the uterus will practice for labour by contracting and relaxing every once in a while. It may feel like a tightening or hardening of the uterus or mild menstrual or intestinal cramps. This may last a few hours or weeks.
- A low dull backache that comes and goes
- Frequent, loose bowel movements, often cramping
- A burst of energy – this may occur a day or two before labour begins. It may involve cleaning the house or any other household tasks. This is the time to conserve energy for labour.

(b) The following are signs of labour

- Regular uterine contractions – felt low in the abdomen, some feel it lower in the back or as a band radiating from back to front, some feel contractions in their groin, upper thighs, or rectum. The contractions become closer, longer and stronger over time.
- Bloody show – varying or blood streaked or blood tinged mucous from the vagina. This is a mucous plug lost from the cervix as it thins and opens. This may occur days or a few weeks earlier. However, should it be red blood like a menstrual period, report to the hospital.
- Breaking of the bag of waters (rupture of membranes) – it may break with a gush or trickle depending on the amount of fluid in the sac and where the break occurs. For most women, membranes will not rupture spontaneously until late in labour. Other signs are: indigestion, diarrhoea, and nausea, or vomiting just before labour begins.

## **DIFFERENCE BETWEEN TRUE AND FALSE LABOUR**

### **TRUE LABOUR**

- Contractions may be irregular at first, usually becoming regular, closer and stronger with time.
- Walking makes them stronger.
- Lying down does not make them go away.
- Contractions usually start in the back and move to the front.
- Cervix thins and opens – bloody mucous discharge.
- Drinking water will not affect contractions.

### **FALSE LABOUR**

- Contractions are irregular and short, do not get closer and stronger.
- Walking does not make them stronger.
- Lying down may make them go away.
- There are no changes in the cervix

## **STAGES OF LABOUR**

There are four stages of labour:

**STAGE ONE** – This is the time the cervix opens (dilates), thins (effaces), and gets shorter. Before labour the cervix is thick and extends into the vagina. When contractions occur, the uterus compresses and squeezes itself into a hard bulge, then relaxes. Each time the uterus contracts, the squeezing action pulls up and out on its lower portion (the cervix). The contractions, combined with pressure of the baby's head, make the cervix open and get shorter, preparing a passage for baby to pass through during birth. The cervix must open to a diameter of 10 cm (fully dilated) for a full term baby to pass through (use graphic on cervical dilatation to explain this). Stage one may last 12 to 14 hours in a first pregnancy and 6 to 8 hours in subsequent pregnancies.

**STAGE TWO** - Once the cervix is completely dilated, the mother and her uterus push the baby through the birth canal and out into the world. It may last 10 minutes to 1 hour. Most women have a vaginal delivery, but a small incision may be needed to enlarge the opening of the vagina, otherwise lacerations can be sustained. Caesarean delivery (operation on the abdomen) can be done if vaginal delivery is not safe.

**STAGE THREE** – The uterus contracts a few more times and the afterbirth products (placenta and membranes) are expelled. It may last 10 to 45 minutes.

**STAGE FOUR** – The first hour after birth when you can rest or cuddle the baby.

#### **ROLE OF THE MIDWIFE DURING DELIVERY**

The role of the midwife is to ensure a safe outcome of labour and delivery process for both the mother and baby. The midwife welcomes you, admits you in labour and does the following:

- Asks information related to your personal details, problems in previous pregnancies, course of present pregnancy and prenatal care course of pregnancy – to identify significant information, which can influence plan of care. Significant information includes previous difficult deliveries, stillbirths, caesarean section bleeding after deliveries, anaemia, antepartum haemorrhage and any other complications (most of the information is on the antenatal card).

Ask information related to labour; onset of contractions, any abnormal signs like headache, vaginal bleeding, what and when you last ate, any medicine taken (including herbal medicines to facilitate labour), who has escorted you, whether membranes broke or not.

- Does a general head to toe physical examination – including abdominal examination – to check foetal well being and time contractions.

- Vaginal examination is done to assess size of the pelvis in relation to the baby size (to help decide on anticipated mode of delivery), cervical dilation to know labour progress.

Subsequent care – The midwife will admit you to labour ward if you are in labour and will continue to monitor the following: Mother's physical and emotional responses to labour, labour progress and foetal well being. Pain relief and comfort measures are done accordingly. **The midwife is the support person throughout the labour and delivery process.**

### **SELF CARE ACTIVITIES RELATED TO LABOUR AND DELIVERY**

The following precautions need to be observed:

Preparation – have a bag packed with the following: your dresses, sanitary pads, cloth to wrap yourself at least 2 (chitenje), clothes for the baby (chitenje), candles and matches in case there are no lights, basin if you can afford, razor blade for cutting cord and any necessary items you can afford.

- Report to the hospital immediately you notice you are in labour. Some women wait until they are advanced in labour and report to the hospital – this is dangerous as you can deliver on the way to the hospital, complications will not be detected in good time.
- Do not forget the antenatal card when going to the hospital.
- Take light porridge and fluids in early labour for energy unless contraindicated. Labour is hard work.
- Do not take herbal medicines to facilitate labour – women traditionally take these medicines in order to have a short labour – it can cause excessive uterine contractions and uterine rupture.
- Have someone to escort you to the hospital when in labour – there might be emergencies requiring blood transfusion.

- If you stay very far from the hospital – plan on going to the hospital 2 weeks before due date and stay in the guardian shelter or maternity waiting home (this is a hospital rule and no one will turn you away).
- Always tell with the midwife if you have any concerns during labour and delivery.

### TEACHING GUIDELINES

THERE ARE A LOT OF TRADITIONAL MYTHS AND BELIEFS RELATED TO LABOUR AND DELIVERY. THESE INFLUENCE THE WAY PEOPLE USE HOSPITALS FOR DELIVERY. SOME WOMEN PREFER HOME DELIVERY WITH THE AID OF ELDERLY AND UNTRAINED WOMEN. TRADITIONAL MEDICINES ARE USED IN ORDER TO HAVE SHORT LABOUR AND THIS HAS CONTRIBUTED TO A LOT OF COMPLICATIONS. THESE BELIEFS AND MYTHS NEED TO BE EXPLORED DURING THE TEACHING SESSIONS.

### TOPIC NINE: DANGER SIGNS OF LABOUR AND DELIVERY

#### BEHAVIOURAL OBJECTIVES

The client will be able to:

- **List warning signs of labour and delivery.**
- **List precautions to take if the warning signs occur.**

**TEACHING METHODS** – Lecture – discussion, question and answer

**TEACHING AIDS** – Posters depicting warning signs during labour and delivery.

#### CONTENT

##### WARNING SIGNS

The following are warning signs:

**(a) Premature rupture of membranes**

Sometimes membranes and labour does not start within 24 hours. This is dangerous because there is a high risk for infection to both the mother and baby. It may also be associated with prolapse of cord (cord in the vagina or outside). This can cause death of the baby.

**Precautions** – The woman should not insert anything into the vagina, no sexual intercourse, and use clean pads. She needs to go to the hospital immediately.

(b) **Labour continues for more than 24 hours without the baby being delivered –**

This is an indication of **obstructed labour**. The causes are:

- Woman's birth canal is too small.
- Baby is too big.
- Baby is lying the wrong way in the womb – feet or buttocks first, shoulder first.

Traditionally, people believe that obstructed labour is a sign the mother was unfaithful to her husband during pregnancy or she is bewitched.

Who is likely to suffer from obstructed labour:

- Short women (less than 5 feet or 150 cm).
- Girls less than 18 years old.
- Women with deformity of lower limbs or hip.

**What are dangers of obstructed labour?**

**Rupture of the uterus** – the muscles of the womb are torn and this can lead to bleeding, which can result in death of the unborn baby or the mother.

**Fistulae - pressure** of the baby's head can cause a hole to develop between the woman's vagina and the channel through which urine or faeces leave the body. Such a woman cannot control her urine and faeces, she always smells, the husband will later on leave her for another woman.

**Infection** – which will affect the uterus.

**Exhaustion and dehydration** - mother becomes very tired and body fluids are depleted due to inadequate fluid intake.

**Signs of obstructed labour:** rising fundus, abdomen is divided in between.

**Precautions** - Herbal medications should not be used and the woman should be taken to the hospital immediately. Caesarean section will be done. Preventive

measures include avoiding teenage pregnancy, attending prenatal care and have delivery with trained personnel.

- (c) **BLEEDING BEFORE DELIVERY** – Already discussed in the antenatal section. Needs to be reinforced.
- (d) **POST DELIVERY BLEEDING** – This is a serious complication, which can cause death of the mother. It is normal to bleed after childbirth, but a loss of more than two cupfuls is dangerous. The causes are rupture of the uterus, retained placenta, vaginal or cervical lacerations, uterus not able to contract effectively, or full bladder.

**Who is more likely to suffer from severe bleeding?**

- Women with a previous history of bleeding.
- Women who have stayed in labour for a long time.
- Older women who have already had more than five children.
- Women with anaemia.

**Precautions** - Hospital delivery is very important because if the problem occurs, blood transfusion and measures to correct the problem can be done.

(e) **RATAINED PLACENTA**

The placenta should come out of the womb within 15 minutes after the child is born. It takes more than 30 minutes then the placenta is retained. This is dangerous because it can cause bleeding.

**Who is likely to suffer from the problem?**

Women who had the problem before – otherwise it is hard to predict.

**Precautions** – If delivered outside the hospital, the placenta should not be forced out, no herbs should be used. The woman needs to be transported to the hospital where the placenta will be removed manually.



- (f) **The women begins is to have fits or loses consciousness (eclampsia) -**  
Discussed in the antenatal section – review.

**OTHER WARNING SIGNS: REPORT TO THE HOSPITAL IF YOU HAVE THE FOLLOWING:**

- **Severe constant abdominal pain**
- **Decreased foetal movements**
- **Fever**
- **Repeated vomiting and diarrhoea**

#### **TEACHING GUIDELINES**

**IT IS VERY CRUCIAL THAT WOMEN SHOULD BE ABLE TO RECOGNISE WARNING SIGNS OR LABOUR AND DELIVERY. USE MULTIGRAVID WOMEN TO SHARE EXPERIENCES.**

#### **TOPIC THREE: CAESAREAN BIRTH**

##### **BEHAVIOURAL OJECTIVES**

The client will be able to:

- **Define caesarean delivery.**
- **List reasons for caesarean delivery.**
- **List self-care activities after caesarean delivery.**

**TEACHING METHODS** – Lecture-discussion, question and answer.

**TEACHING AIDS** - Poster depicting caesarean delivery.

#### **CONTENT**

##### **CAESAREAN DELIVERY**

This is procedure in which the baby is removed through the abdomen, instead of a normal vaginal delivery.

### **REASONS FOR CESARIAN DELIVERY**

**Long or difficult labour-** the contractions are not strong enough, the baby is in an unusual position or baby's head will not fit the mother's pelvis.

**Foetal distress** – baby seems to be short of oxygen, baby's heart rate goes down, is irregular, or meconium (baby's first bowel movement) is passed.

**Breech** – baby is born feet or bottom first.

**Previous caesarean delivery** - two or more previous caesarean deliveries

**Other reasons are** – unusual position of the umbilical cord (cord prolapse), unusual positioning or placenta, heart or kidney disease, or herpes genitalia.

### **SELF-CARE ACTIVITIES AFTR CESAREAN DELIVERY**

**Prevention of infection** – body hygiene is very important and wound care.

**Main good health** – have balanced meals.

**Activity** – early ambulation is important, other normal duties are gradually resumed depending on the wound healing and absence of other complications

**Family Planning** – the woman must wait at least for two years before becoming pregnant again.

**Future deliveries** – the woman will always require hospital delivery with all the other subsequent deliveries.

### **TEACHING GUIDELINES**

**MANY WOMEN AVOID HOSPITAL DELIVERY BECAUSE OF FEAR OF CEASAREAN DELIVERY, THIS CONTRIBUTES TO THE MAGNITUDE OF COMPLICATIONS DURING CHILDBIRTH. DURING THE TEACHING EMPHASISE ON REASONS FOR CEASAREAN DELIVERY AND THAT ALL IS DONE FOR THE BENEFIT OF THE MOTHER AND THE BABY.**

## TOPIC TEN: PAIN RELIEF MEASURES IN LABOUR

### BEHAVIOURAL OBJECTIVES

The client will be able to:

- **List factors influencing pain in labour.**
- **Describe pain relief measures used in labour**

**TEACHING METHODS** - lecture, demonstration.

**TEACHING AIDS** - posters depicting relaxation methods in labour.

### CONTENT

Pain in labour is an issue of concern in developing nations because many women go through the labour experience without pain relief medications. Most hospitals cannot afford pain medication for all labouring women. Non-pharmacological pain relief measures need to be reinforced.

### FACTORS INFLUENCING PAIN IN LABOUR

- (a) **Fear** – Mostly it is fear of the unknown. The woman who knows what to expect, predict and deal effectively with what happens during labour.
- (b) **Tension** - The woman needs to relax in labour and let the uterus do its work and let labour progress smoothly. Tension will cause pain and have a negative impact on the course of labour.
- (c) **Lack of oxygen to the uterus** – The woman who is screaming, holding her breath may be depriving the uterus of needed oxygen and cause unnecessary pain.
- (d) **Position** - a woman who lies on her back will intensify back pain.
- (e) **Procedures**- can cause pain directly or by causing anxiety.

### MEASURES TO RELIEVE PAIN

The techniques described will not eliminate pain, but help the labouring woman relax hence reduce pain.

## **WARM WATER**

Warm water can dramatically reduce pain and increase relaxation. Take a warm bath during early labour.

## **TOUCH**

Touch can take many forms – hand holding, hand on the shoulder of leg, stroking the abdomen, arms or legs, slow massage of the legs, back, or buttocks.

## **CHANGING POSITIONS**

Some women find labour less painful if they remain upright and walk around especially in early labour. Staying in one position can increase tension, changing position lessens pain.

## **MEDITATION**

It involves focusing attention on one thing and shutting out other thoughts or concerns. One focus on a picture, object or word during a contraction.

## **VISUALIZATION**

Involves focusing on a mental image – like thinking of a beautiful place where you feel safe, relaxed, and calm. Imagining all sights, sounds smells, and feelings you would have there.

## **BREATHING PATTERN**

Slow rhythmic breathing is most relaxing and conserves energy. Avoid holding breath and rapid panicked breathing. The following patterns can be used:

**Early labour phase breathing** - slow rhythmic breathing – inhale through the nose, exhale through the mouth.

**How to do it; contraction** begins, focus or visualise, Take deep cleansing breathe deep inhale through the nose and deeply exhale through the mouth, begin slow rhythmic breathing. Contraction ends, cleansing breath.

Active labour phase breathing – **breathe through open mouth, increasing the rate at peak of contraction.**

**How to do it:** contraction begins, focus or visualise, cleansing breath, begin breathing pattern, contraction ends, cleansing breath.

#### **TEACHING GUIDELINES**

**THE CONTENT PRESENTED ON THIS TOPIC CAN BE A USEFUL GUIDE FOR NURSE MIDWIVES WHILE CARING FOR WOMEN IN LABOUR. HOWEVER, THE TOPIC CAN BE TAUGHT AT AN ANTENATAL CLINIC.**

## **WEEK 5 PROGRAM**

- **Review of week 4 content**
- **Topics:**
  - Self care during postpartum period**
  - Exclusive breast feeding**
  - Family planning**
- **Individual teaching and counselling**
- **Treatment or referral if need be**
- **Physical assessment if need be**

**SECTION THREE: PROMOTING REPRODUCTIVE HEALTH DURING THE POSTNATAL PERIOD (PUERPERIUM)**

**TOPIC ELEVEN: SELF-CARE DURING THE POSTNATAL PERIOD (PUERPERIUM)**

**BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **List the body changes that occur during the postnatal period.**
- **Describe self-care activities during the postnatal period.**
- **List common warning signs during the postnatal period.**

**TEACHING METHODS** – lecture-discussion, question and answer.

**TEACHING AIDS** - posters depicting self-care activities.

**CONTENT**

**BODY CHANGES EXPERIENCED DURING POSTNATAL PERIOD**

The postnatal period the first six weeks immediately following delivery and it is an important part of the childbearing process. It is the time when the woman's body returns to the way it was before pregnancy. The following changes take place:

**THE UTERUS (WOMB):** Gradually reduces in size. Right after delivery it is felt at the navel and should as hard as a rock. Each day the uterus shrinks about a finger width. This occurs with contractions (squeezing) and retraction (shortening) of the uterine muscles. This is aided by breastfeeding. After a week the uterus is found just above the symphysis pubis. After two weeks it is no longer felt because it is back in the pelvis (use poster on uterine involution).

**LOCHIA** – Vaginal discharge (coming from the uterus) after delivery, which starts like a heavy menstrual, flow but is not a regular menstrual period. The colour is bright red for the first 3 to 5 days, changing to lighter red – pink brown for 5 to 10 days. Later it becomes yellowish – white or watery and colourless and less profuse. It stops after 4 to 6 weeks.

**AFTER PAINS** – These are abdominal cramps (pains that occur when the uterus naturally contracts to prevent bleeding and to return to its pre-pregnant size). The afterpains are intensified with breastfeeding.

**PERINEAL PAIN** – The woman can experience pain in the perineum, the muscular area between the vagina and anus that is stretched during delivery. The perineum may have been cut during delivery (episiotomies) or it may have been torn naturally. The pain results from the stretching, cutting, or tearing or from the swelling or pulling on the stitches used to repair the cut or tear. Swelling from episiotomy is usually intense on the third day after delivery.

**THE BOWELS** – Constipation or sluggish (slow) or painful bowel movements is common after delivery. During labour the digestive system slows down, most women do not eat solid foods in labour, with pushing the bowels are almost emptied. The bowels are also relaxed due to hormonal changes. Sometimes tender episiotomies or haemorrhoids (piles) make women afraid to strain.

**URINARY SYSTEM** – The process of labour may have bruised the urethra and urinary bladder. The woman may have difficulty in voiding frequently. A full bladder may keep the uterus from staying contracted and this can cause bleeding.

**MUSCLE STRAIN** - chest, leg, back, or shoulder pain can occur from muscle strain that occurred during labour.

**BREASTS** – milk comes on the third or fourth day. The breasts can be engorged, larger, and firmer and sometimes warm to touch. This is reduced as the baby begins to suckle.

**FEELINGS** – Most women go through a difficult time in the first days. They are impatient, anxious, and irritable without knowing why. Sometimes they cry for no apparent reason. This may occur due to fatigue (feeling tired), and hormonal changes



## **SELF-CARE ACTIVITIES DURING THE POSTNATAL PERIOD**

**Prevention of infection** – Most women die due to infection during the postnatal period. The infection can originate from the breasts, reproductive tract, urinary tract and respiratory tract.

The following measures should be done: -

- Take a bath once or twice a day with good vulval toilet.
- Change vulval pads frequently, use clean pads.
- Wipe perineum after bowel movement and voiding – wiping should be directed from vagina to anus (front to back).
- Early ambulation – do not just lie in bed – this promotes lochia drainage.

**Episiotomy care** – Good hygiene and use sitz bath – (sitting on a basin filled with warm water with salt added) – this should be done four to six times a day. Promotes healing and prevents infection. Avoid use of herbal medicines unless proved to be safe.

**Rest and sleep** – If delivery was normal, a woman can resume her normal activities a week after delivery. Walking around helps women to return to full health quickly. Have adequate rest and sleep (sleep when the infant takes a nap). Avoid heavy work like digging and carrying heavy loads for 3 to 40 weeks (if delivery was normal) or 3 months (women with operative and complicated delivery).

**Nutrition** – Nourishing, varied, and balanced diet is required. Adequate proteins, vitamins, and iron are required for building tissues, milk production and prevention anaemia. A breastfeeding woman needs more food than she ate during pregnancy (25 to 30%).

**Bowels** – Normal activity, high fibre diet, fresh fruits and vegetables and plenty of fluids will encourage normal bowel movements. Laxatives are not necessary unless ordered. Heed to nature's call promptly.

**Bladder care**- void frequently – ambulation, drinking plenty of fluids will promote frequent urination.

**Exercises** - Are necessary to increase muscle tone and venous return from the legs and abdomen. (Show drawing on various exercises). Different exercises are tolerated as time goes on, especially vigorous exercises.

### **Kegel's exercise**

- Perineal squeeze to tone muscles of the pelvis

- Tighten up the pelvis floor muscles and hold (as you are holding urine), slow count of five.
- Bulge muscles downward and gently holding breath and bearing down, relax, tighten again relax. Practice each day.

**Sexual Resumption** – There are various cultural practices related to this. It should be delayed until healing process is complete and lochia has stopped, to avoid infections. The woman needs to be physically and psychologically fit to resume sexual intercourse, this requires mutual agreement with the husband.

**Resumption of menses and conception** – It may take three months or longer. Mothers, who are fully breastfeeding, menses reappear much later, and non-breastfeeding mothers it may take 7 to 9 weeks. However, conception (pregnancy) can occur any time after childbirth whether menses have occurred or not. The woman must go to a family planning clinic before resuming sexual intercourse.

**Pain relief** – Afterpains, episiotomy pain and other body aches may require pain relief medications. The woman can take panadol (paracetamol). Other measures include: -

- Lying on the stomach – for afterpains.
- Sit tilted on one side (putting pressure on one buttock instead of perineum – for episiotomy).
- Putting hot pack on abdomen

**Breasts** – Nipples need to be kept clean and dry. Self-breast examination needs to be done every month. One of the warning signs of breast cancer is a lump in the breast.

**Incision-** women who have had caesarean section need to keep the incision clean and dry to prevent infections. Skin healing may take 7 to 10 days, but internal tissues take longer to heal.

**Incision** - women who have had caesarean section need to keep the incision clean and dry to prevent infection. They should also avoid heavy lifting for 6 weeks.

**Follow-up care** – All women need to go to the clinic for checkup at 1 to 6 weeks postpartum.

This is important for promotion of good health, nearest hospital.

**Warning Signs** – The following signs indicate that there is a problem, which requires immediate medical attention:

- Release of large blood clots at any time or a gush of bright red blood from vagina a week or more after delivery.
- Fever, chills, or painful or frequent urination (urinary tract infection)
- Fever, severe abdomen pain, discharge from the vagina, which smells bad or is brownish in colour.
- The episiotomy or incision site is red, warm, swollen, painful or oozing (possible infection).
- A red swollen area in a breast, especially with fever (possible mastitis).
- The womb is not reducing in size (going to the pre-pregnant state)
- Feeling depressed to get out of bed, continuous crying, or having destructive thoughts about the baby.

#### TEACHING GUIDELINES

**THE TOPIC CAN BE PRESENTED DURING INDIVIDUAL TEACHING. SELF-BREAST EXAMINATION AND EXERCISES ARE AREAS WHICH ARE MOSTLY IGNORED DURING POSTNATAL TEACHING. ITS IS IMPORTANT THAT THESE ASPECTS OF SELF-CARE ARE EMPHASISED.**

#### TOPIC TWELVE: EXCLUSIVE BREASTFEEDING

##### BEHAVIOURAL OBJECTIVES

The client will be able to:

- **List the advantages of exclusive breastfeeding**
- **Describe breastfeeding**
- **Describe measures to be done in order to promote successful; breastfeeding**
- **Mention common problems associated with breastfeeding**

**TEACHING METHODS** – Lecture-discussion

**TEACHING AIDS** – Posters depicting mother breastfeeding the baby.

#### CONTENT

### ADVANTAGES OF EXCLUSIVE BREASTFEEDING

- Reduces the incidence of allergies such as asthma and eczema.
- Economical – no cost and wastage.
- Contains antibodies, which help to protect the child from infections
- Satisfies the infants' nutritional needs.
- Temperature always correct and constant
- Never spoils – always fresh.
- Promotes mother –child bonding
- Easily digested.
- Provides some contraceptive benefit, which inhibits ovulation (release of female egg) and helps increase intervals between births.
- No mixing required.
- Gastro-enteritis is greatly reduced.

### BREASTFEEDING TECHNIQUES

Most women feel they do not need to be taught how to breastfeed. There are techniques to be followed in order to breast feed the infant successfully. These are as follows:

**(a) Position** – The mother must be in a comfortable and relaxed position during breastfeeding. The baby must be held as close as possible to the mother's body. The most comfortable position is when baby is facing the mother-tummy to tummy. See diagram on different positions and how to hold baby during breastfeeding.

**(b) Support breast** – Put four fingers under the breast and a thumb on top.

© **Stimulate infant** – Tickle the baby's lips with the nipple. This will make the baby open its mouth wide and take the nipple. The mother must be patient and allow the infant to respond to stimulus.

**(d) Latch on** – Put baby on to the breast, the baby needs to take the whole nipple and areola (darkened area around the nipple) into its mouth. Her chin and nose should touch the breast. The baby must suck on both breasts so that each is emptied. Alternate the breasts on which you start each feeding.

(e) **Breaking suction** – It should not be done abruptly as it can cause sore nipples. Slip the little finger into the corner of the baby's mouth between the gums. (It is important to clean hands before breastfeeding).

(f) **Burping baby** - The baby swallows air while breastfeeding and this needs to be removed. This can be done before switching to the other breast and at the end of breastfeeding. The following techniques can be used: -

- Hold the baby so that the chin rests against shoulder and gently stroke the back.
- Hold baby upright, leaning slightly forward, support her head and chest with one hand and stroke her back with the other hand.

### **MEASURES TO PROMOTE SUCCESSFUL BREASTFEEDING**

- Breastfeed the baby as soon afterbirth as possible. It helps to initiate milk production. It takes a few days for the milk to come in, the breasts feel empty but it does not mean you have no milk. The milk produced (colostrum) in the first few days is very nutritious therefore it should not be thrown away.
- Eat well-balanced meals with plenty of fluids to promote milk production. A sickly and malnourished woman will not produce adequate milk.
- Breast milk is all that the baby will need in the first four months, no other food is necessary.
- Take turns starting feeding with the right or left breast, offer the baby both breasts at each feed.
- Feed baby on demand, the more the baby suckles the more milk the mother produces. Let the baby suck until it releases the nipples.
- The breasts may become swollen, warm and painful in the first 2 to 4 days, baby sucking can reduce this.

### **COMMON PROBLEMS ASSOCIATED WITH BREASTFEEDING**

**Sore nipples** - This can occur due to improper latching on, use off soap and ointments. Appropriate technique of latching on needs to be followed. Nipples need to be kept clean and dry.

**Breast engorgement** - Occurs when milk is not adequately drained. The breasts are hard, shiny and painful. Warm or cold packs can provide relief. Emptying both breasts will prevent this. If infant is not feeding well the milk will need to be expressed.

**Low milk supply** - The mother needs to allow the infant to breast-feed frequently and for longer periods. Must eat well, positive attitude, handle stress appropriately. If the cause is genuine the nurse-midwife may decide on providing supplemental milk.

**Flat nipples** – the nipples are short and the baby has problems breastfeeding. Sore nipples may develop when the baby bites on the nipple instead of taking the thing into his mouth.

#### **TEACHING GUIDELINES**

**DURING THE TEACHING EMPHSIS MUST BE PUT ON BREASTFEDING TECHNIQUES – DO NOT ASSUME THAT ALL WOMEN KNOW HOW TO BREASTFEED.**

#### **TOPIC THIRTEEN: CARE OF THE NEWBORN**

##### **BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Describe appropriate measures for baby care.**
- **Mention warning signs in a newborn.**

**TEACHING METHODS** - Lecture discussion.

**TACHING AIDS** – Posters of newborn care activities.

##### **CONTENT**

##### **APPROPRIATE MEASURES FOR BABY CARE**

Appropriate baby care involves the following:

**Feeding** – The baby needs balanced meals for growth and development. Breast milk is the best food for the infant in the first 6 months and later supplemental foods can be introduced (review breastfeeding topic). Baby should continue breastfeeding for at least one year.

**Skin care** - bathe baby every day using water and mild unmedicated soap (full bath is not required if it is too cold). Buttocks, genital areas, areas of skin fold (neck, joints) should be kept clean and dry.

**Malaria** – Protect the baby from mosquito bites by using chitetezo net. Close windows quickly. Don't keep wet areas around the house, which can bleed mosquitoes.

**Navel care** – keep the navel clean and dry, clean it with cotton wool or clean piece of cloth at least twice a day. The cord dries and falls off on its own in about a week. Do not apply any traditional herbs or powder.

**Bowels - Breast** milk is always well digested. Stools are loose for the first week or two. Some may have one bowel movement every 3 to 4 days. Do not give medications.

**Bladder care** – Napkins or materials used as napkins need to be changed when wet to prevent skin irritation.

**Prevention of infection** – Wash hands carefully before handling the baby, keep bedding and clothes clean, avoid contact with people who have infections.

**Rest and sleep** - Baby spends most of the time sleeping, especially between feeds. This is necessary for growth and development. Provide a warm and quiet environment for this. When awake it should be alert and responsive.

**Warmth** – Newborn babies need to be kept warm because they cannot maintain their own body heat. This puts baby at risk of respiratory problems and infections. Baby must have cap for the head, socks for the feet. It should be kept in a warm environment. Baby swaddling is another method of keeping baby warm.

**Love** – The baby needs to be loved as much as human being and this is important for its growth and development. It needs love from all family members.

**Fontanelles** – The bones in the baby's head have not yet grown together and soft spots (fontanelles) can be felt (use diagram on fontanelles). These close as the baby grows. The one located above the forehead closes within 18 months and the one located near the back of the head closes within 2 to 6 months. There is no need to apply any herbs on them to hasten the process, as it is traditionally done.

**Baby's cry** - The baby communicates through crying but not all crying means that the baby is hungry. When baby cries check the following:

- Is it too warm or too cold?
- Does it have fever?

- Is it hungry, napkin soiled, bitten by insect, needs human contact (check all possible causes)?

**Immunisation** – Baby needs to be immunised against child killer diseases – tuberculosis, polio, diphtheria, pertussis, whooping cough, tetanus, and measles. The following immunisations are given:

BCG – Given at birth, on the left arm.

Polio – Given orally at age of 1 month, 2 months, 3 months (three doses)

DPT – Given by injection at ages of 1 month, 2 months, and 3 months (three doses)

Measles – Given by injection at age of 9 months.

Follow- care – infants need follow-up care for growth and development until the age of 5 years.

#### **WARNING SIGNS IN THE NEWBORN**

The newborn needs to be taken to the hospital if the following are noted:

Diarrhoea, vomiting, poor feeding, skin rash, foul odour or discharge from the navel, bloody or watery stools, fever, yellow tinge to skin or site of eyelids, bleeding or oozing from the umbilical cord, or irritability.

#### **TEACHING GUIDELINES**

**DIFFERENT CULTURES HAVE UNSAFE PRACTICES RELATED TO CHILDREARING. THESE NEED TO BE EXPLORED AND CORRECTED DURING THE TEACHING.**

#### **TOPIC FOURTEEN: FAMILY PLANNING**

##### **BEHAVIOURAL OBJECTIVES**

The client will be able to:

- **Define family planning**
- **Explain the advantages of family planning**
- **Describe various family planning methods**

**TEACHING METHODS** – Lecture-discussion, demonstration, question and answer, role [playing].



**TEACHING AIDS** - Poster of various methods, samples of various family planning methods.

## **CONTENT**

### **FAMILY PLANNING**

Means deciding on the number of children to have and deciding on when to have them.

### **ADVANTAGES OF FAMILY PLANNING**

Helps couples to:

- Avoid pregnancy when it could be dangerous for the woman or infant – mother not physically health for pregnancy, infant too small.
- Limit the number of children – it is often easier to feed, clothe, house and care for smaller family.
- Promotes maternal well being – mother has enough time to recover fro the physical and psychological stress related to childbearing. The healthier the mother, the better the pregnancy outcome.
- Avoid age related risks – the safest time for pregnancy is between ages 20 and 35 years. Teenagers' pregnancies are dangerous.
- Avoid unwanted pregnancies – which can lead to induced abortions and maternal death.
- Avoid risks from poor pregnancy spacing – it is best for a woman to plan an interval of two years between births and allow her to recover from the extra demands of pregnancy and lactation.

**FAMILY PLANNING MEANS HEALTHY MOTHERS, CHILDREN, FAMILIES, AND NATION**

### **FAMILY PLANNING METHODS**

**NATURAL FAMILY PLANNING** (rhythm, calendar, temperature, mucous). A woman uses one of the methods to know when she is fertile (able to become pregnant) each month and must avoid sexual relations during this time. She is trained to use this method correctly. It is 80% effective.

**Advantages-** not expensive, is natural, no side effects, and helps women to understand how their bodies work. Women who have irregular menstrual period or have infection cannot use it.

**Withdrawal** – The man removes his sexual organ from the vagina just before ejaculation. It is 60-75% effective.

**Advantages** – Does not require advance preparation, no cost.

**Disadvantages** – It can cause dissatisfaction or frustration. Men who ejaculate early can have problems using the method.

**INTRA-UTERINE DEVICE (LOOP)** – It is small piece of plastic that is put woman's uterus at the clinic. It keeps the egg from growing in the woman's uterus. It is 95% effective.

**Advantages** – It is highly effective, no advance preparation, required during sexual intercourse, can be used while breastfeeding.

**Possible problems** – More bleeding or cramping during period, can easily get infection in the tubes, it can come out by itself, can have bleeding between periods.

**Women who cannot use this method are those who have:** Never given birth, had sexually transmitted diseases, tubal pregnancy, sexual relations with more than one partner, anaemia.

**ORAL CONTRACEPTIVE PILL** – a tablet containing a special substance, and must be swallowed every day. It works by preventing release of an egg, making it difficult for the man's sperm to enter the womb, changing the lining inside the womb making it difficult for a fertilised egg to implant. It is 95-98% effective.

**Advantages** – Highly effective, easy to use, reduces menstrual pain, helps prevent anaemia.

**Possible problems** - Nausea, slight weight gain, bad headaches, less blood during menstruation, may affect breast milk production.

**Women who should not use** - Over 40, smokers, suffering from high blood pressure, liver, and heart diseases. Those breast feeding can not use combined pill.

**BIRTH CONTROL SHOT (DEPO-PROVERA)** - It is an injection given every three months, works by keeping the woman's eggs from leaving the ovaries. It is 95-99% effective.

**Advantages** - Highly effective, reduced menstrual blood does not affect breast milk production.

**Possible problems** - Irregular periods (scanty or non), after stopping taking injections, it may take longer to become pregnant again.

**Women who should not use** – Same as oral contraceptives.

**NORPLANT** - A set of six small bars containing a special substance placed under the skin in the woman's arm. Work mainly by keeping the woman's eggs from leaving her ovaries. Can be effective for 5 years. Effectiveness is 99%.

**Advantages** - Highly effective, effect is quickly reversible once bars are removed, long lasting once inserted.

**Possible problems** - Irregular periods, light periods, spotting between periods.

**Women who should not use** - Same as for oral contraceptives.

**CONDOM** - A thin rubber placed over man's erect penis just before intercourse. Prevents the man's semen from entering the vagina. Once used it is thrown away. Effectiveness is 98%.

**Advantages** - Provided protection against sexually transmitted diseases including HIV/AIDS, inexpensive, requires man to take active responsibility for contraception, no health problems are caused.

**Possible problems** – Putting on condom interrupt sex, dissatisfaction, spilling of sperms when removing from vagina.

**DIAPHRAGM** - A shallow cup of thin rubber, which the woman places deep inside her vagina before sexual intercourse to block entrance to the womb. It is 85% effective.

**Advantages** – Protection against sexually transmitted diseases, inexpensive, can be put on six hours before intercourse.

**Possible problems** – Can cause bladder infections, may irritate the penis or vagina.

**Women who should not use** - Women, who are prone to bladder infection, have problems of womb or bladder prolapse.

If used with spermicide, it is more effective.

**SPERMICIDE** – A chemical substance in form of tablets, foam, cream or jelly that kills sperms. They work better if used with condoms. Effectiveness - 80-85%.

**Advantages** - Easy to use, cause a few health problems and inexpensive.

**Possible problems** - must be put in just before sex, some require a waiting period for them to foam up can be messy, can irritate vagina or penis.

**STERILIZATION** - Is a minor operation done when people no longer want to have children. The man or woman can have it done. In men the tubes that carry man's sperm are cut. In women the tubes that carry the woman's eggs are cut. It is 98% effective.

**Advantages** - Highly effective, eliminates fear of unwanted pregnancy, does not interfere with sexual relations.

**Possible problems** - You cannot change your mind and have children later, occasional infection at site of operation.

**People who should not use** – Those not sure about whether they might want to have children or not.

#### **TEACHING GUIDELINES**

**THE TOPIC MUST BE PRESENTED IN SUCH A WAY AS TO MOTIVATE PEOPLE TO USE FAMILY PLANNING METHODS. REMEMBER TO CLARIFY PEOPLE'S MISCONCEPTIONS RELATED TO FAMILY PLANNING. ENCOURAGE GROUP DISCUSSION DURING THIS SESSION.**

## **WEEK 6 PROGRAM**

- **Review of all topics**
- **Individual teaching and counselling**
- **Physical assessment**
- **Treatment or referral if necessary**

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