

**KNOWLEDGE AND ATTITUDES TOWARDS LABOUR PAIN RELIEF AMONGST  
PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT THE WOMEN AND  
NEWBORN HOSPITAL, UNIVERSITY TEACHING HOSPITALS, LUSAKA**

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requirements of the degree of Master of Medicine in Obstetrics and Gynaecology**

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## **DECLARATION**

I, Dr Mercy Monde Imakando, do hereby declare that this dissertation herein presented for the degree of Master of Medicine in Obstetrics and Gynaecology has not been previously submitted either in whole or in part for any other degree at this or any other university, nor is it being currently submitted for any other degree.

**SIGNED** \_\_\_\_\_

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**APPROVED**

BY \_\_\_\_\_

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**2019**

## **APPROVAL**

This dissertation of Dr Mercy Monde Imakando is approved as fulfilling part of the requirements for the award of the degree of Master of Medicine in Obstetrics and Gynaecology by the University of Zambia.

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## ABSTRACT

Labour pain is described as severe by most women and hence the use of both pharmacological and non-pharmacological methods for its relief. Low levels of awareness of labour pain relief have been noted in LMIC's compared to more developed countries. The present study sought to determine the knowledge and attitude towards labour pain relief amongst 385 parturients attending antenatal clinic at Women and Newborn Hospital, University Teaching Hospitals, Lusaka, Zambia from August to November 2017.

This was a cross-sectional study and a semi-structured interview was conducted with data collected in form of questionnaires. Data was analysed using Stata SE13. The majority of the women were fairly well educated (87 percent secondary level education and higher) and multigravidas (77 percent). Only 35 percent of the women had knowledge of labour pain relief. The main factors influencing knowledge were education ( $P = < 0.001$ , CI 2.18 – 4.61) and employment ( $P = < 0.001$ , CI 2.04 – 5.03). The main sources of information on labour pain relief were health workers and the internet. Most of the women (74 percent) expressed a desire to have labour pain relief at next delivery. None of the independent variables under study were found to influence attitude towards labour pain relief.

There is a low level of knowledge on labour pain relief amongst pregnant women attending antenatal clinic at the Women and Newborn Hospital, however, once they know that such an option exists, most of them are willing to receive labour pain relief during delivery. Inclusion of such lessons as part of routine antenatal care as well as using the media i.e. television and online resources would greatly help in increasing women's knowledge on the matter.

Key words: Knowledge, Attitude, Labour pain relief, Antenatal

## **DEDICATION**

I dedicate this dissertation to my husband, Misheck Mutali and my parents, Brighton Imakando and Sophia Imakando.

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## **ABBREVIATIONS**

<b>ACOG</b>	American College of Obstetricians and Gynecologists
<b>ASA</b>	American Society of Anesthesiologist
<b>DDA</b>	Dangerous Drug Act
<b>EA</b>	Epidural Analgesia
<b>IASP</b>	International Association for the Study of Pain
<b>KAP</b>	Knowledge, Attitudes and Practices
<b>LMIC's</b>	Low and Medium Income Countries
<b>TENS</b>	Transcutaneous Electric Nerve Stimulation
<b>WHO</b>	World Health Organization
<b>WNH-UTH's</b>	Women and Newborn Hospital University Teaching Hospitals
<b>ZDHS</b>	Zambia Demographic Health Survey

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background**

Labour is a physiological process that results in the delivery of the baby. It is accompanied by varying degrees of pain. The International Association for the Study of Pain (IASP) defines pain as an individual sensorial and emotional experience correlated with actual or potential tissue damage, or describes it in terms of damage. The same organization in September 2010, in the Montreal Declaration indicated that access to pain management is a fundamental human right. Labour is associated with severe pain for many women. In fact, it has been described as one of the most extreme forms of (Lowe, 2002) . The American College of Obstetricians and Gynecologists (ACOG) together with the American Society of Anesthesiologists (ASA) noted that, “Labour causes severe pain for many women. There is no other circumstance where it is considered acceptable for a person to experience untreated severe pain, amenable to safe intervention, while under a physician's care.” (ACOG, 2004). Various methods are used to alleviate the pain of labour and these include pharmacological (parenteral opioids and epidural analgesia [EA]) and non-pharmacological (back massage, delivery in water, acupressure,

Acupuncture, aromatherapy, transcutaneous electrical nerve stimulation-TENS). Of these, epidural labor analgesia (EA) has evolved as a popular and effective method of relieving labor pain in recent years. If timely administered, it has been noted to completely relieve labor pain in most of the patients without impeding the progress of the first stage of labor (Ramin, et al., 1995)

The World Health Organization (Kumar, 2007) recognizes that correct diagnosis and proper treatment of pain is an important public health concern. A number of studies have been conducted in both developed countries and LMIC's. A study in Pakistan found that 38.9 percent of the respondents were not aware that labour pain could be relieved, and there was a poor general awareness of women about the role of epidural analgesia in labour leading to a low patient demand for the service (Barakzai et al., 2010). Similarly, Kapadia et al (2013) found that most of the Indian parturients still suffer from the agony of labor pains due to lack of awareness, lack of availability or knowledge of availability of labor analgesia service. The need to improve awareness of labour pain relief was noted. To the contrary, an earlier study by Biswas et al (2002) in a United Kingdom survey on knowledge of labour pain relief amongst antenatal

women, found that 93 percent of the women knew about epidural anesthesia as a form of labour pain relief and 60 percent of respondents who were multiparous had had a previous epidural. This reflects a higher awareness of labour pain relief in a more developed set up than in LMIC's. A Ugandan KAP study (Nabukenya et al., 2015) concluded that very few pregnant mothers knew about labor analgesia but the majority would love it. Similar findings (Olayemi et al., 2003) in Nigeria, who noted that awareness of obstetric analgesia was relatively low in the area, however, a high proportion of patients would accept analgesia in labour if offered. These finding correlate with those of Kumar (2007) who noted patients with moderate to severe pain being often under-treated in both developing and developed countries due to inaccessibility to opioids, the mainstay of pain relief in such cases. Low and Medium Income countries (LMIC's) were even more affected than developing ones.

According to the Zambia Demographic Health Survey (ZDHS) of 2014, the total fertility rate was 5.3. This means that, on average, a Zambian woman who is at the beginning of her childbearing years would likely give birth to 5 children by the end of her reproductive period if she were subject to the prevailing rate of age-specific fertility. Without knowledge of analgesics options, the Zambian woman is likely to experience the severe pain of labour about five times during her lifetime. Since maternal request is sufficient justification for pain relief during labor (ACOG), it is imperative that women be aware of pain relief options available to enable them make informed decisions on the pain relief option of their choice during labour. As yet, no studies have been done in Zambia to determine the knowledge and attitude towards labour pain relief in Zambia

This study was aimed at determining the knowledge and attitude regarding labour pain relief amongst pregnant women attending antenatal clinic at Women and Newborn Hospital, UTH's Lusaka so as to improve quality of care at the highest health institution in Zambia.

## **1.2 Statement of the Problem**

Despite the current global emphasis on pain management, the correct diagnosis and management of which is a matter of public health concern (Kumar, 2007), it appeared that in our setting, there is limited use of analgesia in labour. The main analgesics used at Women and Newborn Hospital are the opioids Fentanyl and Pethidine. Epidural analgesia (which is the gold standard) is not readily available despite being the highest referral institution.

However, from anecdotal evidence derived from crude count in the Dangerous Drug Act (DDA) log, it appeared that not much of these drugs were being used. From September to November 2016, 794 vials of opioids were used (509 of Pethidine and 285 Fentanyl), during time period a total of 4017 vaginal deliveries were conducted giving an extremely low and alarming usage of 19.8 percent. The low utilization seemed to arise from low demand. This could also be compounded by culture and religion.

In view of the above, it was imperative that these issues be explored through the study with the view of improving pain management in labour ward at Women and Newborn Hospital. .

## **1.3 Study Justification**

Since every woman deserves to be as comfortable as possible during the process of labour, and access to pain management is a fundamental Human right (Montreal declaration), against the background of limited usage of analgesia as noted from the crude count, there is great need to explore the situation at UTH. The information acquired will create a basis for strategizing on labour analgesia as well as forming a data base for reference in future studies on the same

## **1.4 Research Question**

What is the knowledge and attitude towards labour pain relief amongst pregnant women attending antenatal clinic at WNH-UTH's Lusaka Zambia?

## **1.5 Objectives**

### **1.5.1 General Objective**

To assess the knowledge and attitude regarding pain relief options amongst pregnant women attending antenatal clinic at WNH-UTH's Lusaka Zambia from August to October 2017

### **1.5.2 Specific objectives**

1. To determine knowledge of labour pain relief amongst pregnant women attending antenatal clinic at WNH-UTH's Lusaka Zambia
2. To determine the attitude towards labor pain relief
3. To examine factors influencing knowledge and attitude towards labor pain relief

### **1.6 Organization of the dissertation**

This dissertation shows information pertaining to the knowledge and attitude of antenatal women towards labour pain relief. Chapter 1 gives an overview of labour pain and its relief from a global, regional and local perspective, a statement of the problem and the objectives of the study. Chapter 2 is a review of existing literature on the nature of labour pain, types of pain relief, knowledge and attitude towards pain relief in labour. Chapter 3 describes the methodology of the study whilst Chapter 4 goes on to outline the results in tables and brief narratives. Chapter 5 is a discussion of the study findings and conclusion, with recommendations based on the study findings. Included in the appendix are the consent forms, questionnaire and letters of permission from the Hospital and Research Ethics Committee.



## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Labour Pain Relief**

It is a well-documented fact that labour pain is among the most severe forms of pain. Melzack (1984), Ranta et al (1995) and Lowe (2002) concluded that labour pain is one of the most extreme forms of pain. This was in agreement with ACOG and the American society of Anesthesiologists who noted that “Labor causes severe pain for many women”, and further stated that, “There is no other circumstance where it is considered acceptable for a person to experience untreated severe pain, amenable to safe intervention, while under a physician's care.”

Various interventions to alleviate pain during labour are in existence. These are classified into pharmacological and non-pharmacological.

Pharmacological methods include parenteral opioids (i.e. Pethidine fentanyl and Butorphanol), Inhalational agents (i.e. Entonox and Sevoflurane,) and Neuraxial analgesia. Of the various pharmacological methods used for pain relief during labour and delivery, Neuraxial analgesia techniques (epidural, spinal and combined spinal –epidural) are the most flexible, effective and least depressing to the central nervous system, allowing for an alert participating woman and an alert neonate, (ACOG, 2004). Epidural analgesia has emerged as the gold standard method for pain control in obstetrics (Hawkins, 2010). Anim-Somuah et al (2005) in a review of 21 trials noted that epidural analgesia affords more effective pain relief than non-epidural forms of analgesia. However, women randomized to epidural had an increase in the length of the second stage of labour and the need for oxytocin, with an increase in the risk of instrumental vaginal delivery.

Non pharmacological methods include Transcutaneous electrical nerve stimulation (TENS), continuous support in labour, touch and massage, water bath, intradermal sterile water injections, acupuncture and hypnosis (Simkin et al., 2002).

## **2.2 Awareness of Labour Pain Relief**

Analgesia for labour is widely utilized in high-income countries, however, this is not the case in Africa (Kuti et al., 2008). In an Australian based KAP study on epidural analgesia, Vandendriesen et al (1998) found that 20 percent of the women studied did not have adequate knowledge pertaining to the problems associated with EA, which was attributed to widespread uncertainty on the effects of EA on various stages of labour. A similar study in Kenya (Apondi, 2012) showed knowledge levels in relation to timing, complications and cesarean section ranged from 50-70 percent. Though most obstetricians at Kenyatta National Hospital have a positive attitude towards routine use of EA among Parturients, only 3.3 percent practiced EA, the greatest hindrance being inadequacy of equipment.

Knowledge levels of labour pain relief amongst patients together with factors influencing attitude towards the same has been a subject of research for some time in both high and low income countries. Hanem, et al (2013) found high awareness of EA existed among the women, and the source of knowledge was from friends, relatives and family members. The findings were comparable to studies done by James, et al (2012), Mugambe, et al (2007) and Minhas, et al (2005). Of note is that in the former, the majority of the women were young and well educated. The exact opposite was seen in the LMIC's. In an Indian study (Hazarika, et al., 2016) a poor general awareness regarding the role of EA i.e. of 400 women only 14 percent had knowledge on EA. However, 81.25 percent had knowledge on injectable analgesia. Low awareness levels were attributed to low education levels (60 percent had no education). These results were similar to (Barakzai, et al., 2010) done in a very similar setting. The latter added that women's upbringing, culture and ethnic group largely influence attitudes to labor pain relief.

Naithani (2011) also found only a 9.5 percent (200 participants) awareness of availability of pain relief in labour. Educational status was noted to play a role towards awareness acceptance of labour analgesia.

Even though in high-income countries issues are focused on the choice of methods and complications of labour analgesia, in developing countries the issues are centered on awareness, acceptability and availability of analgesia for labour (Olayemi et al., 2003).

The awareness and attitudes towards pain during labor and its relieving agents during childbirth among antenatal women are relatively low in developing countries. Lack of knowledge, low levels of antenatal discussion and minimum practical exposure regarding available obstetric analgesic services remain a major concern towards acceptance and practice of epidural analgesia among obstetricians, inhibiting the maternal and fetal benefits (Karn et al., 2016). This is as evidenced by Nabukenya et al (2015) in Uganda, who found that of 1293 women enrolled, only 7 percent had knowledge of labour analgesia. 87.9 percent of the multiparous women did not receive any labour analgesia in the previous pregnancies despite the majority of them having delivered in the national referral hospitals. These findings were comparable to those of a Nigerian study (Okojie et al., 2014) in which 79.5 percent of the women were not aware of epidural analgesia. These alarming statistics show that although the majority of the world is concentrating on awareness of Epidural Analgesia, in LMIC's more needs to be done to improve awareness and usage of not only neuraxial analgesia but also injectable opioids.

The purpose of the study was to assess the level of awareness and attitude of Zambian women towards labour pain relief, with the view to improve utilization of analgesia in labor and thus improve on the quality of care.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Study Design:**

This was a prospective cross-sectional study

#### **3.1.1 Site**

Study participants were recruited from The Women and Newborn Hospital - University Teaching Hospitals (WNB-UTH) Antenatal Clinic. The clinic runs every morning from Monday to Friday with an average of 1500 women being attended to on a monthly basis.

#### **3.1.2 Target population**

Pregnant women attending Antenatal clinic in Lusaka

#### **3.1.3 Study population**

The studied - population were women attending antenatal clinic at WNB-UTH who met the eligibility criteria

#### **3.1.4 Research Material**

A questionnaire was used. The principal investigator administered the questionnaire and where necessary assisted by well- trained research assistants. The assistants were qualified midwives working in the antenatal clinic

#### **3.1.5 Eligibility criteria**

##### **a) Inclusion criteria**

1. Pregnant women aged 18 and above irrespective of parity
2. Signed consent

##### **b) Exclusion criteria**

1. None

### **3.1.6 Sample size**

Sample size was calculated using [sampsize.sourceforge.net](http://sampsize.sourceforge.net)

Sample size for a prevalence survey with finite population correction.

Precision – 5% (default to return sample size needed for 95% confidence interval)

Prevalence – 50% (recommended if unknown)

Population – 0 (recommended if unknown)

Level – 95% confidence interval

Sample size = 385

Philippe Glaziou (2003-2005) Sampsize project

### **3.1.7 Sampling**

Systematic sampling was done as follows;

Average number of women attending antenatal at UTH Antenatal clinic from September to November 2016 was 4720 translating to a monthly average of 1573

The study sample size is 385 pregnant women at booking

Calculating the sample interval;  $(k) = 1573/385 = 4.09$  rounded off to 4

Therefore, on each antenatal clinic day, for the clients meeting the eligibility criteria, every 4th client was selected.

### **3.1.8 Data Collection Period**

Data was collected from August to October, 2017.

### **3.2 Data Collection Plan and Tools**

A structured questionnaire was administered to the study participants meeting the eligibility criteria. The questionnaire was comprised of the following sections:

1. Socio-economic and demographic information
2. Details of pregnancy and knowledge on labour pain relief
3. Attitude towards labour pain relief

The principal investigator was responsible for conducting interviews and was assisted by research assistants. The research assistants were qualified midwives working in the antenatal clinic. Patients were recruited in WNB-UTH antenatal clinics from Monday to Friday during working hours. Every 4<sup>th</sup> antenatal patient received at the nurse's desk was recruited. Interviews were conducted in cubicles available in the clinic and the questionnaire

Collected data was entered into Epidata entry software.

### **3.3 Data Management and Storage:**

The collected data was kept in the department of Obstetrics and Gynaecology. Only authorized personnel had access to the information i.e. Supervisor, Principal Investigator and Statistician and attending clinician.

### 3.4 Variables

Table 1 below, shows the dependent and independent study variables together with their scales of measure.

**Table 1: Study Variables**

<b>Dependent Variables</b>	<b>Scale of Measure</b>
Knowledge of labour pain relief	No scale: Categorical response Yes/No
Attitude towards labour pain relief	Categorical response : Yes/No to receiving labour pain relief
<b>Independent Variables</b>	<b>Scale of Measure</b>
Tribe	Categorical: Lozi, Tonga, Bemba, Chewa, other.
Residence	Categorical
Religion	Categorical: Christian, Hindu, Muslim, other
Educational status	Categorical : No formal, Primary, Secondary, Tertiary
Perception of Intensity of Labour Pain	Numeric Rating Scale
Age	Categorical
Parity	Categorical
Gravidity	Categorical

Table 1 above shows the study variables with their scales of measure where applicable. The dependent variables were Knowledge of labour pain relief and Attitude towards labour pain relief. Tribe, residence, religion, educational status, age, perception of labour intensity, gravidity and parity were the independent variables.

### 3.5 Ethical considerations

Ethical approval was granted by University of Zambia Biomedical Research Ethics Committee, Reference Number 001-04-17. Permission was also obtained from the Senior Medical Superintendent of the Women and New-born Hospital and the Head of Department Obstetrics and Gynaecology for the conduct of this research in the hospital. Participation in this study was absolutely voluntary. Prospective participants were invited to participate after explaining the

details of the study and its potential benefits toward the improvements of labour outcomes. Those accepting to participate were provided with an information sheet and informed consent was obtained by a signature or thumb print for those unable to sign. Women were further informed that they were free to decline participation and that such a decision would not disadvantage them in any way regarding the quality of care they would receive in this hospital. They were also informed that participation would not entitle them to any financial incentives and that they would receive the standard of care as everybody else. A patient identity number was used to ensure strict confidentiality.

### **3.6 Data Analysis**

Data was entered into Epidata and then using Epimanager, was exported to StataSE13, which was the data analysis tool. The results were then presented in form of tables. Binary logistic regression was done followed by multivariable logistic regression. The latter was to study the effects of various responses on the outcome.



## CHAPTER FOUR: RESULTS

After interviewing 385 antenatal women, the results are shown in tables 2 – 9 below:

**Table 2: Descriptive Statistics of Social and Demographic Characteristics of 385 Antenatal Women.**

Demographic Data	Frequency	Percentage	95% CI
<b>Ages (Years)</b>			
18-24	60	16	12-19
25-30	145	38	33-42
31-36	129	34	29-38
37-42	47	12	9-15
43-48	3	0.8	0.2-1.2
<b>Ethnicity/Tribe</b>			
Lozi	24	6	4-9
Tonga	51	13	10-17
Bemba	101	26	22-30
Chewa	38	10	7-13
Other	170	44	39-49
<b>Education</b>			
No formal Education	1	0.3	0.03-1
Primary	49	13	10-16
Secondary	138	36	31-40
Tertiary	197	51	46-56
<b>Occupation</b>			
Unemployed/ Housewife	176	46	41-51
Employed	209	54	49-59
<b>Gravidity</b>			
1	90	23	19-28
>1	295	77	72-80
<b>Parity</b>			
unipara	113	38	33-44
Multi-para	181	62	56-67
<b>Religion</b>			
Christian	383	99	97-100
Muslim	2	0.5	0.1-2
<b>Monthly income (ZKM)</b>			
<1000	60	16	12-19
1001-5000	215	54	51-61
5001-10000	74	19	15-23
>10000	34	9	6-12

Table 2 above shows the descriptive socio-demographic data of the 385 antenatal women who were interviewed. The respondents were aged between 18 and 48. Of these, majority were aged between 25 and 36 years (72 percent). The majority also had formal education with 36 percent having attained secondary and 51 percent tertiary level of education. Most of the respondents were employed (54 percent). There were 90 Prim-gravidas (23 percent), the rest being multigravidas. The majority of the households earned a monthly income of between ZMK 1001 to 5000 monthly. It was also found that 9 percent of the parturients had a household income of ZMK 10,000 and above. Christianity was the dominant religion at 99percent.

**Table 3: Knowledge and Utilization of labour pain relief**

	Frequency	Percentage	95% CI
<b>Knowledgeable about labour pain relief (n=385)</b>			
Yes	136	35	31-40
No	249	65	60-69
<b>Which one(s) do you know (those who said Yes above (n=136) candidate able to give more than one response)</b>			
Breathing exercises	52	38	30 – 48
Analgesic injections	50	42	42 – 59
Epidural Analgesia	45	26	25 – 41
TENS	9	5	03 – 12
<b>How did you come to know about it first (n=136)</b>			
Health worker	54	40	32 – 48
Friends	20	15	09 – 21
Articles available online	33	24	17 – 32
From books	22	16	10 – 23
Other	7	5	02 – 10
<b>Mode of delivery in the previous pregnancy (n=295 )</b>			
Vaginal	253	86	81 – 89
Emergency caesarean	32	11	07 – 14
Elective caesarean	10	3	01 – 06
<b>Method of analgesia used before (n=295)</b>			
Breathing exercise	3	1	0.3-3
Analgesia Injection	24	8	0.5-11
Epidural labour analgesia	4	1	0.5-3
Electric caesarean section	2	0.7	0.1-3
None	261	89	84-92

In Table 3 above, it can be seen that 136 (35 percent) of the women had knowledge of labour pain relief. In terms of the types of labour pain relief methods known, breathing exercises were at (30 percent), analgesic injections (39 percent), epidural analgesia (26 percent) and TENS (5 percent). Each respondent was allowed more than one response in case they knew more than one method. The major sources of information on labour pain relief were health workers (40 percent) followed by online articles (24 percent). The rest was from friends and other sources. Of the parous women, 86 percent had had vaginal deliveries. Of these, 89 percent did not receive any form of labour analgesia.

**Table 4: Perception of Labour Pain and Attitude towards Labour Pain Relief**

	Frequency	Percentage	95% CI
<b>Perception of labour pain (n=385)</b>			
<b>Labour Pain Natural</b>			
Yes	384	99.7	98-99
No	1	0.3	0.03-1
<b>Perception of labour pain intensity (n=295)</b>			
Severe pain (7-10)	208	71	65-75
Moderate (4-6)	70	24	19-29
Mild (1-3)	7	2	01-05
No pain	10	3	01-06
<b>Received analgesia in previous pregnancy(n=295)</b>			
Yes	31	11	07-14
No	264	89	85-93
<b>Attitude</b>			
<b>Would like receive Analgesia during next delivery(n=385)</b>			
Yes	286	74	70-78
No	99	26	21-30
<b>Why wouldn't you receive analgesia during next delivery (n=99)</b>			
Method do not work	1	1	0.1-7
Harmful to baby	32	32	24-43
Want to experience natural child birth	56	57	46-66
Culturally unacceptable	1	1	0.1-7
May weaken contractions	5	5	02-11
May lead to caesarean delivery	1	1	0.9-9
Other	3	3	

Table 4 above shows that among the parous women, 71 percent perceived labour pain as severe, while 24 percent reported it to be moderate. Most of the respondents (74 percent) expressed the desire to receive analgesia during delivery. In the group of women who did not desire labour pain relief at delivery, the main reason for not wanting to receive labour analgesia was the desire to experience natural childbirth (57 percent), while 32 percent expressed fear that the method used for labour pain relief might cause harm to the baby.

**Table 5: Characteristics of Respondents and their Knowledge of Labour Pain Relief.**

Social Characteristics	Knowledgeable of labour pain relief(136 women)	Not knowledgeable of labour pain relief (248 women)	X <sup>2</sup>	P-value
<b>Education</b>				
No formal	0	1	43	<0.0001
Primary	6	43		
Secondary	30	108		
Tertiary	100	97		
<b>Parity</b>				
Unipara	49	64	3	0.06
Multipara	59	122		
<b>Occupation</b>				
Unemployed/Housewife	38	138	27	<0.0001
Employed	98	111		
<b>Age</b>				
18-24	10	50	12	0.02
25-30	54	91		
31-36	54	75		
37-42	17	30		
43-48	1	2		
<b>Gravidity</b>				
1	28	62	0.9	0.3
>1	108	187		

Significance at  $\alpha=0.05$ .

Table 5 showed that education, occupation and age ( $P= <0.0001$ ,  $<0.0001$  and  $0.02$  respectively) played a significant role on knowledge towards labour pain relief. No significant association was found between gravidity and parity, to knowledge of labour pain relief.

**Table 6: Bivariate Relationship between Knowledge of Labour Pain Relief and Independent Variables**

Independent Variables	Bi variant Odds Ratio	P>z	[95% Conf.
Gravidity	0.78	0.34	0.47-1.23
Education	3.17	>0.001	2.18-4.61
Occupation	3.20	>0.001	2.04-5.03
Age	1.03	0.021	0.41-1.31
Parity	0.63	0.063	0.38-1.02

Displayed in Table 6 above, the bivariate analysis of the independent variables to knowledge of labour pain relief showed a correlation between education (OR 3.17 CI 2.18- 4.61), occupation (OR 3.2 CI 2.04-5.03). Age, gravidity and parity did not influence knowledge of labour pain relief.

**Table 7: Multivariable Relationship between Knowledge of Labour Pain Relief and Independent Variables**

<b>Independent Variables</b>	<b>Multi variant Odds ratio</b>	<b>P-value</b>	<b>[95% Conf.</b>
Gravidity	0.65	0.114	0.38-1.11
Education	2.64	>0.001	1.75-3.98
Occupation	1.82	0.02	1.09-3.04
Age	1.03	0.261	0.97-1.09
Parity	0.78	0.406	0.43-1.40

Multivariable analysis of knowledge of labour pain relief to independent variables as displayed in Table 7, showed that a pregnant woman who is educated is 2.64 times (CI 1.75 -3.98) more likely to be knowledgeable of labour pain relief than one who is not educated, and an employed antenatal woman is 1.82 times (CI 1.09 – 3.04) more likely than an unemployed one to know about labour pain relief.

.



**Table 8: Bivariate Relationship between Desire to Receive Analgesia at Next Delivery and Independent Variables**

<b>Analgesia</b>	<b>Odds Ratio</b>	<b>P&gt;z</b>	<b>[95% Conf.]</b>
Gravidity	1		
Education	1.06	0.82	0.7-1.7
Occupation	0.94	0.84	0.5-1.6
Age	1.01	0.56	1-1.1
Parity	0.84	0.59	0.5-1.6
Monthly income	1.09	0.64	0.8-1.6

Bivariate analysis did not show an association between desire to receive analgesia at next delivery and the independent variables (Gravidity, Education, Occupation, Age, Parity, and Monthly income) as well as knowledge, demonstrated in Table 8 above.

**Table 9: Multivariable Relationship Between desire to Receive Analgesia at Next Delivery and Independent Variable**

<b>Analgesia</b>	<b>Odds Ratio</b>	<b>P&gt;z</b>	<b>[95% Conf.]</b>
Gravidity	1		
Education	1.06	0.82	0.7-1.7
Occupation	0.94	0.84	0.5-1.6
Age	1.01	0.56	1-1.1
Parity	0.84	0.59	0.5-1.6
Monthly income	1.09	0.64	0.8-1.6

Table 9 illustrates the multivariable relationship between desire to receive analgesia at next delivery and the independent variables. No significant associations were noted. The P values ranged from 0.56 – 0.84.

## CHAPTER FIVE: DISCUSSION

The Study found that 35 percent of the women attending antenatal clinic at Women and Newborn Hospital had knowledge of labour pain relief, despite the fact that 77 percent of the women had experienced labour many times before. The main factors influencing knowledge were level of education attainment ( $P = < 0.001$ , CI 2.18 – 4.61) and employment status ( $P = < 0.001$ , CI 2.04 – 5.03). The attitude towards labour pain relief was good, as the majority (74 percent) of the respondents desired labour pain relief at next delivery. None of the independent variables under study were found to influence attitude towards labour pain relief.

### 5.1 Knowledge of labour Pain Relief

In this study, 23 percent of the respondents were prime gravidas whilst 77 percent were multigravidas. The majority of the women were fairly well educated, 87 percent of whom had secondary school level of education and higher (see Table 2). Of the women interviewed, 35 percent had knowledge of labour pain relief which is really low. These low levels of knowledge are in conformity to findings by Naithani et al (2011), and Nabukenya et al.(2015), in which the knowledge levels were even much lower at 9.5 percent and 7 percent respectively. Seemingly, levels of knowledge are low in LMIC's. Contrary to expectation, even the parous women who are expected to have come into contact with health workers in previous pregnancies and probably received labour analgesia also had low levels of knowledge. This warrants further investigation to establish whether it is due to unavailability of analgesics or low usage by healthcare providers.

The main methods of labour pain relief known were the injections (39 percent), breathing exercises (30 percent) and epidural analgesia (26 percent). These results are consistent with the fact that injectable analgesics are the main form of labour pain relief available at the health facilities. Possible limitations to use of epidural analgesia in public facilities include high cost of epidural kits, inadequate facilities (i.e. equipment and high health provider to patient ratio) to allow individualised patient monitoring during the intra-partum period.

In contrast to these findings, higher levels of knowledge were observed by Mugambe et al (2007) in neighbouring South Africa where 56.3 percent of the respondents had knowledge of

pain relief. Similarly Barakzai et al (2010) noted that 61.1 percent of the women were aware that labour pain could be relieved. The latter study however had excluded prim gravid women. Since more than half the respondents (51.1 percent) had received pain relief in the previous delivery(s) leading to increased exposure, increased knowledge of labour analgesia came as no surprise. In this study, an alarming 89 percent of the parous women had not received labour analgesia during previous deliveries. The low usage of labour analgesia likely had an impact on the low levels of knowledge even among the parous women, contrary to expectation.

The main sources of information among the respondents with regards knowledge of pain relief were Health workers, 40 percent, followed by the internet sources at 24 percent. Friends only accounted for 15 percent. These findings again are in contrast with those in other studies where major sources of information were friends and family ((Barakzai et al., 2010) (Nabukenya et al., 2015) (Naithani et al., 2011)). According to Ogboli-Nwasor et al (2011) the major source of information on labour pain relief for Nigerian women was from health workers (15 percent Doctors, 79.4 percent Nurses). The fact that health workers were the main source of information in this study reflects the importance of including some lessons on labour analgesia in antenatal care. Traditionally, Zambian women are taught to be prepared for labour pain and counseled to be ‘Strong’ so as to endure the ordeal. This cultural norm is a possible explanation for the low number of women learning of labour pain relief from family and friends and may also play a role in its acceptance. The high cost of internet services might be a limitation to accessing of information by the pregnant women.

## **5.2 Attitude towards labor pain relief**

Among the parous women, 71 percent described labour pain as severe. This is in keeping with the findings by Lowe et al (2002). It is not surprising therefore that most of the women (74 percent) expressed a desire to receive labour pain relief at the next delivery, once they were informed that such a facility exists. Similarly Mugambe et al (2007) had 78.8 percent and Nabukenya et al (2015) 87.7 percent desiring analgesia at next delivery.

Of the remainder, who declined analgesia during next delivery, the desire to experience natural child birth (57 percent) followed by the fear that the medications or interventions given might be harmful to the baby (32 percent), were the major concerns. Although only 1 per cent thought it would be culturally unacceptable to receive labour pain relief, the fact that most of those who

declined analgesia expressed a desire to experience natural child birth could be an indicator of cultural conditioning as well as religious considerations (some women indicated that the Bible clearly states that labour will be painful from the time of Eve's fall in Eden).

### **5.3 Factors influencing knowledge and attitude towards labor pain relief**

There was a significant relationship between knowledge and education ( $P = < 0.001$ , CI 2.18 – 4.61), knowledge and employment ( $P = < 0.001$ , CI 2.04 – 5.03) as well as knowledge and age ( $P = 0.02$ ). The study showed that educated and employed women are 3 times more likely to have knowledge of labour pain relief than the uneducated ones. From the multivariable analysis, education and occupation were the key determinants of knowledge. This may be due to the fact that educated women have more access to information via internet sources and books. In like manner, a Saudi Arabian study by (Hanem et al., 2013), noted a significant correlation between knowledge, education and income. The latter study also found a correlation between knowledge and parity, contrary to our findings; however, the study was specifically looking at awareness and attitude towards epidural analgesia and no other forms of labour pain relief.

The study did not find a significant correlation between parity and knowledge ( $P = 0.063$ ). This is contrary to expectation since from a previous delivery, one is expected to have had contact with health workers and possibly been exposed to labour analgesia. However, it is important to note that only 11% of the parous had received any form of pain relief in previous deliveries and this could have had a bearing on the results. It also reflects low usage of labour pain relief in health facilities. More information on place of last delivery and health worker attitude towards administration of labour analgesia (which was not included in this study) could perhaps shed more light in this vein.

Analysis of the attitude towards receiving labour pain relief at next delivery did not show an association with knowledge nor the other independent variables i.e. neither parity, monthly income nor Age) (Tables 8 and 9). This is in keeping with the fact that labour pain relief is a basic human right, cutting across barriers of education and socioeconomic status. All whether rich or poor, educated or illiterate feel pain and desire its relief.

Religion as a factor affecting knowledge and attitude towards labour pain relief was not analysed as only 0.5 percent of the respondents were non-Christian.

#### **5.4 Conclusion**

The study found that knowledge about labour pain relief is low among the pregnant women attending antenatal clinic at the Women and Newborn Hospital. Education and employment were the main factors affecting knowledge towards labour pain relief. The main sources of information on labour pain relief from the few that had knowledge of it were health workers, followed by the online reading. Despite the low knowledge on labour pain relief, once they knew that such an option exists, most of the women expressed a desire to receive analgesia at next delivery.

#### **5.5 Study Limitation**

The study was based in an urban setup and restricted to the highest health institution in the country and hence may not give a complete reflection of the country situation.

#### **5.6 Recommendations**

1. To strengthen lessons on labour pain relief, given by health workers during antenatal visits/contacts.
2. To strengthen the use of the internet and television for health education even on matters pertaining to pregnancy and labour pain relief so as to increase awareness in the general public and possibly alleviate any fears and concerns
3. A follow-up multicenter studies to determine the knowledge and attitude of both health workers and pregnant women towards labour pain relief and its administration

## REFERENCES

- ACOG Practice Bulletin (2002) *Clinical Management Guidelines for Obstetrician-Gynecologists*. (Goetz, L.M) *Obstet Gynecol* **100**(1): 177-19 [Online] Available From <https://www.ncbi.nlm.nih.gov/pubmed/12100826> [22/12/16]
- [ACOG Committee Opinion \(2004\) Pain Relief During Labor. No.295. Obstet Gynecol; 104\(1\):213.](#) [Online] Available From <https://www.ncbi.nlm.nih.gov/pubmed/15229040> [22/12/16]
- Anim-Somuah, M, Smyth, R, Howell, C. (2005) Epidural Versus Non-Epidural or No Analgesia in Labour. *The Cochrane Database of Systematic Reviews*, (4): CD000331. DOI: 10.1002/14651858.CD000331
- Apondi ,C. (2012) *A Survey of Knowledge and Attitude and Practice Regarding Labour Analgesia Among Obstetricians at the Kenyatta National Hospital*. Unpublished MSc Anaesthesia dissertation. University of Nairobi.
- Barakzai A, Haider G, Yusuf F, Haider A, Muhammad N. (2010) Awareness of Women Regarding Analgesia During Labour. *J Ayub Med Coll Abbottabad*; **22**(1): 73-5. [Online] Available From: <http://www.ayubmed.edu.pk/JAMC/PAST/22-1/Barakzai.pdf> [20/12/18]
- Biswas, G, Hariharan, V. (2002) A survey of antenatal women on their knowledge of pain relief methods in labour. *Royal Coll Anaesth.* **11**: 530–1.
- Hanem, F, Alqantani, J, Almobaya, N, Aldosari, M, Alnajay, H. (2013) Women’s Awareness and Attitude Toward Epidural Analgesia. *Journal of Biology and Healthcare.* **3**(6). [Online] Available From [www.isitte.org](http://www.isitte.org) [20/12/18].
- Hawkins, J.L. (2010) Epidural Analgesia for Labour and Delivery. *N Engl J Med* **362**(1): 1503–10. [Online] Available From: <https://www.nejm.org/doi/full/10.1056/NEJMct0909254> [12/01/17]
- Hazarika R, Rajkhowa T, Parua S. (2016) Awareness of Epidural Labor Analgesia among Postpartum Woman at Guwahati Medical College: A Cross-sectional Study. *Int J Adv Health Sci.* **2**(10): 1-5.
- James, J. N, Prakash, K. S, Ponniah, M. (2012) Awareness and Attitude Toward Labour Pain Relief of Urban Women Attending a Private Antenatal Clinic in Chennai, India. *Indian J*

*Anaesth*, 56(2): 195-198. From <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3371503> [05/01/17]

Kapadia, S, Parmar, K, Solanki, N, Patadia, K. (2013). Knowledge, Awareness and Attitude of Antenatal Women Towards Labour Pain and Labour Pain Relief. *BJ Kines National Journal of basic and Applies Sciences*. **5**: 11-13.

Karn, S., Yu, H., Karna, S., Chen, L.Q. and Qiao, D.Y. (2016) Women's Awareness and Attitudes Towards Labor Analgesia Influencing Practice between Developed and Developing Countries. *Advances in Reproductive Sciences*, 4: 46-52. [Online] Available From: <http://dx.doi.org/10.4236/arsci.2016.42007>

Kuti, O, Faponle, A.F, Adeyemi, A.B, Owolabi, A.T. (2008) Pain Relief in Labour: A Randomized Controlled Trial Comparing Pentazocine with Tramadol, *NJOG*, **3**(1): 14–18. [Online] Available From: <https://doi.org/10.3126/njog.v3i1.1433> [12/01/17]

Lowe, N.K. (2002) The Nature of Labor Pain. *AmJ Obstet Gynecol* **186**(Suppl Nature): 16-24.

Melzack, R. (1984) The Myth of Painless Childbirth (the John J. Bonica Lecture). *Pain* 19(4): 321-337. [Online] Available From: <https://eurekamag.com/research/029/383/029383511.php> [10/01/17]

Minhas, M.R., Afshan, G, and Raheel, H. (2005). Knowledge, Attitude and Practice of Parturients Regarding Epidural Anesthesia in a University Hospital of Karachi, *Journal of Pakistani Medical Association*, 55(2): 63-66.

Moir, D.D. (1979) Extradural Analgesia for Caesarean Section. *British Journal of Anaesthesia*, **51**(2): 79-80 [Online] Available From: <https://bjanaesthesia.org/article/pdf> [05/01/17]

Mugambe, J.M, Nel, M, Hiemstra, L.A, Steinberg, W.J . (2007) Knowledge of and attitude towards pain relief during labour of women attending the antenatal clinic of Cecilia Makiwane Hospital South Africa. *SA Fam Pract*. **49**(4):16. [Online], Available from: <http://www.safpj.co.za> [12/01/17]

Nabukanya, M.T., Kintu, A., Muyingo, M. T & Kwizera, A. (2015) Knowledge, Attitudes and Use of Labour Analgesia Among Women at a Low-income country Antenatal Clinic. *BMC Anesthesiology*. **15**: 98: Doi:10.1186/s12871-015-0078-9.

Naithani U, Bharwal P, Chauhan SS, Kumar D, Gupta S, Kirti . (2011) Knowledge, Attitude and Acceptance of Antenatal Women Toward Labor Analgesia and Caesarean Section in a Medical College Hospital in India. *J Obstet Anaesth Crit Care* **1**: 13-20. [Online], Available from : <http://www.joacc.com> [12/01/17]

Ogboli-Nwasor, E, Adaji ,S E, Bature ,S B, Shittu ,O S. (2011) A Survey of Awareness, Attitude and Practice of Health Care Providers in Zaria Nigeria. *J Pain Res*: **4** : 227-32. [Online], Available from: <https://www.ncbi.nlm.nih.gov/articles/PMC/3160836> [12/01/17].

Olayemi, O, Aimakhu. C.O, Udoh, E.S. (2003) Attitudes of Patients to Obstetric Analgesia at the University College Hospital, Ibadan, Nigeria. *J Obstet Gynecol*, **23**(1): 38–40. [Online], Available from: <https://www.ncbi.nlm.nih.gov/m/pubmed/12623480/> [13/01/17]

Okojie, N, Isah, E. (2014) Perception of Epidural Analgesia for Labour Among Pregnant Women in A Nigerian Tertiary Hospital Setting. *Journal of the West African College of Surgeons*, **4**(4): 142-162. [Online], Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC/4866730> [15/01/17]

Ramin S.M, Gambling, D.R, Lucas, M.J, Sharma, S.K, Sidawi, J.E, Leveno, K.J. (1995) Randomized Trial of Epidural Versus Intravenous Analgesia During Labor. *Obstet Gynecol*, **86**(5): 783-9. [Online], Available from: <https://www.ncbi.nlm.nih.gov/m/pubmed/7566849> [28/12/2016]

Ranta P, Spalding M, Kangas-Saarela T, et al. (1995). Maternal expectations and experiences of labour pain--options of 1091 Finnish parturients. *Acta Anaesthesiol Scand*, **39**: 60. [Online], Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1399-6576.1995.tb05593.x> [20/01/17]

Simkin P. P, O'Hara M. (2002). Nonpharmacologic Relief of Pain During Labor: Systemic Reviews of Five Methods. *Am J Obstet Gynecol*, **186**(5): 131–59. [Online], Available from: <https://www.ncbi.nlm.nih.gov/pubmed/12011879> [21/01/17]

World Health Organization (2007) *Normative Guidelines on Pain Management, Report on Delphi Study*. (Prof. Neeta Kumar) Geneva: World Health Organization.



Vandendriesen, N.M, Lim, W, Paech, M.J. (1998) Obstetricians' knowledge and attitudes toward epidural analgesia in labor. *Anaesth Intensive Care*. **26**: 463-7.

International Association for the Study of Pain (2011) *The Declaration Montreal: Access to Pain Management is a Fundamental Human Right*, (Cousins ,M.J) Elsevier Publishers [Online], Available from: [www.elsevier.com/locate/pain](http://www.elsevier.com/locate/pain) doi: 10.1016/j.pain.2011.09.012 [10/01/17]

## **APPENDICES**

### **Appendix 1 Participant Information Sheet**

#### **Knowledge and attitude towards labour pain relief amongst pregnant women attending antenatal clinic at the University Teaching Hospital in Lusaka, Zambia**

##### **Introduction**

I, Mercy Monde Imakando, an MMED student in Obstetrics and Gynaecology of the School of Medicine at the University of Zambia, do hereby request for your participation in the above stated study. I am conducting this study in partial fulfilment of the requirements for the award of a Master of Medicine in Obstetrics and Gynaecology. Stated below is information about the study and what is expected of you. If there are any words you do not understand, feel free to stop me as we go through the information and I will explain.

##### **Purpose of the Study**

This study is being conducted to determine the knowledge and attitude towards labour pain relief, with the intent that increased awareness will lead to antenatal mothers being empowered with information on options for labour pain relief. Consequently, pregnant women will be able to make informed decisions on the labour pain relief option of their choice and make the experience of child birth more desirable and fulfilling.

##### **Inclusion criteria**

Pregnant women aged 18years and above, and agreeable to participate. This is regardless of whether one has or has not had a baby before.

##### **Study Procedure**

Upon agreement to participate in this study, your information will be entered on a data entry sheet; your name will not be included to maintain anonymity. You will be asked on your age, educational status, and income status, knowledge on labour pain, pain relief options and attitude towards pain relief. The interview will take place in a cubical within BO2 (Antenatal clinic) and will last approximately 20 minutes.

## **Confidentiality**

All information collected from this study will be kept confidential. A number will be used instead of your name to identify information collected from you. The data will be kept under lock and key.

## **Participant Selection**

Pregnant women attending antenatal clinic at UTH are invited to participate in this study.

## **Voluntary Participation /Right to withdraw and seek clarity**

Your participation in this study is voluntary. Whether you choose to participate or not, the services you receive at this clinic will continue as usual and the quality of care will remain the same. If you agree to take part, you will be asked to sign or put your thumb print on the consent form in the presence of a witness. You may seek clarity or withdraw your participation at any time during the interview without consequence.

## **Provision for Standard of Care**

Whether you choose to participate or not, the services you receive at this clinic will continue as usual and the quality of care will remain the same.

## **Risks and Discomforts**

You will not be exposed to any risks when participating in this study.

## **Benefits**

If you participate in this study, you will have the immediate benefit of knowing that labour pain can be relieved and have a clue about the labour pain relief options available. If you request for the available analgesia during labour, it will be availed to you. The information generated will help in inclusion of education on labour pain relief options as part of routine antenatal care (thus empowering pregnant women with information on the matter), as well as setting up of standardised protocols for pain management in labour and this will make labour more pleasurable.

**Incentives**

No money or gifts will be given for you to take part in this research.

**Contact Persons**

For any queries or concerns, contact me,

Dr. Mercy Monde Imakando, University Teaching Hospital, Department of Obstetrics and Gynaecology; P/Bag RW1X, Lusaka, Zambia. Cell: +260 977159760, email address [mercyimakando@gmail.com](mailto:mercyimakando@gmail.com)

Or the Chairperson UNZABREC

Prof. BellingtonVwalika, University Teaching Hospital, Department of Obstetrics and Gynaecology; P/Bag RW1X, Lusaka. Zambia. Cell: +260 966782971

## Appendix 2 Certificate of Consent

I hereby acknowledge that the nature, purpose, benefits and risks of this study have been adequately explained to me. It has also been made clear that the information I will give will be kept confidential. I understand that I am participating voluntarily and have the freedom to withdraw from the study anytime without consequence. I have been given ample time to ask questions and seek clarifications, which have been answered to my satisfaction. Of my own free will, I declare my participation in this research.

I have received a signed copy of this agreement

_____	_____	_____
Name of Participant (Print)	Participant's Signature or thumbprint	Date

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent of their own free will.

_____	_____	_____
Name of Witness (Print)	Witness (Signature)	Date

I have accurately read or witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has consented of their own free will.

_____	_____	_____
Name of researcher (Print)	Researcher (Signature)	Date

## **Appendix 1 Pepala Yankhani Kuli Otengapo Mbali (Nyanja version of Patient Information Sheet)**

Kudziwa ndikhalidwe palikuletsa kuwawa poberekapakati pa amayi alindipakati amene amayenda kuchipimo ku University Teaching Hospital mu Lusaka, ziko la Zambia.

### **Chiyambi**

Ine Mercy Monde Imakando, wopunzira zaaakazi alindipakati ndimatenda achikazi a sikulu la Mankhwala pa University of Zambia, ndhipemphainu kuti mutengekombali muphunziroli ndanena pamwamba pa. Ndichita phunziroli neli kuti ndikwaniritse zoyenera zhamphoto ya Master of Medicine Obstetrics and Gynaecology.

Pansipamfundoyo funikila yapatsidwa ndizofunikilainu kuchita. Ngat ipalimawaali wonse simukuventsa, masukani kuniletsa tisananene zambiri kuti ndikumatsulileni inuyo.

### **Cholinga Cha Kuphunzira**

Phunziro lino lichitika kutitiziwe nzelu ndikhakalidwe pakuletsa kuwawa pobereka ndicholinga kuti kuchuluke kudziwa zochita kuliamayayi obereka oyendakuchipimo. Akazi apakati adzatha kusankha palizambiri pa kusankha kwawo ndikupanga kubadwa kwa mwana wawo kopepuka kapena kosangalatsa.

### **Otengapo Mbali**

Amayi apakati amene alindizika 18 ndipamwamba, ndipowovomela yeka, angatengepo mbali. Palibe mulandu ngati mkazisanaberekepo, angathengepo mbali.

Mukavomela kutengapo mbali muphunziro ili, nkaniyanu idzaikidwa papepala yamaphunziro. Dzinalanu sitizafakapo ayi. Muzafunsidwa zakazanu, maphunziroanu, chumachanu, udindowanu kapen apa zaumoyowanu, chidziwitso kuwawapobereka, njira zoletsakuwawa zimenemudziwa, ndikhalidwelanu pankani yakuwawa pobereka.

Kukambitsana kumeneuku, kuzachitika mumalo osankidwa mkatika BO2, izatenga mpindizili 20.

### **Chinsinsi**

Mfundo zonsezo sonkhanitsidwa muphunziroili zizasungidwa mwachisinsi. Chiwerengero chizagwiritsidwa m'malo mu adzin alanukudziwa zambiri zosankhanakwainu. Nkhani yonse iyiizosungidwa m'malo ameneakomewa ndikiyi.

### **Kasankidwe Kaotengapo Mbali**

Amayi apakati amene amayenda kuchipimo pa UTH, mukupemphedwa kutengapombali muphunziroili. Ufulu mukutengapombali ufulumulina wokuleka kapena funamusulidwe.

Kutengapombali muphunziroili ndichifunirochanu kapen aayi, nchito mumalandira pa chipatala imeneyi adzaphitiriza mwachizolwe zindikhalidwe la chisamaliro sizizasinth ayi. Ngatimukuvomera kutengambali, mudzankhala kusaina kapena kudindachala chanukusindizika pamaso pa ambone zakuvomera kwanu papepalaya chilolezo. Ngati mufuna kuleka mungaleke nthawi iliyonse ndiponso ngatimufuna kudziwa zambiri pa nkhaniiyi muli o masuka kufunsa.

### **Kusimikidza Kwa Kasamalidwe**

Kayo musankha kutengapombali kapenayi, nchito mumalandira pa chipatala chimene chiadzapitiliza mwachizolwe zindikhalidwe la chisamalira sizizasinth a.

### **Kuwoposa Ndi Mavuto**

Pamene mutengapombali muphunziroili- umoyowanu ndiwotetzedwa, palibengozii zachitikaayi.

### **Ubwino**

Ngati mwatengapombali muphunziroili, mudzankhala ndidanga mwansanga kudziwa dzochita njira zakuletsakuwawa kapena kulipakubereka. Ngati inu muzapempha kapena kufuna njilayoletsa kuwawa, azakupatsani. Mfundo kapena nkhaniiyi idzathandizira pamaphunziro pankhani zakuletsakuwawa pobereka nthawindinthawi mupita kuchipimo. Komanso atakhala

ndindondomeko yovomerezeka pa kasamialidwe pa kuletsa kuwawa pobereka, ndiizi zidzapanga ntchito kufewa kapena kukoma.

### **Zolimbikitsa Zambwino**

Palibe ndalama kapena mphatso ziza patsidwa potengapombali.

### **Anthu Munga Funse**

Nghati muli ndimafunso, kukaika zovuta, mudzandipeza pa;

Dr. Mercy Monde Imakando, University Teaching Hospital, Department of Obstetrics and Gynaecology; P/Bag RW1X, Lusaka, Zambia. Cell: +260 977159760, email address mercyimakando@gmail.com

Kapena Chairperson UNZABREC

Professor .BellingtonVwalika, University Teaching Hospital, Department of Obstetrics and Gynaecology; P/Bag RW1X, Lusaka. Zambia. Cell: +260 966782971



## **Appendix 2 Pepala Wakuvomereza (Nyanja Version of Certificate of Consent)**

Ine ndikuvomereza kuti chikhalidwe cholinga ubwino ndikuposa kwaphunziro lino andi fotokozera ine, ndiponso andiudza poyera kuti mfundo imeneiyi ndiyachisinsi. Inendamvwa kuti ndichita izimukufuna ndipo ndinawofula kuchoka kuphundzirdi nthawi iliyonse popanda zotsatira. Ndapatsidwa nthawi yokwanira kufunsa mafunso ndikufunafuna zofotokoza zimene andiyankha ndakutula. Mwakufuna kwanga ndizapeleka kutengapombali mukufufuza kumeneku. Ndalandira pepala losaina panganolimeneli.

---

Dzina la otengapombali

---

Sindikizani- otengapombali

---

Siku

Ine ndaona kuwerenga molondola chilolezo mawonekedwe kwaotengapombali, ndipo munthu alindimwayi kufunsamafunso. Ine nditsimikiza kuti munthuyu apatsa chilolezo chakufunekwake.

---

Dzina la mboni

---

Sindikizani – la mboni

---

Siku

Ine molondola ndawerenga kapena ndipatsa umboni mukuwerenga molondola chilolezo, kuli otengapombali, ndipo munthu alindimwayi kufunsamafunso. Ine nditsimikiza kuti munthuyu avomera mwa kufunakwake.

---

Dzina la ofufuza

---

Sindikizani- ofufuza

---

Siku

## Appendix 3 Questionnaire

Tick and where necessary write your answer

### Socio- demographics

1. Age: .....

2. Tribe

1) Lozi ☐

2) Tonga ☐

3) Bemba ☐

4) Chewa ☐

5) Other (indicate).....

3. Residence

.....

4. Religion

1) Christian ☐

2) Hindu ☐

3) Muslim ☐

4) Other (indicate).....

5. Educational status: (please tick one option only)

1) No formal education ☐

2) Primary ☐

3) Secondary ☐

4) Tertiary ☐

6. Occupation (please tick one option only)

1) Unemployed/housewife ☐

2) Employed ☐

**7. Monthly income of family in Kwacha (please tick one option only)**

- 1) <1000 ☐
- 2) 1001 – 5000 ☐
- 3) 5001 - 10000 ☐
- 4) > 10 000 ☐

**Details of pregnancy & Knowledge on labour pain and relief**

**8. Do you know that labour pain can be relieved?**

- 1) Yes ☐
- 2) No ☐

(If No, skip to question Q 11)

**9. Knowledge of pain relief modalities during labor:**

- 1) Breathing exercises: Yes ☐ No ☐
- 2) Analgesic injections: Yes ☐ No ☐
- 3) Epidural labor analgesia: Yes ☐ No ☐
- 4) Trans-electrical nerve stimulation Yes ☐ No ☐
- 5) Other (specify)\_\_\_\_\_

**10. How did you come to know about it first (please tick one option only)?**

- 1) From health worker ☐
- 2) From friends ☐
- 3) From articles available online ☐
- 4) From books ☐
- 5) Other (state).....

**11. Gravida: (please tick one option only)**

- 1) Prim gravida (Skip to Q 16) ☐
- 2) Second gravida ☐
- 3) Third gravida ☐
- 4) Fourth gravida ☐
- 5) Fifth gravida and above ☐

**12. Parity**

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5 or more

**13. Mode of Delivery in previous pregnancy**

- 1) Vaginal
- 2) Emergency Caesarean
- 3) Elective Caesarean

**14. Did you receive any analgesia during labour in previous pregnancies?**

- 1) Yes
- 2) No

**15. Method of analgesia used during previous delivery (please tick one option only)**

- 1) Breathing exercises
- 2) Analgesic injections
- 3) Epidural labor analgesia
- 4) Trans-electrical nerve stimulation
- 5) Had elective caesarean section
- 6) None

## Attitude Towards labour Pain Relief

### 16. Do you think labor pain is natural?

- 1) Yes ☐
- 2) No ☐

### 17. Perception of intensity of labor pain during last child birth. (please tick one option only) (skip to Q18 if primigravida)

- 1) Severe pain (7 to 10) ☐
- 2) Moderate pain (4 to 6) ☐
- 3) Mild pain (1 to 3) ☐
- 4) No pain ☐

### 18. Do you think that medications to relieve labor pain are harmful?

- 1) Yes ☐
- 2) No ☐

### 19. Would you like labor analgesia during your next delivery?

- 1) Yes ☐
- 2) No (Skip to **Q21**) ☐

*\*for those planned for elective cesarean section, in case they go into labor before set time, ask if they would want analgesia whilst waiting for emergency cesarean section*

### 20. If Yes which modality will you prefer (please tick one option only) (do not answer Q21)

- 1) Breathing exercises ☐
- 2) Analgesic injections ☐
- 3) Epidural labor analgesia ☐
- 4) Trans-electrical nerve stimulation ☐
- 5) Other (specify) \_\_\_\_\_

**21. Why are you not willing to receive analgesia during labour?**

- |   |                          |
|---|--------------------------|
| 1) Methods do not work                    | <input type="checkbox"/> |
| 2) Harmful to baby                        | <input type="checkbox"/> |
| 3) Refusal by relatives                   | <input type="checkbox"/> |
| 4) Culturally unacceptable                | <input type="checkbox"/> |
| 5) Against religion                       | <input type="checkbox"/> |
| 6) Want to experience natural child birth | <input type="checkbox"/> |
| 7) May weaken contractions                | <input type="checkbox"/> |
| 8) May lead to cesarean delivery          | <input type="checkbox"/> |
| 9) Other (specify) .....                  |                          |

Signature (or Thumb print) of the Client\_\_\_\_\_

Date\_\_\_\_\_

Signature of the Investigator\_\_\_\_\_

Date\_\_\_\_\_

Thank You.

## Appendix 4 Permission Letter Graduate Proposal Presentation Forum



# UNIVERSITY OF ZAMBIA

## SCHOOL OF MEDICINE

Telephone : +260211252641

Telegram: UNZA, Lusaka

Telex: UNZALU ZA 44370

Email: [assistantdeanpgmedicine@unza.zm](mailto:assistantdeanpgmedicine@unza.zm)

P.O Box 50110

Lusaka, Zambia

10 March 2017

Dr. Mercy Monde Imakando  
Department of Obstetric and Gynaecology  
School of Medicine  
University of Zambia  
**LUSAKA**

Dear Dr. Imakando,

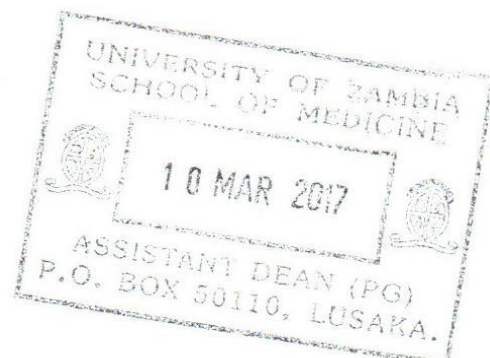
### RE: GRADUATE PROPOSAL PRESENTATION FORUM

Following the presentation of your proposal entitled **“Knowledge and Attitude Towards Labour Pain Relief Amongst Pregnant women Attending antenatal Clinic at The University Teaching Hospital, Lusaka Zambia”** your supervisor has confirmed that the necessary corrections to your research proposal have been done.

You can proceed and present to the Research Ethics.

Yours faithfully,

Dr. L. Prashar  
Assistant Dean, Postgraduate  
SCHOOL OF MEDICINE



cc: Head, Department of Obstetric and Gynaecology

## Appendix 5 Permission letter Research Ethics



### THE UNIVERSITY OF ZAMBIA

#### BIOMEDICAL RESEARCH ETHICS COMMITTEE

Telephone: 260-1-256067  
Telegrams: UNZA, LUSAKA  
Telex: UNZALU ZA 44370  
Fax: + 260-1-250753  
E-mail: unzarec@unza.zm  
Assurance No. FWA00000338  
IRB00001131 of IORG0000774

Ridgeway Campus  
P.O. Box 50110  
Lusaka, Zambia

26<sup>th</sup> May, 2017.

Your Ref: 001-04-17.

Dr. Mercy M. Imakando,  
University of Zambia,  
School of Medicine,  
Department of Obstetrics and Gynaecology,  
P.O Box 50110,  
**Lusaka.**

Dear Dr. Imakando,

**RE: RESUBMITTED RESEARCH PROPOSAL: "KNOWLEDGE AND ATTITUDES TOWARDS LABOUR PAIN RELIEF AMONGST PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT THE UNIVERSITY TEACHING HOSPITAL, LUSAKA" (REF. No. 001-04-17)**

The above-mentioned research proposal was presented to the Biomedical Research Ethics Committee on 22<sup>nd</sup> May, 2017. The proposal is approved.

#### CONDITIONS:

- This approval is based strictly on your submitted proposal. Should there be need for you to modify or change the study design or methodology, you will need to seek clearance from the Research Ethics Committee.
- If you have need for further clarification please consult this office. Please note that it is mandatory that you submit a detailed progress report of your study to this Committee every six months and a final copy of your report at the end of the study.
- Any serious adverse events must be reported at once to this Committee.
- Please note that when your approval expires you may need to request for renewal. The request should be accompanied by a Progress Report (Progress Report Forms can be obtained from the Secretariat).
- **Ensure that a final copy of the results is submitted to this Committee.**

Yours sincerely,

Dr. S.H Nzala  
VICE-CHAIRPERSON

Date of approval: 26<sup>th</sup> May, 2017.

Date of expiry: 25<sup>th</sup> May, 2018.



## Appendix 6 Permission Letter Women and Newborn

University of Zambia  
Ridgeway Campus  
P.O. Box 50110  
Lusaka

28<sup>th</sup> June, 2017

The Senior Medical Superintendent,  
Women and New-born Hospital  
University Teaching Hospitals



Dear Madam,

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH: KNOWLEDGE AND ATTITUDE TOWARDS LABOUR PAIN RELIEF AMONGST PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT THE UNIVERSITY TEACHING HOSPITAL, LUSAKA.**

The above subject matter refers.

I am a 2<sup>nd</sup> year MMED student at University of Zambia and do hereby request your permission to conduct my research as indicated above. I have already received approval from the UNZA Biomedical Research Ethics Committee.

Attached is a copy of the proposal and approval letter from UNZABREC.

Your favourable response in this matter will be highly appreciated.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'DM', written over a horizontal line.

**DR MERCY MONDE IMAKANDO**

Cell: 0977159760

Email: [mercyimakando@gmail.com](mailto:mercyimakando@gmail.com)