Original Research Article

Labour pain Perceptions and Experiences among Postpartum Mothers in two selected Public Health Facilities in Rivers State: A Mixed Method Study

ABSTRACT

Background: Labour pain is regarded as the most intense pain experienced by women; yet, the degree of labour pain varies. Severity of labour pain is seldomly assessed or addressed in low-resource settings.

Aim: to evaluate the perceptions and experiences of labour pain among postpartum mothers in two public health facilities in Rivers State.

Study Design: A mixed method (convergent parallel) study design was used.

Methods: The qualitative and quantitative aspects involved 26 purposively and 194 consecutively selected postpartum mothers. The qualitative aspect (perception) involving in-depth interviews and thematic analysis was performed using Atlas.ti software version 23. The quantitative aspect (experience) employed an interviewer administered semi-structured questionnaire and Visual Analogue Scale (VAS) pain tool to obtain sociodemographic information, antenatal data and assess labour pain experience. Labour pain VAS ≥6 was considered severe. The proportion with severe labour pain was calculated and associated factors were uncovered using a Chi-square test. Significance level was p-value<0.05.

Results: Of the 26 postpartum mothers interviewed, four themes emerged: labour pain perception, pain relief, health worker and family support. Also, of the 194 postpartum mothers recruited, 137(70.6%) experienced severe labour pains.

Conclusion/Recommendation: This study demonstrated that women perceived labour pain as severe during childbirth. Pain relief was strongly desired by postpartum mothers and influenced labour pain perception. Postpartum mothers' perceptions of labour pain were predominantly convergent with their experience. There is a need for a uniform labour pain relief policy and improved pain assessment and support for women in labour in Nigeria.

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Keywords: Labour pain, Perception, Experience, Mixed Method, Postpartum Mothers

Introduction: Labour pain is regarded to be the most intense pain among women of reproductive age, and the degree of pain experienced during labour affects labour progress as well as maternal and newborn well-being [1]. Although labour is a physiological process, the severity of labour pain varies among women. The perception of labour pain can range from being

agonizing to enjoyable depending on the individual's perspective which may arise from an interplay of several factors which include previous experiences, antenatal education, religion, place of delivery, family and caregiver support, and sociocultural contexts [2]. Despite the intensity of labour pain, the memories and unpleasant experience fade over time for the majority of women [3].

The World Health Organization (WHO) strongly recommends that during the intrapartum period, comprehensive healthcare be provided promptly, appropriately, and with regard for a woman's choice, culture, and requirements. Also, WHO considers pain treatment to be a quality-of-care criterion for all women throughout the postpartum period [4]. The intensity of labour pain, as well as its detrimental impact on maternal well-being during and after childbirth, has been widely documented, leading to the formation of health policies in resource-rich nations in favour of pain treatment during labour. However, in low-resource countries, pain relief options are largely non-pharmacological and solely depend on the attitude and understanding of the healthcare workers [5,6].

In some health facilities, some birth attendants tend to downplay the individual experience of women in labour and paying more attention to the aftermath of the delivery [7]. However, Sustainable Development Goal 3 (Women, Children, and Adolescent Health) suggests that all women have the right to the greatest achievable level of health, including physical and psychological care[8].

In the early 20th century, there have been a variety both non-pharmacological and pharmacological methods of pain relief to help in pain management during labour ranging from; epidural anaesthesia, nitrous oxide, meperidine, para cervical block and the use of pethidine [9], to non-pharmacological methods such as breathing exercises, partner or doula support and lower back massage which have little or no adverse effect on maternal or fetal health [10]. During the third trimester as part of the birth plan process, these pain relief options are regularly deliberated during antenatal visits and reiterated during labour. The delivery of actual pain relief during labour allows the woman to undergo an improved experience during childbirth [11]. Albeit, according to Leeman and colleagues, [9] most health workers have a limited understanding of how women truly feel during labour even though many have described labour pain as very excruciating. A more satisfying experience, one that is safe and comfortable for both the mother and the infant is the value of effective labour pain management [5].

The awareness and management of labour pain may change if women recount their pain perception before labour and their real experience of pain shortly after labour. This will ensure that every woman in labour is given the required focus of attention and that her labour pain is promptly and adequately managed [12]. If women in labour are attended to by a skilled birth attendant, then the attendant has to ensure that women obtain a satisfactory birth experience since pain in labour is inevitable [13]. There is some evidence showing that the support women

receive during labour can lessen the use of pharmacological pain relief, decrease the duration of labour and cut down on some medical interventions that could have been performed [14].

Midwives are predominantly the first-line of healthcare providers at health centres and are the lead service providers to women in labour. They are usually the first to observe worsening painful maternal distress and participate in the delivery process. Thus, making them the first likely initiators of labour pain management. However, several studies have reported that there is a general suboptimal level of knowledge of labour pain management among midwives/nurses, especially in low- and middle-income countries [5,15]. Assessing the severity of labour pain is largely undone as most see the labour process as natural and so are less likely to intervene [6].

Most studies in Nigeria, although few, which explored perceptions and or experiences of labour pain reported that between 50% to 85.3% of post-partum mothers described labour pain as severe. However, these were predominantly quantitative studies, some were subjective and all did not explore the actual views of the mothers themselves. Concerning, is the fact that qualitative studies on this subject were very scarcely conducted in Nigeria [16,17] and were limited by small sample sizes and prolonged duration between delivery and in-depth interview, which increased the possibility of recall bias. Despite this high prevalence of perceived severe labour pains, there is still no national policy on pain relief and most hospitals have no working protocols to assess labour pain severity and institute the desired pain management.

This study sought to fill this knowledge gap by using a mixed method to address this very troubling yet, insufficiently addressed issue of labour pain perception and experiences among post-partum mothers and mitigate the methodological challenges inherent in existing studies in Nigeria that employed 'stand-alone' research methods. Findings from this study could create awareness by highlighting the perceptions (qualitative) and unique experiences (quantitative) of the post-partum mothers within the socio-cultural context of Nigeria, particularly Rivers State which has provided evidence to inform the values, equity and acceptability components of obstetric interventions for labour pain in this setting.

The aim of this study was to evaluate the perceptions and experiences of labour pain among postpartum mothers in two selected public health facilities in Rivers state, South south Nigeria.

OBJECTIVES:

1. To explore how postpartum mothers perceived their labour pain (qualitative)
2. To determine how postpartum mothers experienced labour pain using a pain score (quantitative)

THEORETICAL FRAMEWORK:

The theoretical framework of this research is propagated based on the Hard, Wolff and Goodell's Fourth Theory of Pain (1940) [18]. According to their theory, pain has two components: pain perception (afferent) and pain response (efferent). In contrast to pain perception, which was thought to be a more hardwired physiological process, pain response was

assumed to be influenced by complicated psychologic and physiological processes that were influenced by prior experiences, culture, the environment, and emotional state [19]. Since the perceptions and experiences of labour pain is a reflective lived experience that is often a major life experience intertwined with a complexity of factors including the woman's inherent pain threshold levels, her knowledge and understanding of the birth process, external sources of influence such as the birth environment and other socioeconomic, sociodemographic and antenatal factors this framework was take into consideration. This theory thus informed the concepts used in this research which includes labour pain, pain perception, postpartum mothers, pain assessment.

MATERIALS AND METHODS

Research Design: Cross-sectional mixed method (Convergent parallel design) and employed a phenomenological methodology for the qualitative aspect and an interviewer-administered semi-structured questionnaire for the quantitative aspect.

Study facilities: Of the 2 Tertiary and 2 secondary public health facilities in Port Harcourt, one each (Rivers State University Teach Hospital) and Obio Cottage Hospital (OCH) were randomly selected.

Study Area: Labour and post-natal wards of the Department of Obstetrics and Gynecology, RSUTH and Obio Cottage Hospital, Rumuobiakani, Port Harcourt.

Population for the Study: Post-partum mothers who delivered at the labour wards of either the Rivers State University Teaching Hospital and Obio Cottage Hospitals and those who had emergency C-sections after labouring for a while.

Inclusion criteria: All post-partum mothers either booked or unbooked who delivered in the labour wards of RSUTH and OCH. All post-partum mothers that delivered per vaginam or via C-section but experienced labour pain and all post-partum mothers who gave consent were included.

Exclusion criteria: All post-partum mothers who are too sick to give consent e.g., had eclampsia, and all post-partum mothers that delivered via elective C/Section and/or were sedated/ never experienced labour pains were excluded.

Sample and Sampling Techniques:

Sample size and sampling technique for qualitative aspect: 26 post-partum mothers were purposively recruited.

Sample size for the quantitative component: The sample size calculation was based on the prevalence of severe labour pain from a previous study in Nigeria which was reported as 85.3% [20]. Hence, using the Cochran formula for observational studies [21].

$N = Z\alpha^2 p(1-p) / e^2 = 1.96^2 \times 0.853 (1 - 0.853) / (0.05)^2$ = **193 participants**

Where; N= sample size, P= proportion of post-partum women with severe Labour pain in the previous study: 85.3%, e= acceptable sampling error = 5% = 0.05, Z= standard deviation of the population, if confidence is at 95%, z = 1.96. Hence, 194 postpartum mothers were consecutively recruited. Mothers were selected in each facility by proportionate allocation based on monthly birth rates from earlier studies [22] and [23]. Hence, in RSUTH, 30 postpartum mothers and in OCH, 164 were recruited.

Operational definitions: In this research, the following terms were the operational definitions used. **Perception** is defined as the participant's view of labour pain – how the participant perceived labour pain in their words. **Experience** is defined as the participant's actual pain experience (severity) of labour pain as verified by a pain score.

Methods of data collection/ instrumentation:

For qualitative data collection: Personal in-depth interviews were used taking into cognizance the peculiarities of the labour ward and transition in care to the postnatal wards. **Part A** of the questionnaire contained the interviewer-guide questions and prompts utilized in data collection. The interview lasted 10- 20 minutes for each respondent in order to acquire a considerable amount of valuable data. When no new relevant knowledge was gathered from participants during the course of the rapport (i.e., data saturation), the in-depth interview was halted. Only one interview session with each selected participant was conducted and minimal interruptions after probing questions were asked, was ensured, to avoid influencing the rapport developed between the researcher and participant that could negatively impact the findings.

The method of recording the words of the participants was done using an audio recording application Samsung A10 ISO device to ensure transcription was more accurately reflective of the participants' views and to minimize erroneously transcribing an unintended meaning. This ensured that accuracy was maintained.

For quantitative data collection: All necessary information were obtained using a semi-structured questionnaire that was modified from earlier studies [24,25] and was obtained from the case notes. The questionnaire was made up of two sections. For the first section, demographic data, which comprised the participants' age, occupation, husbands' occupation, booking status, religion, tribe, level of education, parity, gestational age at delivery, and referral status, existence of chronic sickness **(Part B)** were obtained from the case notes. Other information gathered included the blood pressure, time of labour onset, the use of any analgesics or epidural pain relief during active labour, the use of oxytocin for labour augmentation, the use of episiotomies, and the outcome of the baby.

In the second section, the visual analog scale (VAS) was used to assess the perceived degree of labour pain. The VAS scale is a 10-centimeter scale with the terms "worst pain possible" and "no pain" at each end. Each participant was asked to select the scale point that best described her level of pain during labour. The VAS score was used to classify pain in accordance with the scale tool as: No pain (0), mild intensity (1.0 - 3.0), moderate intensity (3.1 - 5.9), or severe

intensity (6.0 - 10.0). The VAS was administered after the 2nd stage of labour due to the peculiarities of the cohort of participants by the lead researcher and trained assistants within 6 - 12 hours of delivery.

Data Validity and Reliability:

Quantitative research rigour: Strategies to improve internal consistency (reliability) were performed on the questionnaire which was adapted from previous studies conducted in Nigeria. External validity (generalizability) was ensured by use of the correct approved sampling technique. The Visual Analogue Scale used in this study to assess labour pain is a standardized tool for assessing pain severity and has been used in other obstetric settings [26] and had also been validated in earlier studies in Nigeria for evaluating labour pain among parturients [25,27].

Qualitative research rigour: The following strategies were used to promote credibility: appropriate study environment, participants, and data collection approach; prolonged engagement, triangulation, peer-briefing, negative case analysis, and member checks. To ensure transferability, thick descriptions were used to present findings. Strategies to ensure dependability included an audit trail which will allow other researchers to follow the 'decision trail' used by the researchers and conformability ensured by the use of personal notes which detailed impressions and decisions made along the research path to enable the researchers focus on the end product and find conclusions grounded in the data rather than personal interests and biases. All these were employed to enhance all aspects of trustworthiness in the qualitative research.

Methods of Data analysis

Data analysis for qualitative data

Data were analyzed using interpretative phenomenological thematic analysis (IPA)**.** After transcribing the data verbatim, the texts were read and re-read intensively, after achieving immersion, annotating was done closely (coding) for insights into the post-partum mothers' perception of labour pain. Line by line coding was used. The data was then catalogued into emerging codes and patterns identified as themes. Themes were queried, examined, and visualized before being synthesized in a framework matrix to allow for a more comprehensive and complicated explanation of the labour pain phenomena. The coding method was made apparent, including the selection of relevant sections from participant responses, as well as the derivation and selection of themes. Qualitative data were analyzed using the software packages **Atlas.ti scientific software version 23** which aided with coding of qualitative data.

Data analysis for quantitative analysis

For the quantitative part of the analysis, the IBM-SPSS Statistics for Windows version 25.0 was used. Continuous variables were summarized using descriptive statistics such as mean and standard deviation at a 95% confidence range. The intensity of labour pain experienced by

postpartum mothers was classified as severe, moderate, or mild. Frequencies, percentages, and figures were used to summarize categorical variables. Pearson's Chi-square test was performed to determine the relationship between some participant variables and pain severity scores. After further dichotomizing the pain intensity scores to either 'severe' or 'not severe' labour pain, binary logistic regression was performed on the statistically relevant factors from the bivariate analysis to find predictors of severe labour pain experience among the participants.

Ethical Approval: The protocol of this study was approved by both the Uniport Research Ethics Committee (UPH/CEREMAD/REC/MM87/081) (Appendix II) and the Rivers State University Teaching Hospital Research Ethical Committee (RSUTH/REC/ 2023286) (Appendix III). Permission was also granted by the Chief Medical Officer of Obio Cottage Hospital (Appendix IV), after reviewing the ethical approvals from the aforementioned ethics review committees to conduct the study. Informed consent was obtained from respondents after an explanation of the aim of the study. Respondents were anonymized throughout the study and all collected data were used as approved.

RESULTS:

Qualitative research findings: The section describes the characteristics of the postpartum mothers and narrates how the respondents perceived their labour pain. It highlights how they described labour pain in their own words and their concerns. It also highlights how the postpartum mothers labour pain perception was affected by their desires, knowledge and attitude of pain relief in their own words.

The characteristics of the participants are shown in Table 1. The characteristics showed some variation in ethnicity, level of education, occupation, and socioeconomic status. A total of 26 respondents participated in the in-depth interviews; this comprised postpartum mothers who were transitioned into the post-natal ward. All the respondents were married, and aged between 25 and 40 years. The proportion of respondents was higher among those in the age category of 30 – 34 years (46.2%), followed by 35 – 39 years (26.9%), 25 – 29 years (19.2%) and ≥40 years (7.7%). Thirteen of them worked as employees (50.0%), eleven were self-employed (42.3) and two were unemployed (7.7%). The participants were of the Ijaw (53.8%), Igbo (23.1%), Yoruba/Hausa (11.5%) and then other tribes (11.5%). Of a greater proportion of the mothers, twenty-five were Christians (96.2%), with only one Muslim (3.8%). Those in the middle socio-economic status were more (69.2%), with equal proportions for those in the high and lower status (15.4% & 15.4% respectively). Those with a Parity of 3 – 4 (19.2%) were less, followed by Para 2 (34.6%) and Para 1 (46.2%). Out of the 26 participants, twenty-four (92.3%) were booked before delivery with only two (7.7%) unbooked.

Table 1: Participants Characteristics recruited for Qualitative study

ID	Age (yrs)	RELIGION	TRIBE	MARITAL	LEVEL OF EDUCATION	OCCUPATION	SES	BOOKING STATUS	PARITY	LABOUR COMPANION	REFFERED (PHC/PRIVATE)
6	35	Christian	Ijaw	Married	Tertiary	Civil servant	Low	Booked	1	None	REFFERED
7	37	Christian	Edo	Married	Secondary	Trader	Low	Booked	1	None	N
8	35	Christian	Ijaw	Married	Tertiary	Civil servant	Mid	Booked	1	None	N
9	25	Christian	Igbo	Married	Tertiary	Trader	Low	Booked	1	None	N
11	32	Christian	Ijaw	Married	Tertiary	Civil servant	Low	Booked	2	None	N
12	40	Christian	Ijaw	Married	Tertiary	Trader	Low	Booked	1	None	N
13	30	Christian	Igbo	Married	Secondary	Trader	Low	Booked	3	None	N
14	32	Christian	Igbo	Married	Tertiary	Civil servant	Low	Unbooked	2	None	Y
15	27	Christian	Others	Married	Secondary	Artisan	Low	Booked	1	None	N
32	34	Muslim	Yoruba	Married	Secondary	Trader	Low	Booked	1	None	N
33	31	Christian	Ijaw	Married	Tertiary	Civil servant	Low	Booked	1	None	N
36	27	Christian	Ijaw	Married	Tertiary	Civil servant	Low	Unbooked	1	None	Y
37	40	Christian	Ijaw	Married	Tertiary	Civil servant	Mid	Booked	1	None	N
38	34	Christian	Hausa	Married	Tertiary	Civil servant	Low	Booked	2	None	N
39	41	Christian	Ijaw	Married	Tertiary	Professional	High	Booked	4	None	N
40	31	Christian	Ijaw	Married	Secondary	Trader	Low	Booked	2	None	N
41	30	Christian	Others	Married	Tertiary	Artisan	Low	Booked	2	None	N
42	33	Christian	Igbo	Married	Tertiary	Professional	High	Booked	2	None	N
43	34	Christian	Ijaw	Married	Tertiary	Professional	High	Booked	1	None	N
44	39	Christian	Yoruba	Married	Tertiary	Civil servant	Low	Booked	3	None	N
45	32	Christian	Ijaw	Married	Tertiary	Trader	Mid	Booked	4	None	N
46	35	Christian	Ijaw	Married	Tertiary	Unemployed	Low	Booked	4	None	N
28	36	Christian	Igbo	Married	Tertiary	Unemployed	Low	Booked	2	None	N
29	29	Christian	Ijaw	Married	Tertiary	Artisan	Low	Booked	2	None	N
27	25	Christian	Igbo	Married	Tertiary	Trader	Mid	Booked	1	None	N
26	30	Christian	Ijaw	Married	Tertiary	Professional	High	Booked	2	None	N

SES -Socioeconomic status, N = No , Y = Yes

Table 2: Thematic Summary of the Perception of Labour Pains from In-depth Interviews with Postpartum Mothers

Themes	Main Sub-themes	Minor Sub-themes

Labour pain	• **Labour pain perception**
	  ○ Positive perception
	  ○ Negative perception
		• Pain intensity – mild/moderate/severe
		• Tolerability
		• Faith

	• **Emotions**	• Positive – gratitude • Negative – fear
Pain relief	• **Attitude**	• Positive – desired • Negative – undesired
	• **Knowledge**	• Ignorant / unawareness
	• **Emotion**	• Negative – Frustration
	• **Pain relief method**	• Barriers/ hinderances • Non-pharmacological measures

Spectrum of labour pains during delivery among postpartum mothers

The women's description of their perception of labour pain and the entire delivery processes in answer to objectives 1 (Table 2) were summarized into two themes; (a) labour pain perception, (b) Pain relief . In addition, major and minor sub-themes also emerged which provided a more robust exploration of postpartum mothers' views of their overall labour pain perception.

Labour Pain Perception

The results demonstrated several subthemes that played a major role in shaping the labour pain perception and child birth experience. For instance, their labour pain perception **was mostly negative** and the main reason being labour pain severity. All respondents experienced some level or form of pain during labour in varying intensities. In describing the pain, they felt, the mothers rated it as normal, mild or moderate at early labour (onset of contraction), emphasizing that the level of pain became intense or severe as dilation increased and labour progressed to full dilatation of cervix/crowning (pushing the baby out). However, most shared that the labour was very painful:

> *"Very very painful, it was not funny at all, it's very painful, I saw hell….."* – **Respondent 40 (Para 2, 31 years)**

"It was very painful o, that Sunday night I was feeling serious pain, I didn't even know that it was labour pain, it was around that 10 – 11 pm it became serious. I started pulling off my hair…" – **Respondent 12 (Para 1, 40 years)**

"The pain was very severe; the doctors will only encourage you……" – **Respondent 8 (Para 1, 35 years)**

Yet for others who were deemed to have had a positive perception of labour pain rated it to be less severe – being either of mild or moderate intensity but was not beyond their tolerance at the same time which also suggested that pain perception was closely related to their tolerance levels.

"…..Not bad, I will not say out of this world but……. but moderate……" – **Respondent 29 (Para 2, 29 years)**

"I had mild pain; it was not something I could not bear……I could bear it because it was not persistent, it came and subsided off and on until delivery" – **Respondent 39 (Para 4, 39 years)**

Some women who during active stage of labour pain yelled or screamed about it; others tolerated it (or sobbed internally); still, others showed no signs of discomfort.

"At first it was mild, then with time as the dilation progressed, the pain became unbearable. It wasn't funny…… then the doctor tried moving and I shouted where are you going, come back o! A student doctor tried to check for my baby's heartbeat, I pushed the machine away; then a nurse said I should hold on, not to let the baby come out until they make everything ready and I told her I can't control it……." – **Respondent 11 (Para 2, 32 years)**

Some of the women had never had labour or delivery before, while the majority had had two, three, or even four prior experiences. Nevertheless, some women also expressed having had increased pain intensity when the labour was augmented as opposed to natural spontaneous labour process in previous delivery.

"Ehm… this one a lot more intense because it was induction; but I think it was faster and more painful than the natural labour for my first baby". **Respondent 29 (Para 2, 29 years)**

Interestingly, quite a number of the women expressed varying emotions including fear, gratitude, exaggerations and expressions of faith.

"*Well, what I went through, I went through pains, I was just praying ……to go and come back alive……"* **Respondent 14 (Para 2, 32 years)**

"The pain was ha ha ha painful, something out of this world. Anyway, it was really painful but I thank God anyway……" **– Respondent 33 (Para 1, 31 years)**

The study emphasized the uniqueness and individuality of postpartum mothers' pain perception of labour and how vocalizations varied.

Pain Relief

Pain Relief as evidenced by the preceding, almost all of the women stated that labour and childbirth were associated with varying degrees of pain. One of the most important aspects related to pain perception was the use of pain relief during labour as a form of support. One of the main goals of this study was to investigate postpartum mothers' perceptions of pain management during labour and whether they were aware of and given any form of pain relief. The analysis further highlighted this query under the following major and minor subthemes:

A. **Attitude:** Analysis revealed that most of the postpartum mothers had a positive attitude towards pain relief during labour. They actually expressed their desire for and wished to have had pain relief during childbirth.

"No o, no pain relief, I even requested but they did not give me" – **Respondent 28 (Para 2, 36 years)**

No o, no pain relief was given, the doctors will …. tell you that you need the pain, there is nothing like pain relief for labour" – **Respondent 8 (Para 1, 37 years)**

On the contrary, a few postpartum mothers expressed negative attitudes towards pain relief in the process of their child birth as they were of the opinion that labour pain was natural and required no interventions.

"...I don't subscribe to any pain relief because if the level of pain I felt is what other women feel, I don't subscribe to pain relief" – **Respondent 39 (Para 4, 41 years)**

"..but anyway, at that moment of the pain I don't expect any pain relief because the pain will help the baby to come out, so no need for pain relief " – **Respondent 36 (Para 1, 27 years)**

"No! I was not aware of pain relief during labour and even if there was, I don't think I need it" – **Respondent 32 (Para 1, 34 years)**

B. **Knowledge/ Awareness:** The analysis also revealed that all of the postpartum mothers were ignorant or lacked knowledge of pain relief during labour or its availability, including those who desired pain relief or did not want pain relief.

"No I was not aware of any pain relief, so I did not get any. If I knew, I would have asked because I saw Hell" – **Respondent 40 (Para 2, 31 years)**

"I didn't know about pain relief during labour o, because it's my first experience" **Respondent 15 (Para 1, 27 years)**

The study emphasized the general lack of knowledge/ awareness and the unfulfilled desire of women's expression for pain relief in labour and was linked to their overall perception of labour pain.

C. Emotion: Some postpartum mothers expressed their frustrations during the labour process as some health workers appeared to be insensitive to the degree of labour pain and their desire for pain relief.

"The pain became very severe and worse, I cannot scream because they asked me not to scream, no matter what and it got to a point where I literally ripped off anything no matter how hard it was because the pain was incomparable to anything in this world…" **Respondent 41 (Para 2, 30 years)**

"The pain was so bad that I was calling and calling and calling, no way. They were all there…It got to a time that I started to hit on the drawer that they should come and help me…I need help ooo…but they did not come" **Respondent 28 (Para 2, 36 years)**

D. Pain management: The data demonstrated that some women asked for access to pain relief treatment alternatives despite the dearth of accessible options, and they received a variety of responses.

Some women received non-pharmacological pain relief methods and had a combination of mainly back massages and breathing exercises.

"The nurse was coming to massage my back, giving me a breathing exercise, checking to know how far I have dilated and my contraction…." **– Respondent 43 (Para 1 , 34 years)**

However, some women that received non-pharmacological pain relief methods which were altogether offered during the labour process were largely unaware these were actually being offered as pain relief options.

"we were never told anything about pain relief during labour, but the encouragement and breathing exercise from the midwife helped a lot…" **Respondent 43 (Para 1, 34 years)**

"The pain was unbearable; it wasn't funny and I was shaking the bed and the pole. One of the nurses came and she told me to breathe in and out and try my best. But they did not give me anything to relieve my pain…" **Respondent 11 (Para 2, 32 years)**

It was found that some women failed to request pain management because they were unaware that it was a possibility – hence their ignorance was a barrier / hinderance:

"They were even telling me that it is how it is, that the baby was looking for a way to come out" **Respondent 15 (Para 1, 27 years)**

However, although some were unaware, expected pain relief to be offered, and even requested but were not given:

"I was not aware of any pain relief drugs; they didn't give me anything. I felt since I was in the hospital, if there was anything to help with the pain, they should have given me, but even when I requested, they didn't give…" **Respondent 33 (Para 1, 31 years)**

Quantitative research findings:
Sociodemographic characteristics of postpartum mothers

The study involved 194 postpartum mothers with a mean age of 32.2 years and a standard deviation of 4.8 years. The Majority of the women were aged between 31 – 35 years (38.7%), while about a quarter was aged 26 – 30 years. Almost all participants (97.9%) were Christian and half of the postpartum mothers were women of Ijaw ethnic extraction. Other ethnic groups in the study include Igbos (37.6%), Yorubas (3.6%) and the Hausas (2.1%). About 4 in every 5 women (85.6%) in the study had tertiary education. Fifty-eight of the women were civil servants (29.9%), 50 women (25.8%) were traders, while 33 (17.0%) and 17 women (8.8%) were professionals and artisans respectively. One hundred and seventeen women (60.3%), 52 women (26.8%) and 25 (12.9%) belonged to the low, middle and high socioeconomic class respectively as seen in (Table 3)

Table 3: Sociodemographic Characteristics of Study Participants

Characteristics	Frequency N = 194	Percent (%)
Age group (years)		
21 - 25	23	11.9
26 - 30	51	26.3
31 - 35	75	38.7
36 - 40	29	14.9

> 40	16	8.2
Religion		
Christian	190	97.9
Others	4	2.1
Tribe		
Ijaw	98	50.5
Igbo	73	37.6
Yoruba	7	3.6
Hausa	4	2.1
Others	12	6.2
Participants' occupation		
Civil servant	58	29.9
Trader	50	25.8
Unemployed	36	18.6
Professional	33	17.0
Artisan	17	8.8
Participants' level of education		
Secondary	29	14.9
Tertiary	165	85.1
Husband occupation		
Artisan	38	19.6
Trader	39	20.1
Civil servant	44	22.7
Professional	73	37.6
Husband education		
Secondary	28	14.4
Tertiary	166	85.6
Socioeconomic status		

Low socioeconomic status	117	60.3
Middle socioeconomic status	52	26.8
High socioeconomic status	25	12.9

Obstetric care features among participants

As seen in Table 4, about 9 in every 10 participants (94.8%) were booked in the hospital where the study was conducted. However, about 10.8% of the study participants were referred in labour to the investigating hospital from primary healthcare centres (6.7%) and private health institutions. The majority of women in the study were primiparous women (56.7%) while about a quarter were nulliparous women (27.3%). Multiparous women form 17.0% of the study population. One hundred and twenty-seven women (65.5%) delivery at term (gestational age ≥ 37 weeks) and a third (34.5%) were delivered prematurely (gestational age < 37 weeks).

Table 4: Obstetric care features among participants

Characteristics	Frequency N = 194	Percent (%)
Booking status		
Unbooked	10	5.2
Booked	184	94.8
Referral Status		
Not referred	173	89.2
Referred	21	10.8
Referring Institution		
Not referred	173	89.2
Referred from PHC	13	6.7
Referred from a Private hospital	8	4.1
Gestational Age at Birth		
< 37 weeks	67	34.5
≥ 37 weeks	127	65.5
Parity		
Primiparous	110	56.7
Multiparous	31	17.0
Grand multiparous	53	27.3
Blood pressure level		
Normotensive	181	93.3
Hypertensive	13	6.7

Severity of Labour pain experience as verified by VAS pain score

Overall, 137 **(70.6%)** postpartum mothers considered labour pain as **"severe",** while 57 postpartum mothers (29.4%) rated labour pain as "**Not severe".** However, the labour pain score

assessment by postpartum mothers ranged from 2 points among 12 (6.2%) postpartum mothers to 10 points as rated by 35 (18.0%) postpartum mothers, as displayed in Figure 1.

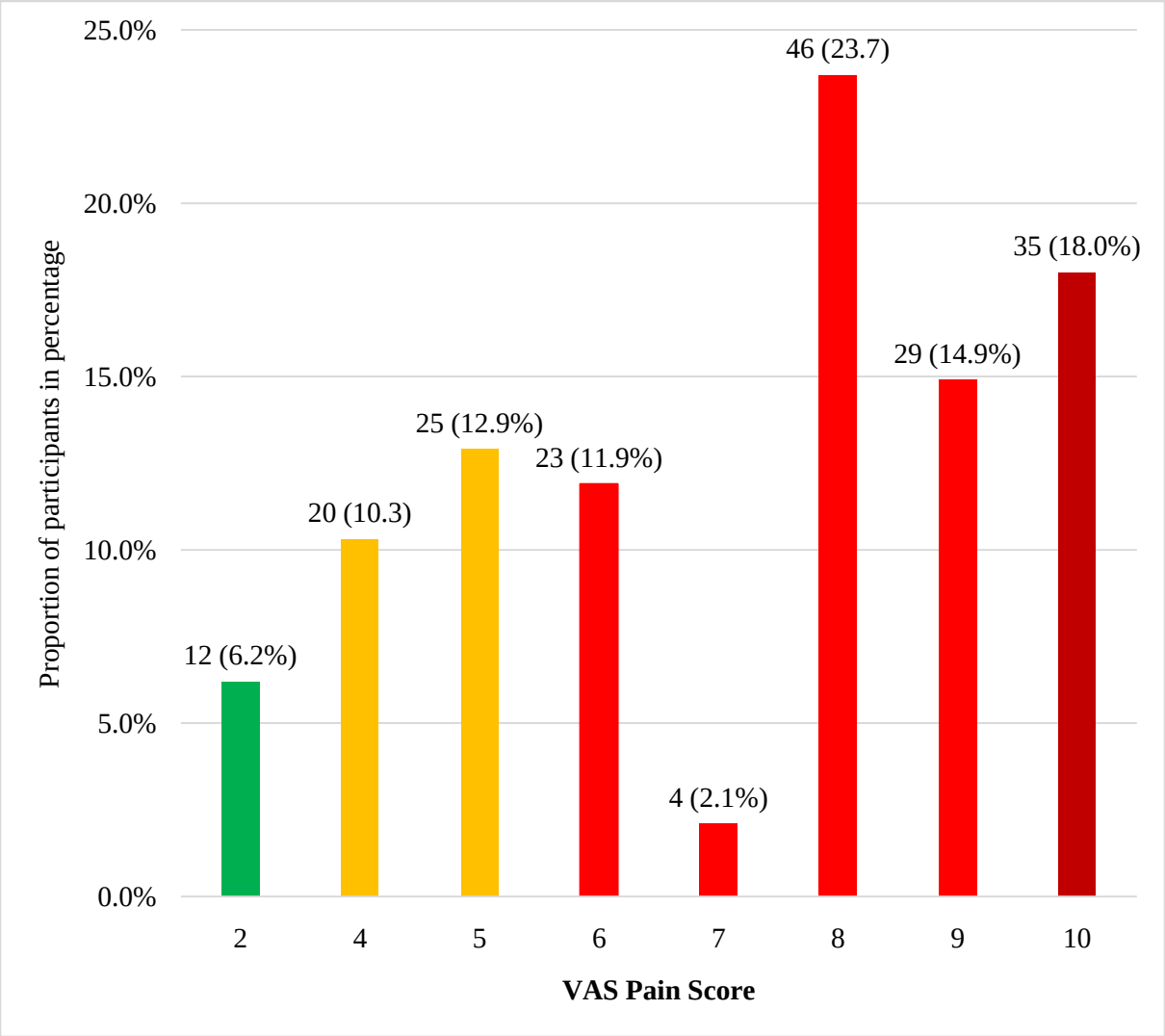

Figure 1: The distribution of labour pain scores among postpartum mothers as assessed using the VA scale

Postpartum mothers' expectation of labour pain severity and awareness of access to relief during Antenatal Care

Table 5 shows that during antenatal care, 82 (42.3%) and 100 (51.3%) expected labour would either be severe or moderate pain, respectively. Albeit, only 62 postpartum mothers (32.0%)

were informed of pain relief during labour while were receiving antenatal care. When asked about their desired goal with pain relief measures in labour, the majority (45.9%) of women in the study wanted analgesic agents just for reduction of pain in labour and interestingly, 26 (13.4%) desired for pain elimination in labour. On the contrary, 55 (28.4%) thought that no relief is needed for women in labour.

About 9 out of 10 respondents (87.7%) had vaginal delivery in the study; of which 62 (32.0%) had spontaneous vaginal delivery and 108 (55.7%) had assisted vaginal delivery. Sixty-one postpartum mothers (31.4%) had their labour augmented. About 4 in every 5 postpartum mothers (80.9%), thought that phase of uterine contraction was the most painful during labour.

Table 5: Postpartum mothers' expectation of labour pain severity and awareness of access to labour pain relief during ANC

Characteristics	**Frequency N = 194**	**Percent (%)**
Informed about pain relief in labour during ANC	62	32.0
Initial perception of Labour pain during ANC		
Mild	12	6.2
Moderate	100	51.5
Severe	82	42.3
Mode of delivery		
Spontaneous vaginal delivery	62	32.0
Emergency Caesarean Section	24	12.4
Assisted vaginal delivery	108	55.7
Duration of active labour		
< 6 hours	76	39.2
6 – 12 hours	62	32.0
12 – 18 hours	12	6.2
> 18 hours	44	22.7
Participants with labour augmented	61	31.4
Most painful stage of labour		
During contraction	157	80.9
During bearing down	37	19.1
Perceived goal of pain relief in labour		
No relief is needed	55	28.4
Relief should reduce pain	89	45.9
Relief should eliminate pain	26	13.4

Unsure what relief should achieve	24	12.4

Labour pain relief modalities and reason for a low request for pain relief during Labour

Table 6 showed that 73 postpartum mothers (37.6%) got one form of pain relief or the other in labour. The different forms of pain relief modalities that were instituted include: non-pharmacologic methods [breathing exercises (21.1%), back massage (37.6%)] and pharmacologic methods [parenteral opioids (6.7%) and epidural analgesia (2.1%)].

The most common reason why participants did not request analgesia in labour was that they were unaware of their right to demand pain relief in pregnancy (48.5%). Other reasons given by the postpartum mothers included the belief that labour pain should be bearable (10.8%), labour pain is natural, and hence needs no relief (7.7%). Some think that analgesia in labour would affect the progress of labour (6.7%) and affect the baby (4.6%). Twelve postpartum mothers (6.2%) did not request analgesia because of the fear of healthcare workers' reaction (Figure 2).

Table 6: Labour pain relief modalities among participants

Characteristics	Frequency N = 194	Percent (%)
Participants had relief given		
No	121	62.4
Yes	73	37.6
Non-pharmacologic method		
Breathing exercise		
No	153	78.9
Yes	41	21.1
Back massage		
No	121	62.4
Yes	73	37.6
Pharmacologic methods		
Parenteral injection – PCM		
No	181	93.3
Yes	13	6.7
Epidural anaesthesia		

No	190	97.9
Yes	4	2.1

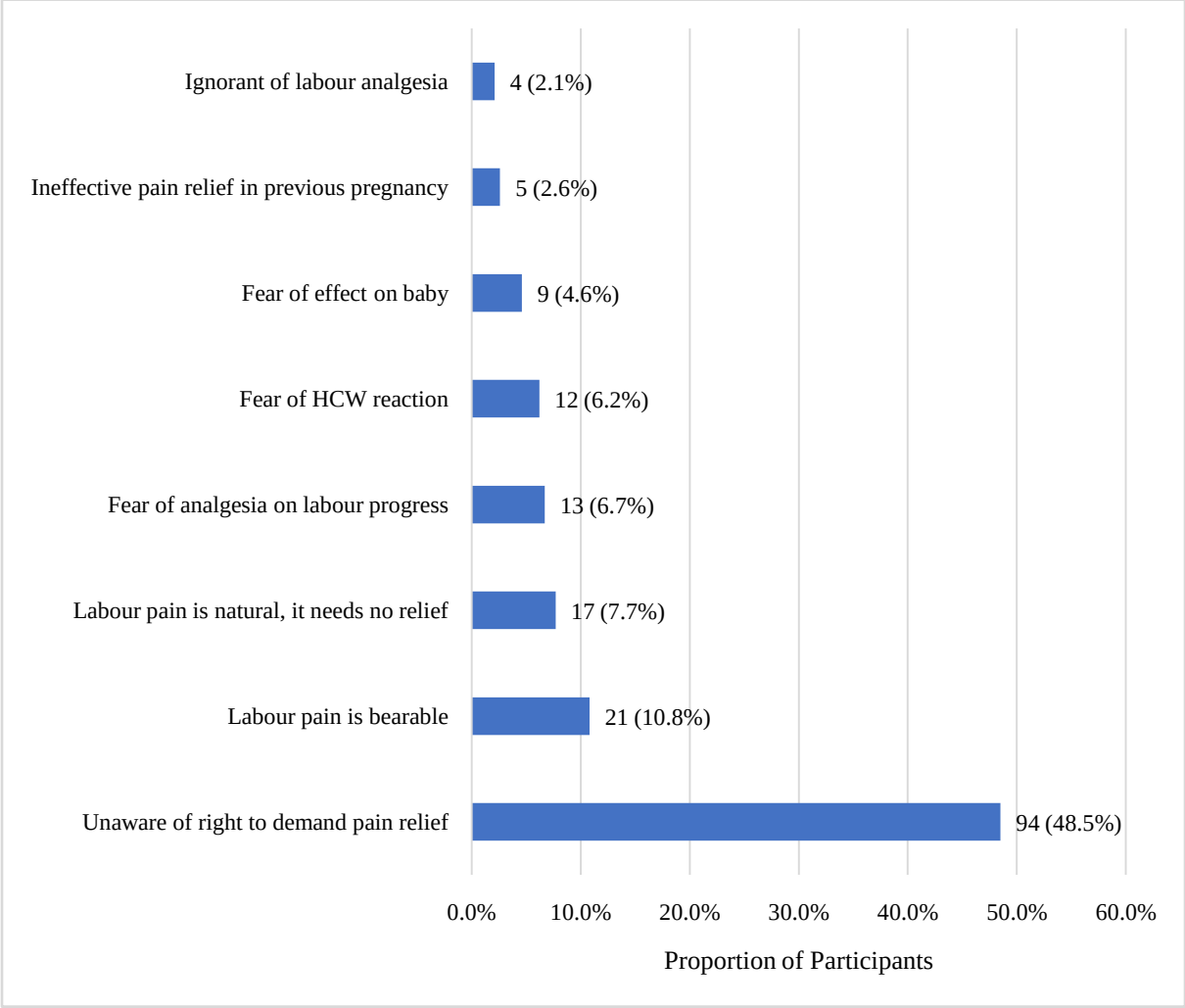

Figure 2: Reasons participants did not request labour analgesia

Relationship between expected severity of labour pain and the experienced labour pain

The initial expectation of labour pain during antenatal care among postpartum mothers was seen to significantly influence ($\square^2$ = 32.70; p – 0.001) the experience of labour pain; while no women with mild expectation (0.0%) rated labour pain as severe, 80.5% of women who expected severe labour pain rated their experience as severe (Table 7). The expectation from pain relief ($\square^2$ = 16.46; p – 0.001) and the most painful stage of labour ($\square^2$ = 7.60; p – 0.006) were also seen to influence the way labour pain was rated among postpartum mothers (Table 7). Other factors

related to labour that affected the rating of labour pain severity included the duration of labour (χ^2 = 24.30; p – 0.001), augmentation of labour (χ^2 = 4.04; p – 0.044), and mode of delivery (χ^2 = 15.19; p – 0.001).

Table 7: Relationship between expected severity of labour pain and experienced labour pain among participants

Characteristics	Total N = 194	Level of Pain Severity		χ^2 (p-Value)
		Severe N = 137 (%)	Not Severe N = 57 (%)	
Informed about pain relief in labour during ANC				
NO	132	92 (69.7)	40 (30.3)	0.17
YES	62	45 (72.6)	17 (27.4)	(0.681)
The initial expectation of Labour pain during ANC				
Mild	12	0 (0.0)	12 (100.0)	32.70
Moderate	100	71 (71.0)	29 (29.0)	(0.001*)
Severe	82	66 (80.5)	16 (19.5)	
Duration of active Labour				
< 6 hours	76	39 (51.3)	37 (48.7)	24.30
6 – 12 hours	62	50 (80.6)	12 (19.4)	(0.001*)
12 – 18 hours	12	12 (100.0)	0 (0.0)	
> 18 hours	44	36 (81.8)	8 (18.2)	
Labour Augmentation				
NO	133	88 (66.2)	45 (33.8)	4.04
YES	61	49 (80.3)	12 (19.7)	(0.044*)
Goal of pain relief in labour				
No relief is needed	55	31 (56.4)	24 (43.6)	16.46
Relief should reduce pain	89	64 (71.9)	25 (28.1)	(0.001*)
Relief should eliminate pain	26	26 (100.0)	0 (0.0)	
Unsure what relief should achieve	24	16 (66.7)	8 (33.3)	
Most painful stage of labour				
During contraction	157	104 (66.2)	53 (33.8)	7.60
During bearing down	37	33 (89.2)	4 (10.8)	(0.006*)
Mode of Delivery				
Spontaneous vaginal delivery	62	53 (85.5)	9 (14.5)	15.19
Emergency Caesarean Section	24	20 (83.3)	4 (16.7)	(0.001*)
Assisted vaginal delivery	108	64 (59.3)	44 (40.7)	

*Statistically significant

Relationship between severity of labour pain and labour pain relief modalities

Table 8 showed that back massage was one of the non-pharmacological relief modalities given postpartum mothers by nurses. Still, most postpartum mothers (89.0%) who had back massage

still rated labour pain as severe demonstrating back massage had significant relationship to labour pain severity (χ^2 = 19.14; p – 0.001). However, epidural analgesia significantly improved the severity of labour pain (χ^2 = 9.77; p – 0.002). None of the women (0.0%) who had epidural analgesia considered labour pain to be severe.

Table 8: Relationship between severity of labour pain and labour pain relief modalities

Characteristics	Total N = 194	Level of Pain Severity		χ^2 (p-value)
		Severe N = 137 (%)	Not Severe N = 57 (%)	
Non-pharmacological method				
Breathing exercise				
NO	153	108 (70.6)	45 (29.4)	0.00
YES	41	29 (70.7)	12 (29.3)	(0.986)
Back massage				
NO	121	72 (59.5)	49 (40.5)	19.14
YES	73	65 (89.0)	8 (11.0)	(0.001*)
Pharmacologic method				
Parenteral opioids				
NO	181	127 (70.2)	54 (29.8)	0.27
YES	13	10 (76.9)	3 (23.1)	(0.605)
Epidural analgesia				
NO	190	137 (72.1)	53 (27.9)	9.77
YES	4	0 (0.0)	4 (100.0)	(0.002*)

*Statistically significant

DISCUSSION

This study explored the perceptions of labour pain among postpartum mothers at the Obio Cottage Hospital and the Rivers State University Teaching Hospital in Port Harcourt. Conducting thematic analysis yielded interesting results that highlighted the individuality of pain perceptions among postpartum mothers. Whereas most of the postpartum mothers reported negative perceptions of labour pains which they described as being very severe, extremely painful, unbearable and agonizing, which is consistent with findings from other studies conducted by Onasoga et al [17] in Nigeria and Ampofo et al[12] in Ghana, a few of the postpartum mothers expressed positive perceptions of labour pains – describing pain as mild and tolerable. Expectations regarding labour pain may have also been influenced by prior knowledge of labour pain and individual labour experiences. The analysis also revealed that quite a number of the women expressed varying emotions including fear, gratitude and expressions of faith in the process of childbirth. This suggests that faith, as demonstrated through uttered prayers and gratitude to God, may have assisted the mothers in coping with their child birth experience.

This study also surprisingly revealed that despite the fact that almost all the mothers who were duly booked in the selected health facilities were unaware of labour pain relief methods, were uninformed about labour pain methods available in pregnancy and their ability to actually request for pain relief during labour. This was similar to reports in another study by in Nigeria [28]. More disturbing, was the inapparent recognition of the use of non-pharmacological pain relief methods such as breathing exercises and massages administered by health workers as measures for pain relief management among those mothers who received such interventions. This was consistent with the reports by Onasoga et al[17] in yet another study in Nigeria where although non-pharmacological methods of coping with labour pain were mostly employed, almost all of the participants affirmed they were not given any pain relievers. This highlights an obvious misinformation gap among pregnant mothers attending the public health facilities in Nigeria. This therefore, brings to the fore the need for effective education on methods for reducing labour pain during antenatal period and this should be revisited frequently even until the time of delivery so that women are aware of the various pain relief methods available.

Furthermore, this study demonstrated that the overall majority (70.6%) of postpartum mothers experienced severe labour pains. This was similarly found among post-partum mothers in other studies that reported severe labour pains of 75.3% [27] in Port Harcourt, South-south Nigeria and 68.3% [29] in Ilesha and 75.2% in Ado-Ekiti, both in Southwest Nigeria. The finding of this present study, however, contrasts findings of lower reports of severe labour pains of 50% [25] in Sagamu, Ondo state, Southwest Nigeria and 52% [30] in Ebonyi State, Southeast Nigeria. Also, much higher reports of 81.6% [31] in Northwest Nigeria and 85.3% [20] in Port Harcourt, South-south Nigeria were noted to be at variance with the findings in this present study. The variations in the reported prevalence of severe labour pain among post-partum mothers could be due to differences in methods of pain assessment and timing when the actual assessment was done. Also, some studies did not employ the use of a pain scale but only relied on the recall of participants. Similarly, findings from other authors outside Nigeria have also reported a wide range in the prevalence of severe labour pain among women ranging from 33% to 77% with over half of the studies reporting the desire for pain relief [1,32].

Also, it was interesting to note that in this study, just over half (51.5%) of post-partum mothers reported having initially perceived labour pain to be moderate intensity during their antenatal period. This study, however, revealed that indeed nearly three-quarters (70.6%) of these mothers in reality experienced severe labour pains. Of these, 40.7% reported labour pain to be very severe and 18% reported that their labour pain was the worst pain ever. This finding was buttressed by the fact that the majority of the mothers perceived labour pain as not what they experienced but was more severe. This finding differed from what was reported in the study by [27] where it was found that the mothers' perceived labour pain was lesser than their experienced labour pain or from the study by Aksoy et al[33] in Turkey, where there was no significant difference between expected and experienced labour pains. The authors of the Turkey study concluded that the

degree of pain experienced during labour was lower for expectant women if they had reduced expectations of pain before giving birth.

Yet another finding worth highlighting, is the finding that postpartum mothers were inadequately informed about pain relief during their antenatal care visits, despite being booked or supervised at both public healthcare facilities. This study demonstrated that only about a third (32.0%) were informed about pain relief in labour during their antenatal care visits. This suggests that there is a lack of such awareness among both mothers and plausibly the midwives who should usually be required to give such information during their routine health talks to registered pregnant women. This was also similarly reported in an earlier study [27] in Port Harcourt where only 32% of mothers reported having been counselled about pain relief during labour in the antenatal clinics. A study by [34] in South Africa that assessed women's knowledge and attitudes to pain relief during labour found that about two-thirds of their pregnant women were not told what to expect when in labour, rather most of them gained knowledge of pain relief from either friends/ relatives or past experiences.

This study also found that when faced with severe labour pains, almost two-thirds (59.3%) of post-partum mothers desired pain relief. In fact, about two-fifths (45.9%) of the cohort of mothers in this study reported that their labour pain is reduced and just over a tenth (13.4%) wanted a total elimination of the labour pain. The finding was consistent with the larger proportions of mothers' requests for pain relief which ranged from 67.6% to 86.4% found in other studies in Nigeria [25,30,31]. It is also worthy of note that despite the foregoing, about a third (29.4%) of the post-partum mothers in this study, experienced non-severe labour pains. Interestingly, while only 6.2% reported their initial perception of labour pain to be of mild intensity, 6.2% of postpartum mothers were also found to have experienced mild labour pains with a VAS score of 2. This was comparable to the finding of 8% of mothers reporting labour pain to be mild in severity in a study by [30] in Ebonyi State, Southeast Nigeria but higher than the reports of mild labour pains ranging from 1.3% to 1.7% reported in other studies and lower than the 27.5% reported by [31] in Northwest, Nigeria. The seemingly much higher prevalence of mild labour pain intensity in the study conducted in Northwest Nigeria could be explained by the fact that the assessment of pain was subjective and included predominantly mothers who were also being seen at the antenatal clinic and undelivered. The finding from this research suggests although a smaller proportion of mothers deem labour pain as mild, most of them however, experienced severe labour pains and should not be ignored.

As regards the modality of pain relief received, this study revealed that although both non-pharmacological and pharmacological methods were used among postpartum mothers in this study, a majority (63.2%) did not receive any form of pain relief during labour. This was consistent with what was previously documented in other studies where the proportion of mothers who did not receive pain relief in labour ranged from 64.2% to 77.9% in other states in Nigeria.

For those that received some form of obstetric pain relief, in this study, the non-pharmacologic modality was used predominantly and is similar to what was observed in another study [5] in Northwest Ethiopia where it was found that non-pharmacologic modalities were predominantly utilized. Similarly, non-pharmacological method of pain relief was also largely utilized in other studies in Nigeria [25,35]. This present study's findings, albeit, suggests that these non-pharmacologic modalities – back massage and breathing exercises were ineffective or were insufficient in relieving labour pain severity among the study population. This could plausibly be due to the fact that these non-pharmacological methods were usually given in suboptimal measures and were inconsistently done. This was also buttressed by the report from another study from Ethiopia [36] which showed that the practice of non-pharmacological labour pain management was poorly administered to women in labour. Hence, health worker training on administration of non-pharmacological methods of labour pain relief, particularly for midwives ought to be strengthened in Nigerian healthcare facilities.

Only 6.7% and 2.1% of the mothers in this study received either parenteral opioid or epidural analgesia respectively. When asked about the reasons for not requesting labour pain analgesia nearly half (48.5%) of them reported being unaware of the right to demand pain relief, even though 10.8% reported that labour pain is bearable. The findings were further substantiated by the views of mothers as follows: **R39 (Para-4, 41 years):** *"I'm not aware of any pain relief during labour and I don't subscribe to it either, because, if the level of pain I felt is what other mothers feel, then there is no need for pain relief". Whereas,* **R40 (Para-2, 31 years):** *" No, I wasn't aware of any pain relief, so I didn't take any. But, if I knew about it, I would have taken it because I saw Hell"*

In an earlier study conducted in Enugu, Southeast Nigeria by Chigbu et al,[35], it was reported that only 34.1% were aware of their right to labour pain relief. The findings of lack of knowledge of pain relief in labour were similarly reported in the study by Audu et al,[31] in Maiduguri, Northwest Nigeria. Moreover, this present study revealed very low utilization of pharmacologic pain relief interventions which contrasted findings from other studies in Nigeria where authors reported that as high as 35.3%, 68% and 92% received intramuscular pentazocine in Ekiti state, Rivers State and Ebonyi States respectively[27,35]. The reason for the much lower rates of use of pharmacologic modalities for managing labour pain in the centre surveyed in this study could be that there are no laid-out standard hospital policies on obstetric labour pain management. Also, it is plausible that the shortage of available midwives in the labour wards, who should be actively supervising the labour process to intervene and administer obstetric analgesia with progressing pain intensity are few compared to the number of women being cared for. Notwithstanding, the attitude of the midwife to objectively assessing the severity of labour pain is largely undone as most see the labour process as natural and so are less likely to intervene [6]. This study highlights the need for the institutionalizing of obstetric pain relief and re-emphasizes the need for midwives to actively administer obstetric analgesia if so desired by the mothers in labour.

LIMITATIONS: The sampling techniques employed were unavoidable due to the nature of the study participants. Furthermore, with regards to the qualitative aspect of the study, being single interviewer-administered, it may have been difficult to completely eliminate all of the researcher's personal biases. To limit these, however, a qualitative scientific software, interviewer guide and transcribing participants' words verbatim were utilized. Albeit, the aim and objectives of the study were achieved and a considerably large sample size was used, providing rather robust evidence about the perspectives and experiences of labour pain among postpartum mothers in Rivers state, Nigeria.

CONCLUSION: Postpartum mothers largely viewed labour pain as severe. Postpartum mothers had some form of labour pain relief in form of back massages and breathing exercises while very few had pharmacological pain relief. This study found that 7 in 10 postpartum mothers experienced severe labour pains as verified using the VAS pain score.

RECOMMENDATIONS:

1. Midwives should be sensitized on their duties to educate mothers on the types of pain relief available during antenatal visits.
2. Labour pain assessment should be performed among parturients routinely in the labour wards of public health facilities including RSUTH and OCH , in Rivers State.
3. Obstetric analgesia should be readily provided to mothers who desire labour pain relief
4. A working hospital policy on obstetric analgesia should be made available in the labour wards

CONTRIBUTIONS TO BODY OF KNOWLEDGE:

This study has the following principal implications:

1. The perceptions of labour pain of postpartum mothers irrespective of their socioeconomic, sociocultural and antenatal background were found to be largely consistent with the actual experiences of the mothers.
2. Mothers attending antenatal clinics in Nigeria are largely unaware of pain relief options and the right to request pain relief in labour.

3. Labour pain should be routinely assessed in health facilities using a validated pain score.
4. Pain relief was desired by the majority of women and should be provided if requested.
5. Health workers particularly midwives need to be trained on how to effectively administer non-pharmacological pain relief methods and also be abreast with recent advances in non-pharmacological pain methods.
6. In Nigeria, an universal labour pain treatment strategy should be created to restrict the diverse personalized facility-based protocols that are primarily doctor-initiated and generally unimplemented.

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