

AWARENESS OF LABOR ANALGESIA AND ITS ASSOCIATED FACTORS AMONG PREGNANT WOMEN WHO HAD ANTENATAL CARE FOLLOW UP AT TIKUR ANBESSA SPECIALIZED HOSPITAL, ADDIS ABABA ETHIOPIA

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Awareness of labor analgesia and its associated factors among pregnant women who had antenatal care follow-up at Tikur Anbessa Specialized Hospital Addis Ababa Ethiopia

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APPROVED BY THE BOARD OF EXAMINATION

The thesis here, entitled "Awareness of labor analgesia and its associated factors among pregnant women who had antenatal care follow-up at Tikur Anbessa Specialized Hospital Addis Ababa Ethiopia". is accepted in its present form by the board of examiners as partial fulfillment of the requirement for specialty certificate in Anesthesiology Critical Care And Pain Medicine.

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STATEMENT OF THE AUTHOR

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document.

Every serious effort has been made to avoid any plagiarism in the preparation of this thesis. This thesis is submitted in partial fulfillment of the requirement for specialty of anesthesiology degree to AAU. I would like to declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma or certificate.

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Abbreviations

AA.. …….Addis Ababa

ACCPM……Anesthesia Critical Care and Pain Medicine

ACOG…… .American College of Obstetricians and Gynecologists

ANC ……Antenatal care

CS……Caesarean Section

EHSTG……...Ethiopian Health Service Transformation Guideline

EPA……Epidural Labor Analgesia

ETB……Ethiopian Birr

FMOH...…….Federal Ministry of Health

HCP……Health care providers

IM ……..Intra Muscular

IV ……Intra Vascular

OPD ……Out Patient Department

PI ……Principal Investigator

SPSS……Statistical Package for Social Sciences

SVD……Spontaneous Vaginal Delivery

TASH…….……Tikur Anbessa Specialized Hospital

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Abstract

Background: Labor pain is one of the most severe forms of pain that women experience throughout their lifetime. Many pregnant women in our country don't ask analgesia for labor pain. This is due to women awareness about the presence of labor pain analgesics is low.

Objective: To asses awareness of labor analgesia and associated factors among pregnant women who had ANC follow up at TASH.

Methods: An Institutional based cross-sectional study design was conducted among 382 women attending ANC in TASH. Structured, pretested and interview administered questionnaire was used to collect related data. Data were coded and entered in to Epi-Info version 7 and exported to SPSS version 25 for analyses. Bivariate and multivariate binary logistic regression analyses were used to identify independent predictors of awareness of labour analgesia. Odds ratio with 95 % Confidence interval was estimated to identify the predictors of the outcome variables. Statistical significance was affirmed at a p-value ≤ 0.05.

Results: A total of 375 women attending ANC TASH were participated in this study making a response rate of 98.1%. A total of 116 (30.9%) 95% CI: (27.5-36.3) women had awareness about labour analgesics. Factors associated with awareness of labour analgesics were; Higher education level (high school education [AOR=3.1, 95%CI: 1.4-7.1], college or university [AOR=9.8, 95%CI: 3.6-26.6]), Urban resident [AOR=5.9, 95%CI: 2.1-17.3], and Information during ANC [AOR= 5. 2, 95%CI: 1.5- 17.1].

Conclusion and Recommendations: We found that the practice of giving information on labor analgesia were low on the ANC clinic and it's highly associated with women awareness. Therefore, health care providers should practice provision of adequate information about labour pain management to enable women's right of informed decisions.

Key words: Labor analgesia, awareness, labor pain, mothers, pregnant, TASH, Ethiopia

1. Introduction

1.1 Background

Childbirth is a complicated experience that leaves mothers in a paradoxical state where they are overwhelmed by a sensation of happiness, fear, and severe pain. Labor pain is a multi factorial event in which pregnant women experience physiological, psychological, and psycho social distress. The pain of childbirth is arguably the most severe pain most women will endure in their lifetime.[1] Labor pain is due to frequent uterine contraction and cervical dilatation, transmitted through the sympathetic chain of T10–S1 and perineal stretching somatic pain transmitted through S2–S4.[2]

The pain and stress of labor activate the sympathetic nervous system, resulting in an increase in plasma catecholamine concentrations, cardiac output and blood pressure. This increase in catecholamine is associated with a decrease in uterine blood flow. Severe pain, anxiety and increased catecholamine levels are associated with prolonged or dysfunctional labor. Epinephrine is a tocolytic and physicians have long observed that an apparent dysfunctional labor pattern can be corrected with effective analgesia. Unrelieved severe pain may result in serious mental health disturbances that interfere with maternal–neonatal bonding, future sexual relationships, and contribute to postpartum depression, and rarely, to post traumatic stress disorder.[3]

The American College of Obstetricians and Gynecologists and the American Society of Anesthesiologists agree that there are no other circumstances under which it is acceptable for a person to experience untreated severe pain. It is amenable to intervention while under a physician's care. And it also recommends that pain management be provided whenever medically indicated during labor. In the absence of a medical contraindication, maternal request is a sufficient medical indication for pain relief during labor.[2]

The modern era of childbirth analgesia began in 1847 when Dr. James Young Simpson administered ether to a woman in childbirth, and later in the same year, chloroform.[3] Currently,

there are different types of pain relief methods in labor pain management, both non-pharmacological and pharmacological. The ideal labor-analgesic drugs should be Safe for both mother and fetus, ease of administration, consistent and predictable with rapid onset of action, maintains maternal composure and co-operation during both the 1st and 2nd stages of labor, high technical success rates, analgesia through all stages of labor, devoid of motor blockade, retains maternal expulsive efforts, facilitates the delivery of anesthesia for cesarean section.[1]

It has been speculated that labor analgesia, especially epidural, prolongs the stages of labor and increases the rate of cesarean section, but studies shows that Epidural analgesia provides good pain relief in majority of the patients without any evidence of foeto-maternal compromise, no increment the risk of cesarean delivery, nor does it necessarily increase oxytocin use or instrumental delivery caused by dystocia. The duration of the active phase of labor appears unchanged, but the second stage of labor is likely prolonged.[4][5].

1.2 Statement of the problem

Women suffer from the agony of labor pain because of lack of awareness, unbound fears and limited knowledge about the availability of the analgesia service.[6]A study in India has shown that 50% of Caesarean delivery on maternal request in multigravida women was the result of their previous bad experience of pain.[7][8]

Women should be informed about the advantages and potential drawbacks of the various pain management techniques during pregnancy. A survey of antenatal and peripartum provision of information on analgesia and anaesthesia conducted across 28 Greater London hospitals on 903 postnatal women, found Overall, 67 of 749 (9.0%) women recalled receiving antenatal information covering all aspects of labour analgesia.[9]

Labor pain management practice is good in developed countries but poor in third world countries such as countries in Africa. One of the reasons for this is awareness and attitude towards pain during labor and its relieving agents during childbirth among women are relatively low in developing countries.[10]

Although obstetrical epidural rates are also similarly low in developing countries than those in western countries like Australia, France, Germany, UK, and USA perhaps because women from developing countries have not yet been made sufficiently aware of the significance of epidural analgesia, and they are more suspicious about its side-effects on the mother and infant's health.[10]

Lack of knowledge, low level of antenatal discussion and minimum practical exposure regarding available obstetric analgesic services remain a major concern towards acceptance and practice of epidural analgesia among obstetricians and anesthesiologists, inhibiting the maternal and fetal benefits.[9][10]

According to FMOH EHSTG2016, hospital should ensure women and child friendly services at all MNCH units including pain management. Nonetheless, despite its acknowledgment as a crucial component in the FMOH's attempts to improve the quality of maternal health services, its implementation is not widely recognized [11].

1.3 Significance of the study

Collaboration between the expectant woman, the obstetrician, and the anesthesiologist is necessary for effective labor pain management.

As far as the best of authors' knowledge, there are two studies conducted in Ethiopia among pregnant women regarding their awareness for labor analgesia and the findings had great variation so the result of this study may settle this significance difference of results.

No studies being conducted on the central part of the country with highest patient flow, the findings of this study may remind clinicians of the importance of educating mothers about labor analgesia.

In addition, an overview of awareness of labor analgesia among pregnant women could be a clue for hospital administrators and policy makers for planning and intervening in areas of deficit, thereby organizing and equipping the health institutions in ways to improve the quality of care. This study will also be used as a reference for other studies in the future.

2. Literature review

There are many studies done all over the world on awareness of labor analgesia on pregnant women and medical professionals and provision of information for parturient women.

A cross-sectional study to measure awareness about EPA among pregnant women visiting the obstetrics and gynecology clinic in King Abdulaziz Medical City in Jeddah on 105 women found that 25 (23.8%) respondents revealed a complete lack of knowledge regarding EPA, 63 (60%) showed minimal awareness, and 17 (16.2%) were aware of EPA from various sources. [12]

A cross sectional study conducted among 256 pregnant women in semi urban area India from Jan 2016 to March 2016 found that 89.8% had no idea about usage of pain relief in labor. Only 10.2% had some idea about pain relief in labor. [13] Also another study to measure mothers' awareness toward EPA on 328 women of childbearing age in primary health care centers in India showed the majority of women (205 [62.5%]) had a low level of knowledge about EPA.[14]

An observational cross-sectional study from September 2018 to September 2019 included 450 pregnant women visiting the antenatal clinic during 2nd and 3rd trimester in Bhutan found 61.4% of the participants knew that labour epidural services were available and 37.5% got information through media. [15]

A cross-sectional study on 1000 antenatal women between 1 June 2000 and 31 May 2001 carried out at the University College Hospital situated in the southwestern region of Nigeria, Awareness of pain relief methods was seen in only 27.1%. The most common method known was the use of systemic opioids (80%); only 10% were aware of epidural analgesia and about 14% knew of inhalational analgesia [16]. While in a similar cross-sectional survey conducted in Nigeria with 350 antenatal clinic patients between April 2016 and July 2016, 43.3% of respondents were informed about the use of epidural analgesia in labor, but only 7.5% had used it. [17] another cross-sectional study conducted on 2019 among 200 randomly selected pregnant women attending Ante-natal Clinic of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria revealed that majority (85%) of the respondents had good perception of epidural analgesia but majority (86%) displayed negative attitude toward epidural analgesia. [18]

A descriptive cross-sectional survey conducted from June 1st 2018 to December 30th 2018 in a tertiary hospital Cameroon revealed that 270/336 (80.35%) respondents were aware of EPA. In 39.63% of cases, the media was the primary source of information.[19]

Another cross-sectional descriptive study conducted in Mulago National Referral Hospital Uganda on 1293 women attending the antenatal clinic revealed only 7 % of the participants had knowledge of labour analgesia. Of the multiparous mothers 87.9 % did not have labour analgesia in their previous deliveries, although 79.2 % of them had delivered in a national referral hospital. [20]

On cross-sectional study conducted from August 1 to October 1, 2018 at Tikur Anbessa Specialized Hospital on knowledge, attitude and practice of labour analgesia among obstetric health care providers found that majority (91%) of anesthesia and more than half(67%) of obstetric residents have good attitude towards labor analgesia, while majority(74%) of the midwifes found to have poor attitude. Although 80% of anesthesia residents have good knowledge towards labor pain management, only 49% of midwifes & 47% of obstetrics residents found to have good knowledge about labor analgesia .majority of HCPs i.e. 82% of midwifes, 69% of obstetric residents, 83% of anesthesia residents was found to have good practice of labor analgesia.[21]

An institution-based, cross-sectional study was conducted from February to March 2019 at the University of Gondar Comprehensive Specialized Hospital Ethiopia on 410 pregnant women attending antenatal care and only Thirty-three (8%) of the pregnant women who visited the antenatal care facility were found to have an awareness of labor analgesia. [22] While another cross-sectional study on 310 pregnant women who were visiting Antenatal care conducted at Amhara regional state Ethiopia in undetermined Specialized Referral Hospital from March 01/2021 to May 01/2021 found that nearly thirty five percent, (34.5%) of participants had information about labour analgesia. Approximately 40.3% of participants had positive attitude to labour analgesia.[23]

Most of the literature's showed that the likelihood of having awareness of labor analgesia was associated with employment status, age, level of education, parity, previous exposure, and residency. In the study conducted in Gondar Ethiopia, the likelihood of having awareness of labor analgesia was 7.22 times (AOR: 7.227, 95%, CI 2.406–21.720) greater among parous versus nulliparous mothers. The odds of having awareness of labor analgesia were 3.133 times (AOR: 3.133, 95%; CI 1.144–8.581) greater among government employees than among housewives[22].While in a study conducted in Nigeria the Spear man's correlation coefficient for

the correlation between educational status Parity and age with awareness (rho =0.058, P > 0.05), 0.010 (P > 0.05) and (rho = 0.05, P = 0.05) respectively which showed no significant correlation between the level of awareness with educational status, parity and age of the respondents. [16]

3. Objectives

3.1 General objective

To assess awareness of labor analgesia and its associated factors among pregnant women who had ANC follow up at TASH, Addis Ababa Ethiopia.

3.2 Specific objective

To assess the awareness of labor analgesia among pregnant women who had ANC follow up at TASH

To identify factors associated with awareness of labor analgesia among pregnant women who had ANC follow up at TASH

4. Methods and materials

4.1 Study area

The study was conducted at Tikur Anbesa Specialized Hospital (TASH) ANC clinic. It is located in Central part of Addis Ababa city Administration, the capital of Ethiopia. TASH is a tertiary hospital which gives services for referral cases from other specialized referral hospitals throughout the country. The ANC clinic has 4 OPDs and on average 50 to 70 pregnant women get service daily. The department of anesthesiology, critical care and pain medicine has 15 consultant anesthesiologists and 71 residents (year 1-3).

According to reports from the department of gynecology and obstetrics on average there are 400 to 450 deliveries per month in the hospital, from this 05 to 15 patients get epidural labor analgesia monthly based on reports from the department of ACCPM.

4.2 Study design and period

An Institution based, cross-sectional study was conducted from 1 January to February 30, 2023.

4.3 Population

4.3.1 Source population

All women who had ANC follow up at Tikur Anbesa specialized hospital.

4.3.2 Study population

All women who had ANC follow up at Tikur Anbesa specialized hospital during the study period that fulfills eligibility criteria.

4.4Sample size and sampling technique

The actual sample size for the study is determined by using single population proportion formula for single proportion population

$$N = \frac{z^2_{1-\frac{\alpha}{2}} \times p \times (1-p)}{d^2}$$

Where:

N= Initial estimated sample size

Z = Confidence level (alpha, α), 1.96

P = prevalence from previous study (0.345) from study in Amhara region [23]

d= marginal error (0.05)

N= (1.96)2* 0.345*0.655/ (0.05)2 = 347

Adding 10% non-respondent final sample size = 382

Convenience sampling were used to select study participants by taking every consecutive pregnant woman until the required sample size reached.

4.5 Eligibility criteria

4.5.1 Inclusion criteria

All women attending ANC at TASH and whose age is 18 years and above

4.5.2 Exclusion criteria

Women who had difficulty of communicating: Example women with psychiatric illness.

4.6 Study variable

4.6.1 Dependent variables

- Awareness of labour analgesia

4.6.2 Independent variable

Socio-demographic characteristics: Age, marital status, occupation, income, educational level, ethnicity, language, income, residency,

Past and current obstetric history: parity, mode of previous delivery, place of previous delivery and Current gestational age and history previous labour analgesia

4.7 Operational definition

Had awareness of Labour analgesics: Women, who said yes when they were asked about labour analgesics and who can mention at least one method [22].

4.8 Data collection Tool and procedure

The data collection tool was developed by reviewing similar studies conducted in Ethiopia and abroad with appropriate modifications. The data was collected at Tikur Anbesa Specializes hospital with interviewer administered semi structured questionnaire from previous studies [22] [24] [16] which includes, socio-demographic characteristics, obstetrics characteristics and awareness of labor analgesia. The questioners were translated to Amharic and Afan Oromo and both tested before the start of data collection on mothers at delivery ward. The pretest was done on 15 mothers and there was no difficulty in understanding questions. Data collectors were nurses at ANC clinic. Training was given for the data collector before data collection.

4.9 Data Analysis plan

The collected data was entered in Epi info version 7 and exported to SPSS version 25 software for data cleaning and analysis. Frequencies and cross tabulations were used to check for missed values of variables and to describe the study population in relation to relevant variables. Descriptive analysis was used to describe the percentages and number of distributions of the respondents by socio-demographic characteristics and other relevant variables in the study. Both bi variate and multivariate logistic regressions were fitted. Independent variables with a p-value of less than 0.25 in the bi variate analysis were entered in to final multivariate logistic regression model to control for potential co-founders and to identify significant factors associated with the outcome variable. Finally adjusted odds ratio (AOR) along with 95% confidence interval was estimated to assess the strength of the association and a P value <0.05 was considered to declare the statistical significance in the multi-nominal analysis in this study.

4.10 Ethical consideration

Ethical clearance and support letter was obtained from Addis Ababa University College of Health Science Institution of Review Board and submitted to Tikur Anbessa Comprehensive Specialized Hospital Chief Clinical and Academic Director Offices. Verbal informed consent was obtained from the participants after explanation is given on the objective, procedure, potential risks and benefits of participating in the study and the right to withdraw from the study at any time throughout their interview. Study participants were assured that their information confidentiality was kept by removing personal identifications and instead using codes not sharing their information to anyone other than the study team.

5. Results

5.1 Socio-demographic Characteristics

A total of 375 women attending ANC TASH were participated in this study making a response rate of 98.1%. The mean age of the study participants was 26.8 with a standard deviation (SD) of ± 3 years. The majority of the study participants were currently married 341 (90.9%), with mother language of Amharic speakers 215 (57.3%) and 188 (50.1%) were Orthodox Christian by religion. Even though, nearly 93.5% attended formal education, nearly half of the study participants were not employed 219 (58.4%). Regarding the place of residence, 293 (78.1%) was an urban resident. The average monthly income was under 10,000 ETB for 338 (90.1%) of the study participants (Table 1).

Table 1: Socio-demographic Characteristics of women attending ANC at TASH (n=375) Addis Ababa Ethiopia January to February 2023

Variable	Response	Frequency	Percentage %
Age category	Younger than 30 Years	265	70.7
	30 Years and above	110	29.3
Marital Status	Currently Married	341	90.9
	Not in Marriage	34	9.1
Mother language	Amharic	215	57.3
	Afann Oromo	71	18.9
	Tigrega	26	6.9
	Guragega	39	10.4
	Other	24	6.4
Religion	Orthodox Christian	188	50.1
	Muslim	157	41.9
	Protestant	30	8.0
Education	I can't read and write	23	6.5
	Primary education	121	33.8
	Secondary education	143	39.9
	College / University	71	19.8
Occupation	Not employed	219	58.4
	Employed	156	41.6
Residence	Urban	293	78.1
	Rural	82	21.9
Monthly Income	Under 5,000 ETB	187	49.8
	5,000 to 10,000 ETB	151	40.3
	10,000 and above	37	9.9

5.2 Obstetric History

Concerning obstetric history, 219 (58.4%) of the study participants had previous one or two pregnancies. Regarding their past delivery, 206 (75.8%) of 272 mothers who had delivery before had previous delivery in hospital and nearly half, 151 (55.5%). of them delivered through spontaneous vaginal delivery (SVD). Among the total of pregnant women who participated in this study 222 (59.2%), were above 30 weeks on their current pregnancy during the interview (Table 2)

Table 2: Obstetric history of women attending ANC at TASH (n=375) Addis Ababa Ethiopia January to February 2023

Variable	Response	Frequency	Percentage %
Gravid	Primi Gravid	98	26.1
	One or Two	219	58.4
	Three to Four	58	15.5
Place of Delivery	Hospital	206	75.7
	Health centre or clinic	78	28.6
	Home	9	0.22
Previous Mode of Delivery	SVD	151	55.5
	C/S	97	35.7
	Both SVD and C/S	24	8.8
Current Gestational Age	Less than 20 Wks	47	12.5
	20 to 30 Wks	106	28.3
	More than 30 Wks	222	59.2

5.3 Awareness about Labour Analgesics

Regarding awareness about labour analgesics, only 116 (30.9%) 95% CI: (27.5%-36.3%) had awareness about labour analgesics, and their main source of information were from health professionals and previous experience, 43 (37.1%) and 49 (42.2%) respectively. Among those who have awareness about labour analgesics, 77 (66.3%) women knows massage, deep breathing and relaxation. About 49(18.01%) of 272 parous women have used labour analgesia before, deep breathing massage and relaxation was used the most 32 (65.3%) followed by an injection in the lower back (epidural, spinal) 17(34.6%) , and 34(69.9%) of them responded their labour analgesics

were effective . Only 41 (10.9%) of them are informed about labour analgesics by health professionals during their current ANC visit (Table 3).

Table 3: Awareness of labour analgesics among women attending ANC at TASH (n=375) Addis Ababa Ethiopia, January to February 2023

Variable	Response	Frequency	Percentage %
Awareness of Labour Analgesics	Yes	116	30.9
	No	259	69.1
Source of Information	Health Professionals during ANC	43	37.1
	Media or Books	23	19.8
	Friends relatives	36	31.1
	Previous experience	49	42.2
Method of Labour Pain relief known	Massage, deep breathing and relaxation.	77	66.3
	IV injection	12	10.3
	IM: injection in injection	31	26.7
	An injection in the lower back (epidural, spinal)	42	36.2
	I don't identified any	19	16.3
Previously used analgesia	Massage, deep breathing and relaxation.	32	65.3
	An injection in the lower back (epidural, spinal)	17	34.6
	IM: injection in shoulder, thigh, buttock	5	10.2
Effectiveness of Pain relief method	Yes	34	69.9
	No	15	30.1
Information about pain relif during Current ANC	Yes	41	10.9
	No	334	89.1

I.e. In the method of labour pain relief known and source of information more than one response were possible.

5.4 Factors associated with awareness of labour analgesia

Age category, Occupation, residence, previous mode of delivery, place of previous delivery monthly income, educational level, and Information about pain relief during current ANC were selected variables for the multivariate binary logistic regression analysis, with P-value less than 0.25 in bi-variate binary logistic regression. In multivariate analysis, three variables; educational level, residence and information about pain relief during current ANC were significantly associated with awareness of labour analgesia in the presence of other confounding factors. Women who completed high school education were 3.1 times more likely to have awareness about labour analgesia than those women who completed primary school and below.[AOR=3.1, 95%CI: 1.4-7.1]. Women who had college or university education were 9.8 times more likely to have awareness about labour analgesia than those women who completed primary school and below.[AOR=9.8, 95%CI: 3.6-26.6]. Urban resident women were 5.9 times more likely to have awareness about labour analgesia than rural resident women [AOR=5.9, 95%CI: 2.1-17.3]. Finally, those women who received information about pain relief during their current ANC were 5.2 times more likely to have awareness about labour analgesia than their counterparts [AOR= 5,2, 95%CI: 1.5- 17.1] (Table 4).

Table 4: Factors associated with awareness of labour analgesia among women attending ANC at TASH (n=375) Addis Ababa Ethiopia January to February 2023

Variables	ALA		COR		AOR	
	Yes N (%)	No N (%)	(75% CI)	P-value	(95% CI)	P-value
Age category						
Younger than 30 Years	94 (35.5)	171 (64.5)	2.2 (1.6-3.1)	0.004	1.9(0.9-4.2)	0.08
30 Years and above	22 (20.0)	88 (80.0)	1		1	
Occupation						
Not employed	59 (26.9)	160 (73.1)	1		1	
Employed	57 (36.5)	99 (63.5)	1.5 (1.2-2.1)	0.05	0.8 (0.4-1.7)	0.6
Residence						
Urban	99 (33.8)	194 (66.2)	1.9 (1.4-2.8)	0.025	**5.9 (2.1-17.3)***	**0.001**
Rural	17 (20.7)	65 (79.3)	1		1	
Previous Mode of Delivery						
SVD	47 (31.1)	104 (68.9)	1		1	
C/S	37 (38.1)	60 (61.9)	1.4 (0.9-1.9)	0.025	0.7(0.4-1.5)	0.4
Both SVD and C/S	14 (58.3)	10 (41.7)	3.1 (1.8-5.2)	0.012	0.4 (0.1-1.9)	0.2
Information about pain relief during Current ANC						
Yes	22 (53.7)	19 (46.3)	2.9 (2.1-4.4)	0.001	**5.2 (1.5-17.1)***	**0.007**
No	94 (28.1)	240 (71.9)	1		1	
Monthly household income						
Less than 5,000 ETB	49	138	1		1	
5,000 to 10,000 ETB	47	104	1.3(0.9-1.7)	0.3	0.6(0.3-1.6)	0.3
More than 10,000 ETB	20	17	3.3()2.2-5.1	0.01	2.1(0.7-6.4)	0.2
Education level						
Primary school and below	24	120	1		1	
Completed high school	43	100	2.2(1.5-2.9)	<0.01	**3.1(1.4-7.1)***	**0.006**
College or university certified	42	29	7.2(4.9-10.6)	<0.01	**9.8(3.6-26.6)***	**0.001**
Place of previous delivery						
Hospital	76	123	3.2(1.9-5.1)	0.05	1.6(0.6-4.5)	0.3
Home, health center or clinic	8	41	1		1	

6. Discussions

The awareness level labour analgesia in this study (30.9%) 95% CI: (27.5-36.3) was found to be similar to study conducted in Nigeria (27.1%) [16].This finding was also similar to a cross-sectional study conducted in Ethiopia (34%) [23]. However greater than study conducted in India (10.2%) [13] and Gondar Ethiopia 8% [22]. The difference in the awareness level can be due to the geographical and time difference among the studies. The awareness level labour analgesia in this study was much higher than Uganda (7%) [20] can be due to the time difference among the two studies as in recent times labour analgesics were more available and used in African countries [20]. Similarly, it was much higher than the study conducted in rural Gonder (8%) [22]. The main reason can be the urbanization difference among the two studies, which is also evidenced by this study as women from urban area have more awareness than those from rural area.

On the other hand, the awareness level labour analgesia in this study was found to be lower than study conducted in South Africa (56.3%) [25] and in Cameron (80.3%)[19]. The study area and population difference might contribute to the difference from the South African study. Education level of women significantly associated with awareness of labor analgesia in this study, in the study conducted in Cameron 71.42% having at least university level may be the reason for significant difference.

Regarding the source of information about labor analgesia, the present study showed that most participants got information about labor analgesia from health professionals and previous experience, 43 (37.1%) and 49 (42.2%) respectively which has similarity in study conducted in Gondar 27.3% [22] and northern Ethiopia 33.6% [23] responded health professionals as there source of information and also in South African study, in which women had gained information from previous experience (56.5%) [25] but different from study in Uganda, where the majority (47%) got their information from friends or family{20]. Sociocultural value in discussing and sharing things and high trust in their health care provider in our setup may be the reason for this result.

Regarding the pain relief methods, most of the participants 77 (66.3%) women knows massage, deep breathing and relaxation which differs from the study in northern Ethiopia where only 5.2% [23] and Gondar Ethiopia 6.1%[22] of women knew massage, deep breathing and relaxation . The next known method was injection in the lower back, either spinal or epidural, 42 (36.2%) almost similar to the study in Gondar Ethiopia 42.6% of women know injection in the lower back [22]. The difference about the non-pharmacologic method may be different sociocultural approaches in treating labor pain throughout the country.

Women who had better education were more likely to have awareness about labour analgesia than those women with lower education level. This might be educated women had better sources and better exposure to technology to search through things about the process of labor and its pain and had the desire to minimize the pain. This finding is against the study conducted in Gondar Ethiopia and Nigeria in which education level didn't affect the awareness of labor analgesia s [22][16].

Women residence was also found to be one of the factors affecting women awareness about labour pain management. This also evidenced by a qualitative study conducted in south Africa[25] and northern Ethiopia[23] which shows awareness among rural women is very limited as a result of limited source of information. Rural women in Cameroon also believe that labour pain is inevitable and a natural process and they don't believe that nothing will avoid it.[19]. Since, rural resident women have limited access for information; health care providers should take the opportunity during ANC to inform women about labour pain management.

A study conducted in a tertiary hospital in Cameroon Tchounzou, also reviled that health education during ANC was the main factor which determines women awareness about labour pain analgesia [19]. This is also supported by the study conducted in Nigeria [16]. Similarly a study conducted in United Kingdom to assess antenatal and peri-partum provision of information on analgesia and anaesthesia, indicated that information during ANC improve the quality of information offered and women's retention of that information [9].

7. Strength and limitation of the study

7.1 Strength of the study

In this study, we tried to assess women level of awareness of labour pain analgesics by considering both pharmaceutical and non-pharmaceutical labour pain management such as massaging deep breathing and relaxation. This makes this study different from other similar studies since most of the studies focused on assessing women awareness on epidural analgesics only.

Fairly Adequate sample size was used to give conclusion.

7.2 Limitation of the study

The study was conducted in a single hospital which makes the generalizability of this study finding specific to TASH.

The study is a cross-sectional study design, which doesn't indicate a cause and effect relationship between the identified factors and the outcome variable.

8. Conclusions and Recommendations

The finding of this study shows that the level of women awareness about labour analgesics was low as only one third of the women attending ANC were aware of labour analgesics. Women educational level, residence and health education about labour analgesics during ANC were found to be significantly associated with women awareness of labour analgesics. We also found that the practice of giving information on labor analgesia were low on the ANC clinic, therefore, health care providers should provide adequate information about labour pain management and the possible options they have during delivery will be important to enable women right of informed decisions. Furthermore, those women who had low level of education and who came from rural areas have lower awareness level; special attention should be given for such population groups during ANC to inform them about labour pain management.

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Annexes

I: Informed consent sheet

Addis Ababa University School of medicine Subject information sheet

Hi, my name is ----------, I am here on behalf of Dr. Henoke Mulu., a student in Addis Ababa University School of medicine, department of anesthesiology, critical care and pain medicine. He is conducting a research thesis on "Assessment of awareness of epidural labor analgesia and its associated factors among women who had delivery at TASH, Addis Ababa ETHIOPIA from December 2022 to January 2023". He has got formal permission from Addis Ababa University School of medicine and TASH officials to conduct the study.

You are selected to participate in this study. There will be no direct benefit by participating in this study, but in the future information gathered by this study will helps policy makers, programmers and researchers to give appropriate attention on issues of interest and design specific treatment options.

The information will be kept confidential by using only code numbers and locking the data. Only the members of the study team will have the access to the non-coded data and the data will not be used for purposes other than the study. Your willingness and active participation is very important for the success of this study.

If you need any further information or explanation regarding to the study, you can have this address to contact.

Name: Dr. Henoke Mulu Tel- +251-973038363 Email- henokemulu@gmail.com

Would you be willing to participate.[put "x'' mark]

Yes……

No……..

II: Questioners

Q1. Socio-demographic characteristics

1.1) Age

1) <20yrs 2) 20-30yrs 3) 31- 40yrs 4) > 40yrs

1.2) Marital status

1) Married 2) Single 3) Widowed 4) Divorced

1.3) what is the primary language you speak at home?

1) Amharic

2) Oromiffa

3) Tigregna

4) Siltegna

5) Guragegna

6) Wolaytegna

7) Sidamegna

8) Somaligna

9) Other please specify

…….

1.4) what is your religion?

1) Orthodox

2) Muslim

3) Protestant

4) Catholic

5) Other please specify……

1.5) how much schooling have you completed?

1) Can't read write

2) Can read write

3) Elementary

4) High School

5) College/ university

1.6) what is your occupation?

1) Housewife

2) Government employee

3) Merchant

4) Farmer

5) Private company employee

6) Other private job

7) Other please specify

……

1.7) How much is your monthly household income in ETB?

……..

1.8) where do you live?

1) Urban 2) Rural

Q2. Obstetric characteristics

2.1) your current weeks of pregnancy

1) < 20 2) 20 to 30 3) >30

2.2) how many deliveries do you have before?

1) None 2) 1 or 2 3) 3 or 4 4) 5 and above

If your answer was not none for Q2.2 answer Q 2.3 and Q 2.4

2.3) Where was your previous delivery/s? (Select more than one if applicable)

1) Home

2) Health center or clinic

3) Hospital

2.4) Mode of your previous delivery

1) SVD 2) Caesarian section 3) Both types

Q3. Awareness of labor analgesia

3.1) Do you have information about labor analgesia?

1) Yes 2) No

If yes for Q3.1 answer questions Q3.2, Q3.3, Q3.4

3.2) what was your main source of information about labour analgesia?

1) The media or reading

2) Antenatal talks in the hospital/maternal and child health clinics

3) Friends or relatives

4) Experience in previous deliveries

5) Health care provider

6) Other, please list

……..

3.3) What Methods of pain relief do you know?

1) Inhaled analgesia

2) Intravenous analgesia

3) Intramuscular injection in the thigh, shoulder and buttock

4) Injection in the lower back (epidural, spinal)

5) Massage, deep breathing and similar reassurance

6) Other, please list

……

3.4) have you ever used analgesia for labour before?

1) Yes 2) No

If yes for Q3.4 answer Q3.5 and Q 3.6

3.5) which type of analgesia have you used before?

1) IM pethidine, diclofenac or other IM drug

2) IV pethidine, tramadol or other IV drug

3) Massage, deep breathing

4) Epidural analgesia

5) Other (unspecified)

3.6) was there significant difference in pain after the analgesia?

1) Yes 2) No

3.7) have you received any information about labor analgesia on the current follow up?

1) Yes 2) No