

## A 5-Year review of obstructed labour at the Federal Medical Centre, Yenagoa, Bayelsa State

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### ABSTRACT

**Background:** Obstructed labour remains a common obstetric complication with resultant fetomaternal morbidity and mortality in low-income countries. In developing countries, fistulae usually result from prolonged obstructed labour and follow pressure necrosis caused by impaction of the presenting part during difficult labour. In the infant, neglected obstructed labour may cause asphyxia, leading to stillbirth, brain damage, or neonatal death. The study aims to determine the prevalence, sociodemographic characteristics, causes, complications, and the fetomaternal outcome of pregnancies complicated by obstructed labour.

**Methods:** It was a retrospective study carried out on managed cases of obstructed labour in Federal Medical Centre, Yenagoa, Bayelsa State, between 1st January 2018 and 31st December 2022.

**Results:** A total of 46 cases were recorded out of 3,718 deliveries during the study period, giving an institutional prevalence rate of 1.2%. The main causes were cephalopelvic disproportion (76.1%) followed by malpresentation (23.9%). Obstructed labour was more common among women aged 30–34 years (39.1%). Most of the women were married (86.9%) with secondary education (47.8%). Most of the women were nulliparous (47.8%), unbooked (95.7%), and referred by traditional birth attendants (52.2%). The common foetal complications were intrauterine foetal death (23.8%) and foetal distress (11.9%), while the common maternal complications were wound infection (7.5%), uterine rupture (4.5%), and puerperal sepsis (4.5%).

**Conclusion:** *The prevalence of obstructed labour in this study is low. The major causes were cephalopelvic disproportion and abnormal lie/presentation.*

**Keywords:** Obstructed labour, Perinatal morbidity, Perinatal mortality, Maternal morbidity, Maternal mortality.

## INTRODUCTION

Obstructed labour occurs when there is a lack of progress despite good adequate uterine contractions for mechanical reasons.<sup>1</sup> This is one of the most common preventable causes of maternal and perinatal morbidity and mortality both globally and in the developing world.<sup>2,3</sup> It is a mechanical halt in the progress of labour despite adequate uterine contractions requiring an operative intervention.<sup>1</sup> Obstructed labour is more common in developing countries where antenatal coverage and supervised deliveries are poor. The common causes of obstructed labour include cephalopelvic disproportion, contracted pelvis, abnormal lie, and presentations.<sup>1,4-6</sup> Other causes include macrosomic babies, fetal anomalies, soft tissue abnormalities, and rarely, locked twins.<sup>1,7-9</sup> It is diagnosed when the duration of labour is prolonged, a labouring mother becomes unable to support herself or move her lower extremities, with deranged vital signs, distended bladder, Bandle's ring formed in the lower uterine segment, fetal distress or death, oedematous vulva, significant caput, significant moulding, foul-smelling, and thick meconium-stained amniotic fluid.<sup>10</sup>

Management involves resuscitation, relief of obstruction (delivery), management of associated complications, and rehabilitation/reintegration of the patient. The method for relieving the obstruction depends on the cause and extent of complications.<sup>11</sup> Mismanagement may result in severe complications leaving both mother and baby with devastating disabilities and even mortality. These complications are related to unrelieved pressure on the bladder, rectum, and

lumbo-sacral trunk of the sacral plexus and to the method of delivery of the fetus.<sup>11</sup>

Obstructed labour has serious complications that may result in maternal morbidities and mortality. These morbidities include sepsis, fistula, postpartum hemorrhage, rupture of the uterus, and rupture of the bladder.<sup>5,12</sup> Other complications of abdominal delivery include septic shock, anaemia, blood transfusion, wound infection, burst abdomen, prolonged hospital stay, high cost of care, infertility, aversion to hospital delivery, caesarean delivery in a subsequent pregnancy, abandonment, and even divorce.<sup>1,5,10,12</sup> Booking for antenatal care, competent observation in early labour, use of partograph, and prompt referral to specialist centres will significantly help curb this issue. This study aims to determine the prevalence, sociodemographic characteristics, causes, complications, and feto-maternal outcomes of pregnancies complicated by obstructed labour at Federal Medical Centre, Yenagoa, to improve health care.

## MATERIALS AND METHODS

This was a retrospective study of women with obstructed labour managed within a 5-year period in the Federal Medical Centre, Yenagoa. Permission was obtained from the hospital's Ethical and Research Committee. All patients managed for obstructed labour from 1st January 2018 to 31st December 2022 were compiled from the labour ward and obstetrics theatre records, and their case notes were retrieved from the Medical Records Department. Folder retrieval was 100%. The total number of deliveries during the study period was obtained from the

departmental annual report. Relevant data, including age, marital status, educational status, place of residence, parity, booking status, gestational age at presentation, cause of obstruction, complications, duration of indwelling catheter, and duration of hospital stay, were extracted and entered into a proforma. The data was coded into a spreadsheet and analyzed using the SPSS 25.0 version statistical package. The results are presented in tables and charts.

## RESULTS

During the study period, there were a total of 3,718 deliveries, out of which 46 cases involved obstructed labour, giving a prevalence rate of 1.2%. The main causes of obstructed labour were cephalopelvic disproportion (76.1%), followed by malpresentation (23.9%). Obstructed labour was more common among women aged 30-34 years (39.1%). Most of the women were married (86.9%) and had a secondary level of education (47.8%).

About 58.7% of the women resided in urban areas, while 41.3% lived in rural areas.

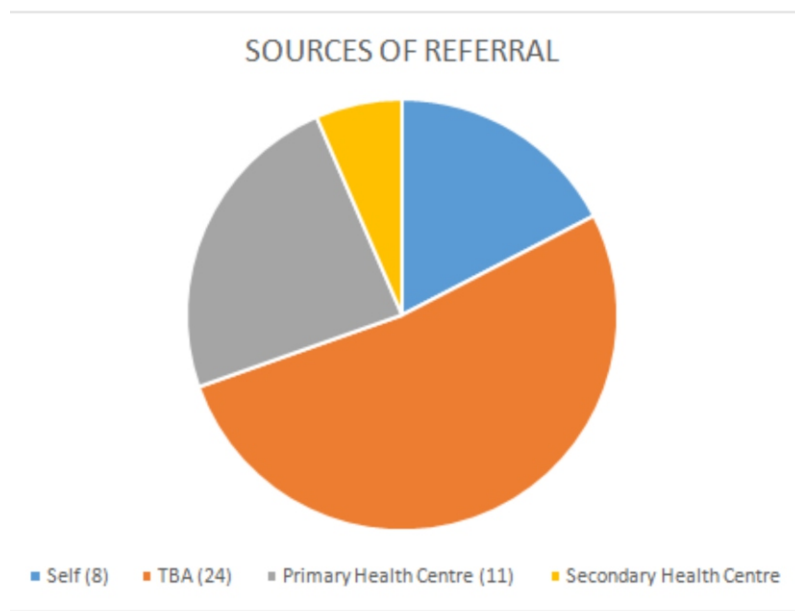
Most of the women were nulliparous (47.8%), unbooked (95.7%), and were referred by traditional birth attendants (52.2%). The common fetal complications were intrauterine fetal death (23.8%) and fetal distress (11.9%), while the common maternal complications included wound infection (7.5%), uterine rupture (4.5%), and puerperal sepsis (4.5%).

Out of the total obstructed deliveries, 65.2% resulted in live births, while 34.8% were stillbirths. All the women underwent caesarean sections. Most of the women (70.8%) had a good outcome, with no maternal deaths recorded. Fetal outcomes included 26.8% birth asphyxia, 34.2% neonatal sepsis, and 39.0% perinatal death. Regarding post-delivery care, most of the women (63.1%) had an indwelling catheter for 7 days, while others had it for 14 days. The average hospital stay was 10.7 days.

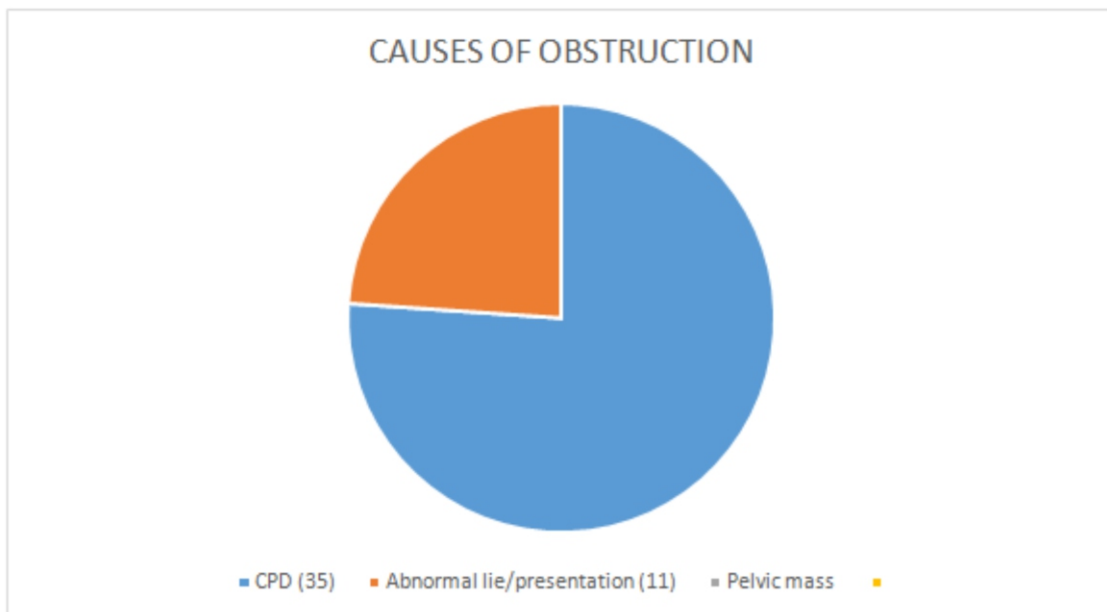
**Table 1:** Sociodemographic characteristics of the 46 women who presented with Obstructed labour

Factors	Frequency	%
<b>AGE GROUP</b>	<b>N=46</b>	
15 – 19	2	4.3
20 – 24	9	19.6
25 – 29	8	17.4
30 – 34	18	39.1
35 – 39	9	19.6
<b>MARITAL STATUS</b>	<b>N=46</b>	
Single	6	13.1
Married	40	86.9
<b>LEVEL OF EDUCATION</b>	<b>N=46</b>	
Primary	18	39.1
Secondary	22	47.8
Tertiary	6	13.1
<b>PLACE OF RESIDENCE</b>	<b>N=46</b>	
Urban	27	58.7
Rural	19	41.3
<b>PARITY</b>	<b>N=46</b>	
0	22	47.8
1	9	19.6
2	9	19.6
3	4	8.7
4	2	4.3
<b>BOOKING STATUS</b>	<b>N=46</b>	
Booked	2	4.3
Unbooked	44	95.7

Table 1 showed that most women were aged 30-34 years (39.1%). Most of the women were married (86.9%) and had a secondary level of education (47.8%). About 58.7% of the women resided in urban areas, while 41.3% lived in rural areas. Most of the women were nulliparous (47.8%) and unbooked (95.7%).



Pie chart 1 above shows that 24 women were referred from the Traditional birth attendant (TBA), 11 women from Primary health centre (PHC), 8 women were self-referred and 3 women from the secondary health centre.



Pie chart 2 above shows that 35 and 11 women respectively had Cephalopelvic disproportion (CPD) and Abnormal lie/presentation as the cause of the obstruction.

**Table 2: Foetomaternal outcomes**

Factors	Frequency	%
<b>FOETAL OUTCOME</b>		
Birth asphyxia	11	26.8
Neonatal sepsis	14	34.2
Perinatal death	16	39.0
<b>MATERNAL OUTCOME</b>		
Anaemia	8	12.3
Wound infection	11	16.9
<b>DURATION OF INDWELLING CATHETER</b>		
7days	29	63.0
14days	17	37.0

Table 2 showed no maternal death recorded. Foetal outcomes included; 26.8% birth asphyxia, 34.2% neonatal sepsis and 39.0% perinatal death. About 63.1% had 7days of indwelling catheter while others had 14days.

The average hospital stay was 10.7days.

**Table 3: Foetomaternal complications.**

Factors	Frequency	%
<b>COMPLICATIONS</b>		
Uterine rupture	3	4.5
Sepsis	3	4.5
Postpartum haemorrhage	3	4.5
Wound breakdown	5	7.5
Foetal distress	8	11.9
Intrauterine foetal death	16	23.8
No complication	29	43.3
<b>MATERNAL DEATH</b>	0	0

Table 3 shows that 23.8% of the women suffered intrauterine fetal death, and 11.9% had fetal distress, while 7.5%, 4.5%, and 4.5% of the women had wound infection, uterine rupture, and puerperal sepsis, respectively.



## DISCUSSION

The prevalence of obstructed labour in this study was 1.2%. This was comparable to 1.2% in Ekiti and similar to 1.79% recorded in Usmanu Danfodiyo University Teaching Hospital Sokoto and 1.71% in Pakistan. It was slightly lower than 2.7% in Enugu, Nigeria, and far lower than 14.1% in Rivers State, Nigeria, and 18.1% in Ethiopia. The low prevalence in this study may be due to the widespread availability of secondary facilities in the state where caesarean deliveries can be performed.

Most women were aged 30 to 34 years, and the majority had secondary education and resided in urban areas. This finding aligns with studies in Rivers State, Nigeria, but differs from other studies. About 47.8% of the parturients were nulliparous, which may be due to their untested pelvises. This is consistent with similar studies conducted in Nigeria, Pakistan, and Ethiopia but contrasts with studies done in other regions of Nigeria. A high occurrence of obstructed labour was found among the unbooked (95.7%), likely due to late recognition of obstruction in labour and subsequent referral, often influenced by traditional practices like home delivery and unsupervised antenatal care.

Public enlightenment and health education, compulsory basic education, and integrating reproductive health education into secondary school curricula can help women make better health-related choices. Overcoming traditional barriers through education and women's empowerment could encourage greater utilization of antenatal care and delivery services.

More than half of the parturients (52.2%) were initially managed by traditional birth attendants before being referred, consistent with a study in South-Eastern Nigeria. To prevent obstructed labour, it is essential to ensure emergency obstetric care services, use the partograph to monitor labour

progress, advocate for girl education, prevent early marriages, provide adequate nutrition, and strengthen community structures against unskilled maternity care.

Cephalopelvic disproportion and malpresentation were common causes of obstructed labour, consistent with other studies but different from a study in India, where malpresentation was the major cause. This discrepancy may be due to poor supervision and the inability to recognize cephalopelvic disproportion.

This study showed that emergency caesarean section was used to relieve the obstruction in all parturients, often due to its perceived safety when the fetus is alive. Destructive delivery was not performed during the study, likely due to the procedure's unpleasantness. The study revealed that obstructed labour contributed to poor perinatal outcomes, similar to findings in Sokoto but different from studies in Maiduguri, Angola, and India. Early referral and prompt, specialized emergency care likely contributed to the lack of maternal complications and the absence of obstetric fistulas.

**LIMITATION:** Difficulties in retrieving data at the special care baby unit.

**CONCLUSION:** The prevalence of obstructed labour in this study is low. The common causes were cephalopelvic disproportion and abnormal lie/presentation, predominantly occurring among the unbooked. The primary fetal outcome was perinatal death, and the common maternal complication was wound breakdown.

**AUTHOR CONTRIBUTIONS:** Author AG conceptualized the study, developed the proforma, and drafted the manuscript. Authors ASW and AMG retrieved the folders, Author CTA entered the data into

the proforma, and Author FAE analyzed the data. Author IEH proofread the manuscript and made corrections. All authors read and approved the final draft.

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**ETHICAL APPROVAL:** Ethical approval with approval number 766 was obtained from the ethical committee of the Federal Medical Centre, Yenagoa, Bayelsa State.

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