

Obstetric analgesia utilization in labor pain management and associated factors among obstetric care providers in the West Shewa Zone, Central Ethiopia

SAGE Open Medicine

Volume 10: 1–9

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DOI: 10.1177/20503121221088705

journals.sagepub.com/home/smo



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Abstract

Objectives: Labor pain is the worst pain that almost every woman experiences during childbirth. Labor pain management plays a crucial role in promoting maternal-wellbeing, contributing enormously to maternal satisfaction with the childbirth experience and the high quality of services. Although there have been previous studies, they have primarily been conducted at referral or general hospitals located in urban settings. Thus, this study aimed to assess the utilization of labor pain analgesia and associated factors among obstetric care providers at all levels of health facilities in central Ethiopia.

Methods: A multicenter institution-based cross-sectional study design was employed from 1 July to 30 September 2020. Simple random sampling using the lottery method was employed to select 399 obstetric care providers. The data were entered into Epi-data version 4.2 and analyzed using SPSS version 26. Bivariate and multivariable logistic regression analysis were used to identify the associated factors. The adjusted odds ratio with its 95% confidence interval and p value ≤ 0.05 were used to identify associated factors.

Results: The overall utilization of obstetric analgesia was 46% (95% confidence interval: 41.2%–50.8%). Being a Midwife (adjusted odds ratio: 2.10, 95% confidence interval: 1.27–3.47), having heard of the World Health Organization pain ladder (adjusted odds ratio: 2.95, 95% confidence interval: 1.73–5.01), having favorable attitude (adjusted odds ratio: 1.89, 95% confidence interval: 1.17–3.05), the expectation of obstetric care providers about labor pain (adjusted odds ratio: 3.26, 95% confidence interval: 1.27–8.36), having training on labor pain management (adjusted odds ratio: 2.51, 95% confidence interval: 1.03–6.07), and presence of chance for preference of obstetric analgesia for mothers in the facility (adjusted odds ratio = 2.30, 95% confidence interval: 1.33–3.98) were identified as factors significantly associated with the practice of obstetric analgesia among obstetric care providers.

Conclusion: The overall use of labor pain management methods among obstetric care providers is low. Professional category, provider attitude, labor pain severity expectations, and having training were found to be factors associated with the use of obstetric analgesia. Therefore, working on adapting and disseminating the harmonized guideline and protocols on labor pain management and provision of training for obstetric care providers on labor pain management techniques were recommended.

Keywords

Utilization, obstetric analgesia, obstetric care providers, West Shewa Zone

Date received: 1 October 2021; accepted: 3 March 2022

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Introduction

Labor-related pain is the worst pain that almost all women experience during childbirth.¹⁻³ “The American College of Obstetricians and Gynecologists (ACOG) confirmed the severity of labor pain by stating that there are no other circumstances considered as severe as labor pain.”¹ Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage.” Labor pain has two types: visceral and somatic.^{4,5} Labor pain is caused by uterine contractions, cervical dilation, and later by perineal stretching. Cortical responses to pain and anxiety during labor are complex and may be influenced by maternal expectations for childbirth, her age, preparation through education, emotional support, and other factors.⁶ Today, the United Nations and regional human rights bodies have embraced the concept of pain management and integrated it into key human rights reports, reviews, and standards.⁷ However, the issue of pain management and human rights in many ways cries in the dark. As a global concern, women have the right to receive the highest attainable standard of health care, including physical and psychological care.^{8,9}

Nowadays, a broad range of both pharmacological and non-pharmacological labor pain relief techniques are available for women during labor and childbirth across the world.¹⁰⁻¹² The World Health Organization (WHO)¹³ recommended both pharmacological and non-pharmacological management of labor pain. The techniques, like progressive muscle relaxation, breathing, music, mindfulness, and massage or application of warm packs are recommended by WHO for healthy pregnant women requesting pain relief during labor, depending on a woman’s preferences.^{11,14} WHO recommended the use of parenteral opioids such as fentanyl, diamorphine, and pethidine for pain relief during labor.^{12,15,16} ACOG also recommended that maternal request be a sufficient medical indication for pain relief during labor unless there is a medical contraindication.¹ The Ethiopian Ministry of Health highlighted the provision of support through the use of pharmacological and non-pharmacological comfort measures during labor and childbirth.¹⁷

Even though the management of labor pain is one of the main goals of maternity care, laboring mothers are still suffering due to labor pain.¹⁸ Poorly controlled labor pain leads to negative or traumatic delivery experiences.¹⁸ Addressing the issues of continuous labor support, labor pain relief methods, and factors affecting labor pain management will be a mechanism for enhancing institutional delivery. Effective management of labor pain results in greater satisfaction and a safe and comfortable birth experience for the mother and the baby. Women who are provided analgesia during labor report greater satisfaction with their overall birth experience, and it is essential for good quality maternity care provision.¹⁹ However, many obstetric care providers (OCPs) in low- and middle-income countries did not use labor pain management techniques during childbirth.^{12,15,19-21}

In Ethiopia, the provision of effective labor pain relief techniques is also not part of the routine intrapartum care.^{17,22}

In Ethiopia, studies indicated that the utilization of labor pain management was 40.1% at referral hospitals in the Amhara region, 43.3% at general hospitals in the Tigray region, and 37.9% in the Kembata Tembaro Zone in southern Ethiopia. The majority of OCPs were using a non-pharmacologic method, and the use of the pharmacological method was almost null. Moreover, OCPs’ knowledge, attitude, and the availability of labor analgesic drugs were the factors identified for the use of labor pain management.²³⁻²⁵

Despite the importance of labor pain relief techniques in promoting maternal health and contributing to quality of service, there is a dearth of evidence about its utilization among OCPs at all levels of health facilities. Moreover, previous studies were mainly conducted at referral or general hospitals, involved a single hospital, and were located in urban setting, which could not reflect practice at all levels of health facilities. Thus, this study might help to appraise the practices of OCPs on the methods and use of obstetric analgesia according to the WHO recommendation.¹¹ Therefore, this study was conducted to assess the utilization of obstetric analgesia and associated factors among OCPs working at public health facilities in the West Shewa Zone, Central Ethiopia.

Methods

Study design, area, and period

A multicentre institution-based cross-sectional study was employed among OCPs working at public health facilities in the West Shewa Zone, Oromia region, Ethiopia, from 1 July to 30 September 2020. Ambo town, which is the capital of the West Shewa Zone, is located 114 kilometers to the west of Addis Ababa, Ethiopia’s capital. As per the data obtained from the West Shewa zonal Health office, the population of the West Shewa Zone in 2019 was projected to be 2,661,188 of whom 50.5% were females. There are 23 districts and 581 Kebele (small administrative units) in the zone.²⁶

The Zone has eight public hospitals, 92 health centers, and 529 health posts. There are a total of 725 OCPs in the West Shewa Zone, among whom; 15 are Gynecologist & Obstetricians, 19 Integrated Emergency Surgical Officers (IESO), 416 Midwives, and 226 Health Officers. Moreover, 155 (21.4%) of the providers are working in public hospitals, while the remaining 570 (78.6%) are working in Health Centers.

Source and study population. All OCPs (Obstetricians, IESO, Midwives, General practitioners and Health officers) who were working in the public health facilities of the West Shewa Zone were the source population. Whereas, all OCPs who were working in the selected health facilities of the West Shewa Zone and randomly selected were our study population.

Inclusion and exclusion criteria. All OCPs who were on duty and working in the labor and delivery units of the selected public health facilities in the West Shewa Zone were included. All OCPs who worked for less than 6 months since their employment at the time of data collection were excluded.

Sample size determination and sampling technique

The sample size was determined by using a single population proportion formula with the assumptions of the confidence level of 95%, a margin of error of 5%, and a 37.9% proportion of use of labor pain relief methods by OCPs from the study done in Kembata Tembaro Zone, Southern Ethiopia.²⁵ Taking into account the non-response rate of 10%, the final calculated sample size was 399.

The West Shewa Zone has eight public hospitals and 92 health centers. A stratified random sampling technique was used to select health facilities after stratifying them into Hospitals and Health Centers. Then, 75% of the available health facilities (6 hospitals and 69 health centers) were selected by a simple random sampling technique using a computer-generated random number from each stratum. The OCPs were allocated proportional to their numbers for the hospitals and health centers. Finally, after having the lists of all OCPs who were working at those selected health facilities, study units were selected by using a computer-generated simple random sampling method.

Data collection tools and techniques

A structured self-administered questionnaire was used to collect data from the study subjects. The questionnaire was adapted by reviewing related literature with modification and contextualized into the local setting.^{23,24} The questionnaire consists of seven parts. The first part of the questionnaire was used to assess the socio-demographic characteristics. The other sections focus on the attitude, knowledge, utilization, preference of labor pain relief methods, and institutional-related factors affecting the use of labor pain relief techniques. Knowledge of labor pain relief methods was assessed using 17 knowledge questions. Attitude toward the use of labor pain relief techniques was measured using 10 attitude-related questions. A 5-point Likert-type scale (with the possible responses being *strongly agreed*, *agree*, *neutral*, *disagree*, *strongly disagree*) was used to quantify the participants' attitude toward the utilization of obstetric analgesia. The items had good internal consistency with a Cronbach's alpha of 0.87 for knowledge items, 0.79 for attitude items, and 0.76 for practice items. The questionnaire was prepared in English. Moreover, 12 bachelor's degree nurses were recruited for data collection, and three bachelor's degree senior midwives who were not

working in those selected health facilities supervised the data collection process.

Operational definitions

Obstetric analgesia utilization. If OCPs reportedly practiced any form of obstetric analgesia either pharmacological or non-pharmacological method for labor pain management routinely, sometimes or depending on maternal request within the past 1 month. Those who were reportedly not practicing were considered as not utilizing labor pain analgesia.^{23,27,28}

Adequate knowledge of obstetric analgesia. OCPs who correctly answered greater than or equal to the mean value for knowledge of obstetric analgesia-related questions.^{23,27,28}

Inadequate knowledge of obstetric analgesia. OCPs who correctly answered less than the mean value for knowledge of obstetric analgesia-related questions.

Favorable attitude toward obstetric analgesia. OCPs who responded greater than or equal to the mean value for attitude toward obstetric analgesia-related questions.

Unfavorable attitude toward obstetric analgesia. OCPs who answered less than the mean value for attitude toward obstetric analgesia-related questions.^{23,27,28}

Data quality control and management

Training was given for 2 days for the team of supervisors and data collectors on the aims of the study, study tool, individual rights, and how to take consent. A pretest was done at Tulu Bolo Hospital and Waliso Health center, in the South West Shewa Zone on 5% of OCPs 2 weeks before the data collection period. Necessary corrections were made to the arrangements of some questions, and ambiguities in the use of some words were also corrected. Regular daily supervision was conducted during the data collection period. All the collected data were checked for completeness, missing values, and unlikely responses, and then cleaned manually. All the COVID-19 prevention protocols were maintained during data collection.

Statistical analysis

The completed questionnaire was coded and entered into the Epi Data Version 4.2 software for its customizing and skipping benefits, then exported to SPSS version 26 for analysis. The data were presented through texts, tables, and figures. Initially, bivariate logistic regression was performed to see the association of each of the outcome variables with the independent variables. The variables with $p < 0.25$ in the bivariate logistic regression were selected for multivariable

logistic regression. Moreover, multivariable logistic regression analysis was used to identify factors independently associated with the utilization of obstetric analgesia after controlling for the effects of confounders. The adjusted odds ratio (AOR), with its 95% confidence interval (CI), and a p-value of ≤ 0.05 were used to identify associated factors. The model fitness was checked using the Hosmer–Lemeshow goodness of fit test and was found to be 0.171.

Results

Socio-demographic characteristics of respondents

A total of 398 OCPs participated in the study, giving a response rate of 99.7%. The respondents' mean age was 28.52, with a standard deviation of 4.34 years. The majority 280 (70.4%) of respondents were in the age group of 20–29 years. About 217 (54.5%) of the respondents were males. More than half, 230 (57.8%), were midwives in a profession. The majority, 304 (76.4%), of the study participants were first degree holders and 265 (66.6%) had work experience of less than 5 years (Table 1).

Knowledge of the respondents about obstetric analgesia

The majority of respondents, 335 (84.2%), reported that they knew both non-pharmacological and pharmacological labor pain management methods. Among the respondents who knew pharmacologic methods, 282 (70.9%) knew non-steroidal anti-inflammatory drugs, 196 (48.7%) knew systemic opioids, and 99 (24.9%) knew epidural analgesia. From those who knew about pharmacologic methods of labor pain management, 253 (63.6%), 126 (31.7%), 104 (26.1%), and 58 (14.6%) stated that it delays the progress of labor, fetal distress, increase in instrumental delivery, and increasing caesarian section as a side effect of those analgesic drugs, respectively.

Among those respondents who knew non-pharmacologic methods of labor pain management, allowing the mother to ambulate (283, 71.1%), massaging the back (254, 63.8%), and psychotherapy (250, 62.8%) were the most commonly reported methods (Table 2). Based on the composite knowledge score, 231 (58%) (95% CI: 53.3–62.8) respondents had adequate knowledge about labor analgesia.

Attitude of OCPs toward utilization of obstetric analgesia

Regarding the attitude of the respondents, two-thirds of OCPs, 270 (67.8%), consider using labor analgesia has an impact on the progress of labor. More than half, 217 (54.5%), of the OCPs agrees that women should endure the natural labor pain. However, 237 (59.5%) of the study participants

Table 1. Socio-demographic characteristic of obstetric care providers working at labor ward in public health facilities of West Shewa Zone, Oromia region, Ethiopia, 2020 (n = 398).

Characteristics	Frequency (n)	Percent (%)
Age (in years)		
20–29	280	70.4
30–39	107	26.9
≥ 40	11	2.8
Gender		
Male	217	54.5
Female	181	45.5
Profession		
Obstetrician & Gynecologist	3	0.8
Integrated Emergency Surgery Officer	21	5.3
General practitioner	7	1.8
Midwife	230	57.8
Health officer	137	34.4
Level of education		
Specialist	3	0.8
Master's	22	5.5
Degree	304	76.4
Diploma	69	17.3
Clinical experience in years		
≤ 5	265	66.6
6–9	98	24.6
≥ 10	35	8.8

agreed that labor analgesia improves the birth experience. Overall, about 230 (57.8%) of OCPs had a favorable attitude toward obstetric labor analgesia.

Most of the OCPs, 288 (72.4%), perceived the intensity of labor pain as severe, while 33 (8.3%) of them perceived labor pain as mild. To manage labor pain, nearly half of the OCPs, 177 (44.5%), prefer pharmacological methods, while 117 (29.4%) prefer non-pharmacological methods. About one-fourth, 104 (26.1%), of respondents prefer both methods of pain management techniques (Table 3).

Utilization of obstetric analgesia

According to the study, only 46% (95% CI: 41.2%–50.8%) of OCPs have used any type of labor analgesia for clients in labor. From pharmacologic methods, pethidine 68 (17.1%), paracetamol 73 (18.3%), and diclofenac 67 (16.8%) were obstetric analgesia methods commonly used by OCPs. However, allowing a laboring mother to ambulate 217 (54.5%) was the most commonly practiced non-pharmacological method (Figure 1). Regarding the pattern/frequency of labor analgesia usage, only 23 (5.8%) health care providers used it routinely, 22 (5.5%) of the respondents used it sometimes, and 138 (34.7%) of them used it on maternal request.

Table 2. Knowledge of obstetric care providers on non-pharmacologic labor pain management methods working at labor ward in public health facilities of West Shewa Zone, Oromia region, Ethiopia, 2020 (n = 398).

Types		Frequency (n)	Percent (%)
Knew about labor pain management methods	Yes	391	98.2
	No	7	1.8
Knew pain management methods	Both methods	335	84.2
	Only pharmacologic	19	4.8
	Only non-pharmacologic	37	9.3
Allow the mother to ambulate	Yes	283	71.1
	No	92	23.1
Allow free vertical positioning	Yes	81	20.9
	No	294	73.9
Show the patient how to bear down	Yes	147	36.9
	No	228	60.8
Allow companion of her choice	Yes	138	34.7
	No	237	59.5
Music therapy	Yes	61	15.3
	No	314	78.9
Psychotherapy	Yes	250	62.8
	No	125	31.4
Massage the back	Yes	254	63.8
	No	121	30.4
Application of warm packs	Yes	36	9
	No	339	85.2

Table 3. Attitude toward obstetric labor analgesia among obstetric care providers in public health facilities of West Shewa Zone, Oromia region, Ethiopia, 2020 (n = 398).

Attitude assessment items	Unfavorable	Favorable
	n (%)	n (%)
Labor pain management methods can alleviate or help the mother to cope labor pain	48 (12.1)	350 (87.9)
Use of analgesia can influence the progress of labor	128 (32.2)	270 (67.8)
Use of labor analgesia can cause fetal distress	229 (57.5)	169 (42.5)
Women should endure the natural labor pain	181 (45.5)	217 (54.5)
Women need pain relief during labor and childbirth	84 (21.1)	304 (78.9)
Use of labor analgesia causes late presentation	313 (78.6)	85 (21.4)
labor analgesia offers a better birth experience	161 (40.5)	237 (59.5)
labor pain relief services should include awareness creation and education for client and care provider	48 (12.1)	350 (87.9)
Every mother during labor should be managed for labor pain.	153 (38.5)	245 (61.5)
As an obstetric caregiver, you have a responsibility and obligation to manage labor pain.	56 (14.1)	342 (85.9)
Overall attitude	168 (42.2)	230 (57.8)

Reasons for non-utilization of labor pain management methods

The most commonly reported reasons for the non-utilization of labor pain management methods were lack of guidelines and protocol (251, 63.1%), followed by unavailability of drugs 170 (42.7%) and lack of knowledge and skill (Figure 2). Three hundred forty-one (85.7%) of study participants reported that they did not get training on labor pain management. Three-fifths (241, 60.6%) of them reported that the companion of their choice for laboring women was

not allowed in their health facility. Nearly all (373, 93.7%) respondents reported that their health facility allows women to move around while they are in labor.

Factors associated with utilization of obstetric analgesia

In bivariate logistic regression, facility type, profession, knowledge, having heard about WHO pain ladder, side effects, attitude, the method preferred by participants, the expectation of participants, having training, and the chance

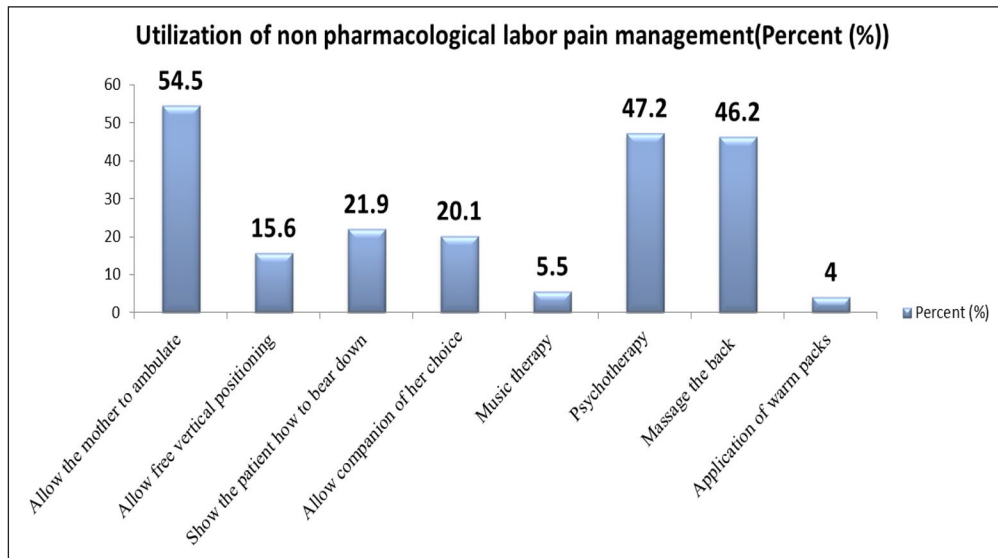


Figure 1. Non-pharmacologic methods used by obstetric care providers working at labor ward in public health facilities of West Shewa Zone, Oromia region, Ethiopia, 2020 (n = 398).

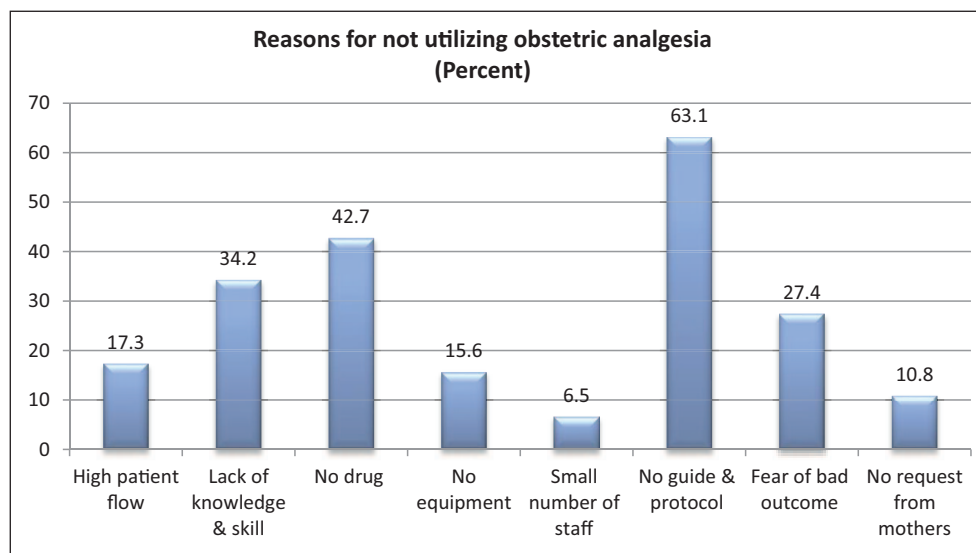


Figure 2. Bar graph showing the reasons for non-utilization of obstetric analgesia by respondents' public health facilities in West Shewa Zone, Oromia Region, Ethiopia, 2020 (n = 398).

of preference for mothers were associated with the utilization of obstetric analgesia among OCPs at a p value less than 0.25. In multivariable logistic regression, profession category, had information about the WHO pain ladder, attitude, the expectation of participants, lack of guide and protocol, no request from mothers, having training on labor pain management, and the chance of preference for mothers were found to be associated with the utilization of obstetric analgesia among OCPs in public health facilities in the West Shewa Zone at a p value less than 0.05.

Midwives were two times more likely to utilize obstetric analgesia (AOR: 2.103, 95% CI: 1.27–3.479) than health officers. OCPs who had information about the WHO pain ladder were 2.95 times more likely to use obstetric analgesia (AOR: 2.951, 95% CI: 1.73–5.012) than those who did not have information. In this study, OCPs who had a favorable attitude toward obstetric analgesia were 1.89 times more likely to utilize obstetric analgesia (AOR: 1.897, 95% CI: 1.176–3.059) than those with an unfavorable attitude. Those who perceived labor pain as severe pain were 3.26 times

Table 4. Factors associated with utilization of obstetric analgesia in multivariable regression among obstetric care providers in public health facilities of West Shewa Zone, Oromia, Ethiopia, 2020 (n = 398).

Variables	Category	Utilization of obstetric analgesia		COR (95% CI)	AOR (95% CI)	p value
		Yes (%)	No (%)			
Profession of participants	Ob/Gyn, IESO, GP	21 (11.5)	10 (4.7)	4.154 (1.8–9.55)	2.46 (0.89–6.79)	0.081
	Midwifery	116 (63.4)	53.0 (71.5)	2.01 (1.29–3.12)	2.10 (1.27–3.47)	0.004*
	Health officers	46 (25.1)	91 (42.3)	1	1	
Had information about WHO pain ladder	Yes	108 (59)	76 (35.3)	2.63 (1.75–3.95)	2.95 (1.73–5.01)	<0.001*
	No	75 (41)	139 (64.7)	1		
Attitude of participants	Favorable attitude	122 (66.7)	108 (50.2)	1.98 (1.31–2.97)	1.89 (1.17–3.05)	0.009*
	Unfavorable attitude	61 (33.3)	107 (49.8)	1		
Expectation of participants to labor pain	Severe	151 (82.5)	137 (63.7)	2.20 (1.03–4.73)	3.26 (1.27–8.36)	0.013*
	Moderate	21 (11.5)	56 (26)	0.75 (0.31–1.8)	0.69 (0.23–2.01)	0.499*
	Mild	11 (6)	22 (10.2)	1		
Had training on labor pain management	Yes	37 (20.2)	10 (4.7)	5.19 (2.5–10.7)	2.51 (1.03–6.07)	0.041*
	No	146 (79.8)	205 (95.3)	1		
Presence of chance for mothers to prefer labor pain management methods in the facility	Yes	75 (41.0)	51 (23.7)	2.23 (1.45–3.43)	2.30 (1.33–3.98)	0.003*
	No	108 (59.0)	164 (76.3)	1		

COR: crude odds ratio; CI: confidence interval; AOR: adjusted odds ratio; Ob/Gyn: obstetrician and gynecologist; IESO: Integrated Emergency Surgery Officers; GP: general practitioners; WHO: World Health Organization.

*p value < 0.05.

more likely to practice obstetric analgesia (AOR: 3.269, 95% CI: 1.278–8.363) as compared with those who perceived it as mild pain.

OCPs who had training on labor pain management were 2.5 times more likely to utilize obstetric analgesia (AOR: 2.512, 95% CI: 1.038–6.078) as compared to those who had no training. The study also revealed that the presence of a chance for the mothers to prefer labor pain management methods increases the odds of utilizing obstetric analgesia by more than twofolds (AOR: 2.302, 95% CI: 1.332–3.980) (Table 4).

Discussion

Obstetric analgesia is important in promoting maternal health and contributing to quality service. In addition, WHO recommended both pharmacological and non-pharmacological management of labor pain for high-income and low- to middle-income countries.^{1,11,14,16} The utilization of obstetric analgesia for labor pain management in the study area was 46% (95% CI: 41.2%–50.8%). This finding is similar to the study done in Egypt (44.9%)²⁰; referral hospitals in the Amhara region, Ethiopia (40.1%)²³; and general hospitals in the Tigray region, Ethiopia (43.3%).²⁴ But the current finding is higher when compared to a study done in Kenya (15%)²⁹; East Gojjam Zone, Ethiopia (34.4%)²⁷; and Kembata Tembaro Zone, Ethiopia (37.9%).²⁵ This might be due to the time difference related to previous studies and the increased awareness of OCPs toward labor pain management over time. Moreover, as indicated in their finding, the study conducted in the East Gojjam zone was limited to health centers primarily located in

rural areas with lower to middle-level OCPs who had a relatively lower level of knowledge on obstetric analgesia and low availability of analgesic drugs.

The utilization of obstetric analgesia in the current study was lower than the studies conducted in Berlin, Germany (75%)³⁰; India (71.34%)³¹; and Addis Ababa, Ethiopia (54.2%).³² The difference could be attributable to the fact that the current study was done primarily among OCPs working in health institutions located in rural settings, where there is less access to information and inconsistent drug availability than in those study areas. Furthermore, there are clear policies in Germany and India regarding the use or practice of obstetric analgesia, and the availability of varieties of obstetric analgesia in those study areas differs from the current study area.

In this study, midwives were twice more likely to utilize obstetric analgesia than health officers. This finding is also supported by the study conducted in Ghana²¹ and East Gojjam zone, Ethiopia, in which Midwives were more knowledgeable than health officers and nurses.²⁷ This could be because midwives have more knowledge on obstetric analgesia and a better understanding of the severity of labor pain as a result of their preservice education and spending more time with mothers in labor than Health Officers.

This study revealed that the odds of using obstetric analgesia for labor pain relief were twice as high among those who had a favorable attitude than those who had an unfavorable attitude. This finding is in line with a study done in the Kembata Tembaro Zone, Tigray region, and Hawassa city, Ethiopia.^{24,25,28} This might be explained by those OCPs

who have favorable attitude were likely to have the knowledge and sense the severity of labor pain.²⁷

OCPs who had heard of the WHO pain ladder were nearly three times more likely to use obstetric analgesia than those who had not. This could be because those who had information or training on the WHO pain ladder were more likely to be aware of the severity of labor pain and more likely to use labor pain relief techniques.

This study indicated that OCPs who perceived labor pain as severe pain were three times more likely to practice obstetric analgesia when compared with those who perceived it as mild pain. This finding is similar to the study conducted in Ethiopia.²² This might be due to the difference in their knowledge of the severity of labor pain and the experience and skills of the OCPs. Some OCPs also consider labor pain as a natural process that a woman should endure.^{20,33}

OCPs who had training on labor pain management were 2.5 times more likely to utilize obstetric analgesia when compared to those who had no training. This might be due to the fact that training may fill the gaps in knowledge and skills that may assist them to use obstetric analgesia. This finding is in line with the studies done in Ethiopia.^{23,25,34}

The study also demonstrated that the presence of a chance for mothers to prefer labor pain management methods more than doubles the likelihood of using obstetric analgesia among OCPs. This might be due to the reality that if there is the chance to prefer pain relief methods, women might request the use of either pharmacological or non-pharmacological methods. This finding is supported by a study conducted in the United States.³⁵

The current study has the following limitations: self-reported data on the utilization of obstetric analgesia might have social desirability bias and recall bias. Since the study participants were OCPs, the perception of laboring mothers was not addressed. Meanwhile, because the study was a cross-sectional study, it did not address the cause-and-effect relationship between the factors and the outcome variables.

Conclusion

This study showed that the overall use of labor pain management by OCPs was found to be low. In this study, professional category, training status, the attitude of OCPs, the perceived severity of labor pain, and the presence of maternal requests were the identified factors for low utilization of obstetric analgesia.

Therefore, working on adapting and availing the guidelines and protocols on labor pain management techniques and providing training on labor pain management methods to boost the OCPs' knowledge, attitude, and skills as an intervention at all levels of the health care system were recommended. Health institutions should have the necessary drugs for labor pain management. In addition, further study needs to be conducted to explore the mother's preference for labor pain management methods.

Acknowledgements

We would like to acknowledge Ambo University, College of Medicine and Health Sciences, Department of Midwifery, for giving us the opportunity to conduct the study. Our heartfelt thanks also goes to the West Shewa Zonal Health Office and district health offices in the West Shewa Zone for their cooperation. Finally, we would like to thank our data collectors, supervisors, and study participants for their invaluable cooperation and willingness to participate in the study.

Author contributions

E.A.T. conceived the idea, and participated in write-up of the proposal, supervision, data entry, data cleaning, data analysis, preparation of the draft of the manuscript, and subsequent revisions. G.A.B. and D.Y.I. participated in the write-up of the proposal, supervision of data collection, data analysis, preparation of draft of the manuscript, and subsequent revisions. The final manuscript has been read and approved by all authors.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethics approval and informed consent

Ethical approval for this study was obtained from the Research Review and Ethics Committee of the College of Medicine and Health Sciences, Ambo University (AU-CMHS/RCS/079/2012). The support letter was obtained from the Zonal Health administrative office. Written informed consent was obtained from all study subjects after the nature of the study was fully explained to them. The study subjects were told about the aims of the study and the confidentiality of the information. In addition, the respondents were told that they had the full right to withdraw from the study at any time if they felt uncomfortable. No name or identifying information was included in the instrument.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Supplemental material

Supplemental material for this article is available online.

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