Original Article

http://jbrcp.org

Article information

Date Submitted: 27/10/2023

Date Accepted: 14/11/2023 Date Published: 29/11/2023

Awareness and Acceptance of Labour Analgesia by Prospective Beneficiaries at the Benue State University Teaching Hospital (BSUTH), Makurdi, Benue State, Nigeria

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ABSTRACT

Background: The pain of childbirth is perhaps the most severe pain most women will experience in their lifetime. While pain of the first stage of labour is triggered by stretching of the mechanoreceptors, pain of the second stage of labour is caused by distension of pelvic structures and perineum due to the descent of the presenting part. Historically, there were several descriptions of various methods that were used to relieve the sufferings of the labouring women. Opposition to labour analgesia came from both the church and the medical community. An extremely important step in the development of labour analgesia was the use of nitrous oxide in 1880. At the moment, lumbar epidural block is considered as the gold standard of intrapartum analgesia. **Objective:** This study was conducted to ascertain the level of awareness and the acceptance of labour analgesia amongst pregnant women attending the ante natal clinic at the Benue State University Teaching Hospital. Findings from the study would serve as a guide to establishing labour analgesia services in the institution. Methodology: This was a cross sectional study conducted amongst pregnant women who attended the ante natal clinic of the Benue State University teaching Hospital Makurdi, by the use of questionnaire. The sample size was calculated using the Kish Leslie formula for cross sectional studies, n=Z2Pq/d2. Consultants, resident doctors, nurses and sometimes, medical students administered the questionnaires. The questionnaire contained demographics as well as other pertinent items. Data collected were analyzed using SPSS version 25 using simple statistics. Results: A total of 275 respondents were enrolled into the study. The age bracket between 25 to 29 years recorded the highest number of respondents with an average age of 29.84±4.52 years. A majority of those sampled, 238, (98.3%) were married. Majority of the sample population, 196, (71.3%) were of Tiv ethnic group. A majority, 263 (95.6%), were of the Christian faith. Also, majority of the sample population, 232 (84.4%), had tertiary education. One hundred and thirty-nine, (50.5%) of respondents were gainfully employed. The average gestational age was 29.41±7.59 weeks. One hundred and fifty-six (56.0%), had no awareness at all, while 7 (2,5%) were very much aware. Fifty (41.3%) got information through their attending physicians while 30 (26.4%) got through their friends. On whether respondents would accept labour analgesia if offered, 213 (77.5%) answered in the affirmative. The most reason offered for accepting labour analgesia, 143 (67.1%), is that it would make them enjoy pain-free labour. The major

How to cite this article

Efu ME*, Ojabo AO, Hembah-Hilekaan SK, Eka PO, Anenga UM. Awareness and Acceptance of Labour Analgesia by Prospective Beneficiaries at the Benue State University Teaching Hospital (BSUTH), Makurdi, Benue State, Nigeria. J Biomed Res Clin Pract: 2023;6(1-2):1-8. DOI: https:///doi.org/:10.5281/Zenodo.10214352



Access to the article Website: http://www.jbrcp.org reason offered for rejecting it was that labour is a natural process that should not be interrupted [31 (50.0%)]. All those who professed very much knowledge all said they would accept. Even though, out of those who had no knowledge at all about labour analgesia, 123 would accept and 31 would not accept indicating that 50% of respondents that would reject the offer of labour analgesia were from this group. **Conclusion:** Awareness of labour analgesia is quite low amongst pregnant women attending the ante natal clinic in our institution. On the contrary, the level of acceptance is high. However, we observed that the more awareness they have, the more likely they would accept to be given analgesia during labour. Therefore, it is safe to postulate that there is a high level of acceptability among our clients in BSUTH. The drawbacks remain lack of trained manpower and envisaged high cost of the service that are likely to hamper effective implementation.

Keywords: Awareness; acceptance; labour; analgesia

INTRODUCTION

The pain of childbirth is perhaps the most severe pain most women will experience in their lifetime. Since pain relief in labour has always been encircled with myths and controversies, providing effective and safe analgesia during labour have remained an ongoing challenge¹¹

Pain of the first stage of labour is triggered by stretching of the mechanoreceptors. Noxious impulses are carried by sensory nerve from the lower uterine segment (LUS) and cervix, which stimulates the fibers (A δ and C), which accompanying sympathetic nerve endings, travel through paracervical ganglion and hypogastric plexus to the lumbar sympathetic chain which enter the spinal cord at T10, T11, T12 and L1 spinal segments. This pain is visceral in nature, transmitted slowly, poorly confined, primarily in the lower abdomen, but also referred to lumbosacral area, gluteal region and thighs.¹

Pain of the second stage of labour is caused by distension of pelvic structures and perineum due to descent of the presenting part, ischaemia and frank injury and is carried by somatic afferent nerve fibers that transmit impulses through the pudendal nerve to the spinal cord at S2, S3, and S4 levels. Characteristic of somatic pain, it is sharp and well-localized⁻¹

Painful labour produces several adverse changes in maternal physiology, which have important implications for the foetus too. These include increased respiratory rate, increased cardiac output, decreased uterine contraction, decreased placental perfusion as well as foetal acidaemia and hypoxia, amongst others.¹

In the literature on the history of anesthesia, we can find several descriptions of various methods which were used to relieve the sufferings of the labouring women. Medieval manuscripts revealed that methods of treating pain during labour accepted by the church to include use of amulets, semi-precious stones, or magic belts.² Ethyl alcohol was often used by midwives for analgesia, despite the many voices criticizing that it was too frequently used in excessive doses. Often, noncontrolled supply of alcohol put labouring women in a state of drunkenness, disturbing the physiological parturition³

A new chapter in the history of the delivery analgesia was opened in 1847 when James Young Simpson from Edinburgh, an obstetrician, in spite of opposition from the ecclesial and medical environments, as well as from the society itself, for the first time, administered inhalational chloroform for labour analgesia⁴

Opposition to labour analgesia came from the church who believed that the pain experienced by a woman during labour is a consequence of the curse of Eve for her disobedience in paradise and as such, people should not hinder it.⁴ Simpson tried to fight this theory through both his medical activities as well as the publication of texts of a polemic nature⁵ Opposition from the medical environments was often even more pronounced than on the part of the church community. For example, Charles Meigs (1792-1869) from the USA was a passionate antagonist of any use of anesthesia during labuor because he thought that childbirth is a natural process

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that does not require any medical intervention⁴

As the acceptance for the use of inhaled analgesics during labour increased, other methods were introduced leading to an Austrian physician Richard von Steinbuchel (1865-1952) for the first time using morphine and scopolamine for analgesia in a woman in labour in 1902. Carl Gauss from Freiburg (1875-1957), who studied this technique of anesthesia later called it "twilight sleep".⁶

An extremely important step in the development of labour analgesia was the use of nitrous oxide in 1880 by a Russian doctor Stanislav Kliclowicza from St.Petersburg⁷ The proportions of 50% of nitrous oxide and 50% of oxygen determined by Michael Tunstall in 1961, turned out to be safe for both the woman and her child, and placing the ready mixture into one container significantly increased the mobility of labouring women using this form of analgesia⁸ This heralded the use of entonox in obstetric analgesia.

One of the most significant steps in the development of intrapartum relief of pain was epidural analgesia. Thirty to thirty-five millilitres of a 0.5% solution of procaine and adrenaline was used for the first time in 1909 by the German physician Walter Stoeckel (1871-1961^{),9} In his work, he described in details 141 cases of the use of this method, proving that it is highly effective in eliminating pain, and at the same time devoid of side effects typical of then popular method of "twilight sleep".⁹ Currently, lumbar epidural block is considered as "the gold standard" of intrapartum analgesia.⁴

Although several methods of labour analgesia have evolved over the years, pain relief in

labour is still controversial.¹⁰ In developed countries the issue is focused on the choice of methods and complications, while in developing countries, the issues revolve around awareness, acceptability and availability of labour analgesia¹¹ Apart from fear of child birth women may not be aware of the analgesic options for labour.^{12,13,14} Culture, ethnic group, age and education may have a strong influence on the attitude toward pain relief in labour.¹⁰

This study was conducted to ascertain the level of

awareness and also to determine the acceptance of labour analgesia amongst pregnant women attending the ante natal clinic at the Benue State University Teaching Hospital. Findings from the study would serve as a guide to establishing labour analgesia services in the institution.

METHODOLOGY

This was a cross sectional study that was conducted amongst pregnant women who attended the ante natal clinic at the Benue State University Teaching Hospital Makurdi, Benue State, Nigeria by the use of questionnaire, between January and April 2022. Only pregnant women that gave their consents were recruited into the study.

The sample size was calculated using the Kish Leslie formula for cross sectional studies¹⁵.

n=Z²Pq/d². Where *n* is the desired sample size and *Z* is the standard normal deviate usually set at 1.96, which corresponds to the 95% confidence interval. *P* is the proportion of pregnant women aware of labour analgesia, which is 21% from a previous study¹⁶. *q* is the complementary proportion equivalent to one (1) minus *P*, while *d* is the degree of accuracy desired (absolute precision), which is 5.0% (0.05).

Thus:

n=3.842x0.21(1-0.21)/0.0025=254.96

To compensate for non-response (Attrition factor)¹⁵

N=n/1-f

Where: f = assumed non-response set at 5%.

 $N{=}254.96/1{\text{-}}0.05{\,=\,}254.96/0.95$

N=268.37

Therefore, the sample size was 268. Since 268 subjects were the minimum required, a total of 275 were recruited for the study.

Consultants, resident doctors, nurses and sometimes, medical students, who had been previously trained, administered the questionnaires. While literate respondents were guided to fill the questionnaires, the not so literate were assisted with the filling by those administering them. Completed questionnaires were

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collected and submitted to members of the study team.

The questionnaire contained demographics. Other items contained in the questionnaire include, parity of respondents, previous deliveries and the routes of deliveries, gestational age at presentation as well as the highest educational qualification. Respondents were also asked how much knowledge of labour analgesia they had and how they got the knowledge. Besides, they were asked if they had experienced labour analgesia and to indicate how the experience was. Finally, they were asked to indicate if they would accept labour analgesia and to choose the appropriate reason for accepting or rejecting it, if offered.

Data collected were analyzed with Statistical Package for the Social (and Health) Sciences (SPSS) version 25 using simple statistics.

RESULTS

A total of 275 respondents were enrolled into the study. The age bracket between 25 to 29 years recorded the highest number of respondents with 106 making up 38.5%. The next highest age bracket is that between 30 to 34 years which recorded 101 respondents which is 36.7%. The least figure of 2 (0.7%) was observed with the age bracket between 45 to 49 years (Fig. 1). The average age of respondents was 29.84 ± 4.52 years



Figure 1. Histogram showing age of participants

An overwhelming majority of the respondents, 238, accounting for 98.3% were married (Tab.1). A vast

majority of the study population, 196, were of Tiv extraction making up 71.3%. This was followed by the Idomas and Igedes that recorded 25 (9.1%) and 16 (5.8%) respectively (Tab.1). While 263 (95.6%), were of the Christian faith, 12 (4.4%), professed the Islamic faith (Tab.1). A majority of the sample population, 232 (84.4%), had tertiary education. This was followed by those with secondary education, 33 (12.0%), those without formal education, 6 (2.2%) and those with primary education, 4 (1.5%) respectively (Tab.1). One hundred and thirty-nine, (50.5%) were gainfully employed, while 136 (49.5%) were unemployed (Tab. 1).

Table 1	Other	hindata	variables
Table 1.	Other	Diouata	variabies

Variable	Frequency (N=275)	Percentage (%)
Marital status		
Married	261	94.9
Single	10	3.6
Divorced	4	1.5
Ethnicity		
Tiv	196	71.3
Idoma	25	9.1
Igede	16	5.8
Fulani	10	3.6
Hausa	8	2.9
Igbo	6	2.2
Igala	4	1.5
Others	10	3.6
Religion		
Christianity	263	95.6
Islam	12	4.4
Educational level		
Tertiary	232	84.4
Secondary	33	12.0
Primary	4	1.5
None	6	2.2
Employment status		
Gainfully employed	139	50.5
Unemployed	136	49.5

Eighty-two respondents had a parity of 2 accounting for 29.8%. This was followed by para 1 with 69 (25.1%), nully para, 55 (20.0%), para 3, 51(18.5%), para 4, 1 (4.4%) and para 5, 6 (2.2%) respectively (Tab. 2). One hundred and eighty-six (67.6%) were in their third trimester, 81 (29.5%), in their second trimester and 8 (2.9%), in their first trimester with an average gestational age of 29.41 ± 7.59 weeks. On delivery

experience, 173 (62.9%) had spontaneous vaginal _ delivery (SVD) while 47 (17.1%) had surgical delivery. _ Two hundred and twenty (80%) of the respondents were multiparous whereas 55 (20.0 %) were nulliparous (Tab. 2)

Table 2. Frequency of obstetric characteristics				
Variable	Frequency (N=275)	Percentage (%)		
Parity				
0	55	20.0		
1	69	25.1		
2	82	29.8		
3	51	18.5		
4	12	4.4		
5	6	2.2		
Gestational Age				
First	8	2.9		
Second	81	29.5		
Third	186	67.6		
Previous Delivery				
Nulliparous	55	20.0		
SVD	173	62.9		
CS	47	17.1		

With regard to awareness of labour analgesia, 156 (56.0%) had no awareness at all, while 83 (30.2%) were barely aware even as 31 (11.5%) indicated to have had enough awareness and 7 (2,5%) were very much aware (Tab. 3). Concerning the source of information, 50 (41.3%) got it through their attending physicians, 30 (26.4%) got through their friends while 4 (19.8%) and 15 (12.5%) got it through their nurses/midwives and the internet respectively (Tab.3). Out of those who knew about labour analgesia, only 6 (2.7%) had experienced it. The rest, 215 (97.3%), had not experienced it (Tab.3). Furthermore, 2 (33.3%) each had nice experiences (Tab.3).

Table 3. Awareness about labour analgesia			
Variable	Frequency (N=275)	Percentage (%)	
Knowledge of labour analgesia			
Very much	7	2.5	
Enough	31	11.3	
Barely	83	30.2	
None	154	56.0	
Source of information	Frequency (N=121)		
Through my doctor	50	41.3	
Through a friend	32	26.4	
Through the Midwife/Nurse	24	19.8	
Through the internet	15	12.5	
Had it in any previous labour?	Frequency (N=221)		
Yes	6	2.7	
No	215	97.3	
What was your experience?	Frequency (N=6)		
Nice	2	33.3	
Bad	2	33.3	
Can't tell	2	33.3	

On whether respondents would accept labour analgesia if offered, 213 (77.5%) answered in the affirmative while 62 (22.5%) said they would not accept (Tab.4). Out of those that answered in the affirmative, 143 (67.1%) believed that it would make them enjoy pain-free labour. While 28 (13.1%) believed it would eliminate the fear of labour, 27 (12.7%) believed it would make them less agitated and 15(7.1%) were of the opinion that it would make them feel good generally about labour (Tab.4). Those who said they would not accept the offer of labour analgesia gave various reasons such as labour being a natural process that should not be interrupted, 31 (50.0%); it could be harmful to the baby, 15 (24.2%); it could result in cesarean section, 6 (9.6%); it is expensive, 4 (6.5%); their husbands not accepting, 4 (6.5%) as well as making them feel less a woman, 2 (3.1%) (Tab.4).

Table 4. Attitude towards labour analgesia		
Variable	Frequency (N=275)	Percentage (%)
If offered labour analgesia, will you accept it?		
Yes	213	77.5
No	62	22.5
Reason for those who said YES	Frequency (N=213)	
I will enjoy pain -free labour	143	67.1
It will eliminate my fear of labour pain	28	13.1
It will make me less agitated	27	12.7
It will make me feel good about labour generally	15	7.1
Reason for those who said NO	Frequency (N=62)	
Labour pain is natural and must not be interrupted	31	50.0
It can harm my baby	15	24.2
it will result in my labour ending in CS	6	9.7
My husband will not accept it	4	6.5
It is expensive	4	6.5
It will make me less a woman	2	3.1

Of all those who professed very much knowledge all said they would accept, with none rejecting the offer (Tab.5). Out of those who said they had enough knowledge, 27 respondents said they would accept and 4 said they would reject (Tab.5). Also, out of the respondents that were barely knowledgeable about labour analgesia, 56 said they would accept and 27 said they would reject (Tab.5). Finally, out of those who had no knowledge at all about labour analgesia, 123 said they would accept and 31 would not accept indicating that 50% of respondents that would reject labour analgesia were from this group.

Table 5. Relationship between knowledge about labour analgesia and possible acceptance

		If offered labour analgesia, will you accept it?			
		Yes	No	X^2	P-value
Knowledge about labour analgesia	Very much	7	0	8.941	0.030*
		27	4		
	Enough				
	Barely	56	27		
	Not at all	123	31		

DISCUSSION

All the participants were within the female reproductive age with the average age of respondents being 29.84 \pm 4.52 years. The dominance of the Tiv ethnic group (71.3%) in the study population is understandable in that not only is Makurdi, where sampling took place, a Tiv town, but also the Tivs are the majority ethnic group in Benue State. The other 2 major tribes, Idoma and Igede came second and third respectively. Benue state is majorly a Christian state and therefore, it is not surprising that an overwhelming majority (95.6%) of respondents were of the Christian faith. Benue state is blessed with a good number of tertiary institutions such as universities, polytechnics and colleges of education with ownership ranging from Federal, State, Missions to private individuals. Residents in the state naturally take advantage of these schools to get educated. This is responsible for the high percentage of graduates of tertiary institutions recorded amongst the respondents (84.4%). From the results of the study conducted by Nabukenya et al, while over 50 % had attained at least secondary education, the number with primary level education and below is still significant¹⁷. By comparison, women attending antennal clinic in our institution are better educated.

Both the employed and the unemployed are almost evenly distributed (50.5% and 49.5%). Ordinarily, one would have expected a higher level of employment given the level of education of respondents. However, owing to the down turn of the economy, unemployment remains a national issue.

A vast majority of the study population were either barely aware or not at all aware of the existence of labour analgesia (86.2%), while barely 13.8% fell into the category of those who were very much aware or had enough awareness. This poor result is in tandem with very similar results in developing countries. The problem in this situation is compounded by the dearth of trained manpower too, which if available and ready should be in the forefront of the campaign for the awareness. In developed countries, because labour analgesia is easily available and accessible, the issue is focused on the choice of methods and complications, while in developing countries, the issues revolve around awareness, acceptability and availability.¹¹ Naithani et al, in their study, found that only 9.5% of the women were aware of the availability of pain relief during labour and this is similar to the result of our study.¹⁸ Our result is less than what obtains nation-wide in our country which has a record of 27%¹¹ and in Lagos with an impressive figure of 38.9%.¹⁹ Australia has an even more impressive 98% awareness level.¹²

A majority of the respondents became aware of labour analgesia through their doctors, mid-wives/nurses and friends (87.5%) leaving just 12.5% who self-educated themselves via the internet. Among those who had knowledge of labour analgesia in the study undertaken by Nabukenya et al, the commonest source of information was friends and relatives. Few received information from the previous labour, even fewer still from media and literature¹⁷ From the result of our study, only a mere 2.7% has had any experience of labour analgesia. This is not unexpected when one observes the huge number of the respondents that had little or no awareness of this interventional modality.

The most reason given by respondents for accepting labour analgesia was that labour analgesia would make them enjoy pain-free labour (67.1%). But 50% of those who would reject labour analgesia believed that labour was a natural process that should not be interrupted. It is important to observe also, that a good percentage (24.2%) were of the belief that labour analgesia could be harmful to their babies. In their study, Ibach et al observed that the discrepancy in the level of awareness and acceptance they were able to unearth could be attributed to the fact that child birth is still viewed as a physiological process in most of the developing

countries, which is managed with as little interference as possible. Many women still do not know that pain of labour can be relieved²⁰

Corelating awareness and possible acceptance of labour analgesia, 100% of those who professed very much knowledge all said they would accept, with none rejecting the offer. Out of those who said they had enough knowledge, 87.0% respondents said they would accept and 13% would reject. Also, out of the respondents that were barely knowledgeable about labour analgesia, 67.5% said they would accept and 22.5% said they would reject. Finally, out of those who had no knowledge at all about labour analgesia, even though about 80% of them would accept with 20% indicating they would not accept, the 20% from this group of respondents constitute 50% of the total number of respondents that would reject labour analgesia. A significant relationship has, thus, been established between awareness and acceptance of labour analgesia.

CONCLUSION

Awareness of labour analgesia is quite low amongst pregnant women attending the ante natal clinic in our institution. On the contrary, the level of acceptance is high. However, we observed that the more awareness they have, the more likely they would accept to be given analgesia during labour. Therefore, it is safe to postulate that there is a high level of acceptability among our clients in BSUTH. However, the drawbacks remain lack of trained manpower and envisaged high cost of the service that are likely to hamper effective implementation. We therefore recommend that efforts should be made to train/employ more staff and to equip the hospital towards the commencement of labour analgesia services.

Conflict of interest: The authors declare that there is no conflict of interest.

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