



JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES SCHOOL OF
ANESTHESIA

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A RESEARCH PAPER TO BE SUBMITTED TO JIMMA UNIVERSITY, TO
DEPARTMENT OF ANESTHESIA, INSTITUTE OF HEALTH SCIENCE,
FACULTY OF MEDICAL SCIENCES, IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE MASTER DEGREE IN CLINICAL
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PRACTICE OF LABOR PAIN MANAGEMENT, ITS PERCEIVED BARRIERS AND
ASSOCIATED FACTORS AMONG OBSTETRIC CARE PROVIDERS WORKING IN
JIMMA ZONE HOSPITALS ETHIOPIA, 2019.

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ABSTRACT

Background: Pain is ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage. Labor pain is an unpleasant, complex, highly individualized phenomenon with both sensory and emotional components. It is a profound physiological, psychosocial and spiritual event. The practice of labor analgesia in Africa is not a well-practiced, especially in the low-income countries like Ethiopia.

Objective: Practice of labor pain management, its perceived barriers and associated factors among obstetric care providers working in Jimma zone hospitals Ethiopia, 2019.

Method: Institutional based cross-sectional study was conducted in Jimma Zone public Hospitals from August 1- 30/2011. Convenience sampling technique was used to collect data. Self administered questionnaire was used to collect data. All of the healthcare providers who are supposed to be involved in the management of labor pain in the Jimma zone public hospitals were included. Pretested structured questionnaires were used to collect data with regular supervision and follow up. Data was entered in to Epi-info version 7 and analyzed with SPSS-20 statistical software. Results were presented using narratives, graphs, tables and charts. Conclusions were drawn by means of simple percentages and inferential statistics using binary logistic regression, with P-value < 0.05 at 95% Confidence Interval (CI) taken to be statistically significant.

Results: .Among 181 respondent ninety-nine (54.7 %) were male. From the total obstetric care giver providers on the study, 122 (67.4%) midwife, 35(19.3) Anesthetist, 13 (7.2) IESO, 3(1.7) Anesthesiologist, 8 (4.4) Obstetrics, were involved. The majority 134 (74 %) of practitioners have been in their respective professional practice for 5 years or less, while only 12 (6.6 %) had practiced for 11-15 years. 86 (47.4) practiced in Jimma medical center. One hundred respondents (55.2 %) were practiced labor analgesia while 81 (44.8 %) were not practiced labor analgesia. The major reasons for not offering labor pain management of both methods were non availability of the drugs 125 (69.1 %), lack of emphasis towards labor pain management by health service management system 122(67.4 %), fear of adverse effect of maternal and fetal to administer systemic analgesia 68 (37.6 %).

Conclusion: The routine practice of labor pain management by obstetric care giver was very low especially pharmacological method. It is very important for stakeholders in the health sector and ministry of health to step up its use, and make childbirth pain free.

Key word: Analgesia, Barrier, Labor, Pain, Practice

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LISTS OF ABBREVIATIONS

ACOG – American College of Obstetricians and Gynecologists
ASA – American Society of Anesthesiologists
CDC – Center for Disease control
CI – Confidence Interval
CSE – Combined Spinal Epidural
EFMoH – Ethiopian Federal Ministry of health
JMC – Jimma Medical center
N₂O – Nitrous Oxide
NICE – National Institute of Clinical Excellence of United Kingdom
NSAIDS – Non-Steroidal Anti-Inflammatory Drugs
OR – Odds Ratio
PI – Principal Investigator
PSI – Primary Sampling Unit
S₂-S₄ – Sacral nerve fibers 2 to 4
SPSS – Statistical Package for Social Sciences
SSU – Secondary Sampling Unit
TENS – Trans-cutaneous Electrical Nerve Stimulation

CHAPTER ONE

INTRODUCTION

1.1. Background

Labor pain is one of the most severe pains; it is a complex and individual process with varying maternal requesting analgesia. Labor analgesia must be safe and accompanied by minimal amount of unwanted consequences for both the mother and the child, as well as for the delivery procedure (1).

Nowadays, obstetric analgesia is provided routinely in most developed countries. However, in developing countries, labor pain management is not a well-established service. The poor utilization of labor analgesia in low-income countries including Ethiopia results in laboring mothers in unmeasured suffering, let alone analgesia(2).

Labor Pain is characterized as 'discomforting' during early dilation and as 'distressing, horrible, excruciating' as dilation progressed. Significant increases in pain with increased dilation occurred on all measures for multigravidas but only on the VAS for primigravidas(3).

Labor pain is an intense, unpleasant experience with significant physiologic consequences on the mother and the fetus, in the past delivery was called “poena magna” in Romans which means great pain or great punishment(4).

Labor pain is the most severe pain that a woman ever has to face. Pain relief in childbirth is subject to many social and cultural modifiers, which continue to change (5).

Delivery of the infant into the arms of a conscious and pain-free mother is the most exciting and rewarding moment in maternal care services. Developed nation give emphasis on continuous labor support, But in developing country pain is neglected especially managing labor pain. (5).

Effective analgesia is crucial to maximize the mother's comfort, increase her mobility, and support lactation and emotional attachment to her newborn(6).

ACOG and American College of Nurse-Midwives' recommends pain relief and say “women should have access to variety of measures to assist them in labor and in the absence of medical contraindication; maternal request is enough for pain relief” Many pharmacologic and none pharmacologic treatments have been used to alleviate labor pain including systemic opioids, epidural

analgesia, combined spinal-epidural analgesia, Transcutaneous electrical nerve stimulation, massage and breathing technique (7).

In Ethiopia, the practice of labor pain management is very low. In 2014, the Ethiopian Food, Medicine, and Health Care Administration and Control Authority (FMHACA) has developed and implemented standard treatment guidelines. Giving analgesics and anesthetics to pregnant mothers without affecting maternal and fetal condition must be a concern to the health care provider(2).

Hence, relieving labor pain is one of the main concerns for pregnant women, her families, and health care providers. So, effective utilization of labor analgesia has implications on the course of labor, best outcomes, and the quality of obstetric care (2).

1.2. Statement of the Problem

Developed nation give emphasis on continuous labor support, But in developing country pain is neglected especially managing labor pain. In a country like Ethiopia with low institutional delivery managing labor pain can help as an incentive to enhance institutional delivery rate(5).

Labor pain is as old as human being, which is not simple but a complex phenomenon with sensory, emotional, and perceptive components and considered as one of the most serious kinds of pain. Although severe pain during labor is not life-threatening for a healthy parturient, it may result in the stimulation of the sympathetic nervous system leading to maternal hypertension and oxygen consumption affecting uteroplacental blood flow. Besides this, it can contribute to postpartum depression and posttraumatic stress disorder(2)

The World Health Organization has recently set standards emphasizing the importance of emotional support during birth for improving the quality of maternal and newborn healthcare in facilities. lack of emotional support during labor and birth can negatively affect the overall quality of maternal and newborn health services in Bangladesh(8).

Maternal mortality continues to be a major public health problem. Epidural analgesia is the treatment that best meets these demands. According to the American Congress of Obstetrics and Gynecology and American Society of Anesthesiologists guideline in 2015, mother's demand is a reason enough for providing of labor analgesia, providing that no contraindications exist. The application of analgesics should not cease at the end of the second stage of labor, but it is recommended that lower concentration analgesics be then applied. Based on the latest studies, it can be claimed that epidural analgesia can be applied during the major part of the first and second stage of labor(1)

Women have experienced severe labor pain over the years and various attempts have been made to effectively manage labor pain. However, there is paucity of literature on the labor pain experience and perceptions about labor pain with the contemporary Ghanaian health system(9)

Women in this study experienced pain during labor rated as mild, moderate and severe and the pain was felt at the waist area, vagina, lower abdomen and the general body. The women expressed labor pain through crying, screaming and shouting. They prayed to God to help reduce the severe pain. Some women endured the pain, cried inwardly and others showed no sign of pain(9)

Severe pain adversely affects parturient and fetuses. Pain-induced stress accelerates the basal metabolism of a parturient and increases cardiac output and ventilation. In extreme cases, reflex hyperventilation leads to respiratory alkalosis manifesting with maternal tetany and fetal cardiac arrhythmia. Maternal respiratory tetany shifts the hemoglobin dissociation curve to the left, leading to deterioration of the transplacental oxygen transport.

The sympathetic stimulation and increased endogenous catecholamine concentration cause uterine vasoconstriction, which reduces the utero-placental flow and is likely to lead to intrauterine fetal hypoxia and acidosis. This could be again dangerous for women with pre-existing cardiopulmonary problems. Released catecholamines impair uterine contractile function, which prolongs the delivery and secondarily deteriorates the postpartum status of the newborn additionally, lipolysis, the release of free fatty acids freely permeating the placenta and hyperglycemia are observed, which increases fetal hypoxia and acidosis. Pain during labor has also been correlated with the development of maternal post-traumatic stress disorder (10).

The high rate of cesarean delivery in China can be attributed to many factors. Low household income does not appear to play a primary role, because affluent, educated Chinese women often prefer cesarean rather than vaginal delivery, believing that cesarean delivery is safer when planning a single birth, as permitted under China's one-child policy. Many women opt for cesarean delivery to avoid the pain, anxiety, and distress associated with vaginal delivery without analgesia. In addition, the medical reimbursement system in China, similar to many other countries, provides greater reimbursement for cesarean than for vaginal delivery(11).

The study done in Addis Ababa the vast majority of respondents never involved in the practice of labor analgesia (n = 81, 45.8 %), while only 0.6 % (n = 1) of respondents administered labor analgesia routinely, 23.7 % (n = 42) offered it sometimes and 6.6 % (n = 10) on maternal request. Overall, 54.2 % of respondents had provided any form of pain relief in labor including psychological support alone (10).

The study Worked at General Hospitals in Tigray Region, North Ethiopia found out practice of labor pain management methods was 43.3 %, which is only non pharmacologic methods; practice of pharmacologic method was nil (5).

During delivery, excessive pain leads to fear and anxiety. This stimulates the sympathetic nervous system to increase catecholamine secretion leading to increased blood levels of hormones such as epinephrine. These will further intensify the pain, and potentially prolong the first and second stages

of labor, thus resulting in a very unpleasant experience of childbirth .Additionally, prolonged first stage of labor is associated with fetal complications, including head compression, impaired oxygen supply, low Apgar score and ultimately fetal death(12)

Pain during labor is a physiological phenomenon. The evolution of pain during the first stage of labor is associated with ischemia of the uterus during contractions. In the second stage, pain is caused by the stretching of the vagina and perineum and compression of pelvic structures However, pain sensation is a response of the total personality to the birthing experience and is therefore a subjective phenomenon. Labor is not a permanent practice and pain relief in childbirth is subject to many social and cultural modifiers which are continuously changing(13).

Continuous caudal analgesia was developed to relieve the pains of labor and delivery. Since its beginning we have sought to improve our apparatus and refine our technic in order to provide the maximum of comfort for the mother with a minimum of risk for her and the baby. Both Drs. J. B. De Lee and J. Whitridge Williams recognized that some obstetricians would literally follow the Biblical injunction "in sorrow shalt thou bring forth" but stated that it was the duty of the obstetrician to mitigate the sufferings of natural labor and delivery. They demanded that any amnesic, analgesic or anesthetic agent possess safety for mother and child since 1847, when Sir James Y. Simpson introduced ether in obstetrics, there has been a continuous search for a perfect method. Many different agents, used either alone or in combinations, have been described for this purpose. Not one has been found(14).

ACOG guidelines 2015 also reiterate that seeking labor analgesia is the right of every woman and it's the duty of obstetricians and anesthesiologists to fulfill their dream of painless delivery. 'Delivery of the infant into the arms of a conscious and pain-free mother is one of the most exciting and rewarding moments in medicine' - Donald D. Moir (father of labor analgesia)(15).

Many researches concerning labor pain management were performed in different parts of the world. However, there is limited research done in Ethiopia to assess practice and perceived barrier of labor analgesia among obstetric HCPs.

For most women, labor causes severe pain, similar in degree to pain caused by the amputation of a finger.

1.3. Significance of the Study

For many years Labor pain was regarded as punishment given by God from Eve's sin and asking for relief was considered as against God in reality there are no other circumstances considered as severe as labor pain. Therefore, this study is expected to provide benefits primarily to maternal healthcare providers to appraise the forms and use of labor analgesia in such a way that it meets the internationally accepted standards. Then, it will remind clinical preceptors and medical educators to give emphasis on training and retraining of obstetric analgesia as a core competency for their students in their pre-service and in-service environment. In addition to this, the base line data in this study will open the gate to further research activities by researchers. Finally, an overview of the practice of labor analgesia for hospital administrators and policy makers will be a clue for planning and intervening on areas of deficit thereby organizing and equipping the health institutions in ways to improve the quality of care. Thus this research is conducted with the aim of exploring obstetric health care providers' practice, perceived barrier and associated factors about pain relief for women in labor in Jimma zone Hospitals finally to improve the practice looking at the drawbacks.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

Even though delivery is a natural phenomenon, it has been demonstrated that the accompanying pain is considered severe or extreme in more than half of cases. Besides conventional approaches, such as epidural analgesia, many complementary or alternative methods have been reported to reduce pain during labor and delivery.

Most methods of non-pharmacological pain management are non-invasive and appear to be safe for mother and baby, however, their efficacy is unclear, due to limited high quality evidence. Over the years, mankind had devised many methods to combat pain. Pain relief methods can be divided into two main groups: pharmacological and nonpharmacological ones. One of the most significant limitations associated with pharmacological pain relief is that almost every drug that is used for labor analgesia in the mother can pass through the placenta. This has deleterious effects on both the mother and the fetus(12).

Three principles that are essential to relieve pain in midwifery include simplicity, safety and maintaining fetal homeostasis and the non-pharmacological methods satisfy all of these. There is no effect on delivery, and no maternal or fetal side effects(12).

Epidural analgesia has been used to provide labor pain relief for more than 40 years. The technique has been refined over the past 20 years to provide laboring women with higher-quality pain relief, less leg weakness, and more control over the administration of pain relief medication. Since the early 1990s, the combined spinal-epidural (CSE) technique has become popular because it provides more rapid onset pain relief with minimal motor weakness(16)

2.2. Practice of Labor Analgesia

Research done by WHO in 2019 on analgesia during labor and vaginal birth among women with severe maternal morbidity: secondary analysis from the who multicountry survey on maternal and newborn health on from 314,623 women originally included in WHO (Multicountry Survey on

Maternal and Newborn Health) WHO-MCS, 9,788 developed SMM and delivered vaginally, 601 (6.1%) with analgesia and 9,187 (93.9%) without analgesia. Women with Severe maternal morbidity (SMM) were more likely to receive analgesia than those who did not experience SMM. Global distribution of SMM was similar; however, the use of analgesia was less prevalent in Africa(17).

The overall use of analgesia was for vaginal birth was low, including in women with SMM. There was a significant difference in the use of analgesia comparing cases with and without SMM and the procedure was not associated with increased severity Severe Maternal Outcome (SMO). Analgesia for childbirth was intimately associated with social characteristics(17).

Research done in south India in 2017 Ninety-five percent of them felt that labor analgesia could improve the quality of childbirth and majority of them strongly believed that it may prolong the second or third stage of labor (81%) and may lead to forceps delivery (66.7%). Longer time required for anesthesiologists and the cost was felt as main barriers by 66.7% and 71.4% of the obstetricians. While 90.4% of obstetricians agreed that labor epidural does not affect the baby, 4.8% said labor epidural affects the foetus and another 4.8% said that they did not know whether it affects the foetus or not. Only about 20% of them felt that labor analgesia is not suitable for the Indian scenario(15)

The pain of labor is severe and many women seek ways to reduce it. Non-regional techniques include supportive measures, inhalation of nitrous oxide and parenteral opioid administration. Epidural analgesia provides good quality pain relief in labor. Well conducted studies confirm there is no influence on the rate of caesarean delivery or long term back ache; however epidural analgesia is associated with increased duration of labor and increased incidence of operative vaginal delivery(18).

According to Healthcare Commission in 2007 in the UK, estimates for opioids use showed that 34% of women overall used pethidine or another opioids during labor, with variation between NHS Hospital Trusts between 5% and 66% (18).

Study done in 2018 in Egypt shows methods used in normal labor, shows that 44.9 % of the respondents used nonpharmacological methods in the first stage of labor, whereas 18.4 % used pharmacological obstetric analgesia methods in the first stage. majority (67.9 %) used pharmacological methods (e.g., oral or intravenous (IV) paracetamol or tramadol) or intramuscular opioids during the second stage of labor. most frequent nonpharmacological method (such as family support, directed breathing and relaxation techniques, and massage) they used was to give assurance or explain the labor process (19.2 %), followed by massage and therapeutic touch (10.3 %) and changing

maternal position or moving the mother around (8.5 %); 70.1 % of the respondents used pharmacological methods for pain relief (tablets and injections), whereas 12.4 % were found to use epidural anesthesia and only 3.8 % used nitrous oxide or inhaled gases. Less than one-quarter (19.2 %) had taken a continuing education course that focused on pain-relief methods the majority (89.7 %) of respondents expected women to feel pain in labor and some expected that pain should be relieved (78.2 %) main reasons mentioned by 9 % of the respondents ($n = 21$) who did not agree to pain relief were the following: (1) women did not ask for pain relief; (2) labor is a natural process; and (3) it could affect the baby, mother, or labor process(19).

Research done in Zaria, Nigeria show most respondents (94.8 %) agreed that pain relief is needed during labor. Only 2.1 % of respondents were undecided about the provision of pain relief during labor and 3.2 % were of the opinion that pain relief was not necessary during labor. Most respondents (93.7 %) had attended a woman in labor in the 4 weeks preceding the survey. Of these, 56.8 % had counseled a parturient in labor. Most of the counseling (42.1 %) took place during labor. Less than half of the respondents (48.4 %) had administered pain relief in labor in the preceding 4 weeks and systemic opioids was the most commonly form of pain relief. Among the respondents who did not offer pain relief agents in labor, the majority (54.5 %) had no reason for not offering it. Unavailability of methods, inability to afford the cost of pain relief, lack of knowledge and skills, as well as lack of essential equipment to provide the procedure were also given by respondents as reasons for not offering pain relief(20).

The research done in Ethiopia in 2017 majority, 79% of respondents, understood that women can feel moderate to severe pain in labor and 77% were of the opinion that labor pain should be relieved. However, common practices included only supportive measures such as breathing and relaxation exercises, back massage and support from family(21).

Research done in Kenya in 2018 showed, Eighty three point eight percent of the participants responded that they did not have any additional training in non-pharmacological pain management during labor. Fifteen point four percent of participants responded that they had gone for the training the practice of non pharmacological support that Forty percent of the respondents encouraged squatting position for laboring women and 30 % used standing and squatting position. Twenty percent of the respondents encouraged knee chest, side lying, standing and lithotomy positions(22).

The instruction most reported received by delivered women to cope with their pain was to take deep breaths with each uterine contraction (330, 82.5%). Three hundred sixty two (90.5%) women stated their satisfaction with their labor experience and only 38 (9.5%) were not satisfied(23).

Research done In Bangladesh shows among 97 respondents 75.3 % were senior staff nurses and 24.7 % were Family welfare visitors. Only 6.2 % thought women with labor pain should receive an analgesic, 7.4 % gives an analgesic and 10.5 % reported to receive such drug during their own childbirth only 6.2% thought women with labor pain should receive an analgesic, 7.4% gives an analgesic and 10.5% reported to receive such drug during their own childbirth. About 58.6% reported to use injection hyoscine butyl bromide and 6.9% uses injection Pethidine analgesia during labor. Forty percent reported to carry out some activity to comfort women in labor. Those were giving assurance (88.7%), explaining the mother about the process of labor (84.5%) and 77.3 % would allow companion (24).

About 58.6 % reported to use injection hyoscine butyl bromide and 6.9 % uses injection Pethidine analgesia during labor. Forty percent reported to carry out some activity to comfort women in labor Those were giving assurance (88.7 %), explaining the mother about the process of labor (84.5 %) and 77.3 % would allow companion in the labor room. About two thirds respondents thought that pain relief may delay progress of labor, 69.5 % apprehend fetal distress while 60 % are of the opinion that women should endure the natural pain (25).

According to cohort study performed at Forsyth Medical Center (Winston-Salem, North Carolina) Single-center Retrospective Cohort Survival Analysis EPIDURAL analgesia has long been the mainstay of labor analgesia because it allows effective drug delivery throughout the course of labor, including cesarean delivery if necessary. Furthermore, epidural analgesia has a long-standing history of superior maternal and fetal safety compared to other forms of analgesia and anesthesia. Initially, combined spinal epidural technique (CSE) began as a refinement of traditional epidural technique (EPID). Over the last two decades, CSE for labor analgesia has become popular because of its advantages over EPID(26).

Neuraxial labor analgesia is commonly available in high-income countries. These techniques have been shown to be safe and effective for alleviating labor pain. In 2008, 68% of parturient in the United States and 33% in the United Kingdome received neuraxial labor analgesia. Neuraxial analgesia is associated with improved maternal and neonatal outcomes and has been recommended by American

College of Obstetricians and Gynecologists (ACOG) as a proactive approach for high-risk parturient safety during labor.(11)

The study done in Addis Ababa Ethiopia in 2016 shows that Non-pharmacological labor pain management techniques were the commonest form practiced by 84 respondents (47.5 %), while 63 (35.6 %) prescribed opioids systemic analgesic, 35 (19.8 %) used non-opioids systemic analgesics, and 15 (19.8 %) of them practiced regional nerve block techniques. Pethidine injection was the most commonly used opioids by respondents, while psychological support was the only non-pharmacological technique used during labor and delivery. From non-opioids systemic analgesics, diclofenac injection was used by 23 % of practitioners Epidural nerve blockage was used by only 8 respondents (4.5 %) among regional techniques of labor analgesia(10).

Research done in 2017 General Hospitals in Tigray Region Of the respondents 217(93.1%) believed as labor pain is natural and the mother has to face it, but majority 177(76%) of them consider managing labor pain as their responsibility of care for laboring mother. The odds of current practice of non-pharmacologic labor pain management methods was higher among professionals who have positive attitude for managing labor pain. Skilled attendants who have positive attitude for managing labor pain were about 2.24 times more likely to practice nonpharmacological labor pain management methods as compared to those professionals who have negative attitude for labor pain management {AOR=2.242, 95% CI= (1.242-4.048)}(5).

The study done in 2016 Amhara Region referral hospital the overall utilization of obstetric analgesia in labor pain management was 40.1%. All professionals used non pharmacologic methods and while the utilization of pharmacologic obstetric analgesia methods was found to be zero, psychotherapy was the most used method (n=75/88.2%) followed by breathing techniques (n=61/71.9%) and massage (n=54/63.5%)(27).

The research done in kenbata tembaro zone revealed that a substantial majority 211 [62.1%]) of health care providers in public health facilities of KTZ do not use obstetric analgesia to manage labor pain. Indeed, to some, it was an entirely new concept, while only one of respondent administered labor analgesia routinely; 72 (21.2%) of the study participants practiced it sometimes and 56 (16.5%) of the respondents offered labor analgesia on maternal request. Overall, 37.9% of respondents had provided any form of labor analgesia to manage labor pain. These findings are not encouraging, especially when it is expected that women should be offered, among other things, effective pain relief during labor.

The findings of this study showed the proportion of both nonpharmacological (54.7%) and pharmacological (45.2%) methods of pain relief in labor(2).

Research done in Black lion Hospital in 2018 More than half (55%) of the respondents have given labor analgesia more than ones in their practice while 35%(n=43) of the respondents have never gave labor analgesia in their practice off which 70%(n=30) give lack of knowledge and skill as a reason while the rest give lack of equipments and fear of complications (safety concern) as a reason for not giving labor analgesia . about half (51%) of the respondents grade pain before and after analgesia and almost all of the 24 respondents (97%) often use psychological support in their practice(28).

According to research done at durame hospital, Southern Ethiopia Labor pain is distressing and produces undue side effects to both woman and fetus. In low-income countries like Ethiopia, addressing pain relief is often neglected. Professionals attending labor may not have awareness of obstetric analgesia. Besides this, there is a lack of published research on perceptions of obstetric analgesia among health professionals in Ethiopia(29).

CHAPTER THREE

OBJECTIVES OF THE STUDY

3.1. General Objective

Practice of labor pain management, its perceived barriers and associated factors among obstetric care providers working in Jimma zone hospitals Ethiopia, 2019.

3.2. Specific Objectives

- To assess of practice of labor pain management among obstetrics healthcare providers working in Jimma Zone Hospitals
- To identify the barriers to the practice of labor pain management among obstetrics health care providers working in Jimma zone Hospitals.
- To assess the associated factors among obstetrics healthcare providers working in Jimma Zone Hospitals

CHAPTER FOUR

MATERIALS AND METHODS

4.1. Study Area and Period

The study was conducted in seven public hospitals found in Jimma Zone, Oromia Regional state from August 01 to 30, 2019. Jimma is one of the 18 zones of the Oromia Regional State found at 352 Km from Addis Ababa, the capital city of Ethiopia, in the South western part of the country. Based on the 2007 Census conducted by the CSA, this Zone has a total population of 2,486,155, an increase of 26.76 % over the 1994 census, of whom 1,250,527 are men and 1,235,628 women; with an area of 15,568.58 square kilometers(30).

In this zone there are seven public hospitals namely, Jimma medical hospital (JMH), Shenen Gibe and Limu Genet hospital Omo nada Hospital, Agarro Hospital, Sexama Hospital and Seka Hospital The first two are situated in Jimma town where as the Limu Hospital is at Limu town, which is 72kms far from Jimma town. Omo Nada is located in Nada town which is 55 km far from Jimma town, Agaro Hospital is found in Agaro town which is 25 km far from Jimma, Sexama is located in Sigimo twon which is 80 km far from Jimma town, seka is located in seka town which is 18km far from Jimma twon. Except JMH all are district level. JMH plays a pivotal role in this zone and it is the only teaching and referral hospital in the southwestern part of the country, and provides specialized clinical services to about 20 million people (31). It provides generalized service to in-patients and out-patients ideally on a referral from the two hospitals, community health centers, private clinics and clients referred from SNNRS hospitals.

4.2. Study Design

Institution based cross sectional study was used from august 15 to February 15, 2012.

4.3. Population

4.3.1. Source population: All health care providers who were supposed to be involved in the practice of obstetric care giver in Jimma Zone public Hospitals.

4.3.2. Study Population: health care providers who were supposed to be involved in the practice of obstetric analgesia in selected Jimma zone hospitals during data collection period.

4.3.3. Inclusion criteria: obstetric care givers (obstetricians, Integrated Emergency obstetrics and surgical officer, anesthesiologists, anesthetists, and midwives) who were supposed involved in the provision of analgesia for normal labor and delivery were included in the study.

4.3.4. Exclusive Criteria

All obstetricians integrated emergency obstetric and surgical officer, Anesthesiologist, Anesthetists and Midwifery having work experience of less than 6 months.

4.3.4. Sampling

Since the total population were 205 which were manageable the investigator decided to involve all the study population (conducting census).

4.4. Study variables

4.4.1. Dependent variable

The dependent variable of this research is practice of labor analgesia

4.4.2 Independent Variable

The independent variables of this research are: age, sex, profession, and years of service, Hospital of practice, patterns of use of labor analgesia and types of labor analgesia provided, and reasons for non-administration of labor analgesia: fear of fetal distress to administer a drug, fear of adverse maternal side effects to administer a drug, late presentation of mothers for labor and delivery, fear of prolonged second stage of labor if drug is administered, availability of drugs and equipment, shortage of skilled man power, lack of emphasis towards labor pain management by health service management system.

4.5. Data Collection Technique and Instrument

Training was given for three BSc holder data collectors comprising one midwife and two anesthetists, and one MSc holder Anesthesia professional as supervisor. Data was collected using a pretested self-administered questionnaire with multiple choice and open-ended questions on respondents' socio-demographic characteristics, use/non-use of obstetric analgesia for labor pain, the forms of labor analgesia provided and barriers adduced. Maternal health care providers were requested to complete the structured questionnaire following written informed consent. The trained data collectors were available to assist participants completing the questionnaire and clarified any questions that were aroused. For data collection, a structured interview questionnaire was used to assess the following:

Part (1): The sociodemographic characteristics of the obstetricians, IESO, Anesthesiology/Anesthetist, midwifery including age, gender, hospital practiced, year of service

Part (2): Participants' use of labor pain-relief methods

Part 3: Pattern of use and type of labor analgesia offered among maternal healthcare providers who provided obstetric analgesia

Part 4: Participants' attitude toward labor pain-relief methods and whether labor pain management were included as core competence or not

Part 5: Barriers to using labor pain-relief methods in health care settings.

4.6. Data analysis and interpretation

After questionnaire clearance for completeness, Data was collated with Epi info statistical software version 7.0 analyzed with SPSS windows statistical software version 20.0, SPSS to determine the practice of labor analgesia in the study population. Results were presented using narratives, tables and charts. Conclusions were drawn by means of simple percentages or proportions. Univariate and Bivariate analysis was performed, and appropriate tests will be carried out to determine significant relationships between the dependent and independent variables, with the level of statistical significance set at $P < 0.05$, 95% CI

4.7. Data Quality Control

To assure the reliability and validity of the data, self-administered questionnaire was pretested on 10 healthcare providers working in Bedele Hospital; thereafter corrected and modified for clarity. Training and orientation about the objectives and relevance of the study, each items included in the study tools and the whole process of data collection was provided for data collectors and supervisors. Informed consent was obtained from maternal health care providers and the proper information was gathered without limitation and frustration. During data collection, regular supervision and follow up had been undertaken. Supervisors checked each questionnaire daily with further cross check by principal investigator for completeness and consistency of data.

4.8. Operational Definitions/Terms

Practice: Who will practice greater than or equal to the mean value of listed labor pain management methods.

Labor: The process of childbirth from the start of uterine contractions to delivery or the act of a mother giving birth.

Analgesia: The absence of the sense of pain while remaining conscious or relief of pain through administration of drugs or other methods.

Perceived: Who answered greater than or equal to the mean value of perception related labor pain relief method questions

Barriers: - Obstacles/impediment that prevents the access or action.

Providers: - Those who enable or allow something to done/to give what is needed or desired.

4.9. Ethical Considerations

Ethical clearance to conduct the study will be assured from JU IRB and permission letter was given to each respective Hospital management body. The research was conducted after approval by Anesthesia department, Jimma University. Official support letter was written to JMC and shenen Gibe Hospital Omo Nada primary Hospital, Agaro General Hospital, Seka Primary hospital, Limmu Genat primary Hospital, Sexxamma Primary Hospital and permission for data collection was given from the responsible authorities. Informed verbal consent was obtained from respondents after giving them information about the study. In addition, all the responses were kept confidential and anonymous

4.10. Quality Assurance

To assure the quality of data use tool/guide commented by expert. One days training for data collectors and expert comment was seek on instruments guide given to data collectors and supervisors on the objectives of the study, data collection tools and research ethics. Supervision was conducted by supervisors and researcher to monitor overall data collection process.

4.11. Plan for Dissemination and Ensuring Utilization of Findings

The findings of this will be submitted to governmental and non-governmental stakeholders and policy makers. Finally, it will be submitted for publication on a peer reviewed journal.

CHAPTER FIVE: RESULTS

Socio-demographic characteristics of respondents

Out of 205 questionnaires administered to healthcare providers, 181 of them were correctly filled and analyzed giving a respondent rate of 88%. Among respondent ninety-nine (54.7 %) were male. Their ages ranged from 25 – 51 years with a mean age (\pm standard deviation) of 33, (± 5). From the total obstetric care giver on the study, 122 (67.4 %) midwife, 35 (19.3) Anesthetist, 13 (7.2) Integrated emergency surgical officer, 3 (1.7) Anesthesiologist 8 (4.4) Obstetrics/Gynecologist, were involved. The majority 134 (74 %) of practitioners have been in their respective professional practice for 5 years or less, while only 12 (6.6 %) had practiced for 11-15 years. 84 (46.4) practiced in Jimma medical center (**Table 1**).

Table 2: Socio-demographic characteristics of participants (N = 181) Jimma, Ethiopia, 2019.

| Characteristics | | Frequency (%) |
|----------------------|---------------------------------------|---------------|
| Sex | Male | 99 (54.7) |
| | Female | 82 (45.3) |
| Age(years) | 25-30 | 57 (31.5) |
| | 31-40 | 110 (60.8) |
| | 41-50 | 13 (7.2) |
| | 51-60 | 1 (0.6) |
| Profession | Obstetrics/Gynecologist | 8 (4.4) |
| | Midwife | 122 (67.4) |
| | Anesthesiologist | 3 (1.7) |
| | Anesthetist | 35 (19.3) |
| | Integrated emergency surgical officer | 13 (7.2) |
| Academic Rank | Specialty | 11 (6.1) |
| | MSc | 18 (9.9) |
| | BSc | 109 (60.2) |
| | Diploma | 43 (23.8) |
| Duration of practice | ≤ 5 | 134 (74) |
| | 6 – 10 | 35 (19.3) |
| | 11 – 15 | 12 (6.6) |
| Hospital practiced | Jimma medical center | 84 (46.4) |
| | Shenan Gibe Hospital | 21(11.6) |
| | Saka Hospital | 15 (8.3) |
| | Omonada Hospital | 19 (10.5) |
| | Settama Hospital | 15 (8.3) |
| | Agaro Hospital | 12 (6.6) |
| | Limmu Hospital | 15 (8.3) |

Practice of labor analgesia

One hundred respondents (55.2 %) were practiced labor analgesia while 81 (44.8 %) were not practiced labor analgesia (Table 2).

Table 3: Practice of labor analgesia by obstetric care giver (N = 181), Jimma, Ethiopia, 2019

| Variable | Category | Frequency | Percent |
|------------------------|--------------|------------|--------------|
| Use of labor analgesia | Yes | 100 | 55.2 |
| | No | 81 | 44.8 |
| | Total | 181 | 100.0 |

Among professionals, 85% of midwives use non pharmacological methods of labor pain management, 7% of obstetrician/gynecology professions used pharmacological, 0 anesthesia profession. (Table 3)

Table 4: Types of labor analgesia used in different department among obstetric care giver (N =181), Jimma, Ethiopia, 2019.

| Professionals | Pharmacological methods | | Non pharmacological methods | |
|---------------------------|-------------------------|----------|-----------------------------|----------|
| | Yes | No | Yes | No |
| Midwives | 2 | 85(85%) | 85(85%) | 0 |
| Obstetrician/gynecologist | 7(7%) | 1 | 1 | 0 |
| Anesthesia | 0 | 38(100%) | 0 | 38(100%) |
| IESO | 4(4%) | 8 | 1(1%) | 6 |
| Totals | 13 | 132 | 87 | 43 |

Non pharmacological labor pain management techniques were the commonest form practiced by 85 (47 %) respondents in the second stage of labor and 83 (45.9 %) respondents were practiced by respondents in the first stage of labor while only 16 (8.8 %) of respondents practiced pharmacological methods labor pain management during first stage of labor and only 14 (7.7 %) respondents practiced in the second stage of labor (**Table 4**).

Table 4: Types of labor analgesia used during different stage of birth among obstetric care giver (N =181), Jimma, Ethiopia, 2019.

| Types of labor analgesia used | For 1 st stage Frequency (%) | For 2 nd stage Frequency (%) |
|-------------------------------|---|---|
| Non pharmacological method | 83 (45.9) | 85 (47.0) |
| Pharmacological method | 16 (8.8) | 14 (7.7) |

Frequency/pattern 18.89% used on maternal request, 3.87% used any form of labor analgesia routinely. (**Figure 2**)

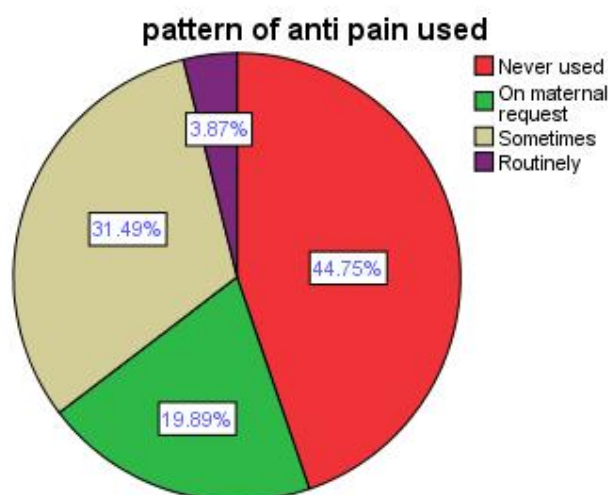


Figure 1: Pie chart showing pattern of labor pain management among Obstetric care giver (N =181), Jimma, Ethiopia, 2019.

Maternal positioning, walking around the room were the commonest non pharmacological methods of labor pain management 76 (42 %) among respondents followed by deep breathing 69 (38.1 %), Music/classical, Bible, Quran, and conversation with laboring mother (Table 4).

Table 5: Sub-types of non pharmacological method used among obstetric care giver (N =181), Jimma, Ethiopia, 2019.

| Sub-types of non-pharmacological used | Frequency | Percent |
|---------------------------------------|-----------|---------|
| Acupuncture | 1 | 0.6 |
| Heat or ice compression | 3 | 1.7 |
| Message and therapeutics | 16 | 8.8 |
| Music, bible, Quran, conversation | 66 | 36.5 |
| Deep breath/patterned breathing | 69 | 38.1 |
| Maternal positioning, walking, around | 76 | 42.0 |

Pethidine is the commonest used of pharmacological pain management used among obstetric care giver 32(17.7) paracetamol 11(6.1%). Other includes pudendal nerve block, and perineal infiltration of episiotomy area (Table 5).

Table 6: Sub-type of pharmacological analgesia used among obstetric care giver (N =181), Jimma, Ethiopia, 2019.

| Sub-types of pharmacological analgesia used | Frequency | Percent |
|---|-----------|---------|
| Pethidine | 32 | 17.7 |
| Paracetamol | 11 | 6.1 |
| Diclofenic | 2 | 1.1 |
| Other specify | 15 | 8.3 |

The major reasons adduced by respondents for not offering labor pain management of both methods; pharmacological as well as non pharmacological methods were non availability of the drugs 125 (69.1 %), lack of emphasis towards labor pain management by health service

management system 122(67.4 %), fear of adverse effect of maternal and fetal to administer systemic analgesia 68(37.6 %) (Table 6).

Table 7: Barriers of not using labor analgesia among obstetric care giver (n=181), Jimma, Ethiopia, 2019.

| Variables | Category | Frequency | Percent (%) |
|--|--------------|------------|--------------|
| Reasons | Yes | 2 | 1.1 |
| | No | 179 | 98.9 |
| | Total | 181 | 100.0 |
| Availability of drugs and equipment | Yes | 125 | 69.1 |
| | No | 56 | 30.9 |
| | Total | 181 | 100.0 |
| Fear of adverse maternal effect and fetal effect | Yes | 68 | 37.6 |
| | No | 113 | 62.4 |
| | Total | 181 | 100.0 |
| Late/delay of presentation in labor | Yes | 14 | 7.7 |
| | No | 167 | 92.3 |
| | Total | 181 | 100.0 |
| Fear of prolonged 2nd stage of labor | Yes | 20 | 11.0 |
| | No | 161 | 89.0 |
| | Total | 181 | 100.0 |
| Belief that labor is natural | Yes | 76 | 42.0 |
| | No | 105 | 58.0 |
| | Total | 181 | 100.0 |
| Providers think it's not necessary | Yes | 57 | 31.5 |
| | No | 124 | 68.5 |
| | Total | 181 | 100.0 |
| Decline by patient | Yes | 1 | 0.6 |
| | No | 180 | 99.4 |
| | Total | 181 | 100.0 |
| Shortage of skilled man power | Yes | 11 | 6.1 |
| | No | 170 | 93.9 |
| | Total | 181 | 100.0 |
| Lack of emphasis towards labor pain management by health service | Yes | 122 | 67.4 |
| | No | 59 | 32.6 |
| | Total | 181 | 100.0 |

One hundred twenty nine (71.3 %) participants think that labor pain management would offer women better birth experience. The study inquired about whether the curriculum included provision of labor analgesia as one of core competencies or not, and the obstetrics care giver respond 93 (51.4 %) were respond they learned the practice as a core competency while 88 (48.6 %) of them did not. (Table 7)

Table 8: General respondents' opinion about issue under study among Obstetric care giver (N =181) Jimma, Ethiopia 2019.

| Variable | Categories | Frequency | Percent |
|--|--------------|------------|--------------|
| Does labor analgesia offer better experience | Yes | 129 | 71.3 |
| | No | 52 | 28.7 |
| | Total | 181 | 100.0 |
| Curriculum incorporated | Yes | 93 | 51.4 |
| | No | 88 | 48.6 |
| | Total | 181 | 100.0 |

On the bivariate analysis Attitude and sex, of respondents labor pain management methods.

Responses to the practice of labor pain management did not differ by years of experience (COR= (0.5-1.9), 95 % CI for OR=0.59 and P-value=0.991).On the other hand, sex (COR= (0.27-0.9) ,95 % for OR=0.49 and P-value 0.022*) was statistically significant for non using of labor pain management by practitioners. Being female to manage labor pain, there could be 0.5 times more likelihood of usage of labor pain management than male among obstetric care giver.

Positive opinion/attitude (COR= (3.4-15), 95 % CI for OR=7.15 and P-value 0.000*was also statistically significant with the practice of labor pain management by practitioners among the barriers adduced. Positive opinion/attitude could be associated with 7.15 times less likely to not practice labor pain management.

Availability of drugs statistically significant **COR= (2.3-7.77)**, 95% CI for OR 5.01 and P-value 0.04, lack of emphasis towards labor pain management by health service management system statistically significant COR= (2.22-6) OR 8.05 P-value 0.067 (**Table: 8**)

Table 9: Associated factors, univariate and bivariate analysis of labor pain management in Jimma Zone Hospital, Ethiopia, 2019.

| Variables | Categories | Practice labor pain management? | | | OR(95% CI) | P- value |
|-----------------------|----------------|---------------------------------|-----------------|-------------------|----------------|----------|
| | | Yes No (%) | No No (%) | Total, No (%) | | |
| Sex | Male | 47(26.0) | 52(28.7) | 99(54.7) | 1 | 0.02* |
| | Female | 53(29.3) | 29(16.0) | 82(45.3) | 0.49(0.27-0.9) | |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Age in years | ≤30 | 36(19.9) | 21(11.6) | 57(31.5) | 1.05(0.3-3.5) | 0.937 |
| | 31-40 | 55(30.4) | 55(30.4) | 110(60.8) | 1.8(0.56-5.7) | 0.319 |
| | >41 | 9(5.0) | 5(2.8) | 14(7.7) | 1 | |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Qualification | Specialty | 8(4.4) | 3(1.7) | 11(6.1) | 1 | |
| | MSc | 14(7.7) | 4(2.2) | 18(9.9) | 0.76(0.13-4.3) | 0.758 |
| | BSc | 57(31.5) | 52(28.7) | 109(60.2) | 2.4(0.6-9.6) | 0.206 |
| | Diploma | 25(11.6) | 22(12.2) | 43(23.8) | 2.7(0.6-11.9) | 0.167 |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Duration of practice | ≤5 | 74(40.9) | 60(33.1) | 134(74.0) | 1 | |
| | >5 | 26(14.4) | 21(11.6) | 47(26.0) | 0.59(0.5-1.9) | 0.991 |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Type of institution | TRH | 50(27.6) | 36(19.9) | 86(47.5) | 1 | |
| | Other hospital | 50(27.6) | 45(24.9) | 95(52.5) | 1.25(0.6-2.2) | 0.457 |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Attitude | Yes | 88(48.6) | 41(22.7) | 12(2.9) | 1 | |
| | No | 12(6.6) | 40(22.1) | 52(28.7) | 7.15(3.4-15) | 0.000* |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Training | Yes | 57(31.5) | 36(19.9) | 93(51.4) | 1 | |
| | No | 43(23.8) | 45(24.9) | 88(48.6) | 1.65(0.9-2.99) | 0.094 |
| | Total | 100(55.2) | 81(44.8) | 181(100.0) | | |
| Availability of drugs | Yes | 125 | 69.1% | | 1 | |
| | No | 56 | 30.9% | | 5.01(2.3-7.77) | 0.04 |
| | Total | 181 | 100.0 | | | |
| Lack of emphasis | Yes | 122 | 67.4% | | 1 | |
| | No | 59 | 32.6% | | 8.05(2.22-6) | 0.067 |
| | Total | 181 | 100.0 | | | |

CHAPTER SIX: DISCUSSION

This study is first to assess obstetric care giver labor pain management and its perceived barriers in Jimma Zone public Hospitals. Greater than half obstetric care giver (n =100, 55.2 %) were involved in the practice of labor pain management, while (n = 81, 44.8 %) were not involved in any labor pain management methods. Among (n =100, 55.2 %) Maternal positioning, walking around the room were the commonest non pharmacological methods of labor pain management 76 (42 %) among respondents followed by deep breathing 69 (38.1 %), Music/classical, Bible, Quran, and conversation with laboring mother.

The respondents uses non pharmacological method of labor pain management were 83 (45.9 %) in the first stage of labor and 85 (47 %) in the second stage of labor, the respondents uses only 16 (8.8 %) pharmacological method in first stage of labor and only 14 (7.7 %) respondents administer pharmacological methods in second stage of labor. 19.89 % uses any form of labor pain management on maternal request, 31.49 % sometimes and 3.87 % routinely, Pethidine is the commonest used of pharmacological pain management used among obstetric care giver 32 (17.7) paracetamol 11 (6.1 %) these findings are not encouraging.

However it is comparable with the findings in Addis Ababa Ethiopia in 2016 shows that Non-pharmacological labor pain management techniques were the commonest form practiced by 84 respondents (47.5 %) (12).

This findings also comparable with the other study done in 2018 in Egypt shows methods used in normal labor, shows that 44.9% of the respondents used nonpharmacological methods in the first stage of labor, whereas 18.4% used pharmacological obstetric analgesia methods in the first stage. Majority (67.9 %) used pharmacological methods (e.g., oral or intravenous (IV) paracetamol or tramadol) or intramuscular opioids during the second stage of labor.

Most frequent nonpharmacological method (such as family support, directed breathing and relaxation techniques, and massage) they used was to give assurance or explain the labor process (19.2 %), followed by massage and therapeutic touch (10.3 %) and changing maternal position or moving the mother around (8.5 %); 70.1 % of the respondents used pharmacological methods for pain relief (13)

In this study among professionals, 85% of midwives use non pharmacological methods of labor pain management, 7% of obstetrician/gynecology professions used pharmacological

while anesthesia profession where not used any type of labor pain management. The reason why they did not offer pain relief to laboring mothers routinely or not at all, where non availability of drugs and equipment (e.g. epidural analgesia kit), lack of emphasis towards labor pain management by health service management system to practice standard labor analgesic techniques like labor epidural and lack of training.

In this study one hundred twenty nine (71.3 %) participants think that labor pain management would offer women better birth experience.

This is lower than with the research done in Zaria, Nigeria show most respondents (94.8 %) agreed that pain relief is needed during labor. Only 2.1 % of respondents were undecided about the provision of pain relief during labor and 3.2 % were of the opinion that pain relief was not necessary during labor (14).

The major barrier selected by respondents for not offering labor pain management of both methods; pharmacological as well as non pharmacological methods were non availability of the drugs 125 (69.1 %), lack of emphasis towards labor pain management by health service management system 122(67.4 %), fear of adverse effect of maternal and fetal to administer systemic analgesia 68(37.6%), respond belief that labor is natural 76 (42.1 %), providers thinks, it's not necessary 57 (31.5 %), decline by patient 1 (0.6 %), shortage of skilled man power 11 (6.1 %).

Other research done in Kenya showed In terms of health care system related barriers among 266 participants, 254 participants responded that the main barrier was lack of time, 246 participants responded that their barrier was regulatory issues (policy), 247 participants responded that their barrier was inadequate staff members and 246 participants responded that their barrier was lack of equipment (15).

In this study responses to the practice of labor pain management did not differ by years of experience (COR= (0.5-1.9), 95 % CI for OR=0.59 and P-value=0.991).On the other hand, sex (COR= (0.27-0.9), 95 % for OR=0.49 and P-value 0.022*) was statistically significant for non using of labor pain management by practitioners. Being female to manage labor pain, there could be 0.5 times more likelihood of usage of labor pain management than being male among obstetric care giver.

Positive opinion/attitude (COR= (3.4-15), 95 % CI for OR=7.15 and P-value 0.000*was also statistically significant with the practice of labor pain management by practitioners among the barriers adduced. Positive opinion/attitude could be associated with 7.15 times less likely to not practice labor pain management.

Availability of drugs statistically significant COR= (2.3-7.77), 95% CI for OR 5.01 and P-value 0.04, were statistically associated with the practice of labor analgesia by practitioners among the barriers. This indicates shortage of skilled man power could be associated with 5 times less likely to practice labor analgesia, while non-availability of drugs and equipment could be associated with 5 times less likely to practice labor analgesia. Lack of emphasis towards labor pain management by health service management system statistically significant COR= (2.22-6) OR 8.05 P-value 0.067. When there is lack of emphasis towards labor analgesia, there could be 8 times more likelihood of non-usage of labor analgesia among healthcare providers.

CHAPERT SEVEN

CONCLUSION AND RECOMMENDATIONS

7.1. Conclusion

Labor analgesia practiced by obstetric care giver was very low in the study area to all laboring mothers keeping with international recommendations This was related with the major barrier selected by respondents for not offering labor pain management of both methods; pharmacological as well as non pharmacological methods were non availability of the drugs, lack of emphasis towards labor pain management by health service management system , fear of adverse effect of maternal and fetal to administer systemic analgesia, respondent belief that labor is natural, providers thinks, it's not necessary, decline by patient, shortage of skilled man power.

7.2. Recommendation

Federal Ministry of Health, Oromia health Bureau and policy makers in Oromia should develop a protocol/Guideline on labor pain management.

Emphasis towards labor pain management by Health service management system, provide drugs and equipments.

To Anesthesia department and Obstetric department should develop their own protocol/ Guideline in line with international recommendation to practice labor pain management

There is needed for ongoing research and appraisal of the form and use of obstetric labor pain management.

STRENGTH OF THE STUDY

In this study census was employed to recruit study participant which eliminate sampling error.

REFERENCE

1. labor epidural analgesia: Topics by Science.gov [Internet]. [cited 2019 Nov 23]. Available from: <https://www.science.gov/topicpages/l/labor+epidural+analgesia>
2. Geltore TE, Taye A, Kelbore AG. Utilization of obstetric analgesia in labor pain management and associated factors among obstetric caregivers in public health facilities of Kembata Tembaro Zone, Southern Ethiopia. *J Pain Res.* 2018 Dec 6;11:3089–97.
3. Brown ST, Campbell D, Kurtz A. Characteristics of labor pain at two stages of cervical dilation. *Pain.* 1989 Sep;38(3):289–95.
4. Indris S, Eshete M. ASSESSMENT OF KNOWLEDGE, ATITUDE AND PRACTICE OF LABOR ANALGESIA AMONG OBSTATRIC HEALTH CARE PROVIDERS IN TIKUR ANBESSA SPECIALIZED HOSPITAL. :40.
5. Sahile E, Yemaneh Y, Alehegn A, Nigussie W, Salahuddin M, Yekoye A, et al. Practice of Labour Pain Management Methods and Associated Factors among Skilled Attendants Working at General Hospitals in Tigray Region, North Ethiopia: Hospital Based Cross-Sectional Study Design. *Health Sci J [Internet].* 2017 [cited 2019 Nov 23];11(4). Available from: <http://www.hs.j.gr/medicine/practice-of-labour-pain-management-methods-and-associated-factors-among-skilled-attendants-working-at-general-hospitals-in-tigray.php?aid=20128>
6. Wisner KL, Stika CS, Clark CT. Double Duty: Does Epidural Labor Analgesia Reduce Both Pain and Postpartum Depression? *Anesth Analg.* 2014 Aug;119(2):219–21.
7. Journals | Oxford Academic [Internet]. [cited 2019 Nov 23]. Available from: <https://academic.oup.com/journals>
8. Perkins J, Rahman AE, Mhajabin S, Siddique MdA, Mazumder T, Haider MR, et al. Humanised childbirth: the status of emotional support of women in rural Bangladesh. *Sex Reprod Health Matters.* 2019 Jan 1;27:1610277.
9. Aziato L, Acheampong AK, Umoar KL. Labour pain experiences and perceptions: a qualitative study among post-partum women in Ghana. *BMC Pregnancy Childbirth [Internet].* 2017 Feb 22 [cited 2019 Nov 23];17. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5322618/>
10. Mulugeta H, Weldeyohannes M. Addis Ababa University College of Health Sciences Department of Anesthesia. :42.
11. Hu L-Q, Flood P, Li Y, Tao W, Zhao P, Xia Y, et al. No Pain Labor & Delivery: A Global Health Initiative's Impact on Clinical Outcomes in China. *Anesth Analg.* 2016 Jun;122(6):1931–8.
12. Dolatian M, Hasanpour A, Montazeri S, Heshmat R, Alavi Majd H. The Effect of Reflexology on Pain Intensity and Duration of Labor on Primiparas. *Iran Red Crescent Med J.* 2011 Jul;13(7):475–9.
13. Almushait M, Ghani RA. Perception toward Non-Pharmacological Strategies in Relieving Labor Pain: An Analytical Descriptive Study. 2014;8.
14. Hingson RA, Edwards WB. CONTINUOUS CAUDAL ANALGESIA IN OBSTETRICS. *J Am Med Assoc.* 1943 Jan 23;121(4):225–9.

15. Barriers for labour analgesia in South India - Knowledge and attitude of relevant stakeholders: A hospital-based cross-sectional study [Internet]. [cited 2019 Nov 26]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5330076/>
16. Gambling D, Berkowitz J, Farrell TR, Pue A, Shay D. A Randomized Controlled Comparison of Epidural Analgesia and Combined Spinal-Epidural Analgesia in a Private Practice Setting: Pain Scores During First and Second Stages of Labor and at Delivery. *Anesth Analg*. 2013 Mar;116(3):636.
17. Analgesia during Labor and Vaginal Birth among Women with Severe Maternal Morbidity: Secondary Analysis from the WHO Multicountry Survey on Maternal and Newborn Health [Internet]. [cited 2019 Nov 24]. Available from: <https://www.hindawi.com/journals/bmri/2019/7596165/>
18. Anaesthesia UK : Analgesia for labour [Internet]. [cited 2019 Nov 24]. Available from: <https://www.frca.co.uk/article.aspx?articleid=100551>
19. (PDF) Perceptions and Practice of Labor Pain-Relief Methods among Health Professionals Conducting Delivery in Minia Maternity Units in Egypt [Internet]. [cited 2019 Nov 24]. Available from: https://www.researchgate.net/publication/327913405_Perceptions_and_Practice_of_Labor_Pain-Relief_Methods_among_Health_Professionals_Conducting_Delivery_in_Minia_Maternity_Units_in_Egypt
20. (PDF) Pain relief in labor: A survey of awareness, attitude, and practice of health care providers in Zaria, Nigeria [Internet]. [cited 2019 Nov 25]. Available from: https://www.researchgate.net/publication/51614775_Pain_relief_in_labor_A_survey_of_awareness_attitude_and_practice_of_health_care_providers_in_Zaria_Nigeria
21. McCauley M, Stewart C, Kebede B. A survey of healthcare providers' knowledge and attitudes regarding pain relief in labor for women in Ethiopia. *BMC Pregnancy Childbirth*. 2017 Feb 7;17(1):56.
22. Ramasamy P. Knowledge, Attitude, Practice and Barriers to Educational Implementation of Non-Pharmacological Pain Management during Labor in Selected Hospitals, Kenya. *Cent Afr J Public Health*. 2018;4(1):20.
23. Almushait MA, Ghani RMA. Perception toward Non-Pharmacological Strategies in Relieving Labor Pain: An Analytical Descriptive Study. In 2014.
24. Tasnim S. Perception about Pain Relief During Normal Labour Among Health Care Providers Conducting Delivery. *Med Today*. 2010 Jul 23;22.
25. Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. Cochrane Pregnancy and Childbirth Group, editor. *Cochrane Database Syst Rev* [Internet]. 2017 Jul 6 [cited 2019 Nov 24]; Available from: <http://doi.wiley.com/10.1002/14651858.CD003766.pub6>
26. Mousa O, Abdelhafez AA, Abdelraheim AR, Yousef AM, Ghaney AA, El Gelany S. Perceptions and Practice of Labor Pain-Relief Methods among Health Professionals Conducting Delivery in Minia Maternity Units in Egypt [Internet]. *Obstetrics and Gynecology International*. 2018 [cited 2019 Nov 25]. Available from: <https://www.hindawi.com/journals/ogi/2018/3060953/>
27. (PDF) Utilization of Obstetric Analgesia in Labor Pain Management and associated Factors among Obstetric Care Givers in Amhara Regional State Referral Hospitals, Northwest Ethiopia.

- [Internet]. [cited 2019 Nov 25]. Available from:
https://www.researchgate.net/publication/324910788_Utilization_of_Obstetric_Analgesia_in_Labor_Pain_Management_and_associated_Factors_among_Obstetric_Care_Givers_in_Amhara_Regional_State_Referral_Hospitals_Northwest_Ethiopia
28. Indris and Eshete - ASSESSMENT OF KNOWLEDGE, ATITUDE AND PRACTICE OF L.pdf [Internet]. [cited 2019 Nov 24]. Available from:
<http://etd.aau.edu.et/bitstream/handle/123456789/16138/Semira%20Indris%20Dr..pdf?sequence=1&isAllowed=y>
 29. Perceptions of obstetric analgesia: a qualitative study among midwives attending normal vaginal... - Europe PMC Article - Europe PMC [Internet]. [cited 2019 Nov 26]. Available from:
<https://europepmc.org/articles/pmc6643949>
 30. Jimma Zone. In: Wikipedia [Internet]. 2017 [cited 2019 Nov 25]. Available from:
https://en.wikipedia.org/w/index.php?title=Jimma_Zone&oldid=789789470
 31. Abebe M, Alemseged F. Hematologic abnormalities among children on Haart, in Jimma University Specialized Hospital, Southwestern ethiopia. *Ethiop J Health Sci.* 2009;19(9):83–9.

ANNEX

I: INFORMATION SHEET AND CONSENT FORM

Title of the research project: assessment of practice of labor analgesia and its perceived barriers among anesthesiologist, anesthesiology professionals, obstetrician and midwifery working in jimma university medical center and Shenan gibe hospital Omo Nada primary Hospital, Agaro General Hospital, Seka Primary hospital, Limmu Genet primary Hospital, Sexxamma Primary Hospital; Hospital based cross sectional study.

Name of principal investigators: Melka Biratu

Name of the Organization: Jimma University,

Name of the Sponsor: Jimma University

Purpose

You are invited to participate in this research study. The purpose of this study to assess practice of labor analgesia and its perceived barriers among Anesthesiologist, obstetrician and midwifery IOES working in JUMC and Shenan Gibe Hospital, Omo Nada primary Hospital, Agaro General Hospital, Seka Primary Hospital, Limmu Genet primary Hospital, Sexxamma Primary Hospital.

Procedure

You will be asked to answer a questionnaire that will take you approximately **45 minutes**. This will be taking place at your house. You don't have to worry about any things because everything is confidential.

Benefits and Compensation

You will not be compensated for participating in this study and there are no direct benefits for you as an individual participant, however the findings of this study will help in designing, reviewing and improvement of policies for management of labor analgesia.

Voluntary Participation and Withdrawal

Your participation is entirely voluntary and should you change your mind, you have the right to withdraw from participating in the study at any time without penalty

Confidentiality

We will do our best to keep your personal information confidential. You are not required to give your name so there will be no way to identify individual participants. So information cannot be specifically traced back to you.

Contact Person

Should you have questions about the content of this study, participant; please contact the principal investigators:

Questioner

Hello,

My name is Melka Biratu .I have been attending postgraduate program in clinical anesthesia at Jimma University Faculty of Medical Science, Department of anesthesia. I am going to conduct research on the practice of labor pain management and its perceived barrier among health worker who provide obstetric health giver working Jimma Zone public Hospital. The information which is going to be gathered will hopefully help policy makers, healthcare providers and other responsible bodies to improve quality of the service for better maternal and foetal outcome during labor and delivery. The information you give are kept completely confidential and the collected data will remain anonymous.

Part One: Socio-demographic characteristics of respondents (Mark \surd in the boxes provided in front of your answer)

1. Sex: male female

2. Age (years): ≤ 30 31-40 41-50 51-60 ≥ 61

3. Profession:

A. Obstetrician /Gynecologist

B. Midwife Msc BSc Diploma

C. Anesthesiologist

D. Anesthetist Msc BSc Diploma

E. Integrated obstetric and emergency officer (IOSE)

4. Duration of practice (years): ≤ 5 6-10 11-15 16-20 ≥ 21

5. Hospital of practice:

A JMC

D Seka Hospital

G. Sexxama Hospital

B Shenen Gibe Hospital

E Agarro Hospital

C Omo Nada Hospital

F Limmu Hospital

Part II pattern of use and type of labor analgesia offered among maternal healthcare providers who provided obstetric analgesia. (encircle your answer).

1. Frequency of use: A. Routinely B. Sometimes C. On maternal request D. Never used

2. Methods of labor analgesic used in the first stage

A. Non pharmacologic methods B Pharmacological methods C None

3. Methods of labor analgesics used in the second stage

A. Nonpharmacological methods B. Pharmacological methods C. None

4. Types of non pharmacological methods used for labor analgesia

A. Acupuncture method

B. Heat or ice compression

C. Massage and therapeutics touch

D. Relaxing environment, audio analgesia (music, Bible, Quran, conversation, etc)

E. Deep breathing/patterned breathing

F. Maternal positioning, waking, moving around the room

H. Continuous education that focused on methods for pain relief/Psychological support

I. No, I had not

5. Which types of pharmacological obstetric analgesia do you have offered for normal vaginal delivery?

A. pethidine B. Morphine C. Fentanyl D. remifentanyl

E. other (specify-----)

6. Non opioid

A. Paracetamol B. aspirin C Diclofenac

7. Nitrous oxide inhalation

8. Regional analgesia:

A. Spinal analgesia B. Epidural analgesia C. Combined spinal epidural

D. other nerve block technique used (specify-----)

Part III: Challenges and reasons for not administering obstetric analgesia among maternal healthcare providers who have not provided obstetric analgesia routinely or not at all.

A. No reason

B. Non availability of drugs and equipments(e.g. epidural analgesic kit)

C. Fear of adverse maternal effect

D. Late/delay of presentation in labor

E. Fear of prolonged 2nd stage of labor

F. Belief that labor is natural (supporter of natural child birth)

G. Providers think it's not necessary

H. Decline by patient

I. Shortage of skilled man power (e.g.to practice regional analgesia technique)

J. Lack of emphasis towards labor pain management by health service management system

K. Others(specify-----)

Part IV: Respondents opinion

1. Does labor analgesia offer a better birth experience? A. Yes B.No

2. has the curriculum incorporated provision of labor analgesia for normal vaginal delivery as one of the core competencies in your previous in- service and preservice education

A. Yes B. No

Name of data collector _____ signature _____ date _____

Name of supervisor _____ signature _____ date _____

Thank you.

DECLARATION

I the undersigned investigator with the advisors will declare that this thesis is my original work in partial fulfillment of the requirement for the degree of Master in clinical anesthesia. We confirmed that this thesis proposal is ready for data collection with our approval.

Name of the student: Melka Biratu

Date. _____ **Signature** _____

Approval of the Advisors:

| | Signature | Date |
|--|------------------|-------------|
| 1. Dr. Million Tesfaye (Bsc, MSc, PhD) | _____ | _____ |
| 2. Mr. Nega Desalegn (Bsc, MSc, Ass. professor) | _____ | _____ |