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Birth Preparedness and Complications Readiness: Comparative Assessment of Facilities Providing Maternal and Child Health Care Services in Urban and Rural Areas of Anambra State, Nigeria

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ABSTRACT

Background: Ensuring improved maternal and child health care at the facility level implies well-knitsafe motherhood programs hinged on a tripod comprising availability of services and infrastructure, good record keeping and distribution of emergency obstetric care services at the health facilities. This study assessed and compared the facilities providing maternal and child health care services in urban and rural areas of Anambra state, Nigeria for birth preparedness and complications readiness. **Materials and Methods:** This was an institutional based cross-sectional comparative mix-method study of 24 health facilities and heads of the facilities, in urban and rural areas of Anambra state, selected by multistage sampling technique. Quantitative data were collected via facility observation checklist and analysed with statistical package for social sciences version 22.0. Qualitative data were elicited by key informant interviews and analysed thematically. **Results:** More 4(6.6%) rural than 1(1.6%)urban health facilities, had staff available on 24hrs service. Five (41.7%) rural compared to 6(50%) urban had active health committees. Six (50%) facilities in urban and 3(25%) rural had system for reviewing maternal and perinatal deaths. Use of partographs was low, with none at the PHC in both localities. The PHC facilities in both areas had very few or no supplies for at least basic EmOC. **Conclusions**: The findings of this study demonstrated an overall poor BP/CR though poorer in rural than urban. Appropriate interventions should be put in place to equip the health facilities, offer sustained training to health workers and thus create strengthened media for better BP/CR.

1. INTRODUCTION

Birth Preparedness and Complications Readiness (BP/CR) refers to the process of planning for normal birth and anticipating the requisite actions to prevent or combat emergencies, should such occur before, during and after birth.[1] It is an essential component of safe motherhood programs and a comprehensive strategy in reducing delays around recognizing the need for care, seeking care, reaching the point of care and receiving care pre- and peri-partumas well as promoting skilled care peri- and in the immediate postnatal period [2,3,4]

Each day, for numerous women and their families, the event of childbirth is linked to unnecessary yet avoidable suffering arising from maternal morbidity and mortality.[1,5]Theseare often preventable if a skilled provider attends every birth and the birth takes place in a health facility where access to Emergency Obstetric Care (EmOC) can be ensured.[6]The Maternal and Neonatal Health (MNH) Program has expanded the concept of BP/CR to address the providers, the facilities and the policymakers.[4]Promoting BP/CR among these stakeholders can reduce delays in receiving (or providing) appropriate care at the health facility level.

To ensure birth preparedness and complications readiness at the provider level, health facilities must have the needed staff, supplies, equipment, and infrastructure to serve clients with normal births and complications, and they must be open, clean and inviting. Programs tend to focus on one of two approaches: EmOC.[7,8]andskilled care during childbirth.[9,10]

Nonetheless, the entire Nigerian health system is plagued by myriads of problems centered on poor service quality. According to the reports of different studies conducted in 2001 and 2003, many health facilities(public and private) in Nigeria are poorly equipped, lack essential supplies and qualified staff, while only 42% of public health facilities in Nigeria were documented as having met internationally accepted standards for obstetric care.[11,12]In some hospitals, equipment such as sphygmomanometers, thermometers, weighing scales, delivery kits, waste bins and mucous extractors are unavailable.[11,13]Many health workers are demoralized or have relocated to countries where they will be adequately remunerated.

In order to improve pregnancy related health indices, make pregnancies and deliveries safer, as well as meet up with the Sustainable Development Goals (SDGs) of reducing the global maternal mortality to less than 70 per 100,000 live births by the year 2030, it is pertinent that countries attain an annual rate of reduction in maternal mortality of 7.5% per year between

2016 and 2030. [14]It is key to determine the level of readiness of health facilities at combating obstetric danger signs and complications head on. In spite of this, not much is known in scientific literature about the status of BP/CR of health facilities in the communities that host the health facilities we studied. Therefore, this study was designed to assess and compare the level of BP/CR in facilities providing maternal and child health care services in urban and rural areas of Anambra state, Nigeria.

2. METHODOLOGY

Study area, period, design and population: This institutional based cross sectional comparative study was conducted between January and May 2014. The study sites comprised 24 healthcare facilities offering maternal and child health (MCH) care services in the urban and rural communities of Anambra State, South-East Nigeria. Twelve of the centers were located in urban area (Nnewi North Local Government, which has a total population of 155,443 (77,517 males and 77,926 females), while the other 12 were from the rural area, Anaocha Local Government with a total population of 284,215 (142,961 males and 141,254 females).[15]

Sampling technique: A multi-stage sampling technique was used. The first stage involved the selection of the study Local Government Areas(LGAs). The 21 LGAs in the State were stratified into seven (7) urban and 14 rural LGAs. Then simple random sampling technique using balloting system was employed to select one LGA in each urban and rural stratum namely Nnewi North and Anaocha LGAs respectively. Third stage was selection of the health facilities. The facilities in each selected LGA were stratified based on level of care into primary, secondary and tertiary health facilities. The facilities were further stratified based on ownership status into private and public. In Nnewi North LGA, a total of twelve facilities were selected. For Anaocha LGA, 12 health facilities were also selected.

Data collection methods: Data were collected using a mix-method. Quantitative data were collected using an observation checklist, while qualitative data were elicited by key informant interviews (KII)).

The facility observation checklist used was adapted from Maternal and Neonatal Health (MNH) John Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO) readiness: tools for maternal and newborn health.[4] The tool included questions on the facility infrastructure, equipment, supplies and services. This helped identify the

number of health facilities which have Basic Emergency Obstetric Care (BEmOC) and Comprehensive Emergency Obstetric Care (CEmOC). The observation checklist was used to assess both health facilities in the urban and rural areas for the availability of facility services, infrastructure, equipment and supplies for BEmOC, record keeping, infection prevention, childbirth/newborn resuscitation kits, equipment for manual vacuum aspiration (MVA), essential drugs including additional infrastructure, staff, equipment and supplies for CEmOC in carrying out their maternal and child health services. The observation checklist was analysed based on non –EmOC, BEmOC and CemOC services. The facilities which met the criteria for the six key signal functions of parenteral oxytocics, parenteral antibiotics, parenteral anticonvulsants, assisted vaginal delivery, removal of retained products, manual removal of placenta where categorized as BEmOC. While those who in addition to the basicEmOC, had done Caesarean- section and blood transfusion in the last three months were classified as CEmOC.

The KII involved the use of a key informant interviewer guide for the select heads in-charge of the selected health facilities. Each session lasted about 30 minutes. The interviews elicited information on their knowledge, attitude and practice of BP/CR, factors affecting implementation of BP/CR, on presence of written guidelines for BP/CR in their facilities, recommendations for effective implementation. The interviews were moderated by the principal investigator with an assistant who took notes and tape- recorded the sessions.

Data analysis and management: Data collected via the Checklist were scrutinized for completeness, range and consistency. Data analysis was done with International Business Machine/ statistical package for social sciences (IBM/SPSS) Windows version 22.0.[16]Results were presented in tables and percentage distribution (frequencies). While qualitative data were elicited by KII. Information from the KII was handled via thematic content analysis. This involved open coding in participant's own words and phrases, examining language used, categorizing all the information, themes and sub themes generated, then common and overlapping themes were extracted to generate an analytic schema.

Ethical consideration: Approval to conduct this study was obtained from Nnamdi Azikiwe University Teaching Hospital Ethical Committee (NAUTHEC). Permission to conduct this study was obtained from the appropriate authorities, while the informed written consent was obtained from the respondents both for participation in the study and the publication of the findings. The consent of the participants was obtained prior to the recording during KII. All

authors hereby declare that this study was conducted in accordance with the ethical standards laid down in the 1964 declaration of Helsinki.

3. RESULTS

3.1. Results of facility observation checklist

Table 1 shows availability of services and infrastructure at facilities providing maternal and child health care services in urban and rural areas of Anambra State, Nigeria. All the tertiary and secondary health facilities in both urban and rural localities had staff available on 24hrs service. Though poor, there were more PHC facilities on 24hrs service 4(6.6%)in rural than 1(1.6%)urban. A low percentage of the health facilities though lower5(41.7%) in rural, had active health committees than 6(50%) in urban areas, while 6(50%) in urban and 3(25%) in rural had a system for reviewing maternal and perinatal deaths.

Table 1: Availability of services and infrastructure at facilities providing maternal and child health care services in urban and rural areas of Anambra State, Nigeria, January - May, 2014.

	Urban				Rural			
Facility services:	Total n=12 (%)	THF n=1 (%)	SHF n=5 (%)	PHC n=6 (%)	Total n=12(%)	THF n=1(%)	SHF n=5 (%)	PHC n=6 (%)
Availability of staff to treat 24hrs	7 (58.3)	1(100)	5(100)	1(1.6)	10(83.3)	1(100)	5(100)	4(6.6)
Active health committee	6 (50.0)	1(100)	2(40)	3(50)	5 (41.7)	1(100)	2(40)	2(40)
Reviewing system for maternal and perinatal death	6 (50.0)	1(100)	5(100)	0(0)	3 (25.0)	1(100)	2(40)	0(0)
Clientwaiting room with shelter	12(100.0)	1(100)	5(100)	6(100)	12(100.)	1(100)	5(100)	6(100)
Examination room with adequate privacy	12(100.0)	1(100)	5(100)	6(100)	11(91.7)	1(100)	5(100)	5(83.3)
Water source	11 (91.7)	1(100)	5(100)	5(83.3)	11(91.7)	1(100)	5(100)	5(83.3)
Light source	12(100.0)	1(100)	5(100)	6(100)	9 (75.0)	1(100)	5(100)	3(50)
Toilet facilities	11 (91.7)	1(100)	5(100)	5(83.3)	11(91.7)	1(100)	5(100)	5(83.3)

*THF – (Tertiary health facility) SHF (secondary health facility) PHC (primary health center)

Table 2 summarizes record keeping in facilities providing maternal and child health care services in urban and rural areas of Anambra State, Nigeria. The use of partographs was low,2(16.7%)in totality of facilities,1(20%)at secondary and 0(0%) at primary health facilities respectively in both urban and rural localities. Partographswere available 1(100%)for use, only at the two tertiary health facilities respectively. The ANC cards and clinic registers were available in facilities of various levels in both urban and rural localities.

Table 2: Record keeping in facilities providing maternal and child health care services in urban and rural areas of Anambra State, Nigeria, January - May, 2014.

Record keeping	Urban				Rural			
	Total n=12 (%)	THF n=1 (%)	SHF n=5 (%)	PHC n=6 (%)	Total n=12(%)	THF n=1(%)	SHF n=5 (%)	PHC n=6 (%)
ANC cards	12 (100)	1(100)	5(100)	6(100)	10(83.3)	1(100)	5(100)	4(66.6)
Clinic registers	12 (100)	1(100)	5(100)	6(100)	11(91.7)	1(100)	5(100)	5(83.3)
Partographs	2 (16.7)	1(100)	1(20.0)	0(0)	2 (16.7)	1(100)	1(20.0)	0(0)

Table 3 shows the distribution of Basic/Comprehensive EmOC services among facilities providing maternal and child health care services in urban and rural areas of Anambra State, Nigeria. The tertiary and secondary facilities in both study areas had BEmOC equipment and supplies. The PHC in both study areas had very few or no supplies for BEmOC. The tertiary and secondary health facilities in the urban had equipment and supplies for CEmOC, while in the rural only the secondary health facilities had equipment and supplies for CEmOC.

Table 3: Distribution of Basic/Comprehensive EMOC services among facilities providing maternal and child health care services in urban and rural areas of Anambra State, Nigeria, January - May, 2014.

Basic emergency obstetric care supplies	Urban				Rural			
	Total n=12 (%)	THF n=1 (%)	SHF n=5 (%)	PHC n=6 (%)	Total n=12 (%)	THF n=1 (%)	SHF n=5 (%)	PHC n =6 (%)
Parenteral Oxytocics								
Oxytocin	10(83.3)	1(100)	5(100)	4(66.6)	8(66.7)	1(100)	5(100)	2(100)
Parenteral Antibiotics								
Ampicillin	7(58.3)	1(100)	5(100)	1(100)	8(66.7)	1(100)	5(100)	2(100)
Metronidazole	6(50.0)	1(100)	5(100)	0(0)	6(50.0)	1(100)	5(100)	0(0)
Gentamicin	9(75.0)	1(100)	5(100)	3(50.0)	10(83.3)	1(100)	5(100)	4(66.6)
Parenteral anticonvulsants								
Magnesium sulphate/diazepam	9(75.0)	1(100)	5(100)	3(50.0)	7(58.3)	1(100)	5(100)	1(1.6)
Assisted vaginal delivery								
Vacuum extractor	7(58.3)	1(100)	5(100)	0(0)	5(41.7)	1(100)	3(60.0)	1(1.6)
Forceps	6(50.0)	1(100)	5(100)	0(0)	5(41.7)	1(100)	4(80.0)	0(0)
Removal of retained products								
Speculum	9(75.0)	1(100)	5(100)	3(50.0)	7(58.3)	1(100)	4(80.0)	2(33.3)
Tenaculum	6(50.0)	1(100)	5(100)	0(0)	2 (16.7)	1(100)	1(20.0)	0(0)
Manual removal of placenta								
MVA syringe	4(33.3)	1(100)	3(60.0)	0(0)	1(8.3)	0(0)	1(20.0)	0(0)
Comprehensive EMOC								
C-section	6(50.0)	1(100)	5(100)	0(0)	5(41.7)	0(0)	5(100)	0(0)
Blood transfusion	6(50.0)	1(100)	5(100)	0(0)	5(41.7)	0(0)	5(100)	0(0)

3.2. Results of key informant interviews

Birth preparedness plans in the facilities-The response varied in locality and type of facility. Most of the health facilities in urban reported they had satisfactory birth preparedness plans, especially for the tertiary and secondary health facilities. However, a head of a primary health facility in the urban said *"not very good, not enough equipment."* In the rural community, all the heads of the facilities interviewed responded positively. One head of a facility in the rural said "it *is very functional in our facility*"

On the key players in BP/CR plans –The key players varied according to the type of facility. In the urban area, about half of the facilities had doctors among other key players.

However, all of the facilities had midwives and some cases complemented by CHEWs. In the rural area, five out of the twelve facilities had doctors as part of the key players. One head of a facility in the rural said *" Am at the forefront"*In the tertiary health facility in the urban, they had the full team comprising of specialist doctors, midwives, neonatologists pharmacists, laboratory scientists involved in BP/CR represented. In the secondary health facilities, there were specialist doctors and other cadre but only one had neonatology care. The rest of the primary health care facilities and maternity had midwives, auxiliary nurses and CHEWs as their key players. While in the rural the tertiary health center had other doctors but not specialist in Obstetrics, and other cadre of staff, trained nurses, midwives, pharmacists, laboratory scientists but no neonatologist. The Government hospitals and the mission hospitals also had all cadres of staff available. In the privately owned secondary there were qualified doctors though not specialists in obstetrics trained nurses, auxiliary nurses who carry out some basic investigations as well as dispense drugs. In the primary health care facilities in the rural, they were mainly trained nurse midwives, CHEWs and VHWs.One head of a secondary facility said "I *am in charge and always ready and prepared for complications"*

On the roles of key players -Most of the roles played by the key informant interviewed also depended on the level of the facility (primary, secondary or tertiary) however there was delegation of duties to different cadres of staff. This ranged from provision of ANC services including health talks, immunization, family planning services, running prevention of maternal to child transmission (PMTCT) clinics, provision of mama kits, taking deliveries, providing postnatal services, referral plans, training of staff. Also, most facilities in the rural area provided similar services as stated above however in addition provided home visits, advocacy and awareness campaigns.

On whether BP/CR is beneficial to reducing maternal and child mortality-All the health facilities in both localities agreed that BP/CR is beneficial to reducing maternal and child mortality. For the rural one head of a facility had this to say" *it is very helpful because they gain a lot from ANC, health talks. Immunisation, IPT, bed treated nets".* Another said, "*of course it is the cornerstone".* Another response "*very beneficial health talks helps a lot in improving haemoglobin, fit after delivery .establishing lactation*".

On availability of written documents for BP/CR for the facility-Only two facilities in the urban and one in the rural had written down documents in form of guideline lines and

standing order for BP/CR in the facilities. One of them in the urban said "*even though it is not written down they know what to do*"

On training of facility staff on BP/CR-Four urban health facilities and three rural health facilities stated that they had trained their staff specifically on BP/CR. Majority of those that received training specifically on BP/CR were staff of the primary health centers in both localities. Few others said they do so always one said "*we do training during staff meetings*". A head of one of the rural health facility said "*we do regular training and practice for the staff"* in most facilities the last time training on BP/CR was held was more than a year ago. Only three which was the PHC in each of the localities held theirs in the last one year among which one of them was held just a week before the interview. Two facilities in the urban areas mentioned the frequency of staff re- training on BP/CR "*Every two months and twice a year"* Another said, "*No fixed interval as I sense the need"*. Two heads of facilities in the rural said "*we do on the job training"* This meant that the staff are taught while the facility head is attending to their patients during consultations or taking deliveries "*We train our new staff only"* another said. However, it was noted that the training was general training on management of general patients and pregnant women alike.

On what the community do towards effective reduction in maternal and child morbidity and mortality- The key informants in both localities said the community contribute little or nothing towards reduction of maternal and child mortality and morbidity. One head of a facility in the urban said "*None at all"* In the urban area; few communities do support awareness creation, provide company to hospital and assist in referrals through provision of transport. While in the rural, available community support include mobilization of women to utilise ANC services, immunization, family planning services, support for referrals, financial support provision of security and supply of equipment to the primary health centres. One head in the rural PHC facility said "*the community organizes health meetings to ask us our problems".* Another said *the vigilante groups provide vehicles during referrals and the community provides refrigerator and generator set for cold chain, water etc.*

On how they assist patients referred to other health facilities-Most facilities in both urban and rural areas give assistance in the form of issuing referral notes, accompanying patients to centers where they are referred to and providing transport where available. A facility head in the urban said "*we refer promptly*". Another said *counseling, clear guidelines on where they*

can get the best service needed" A head of a facility in the rural said "*I provide transport and give them accompanying staff and make phone calls"*

On unbooked cases-Half of the health facilities in the urban receive unbooked cases, while the remainder said they refer them. All the facilities in the rural said they receive and attend to unbooked cases. One head of facility in the rural had this to say "*we receive without discrimination"*

On the hindrances they encounter in carrying out effective BP/CR plans-Most of the facilities mentioned some barriers to providing effective BP/CR plans to include: Inadequate/irregular supply of delivery kits, lack of equipment, bad roads, lack of staff, inadequate funding, security challenges, poverty and ignorance of the women and HIV – related stigma. The following aptly captured some of their responses particularly; in the urban one head of facility said "*the people are unwilling to receive blood and accept caesarean section quite late".* Another had this to say "*Our facility is situated behind some security gates limiting movements after certain times of the night so to get blood for transfusion or move patients in and out late in the night is a problem".*Another in the rural said "*usually the environment feels unsafe for night duties or referral especially at night"* And yet another said "*patients prefer to use maternity homes and TBAs due to cost and so we receive them in bad shape"*

On recommendation(s) for effective implementation of BP/CR plans, they suggested;Early ANC booking, provision of delivery kits at little or no cost, recruitment of more staff, training and retraining of staff on BP/CR, community health insurance scheme, family planning, giving the patients provider's phone numbers, expansion of clinic space to accommodate more clients, supporting referral through transport and communication and improved blood transfusion bank services.. Some quotes illustrating the above mentioned points include:*"Government at all levels should be committed in provision of delivery kits and employment of more midwives to take delivery" Mothers need home visit to be motivated, delivery should be expanded and the cost of delivery should be reduced"."Increase community health talks on safe motherhood and incentives to pregnant mothers who deliver." "Close monitoring of TBAS."Women should be empowered through education, health workers should be trained, functional equipment be provided and health facilities made accessible and affordable especially in the rural areas"*

4. DISCUSSION

This study assessed and compared the facilities offering maternal and child health care services in urban and rural areas of Anambra state, Nigeria for birth preparedness and complications readiness. Such a birth preparedness plan is expected to assist women in making informed choices as well as in having access to care that would enable them contain complications if and when they occur, and as a result, help them achieve the desired pregnancy outcome.

The findings of the current research showed that all the tertiary and secondary health facilities in both urban and rural localities had staff available on 24hrs services. This is not the scenario in the PHCs, where about seven percent of rural compared to two percent of urban facilities have staff available on 24hrs service. The reason for this locality based gap could be that most PHCs in the urban are rendered redundant by the large number of hospitals in the urban offering MCH services, compared to the rural with few hospitals offering MCH services. This report is worrisome considering that the single most critical condition for safe motherhood is to ensure that a health worker with midwifery skills is present at every birth.[17]This is further necessitated by the fact that labour is not easily predictable, such that where there is lack of skilled attendant, proper transportation to a referral health facility should be available in case of an emergency.[17]

Though the quantitative aspect of this study did not inquire about the cadre of health workers that constitute the staff strength, from reports of the KII, the key players varied according to facility type. In the urban area, about half of the facilities had doctors among other key players. However, all of the facilities had midwives and in some cases were complemented by CHEWs. In the rural area, five out of the twelve facilities had doctors as part of the key players. Therefore sufficient numbers of healthcare workers must be trained and deployed.

From the findings of this study, a low percentage of the health facilities though lower, about one fifth in rural compared to a half in urban, had active health committees. This corroborates the KII report on the thene‘what the community do towards effective reduction in maternal and child mortality and morbidity,’ where it was a consensus that the communities contribute little or nothing. One head of a facility in the urban said “*None at all.”*If active health committees are put in place, it would enhance community mobilization, participation and

ownership. This could more likely inform clients' awareness and use of services,for instance as it relates to booking for ANC as a BP/CR component.

The index study reported a poor reviewing system for maternal and perinatal deaths in a half of the studied health facilities in the urban and a quarter of those in the rural. This report is not good for the health of these women as well as the pregnancy outcome. This is corroborated by other studies that documented that the system for review of maternal and neonatal deaths is a key instrument in improving the quality of maternal and neonatal health services by identifying the causes of deaths and what could be done to avoid each death.[18,19]

The findings of the index study showed that the use of partographs was low. Only, one tertiary and one in five secondary health facilities respectively had in stock and used partographs in both localities. This finding on poor use of partographs conforms with the reports of several studies carried out in Nigeria and other developing countries.[20,21,22,23,24,25]The importance of partographs had been proven by its use in early detection of abnormal progress of labour, which prevents prolonged labour and its attendant risks of postpartum haemorrhage and sepsis, eliminates obstructed labour, uterine rupture and its sequalae; all of which are the major causes of maternal morbidity and mortality in our environment.[25,26]The findings of this study noted that the ANC cards and clinic registers were available in facilities of various levels in both urban and rural localities. This finding agrees with the reports of another study in Anambra, Nigeria.[20]

The findings of the present study revealed that the tertiary and secondary facilities in both study areas had BEmOCequipment and supplies. The PHC facilities in both study areas had very few or no supplies for basic BEmOC.The current study also reported that tertiary and secondary health facilities in the urban had equipment and supplies forCEmOC**,** while in the rural only the secondary health facilities had equipment and supplies for CEmOC. These findings are consistent with the findings of a 1998 countrywide Nigerian study,[28] the 2003 Nigerian National Demographic Health Survey (NDHS),[20] a 2003 studywhich reported that only 42% of public PHC facilities in Nigeria met internationally accepted standards for EmOC.[12] and a 2006 study in Peru that also reported a low met need for EmOC.[29]It is also in keeping with the findings of a 2016study which revealed that none of the health facilities studied had the capacity to deliver even the full range of basic EmOC.[30]Emergency obstetric care isone of the four pillars of safe motherhood, and has beenidentified as the key intervention strategy with thehighest impact on maternal health.[31,32]Perhaps, this lowmet need

for EmOC as has been reported by several studiesis a major contributory factor to the unacceptably poormaternal health indices in the country.

Limitations of the study: The mix methods of data collection in this study complemented the constraints of the respective methods. Observations can be very time consuming, seem subjective, with difficulty in gauging the role and effect of the observer on the observed. A key advantage of observations lies in capturing what participants actually do or sayin real-time, rather than what they say they do. On self-reporting via interviews, participants are not always willing to write their true views leading to reporting errors. Also, KII requires careful selection of participants to gather input from the most knowledgeable on the topic under discuss; requires meeting with many participants in order to produce results that can be generalized. This was taken care of in selecting participants (facility heads) for the KII.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study demonstrated an overall poor BP/CR though poorer inruralthanurban. There was availability of staff on 24hrs services at the tertiary and secondary levels but poor at the PHC facilities (about seven percent of rural and two percent of urban). There were more active health committees in urban than rural. Though there was poor reviewing system for maternal and perinatal deaths, it was about twice in urban compared to rural. The use of partographs was low, while ANC cards and clinic registers were available. The PHC facilities in both study areas had very few or no supplies for basic BEmOC.

Based on these findings it is imperative that appropriate measures be put in place to equip the health facilities, offer sustained training to health workers and thus create strengthened media for better BP/CR. We, therefore, posit that the government should strengthen the PHC facilities in all communities to provide basic EmOC services. The health facilities should be encouraged to keep a good reviewing system for maternal and child mortality, while policymakers should enforce regular training and retraining of all cadres of staff in private and public health facilities on BP/CR.

Conflict of interest statement

Authors have declared that there are no interests.

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