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Research Article

Awareness and Acceptance of Obstetric Epidural Analgesia among Expectant Mothers in Southeast Nigeria

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Abstract

Background: Obstetric Epidural Analgesia (OEA) is a widely used technique for pain relief during labour, yet its awareness and acceptance vary across different populations. This study assesses the awareness and acceptance of OEA among expectant mothers in Southeast Nigeria, where socio-cultural factors may influence healthcare decisions.

Methods: A descriptive cross-sectional survey design was employed, involving 417 expectant mothers attending antenatal clinics across public and private healthcare facilities in Southeast Nigeria. A multistage sampling technique was used to ensure the inclusion of participants from diverse socio-demographic backgrounds. Data were collected using a structured questionnaire and analyzed with SPSS version 26. Descriptive statistics (frequencies and percentages) were used to summarize the findings.

Results: Of the 417 participants, 29.74% had heard of OEA, primarily through social media (39.52%) and health facilities (25%). However, only 38.85% expressed willingness to consider OEA during labour, with 52.27% citing fear of side effects as a key deterrent. Availability of OEA in healthcare facilities was reported by 43.41%, with 48.44% unsure of its availability. A significant portion (40.05%) believed more awareness about OEA should be created among expectant mothers.

Conclusion: Awareness of OEA is low among expectant mothers in Southeast Nigeria, and acceptance is hindered by fears of side effects and limited information. Efforts to increase awareness through targeted health education could improve the uptake of OEA for labour pain management.

Keywords: Obstetric epidural analgesia, Awareness, Acceptance, Expectant mothers, Labour pain management

Introduction

Childbirth is a significant physiological and emotional experience for women. While the joy of bringing life into the world is profound, the process is often accompanied by considerable pain, which can cause distress, anxiety, and sometimes trauma (Orji et al., 2020). To address this, obstetric analgesia, particularly epidural analgesia, has been developed as a method to alleviate the pain associated with labour. Obstetric epidural analgesia (OEA) involves administering pain-relieving medication through a catheter into the epidural space around the spinal cord. It has been widely recognized as one of the most effective methods for pain relief during labour (Orji et al., 2020). Despite its documented efficacy, awareness and acceptance of OEA among expectant mothers in Nigeria remain suboptimal, posing a challenge to its widespread utilization in maternal care.

Globally, the use of epidural analgesia during labour is prevalent, particularly in developed countries. Studies from Europe, the United States, and parts of Asia demonstrate that up to 60% of women opt for epidural analgesia during childbirth (Jones et al., 2019). The widespread use in these regions is largely due to high levels of awareness, access to skilled healthcare professionals, and the availability of resources required for administering the procedure. In these settings, OEA is not only seen as an effective pain management tool but also as a way to ensure a positive birth experience for mothers (Zhang et al., 2021).

In contrast, low- and middle-income countries (LMICs), including Nigeria, exhibit lower rates of OEA utilization. While the global movement toward respectful maternity care emphasizes the importance of pain relief as a human right, barriers such as limited awareness, cultural factors, resource constraints, and misconceptions about epidurals persist in many developing countries (Mung'ayi et al., 2019). These factors contribute to an underuse of OEA, particularly in rural and low-resource settings.

In Nigeria, maternal healthcare has seen significant advancements over the past decade. However, the adoption of epidural analgesia during childbirth remains minimal. Studies indicate that a large proportion of Nigerian women endure labour pain without adequate pain management interventions (Ogunleye et al., 2020). The reasons for this range from the lack of infrastructure and trained personnel in healthcare facilities to deep-rooted cultural beliefs about labour pain as a necessary and natural part of childbirth (Adebayo et al., 2021).

A study by Orji et al. (2020) highlighted that only a small percentage of Nigerian women were aware of OEA, and an even smaller fraction had ever used it. Moreover, misconceptions about the risks associated with epidurals, such as paralysis, chronic back pain, and the potential for a more prolonged labour, persist in the Nigerian context. These myths are further compounded by inadequate counselling from healthcare providers, who themselves may lack adequate knowledge or experience with administering OEA (Olufolabi et al., 2022).

Socio-cultural beliefs play a significant role in the acceptance or rejection of epidural analgesia in Nigeria. Labour pain is often viewed through the lens of tradition, where enduring pain is seen as a rite of passage into motherhood. Among certain ethnic groups, the ability to tolerate labour pain is tied to notions of strength and resilience (Adeleke & Oduro, 2019). As a result, women may reject pain relief options to conform to societal expectations or avoid being perceived as "weak."

Economic factors also influence the uptake of OEA. In many parts of Nigeria, the cost of healthcare, particularly in private facilities where epidural services are more likely to be available, is prohibitive for the average family. Public healthcare facilities, which serve a larger portion of the population, are often underfunded and lack the equipment or skilled personnel necessary to provide epidural analgesia (Ogunleye et al., 2020). Thus, even when women are aware of the procedure, the financial burden often becomes a barrier to access.

The Nigerian healthcare system faces challenges that impede the effective delivery of obstetric analgesia, including epidurals. While there has been progress in maternal healthcare policies, the implementation of pain relief options for labouring women remains inadequate. A survey by Adebayo et al. (2021) indicated that many hospitals do not routinely offer OEA due to a lack of anesthetists, inadequate equipment, and poor management of labour wards. Additionally, a shortage of obstetric anesthetists capable of administering epidurals safely is a critical issue, particularly in rural areas.

Moreover, healthcare providers' attitudes and beliefs play a significant role in shaping women's decisions regarding pain management. Some studies have shown that obstetricians and midwives may downplay the importance of pain relief, emphasizing natural childbirth methods or failing to adequately inform women of their pain relief options (Mung'ayi et al., 2019). The disconnect between healthcare providers' perspectives and patients' desires can further hinder the acceptance of OEA.

Given the documented benefits of epidural analgesia, increasing awareness among Nigerian women is crucial. Public health campaigns aimed at educating expectant mothers about the availability and safety of epidural analgesia could improve acceptance rates. Additionally, training for healthcare providers on the benefits of OEA and how to counsel patients effectively is necessary to bridge the gap between healthcare services and patient needs (Olufolabi et al., 2022).

Empirical evidence suggests that women who are adequately informed about their pain relief options during childbirth are more likely to opt for OEA (Jones et al., 2019). Therefore, addressing the knowledge gap through antenatal education programs, media campaigns, and community-based

interventions is essential to improving maternal healthcare outcomes in Nigeria.

Research Methodology

Research Design

This study employed a descriptive cross-sectional survey design to assess the awareness and acceptance of obstetric epidural analgesia (OEA) among expectant mothers in Southeast Nigeria. This design is appropriate because it allows for the collection of data at a single point in time to describe the characteristics of the population being studied and evaluate relationships between the awareness and acceptance of OEA.

Study Area

The research was conducted in Southeast Nigeria, comprising five states: Abia, Anambra, Ebonyi, Enugu, and Imo. The choice of Southeast Nigeria is pertinent because of the socio-cultural and economic diversity, which can influence healthcare choices among women in the region. Key urban and rural healthcare centres in these states were selected as study sites to ensure representation from different socio-demographic backgrounds.

Study Population

The study population consisted of expectant mothers attending antenatal clinics in public and private health facilities across the selected states. The inclusion of antenatal attendees was justified because these women are more likely to have access to information about labour and delivery options, including epidural analgesia.

Inclusion Criteria:

- Pregnant women attending antenatal care in the selected facilities.
- Women in their second and third trimesters who were more likely to have discussed or considered delivery options.
- Women aged 15 years and above who give informed consent to participate.

Exclusion Criteria

- Pregnant women with contraindications for epidural analgesia as indicated by their healthcare providers.
- Women who decline participation in the study.

Sample Size Determination

The sample size will be determined using the Cochran formula for estimating proportions in a population outlined by Airaodion et al. (2023):

$n = (Z^2 (Pq))/e^2$

where n = minimum sample size

Z = 1.96 at 95% confidence level,

P = known awareness of obstetric epidural analgesia in Nigeria

e = error margin tolerated at 5% = 0.05

q = 1 - p

According to a recent study by Shawahna et al. (2024), the existing awareness of obstetric epidural analgesia in Nigeria is 44.2%.

P = 44.2% = 0.442

q = 1 – p

= 1 – 0.442

= 0.558

$n = ((1.96)^2 (0.442 \times 0.558))/(0.05)^2$

$n = (3.8416 \times (0.246636))/0.0025$

$n = (0.9475)/(0.0025) = 378.99$

The minimum sample size was 379 but was adjusted to 417 to account for a non-response rate of 10%.

Sampling Technique

A multistage sampling technique was employed:

Stage 1: Stratified sampling was used to categorize healthcare facilities into public and private institutions within the five states of Southeast Nigeria.

Stage 2: In each state, a simple random sampling method was used to select one tertiary, one secondary and one primary healthcare facility from both urban and rural areas. This was to ensure diversity in socio-economic and cultural settings.

Stage 3: Proportional allocation was applied to determine the number of expectant mothers to be sampled in each facility based on the facility's antenatal clinic population.

Stage 4: Systematic random sampling was used to select participants from each facility's antenatal clinic registry.

Ethical Consideration

The study adhered to the ethical principles of autonomy, beneficence, non-maleficence, and justice. Informed consent was obtained from each participant before data collection, and participants were assured of confidentiality and anonymity. Participation in the study was voluntary, and participants had the right to withdraw from the study at any time without any penalty.

Data Collection Instrument

A structured questionnaire will be used as the primary data collection instrument. The questionnaire will be developed based on previous studies on obstetric epidural analgesia and modified to suit the study context. It will consist of both open-ended and close-ended questions and be divided into four sections:

Section A: Socio-demographic information.

Section B: Awareness of obstetric epidural analgesia

Section C: Acceptance of obstetric epidural analgesia.

Section D: Availability of epidural analgesia at the healthcare facility they planned to deliver.

Validity and Reliability

Validity: Content validity was ensured by consulting obste-

tricians, anesthesiologists, and healthcare professionals in maternal care to review the questionnaire for relevance, clarity, and comprehensiveness.

Reliability: A pilot study was conducted with 5% of the total sample size in a non-participating state to assess the internal consistency of the instrument. The Cronbach's alpha coefficient was calculated, with a value of ≥ 0.7 considered acceptable for reliability.

Data Collection Procedure

Trained research assistants (midwives and healthcare professionals familiar with the antenatal setting) administered the questionnaire to the participants during their routine antenatal clinic visits. The research assistants explained the purpose of the study to participants, obtained informed consent and assisted with clarifying questions when necessary. Data collection spanned over six months to ensure that an adequate number of participants from diverse settings were sampled.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics (frequencies and percentages) were used to summarize socio-demographic characteristics and the levels of awareness and acceptance of obstetric epidural analgesia.

Results

Socio-Demographic Information	Frequency (n = 417)	Percentage (%)
Age (in Years)		
15-24	28	6.71
25-29	41	9.83
30-34	201	48.20
35-39	123	29.50
40-44	19	4.56
45-49	05	1.20
Educational Level		
No formal Education	14	3.36
Primary Education	31	7.43
Secondary Education	235	56.35
Tertiary Education	137	32.85
Marital Status		
Single	11	2.64
Married	380	91.13
Divorced/Widowed	26	6.24
Employment Status		
Unemployed	11	2.64
Self-employed	195	46.76
Private sector employee	119	28.54
Public sector employee	78	18.71
Student	14	3.36
Residence		
Rural	265	63.55
Urban	152	36.45
How many times have you been pregnant including this present one (gravida)?		
1	34	8.15
2-3	241	57.79
4-5	121	29.02
More than 5	21	5.04
How many deliveries have you had (parity)?		
None	42	10.07
1	112	26.86
2-3	231	55.40
4 or more	32	7.67

Table1: Demographic Information of Participants

Most participants were aged between 30-34 years (48.20%), followed by those aged 35-39 (29.50%). The majority had secondary education (56.35%), while 32.85% had tertiary education. A high proportion of participants were married (91.13%) and self-employed (46.76%). Additionally, 63.55% of the participants resided in rural areas, and the majority had been pregnant 2-3 times (57.79%) and delivered 2-3 times (55.40%) (Table 1).

Only 29.74% of the participants had heard of OEA, with most learning about it through social media/internet (39.52%), followed by health facilities (25%). Among pain relief methods during labor, 28.18% were aware of epidural analgesia, but a notable proportion (15.45%) was unaware of any pain relief method. Additionally, 27.10% knew someone who had used OEA during childbirth (Table 2).

Among the participants, 38.85% were willing to consider using OEA, while 33.33% were opposed, and 27.82% were unsure. The primary reason for rejection or uncertainty was fear of side effects (52.27%). For those considering OEA, recommendations from healthcare providers (59.90%) were the main reason. Participants expressed concerns about the risk of complications (44.84%) but 39.81% had no concerns. Regarding recommending OEA, 36.21% were neutral, while 28.54% were unlikely to recommend it. Additionally, 40.05% believed more awareness of OEA should be created among expectant mothers (Table 3). Less than half (43.41%) of the participants indicated that OEA was available at their healthcare facility, while 48.44% were unsure about its availability (Figure 1).

Variable	Frequency (n = 417)	Percentage (%)
Have you ever heard of Obstetric Epidural Analgesia (OEA)?		
Yes	124	29.74
No	293	70.26
If yes, where did you first learn about it?		
Health facility (hospital/ clinic)	31	25.00
Family/friends	15	12.10
Social media/internet	49	39.52
Books/magazines	21	16.94
Television/radio	08	6.45
Which of the following methods of pain relief during labour are you aware of? (Select all that apply) (n = 440)		
Epidural Analgesia	124	28.18
Spinal block	97	22.05
Narcotic injections	64	14.55
Breathing techniques	52	11.82
Water birth	35	7.95
None	68	15.45
Do you know anyone who has used Epidural Analgesia during childbirth?		
Yes	113	27.10
No	304	72.90

Table2: Awareness of Obstetric Epidural Analgesia

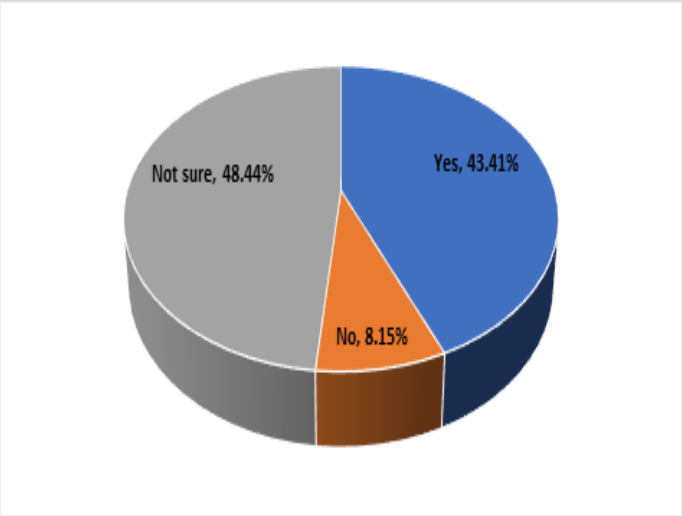

Figure1: Availability of Epidural Analgesia at Participants' healthcare facility

Variable	Frequency (n = 417)	Percentage (%)
Would you consider using Epidural Analgesia for pain relief during labour?		
Yes	162	38.85
No	139	33.33
Not sure	116	27.82
If no or not sure, why? (Select all that apply) (n = 375)		
Fear of side effects	196	52.27
Lack of information	43	11.47
Personal preference for natural birth	63	16.80
Cultural/religious beliefs	31	8.27
Advice from family/ friends	42	11.20
If yes, what are your reasons for considering it? (Check all that apply) (n = 197)		
Effective pain relief	42	21.32
Recommendation from healthcare provider	118	59.90
Positive experiences from others	22	11.17
Information from antenatal classes	15	7.61
What concerns do you have about Epidural Analgesia?		
Risk of complications	187	44.84
Effectiveness in managing pain	22	5.28
Cost	42	10.07
None	166	39.81
How likely are you to recommend Epidural Analgesia to other expectant mothers?		
Very unlikely	27	6.47
Unlikely	119	28.54
Neutral	151	36.21
Likely	71	17.03
Very likely	49	11.75
Do you think more awareness should be created about Epidural Analgesia among expectant mothers?		
Yes	167	40.05
No	63	15.11
Not sure	187	44.84

Table3: Acceptance of Obstetric Epidural Analgesia

Discussion

The age distribution of participants in this study shows that a significant proportion (48.20%) were aged 30-34 years, followed by those aged 35-39 years (29.50%). This is consistent with the observation that many women in Nigeria tend to have children in their 30s, aligning with fertility trends reported by Adeoye et al. (2020), who found a similar age group to dominate in obstetric studies in urban Nigeria. Educational attainment in this study revealed that over half of the participants (56.35%) had secondary education, while 32.85% had tertiary education, reflecting the role of formal education in shaping health-seeking behaviour. Other studies, such as by Anikwe et al. (2021), have reported similar educational distributions among expectant mothers, particularly in rural areas where secondary education predominates.

Most participants (91.13%) were married, which is a common demographic pattern in reproductive health studies in Nigeria, as marriage is closely tied to childbearing in Nigerian culture (Adegbola & Ilori, 2022). Employment status showed that 46.76% were self-employed, highlighting the prevalence of informal sector employment among women in Southeast Nigeria. A significant proportion (63.55%) of participants resided in rural areas, a finding that mirrors the urban-rural divide observed in previous maternal health studies in Nigeria (Iliyasu et al., 2020).

Awareness of OEA was found to be low, with only 29.74% of participants indicating they had heard of it. This aligns with findings from other studies in Nigeria, such as the one by Okojie et al. (2021), which reported similarly low awareness rates (32%) among pregnant women. The most common source of information about OEA was social media/internet (39.52%), followed by health facilities (25%). This suggests that digital platforms play an increasingly important role in disseminating health information, which is consistent with global trends reported by Babalola et al. (2023), where the internet was a key source of health knowledge among expectant mothers.

Interestingly, 72.90% of respondents did not know anyone who had used epidural analgesia during childbirth, further illustrating the lack of practical exposure to this method in the region. Other studies, such as that by Omorogbe et al. (2022), have suggested that low awareness and uptake of epidural analgesia may be attributed to the limited availability of this service, particularly in rural healthcare settings.

Acceptance of OEA for labour pain relief was moderate, with 38.85% of participants stating they would consider using it. This finding is higher than the acceptance rate reported by Okojie et al. (2021), where only 27% of pregnant women expressed willingness to use epidural analgesia. However, the proportion of participants in the current study who were unsure or unwilling to use OEA (61.18%) points to persistent barriers to its acceptance, such as fear of side effects (52.27%) and lack of information (11.47%). These concerns are corroborated by Nwosu et al. (2020), who reported that misinformation and cultural beliefs significantly hinder the adoption of modern obstetric interventions in Southeast Nigeria.

Among those who would consider using OEA, the primary reasons were recommendations from healthcare providers (59.90%) and the perceived effectiveness of the method for pain relief (21.32%). This finding aligns with the work of Afolabi et al. (2021), who found that women's decisions regarding epidural use were strongly influenced by healthcare professionals' advice. However, concerns about complications (44.84%) and cost (10.07%) were notable deterrents to the widespread adoption of OEA. These concerns are consistent with findings from studies in other low-resource settings, where fears of long-term health implications and the cost of epidural services have been cited as barriers (Omorogbe et al., 2022).

Only 43.41% of respondents indicated that OEA was available at the healthcare facility where they planned to deliver, while 48.44% were unsure. This reflects the limited accessibility of OEA in healthcare facilities across the region. Other studies have documented similar issues; Okojie et al. (2021) reported that in many parts of Nigeria, epidural services are not widely offered, particularly in rural and public health facilities. Afolabi et al. (2021) also highlighted the lack of trained personnel as a key factor limiting the availability of OEA, even in urban centres.

A significant proportion (40.05%) of participants expressed the need for more awareness of OEA, and 44.84% were unsure about this need. These findings suggest that healthcare providers need to intensify efforts to educate expectant mothers about the availability, safety, and benefits of OEA as an effective labour pain management option. This aligns with recommendations from international studies that have emphasized the role of targeted health education in improving awareness and acceptance of epidural analgesia (Bhatia et al., 2022).

The findings from this study also underscore the need for healthcare policy interventions aimed at improving the availability and affordability of epidural services, particularly in rural and low-resource settings. Training healthcare providers on the safe administration of epidurals and addressing fears of complications through evidence-based education could significantly improve maternal satisfaction with childbirth experiences.

Conclusion

The awareness and acceptance of obstetric epidural analgesia among expectant mothers in Southeast Nigeria remain low, with significant socio-cultural and informational barriers. This study's findings are in line with previous research that highlights the role of healthcare professionals, the internet,

and antenatal classes in shaping maternal health choices. However, increased awareness campaigns, improved access to epidural services, and addressing misconceptions can improve the uptake of OEA in the region.

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