ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

KNOWLEDGE, ATTITUDE AND USE OF LABOUR PAIN RELIEF METHODS AND ASSOCIATED FACTORS AMONG OBSTETRIC CAREGIVERS AT PUBLIC HEALTH CENTERS OF EAST GOJJAM ZONE, AMHARA REGION, ETHIOPIA, 2018.

By: KERALEM ANTENEH (BSc)

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER IN MATERNAL AND REPRODUCTIVE HEALTH NURSING.

JUNE, 2018

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Approved by the Examining Board

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Advisor	Signature
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Examiner	Signature
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Examiner	Signature

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ABBREVIATION AND ACRONYMS

AOR	Adjusted Odd Ratio
COR	Crude Odd Ratio
CSAE	Central Statistical Agency of Ethiopia
EDHS	Ethiopian Demographic Health Survey
EFMOH	Ethiopian Federal Ministry of Health
ETB	Ethiopian Birr
HCP	Health Care Provider
NASID	Non-Steroidal Anti-Inflammatory Drugs
OCGs	Obstetric Caregivers
TENS	Transcutaneous Electrical Nerve Stimulation

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ABSTRACT

Introduction: Labour pain is the most painful event experienced by most women in their lifetime. Labour pain management is essential to ensure the quality of obstetric care and meet the need of labouring woman to have pain free labour and delivery services.

Objectives: The main aim of the study was to assess knowledge, attitude and use of labour pain relief methods and associated factors among obstetric caregivers at public health centers of East Gojjam Zone, Amhara region, Ethiopia**.**

Methods: Facility-based cross-sectional study design was conducted from March 1-30, 2018. Three hundred nine sampled obstetric caregivers took part in the study. Structured pretested questionnaires were used to collect the data. Data were entered into Epi data 4.2 versions and bivariate and multivariate logistic regression was carried out using SPSS 23 versions with 95 % CI to determine the association between dependent and independent variable.

Result: The overall use of labour pain relief methods were 34.4%, (30.4% non – pharmacological and 8.4 pharmacological) and 54.2% and 57.2 study participants' had adequate knowledge and favorable attitude about labour pain relief methods respectively. Adequate knowledge [AOR=3.821, 95%CI=(2.091-6.980)], positive attitude [AOR=2.455, 95%CI= (1.358-4.436)] and experience 6-9 years [AOR=2.56,95%CI= (1.350-4.845) and ≥10 years [AOR=2.50,95% CI = 1.132-5.524)] were significantly associated with the use whereas, midwife profession [AOR =2.814, 95%CI= (1.574-5.031)], positive attitude [AOR=4.370,95%CI=(2.523-7.567)] , medium level of education [AOR=3.450,95% CI=(1.993-5.971)] and companion [AOR=2.349, 95% CI, = (1.34-4.197)] were significantly associated to knowledge of obstetric caregivers about labour pain relief methods in multivariable logistic regression.

Conclusion and recommendation: Despite of availability of labour pain relief methods, still most women go through painful Labour. The high-level knowledge and positive attitude towards the use of labour pain relief services provide a means to introduce pain relief services in a systematic way into the healthcare facilities. So, there is a need to build knowledge and attitude of obstetric caregivers towards the use of labour relief methods and further studies should be done from mothers' request point of view.

KEYWORDS: knowledge, attitude, use, labour pain relief methods, obstetric caregivers, Ethiopia.

1. INTRODUCTION

1.1.Background

Pain accompanies a human being since the beginning of his existence and is widely recognized as negative phenomena. In fact, it is an indispensable element of our life. It signals the worsening of health (it is called pathologic pain in that case), or it supports the progress of natural processes taking place in the body, e.g. during labour (physiological pain) [1].

Since creation, human beings have constantly felt pain and have always tried to control it in different ways. Labour pain is one of the most severe pain. This pain, as one of the inevitable aspects of the childbirth process, is different from other pains. It is not a sign of injury or (tissue) damage, reduces spontaneously, is regular and continuous, gets tense gradually, and leads to a pleasant incident which is childbirth [2].

Labour pain comprises complex neurobehavioral reactions and offers a personal and distinctive experience to individual women [3]. Labour pain is referenced in the Bible verse where God cursed the woman to suffer labour pain when the early man disobeyed God (Genesis 3:16). Labour pain is therefore considered normal by most women and midwives [4, 5].

Pain during labour is caused primarily by uterine muscle contractions and somewhat by a pressure of the presenting part on the cervix. Other causes may include pressure exerted on the urinary bladder and bowels by the baby's head and/or the stretching of the birth canal and vagina [6].

The pain during labour is a central part of women's experience of childbirth, whose excruciating nature makes most women want to alleviate it. Childbirth is among one of the most intense pain that majority of women will endure during their lifetime [7, 8].

Loneliness, ignorance, unkind or insensitive treatment during labour, along with unresolved past psychological or physical distress increases the chance that the woman will suffer. Many women in labour each day in sub-Saharan Africa particularly in Nigeria, childbirth is experienced not as a joyful event but as sad experience due to midwives' attitude towards the

labouring woman who shouts and yells at labouring women especially if she screams cries or complains of labour pain [9].

Many pharmacologic and non-pharmacologic treatments have been developed to alleviate the labour pains, and their use has become popular, especially in developed countries. Pharmacological methods of pain relief are the most popular namely nitrous oxide, opioids and epidural analgesia. Non-pharmacological techniques comprise hydrotherapy, acupuncture, continuous labour support and intradermal water blocks, transcutaneous electrical Nerve Stimulation (TENS), mobilization, heat and cold application, aromatherapy, massage, hypnosis and audio analgesia labour pain management methods [8].

Studies were done Tigray region general hospitals and Amhara regional state referral hospitals showed the overall utilization of obstetric analgesia in labour pain management was 43.3% and 40.1% respectively which only contribute to non - pharmacologic method [10, 11]. But Up to my knowledge there is no published study conducted at public health center of East Gojjam zone to determine the knowledge, and use of labour pain relief methods and associated factors among obstetric caregivers, so this study determine the current knowledge, and use of labour pain relief methods and associated factors among obstetric caregivers in public health center of East Gojjam zone.

1.2.Statement of the problem

According to the standard of midwifery care practice in 2013 of Ethiopia by Ethiopian Federal Ministry of Health (EFMoH); provision of physical and psychological support and use of pharmacological and non-pharmacological comfort measures during labour and birth are listed as core competencies under practice standard III. Even if it is the critical components in the EFMOH's efforts to improve the quality of maternal health services available to the Ethiopian public, its practice is not noticeably acknowledged [12].

Various pharmacologic and non-pharmacologic treatments have been developed to alleviate the labour pains, and their use has become popular, specifically in developed countries [13]. Pain relief during labour is desired by many women, irrespective of race or belief, and contributes enormously to their satisfaction with the experience of childbirth. Labour pain can be perceived to be the most severe form of pain experienced in a woman's life. Studies have shown that when women are offered analgesia during labour, they report greater satisfaction with their overall birth experience [14, 15].

A study in Southeast Nigeria among Igbo women reported 67.6% of labouring women need labor pain alleviation but only 27% of parturient received pain relief during labour [16]. Another study in Aga Khan teaching and referral hospital, Kenya, found that 90 % of woman would request some form of labour pain relief at their next delivery but 18% percent had been offered some form of pain relief at their last delivery with 82% of those offered having effective pain relief [17].

Birth of the infant into the arms of a conscious and pain-free mother is one of the most exciting and rewarding moments for maternity caregivers. Developed countries regularly use obstetric analgesia, however, in developing countries, including Ethiopia most women still go through painful labour despite the availability of ways to relieve labour pain; it is not a common practice [18,19,20].

Regardless of the finding that labour pains afflict a large proportion of women, thereby making childbirth a less than satisfactory experience, provision of analgesia for labour is uncommon. This might be as a result of a number of factors, including the availability of drugs, health care delivery systems, knowledge, providers' attitude and choice of caregivers

and clients. Of these, the attitude, knowledge, and skills of the provider to offer labour analgesia is vital, particularly in low-income countries, including Ethiopia [21, 22]. To the best of the researcher's knowledge, there is limited research in the study setting. Few local or international studies have been carried out on the current proposed study in Ethiopia.The study is thus aimed at assessing the knowledge, use of labour pain relief methods and associated factors among obstetric caregivers at public health centers of east Gojjam zone, Amhara region, Ethiopia.

1.3.The significance of the study

Even if labour pain considered as a severe by most of health care providers, still most women go through painful Labour. Managing of Labour pain during normal labour improve feto-maternal outcome and satisfaction of labouring women. Up to my knowledge there is no published study in public health centers of east Gojjam zone on knowledge, attitude and use of labour pain relief methods and associated factors among obstetric caregivers (OCGs), so this study will determine the current knowledge, attitude and use of labour pain relief methods and associated factors among OCGs of East Gojjam zone.

This study will be expected to be beneficial for OCGs to aware the types and to provide antenatal education on the need labour pain relief methods during labour so as to equip labouring women with knowledge to have labour pain free labour delivery services. This study will be used as input by East Gojjam health bureau for developing and evaluating OCGs approaches working with labour pain.

According to EDHS 2016 report only 26% percent of women delivered at a health facility, which indicates low institutional delivery. So, addressing the issue of labour support, labour pain relief method and factors affecting labour pain management will be a mechanism for enhancing institutional delivery to achieve the sustainable development goal 3 by reducing maternal mortality and morbidity and preventing of newborn death through utilization of services provided by a skilled birth attendant. Furthermore, this study will serve as an input for the future researcher.

2. LITERATURE REVIEW

2.1.Knowledge on labour pain relief methods

A study done in Greek on labour pain and pharmacological pain relief practice points revealed that pethidine and Epidural analgesia were the most well-known pharmacological pain relief methods [23].

A study was done in Ibadan, Nigeria among nurse/midwives in labour wards back massage (34.5%) as non-pharmacological support and use of paracetamol (39.1%) for pharmacological support were the most well-known pain relief methods whereas epidural was least known by (3.4%) of the respondents. This study also reported (66.7%) of respondents had inadequate knowledge about labour pain relief methods [24].

A study on awareness, attitude, and practice of health care providers in Zaria, Nigeria reported systemic opioids like pethidine the most popular pharmacological labour pain relief method whereas hypnosis and acupuncture were the least popular non-pharmacological labour pain relief methods [25].

A study in all Tigray region general hospitals reported only 48.5% of skilled attendants know non-pharmacologic labour pain management methods, in which back massage was the most known non-pharmacologic method whereas 51.5% know both pharmacologic and non-pharmacological labour pain management methods. This study also reported 60.1% of skilled attendants had adequate knowledge whereas 39.9% had inadequate knowledge about labour pain relief methods [10].

Another study in Amhara regional state referral hospitals 37.7 % of obstetric caregivers had adequate knowledge whereas 62.3 % had inadequate knowledge about labour pain relief method [11].

2.2.Attitude on labour pain relief methods

A survey on awareness, attitude, and practice of health care providers in Zaria, Nigeria reported that maternal health care providers' have positive attitude towards use of labour pain relief method for labour pain management [25].

A study in Tigray region general hospitals reported that about 56.7% of skill birth attendants had Positive attitude towards labour pain management [10]. Another study in Amhara region referral hospitals reported that about 26.4 % of obstetric caregivers had Positive attitude about labour pain management [11].

2.3.Use of labour pain relief methods

Utilization labour pain relief method varies from place to place even it varies from one setup to another. In developed nation pharmacologic way of pain relief is the preferred one whereas in developing countries most of the time non-pharmacologic way of managing labour pain is practiced [26].

In developed countries, effective labour pain relief method practiced but in developing countries in areas where women exposed to high pregnancy rates and short inter-pregnancy intervals use of labour pain relief method is low [20].

A systematic literature review on Brazilian nurse midwives' view of non-invasive nursing technologies for pain relief during childbirth reported non- pharmacological pain relief methods such as back massage,encouraging freedom to move, to walk and the free choice for vertical positioning were the most commonly practiced non- pharmacological labor pain relief methods [27].

A study in Dhaka, Bangladesh on perception about pain relief during normal labour among health care providers conducting delivery reported pethidine, diclofenac, and paracetamol were used as pharmacologic method pain relief method whereas, allow patient to move freely, show the patient how to bear down, allow companion, massage the back were the most utilized non- pharmacologic pain relief methods [28].

A study on labour pain and pharmacological pain relief practice points in Athens, Greece reported that Pethidine was the only drug for pain relief used labour relief method by midwives [23].

A study done on perception and practice of health care providers towards non-pharmacological strategies of relieving labour pain and women's opinion towards their labor pain management experience in Abha Maternity Hospital, Saudi Arabia reported that allow movement and change in position (77.3 %), touch & massage (42%) and psychological support (53.4%) were commonly used non-pharmacologic labour pain relief methods [29].

A study done in Ghana reported pethidine, diclofenac, and paracetamol were used as pharmacologic pain relief method whereas, psychotherapy, back massage and deep breathing exercises were non-pharmacological methods used as labour pain relief method [30].

According to a study done in Nigeria to assess the practice of obstetric analgesia for vaginal delivery among obstetrician revealed that 49% of obstetrician provide labour pain relief method for a labouring woman [7].

Another study conducted in Ibadan, Nigeria to assess knowledge and practice of labour pain management among nurse/midwives in labour wards reported psychotherapy, giving information to the woman and providing physical care were practiced as labour pain management [24].

According to a cross-sectional study was done in Kenya study done to assess the knowledge, attitude and use of labour pain relief methods in women attending an antenatal clinic in Nairobi, 18% percent them had been offered some form of pain relief at their last delivery [17].

A study conducted on all skilled attendants working at labour wards in Tigray region general hospitals showed the overall utilization of obstetric analgesia was 43.3% which showed only non-pharmacologic methods. From the non-pharmacological labour pain management methods, show how to bear down was the most widely used method by (98.3%) professionals followed by psychotherapy (76.8%) and allow companionship (57.9%). The practice of pharmacologic method was zero [10].

A cross-sectional study conducted in public hospitals of Addis Ababa to assess the practice of labour analgesia and its perceived barriers among healthcare providers reported that 47.5% of health care providers practiced non-pharmacological labor pain management techniques while 35.6% and 19.8% health care providers used opioid systemic analgesic and non-opioid systemic analgesics respectively [31].

Another study conducted on all obstetric caregivers in Amhara Regional State Referral Hospitals showed the overall utilization of obstetric analgesia in labour pain management was 40.1% which showed only non-pharmacologic methods. From the non -pharmacological labour pain management methods Psychotherapy was the most used non-pharmacologic method (88.2%) followed by breathing technique (71.9%) and massage (63. 51%). The utilization of pharmacologic method was zero [11].

2.4.Factors associated with the use of labour pain management methods

2.4.1. Socio demographic factors

A study done in U.S. communities reported an experience of nurses affect the use of labour pain relief method in a way which more experienced nurses' more likely to use labour pain relief methods [32].

Another study on behaviors of nurses in the U.S. revealed that age and experience were the two only socio-demographic characteristics of the nurses were associated, in which older and more experienced more likely to use labour pain relief method whereas, no difference was observed between age and profession of skilled birth attendants' and use labour relief methods in a study done in Tigray region general referral hospitals [33, 10].

A study done in South Australia on preferences of pregnant women, midwives and obstetricians of labour pain relief method and another study in Australian to examine the determinants associated with women's use of labour pain management reported profession of obstetric care provider affect the use of pain relief methods, in which obstetricians are less likely to use of non-pharmacological pain management options than midwives [34, 35].

2.4.2. Individual factors

A survey on awareness, attitude, and practice of health care providers in Zaria, Nigeria reported maternal health care providers' that inadequate knowledge affects their use of labour pain relief methods during labour [25].

A study done on perception and practice of health care providers towards non pharmacological strategies of reliving labour pain and women's opinion towards their labor pain management experience in Abha Maternity Hospital in Saudi Arabia reported lack of Knowledge was factor affect the use of labour pain relief methods as it is reported by 68.2% obstetric care providers [29].

A survey on healthcare providers' knowledge and attitudes regarding pain relief in labour for women in Ethiopia reported that the general attitude of healthcare providers is that labour is a natural process, women should be able to cope and pain relief is not a priority for women in labor [36].

A study done in Tigray general referral hospitals of reported positive attitude and level of education were associated with non-pharmacological methods utilization labour pain management methods. Skilled birth attendants who had positive attitude were 2.242 more likely to use labour pain relief method than Skilled birth attendants who had negative (AOR=2.242, 95% CI= (1.242-4.048)). Skilled birth attendants who were MSc (higher level education) were 2.87 more likely to use labour pain relief methods than Skilled birth attendants who had a diploma (low-level education (AOR (95%CI) =2.87(1.29-6.39)) [10].

Another study in Amhara regional referral hospitals of reported knowledge negatively associated with utilization of non-pharmacologic labour pain management methods. Obstetric caregivers who had inadequate knowledge were 2.57 times more likely to use obstetric analgesia than professionals who had adequate knowledge (AOR 2.57, CI 1.42-4.65) [11].

2.4.3. Institutional factors

A study conducted in Australian to examine the determinants associated with women's use of labour pain management and a study done in Belgium and Netherland reported policies, clinical and structural setting of health institution were factors influence the use of labour pain relief methods in the obstetric care units. Labour management procedure like of intra-uterine fetal monitoring, induction of labour, workload of among obstetric care providers and unavailability of drugs affect use of labour relief methods [35, 37].

In a study done Abha Maternity Hospital in Saudi Arabia hospital regulations and policies (55.7%) and inadequate nursing staff numbers (37.5%) were factors affect the use of obstetric analgesia in labour pain management [29].

A study in Zaria, Nigeria reported unavailability of drugs, inability to afford the cost of pain relief and lack of essential equipment were factors affecting the use of labour pain relief metods [25].

A study done in Tigray region general hospitals and in Amhara region referral hospitals reported a small number of staff, lack of skilled professionals, high patient flow,unavailability of analgesic materials and misconceptions regarding labour pain and with unknown reasons were factors affect the use of labour pain relief method [10, 11].

2.5.Conceptual framework

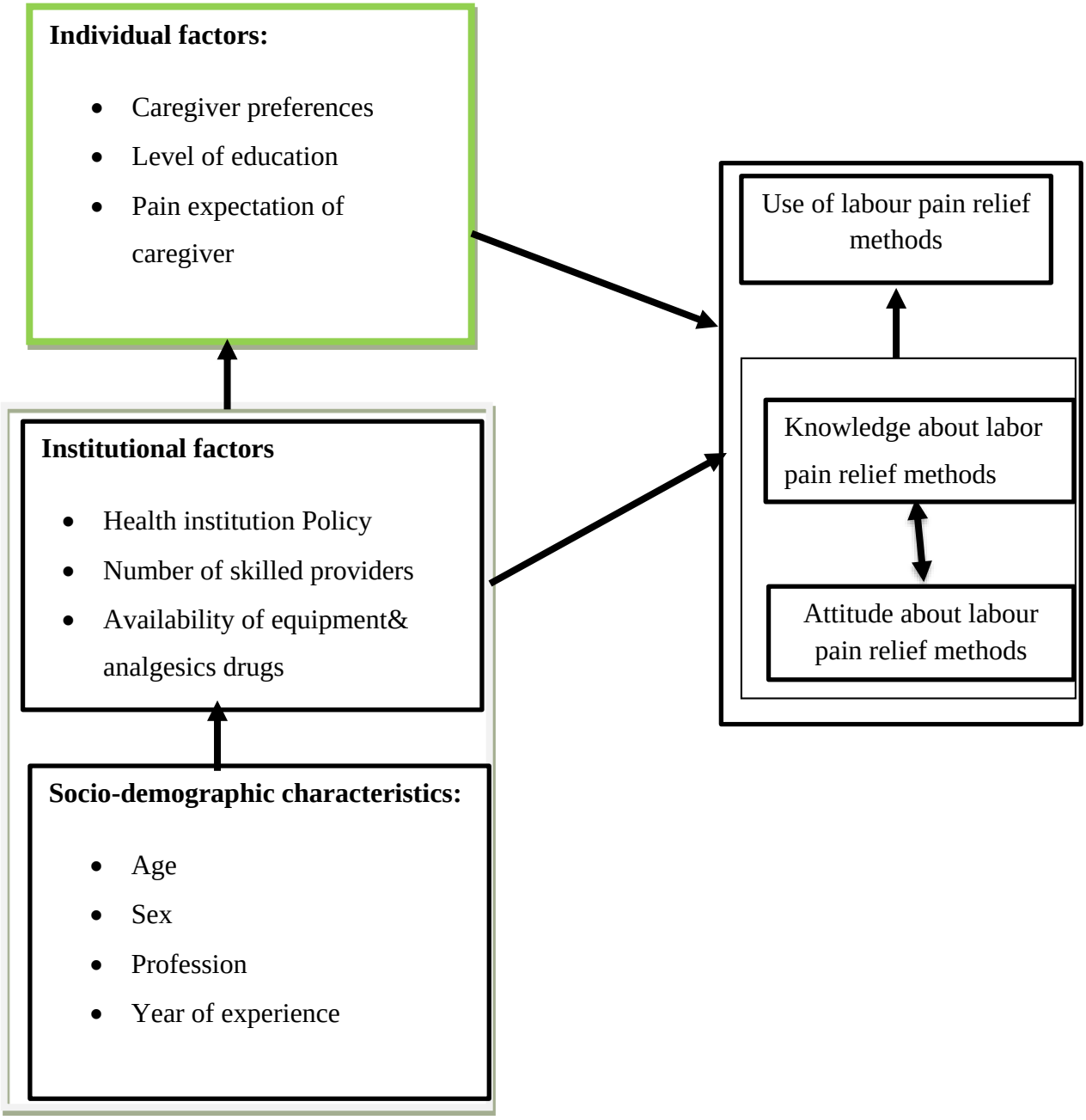


Figure 1:Conceptual model for knowledge, attitude and use of labour pain relief methods and associated factors among obstetric caregivers at public health centers of east Gojjam zone, Amhara region, Ethiopia. Adapted from reviewed literature above [10, 11, 29, 37].

3. OBJECTIVE OF THE STUDY

3.1.General objective

- To assess knowledge, attitude and use of labour pain relief methods and associated factors among obstetric caregivers at public health centers of East Gojjam Zone, Amhara region, Ethiopia, March 1-30, 2018 G.C.

3.2.Specific objectives

- To assess knowledge of obstetric caregivers about labour pain relief methods
- To assess attitude of obstetric caregivers about labour pain relief methods
- To determine the use of labour pain relief methods by obstetric caregivers
- To identify factors associated with knowledge of obstetric caregivers towards labour pain relief methods.
- To identify factors associated with attitude of obstetric caregivers towards labour pain relief methods.
- To identify factors associated with the use of labour pain relief methods by obstetric caregivers.

4. METHODLOGY

4.1. Study area and period

The study was conducted in public health centers of East Gojjam zone. East Gojjam is one of an administrative zone in Amhara regional state of Ethiopia. It is bordered by the Oromia region in the south, on the west by West Gojjam zone, on the north by South Gondar zone, and on the east by South Wollo zone. Debre Markos town is the capital city of East Gojjam zone which is 265Km far from Bahirdar, the capital city of Amhara region and 299 Km from Addis Ababa, the capital city of Ethiopia. According to the projected census of 2007, conducted by the central statistical agency of Ethiopia (CSA), the zone has a total population of 2,153,937, an increase of 26.68% over the 1994 census, of whom 1,066,716 are men and 1,087,221 women; with an area of 14,004.47 square kilometers. East Gojjam zone has 18 woredas [38]. According to East Gojjam zone health bureau annual first quarter yearly report of human resources in 2010, there were around 100 health centers and 329 Health officers, 797 Nurses and 307 Midwives number of health care providers within the zone. The study was conducted from March 1-30,2018.

4.2. Study design

Facility-based cross-sectional study was conducted.

4.3. Population

4.3.1. Source population

All (HCP) Health care providers (Midwife, Nurse, and Health officers) working in public health centers of East Gojjam zone.

4.3.2. Study population

All HCP (Midwife, Nurse, and Health officers) working in delivery ward of the selected public health centers of East Gojjam zone.

4.4. Eligibility criteria

4.4.1. Inclusion criteria

All HCP (Midwife, Nurse, and Health officers) working in delivery ward of the selected public health centers of East Gojjam zone during data collection time.

4.4.2. Exclusion criteria

HCP (Midwife, Nurse, and Health officers) comes to labour ward for consultation during study excluded from the study.

4.5. Sample size determination

4.5.1. The ample size for the outcome variable

The sample size for the outcome variable was calculated based on a single population proportions formula as follows.

$$n = \frac{(Z\,\alpha/2)2 * P * (1-P)}{d2}$$

Where: n is sample size, Zα/2 at 95%CI=1.96, d = is margin of error assumed to be 5%, =0.05

P was the use of labour pain relief methods by obstetric caregivers =40.1% according to study done in Amhara region referral hospital, q=1-p=0.599. Bitew, et al.2016 [12].

$$n = \frac{(1.96)2 * 0.401 * 0.599}{(0.05)2} = 369$$

4.5.2. Sample size for associated factors

Sample size was calculated by double proportion formula using EPI info version 7 by associated factors from a study done in Amhara region referral hospitals. Bitew, et al.2016 [12].

Associated factors	Proportion	Power	CI	Calculated sample size
Lower educational level	P1=29.5% P2=47.3%	80%	95%	254
Inadequate knowledge	P1=52.5% P2=32.6%	80%	95%	212

P1=Proportion among unexposed, P2= Proportion among exposed.

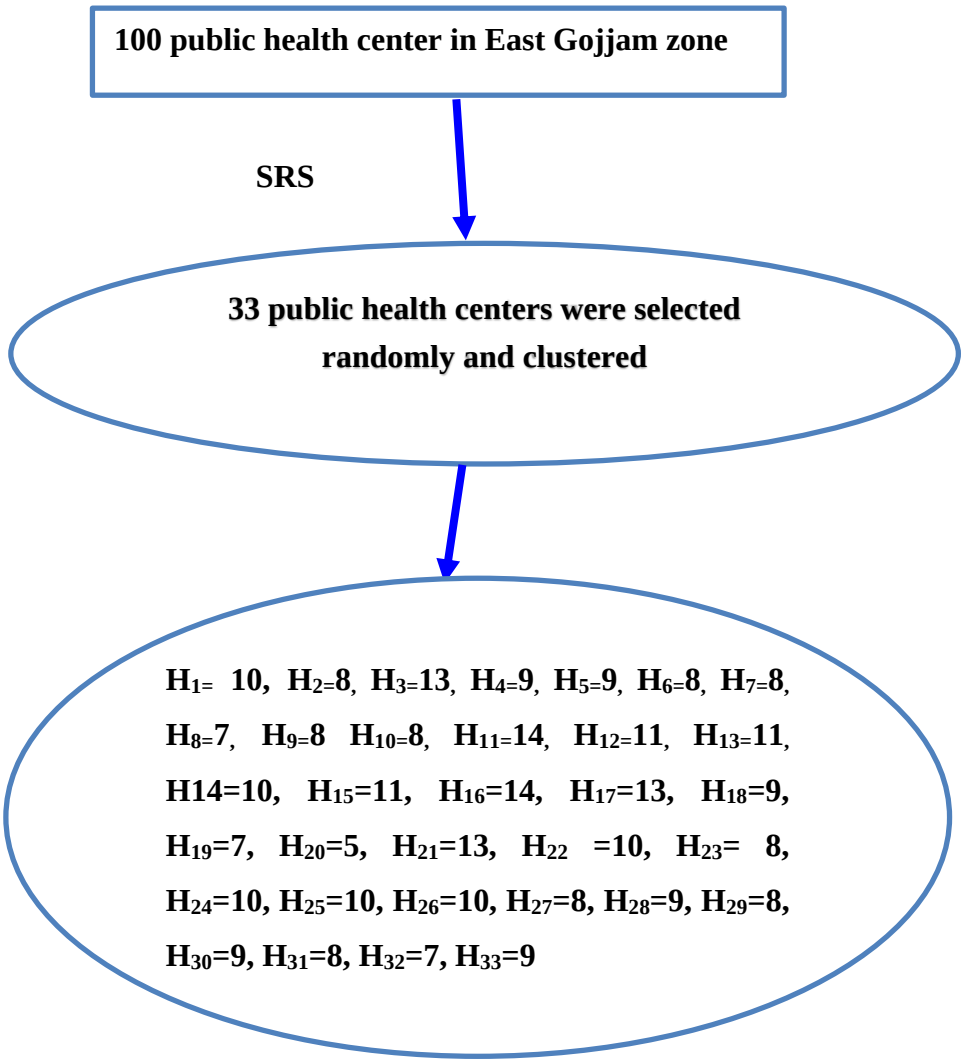
Since the sample size calculated by outcome variable 369 larger than sample size calculated by associated factors, 254,369 was used to determine the final sample size. Due to the source population (N=1433) is <10,000 the sample was adjusted by reduction formula.

$$n=\frac{n}{1+\frac{n}{N}}=\frac{369}{1+\frac{369}{1433}}=\ 294$$

By considering 5% non-response rate of the final sample of the study was 309.

4.5.3. Sampling Procedure

Simple random sampling technique (using lottery method) was used to select 33 public health centers (33% out of 100 public health centers) found in east Gojjam zone. Then all obstetric caregivers within the selected public health centers were included into study participants by using cluster sampling technique.



These are list of public health centers from $H_{1(one)}$ $H_{33(thirty\text{-}three)}$: - Hdase, Chertekel, Amanuel, Weseta, Libanos, Debre qelem, Ytemen, shelel, Gozamn, Weyra, Dejen, Anber, Dima, graram, yebokla, Bichena, yejube, Wejel, yekbhana, Jama, Lumame, kork, kurar, Teskare-mariam, Hagere- selam, yetnora, Den, Debre markos, Betengus, Tsdemariyam, Shebla, Yesenbet, and yelamgej were included in the study.

Since, the number of obstetric caregivers from all public health centers were 312, but only 309 self-administered questionnaires were prepared for data collection as per the expected sample size**.**

Figure 2: Schematic presentation of sampling techniques of participants in east Gojjam zone, Amhara, Ethiopia, 2018 G.C.(n=299)

4.6. Study variables

4.6.1. Dependent variable

Use of labour pain relief methods (Pharmacological or non-pharmacological)

Knowledge about labour pain relief methods

Attitude about labour pain relief methods

4.6.2. Independent Variables

Socio-demographic: Age, sex, profession, year of experience

Individual factors: Caregiver preferences, Level of education,

Pain expectation of caregiver.

Institutional factors: Health institution policy

Number of skilled providers

Availability of equipment& analgesics drugs

4.7. Operational definition

Use of labour pain relief methods: OCGs who were practicing greater than or equal to the mean value of listed labour pain management methods.

Obstetric caregivers: Midwifery, Nurses and Health Officers.

Adequate knowledge: OCGs who answered greater than or equal to the mean values of knowledge related labour pain relief method questions. Those OCGs who answered ≥ 39.02 from a total knowledge related questions was considered as OCGs who had adequate knowledge about labour pain relief methods.

Inadequate knowledge: OCGs who answered less than to the mean values of knowledge related labour pain relief method questions. Those OCGs who answered < 39.02 from a total knowledge related questions was considered as OCGs who had inadequate knowledge about labour pain relief methods.

Favorable attitude: OCGs who answered greater than or equal to the mean value of attitude related labour pain relief method questions. Those OCGs who answered ≥ 8.18 from a total attitude related questions was considered as OCGs who had favorable attitude about labour pain relief methods.

Unfavorable attitude: OCGs who answered less than to the mean value of attitude- related labour pain relief method questions. Those OCGs who answered < 8.18 from a total attitude related questions was considered as OCGs who had unfavorable attitude about labour pain relief methods.

4.8. Method of data collection and Tools

A semi structured self-administered questionnaire with multiple choice was used to collect data from study participants. The questionnaire was adapted from reviewed literature [10, 11 and 36] with modification and contextualized into local setting. The questionnaires consist seven parts, in which the first part was used to assess socio-demographic characteristics of obstetric caregivers, while the rest parts were used to assess the knowledge, attitude, use, preference labour relief methods and institutional factors affecting the use of labour pain relief method. The questionnaire was designed in English to be understood by every study participants'. A self-administered questionnaire was delivered to each obstetric caregivers during data collection time and requested to fill honestly. Nine diploma nurses were recruited for data collection and two BSc midwives were the supervisor of the data collection procedure.

4.9. Data quality control

Training was provided for data collectors and supervisors on objective, the benefit of the study, individual's right and informed consent for the common understanding of the study in general and the questioner in particular. A pretest was done in West Gojjam zone public health centers on 5% obstetric caregivers to modify the questioner two weeks before the actual data collection time. Regular supervision during data collection was made; the questionnaire was reviewed and checked for completeness, accuracy and consistency by the principal investigator and supervisor.

4.10. Data analysis

First, the questionnaire was checked manually for completion and any misfiled questions. Before data entry code was given. Then data was entered into computer by Epi data version 4.2. Software and exported to statistical package for social sciences (SPSS) version 23.0 software for analysis. Descriptive statistics were computed to determine frequencies and summary statistics (mean, standard deviation, and percentage) to describe the study population in relation to socio-demographic and other relevant variables. Data were presented using tables and figures. Initially, bivariate logistic regression was carried out to see the association of each of the independent variables with the outcome variables. Then multivariate logistic

regression was carried out for variables with a p-value < 0.2 in bivariate logistic regression to determine significant relationships between the dependent and independent variables. P-value of <0.05 and 95% confidence level was used as a difference of statistical significance.

4.11. Ethical Consideration

Ethical clearance and approval was obtained from IRB of school of nursing and midwifery, college of health science, Addis-Ababa University. Then, letter from IRB was submitted to East Gojjam zone health bureau. Letter of permission was obtained from East Gojjam zone health bureau to woredas in east Gojjam zone. Permission letter from each woredas health bureau was submitted to selected public health centers. Written consent was obtained from respondents after giving them information about the study. In addition, the confidentiality, anonymous of all the responses was kept and used only for research purposes.

4.12. Dissemination of Result

The results of the study will be disseminated to Addis Ababa University, College of Health science, school of nursing and midwifery, East Gojjam zone Health Bureau and other concerned bodies through reports and publication on an appropriate journal. Efforts will be made to present the results of the study on scientific conferences and publications will be considered.

5. RESULTS

5.1. Socio demographic characteristics of respondents

Out of the 309 sampled obstetric caregivers, 299 responded to the questionnaires making a response rate of 96.8%. The mean age of the respondents was 28.96 (± SD = 4.195) years. Majority 194 (64.9%) of professionals were in the age group of 20-29 years. About 162 (54.2%) of the respondents, were males and 258 of obstetric health caregivers (86.6%) were Orthodox Christians. Out of the total respondents 31.1 % were midwives in a profession. Nearly half 149 (49.8%) of study participants were diploma and 49.2% of had BSc degree. Among respondents (61.9 %) had experience of less than 5 years. **Table 1**

Table 1:**Socio-demographic characteristic of obstetric caregivers working at labour ward in public health centers of east Gojjam zone, Amhara region, Ethiopia, 2018 G.C. (n =299**)

Characteristics	Frequency (n)	Percent (%)
Age (in years)		
20-29	194	64.9
30-39	97	32.4
≥40	8	2.7
Gender		
Male	162	54.2
Female	137	45.8
Religion		
Orthodox	258	86.3
Muslim	30	10
Protestant	10	3.4
Other©	1	0.3
Profession		
Health officer	75	25.1
Midwife	93	31.1
Nurse	131	43.8
Level of education		
Diploma	156	52.2
BSc degree	147	46.8
Masters	3	1
Clinical experience (in years)		
≤5	185	61.9
6-9	76	25.4
≥10	38	12.7

Other©= Catholic

5.2. Knowledge study participants about labour pain relief methods

About 282 (94.3%) respondents respond as they knew about labour pain management methods in general, of the 44 (14.7%) knew pharmacologic and 58 (19.4%) non-pharmacologic labour pain relief methods only whereas 175 (58.5%) knew both labour pain relief methods. Five (1.7%) of study participants from who knew about labour pain management methods in general were unsure about types labour pain relief methods.

Among study participants who knew pharmacologic methods 174 (79.5 %) steroidal drugs, 130 (59.4 %) systemic opioid's, 75 (34.2%) epidural analgesia and 24 (11%) inhalational of respondents knew these methods respectively. Of all who knew about pharmacologic labour pain management methods, 161 (73.5%) and 157 (71.7%) of them reported delay progress of labour and fetal distress as a side effect of labour analgesia respectively. **Figure 3.** One hundred fifty-five (51.8%) of respondents reported they know WHO pain ladder.

Among study participants who knew non-pharmacologic labour pain relief methods Psychotherapy 217 (93.1%), Allow the mother to ambulate 188 (80.7%), Massage the back 175(75.1%), Show the woman how to bear down 127 (54.5%) and Allow companion of choice labouring woman 110 (47.2 %) were the common known non-pharmacologic labour pain relief methods**. Table 2**

In this study out of the total respondents,162 (54.2%) of obstetric care providers had adequate knowledge on listed types of labour relief methods (with 95% CI= 48.55-59.85%) whereas the rest 137 (45.8 %) respondents had inadequate knowledge about the listed labour pain relief methods.

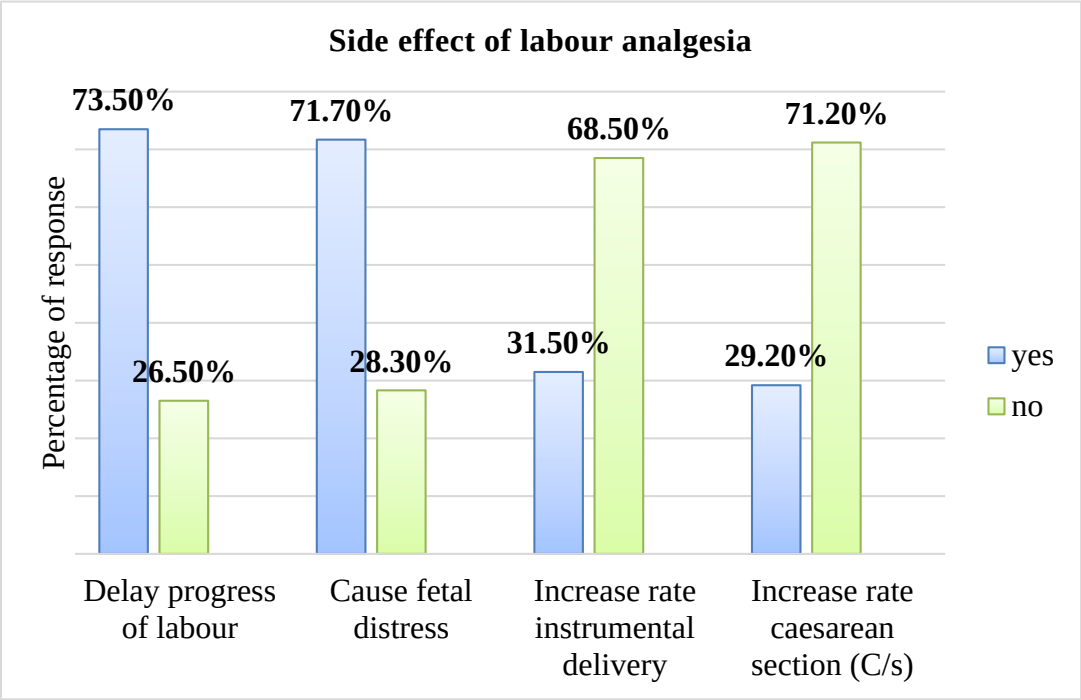


Figure 3 :Knowledge obstetric caregivers on side effect Pharmacologic labour pain relief methods working at labour ward in public health centers of east Gojjam zone, Amhara region, Ethiopia, 2018 G.C. (n =219).

Table 2:Knowledge obstetric caregivers on Non –pharmacologic labour pain relief methods working at labour ward in public health centers of east Gojjam zone, Amhara region, Ethiopia, 2018 G.C. (n =233).

Types		Frequency (n)	Percent (%)
Psychotherapy	yes	217	93.1
	no	16	6.9
Allow the mother to ambulate	Yes	188	80.7
	no	45	19.3
Massage the back	Yes	175	75.1
	no	58	24.9
Allow free vertical positioning	Yes	61	26.2
	no	162	73.8
Trans cutaneous electrical nerve stimulation	Yes	13	5.6
	no	220	94.4
Show the woman how to bear down	yes	127	54.5
	no	106	45.5
Acupuncture	yes	20	8.6
	no	213	91.4
Hypnosis	Yes	13	5.6
	no	220	94.4
Allow companion of labouring woman choice	yes	110	47.2
	no	123	53.8
Music therapy	yes	42	18
	no	181	82

5.3. Attitude of study participants about labour pain relief methods

Regarding the attitude obstetric caregivers 171 (57.2%) of respondents had positive attitude whereas 128 (42.8%) of them had a negative attitude towards managing labour pain. About 258 (86.3%) of the total study participants believed managing of labour could help labouring woman to cope labour pain, but only 171 (57.2%) of study participants perceived as every mother pain during labour should be managed. Among total respondents,167 (55.9%) of them believed that pharmacologic labour pain relief method (analgesic) is not necessary for managing labour pain.

Of the respondents, 114 (38.1%) believed as labour pain is natural and the mother has to face it, but nearly three fourth of 220(73.6%) of them consider managing labour pain as their responsibility of care for laboring mother. More than half of 173 (57.9%) the study participants reported as they will administer labour pain relief method for labouring woman if they had resources at their hand.

5.4. Use of labour pain relief methods

The result of this study showed that overall use of labour pain relief methods among obstetric caregivers was 34.4 %, which contribute 30.4 % to non-pharmacologic and 8.4 % to pharmacologic pain relief method with 95% confidence interval of [29.01-39.78]. From the non-pharmacologic labour pain management methods, psychotherapy was the most widely used method by 132 (44.2%) of obstetric caregivers followed by massage the back 122 (40.8%), allow the labouring woman to ambulate 116 (38.8%), Show how to bear down 96 (32.1%) and allow companion 83 (27.8%) while diclofenac 51 (17.1%), pethidine 47 (15.7%), paracetamol 33 (11%), and hyoscine 18 (6%) were pharmacologic labour pain relief methods used by obstetric caregivers.

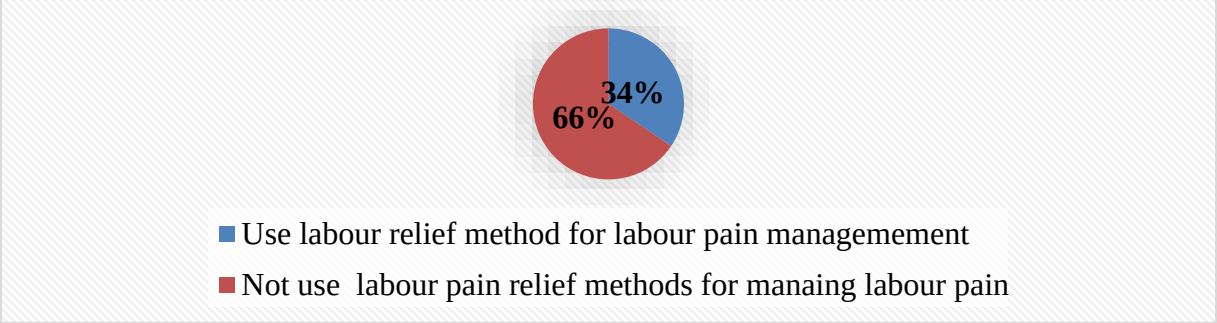


Figure 4 : Pie chart showing the overall use labour pain relief methods by obstetric caregivers,2018 G.C. (n=299)

Table 3:Use Non -pharmacologic methods obstetric caregivers working at labour ward in public health centers of east Gojjam zone, Amhara region, Ethiopia, 2018 G.C. (n =299)

Types		Frequency (n)	Percent (%)
Psychotherapy	yes	132	44.1
	No	167	55.9
Allow the mother to ambulate	Yes	116	38.8
	No	183	61.2
Massage the back	Yes	122	40.8
	No	177	59.2
Allow free vertical positioning	Yes	25	8.4
	No	274	91.6
Show the woman how to bear down	yes	96	32.1
	No	203	67.9
Hot compress	yes	7	2.3
	No	292	97.7
Allow companion of her choice	yes	87	29.1
	No	212	70.9
Music therapy	yes	21	7
	No	278	93

5.5. Personal preference and pain expectation

Most of obstetric caregivers 262 (87.6%) from total study participants' expectation labour pain were as a severe pain, while 10 (3.4 %) of study participants expect labour pain as moderate pain. Among the study participants more than half of them, 167 (55.9 %) and 32 (10.7%) prefer non-Pharmacologic and Pharmacologic methods respectively to manage labour pain. While the rest of one third of study participants prefer both of the two (Pharmacologic and Pharmacologic) as labour pain relief methods.

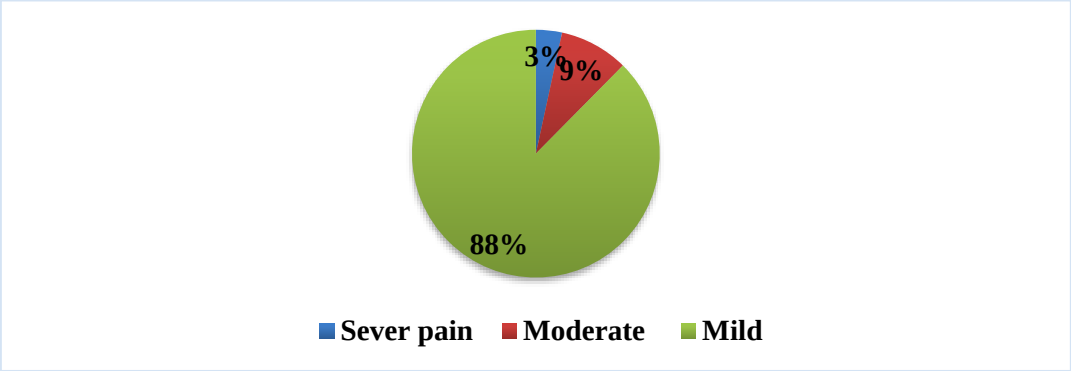


Figure 5: Pie chart showing labour pain expectation of obstetric caregivers,2018 G.C.(n=299)

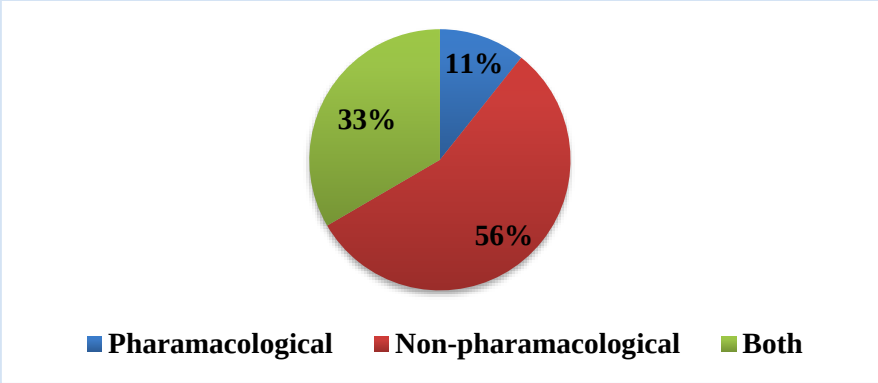
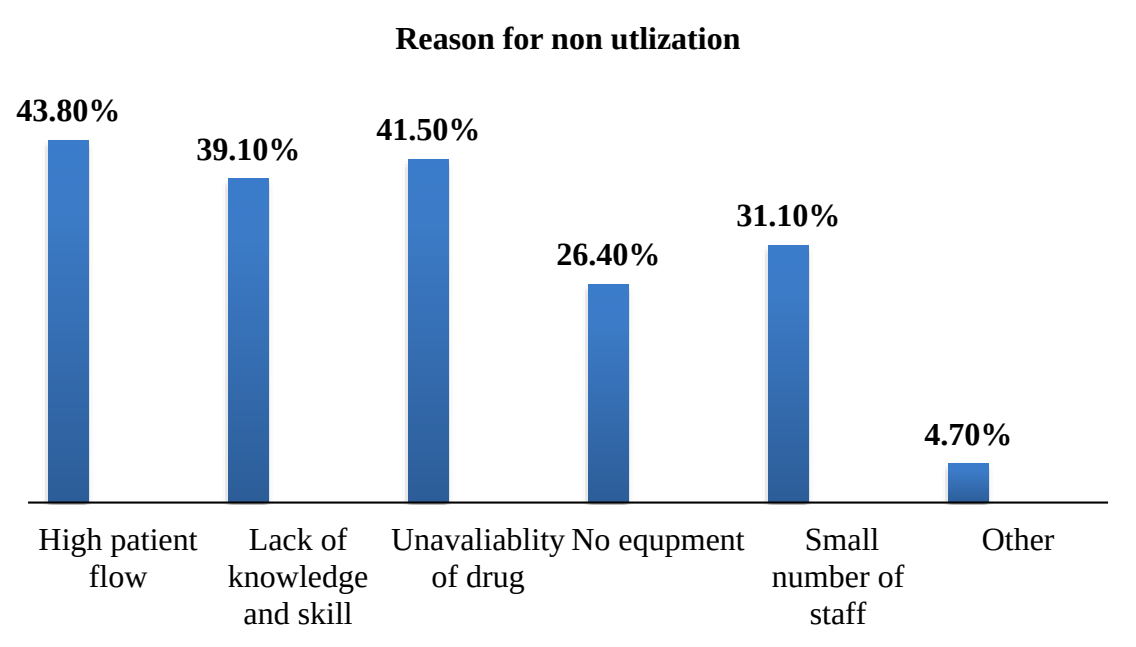


Figure 6:Pie chart showing personal preference labour pain relief methods among of obstetric caregivers, 2018 G.C.(n=299

5.6. Reason for non-utilization

The most common reasons mentioned by study participants for non-utilization of labour pain relief methods were high patient flow 131 (43.8%) and unavailability of drugs 124 (41.5%) by study participants.



Key: Other reasons: Free of side effect and labour pain is a natural process which should be not managed.

Figure 7:Bar chart showing reason for non-utilization of labour pain relief methods,2018 G.C.(n=299)

5.7. Institutional factor

From the respondents who know pharmacologic method type 153 (51.2%),140 (46.8%),102 (34.1%) and 93 (31.1%) of them reported diclofenac, paracetamol, Pethidine and hyoscine are available in their health center respectively. Eighty-seven (29.1%) of study participants reported allowing companion as a choice labouring woman is not allowed by their health center and 87 % of respondents reported that they didn't get any special training on managing labour pain.

5.8. Factors associated with knowledge of obstetric caregivers towards labour pain relief methods

Profession, attitude, Level of education and Companion were factors associated with knowledge of obstetric caregivers about labour pain relief methods in bivariate logistic regression. These variables also remained significantly associated in multivariable logistic regression.

Obstetric care providers of midwifery professional of 2.814 times more likely to be knowledgeable about labour pain relief methods than health officer and nurses. [AOR =2.814, 95 % CI= (1.574-5.031)].

Professional with a medium level of education 3.450 times more likely to be knowledgeable than to those with a lower level of education about labour pain relief methods. [AOR=3.450,95 %CI= (1.993-5.971)].

Obstetric caregivers who provide labour support care in public health center those allow companion 2.349 time more likely to be knowledgeable about labour pain relief methods than those didn't allow it. [AOR=2.349, 95% CI, = (1.314-4.197)].

Obstetric caregivers who had a positive attitude about labour pain management 4.370 times more likely to be knowledgeable about labour pain management methods than those who had a negative attitude for labour pain management [AOR=4.370, 95% CI= (2.523 -7.567)].

Table 4:Bivariate and Multivariate analysis of factors associated with knowledge of obstetric caregivers towards labour pain relief methods east Gojjam zone, Amhara regional state, in Ethiopia,2018. G.C.(n=299)

	Knowledge of obstetric caregivers		COR (95%CI)	AOR (95%CI)	P Value
Characteristics	Adequate	inadequate			
	Frequency (n)	Frequency (n)			
Profession					
Midwife	66(71 %)	27(29%)	2.801(1.68-4.73)	**2.814(1.574-5.031)**	**.000**
Others	96(46.6%)	110(53.4%)	1.00	1.00	
Level of education					
Lower	68 (43.6%)	88(56.4%)	1.00	1.00	
Medium	94(65.7%)	49(34.3%)	2.483(1.55-3.97)	**3.450(1.993-5.971)**	**.000**
Companion					
Yes	132 (62.3%)	80(37.7%)	3.135(1.86-5.28)	**2.349(1.314-4.197)**	**.004**
No	30(34.5%)	57 (65.5%)	1.00	1.00	
Attitude					
Favorable attitude	118(69%)	53(31%)	4.250(2.61-6.92)	**4.370(2.523-7.567)**	**0.000**
Un Favorable attitude	44(34.4%)	84(65.6%)	1.00	1.00	

Lower level: diploma, **Mid-level:** BSc**, Others:** Health officers, Nurse

5.9. Factors associated with attitude of obstetric caregivers towards labour pain relief methods

In bivariate logistic regression Profession, knowledge, training and Companion were factors associated with attitude of obstetric caregivers about labour pain relief methods. But only knowledge, training and Companion remained significantly associated in multivariable logistic regression.

The odds of having favorable attitude towards labour pain management among OCGs who had adequate knowledge was 3.785 times higher as compared to those who had inadequate knowledge. [AOR =3.785, 95 % CI= (2.251-6.365)].

The odds of having favorable attitude about labour pain management among OCGs who provide labour support care in public health center those allow companion were 1.834 times higher as compared those didn't allow companion. [AOR=1.834, 95% CI, = (1.055-3.189)].

The odds of having favorable attitude towards labour pain management among OCGs who had training about labour pain management were 2.923 times higher as compared to those who had not training about labour pain management. [AOR=2.923, 95% CI, = (1.266-6.749)].

Table 5:Bivariate and Multivariate analysis of factors associated with attitude of obstetric caregivers towards labour pain relief methods east Gojjam zone, Amhara regional state, in Ethiopia,2018. G.C.(n=299)

	Attitude of obstetric caregivers		COR (95%CI)	AOR (95%CI)	P Value
Characteristics	Favorable Frequency (n)	Unfavorable Frequency (n)			
Profession					
Midwife	62(66.7%)	31(33.3%)	1.780 (1.068-2.966)	1.255(.718-2.196)	.425
Others	109(52.9%)	97 (47.1%)	1.00	1.00	
Companion					
Yes	136(64.2%)	76(35.8%)	2.659 (1.593-4.437)	**1.834 (1.055-3.189)**	**.031***
No	35(40.2%)	52(59.8%)	1.00	1.00	
knowledge					
Adequate knowledge	118(72.8%)	44(27.2%)	4.250 (2.609-6.924)	**3.785(2.251-6.365)**	**.000***
Inadequate knowledge	53(38.7%)	84(61.3%)	1.00	1.00	
Training					
Yes	30(77%)	9(23%)	2.813(1.285-6.161)	**2.923(1.266-6.749)**	**.012***
No	141(54.2%)	119(45.8%)	1.00	1.00	

Others: Health officers, Nurse

5.10. Factors associated with use of labour pain relief methods

Bivariate logistic regression revealed that profession, knowledge, attitude, an experience of obstetric caregivers and allowing a companion for a labouring woman were associated with the use of labour pain relief methods. But only knowledge, attitude and an experience of obstetric caregivers was remained significantly associated with the use labour pain relief methods for labouring woman in multivariable logistic regression. This study revealed that use of labour pain relief methods for a labour pain management affected by knowledge, attitude and an experience of obstetric caregivers. The use of labour pain relief methods had a significant difference between those obstetric caregivers who had and who didn't have adequate knowledge about labour pain relief methods. Obstetric caregivers who had adequate knowledge about labour pain relief methods for managing labour pain were about 3.82 times more likely to use labour pain relief methods than to those Obstetric caregivers' who had inadequate knowledge about labour pain relief methods [AOR=3.821, 95%CI= (2.091-6.980)].

Obstetric caregivers who had a positive attitude for managing labour pain 2.455 times more likely to use labour pain management methods than those who had a negative attitude for labour pain management [AOR=2.455, 95%CI= ((1.358-4.436))].

OCGs who had an experience of 6-9 and ≥ 10 years were 2.56 and 2.50 more likely to use labour pain relief methods than those who have ≤5 years' experience [AOR=2.56,95%CI= (1.350-4.845) and [AOR=2.50,95% CI = (1.132-5.524) respectively.

Table 6: Bivariate and Multivariate analysis of factors associated with use of labour pain relief methods among obstetric caregivers east Gojjam zone, Amhara regional state, in Ethiopia, 2018G.C.(n=299)

	Use of labour pain relief methods		**COR (95%CI)**	**AOR (95%CI)**	P value
Characteristics	Yes	No			
	Frequency (n)	Frequency (n)			
Profession					
Midwife	40(44%)	53(56%)	1.713(1.032-2.842)	1.435(.801-2.572)	.225
Others	63(70.4%)	143(29.6%)	1.00	1.00	
Experience					
≤5 years	52(28.1%)	133(71.9%)	1.00	1.00	
6-9 years	32(42.1%)	44(57.9%)	1.860(1.066-3.246)	**2.56(1.350-4.845)**	**.004***
≥10 year	19(50%)	19(50%)	2.558(1.255-5.213)	**2.50(1.132-5.524)**	**.023***
Knowledge					
Inadequate	22(16.1%)	115(83.9%)	1.00	1.00	
Adequate	81(50%)	81(50%)	5.227(3.015-9.063)	**3.82(2.091-6.980)**	**.000***
Attitude					
Favorable attitude	79(46.2%)	92 (53.8%)	3.721(2.177-6.360)	**2.46(1.358-4.436)**	**.000***
Un Favorable attitude	24(18.8%)	104(81.2%)	1.00	1.00	
Companion					
Yes	84(39.6%)	128(60.3%)	2.349(1.317-4.188)	1.458(.761-2.793)	.256
No	19(21.8%)	68(78.2%)	1.00	1.00	

Lower level: diploma, **Mid-level:** BSc**, Others:** Health officers, Nurse

6. DISCUSSION

For a country like Ethiopia with a health policy of improving quality of maternal services, it is important to assess the use of labour pain relief methods among obstetric caregivers to manage labour pain which contributes to the quality of intrapartum care for a labouring woman. This facility based cross-sectional study was conducted to assess knowledge, attitude and use labour pain relief methods and associated factors among obstetric caregivers in of east Gojjam zone, Amhara region. This study gives important findings regarding current activities carried out to manage labour pain and possible improvement measures that could be implemented in an effort to enhance the quality maternal health services so as to meet the need of labouring woman.

6.1. Knowledge of obstetric caregivers towards labour pain relief methods

According to this study systemic opioid (pethidine) one of the most known pharmacological pain relief in which this result is comparable with studies done Greek, Ibadan, Nigeria and Zaria Nigeria in which pethidine one of the most known pharmacological pain relief [23,24 and 25]. This may due to accessibility and low cost of the drug.

This study found out 54.2 % of obstetric caregivers had adequate knowledge while 45.8 % had inadequate knowledge about labour pain relief methods. This result is inconsistent with studies in Ibadan, Nigeria (66.7%) of respondents had inadequate knowledge [24], Tigray region general hospital, Ethiopia 60.1% [10] and (37.7%) [11], in Amhara region, Ethiopia had adequate knowledge. This difference may as result of a difference in study setting and sociodemographic characteristics of study participants.

According to this study, midwifery professional was 2.814 times more likely to be knowledgeable about labour pain relief methods than health officer and nurses. This study also found out professional with a medium level of education 3.450 times more likely to be knowledgeable than to those with a lower level of education about labour pain relief methods. This may as a result of a difference in curriculum content of obstetric part among profession and level of education.

Obstetric caregivers who provide labour care in public health center those allow companion 2.349 time more likely to be knowledgeable about labour pain relief methods than those didn't allow it. This may be due to advocacy role of companion to prevent mistreatment of a woman during labour enforce obstetric caregivers read more to provide a better care. Another finding of this study revealed that obstetric caregivers who had a positive attitude about labour pain management 4.370 times more likely to be knowledgeable about labour pain management methods than those who had a negative attitude toward labour pain management.

6.2. Attitude of obstetric caregivers towards labour pain relief methods

According to this study 57.2% of obstetric caregivers had positive attitude, which is consistent with a study done Tigray region general hospitals 56.7% of skilled birth attendants had positive attitude towards labour pain management [10]. But this result higher than a study Amhara region referral hospitals 26.4 % of obstetric caregivers had Positive attitude about labour pain management [11]. This may be due to difference in study time and changing awareness obstetric caregivers about necessity of labour pain relief methods for labour pain management among obstetric caregivers through time.

In this study the odds of having favorable attitude towards labour pain management among OCGs who had adequate knowledge was 3.785 times higher than as compared to those who had inadequate knowledge. This may due to the association of increase in knowledge influence the attitude of individuals' and greater knowledge inevitably leads to enhanced attitude of individuals towards something.

This study also revealed that the odds of having favorable attitude about labour pain management among OCGs who provide labour support care in public health center those allow companion were 1.834 times higher than as compared those didn't allow companion. This may be as a result of the positive influence of companion presence on obstetric caregivers' behaviors in terms of sharing of information related to the care given to the labouring woman.

The result of this study reported that the odds of having favorable attitude towards labour pain management among OCGs who had training about labour pain management were 2.923 times higher as compared to those who had not training about labour pain management. This may be due to effectiveness of the training to promote the desired changes and changing attitude due to getting new information and knowledge through training.

6.3. Use of labour pain relief methods among obstetric caregivers

The overall use of labour pain in this study among obstetric caregivers was 34.4%, which contributed 30.4 % to non-pharmacological and 8.4% to pharmacological pain relief method. The use of labour pain relief (34.4 %) in this study is lower than studies done Tigray region general hospital,43.3% [10], public hospitals of Addis Ababa,47.5% [31] and Amhara region referral hospitals 40.1% [11]. This may be as a result difference in study setting and negative attitude towards use labour pain relief methods.

The use non-pharmacological of in this study was consistent with studies done Dhaka, Bangladesh and Ghana allow labouring woman to move freely, show the patient how to bear down, allow companion, massage the back were the most utilized non-pharmacologic pain relief methods [28], [30].

This study found that the use of pharmacologic labour pain relief method among obstetric caregivers was 8.4%, in which pethidine, diclofenac, paracetamol and hyoscine used labour pain management. The result of this study is consistent with studies done in Ghana, Bangladesh, and Greece in which those drugs used as pharmacological labour pain relief methods [30,28 and 23].

The finding of this study higher than studies done in Amhara region referral hospital [10], Tigray region general hospital's [11]. This may due to time difference between studies and changing awareness of obstetric caregivers towards labour pain management through time.

But this result lower than (49 %) in Nigeria [7], (18%) in Kenya [15] and (54.2%), Addis Ababa Ethiopia of which systemic (35.6%), non-opioid systemic analgesics (19.8%) [31]. This may as a result of a difference in sociodemographic characteristics of respondent's and basic pain relief facilities.

This study revealed that obstetric caregivers who had a positive attitude for managing labour pain 2.455 times more likely to use labour pain management methods than those who had a negative attitude for labour pain management [AOR=2.455, 95%CI= ((1.358-4.436))]. The result of this study is consistent with a study done in Bangladesh [28], and in Ethiopia [36], which health care providers believed that labour pain is a natural process, a labouring woman should able to cope it. This study also consistent with a study done Tigray region (Ethiopia) skilled attendants who had positive attitude were 2.24 times more likely to practice labour pain management methods as compared to those who had a negative attitude for labour pain management [10].

In this study Obstetric caregivers who had adequate knowledge about labour pain relief methods for managing labour pain were about 3.82 times more likely to use labour pain relief methods than to those Obstetric caregivers who had inadequate knowledge about labour pain relief methods [AOR=3.821, 95%CI= (2.091-6.980)], which is in line with those studies in Nigeria and Abha Maternity Hospital in Saudi Arabia health care providers who had inadequate knowledge less likely to provide labour relief method for labouring woman [24 and 29]. But in contrast with a study done in Amhara region, Ethiopia in which obstetric care providers with inadequate knowledge more likely to use labour pain relief methods than those who had adequate knowledge [11]. This might be due to a difference in sociodemographic characteristics study participants.

The current study reported that OCGs who had an experience of 6-9 and ≥ 10 years more likely to use labour pain relief methods than those who had ≤5 years' experience [AOR=2.56,95%CI= (1.350-4.845) and [AOR=2.50,95% CI = (1.132-5.524) respectively. This finding similar to a study done in the U.S in which more experienced nurses provide more labour support [32]. This may be due to more experienced obstetric caregivers may be skillful and competent enough in providing labour pain relief methods.

In this study high patient flow, a small number of staff, lack of knowledge and skill and unavailability of equipment's and drugs for managing labour pain were factors affect the use of labour pain relief methods. This finding is consistent with a study done Tigray region general hospitals, Ethiopia [10], Amhara region referral hospitals, north Ethiopia [11], Addis Ababa, Ethiopia [31], Zaria, Nigeria [25] and Saudi Arabia [29].

7. STRENGTH AND LIMITATION OF THE STUDY

7.1 STRENGTH

Up to my knowledge there is no published study in public health centers of Ethiopia on similar title. So, this study may be used as input for future researcher.

7.2 LIMITATION

Since the study was cross sectional study it did not addressed the cause and effect relationship of the factors and the outcome variables. This thesis study may also at risk of social desirability and recall bias. Even if financial and time constraints were not considered as limitation of study, financial and time constraints were the major challenge faced during this study.

8. CONCLUSION AND RECOMMENDATIONS

8.1. CONCLUSION

Even though most of the obstetric caregivers expect labour pain as severe pain in this study, most labouring woman go through painful labour. Profession, attitude, Level of education and Companion were major factors affecting the knowledge of obstetric caregivers towards labour pain relief methods and also attitude of obstetric caregivers towards labour pain relief methods affected by training, companion and knowledge of obstetric caregivers about labour pain relief method. Finally, Knowledge, attitude and experience of obstetric caregivers had statistical significance with the use labour pain relief methods.

8.2. RECOMMENDATIONS

East Gojjam health bureau:

- Prepare special training, with task-oriented refreshment course, special emphasis on strengthening obstetric caregivers' knowledge and attitude towards the use of labour pain relief methods through communicating with other concerned bodies.
- Regular supervision of activities of obstetric caregivers of their labour pain management mechanisms and supply of necessary logistics needed for labour pain management.

Non-governmental organization:

- Participate in providing short-term training issues related to labour pain and labour pain relief methods.

Obstetric caregivers:

- Empower woman to ask labour pain relief services and update their knowledge and attitude about labour pain relief methods.

Researcher: Researcher should examine the use of labour pain relief methods from maternal' request point of view.

9. REFERENCES

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10. ANNEXES

Annexes I: English Version Information Sheet

Questionnaire Identification Number _____

Dear Respondent:

Good morning/Afternoon! My name is _____. I was a data collector in the research conducted by Keralem Anteneh on knowledge, attitude and use of labour pain relief methods and associated factors among obstetric caregivers in East Gojjam Zone for the partial fulfilment of his Master degree in Maternity and Reproductive Health Nursing Specialty track in Addis Ababa University. You are selected and included in the study as part of the sample population to complete the questionnaire designed by the researcher. Your honest response is vital to assess the knowledge, attitude and use of labour pain relief methods and associated factors of obstetric caregivers those provide obstetric care.

Name of the organization: Addis Ababa University, College of Health Sciences, School Of Nursing and Midwifery.
Name of the Sponsor: Addis Ababa University

Introduction: Information sheet and consent form were prepared for obstetric caregivers who provide obstetric care in public health center of East Gojjam zone. Individuals, who available during data collection participated in a research project, which was conducted to assess knowledge, attitude and use of labour pain relief methods and associated factors of obstetric caregivers of east Gojjam zone by a facility based cross-sectional design.

Purpose of the study: The aim of this study was to assess knowledge, attitude and use of labour pain relief methods and associated factors of obstetric caregiver's public health center of east Gojjam zone. Assessing of knowledge, attitude and use of labour pain relief methods and associated factors of an obstetric caregiver is important to enhance the quality of obstetric care especially labour pain management so as to increase maternal satisfaction which may contribute for utilization of institutional delivery. The results of the study will be used to evaluate and develop appropriate strategies to address the problems related to labour pain

management methods utilization and associated factor in public health centers of East Gojjam zone.

Procedure: To assess the knowledge, attitude and use of labour pain relief methods and associated factors of obstetric caregivers in public health center of East Gojjam zone you are invited to take part in this project. If you were a volunteer to participate, I need you to clearly understand the aim of this study and show your agreement. Finally, you are kindly requested to give your genuine response to the questionnaire. All your responses and the results obtained was kept confidential whereby no one could have access to your response.

Benefits / Risk/ Discomfort: When you participate in this research project you may feel some discomfort by wasting your time (15-25mintues). However, your participation is definitely important to assess knowledge, attitude and use of labour pain relief methods and associated factors of obstetric caregiver to develop appropriate strategy & to improve maternal health services in public health center of east Gojjam zone. I am sure there was no risk in participating in this research project. You were not provided any incentive or payment to take part in this project.

Confidentiality: The information collected from you were kept strictly confidential and stored in a file, without your name by assigning a code number to it. The information obtained in this study was used only for research purposes.

Right to refuse or withdraw: You have the full right to refuse from participating in this research. You have also the full right to withdraw from this study at any time you wish. You can choose not to respond to some or all questions if you do not want to give your response.

Person to contact: Keralem Anteneh principal investigator

Tel: +251-924-52-97-34

Email: keralemante@gmail.com

Annex II: English Version Consent Form

The selected participant should have read and understood the information sheet carefully. I understood the purpose, the benefit of the study and personal information regarding me and all answers given by me should not be transferred to the third party without my permission. I also understood that I can decide whether or not to take part in the study or even withdraw from the study at any time so that I agree to participate in the study with my signature below.

The participant Sign_____

Supervisor Name _____ signature_____

Date_____/_____/____E.C.

Time Started: Hour: _____ Minute: _____

Questionnaire No_____

Time ended: Hour: _____ Minute: _____

Name of Data collector _____

Date _____/_____/____ ____E.C**.** signature_____

Annex III: English Version Questionnaires

Circle or write the appropriate response

I. Socio-demographic characteristics of the respondent

S.No	Question	Response	Skip	Code
101	Age in year?	_____.		
102	Gender?	1. Male 2. female		
103	Religion?	1. Orthodox 2. Muslim 3. Protestant 4. Other specify_____.		
104	Profession?	1. Health officer 2. Midwife 3. Nurse		
105	Level of education?	1. Diploma 2. BSc 3. MSC		
106	Clinical experience in year?	_____.		
II. Knowledge related questions				
201	Do you know about labour pain management methods?	1. Yes 2. No	If no skip to 201	**208**
202	If "yes" to question No 201, what type of labour pain management do you know?	1. Pharmacologic 2.Non-pharmacologic 3. Both (Pharmacologic and Non-pharmacologic) 4.Un-sure	If un unsure to 202 skip	**207**
			If Non-pharmacologic 202 skip to	**204**

203	If "Pharmacological" to question No 202, which pharmacologic method do you know? More than one answer is possible	1. Systemic opioids 2. NASID drugs 3. Epidural analgesia 4. Inhalational 5. If other specify_____.		
204	If "non- pharmacological" to question No 202, which type of non-pharmacologic method, do you know? More than one answer is possible….	1. Psychotherapy 2. Allow the mother to ambulate 3. Massage the back 4. Allow free vertical positioning 5. Transcutaneous electrical nerve stimulation 6. Show the patient how to bear down 7. Acupuncture 8. Hypnosis 9. Allow companion of her choice 10. Music therapy 11. If other specify_____.		
205	If you know about labour analgesia, do labour relief method have side effect on labour and delivery outcome?	1. Yes 2. No 3. I don't know	If 2&3 to 205 Skip to	**207**
206	If" yes" to question 205, what is the side effect of analgesia on labour and its outcome? More than one answer is possible	1. Delay progress of labour 2. Cause fetal distress 3. Increase instrumental delivery 4. Increase C/S delivery		

		5. If other specify_____.		
207	Have you asked labouring women to provide labour pain relief method?	1. Yes 2. No 3. I don't remember		
208	Have you heard about WHO pain ladder?	1. Yes 2. No 3. Unsure		
III. Attitude related questions				
301	Do you believe labour pain management methods can alleviate or help the mother to cope labour pain?	1. Yes 2. No		
302	Do you think every mother during labour should be managed?	1. Yes 2. No		
303	Do you believe that even though labour pain is natural and mother hasn't to face it?	1. Yes 2. No		
304	Do you think analgesic is necessary for managing labour pain?	1. Yes 2. No		
305	Do you believe that you have responsibility and obligation to manage labour pain?	1. Yes 2. No		
306	Would you provide labour pain relief methods if you had resources?	1. yes 2.No 3.Unsure		

IV. Use related questions				
401	Have you ever provide any labour pain relief method in the past one month?	1. Yes 2. No 3. Don't remember	If 2&3 to 401skip	**501**
402	If" yes" to question No 401, which method?	1. Pharmacological 2. Non-pharmacological 3.Both	If 2 to 402 skip	**404**
403	If "Pharmacological" for question 403 which method? You can answer more than one….	1. Pethidine 2. Diclofenac 3. Paracetamol 4. Hyoscine 5. If other specify_____.		
404	If "non-pharmacological" to question 403, which type non pharmacologic you can answer more than one...	1. Psychotherapy 2. Allow the mother to ambulate 3. Massage the back 4. Allow free vertical positioning 5. Show the patient how to bear down 6. Allow companion of her choice 7. Hot compress 8. Music therapy 9. If other specify_____.		

V. Personal preference &pain expectation question				
501	Which method would you prefer for managing labour pain?	1. Pharmacologic 2. Non-pharmacologic 3. Both		
502	What is your expectation of labour pain?	1. Mild pain 2. Moderate pain 3. Severe pain		
VI. Questions on reasons for non-use of labour pain management methods				
601	Reasons for non-utilization of labour pain management methods? Multiple options are possible….	1. High patient flow 2. Lack of knowledge & skill 3. No drug 4. No equipment 5. Small number of staff 6. If other specify_____		
VII. Questions related to institutional factors				
701	If you know pharmacologic methods, is their labour pain managing drugs/ analgesics available at your hospital?	1. Yes 2. No 3. I don't know	If 2&3 to 701 Skip to	**703**
702	If "yes'' to question No 701, which type? You can answer more than one	1. Pethidine 2. Diclofenac 3. Paracetamol 4. Hyoscine 5. If other specify_____.		
703	Have you got any special training for managing labour pain?	1. Yes 2. No		

704	Does your public center allow companion of her choice for labouring mother?	1. Yes 2. No		
705	Do you allow the women to move around while she is in labour?	1. yes 2. No		