

Uptake of Epidural Analgesia among Parturients at a Tertiary Centre in Port Harcourt, South-South Nigeria

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Abstract:

➤ *Background*

Painless, yet progressive labour process is the desire of most parturients globally, and this can be achieved effectively with epidural analgesia especially if administered timely. Epidural analgesia provides an effective means of pain relief in labour and has been shown not to affect the progress of the first stage of labour if administered early. It is the mainstay of labour analgesia in high income countries.

➤ *Aim*

To assess the uptake of epidural analgesia among parturients at Rivers State University Teaching Hospital, Port Harcourt, South-South Nigeria.

➤ *Methodology*

This was a descriptive cross-sectional study conducted at the obstetric unit of the Rivers State University Teaching Hospital involving 393 women within 24 hours of spontaneous vaginal delivery. The women who met the eligibility criteria and gave consent for the study were recruited consecutively until the sample size was obtained.

The data was collected using an interviewer administered semi-structured questionnaire and analysis was done using IBM Statistical Package for Social Sciences version 22.0 for windows. Descriptive statistics employed frequencies and proportions.

➤ *Results*

The mean age of the parturients was 30.30 years with standard deviation of 5.01 years, the mean parity was Para 1 and the mean gestational age at delivery was 38.12 weeks (SD-3.63 weeks). The proportion of the respondents that had heard of epidural analgesia was 42.5% while majority (57.5%) had no idea about the subject. The sources of information about the subject included; social media (27.5%), antenatal clinic (9.2%), radio/television (3.6%), family/friends (2.0%) while 0.3% heard from other sources. The uptake of epidural analgesia was 1.5%, however, 76.5% of those who did not receive this form of analgesia stated that they would have loved to receive it if offered, 16.0% did not express willingness to have accepted the method and 7.5% were unsure of whether they would have loved to receive it or not.

➤ Conclusion

The uptake of epidural analgesia has been shown to be sub-optimal in low resource settings in spite of its effectiveness as labour analgesia as shown in this study. This may be as a result of insufficient knowledge or awareness of its effectiveness, which also played out in this study. This can be improved by incorporating enlightenment programs on epidural analgesia in the regular antenatal programs as this is crucial for a more pleasurable labour process.

Keywords: Analgesia, Epidural, Labour, Pain, South-South Nigeria, Uptake.

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I. INTRODUCTION

Epidural analgesia is an extremely effective method of pain relief in labour which has gained much popularity in high income countries. ^[1] Labour pain has been described as one of the most severe forms of pain necessitating the continuous search for an ideal method of pain relief in order to provide relative pleasure during the labour process. Labour analgesic was therefore said to be ideal if it was safe, had minimal effects on the progress or outcome of labour as well as minimal maternal side effects. ^[1] Epidural analgesia was found to have most of these characteristics as opposed to parenteral opioids which provide sedation, relaxation and comfort but without significant reduction of the intensity of the pain. ^[2]

The other notable benefits of epidural analgesia include; prevention of traumatic vaginal twin delivery, preterm delivery as well as delivery of neonates in breech presentation. It also controls blood pressure in women with preeclampsia by providing good pain relief. ^[3]

Epidural analgesia has been rated as the gold standard for labour analgesia and is recommended by the World Health Organization (WHO) with the uptake ranging from 10% to 83% in high income countries. ^[4]

This form of labour analgesia involves the injection of local anaesthetics with or without adjuvant medications into the epidural space, which is a potential space located between the ligamentum flavum and dura matter containing fat, blood vessels as well as spinal nerve roots. ^[5] The local anaesthetics mostly used are; bupivacaine, levobupivacaine and ropivacaine, and these are said to provide dose-dependent block. ^[6,7] The administration of higher concentrations of these agents are associated with more intense block with increased incidence of assisted vaginal deliveries and vice versa. Therefore, lower concentrations are recommended for labour analgesia. ^[6,7]

Aside the benefits of epidural analgesia, certain side effects have been associated with the procedure, such as maternal hypotension and fever. In the absence of maternal hypotension, it is said not to have negative effects on foetal or neonatal outcome, however when present it has been shown to be associated with foetal heart rate abnormalities with subsequent poor Apgar scores. ^[8] These effects have been minimized with the introduction of newer techniques.

Its use has been shown to be associated with 35% reduction in severe maternal morbidity. ^[9]

Despite the effectiveness of Epidural analgesia, its use in labour is yet to be fully practiced in many obstetric units in sub-Sahara Africa as there are no clear protocol on obstetric analgesia in many facilities. ^[10]

This study is designed to assess the uptake of epidural analgesia in labour at the Rivers State University Teaching Hospital, as this may form a basis for further enlightenment and advocacy for its use.

II. METHODOLOGY

This was a descriptive cross-sectional study conducted at the obstetric unit of the Rivers State University Teaching Hospital (RSUTH) between January 2021 and December 2022. It involved 393 women within 24 hours of spontaneous vaginal delivery.

The sample size was calculated using the formula for cross-sectional study, $(N = \frac{Z^2 P (1-P)}{d^2})$ where,

N- Sample size, Z- Proportion of normal distribution corresponding to the required significance level (5%) which is 1.96, P- The uptake

of epidural analgesia in labour in a previous research conducted by Ezeonu et al was 7.5 % (0.075) ^[11] and d- Margin of error (0.05). The minimum calculated sample size was 106, however this was increased to 393. The research was explained to the women and those who met the eligibility criteria and gave consent for the study were recruited consecutively until the sample size was obtained.

The data was collected using an interviewer administered semi-structured questionnaire which had sections for socio-demographic characteristics, awareness and utilization of epidural analgesia after obtaining verbal consent from the women. The data collected was entered into the excel sheet and exported to IBM Statistical Package for Social Sciences (SPSS) version 22.0 for windows, which was used for the analysis. The results were represented on tables and charts in frequencies and proportions.

The study was carried out according to the Helsinki declaration, taking cognizance of confidentiality, the right to refuse or withdraw from the study without penalty and voluntary participation. These were clearly explained to the participants.

III. RESULTS

The mean age of the parturients was 30.30 years with standard deviation of 5.01 years, the mean parity was Para 1 and the mean gestational age at delivery was 38.12 weeks (SD-3.63 weeks). Most (52.4%) of the women had secondary education, 40.5% had tertiary education, 2.5% had primary education while 4.6% did not specify their status.

The proportion of the respondents that had heard of epidural analgesia was 42.5% while 226 (57.5%) of them

had no idea about the subject. The sources of information about the subject included; social media (27.5%), antenatal clinic (9.2%), radio/television (3.6%), family/friends (2.0%) while 0.3% heard from other sources. The uptake of epidural analgesia was 1.5%, however, 76.5% of those who did not receive this form of analgesia stated that they would have loved to receive it for pain relief if offered, 16.0% did not express willingness to have accepted the method and 7.5% were unsure of whether they would have loved to receive it or not. Reasons for unwillingness to accept epidural were: labour pain no being severe (3.1%), lack of awareness of epidural analgesia (2.8%), fear of side effects (2.3%), fear of the procedure (1.3%), unfamiliarity with labour experience (1.3%), personal belief against epidural analgesia (1%), doubtful of the skill of attendants (0.5%) and history of spinal disorder (0.3%). About 0.3% of them did not remember to ask for it in labour while 3.1% had no reason.

Table 1: Socio-Demographics Characteristics of the Respondents

Variables (N = 393)	Frequency	Percentage
Age in years		
<25 years	46	11.7
25 – 29 years	121	30.8
30 – 34 years	141	35.9
35 – 39 years	76	19.3
≥40 years	9	2.3
Educational level		
Primary	10	2.5
Secondary	206	52.4
Tertiary	159	40.5
Not specified	18	4.6
Employment status		
Housewives	45	11.5
Students	31	7.9
Civil servants	83	21.1
Business women	234	59.5

Table 2: Utilization of Epidural Anesthesia in Labour among Parturients at RSUTH

Variables	Frequency	Percentage
Heard about epidural analgesia prior to labour		
Yes	167	42.5
No	226	57.5
Source of information about epidural analgesia (n = 167)		
Social media	108	27.5
Antenatal clinic	36	9.2
Radio/Televsision	14	3.6
Family/Friends	8	2.0
Others	1	0.3
Received epidural anesthesia during labour		
Yes	6	1.5
No	387	98.5
Did not receive epidural but would have loved to receive it (N = 387)		
Yes	296	76.5
No	62	16.0
Not sure	29	7.5

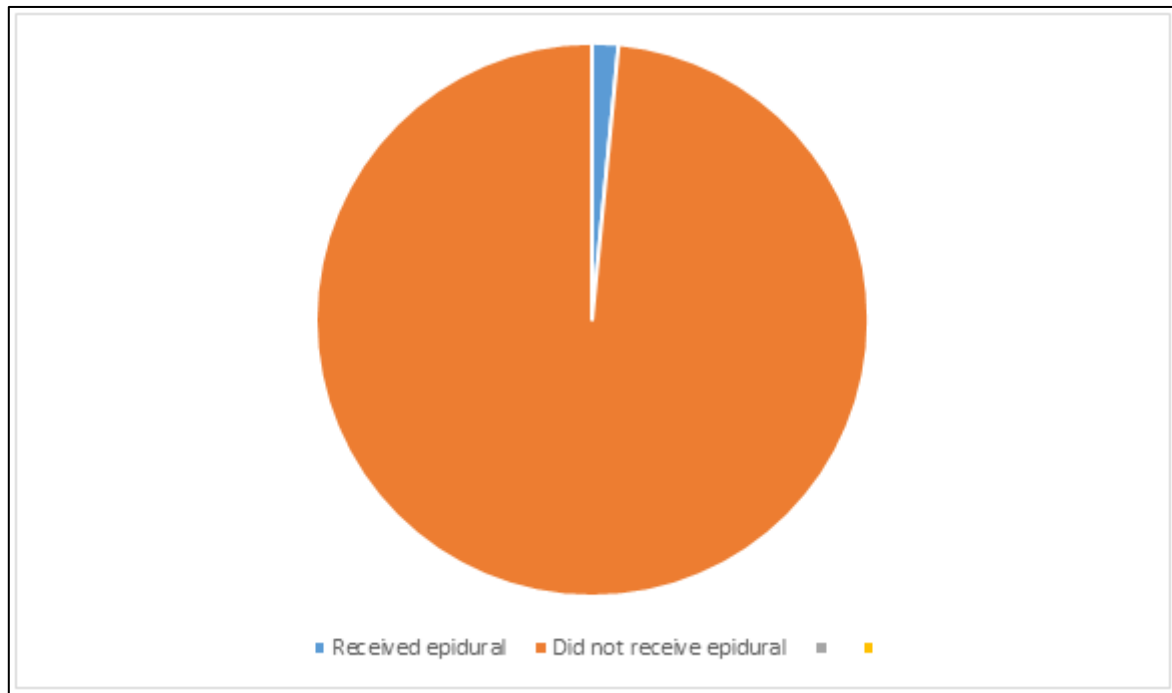


Fig 1: Uptake of Epidural Analgesia

Out of all the women who did not receive epidural (76.5%, n = 296); 76.2% stated that the reason they would have loved to receive epidural was for pain relief (n = 295) while 1 (0.3%) said she would have loved to if it was financially acceptable for her.

The rest of the women 16.0% (n = 62) that did not want to receive epidural or that were not sure they wanted to receive epidural 7.5% (n = 29) stated that their reasons include: labour pain not severe, ie labour pain either mild or

moderate 3.1% (n = 12), not aware/unfamiliar with epidural anaesthesia 2.8% (n = 11), fear of side effects 2.3% (n = 9), fear of the procedure/its processes 1.3% (n = 5), familiar with labour experiences 1.3% (n = 5), personal beliefs about child bearing/against epidural anaesthesia 1.0% (n = 4), doubtful of the skill of birth attendants in handling procedure 0.5% (n = 2), history of spinal disorder 0.3% (n = 1), did not remember it/to ask for it during labour 0.3% (n = 1). For others there were no actual reasons or reasons were not stated 3.1% (n = 12).

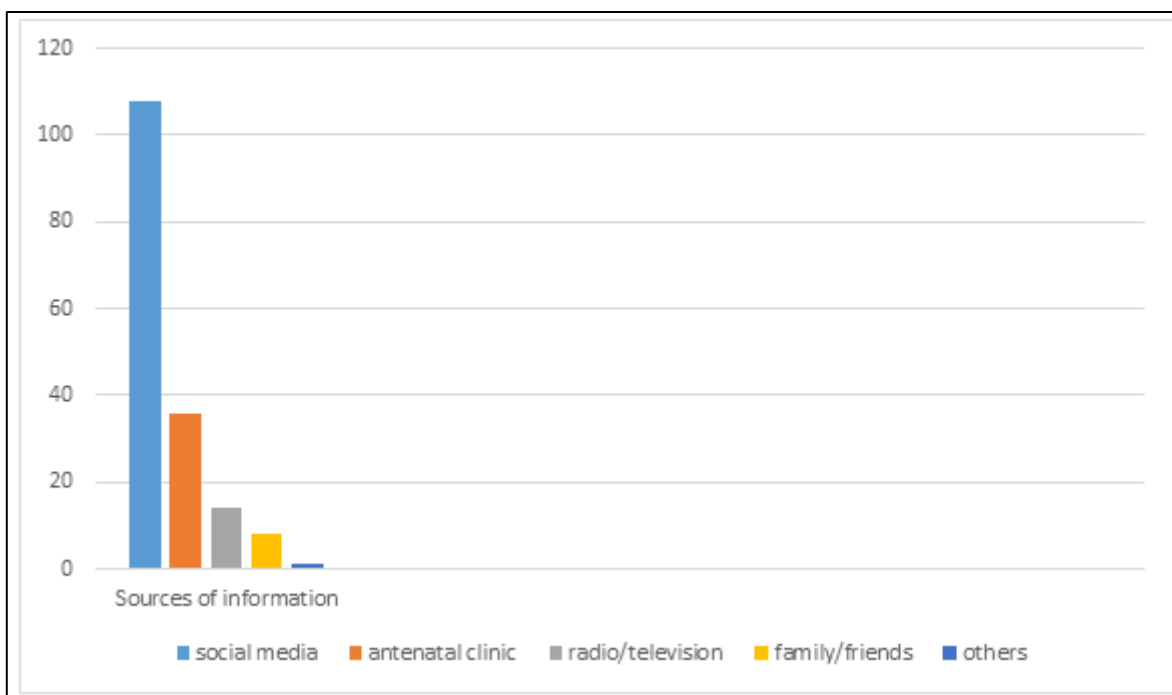


Fig 2: Sources of Information on Epidural Analgesia

IV. DISCUSSIONS

Epidural analgesia is the most effective form of labour analgesia and it is considered as the gold standard globally. Most studies conducted in the low and middle income countries have shown suboptimal awareness of epidural analgesia in labour. From the index study, 42.5% of the respondents were aware of epidural analgesia which is inadequate. Okojie et al reported a lower rate of 20.5% in 2014, in Benin, South-South Nigeria.^[12] Lower rates were also reported in Katsina (25%)^[13] and Jos (12.5%),^[14] both in Northern Nigeria. It was however, similar to 43.3% reported at Abakaliki by Ezeonu et al in 2017.^[11] An acceptable rate of 80.35% was however reported in Cameroon^[15] and this is quite different from most of the studies reported in Nigeria where the awareness is poor.

The major source of information about epidural analgesia in this study was the social media, as 64.7% (167) of those who were aware of it got the information from the social media. This was followed by the antenatal clinic which accounted for 21.6% with the mass media accounting for 8.3%. This is however, the opposite of what was reported in Katsina where most (34.7%) of them got the information from health institutions^[13] and Jos where 57.5% of the respondents got the information from family and friends.^[14] This implies that there is a lacunar in the area of obstetric analgesia in the health information given to the pregnant women in our facilities. This may be due to the fact that most facilities do not offer epidural services as a result of insufficient number of qualified manpower for the procedure, meanwhile health care professionals are in the best position to educate the women on the subject.

The uptake of epidural analgesia from this study as shown in Figure 1 was 1.5% implying that as high as 98.5% of the respondents did not receive epidural analgesia, not because they rejected it. A large proportion of the parturients (76.5%) in this survey desired to receive it if offered this form of labour analgesia. The uptake from this study is lower than values obtained at Abakaliki (43.3%)^[11] and South-West Nigeria (22.7%),^[16] however it is similar to 2.7% reported by Okojie et al in Benin, Nigeria.^[12] This is in agreement with a range of 1.3% to 12% in the low and middle-income countries.^[11] In the United States of America, the uptake was reported to be 60%^[5] with 30% reported in the United Kingdom.^[5] Callahan reported that in America currently, 4 out of every 5 nulliparous women receive epidural analgesia in labour,^[8] which is quite high.

Despite the low uptake, majority of the women in low and middle income countries are desirous of epidural analgesia in labour. From the index study, 76.5% expressed willingness to receive it with 99.7% stating pain relief as the reason for desiring it. This is similar to 63.9% reported in Katsina.^[13] Those who were unsure or expressed unwillingness to receive epidural analgesia gave reasons such as; not being familiar with the procedures, non-severity of labour pain, fear of side effects, familiarity with labour experiences, history of spinal disorder as well as doubts about the skill of the attendants. These reasons are similar to

those from other studies in addition to the cost of the procedure. Callahan reported in a Cochrane review which showed that the duration of first stage of labour was prolonged by 32 minutes with the use of epidural analgesia compared to the use of opioids,^[8] however, Fyene-Ogan et al in Port-Harcourt reported that the duration of both first and second stages of labour were significantly shorter with epidural analgesia than other methods in labour with 8% inadequate pain relief compared to 72% with other methods.^[17] Certain complications have been reported, however these are greatly minimized in the hands of professionals. The duration of first stage of labour, if prolonged by approximately half an hour, may also not be significant compared to the entire duration of labour and patient satisfaction.

V. CONCLUSION

Epidural analgesia remains the gold standard for labour analgesia globally, however, it is yet to be fully incorporated into the maternity/obstetric process in most low and middle-income countries, evidenced by the low rate of awareness and uptake across the region. This was also shown in the index study.

We recommend the establishment of protocols on obstetrics analgesia with proper prenatal and antenatal counseling on epidural analgesia in labour so as to improve the awareness as well as the uptake, as this will subsequently make the labour experience pleasurable, with favourable outcome.

➤ *Conflict of Interest:*

Authors declared no competing interest.

➤ *Grant:*

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