



# Epidural Analgesia for Management of Labour Pain: Determinants and Deterrents Among Obstetricians in Nigeria

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## Abstract

**Objectives:** The aim of this study was to assess the utilization of epidural analgesia, its determinants and deterrents among Obstetricians.

**Materials and Methods:** A questionnaire-based cross-sectional study was conducted among obstetricians who attended the Annual Scientific Conference of the Society of Gynecology and Obstetrics of Nigeria in 2016. A total of 324 questionnaires were analyzed using Epi-info statistical software.

**Results:** Knowledge of epidural analgesia was high (100%), while availability was 77.8%, however only about 25.9% routinely prescribed it. The majority (96.2%) of the respondents practiced in tertiary health facilities in urban locations (94.1%). Almost three quarter (237/324; 73.1%) of respondents were males while 87(26.9%) were females. Female obstetricians were more likely to prescribe epidural analgesia for pain management in labor (68.9% vs 63.3%, P value = 0.001). The greatest impediment to its use was the cost (69.4%), lack of skill (27.8%), client's refusal (13.9%) and fear of complications (10.2%). Over 95% of obstetricians whose patients had used epidural analgesia expressed satisfaction and good fetomaternal outcome of labor.

**Conclusions:** There is a huge disparity between knowledge of epidural analgesia and actual practice among obstetrician. In closing this gap, obstetricians must do more to adequately educate patients on the options of pain relief and routinely offer it for a satisfying birth experience.

**Keywords:** Labor, Analgesia, Epidural, Practice, Obstetricians, Nigeria

## Introduction

Pain perception in labor is extremely variable among women depending on the parturient pain threshold and reaction to pain (1). For the majority of women, labor pain is considered severe and may be likened in severity to complex regional pain syndrome or amputation of a digit without anaesthesia (2). According to the American College of Obstetricians and Gynecologists and the American Society of Anaesthesiologists, there is no circumstance where it is acceptable for an individual to experience untreated severe pain, amenable to safe intervention, while under the care of a physician (2). The development of modern analgesia and in particular regional analgesia marked a major turning point in pain management during labor and delivery. Epidural analgesia is considered as the most effective method of pain relief and recommended as the first choice analgesia for women during labor and delivery (3,4).

The level of awareness and practice of labor analgesia, particularly epidural analgesia in sub-Saharan Africa is still rudimentary and obstetricians undoubtedly have an

important role to play in this regard. In 2012, a survey of the practice of labor analgesia among the obstetricians in Nigeria revealed that only 49% of the respondents offered analgesia to women in labor and of these, a paltry 2% used epidural analgesia (5).

Pain management in labor is an important component of active management of labor and even though not all women request pain relief in labor, the obstetrician has a duty to discuss the options, benefits and risks associated with various methods of labor analgesia with the parturient irrespective of his or her belief (6, 7). Optimal pain control in labor is more likely to result in a satisfactory birth experience for the parturient and her care provider (8-12). A critical step in achieving this milestone is to survey the level of awareness of epidural analgesia, determinants and deterrents of its use among obstetricians practicing in Nigeria.

Currently, there is no available literature documenting the utilization pattern, determinants and deterrents of epidural analgesia among obstetric care providers such as obstetricians in Nigeria. This study, therefore,

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aimed to assess the knowledge of Nigerian obstetricians regarding epidural analgesia, determine the frequency of its use in their practice, enquire about barriers and facilitators of uptake by parturient and evaluate the fetomaternal outcome/experience from the perspective of obstetricians in Nigeria. The findings will be used in making recommendations on how to overcome gaps and improve the health of women and their satisfaction with the process of childbirth. Moreover, it will provide non-existent local literature and data on the subject matter.

## Materials and Methods

A questionnaire-based cross-sectional study was conducted among Nigerian obstetricians who attended the annual general meeting and scientific conference of the Society of Gynaecology and Obstetrics of Nigeria (SOGON); the umbrella body to which registered obstetricians and gynaecologists in Nigeria belong. SOGON was established in 1965 to regulate obstetrics and gynecological practice in Nigeria. This annual event is usually well attended and features scientific presentations and discussions on issues that deal with women's health. The 50th annual meeting held in 2016 in Akure, Ondo State, Southwest Nigeria provided an ideal avenue for the study of this subject.

Self-administered questionnaire was used for data collection. Prior to this, the questionnaire was pretested on 40 randomly selected doctors who did not participate in the conference and it was thereafter corrected and modified for clarity. A total of 350 questionnaires were administered to obstetricians and gynecologists who consented to participate in the study, but only 324 questionnaires were correctly filled and returned.

Twenty-six questionnaires were either not returned or incorrectly filled, which were excluded from the study. The questionnaire assessed the socio-demographic characteristics, duration of practice, the location of practice, knowledge of determinants and deterrents of the practice of epidural analgesia, as well as provider's assessment of patients' satisfaction with their birthing experience with or without epidural analgesia.

Data were collated and analyzed with Epi Info statistical software version 7.0 (Center for Disease Control and Prevention, USA), and conclusions were drawn by means of descriptive statistics.

## Results

A total of 324 questionnaires out of 350 were eligible for analysis; representing a response rate of 92.6%. Table 1 depicts the socio-demographic characteristics of the respondents with over four-fifths of the respondents within the age range of 40-50 years (86.1%). Almost three quarters were males (73.1%) and a little more than one-fifth were females (26.9%). Interestingly, 40.7% of the respondents had practiced for more than 6 years while 36.1% and 23.2% had practiced for 4-6 years and 1-3 years respectively.

More than 90% of the respondents practiced in urban locations, while only 6.5% were in rural locations. Similarly, about 80.6% of the respondents practiced in tertiary health institutions, 13.9% in the secondary centers, while 5.6% were in private practice (Table 1).

Table 2 shows the knowledge of epidural analgesia among respondents. All the respondents knew that

**Table 1.** Socio-demographic Characteristics, N = 324

Variables	No. (%)
<b>Age (y)</b>	
20-30	3 (0.90)
31-40	135 (41.7)
41-50	144 (44.4)
51-60	39 (12.0)
>60	3 (0.9)
<b>Sex</b>	
Male	237 (73.2)
Female	87 (26.9)
<b>Duration of practice (y)</b>	
1-3	75 (23.2)
4-6	117 (36.1)
>6	132 (40.7)
<b>Place of practice</b>	
Rural	21 (6.5)
Urban	303 (93.5)
<b>Institution of practice</b>	
Tertiary	261 (80.6)
Secondary	45 (13.9)
Private	18 (5.6)

**Table 2.** Knowledge of Epidural Analgesia (EA), N = 324

Variable	No.	%
<b>EA is a form of obstetric analgesia</b>		
Yes	324	100
No	0	0.00
Don't know	0	0.00
<b>EA is the most effective obstetric analgesia</b>		
Yes	318	98.2
No	3	0.9
Not sure	3	0.9
<b>EA is administered by</b>		
Obstetrician	12	3.7
Anesthetist	309	95.4
Any health worker	3	0.9
<b>Who should benefit from EA<sup>a</sup></b>		
All women who consent	303	93.5
High risk parturient	24	7.4
Those who can afford it	51	15.7
<b>Training on EA</b>		
Yes	258	79.6
No	66	20.4

<sup>a</sup> Multiple options

epidural analgesia was a form of labor analgesia but 98.2% of them knew it was the most effective labor analgesia. An overwhelming majority of respondents (93.5%) believed it should be offered to all women in labor. An impressive number (79.6%) of the respondents have received one form of training in epidural analgesia but surprisingly only about a quarter (25.9%) routinely offer it for pain management in labor.

Regarding the level of practice of epidural analgesia as shown in Table 3, a significant (77.8%) proportion of the respondents reported the availability of epidural analgesia in their institutions but only a paltry 25.9% offered it routinely to women in labor, 63.9% used it occasionally and 10.2% never used it. Of those whose clients have used epidural analgesia in labor, 94.2% were satisfied with the level of pain relief experienced by the parturient, while the remainder (5.8%) were not.

Table 4 depicts the reasons for non-use. The reasons for non-use were the cost (69.4%), lack of skill (27.8%), patients refusal (13.9%), fear of complications (10.2%) and religious beliefs (2.8%).

Female obstetricians were more likely to prescribe epidural analgesia (68.9% vs 63.3%,  $P$  value = 0.001). The practice location and institutional types of respondents who used epidural analgesics in managing parturient in labor are shown in Table 5, indicating that only 28.6% of the respondents practicing in rural areas had used epidural analgesia and 96.2% of practitioners in tertiary facilities.

## Discussion

This study showed that despite a high level of knowledge of epidural analgesia among obstetricians practicing in Nigeria, there was a huge gap between the knowledge possessed and the actual practice of routinely offering epidural analgesia to parturient for labor pain management. This is similar to the findings among care providers in Ethiopia where it is believed that pain

**Table 3.** Practice of Epidural Analgesia (EA) in Labor, N = 324

Variables	No.	%
EA is available in my facility		
Yes	294	90.7
No	15	4.6
Not sure	15	4.6
Frequency of use of EA		
Routine	84	25.9
Occasionally	207	63.9
Never	33	10.2
My experience with use of EA in labor		
Satisfied	274	94.2
Not satisfied	33	5.8
Commonest analgesia used		
Opioids	290	89.5%

**Table 4.** Reasons for Non-use of Epidural Analgesia in Labor, n = 33

Impediments <sup>a</sup>	No.	%
Lack of skill	90	27.8
Expensive	225	69.4
Against my religion	9	2.8
Against my culture	3	0.9
Fear of complications	33	10.2
Need to allow natural labor	12	3.7
Clients refusal	45	13.9
None	18	5.6

<sup>a</sup>Multiple options.

**Table 5.** Use of Epidural Analgesia, N=291

Variable	No. (%)
Based on sex	
Male obstetricians	150 (63.3)
Female obstetricians	60 (68.9)
Based on duration of practice	
1-3	65 (86.7)
4-6	103 (88.0)
>6	123 (93.2)
Based on level of care	
Tertiary	251 (96.2)
Secondary	30 (66.7)
Private	10 (55.6)
Based on location of practice	
Urban	285 (94.1)
Rural	6 (28.6)

relief in labor should not be a priority since labor is a natural process (13), this is however at variance with the reports from high income settings where there were high awareness and use of epidural pain relief in labor (14,15).

Providing pain relief using effective analgesia like epidural is very important, considering that the process of childbirth is a life-changing event and the care which a pregnant woman receives during this important event may have a long-term emotional and psychological impact on her and this by extension may affect the health of the baby (16). This is consistent with the finding by Lim et al who reported that the extent of labor pain relief by epidural analgesia predicts lower postpartum depression scores (17). A parturient in labor should have a satisfying birthing experience that would make her look forward to her next pregnancy with enthusiasm. The role of obstetricians in making this a reality cannot be over-emphasized and a pain-free labor is very vital if this is to be achieved (5). It is important that the woman receive enough information about the various options of pain relief and be guided into making an informed choice (18).

It is pertinent to note that the level of knowledge of epidural analgesia among the respondents was high with over 95% of respondents having accurate knowledge regarding epidural analgesia, its benefits and indications.

However, about 79.6% of them had received some forms of specialized training in epidural analgesia, emphasizing the need for more regular updates and competency-based training in this area of the patient management.

Despite current evidence that shows epidural analgesia to be the most effective, most flexible, least depressive of the central nervous system, for an alert mother and fetus/neonate (19), this study indicates that its level of use among obstetricians practicing in Nigeria is a far cry from the optimum standard, with only 25.9% administering epidural analgesia routinely. However, this is an improvement on the 2% reported in an earlier study by Lawani et al during a similar conference held 4 years prior to the current study (5). This may have been due to an improvement in the care of women during child birth as currently being advocated by SOGON, with pain relief being a frontline issue in this campaign. Moreover, this finding is higher than the 11% reported in a Turkish study (7), but far less than the high utilization rate observed in other studies conducted in most high-income countries (6, 20).

Interestingly, a greater proportion of female obstetricians compared to their male counterparts in the present study had recommended epidural analgesia for parturient in labor. This might be because women themselves having experienced labor pain may be more inclined to provide pain relief for other women. In addition, more obstetricians with longer duration of practice, those practicing in urban and tertiary centers provided epidural analgesia readily for women in labor than their other counterparts. This may be attributed to practice experience, availability of personnel, materials and equipment for its administration and monitoring, as often seen in tertiary institutions or advanced settings such as in high-income countries where there is a higher level of utilization of epidural analgesia (6,20).

The greatest determinant of its use was cost, while other impediments were lack of skills, clients refusal, fear of complications and religion beliefs. Similar studies have also adduced comparable reason for poor utilization in some other similar settings (8,13). Knox et al identified several contextual factors which facilitated or were barriers to birth without epidural analgesia in tertiary health centers in Canada, with the following themes emerging from differing perceptions of pain, care providers ready for things to go wrong and insufficient resources (17).

These findings once again bring to fore the need for subsidization of the cost of healthcare services which can be done under a comprehensive health insurance scheme. It is also important to train and retrain all cadres of labor ward staff in the skills required for administration and management of epidural analgesia in labor (22).

Leaving such an important tool in the hands of anaesthetists alone that in most case are few and overworked would definitely deprive our patients of the potential benefits of epidural analgesia in labor.

Epidural analgesia is not without complications but with the requisite skill and adequate monitoring, its complications can almost be eliminated. In the present study, 94% of the study participants were satisfied with fetomaternal outcome following the use of epidural analgesia in labor. This is in tandem with the report by the American College of Gynecologist and Liv et al in the United Kingdom where the utilization of epidural analgesia in labor was associated with good fetomaternal outcomes and greater satisfaction when compared with other methods of intra-partum pain management (14,24).

### Conclusions

In conclusion, the routine prescription and utilization of epidural analgesia by Nigerian obstetrician who is the custodian of women's health is still quite suboptimal, despite the overwhelming high level evidence which has clearly shown that many of fears, unsubstantiated risks, as well as the unfounded myths ascribed to epidural analgesia in labor are baseless and that its benefits far outweigh any risks to both mother and baby (1,8,24,25). Therefore, adequate patient education, training of personnel and subsidization of this service will go a long way in promoting the acceptability and utilization of epidural analgesia for women in labor. Specifically, support could be improved through the implementation of guidelines for assessment and management of labor pain, provision of a variety of pain management options, and labor support training for healthcare professionals (21).

### Strength and Limitation

The major strength of this study was the high response rate from the respondents who were directly involved in the management of parturient in labor, however, one limitation was that it did not include the views of some obstetricians who were registered members of SOGON, but absent from its 2016 Annual General Meeting/Conference.

### Area for Further Research

An interventional randomized controlled study assessing 2 groups of care providers who had regular update training in epidural analgesia and those without update training, with the aim of assessing the practice of offering epidural analgesia after the period of intervention (training) will help proffer solution to the problems of non-routine labor pain management with epidural analgesia.

### Conflict of Interests

Authors declare that they have no conflict of interests.

### Ethical Issues

Ethical clearance for the study was obtained from the local organizing committee of SOGON 2016.



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