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Feto-Maternal Outcomes of Obstetric Emergencies Amid Covid-19 Pandemic

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ABSTRACT

Objective: The study was conducted to identify the feto-maternal outcomes of obstetrics emergencies in Barau Dikko Teaching Hospita, Kaduna (BDTH). Specific objectives were to:

I: Examine the categories of common obstetric emergencies and their incidence rates.

II: Compute the maternal mortality rate and still birth rate respectively.

Study design: retrospective cohort study of obstetric emergencies managed for 17 months between January, 2021 to May, 2022.

Methodology: 3,731 total deliveries were examined retrospectively by convenience under review. Obstetric emergencies commonly encountered were carefully extracted (Jan. 2021 to May 2022) from the hospital obstetric unit's record. Data collected were analyzed using descriptive statistics, out of which spontaneous vaginal deliveries were 2857; obstetric emergencies arising before, during or 24 hours after delivery were 2086.

Results: It is a well-known fact that Covid-19 has disrupted socioeconomic activities on a global level since its emergence, including health care related services, which maternal and child care belongs. The findings of this research reflect this current reality. Among the common categories of obstetric emergencies presented on table 2, Caesarean section was the leading emergency (40.2%), followed by Low birth weight (11.9%), preeclampsia (11.6%) and PPH/APH (6.7 & 5.1%) respectively. Cumulative incidence rate (555.6/1000), with Caesarean section having the majority (224.6/1000), followed by preeclampsia (64.8/1000) and PPH/APH (37.5 & 28.1/1000) correspondingly. High level of still birth rate (55.2/1000) and relatively high maternal mortality rate (351.8/100,000) were computed.

Conclusion: The study revealed a poor feto-maternal outcomes of obstetric emergencies, with a high level of still birth rate (55.2/1000 live births) and a relatively high maternal mortality rate (351.8/100,000 live births).Therefore, a concerted efforts are needed in order to reverse these ugly trends.

Recommendations

Government in collaboration with health care professionals and media agencies should intensify awareness on the importance of early enrollment and adherence with antenatal care, educate women on the importance of reporting any danger signs associated with obstetric cases identified during pregnancy, provide adequate and affordable means of transportation, provide free and accessible education for girl child and employ more qualified midwives, obstetricians and gynecologists, including training and retraining of the existing ones.

Keywords : Fetal, Maternal, Feto-Maternal, Obstetrics Emergencies, Outcomes, Pandemic

I. INTRODUCTION

No issue is more central to global well-being than maternal and perinatal health; at some point in time, every individual, family, and community is intimately involved in pregnancy and the success of child birth (W.H.O).The maternal mortality ratio (MMR) in several low- and middle-income countries, however, is concerning, with Nigeria and India alone accounting for approximately 34% of global maternal deaths (W.H.O, 2019). With an MMR of 917/100,000 live births; Nigeria ranks fourth out of 187 countries in terms of maternal mortality ratio (https://fragilestatesindex.org/). The lifetime risk of a Nigerian woman dying during pregnancy, childbirth, postpartum, or post-abortion is one in 22, compared to one in 4900 in developed countries (W.H.O, 2020). Obstetric emergencies are defined as unexpected obstetrical events that require immediate action (Dutta, D. C, 2008). They are potentially fatal medical conditions that can occur during pregnancy, labor, and delivery. A serious and often dangerous situation that develops suddenly and unexpectedly and necessitates immediate attention in order to save lives is also defined as an emergency (S. Campbell and C. Lee, 2000).The maternal mortality ratio (MMR), which is expressed as maternal deaths per 100,000 live births over a given time period, is an important indicator of the quality of obstetric care. Obstetric emergencies are the leading causes of maternal mortality worldwide, particularly in developing countries where illiteracy, poverty, a lack of antenatal care, poor transportation, and insufficient equipment/staffing all contribute to the escalation of the problem (W. O. Chukwudebelu, 2003; J. Drife, 2004). The high rate of maternal and neonatal mortality in Nigeria, according to current evidence, is linked to the three types of maternal delay proposed by Thaddeus and Marine (Okonofua F, Ntoimo L, Ogungbangbe J, Anjorin S, Imongan W, Yaya S,2018; Yaya S, Okonofua F, Ntoimo L, et al, 2018). These barriers include a delay in deciding to seek maternal health care, locating and arriving at a medical facility, and receiving skilled pregnancy care once the woman arrives at the facility (W.H.O,2020; Yaya S, Okonofua F, Ntoimo L, et al,2018). Obstetric emergencies were responsible for 96.7 percent of maternal and 87 percent of perinatal mortality in E. L. Nwobodo's (2006) study in North-Western Nigeria. The most common obstetric emergencies identified by Lamina Mustapha and Oladapo Olufemi Taiwo (2011) in a study conducted at a tertiary institution in western Nigeria, were prolonged/obstructed labour, postpartum haemorrhage, fetal distress, severe

pregnancy-induced hypertension/eclampsia, and antepartum haemorrhage .Where possible, prevention and prompt and effective treatment of obstetric emergencies will go a long way toward reducing the magnitude of ever-increasing maternal mortality, which appears to have defied all proposed WHO-mandated measures to reduce it (A. Haines and A. Cassels, 2004).Data on the contribution of obstetric emergencies to maternal mortality in Sub-Saharan Africa and developing countries such as Nigeria, where maternal mortality ratios are alarmingly high, are, however, scarce. This is one of the most significant barriers to the effective distribution of maternal healthcare resources. Stillbirth is one of the world's most overlooked disasters; 2.6 million stillbirths occur each year, with 98 percent occurring in low- and middle-income countries (Aminu M, Bar-Zeev S, White S, Mathai M, Van Den Broek N, 2019; Healthy Newborn Network & W.H.O, 2021). Nigeria is said to be responsible for 12% of the 2.6 million stillbirths (Okonofua FE, Ntoimo LFC, Ogu R, Galadanci H, Mohammed G, Adetoye D, et al, 2019).Approximately half of all stillbirths occur during the intrapartum period and are frequently caused by avoidable causes (Fren JF, Gordijn SJ, Abdel-Aleem H, Bergsj P, Betran A, Duke CW, et al, 2009; W.H.O, 2016). It is currently estimated that a pregnant woman in Africa will have the same chance of having a live birth as a woman in a high-income country in 160 years (W.H.O, 2016). The average rate of stillbirth in low-middle-income countries is 25/1,000 births, which is ten times higher than in high-income countries, with rural areas accounting for the majority (57 percent) of stillbirths (Bernis L, De Kinney MV et al, 2016; Saleem S, Tikmani SS et al, 2018 &Onwujekwe O, Ezumah N, Mbachu). Two observational studies conducted between 2017 and 2018 at MurtalaMuhammed Specialist Hospital in Kano, Nigeria, revealed a high incidence of stillbirth: 180/1000 births (Rebecca Milton, Fatima Zara Modibo,William John Watkins, et al, 2022). Stillbirth was associated with the following factors: a lack of maternal education, previous stillbirth(s), prematurity, living in both semi-rural and rural areas, and a long period between membrane rupture and delivery. Overall, no formal maternal education, prior stillbirth(s), and having "any disease" were linked to an increased risk of stillbirth. In Uganda and Cameroon, hypertension has been linked to an increased risk of stillbirth and perinatal mortality (Nakimuli A, Mbalinda SN, Nabirye RC, Kakaire O, Nakubulwa S, Osinde MO, et al, 2015; Tolefac PN, Tamambang RF, et al, 2015).Nigeria has a stillbirth rate of 43 per 1,000 people, according to a recent report. (2021, UNICEF). The Every Newborn Action Plan of the United Nations has set a target of 12/1,000 births for all countries by 2030. Madhi SA, Pathirana J, Baillie V, Cutland C, Adam Y, Izu A, et al,2019; Saleem S, Tikmani SS,2018). In low- and middle-income families, stillbirths are overestimated.

II. RESULTS AND DISCUSSION

Table 1 : Socio-demographic attributes

Age	Frequency	Percentage	*P – Value*
< 20 years	78	2.0	
20 - 29 years	1094	29.3	
30 – 39 years	2155	55.7	
40 years and above	404	10.8	0.005
Educational attainment			
FSLCE	501	13.4	
GCE/SSCE	2301	61.6	

Tertiary	929	24.8	< 0.004
Socio-economic status			
Employed	823	22.0	
Unemployed	1341	35.9	
Business	511	13.6	
Artisans	1056	28.3	< 0.05
Ground Total:	**3731**	**100**	

Most of the respondents (55.7%) are between 30 to 39 years of age, majority (61.6%) obtained secondary school certificates.

Table 2 : Categories of Obstetric emergencies from January 2021 to May 2022

Obstetric Emergency Cases	Frequency	Percentage
Caesarean Section (CS)	838	40.2
Pre-eclampsia	242	11.6
Ante partum Hemorrhage (APH)	105	5.1
Postpartum Hemorrhage (PPH)	140	6.7
Retained Placenta	17	0.9
PMTCT	126	6.0
Still birth	206	9.8
Low birth weight	249	11.9
Twin delivery	150	7.1
Maternal death	13	0.6
Total:	**2086**	**100**

Caesarean section was the leading emergency (40.2%), followed by Low birth weight (11.9%), preeclampsia (11.6%) and PPH/APH (6.7 & 5.1%) respectively.

Table 3 : Incidence of Obstetric emergencies, total delivery (Jan. 2021 to May 2022) was 3731.

Obstetric emergencies	Frequency	Incidence rate/1000
Caesarean Section (CS)	838	224.6
Pre-eclampsia	242	64.8
Ante partum Hemorrhage (APH)	105	28.1
Postpartum Hemorrhage (PPH)	140	37.5
Retained Placenta	17	4.5
PMTCT	126	33.7
Still birth	206	55.2
Low birth weight	249	66.7
Twin delivery	150	40.2
Maternal death	13	0.3
Total:	**2086**	**555.6**

Cumulative incidence rate (555.6), with Caesarean section having the majority (224.6), followed by preeclampsia (64.8) and PPH/APH (37.5 & 28.1) respectively.

Table 4 : still birth rate and maternal mortality rate (feto-maternal outcomes)

Obstetric emergencies	Frequency	Rate
Still birth	206	55.2/1000
Maternal Mortality	13	351.8/100,000

(351.8) were computed.

STUDY SETTINGS

The study was conducted in Barau Dikko teaching Hospital, Kaduna state University, Nigeria. The hospital was officially established on 30th march 2015.It is located at the center of the metropolis, Lafia Road Kaduna, with an estimated population of 1158000 as of 2022 (htts://wwwmicrotrends.net>cities). It is a referral center serving the rural, urban and semi-urban populations in the state.

DISCUSION

The result shows 55.5% (n=2155) of maternal age were between 30 – 39 years, P = 0.005. 61.3% (n=2301) obtained a secondary school certificate (GCE/SSCE). Majority 35.9% (n=1341) were unemployed, p = < 0.05. The commonly encountered Emergency Obstetric cases managed from January 2021 to May 2022 were tabulated in table No, which is in conformity with the findings of Lamina Mustapha and Oladapo Olufemi Taiwo (2011) in a study conducted at a tertiary institution in western Nigeria. Caesarean section was the leading emergency (40.2%), followed by Low birth weight (11.9%), preeclampsia (11.6%) and PPH/APH (6.7 & 5.1%) respectively. Maternal mortality rate was 351.8/100,000 which is in line with the report by (*https://fragilestatesindex.org/*): with MMR of 917/100,000 live births, indicating a very high MMR, rank Nigeria fourth out of 187 countries in terms of maternal mortality ratio. Still birth rate was high:55.2/1000 which support the findings of Rebecca et, al (2022) who reported a high incidence of stillbirth:180/1000 births from a two observational studies, conducted in MurtalaMuhammed Specialist Hospital,Kano,Nigeria, between 2017-2018.

III.CONCLUSION

The study revealed a poor feto-maternal outcomes of obstetric emergencies, with a high level of still birth rate (55.2/1000 live births) and a relatively high maternal mortality rate (351.8/100,000 live births).Therefore, a concerted efforts are needed in order to reverse these ugly trends.

IV. RECOMMENDATION

Base on the aforementioned findings, the following recommendations were made

1. Government in collaboration with health care professionals and media agencies should intensify awareness on the importance of early enrollment and adherence with antenatal care.
4. Health workers should educate women on the importance of reporting any danger signs associated with obstetric cases identified during pregnancy.
5. Government should provide adequate and affordable means of transportation.
6. Government should provide free and accessible education for girl child.
7. Government should employ more qualified midwives, obstetricians and gynecologists, including training and retraining of the existing ones.

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