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Original Article

A SURVEY OF MATERNAL MORTALITIES IN ABIA STATE, SOUTHEAST NIGERIA

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ABSTRACT

Ascertaining the burden of maternal mortality is crucial to the improvement of maternal health for any [illegible] they occur. Health facilities in the 17 local government areas of the State were enlisted. Data on births and maternal deaths in the preceding 12 months were obtained. A total of 25,081 births and 43 maternal deaths were recorded for the study period giving MMR of 171/100,000. The public facilities had higher values of MMR (856.8/100,000) than the private (177.2/100,000). Similarly, the comprehensive Essential Obstetric Care facilities (EOC) had lower MMR than the Non-EOC. Poor documentation may be one of the reasons for the low MMR in this study. Enforcing proper documentation, reporting and investigation of maternal deaths is hereby recommended.

Key words: *Maternal mortality, Health facilities, Essential obstetric care.*

INTRODUCTION

Approximately 600,000 women die annually from complications of pregnancy, child bearing and unsafe abortions worldwide[1, 2, 3]. About 99% of these deaths occur in the developing world[1,2]. Unfortunately, most of the affected countries have difficulties ascertaining their burden of maternal mortality, as the estimates are highly susceptible to inaccuracies[2, 4,5]. The difficulties in obtaining accurate data on maternal mortalities have created the need to explore other techniques that would give more reliable data. Some advocate the use of the sisterhood method of estimating maternal mortality. However, the sisterhood method is still being refined and the extent and impact of biases have only recently received attention[6]. Others advocate community-based surveys where maternal deaths are investigated by assessing records of health facilities and augmenting it with verbal autopsies of maternal deaths in the communities[5, 7]. In the interim, the World Health Organization has recommended a number of process indicators to monitor the effect of health programmes on maternal mortality in the developing world[8]. This only goes to reveal the exasperation experienced by experts in dealing with maternal mortality data in the third world. For example, for two consecutive periods (1999 and 2003), the Nigerian Demographic and Health Survey have been unable to come out with a national value of maternal mortality rate for the country as a result of the aforementioned difficulties[9,10].

Reviews of pregnancy related deaths by nations are important public health functions[11]. Every pregnancy related death need to be reported and investigated. In countries where this is enforced, data on maternal deaths is available and it enables them to adopt comprehensive strategies to tackle maternal health problems[12,13].

A survey was carried out on health facilities in Abia State, Southeast Nigeria to ascertain maternal deaths and where they occur. This was part of the National Study on Essential Obstetric Care (EOC) in Nigeria carried out by UNFPA and the Federal Ministry of Health.

MATERIALS AND METHODS

A facility-based assessment of maternal deaths was carried out in Abia State, Southeast Nigeria to determine the magnitude of maternal deaths and where they occur in the State. This was part of a national survey of Essential Obstetric Care facilities. All the seventeen Local Government

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Areas (LGAs) in the State were enlisted into the study. The list of all health facilities in each LGA was obtained and trained interviewers conducted the interview using standard questionnaire adapted from previous studies on maternal mortalities[14,15,16]. Data on child delivery and maternal mortalities recorded in health facilities in the preceding 12-months were obtained. The types of maternal services offered in the facilities were noted and were used to categorize them into 3 groups using the following criteria:

1. Parenteral antibiotics
2. Parenteral oxytocics
3. Parenteral sedatives
4. Manual removal of placenta
5. Removal of retained products of conception
6. Assisted vaginal delivery
7. Blood transfusion
8. Caesarean section.

Facilities that do not offer anyone of the services numbered 1 to 6 were classed as Non-Essential Obstetric Care. Facilities that offer all the services numbered 1 to 6 were classed as Basic Essential Obstetric Care. Facilities that offer all the services numbered 1 to 8 were classed as Comprehensive Essential Obstetric Care.

RESULTS

A total of 370 health facilities that offer maternal services were surveyed in the 17 Local Government Areas of the State. These were made up of 215 Primary Health Centres/Maternity Homes (both public and private facilities) and 155 secondary/tertiary health care facilities. There were a total 249 (67.3%) health facilities that did not meet the criteria for Essential Obstetric Care while those that met the criteria for Basic Essential Obstetric Care and Comprehensive Essential Obstetric Care were 42 (11.4%) and 79 (21.4%) respectively. There is a fair distribution of maternal health facilities across all the local government areas of the State. However, the 6 urban LGAs of of Aba North, Aba South, Osisioma, Ugwunagbo, Umuahia North and Umuahia South had 31 of the Basic Essential Obstetric Care facilities and 61 of the Comprehensive Obstetric Care facilities while the 11 rural LGAs had only 11 Basic Essential Obstetric Care and 18 Comprehensive Essential Obstetric Care facilities, table 1.

A total of 43 maternal deaths and 25,081 births were recorded during the study period giving a maternal mortality ratio of 171 per 100,000 live births. The 6 urban local government areas had a disproportionate share of the deliveries in the State as they accounted for 73.3% (18391) of it. The urban LGAs recorded a total of 23 maternal deaths while the rural LGAs recorded 20 giving maternal mortality ratio of 125 per 100,000 for the urban LGAs and 299 per 100,000 for the rural LGAs. There is no statistical difference between the two values (x^2=0.3307, df=1, p>0.05), table 2.

Only one maternal death was recorded in all the primary care facilities in the State and that occurred in a Basic Essential Obstetric Care facility giving maternal mortality ratio of 13/100,000 for primary care facilities. So while the primary care facilities accounted for 30.5% of the births in the State, they represented only 2.3% of the maternal deaths.

Undue share of the maternal deaths were borne by the secondary public health care facilities. For while they represented only 6.5% (1634) of the births, they accounted for 32.6% of the recorded maternal deaths giving a maternal mortality ratio of 856.8 per 100,000 live births. The private secondary healthcare facilities catered for the majority of the deliveries in the State accounting for 63% (15,801) while an equivalent proportion of maternal deaths (65%; 28 deaths) were recorded by them during the same period giving MMR of 177/100,000, table 3. The private Non-EOC facilities recorded 3,956 deliveries and 14 maternal deaths giving MMR of 354/100,000 while the private Comprehensive EOC recorded 11,135 deliveries and 14 maternal deaths giving MMR of 126/100,000. It is worthy of note to observe that in both the secondary public health facilities and in the secondary private health facilities that those health facilities that were Non-Essential Obstetric Care fared poorly in their maternal mortality ratio. While the public Non-Essential Obstetric Care facilities recorded a maternal mortality ratio of 1070/100,00, the public Comprehensive Essential Obstetric Care facilities recorded a maternal mortality ratio of 829/100,000. However, there is no statistical difference between the two (x^2 =0.1104, df=1, p>0.05). Similarly, while the private Non-Essential Obstetric Care facilities recorded a maternal

mortality ratio of 354/100,000, the private Comprehensive Essential Obstetric Care facilities recorded a maternal mortality ratio of 126/100,000. The difference is statistically significant ($x^2 = 8.1659$, df=1, $p<0.05$).

DISCUSSION

The large number of primary care facilities in the State involved in the delivery of maternal services is very encouraging. This may be a direct effect of the primary healthcare programme in the country, which has resulted in the establishment of several primary healthcare centres in LGAs of the State. The large presence of health facilities in the urban areas is responsible for the relatively large numbers of deliveries and maternal deaths recorded in them. Besides, the urban dwellers are expected to make better use of orthodox health facilities than their rural counterparts. Close to 70% of the maternal health facilities in the State are Non-Essential Obstetric Care and as such, cannot cope with the major causes of maternal mortalities which are haemorrhage, prolonged obstructed labour, sepsis and pregnancy induced hypertension[5, 14,17,18]. The preponderance of such weak healthcare facilities in the country might explain the high maternal mortality ratio of Nigeria.

The total number of maternal deaths of 43 recorded in the State with MMR of 171 per 100,000 for the study period is low. This may be as a result of poor documentation of records of maternal deaths by health facilities. Health facilities in the country exhibit laissez-faire attitude towards records of mortality neither are they compelled to notify appropriate authorities of the occurrence of deaths in their facilities nor are there provisions for investigation of the deaths. Similarly, compliance to the issuance of death certificates to relations of the deceased before burial is not strictly observed. As a result, data on mortality is haphazardly maintained and their retrieval an uphill task. Instituting necessary regulations guiding the documentation, notification and reviewing of maternal deaths is necessary for proper implementation of maternal health programmes in the country[5]. Until we do this, we may never have reliable data on maternal deaths nor have yard sticks to monitor maternal health in the country and will be compelled to use process indicators to monitor the progress of maternal health programmes in the country as recommended by the World Health Organisation[8].

The low MMR of 171/100,000 recorded in this study may not completely appear strange as a previous survey have found similarly low MMR for the country. The 1993 Nigeria Demographic and Health Survey obtained MMR of 289/100,000 for the nation which was however turned down on the grounds that the value does not tally with the other development indices of the country at that time[9]. So while exploring explanations for the low MMR in this study, it might be necessary to also consider that the true MMR for the nation may not necessarily be as high as the currently accepted value of 800/100,000.

The low maternal mortality ratio in the primary care facilities may be as a result of the fact that the services at the primary health centres/maternity homes are patronised more by mothers with low risk of obstetric complications or that when pregnant mothers are perceived to be at risk of major obstetric complications, they are referred to higher levels of care. The other explanation may be poor documentation of maternal deaths at the primary care level.

A number of reasons may account for the high MMR obtained in public secondary healthcare facilities in the State. The public health facilities are more likely to comply with documentation of maternal mortality data since maintenance of health records is supposed to be part of their routine duties. Besides, they are more likely to have trained staff in their employ to carry out such responsibilities. In addition, the public health facilities are more likely to accept patients in bad state of health and are likely to receive large numbers of referrals for mothers with obstetric emergencies. Another reason could be the fact that many public referral centres are ill prepared to cope with obstetric emergencies as a national survey revealed that less than a third of the public sector referral health facilities in Nigeria met the standard for Comprehensive Essential Obstetric Care[19]. Besides, even in situations where public referral centres meet the EOC criteria for comprehensive EOC, many of them offer the services when it is too late to salvage the lives of mothers[20,21,22].

The classification of health facilities on the Essential Obstetric Care status correlated well with their performance on MMR. Both public and private health facilities that did not meet the EOC criteria fared poorly in the handling of maternal health as the Non-EOC facilities recorded higher MMR than those facilities that were classified as Comprehensive EOC. The populace generally regard most general hospitals and 'private hospitals and maternities' (as most private hospitals offering obstetric services are designated) as referral centres for obstetric emergencies without knowledge of their EOC status. As a result, they make referrals to them without knowledge of their competence. It might be necessary to properly designate all health facilities offering maternal services in the country based on their EOC status and the populace properly informed so that decisions on referral of obstetric emergencies to facilities will be based on evidence of competence.

The low MMR recorded in the private Comprehensive EOC is very encouraging. It reveals their competence in handling obstetric emergencies. No wonder such facilities had good patronage and played significant role in child deliveries accounting close to 50% of all the births in the State. Another likely reason for the low MMR in private Comprehensive EOC is the fact that the facilities may not be forthcoming with data on maternal deaths as they may feel that providing information on maternal deaths may damage the reputation of their hospitals. In the absence of strong regulation on maintenance, reporting and investigation of maternal mortality, health facilities are likely to continue to be unserious in their handling of maternal data.

Maintenance of data on maternal deaths is crucial to the implementation of maternal health programmes in the country. It is high time that necessary measures are put in place to effect proper handling of maternal records. This will provide the baseline data for planning, implementation, monitoring and evaluation of maternal health programmes. Until we do this, we are not likely to make reasonable impact in this area.

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Table 1: Classification of health facilities according to Essential Obstetric Care status in Local Government Areas in Abia State.

LGAs	Types of health facilities			
	Non-Essential Obstetric Care services	Basic Essential Obstetric Care services	Comprehensive Essential Obstetric Care services	Total
Aba North	3	4	15	22
Aba South	30	16	22	68
Arochukwu	14	1	1	16
Bende	43	6	1	50
Ikwuano	15	0	0	15
Isiala Ngwa North	16	0	4	20
Isiala Ngwa South	10	0	2	12
Isuikwuato	29	0	2	31
Ohafia	15	0	2	17
Obingwa	7	1	2	10
Osisioma	9	6	9	24
Ugwunagbo	6	4	1	11
Ukwa East	5	1	2	8
Ukwa West	7	1	1	9
Umuahia North	9	0	11	20
Umuahia South	10	1	3	14
Umunneochi	21	1	1	23
Total	**249**	**42**	**79**	**370**

Table 2: Distribution of births and maternal deaths in Local Government Areas in Abia State.

LGAs	Number of births	Number of maternal deaths
Aba North	2204	0
Aba South	10037	11
Arochukwu	449	1
Bende	947	0
Ikwuano	623	0
Isiala Ngwa North	213	4
Isiala Ngwa South	557	0
Isuikwuato	754	1
Ohafia	852	11
Obingwa	1085	2
Osisioma	1955	2
Ugwunagbo	460	0
Ukwa East	188	1
Ukwa West	276	0
Umuahia North	2980	10
Umuahia South	755	0
Umunneochi	746	0
Total	**25,08 1**	**43**

Table 3: Distribution of births and maternal deaths according to types of health facilities

Type of health facilities			Births	Maternal deaths	Maternal mortality Rate
Primary care facilities:	Primary Health Centers and Maternity Homes (Both public and private)	Non-Essential Obstetric Care facilities	5,894	0	0
		Basic Essential Obstetric Care facilities	1,752	1	57.1/100,000
			7,646	**1**	**13.1/100,000**
Secondary and tertiary care facilities	Public care facilities	Non-Essential Obstetric Care facilities	187	2	1069.5/100,000
		Comprehensive Essential Obstetric Care facilities	1,447	12	829.3/100,000
			1634	**14**	**856.8/100,000**
	Private care facilities	NOn-Essential Obstetric Care facilities	3956	14	353.9/100,000
		Basic Essential Obstetric Care facilities	710	0	0
		Comprehensive Essential Obstetric Care facilities	11,135	14	125.7/100,000
			15,801	**28**	**177.2/100,000**
Total			**25,081**	**43**	**171.4/100,000**