PERCEPTION OF LABOUR PAIN AMONG PARTURIENTS AT THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL: AN OBSERVATIONAL STUDY

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ABSTRACT

Background: *Labour pain is the result of a complex and subjective interaction of multiple physiologic and psychosocial factors on a woman's individual interpretation of labour stimuli but little data exist in the South-southern part of Nigeria regarding pain perception and relief in labour, despite its obvious advantages. This study sought to evaluate the perception of labour pains by parturient at the University of Port Harcourt Teaching Hospital (UPTH). We also sought to determine the adequacy of analgesia administered to parturients at UPTH.*

Methods*: This was a descriptive cross-sectional study involving 300 parturient that had vaginal deliveries at UPTH. These subjects were administered a structured questionnaire to obtain their demographic information. Their perception of labour pain and adequacy of analgesia were objectively evaluated pre- and post-vaginal delivery using the visual analogue scale (VAS).*

Results: *The mean expected pain score was 63.1±24.24, while the perceived pain score was 81.2±2.78. Majority (75%) of the respondents perceived labour pains as severe, 23% perceived it as moderate, while 1.7% perceived labour pains as mild. Thirty-two percent of the respondents received counselling during the antenatal period on the nature of labour pains and on the availability of intra-partum analgesia. However, 84.4% of those counselled perceived labour pains as severe, while 71.1% of those notcounselled perceived it as severe. Two hundred and four (68%) of the parturients received some form of analgesia, of which majority was intramuscular pentazocine with only 5.9% expressing satisfaction with the adequacy of analgesia.*

Conclusion: *Most of the parturients perceived labour as a very painful process. The nulliparous and primiparous were more likely to feel more intense pain than the multiparous parturient. The adequacy of analgesia was however grossly inadequate with only 5.9% expressing satisfaction.*

Keywords: *Perception; Labour pains; Parturients; Adequacy.*

INTRODUCTION

Perception of pain, including pain of uterine contraction, is a complex process that involves interaction of both central and peripheral mechanisms and continuous interchange of information among nociceptive and descending anti-nociceptive pathways. Pain perception involves sensory, emotional, behavioural and environmental factors.[1] Many women have intense pain

during labour which is often described as the worst pain in a woman's life.[2] Labour pain is also associated with reflex increase in blood pressure, oxygen consumption and the liberation of catecholamine, all of which may adversely affect uterine blood flow, cause maternal distress and may lead to poor obstetrics outcome.[3] Labour pain relief is an important component of management of labour, but due to worldwide divergence on its implementation has remained an aspect of women's health that has been historically neglected.[4]While most people are aware of association of labour with pain, majority of parturients are unaware of the appropriateness of labour pain relief and the modalities of doing so.[5] In a study that looked into the awareness and desirability of labour analgesia among Indian parturients, 98% had no idea about labour analgesia.[6] In Nigeria, there is dearth of data on the overall pattern of obstetric pain management, and where available are largely confined to surveys concerning service provision rather than genuine patient demand.[7] Parenteral opioids and sedatives are the most frequently deployed forms of labour analgesia in the University of Port Harcourt Teaching Hospital(UPTH), although the routinely used doses of these agents have been shown to have little or no effect on labour pain.[8] The rate of use of epidural analgesia alternative is low in Nigeria due to a lack of materials and manpower.[9]

The experience of labour pain is highly variable and various levels of pain have been described with as many as 45% to 68% of parturient describing it as extremely severe.[10, 11] Kuti and Faponle reported that 68.3% of parturient in Ile-Ife, South-Western, Nigeria described labour pain as severe.[11]

Several factors have been linked to labour pain but it has remained difficult to assess the effects of these factors because labour is a dynamic process and pain intensity changes over its course. The pain during first stage of labour is associated with ischemia of the uterus during contraction as well as effacement and dilatation of the cervix[12], while the second stage pain is more intense, perhaps due to distension of pelvic structures and perineum during descent of presenting part and ischemia.[13]

There is no doubt that individual parturient may perceive labour pain differently depending on their pain threshold[1]. Notwithstanding individual differences, pain perception during labour may vary from one culture to another.[14]

Pain perception during labour has been shown to be dependent on factors in the parturient such as age, parity and educational status.[15] Olayemi *et al* reported that westernization through education tended to increase the perception of pain by parturient in Nigeria. This is so because education allows the parturient to be exposed to, and understand education materials that change their thinking about the long held belief that pain in labour is a mark of womanhood in the Nigerian culture.[16] Olayemi *et al* also reported that the determinants of pain perception in labour among parturient in Ibadan, South-Western Nigerian were age, parity, education and gestational age amongst others. They therefore submitted that parturient would benefit from analgesia in labour.[17]

Pain perception in labour is a subjective experience and to measure its intensity is of

vital concern to researchers and clinicians. Historically, the initial level of pain has been measured with a standard categorical scale (none, mild, moderate or severe). However, Visual Analogue Scale (VAS) is often used in the belief that the measurement continuum produces sensitivity than the discrete points of the categorical scale. The VAS is a reliable, quantitative and valid measure of pain. It is a vertical or horizontal line, usually 100mm (10cm) in length with descriptive words such as "no pain" and "worst pain imaginable" written at the end points.[18] The VAS though a widely used and validated measure of pain; cannot truly represent all aspects of pain and individual determination has an imprecision of 20mm.[19] However, the single retrospective VAS score, although not perfect, may give accurate results that can be easily analysed.[20] The McGill Pain Questionnaire (MPQ) is another useful instrument in the assessment of the nature and intensity of labour pain. However, it varies greatly between subjects with psychological factors such as previous experience of labour pain affecting the perceived levels of labour pain, and becomes less discriminatory as pain levels become severe.[21,22]

The VAS does not assess culture, communication, mood states of pregnant women or other psychological factors that may affect either the perception or the reporting of labour pain.

METHODS

Study population

This was a descriptive cross-sectional questionnaire survey of parturient in the post-partum ward at the UPTH in South-Southern Nigeria from November 2010 to April 2011. The study subjects were 300 parturient who received antenatal care at UPTH, who had uncomplicated vaginal deliveries in the labour ward of UPTH, and gave informed written consent. Also in this study all primiparous women who had first delivery and multiparous women who had more than one delivery were included. All those women who had intra-uterine fetal death, immediate neonatal death or had cephalo-pelvic disproportion, and were in the second stage of labour were excluded. The management of labour and its monitoring was according to the labour room protocol. The subjects who gave consent were educated about the study and data instrument during their antenatal clinic visit. Two pre-designed questionnaires were filled with their consent and proper counselling. First questionnaire was filled by the resident staff on duty containing demographic details, use of pharmacological agents, like injectable narcotic analgesic and local anaesthetic agents. The second questionnaire was filled on 1st postnatal day. This questionnaire contained information of women's own experiences regarding labour pains, effects with different treatment modalities. The VAS scale was used to objectively assess perception of labour pain by these women. Before analysis of the data, pain severity categories were defined. Patients with VAS pain score of 30mm or less were defined as having mild pain. Those with scores of 54mm or more were considered to have severe pain and those from 31mm to 53mm moderate pain.[23] The data was collected, and analyzed regarding their pain expectation score, pain perception within 12 hours after birth since the memory of pain may be affected by the time elapsed from the delivery. Analysis was performed through SPSS version 10.0. Results were presented as percentages,

means with standard deviation. A p-value of less than 0.05 was considered statistically significant.

Ethical approval for this study was granted by the Research Ethics Committee of the University of Port Harcourt and informed consent was obtained from all respondents.

RESULTS

Of the 300 respondents studied, majority were aged 20-34years. Their mean age was 29.46±4.43years. Forty-four (14.7%) were of advanced reproductive age and there was also one teenager (0.3%). The median parity was 2. There were 132 (44%) primiparous and 18(6%) grand multiparae. About two-thirds of the parturient had tertiary level of education while one (0.3%) respondent had no formal education. Most (46%) of the subjects were of Ibo extraction, married (99.3%) and Christian (97.7%). The sociodemographic characteristics of the study population are shown in Table 1.

Table 1: Sociodemographic Characteristics of Parturients in UPTH

Characteristics	Frequency (n)	Percentages (%)
Age		
<19	1	0.3
20-34	254	85.0
	44	14.7
Parity		
0-1	132	44.0
2-4	150	50.0
>4	18	6.0
Educational Status		
No formal education	1	0.3
Primary	10	3.3
Secondary	90	30.0
Tertiary	199	66.4

The mean expected pain score was 63.1±24.24mm and the mean perceived pain score was 80.83±22.78mm. Of the 300 subjects studied, prior to the onset of labour, 4(1.3%) expected no pain, 11(3.7%) expected to feel mild pain, 157(52.3%) moderate pain, and 128(42.7%) severe pain. In the immediate post-partum period however, 5(1.7%) of the parturient felt mild pain, 69(23.0%) moderate pain, while 226(75.3%) severe pain.

Ninety-six (32%) were counselled on labour pain and its relief. Those who received counselling were mostly educated through books read at home 38(39.6%) and by the nurses during ante-natal classes 32(33.3%). Majority of the subjects 199(64%) were unaware of labour analgesia, 97(32%) were aware of intramuscular injection, very few were aware of epidural/spinal analgesia 3(1.0%) and gaseous form of analgesia (entonox) 8(3%). Of the 96(32%) who received counselling on labour pain, 1(1.0%) perceived labour pain as mild as against 2.0% of those who were not counselled. Also, 13.4% of those counselled perceived the labour pain as moderate while 27.6% of those not counselled perceived labour pain as of moderate intensity. However, 83(85.6%) of those counselled perceived labour pain as severe as against 143(70.4%) of those who were not counselled. This was statistically significant (X^2=8.224, p=0.012) (See Figure 1).

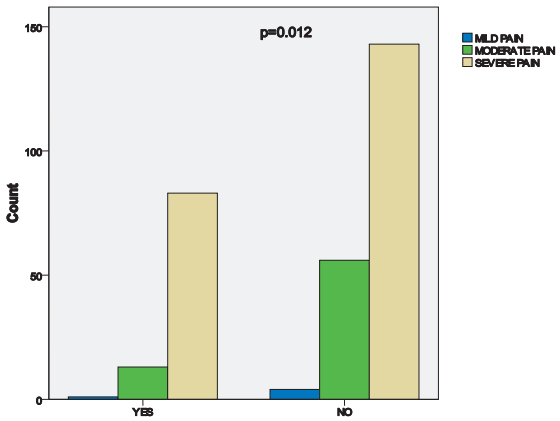

Figure 1: The Influence of Counselling on the Perception of Labour Pain

All the women studied, experienced one level of pain in labour or the other. Two hundred and twenty-six (75%) perceived labour pain as severe, 69(23%) as moderate and only 5(1.7%) perceived as mild. Figure 2 shows the attitude of these parturient to labour pain. We observed that parity was a significant influence on the perception of labour pain (X^2=14.660, P=0.003), while age and educational status failed to influence the perception of labour pain by the parturient (See Table 2).

Table 2: Effect of Sociodemographic factors on Labour Pain Perception

Variables	Mild Pain N (%)	Moderate Pain N (%)	Severe pain N (%)	X^2	Fischer's exact test p-value
Parity					
0-1	0 (0)	20 (15.2)	112 (84.8)	14.660	0.003
2-4	5 (3.3)	42 (28.0)	103 (68.7)		
>4	0 (0)	7(38.9)	11 (61.1)		
Age					
<19	0 (0)	1 (100)	0 (0)	5.388	0.458
20-34	5 (3.3)	58 (22.7)	192 (75.3)		
≥35	0 (0)	10 (22.7)	34 (77.3)		
Education					
No formal education	0 (0)	1 (100)	0 (0)	10.709	0.119
Primary	1 (10)	3 (30)	6 (60)		
Secondary	2 (2.2)	22 (24.4)	66 (73.3)		
Tertiary	2 (1.0)	43 (21.6)	154 (77.4)		

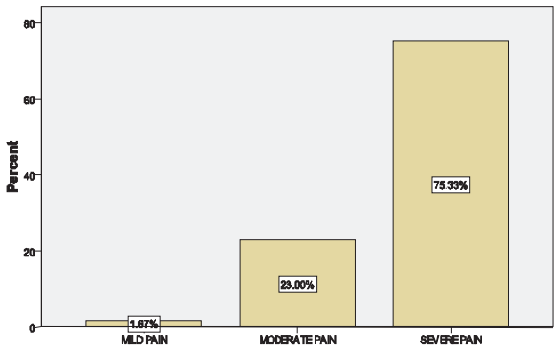

Figure 2: Distribution of Labour Pain Perception by the Parturients

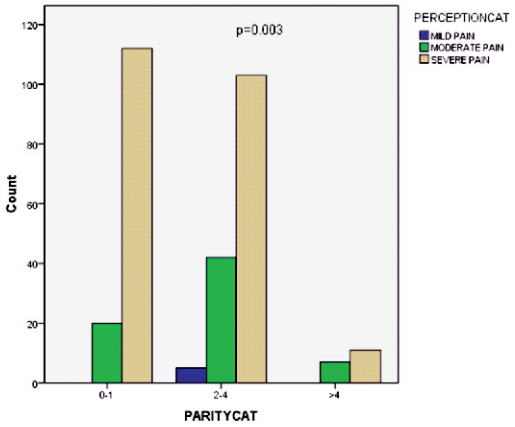

Figure 3: Influence of Parity on the Perception of Labour Pain

Prior to experiencing labour pain, most of these women studied 236(78.7%), had felt it was necessary to alleviate pain in labour. Fifty-one (17%) of the subjects did not think pain relief during labour was necessary and 13(4.3%) had not given it a thought. Ninety-six parturient (32%) did not receive any form of analgesia in labour and of the 204(68%) who did, only 1(0.5%) received epidural analgesia. The rest received intramuscular narcotic analgesic (pentazocine). Of the 68% who received analgesia in labour, 176(87.7%) would want more analgesia in future deliveries. Twelve (5.9%) expressed satisfaction with the form of analgesia received and would recommend it for future deliveries, while the remaining 13(6.3%) would not want to have any form of analgesia in future deliveries.

DISCUSSION

We found that majority of the parturient in UPTH perceived labour as a very painful experience, as most perceived labour pain as severe (75.3%). This was in concert to other

findings by other investigators.[10, 11] It is worthy of note that among the women who received analgesia in labour, only 5.9% expressed satisfaction and would want the same form of analgesia administered to them during future child births. However, the number of parturients who experienced labour pain without any form of analgesia in this study 96(32%) was far less when compared with other studies in Nigeria, ranging from between 77.9% to 94.7%.[14, 18]This highlights the fact that analgesia still has a lower priority than other aspects of healthcare in developing countries so that effective pain relief is unavailable to large numbers of patients.[24] Furthermore, in Nigeria, it is generally assumed that labour is well tolerated and pain relief is not usually considered an important aspect of intrapartum care[11]. This might explain why most (64%) of the parturient were unaware of the availability of labour analgesia. We also found that of the parturients who received some form of analgesia, the vast majority (99.5%) received parenteral narcotic analgesic. This is in spite of the fact that nearly all parenteral opioids analgesics and sedatives readily cross the placenta and can depress the foetus and reduce foetal heart rate variability due to depression of the central nervous system.[25, 26] Systemic analgesics are still widely used around the world, despite being significantly less efficacious than epidural analgesia. This study thus supported the fact that modes of pain relief in labour which are effective and available in developed countries are not frequently in use in Nigeria.[18]This gap between the desirability and availability of labour analgesia can be bridged by adequate patient education.

We also found that the mean perceived pain score was more than the mean expected pain score with the parturient experiencing progressively more intense pain than they had expected. This is because parturients' perception and response to labour pain depends on the intensity of pain, psychological factors, cultural beliefs, previously painful experiences, history of pregnancy, social and marital status.[27] This finding was in contrast to that reported by Aksoy *et al*, who found that the pre-labour pain expectation was of similar intensity to pain during labour.[28] This discrepancy in findings may be due to the fact that pain is only one element of the overall childbirth experience; and the perception of pain is influenced by all the other parts of the birth experience. These other that may contribute to how pain is perceived by the parturient include satisfaction with healthcare providers, level of medical intervention, the health of the new-born, whether there were any complications.[28]Furthermore, the degree of pain experienced during labour is related to the frequency, intensity, and duration of uterine contractions and dilatation of the cervix. In addition, the position of the foetus, decent of the presenting part, stretching of the perineum and pressure on the bladder, bowel, and sensitive pelvic structures also contribute to pain levels.[29] Labour pain is a complex and subjective interaction between multiple physical, psychosocial, environment plus cultural factors and a woman's interpretation of the labour stimuli.[30] The influence of these multiple factors on the perception of labour pain by the parturient is evident in perception of the intensity of the pain after counselling; with those without counselling experiencing progressively more severe pain than their counselled

counterparts. This may be because the counselling sessions accentuated the subjects' perception of labour pain.[13,31]

This study noted that in spite of the use of pharmacological agents 176 (87.7%) patients were dissatisfied with the pain relief which is consistent with another study.[32] This may be explained by the fact that most patients who had epidural labour analgesia had better maternal childbirth satisfaction when compared with women who had parenteral opioid.[33]

Another important finding was that parity was a significant influence in the perception of labour pain by the parturient. This may be because the nulliparous women experiencing labor pain for the first time go through greater emotional distress as compared to multiparous women. This is in concert with the results reported by other researchers[32], and at variance with other reports.[11, 17] Studies have shown that certain factors influence labour pain and delivery such as the parturient psychological state, mental preparation, family support, medical support, cultural background, primipara versus multipara, size and presentation of the foetus, size and anatomy of the pelvis,and use of medications to augment labour (oxytocin) and duration.[34]

CONCLUSION

This study concluded that the labour pain was moderate to severe for majority of the parturients. Nulliparous/primiparous parturients were more likely to perceive labour pain of higher intensity. Although a great percentage of parturients (68%) received some form of analgesia, 87.7% would want more effective labour analgesia, and only 5.9% would recommended the form of analgesia received.

There is therefore an unmet need for adequate pain relief among the parturients. It is therefore necessary to pay more attention to effective obstetric analgesia as an important arm of intrapartum care.

REFERENCES

1. Cheek TG, Gutsche BB, Gaiser RR, Chestnut DH. Obstetric anesthesia. Principles and Practice. 2nd ed. *St Louis: Mosby* 1999; 320-35.
2. Reynolds F. Pain relief in labour. *Br J Obstet Gynaecol* 1990; **97**: 757-759.
3. Okeke CI, Merah NA, Cole SU, Osibogu A. Knowledge and perception of obstetric analgesia among parturients at the Lagos University Teaching Hospital. *Niger Postgrad Med Journal* 2005; **12**: 258-261.
4. Campbel DC. Parenteral opioids for labour analgesia. *Clin Obstet Gynaecol* 2003; **46**: 616-622.
5. Omotayo RS, Akinsowon O, Omotayo SE. Awareness, attitude and use of labour analgesia by pregnant women at State Hospital, Akure. *Trop J Obstet Gynae* 2019; **36**: 170-176.
6. Shidhaye RV, Galande M, Bangal VB, Smita J. Awareness and attitude of Indian pregnant women towards labour analgesia. *Anaesthesia, Pain and Intensive Care* 2012; **16**: 131-136.
7. Akpan S, Eshiet A, Ilori I, Bassey E, Kalu Q, Edentekhe T. Attitude of Nigerian mothers to labour pain and its relief. *Mary Sclesesor Journal of Medicine* 2003; **3**:12-16.
8. Fyneface-Ogan S, Mato CN, Anya SE. Epidural anaesthesia: Views and outcomes of women in labour in a

Nigerian hospital. *Annals of African Medicine* 2009; **8**: 250-256.
9. Imarengiaye CO. Trends in pain relief in labour: Implications for obstetric analgesia service in Nigeria. *Niger Postgrad Med J* 2005; **12**: 193-202.
10. Crowhurst JA. Analgesia and anaesthesia. Edmonds DK (Ed) In: Dewhurst's Textbook of Obstetrics and Gynaecology. 7th Edition; 2007:53-54.
11. Kuti O, Faponle AF. Perception of labour pain among the Yoruba ethnic group in Nigeria. *J Obstet Gynaecol* 2006; **26**: 332-334.
12. Rowlands S, Permezel M. Physiology of pain in labour. *Baillieres Clin Obstet Gynaecol* 1998; **12**: 347-362.
13. Labor S, Maguire S. The pain of labor. *Rev Pain* 2008; **2**: 15-19.
14. Connel-Price J, Evans JB, Hong D. The development and validation of a dynamic model to account for the progress of labour in the assessment of pain. *Acta Obstet Gynaecol Scand* 2004; **83**: 415-424.
15. Campbell CM, Edwards RR. Ethnic differences in pain and pain management. *Pain Manag.* 2012; **2**: 219–230. doi:10.2217/pmt.12.7.
16. Oladokun A, Eyelade O, Marhason-Bello I, Fadare O, Akinyemi J, *et al.* Awareness and desirability of labour epidural analgesia: A survey of Nigerian women. *Int J Obstet Anaesth* 2009; **18**: 38-42.
17. Olayemi O, Aimakhu CO, Akinyemi OA. The influence of westernization on pain perception in labour among parturients at the University College Hospital Ibadan. *Journal of Obstetrics and Gynaecology* 2006; **4**: 329-331.
18. Olayemi O, Aimakhu CO, Udoh ES. Attitudes of patients to obstetric analgesia at the University College Hospital, Ibadan, Nigeria. *Journal Obstet Gynaecol* 2003; **1**: 38-40.
19. Revil SI, Robins JO, Rosen M. The reliability of a linear analogue scale for evaluating pain. *Anaesthesia* 1976; **31**: 1191-1198.
20. Myles PS, Ttoedel S. The pain visual scale: Is it linear or non-linear? *Anaesth Analg* 1999; **89**: 517-520.
21. Niven C, Gijsbers K. A study of labour pain using the McGill Pain Questionnaire. *Soc Sci Med* 1984; **19**: 1347-1351.
22. Baker A, Ferguson SA, Roach GD, Dawson D. Perception of labour pain by mothers and attending midwives. *J Adv Nurs* 2001; **35**: 171-179.
23. Ludington E, Dexter F. Statistical analysis of total labour pain using the Visual Analogue Scale and application to studies of analgesic effectiveness during childbirth. *Anaesth Analg* 1998; **87**; 723-727.
24. Collins SL, Moore RA, McQuay HJ. The visual analogue pain intensity scale: What is moderate pain in millimeters? *Pain* 1997; **72**: 95-97.
25. Size M, Soyannwo OA, Justins DM. Pain management in developing countries. *Anaesthesia,* 2007; **62** : 38–43.
26. Fortescue C, Wee MYK. Analgesia in labour: non-regional techniques. *Continuing Education in Anaesthesia, Critical Care, and Pain.* 2005. **5**: 219-223.
27. Famewo CE. Lectures in anaesthesia and intensive care for medical students and practitioner. Third Edition. *Lovemost Printers Ltd. Ibadan.* 2004: 84.
28. Aksoy H, Yucel B, Aksoy U, Acmaz G, Aydin T, Babayigit MA. The relationship between expectation, experience and perception of labour pain: an

observational study. *Springer Plus* 2016; **5**:1766. DOI 10. 1186/s40064-016-3366-z
29. Bamigboye AA, Holfmeyr GJ. Caesarean section wound infiltration. *SAMJ.* 2010. **100**: 313-317.
30. Global year against pain in women, real women, real pain. Obstetric pain. www.iasp.com.
31. Flavia A, Renato P, Adriana SOM, Leila K, Isabella CC, Melania MRA. Combined spinal epidural analgesia and non-pharmacological methods of pain relief during normal childbirth and maternal satisfaction: a randomised clinical trial. *Rev Assoc Med Bras.* 2012. **58**: 112-117.
32. Fields H. Depression and pain: a neurobiological model. *Neuropsychiatry Neuropsychol Behav Neurol* 1991;**4**:83–92
33. Long J, Yue Y. Patient controlled intravenous analgesic with tramadol for labour pain relief. *Chin Med J (Engl)* 2003; **116**: 1752-5.
34. Iliadou M. Labour pain and pharmacological pain relief practice points. *Health Sci J.* 2009. **3**: 197-201.