

Multi-stakeholder perspectives on access, availability and utilization of emergency obstetric care services in Lagos, Nigeria: A mixed-methods study

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Abstract

Globally, Nigeria is the second most unsafe country to be pregnant, with Lagos, its economic nerve center having disproportionately higher maternal deaths than the national average. Emergency obstetric care (EmOC) is effective in reducing pregnancy-related morbidities and mortalities. This mixed-methods study quantitatively assessed women's satisfaction with EmOC received and qualitatively engaged multiple key stakeholders to better understand issues around EmOC access, availability and utilization in Lagos. Qualitative interviews revealed that regarding access, while government opined that EmOC facilities have been strategically built across Lagos, women flagged issues with difficulty in access, compounded by perceived high EmOC cost. For availability, though health workers were judged competent, they appeared insufficient, overworked and felt poorly remunerated. Infrastructure was considered inadequate and paucity of blood and blood products remained commonplace. Although pregnant women positively rated the clinical aspects of care, as confirmed by the survey, satisfaction gaps remained in the areas of service delivery, care organization and responsiveness. These areas of discor-

dance offer insight to opportunities for improvements, which would ensure that every woman can access and use quality EmOC that is sufficiently available.

Introduction

14% of global pregnancy related deaths occur in Nigeria, making it the second most unsafe country to deliver babies, only behind India (19%). Most of these deaths, which are usually due to hypertension, bleeding and infections in pregnancy occurring during labor, delivery, and the immediate postpartum period.¹ A recent Nigerian Demographic Health Survey revealed a maternal mortality ratio (MMR) of 576 (95%CI:500–652) per 100,000 live-births.² Lagos state, in the south-western part of Nigeria, has one of the highest MMR rates in the country at 450 (95%CI:360-530) per 100,000 live-births.³

Emergency obstetric care (EmOC), defined as *care provided in health facilities to treat direct obstetric emergencies that cause the vast majority of maternal deaths during pregnancy, at delivery and during the postpartum period*,⁴ has been shown to be effective in reducing pregnancy-related morbidity and mortality if properly implemented by skilled birth attendants.⁵ As defined by the World Health Organization (WHO), this life-saving care consists of nine treatment packages for pregnant women: injectable antibiotics, injectable oxytocics, injectable anticonvulsants, manual removal of placenta, removal of retained products, assisted vaginal delivery, basic neonatal resuscitation, caesarean section and blood transfusion.⁴ All nine services constitute comprehensive emergency obstetric care (CEmOC). While excluding caesarean section and blood transfusion, the remaining seven treatment packages constitute basic emergency obstetric care (BEmOC).⁴ Efforts to improve EmOC have been implemented in several parts of sub-Saharan Africa including Nigeria, yet MMR indices in the region remain poor.¹

Despite the involvement of multiple stakeholders such as women, men, health care providers (HCPs), opinion leaders, and government in maternal and newborn health (MNH) interventions like EmOC, previous studies have focused on the women alone.^{6,7} To improve systems, it is critical to capture perspectives of diverse stakeholders to better understand the status of the intervention including the intersecting and diverging perspectives regarding the intervention.⁸ As such, using mixed methods, we engaged various stakeholders associated with EmOC in Lagos, Nigeria.

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Key words: Emergency obstetric care; access; availability; utilisation; Nigeria.

Acknowledgments: the authors would like to appreciate all the respondents who participated in the study and Lagos State Ministry of Health for supporting the conduct of this research.

Funding: Lagos Research and Development Council (LRDC) through the Innovate Lagos project provided funding for the conduct of the research.

Contributions: ABT, KW, OI, BA and OA contributed to the conceptualisation of the study. ABT, KW, OI, OO and OA contributed to the design of data and analytical framework of the study. ABT, KW, OS and OO interpreted the collected data. All authors were involved in drafting and revising the manuscript and read and approved the final version.

Conflict of interests: the authors declare no conflict of interests.

Received for publication: 1 June 2017.
Revision received: 3 August 2017.
Accepted for publication: 4 August 2017.

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Journal of Public Health in Africa 2017; 8:717
doi:10.4081/jphia.2017.717

Materials and Methods

This study utilized mixed methods consisting of quantitative and qualitative components to assess perceptions related to availability, access and utilisation of EmOC in Lagos. Using a sequential explanatory mixed methods design⁹ that comprised two distinct phases - quantitative phase and qualitative phase subsequently. Both methods were used for the purposes of triangulation and complementarity.¹⁰ The quantitative satisfaction survey serves as a baseline for future EmOC service satisfaction surveys in the state and the qualitative interviews and focus group discussions (FGDs) helped to elaborate on some of the quantitative results, as it provided further explanation regarding the situation of the service

and perspectives for improvement. We therefore gave ‘priority’⁹ to the qualitative findings.

Study area and target population

The study was conducted in Lagos state, South-West, Nigeria with an estimated population of approximately 17 million, of which women constitute about half of the total population.¹¹ At the time of this study, Lagos had 22 functional public secondary healthcare facilities that provided CEmOC (Figure 1).

Quantitative phase

Data collection

For the quantitative phase, a cross-sectional survey was conducted to assess satisfaction of women with the service received from all 22 CEmOC facilities in Lagos, using a modified version of a standard questionnaire - the Six Simple Questionnaire (SSQ)¹² - for data collection. The questionnaire was administered to consenting women 18 years or older, who had received at least one signal function between February 2015 and April 2015 from any of the facilities and had been admitted in the post-natal wards. The SSQ assessed the following care features: feeling of control over care, problems dealt with effectively, adequacy of care organization, compassion of health worker, needs of patient addressed and make same choice of facility for next pregnancy. The survey also collected the respondents’ socio-economic and demographic background, duration of travel to facility, waiting time to see an HCP, reasons for choosing the facility and previous facility deliveries.

Cluster randomized (facility-randomized) sampling was used to recruit women to the study. Sample size was estimated using G*Power 3.1[®], targeting a power of 80% and an α -error of 0.05. As the population size of our target group was unknown, we used the conservative assumption for proportion of 50%, such that the constant proportion of women who give positive rating would be 50%. The sample size was estimated to be able to describe a 25% significant difference in rating. These parameters were used to generate sample size with a design effect of 1.5 to adjust for the methodological consequences of using a cluster randomized sampling method. Assumption made to estimate ‘p’ clusters was similar within each sample, to bring value to ‘1’. The computation under these assumptions prescribed a sample size of 30 participants in each CEmOC unit, which adds to 660. Subsequently, factoring the design effect led to an estimated sample size of 990.

Data analysis

STATA SE 13.0[®] was used for data analysis. Demographic data was presented using summary tables. Frequency and percentages was used to describe research findings. In addition, specific information about the pregnancy were summarized as frequencies and percentages. Median satisfaction scores across the six satisfaction dimensions were estimated along with inter-quartile ranges and variances. The results were presented using a box plot.

Qualitative phase

Data collection

From the pool of women who had received EmOC recruited for the quantitative phase, some were purposively sampled to ensure a representation across different socio-economic groups and signal functions received. We conducted FGDs with the recruited women while excluding any woman who was emotionally fragile following delivery. FGDs were viewed as the most suitable method for this study as such forums enable interaction amongst respondents.¹³ Each FGD session with 6-8 participants lasted approximately 45 minutes and was conducted within the post-natal ward of the facilities at the convenience of the women. The FGDs were facilitated by a moderator while a note-taker captured any subliminal non-verbal events.

Key Informant Interviews (KIIs) were conducted with purposively selected stakeholders who could share rich information related to EmOC in Lagos. They included

relatives of women, HCPs, hospital managers, and government representatives.

Topic guides that focused on access, availability and utilization of EmOC in Lagos were used. Each topic guide for the different stakeholder groups was pilot-tested with non-included respondents. The topic guides used for women and their relatives were initially developed in English and subsequently translated and back-translated to Yoruba and Creole (Broken English), languages commonly spoken in the region. The KII topic guides for other stakeholders were only in English. All FGDs and KIIs were audio-recorded using dictaphones after informed consent was obtained from respondents. Those present during the FGDs were the moderator, note-taker and respondents. However, only the interviewer and interviewee were present for the KIIs. Data collection continued until theoretical saturation was attained.¹³ Before closing the sessions, the moderator/interviewer double-checked accuracy of gathered information with the respondent(s).

Data analysis

All audio recordings were transcribed verbatim, with the resulting transcripts reviewed independently for accuracy by the moderators/interviewers. For data reduction, the thematic approach, which focuses on detecting and describing both implicit and explicit ideas (themes) within the transcript was applied.¹⁴ We followed Braun and Clarke’s six-step approach: Becoming familiar with the data, generating initial



Figure 1. Map of Lagos showing CEmOC facilities within the local government areas.

codes, searching for themes, reviewing themes, defining and naming themes and producing the report.¹⁴ All qualitative analyses were conducted with the aid of NVivo 10™.

Ethics

Ethics approval was obtained from the Health Research and Ethics Committee of the Lagos State University Teaching Hospital, Ikeja, Lagos. Permission to conduct the study was granted by the Lagos State Ministry of Health.

For all respondents, details of purpose, format, risks and benefits of participating in the research were verbally explained. Respondents were informed that their participation was voluntary and given sufficient time to decide on their participation. Written informed consent was obtained from each respondent. No financial incentive was given to respondents.

Results

Quantitative results

Distribution of survey participants

In total, 1,000 women were surveyed in this study. Table 1 shows the distribution and characteristics of the women recruited in the survey.

Satisfaction with EmOC service

From a maximum obtainable score of 7, median score ranged between 6 and 7, across all six satisfaction dimensions. The widest variance occurred in two satisfaction domains - problems dealt with effectively and adequacy of care organisation (Figure 2).

Qualitative results

Table 2 shows the categories of stakeholders recruited for the qualitative phase of the study.

Three main themes emerged during analysis: access to EmOC services, availability of EmOC services and provision of EmOC services. These themes are discussed below.

Access to EmOC services

Three factors were associated with clients' and providers' assessment of access to EmOC services. These were location, cost, timeliness/waiting time.

Location. According to the state government, EmOC facilities have been strategically located across all the local government areas (sub-districts) within the state to ease access to EmOC services. However, mothers complained about issues regarding

Table 1. Distribution of women recruited into the survey.

| Demographics | Frequency n=1000 | Percentage (%) |
|---|------------------|----------------|
| Education level | | |
| No formal education | 5 | 1% |
| Primary | 67 | 7% |
| Secondary | 413 | 41% |
| Tertiary | 515 | 52% |
| Marital status | | |
| Married | 965 | 97% |
| Single | 35 | 4% |
| Family monthly income | n=994 | |
| ₦0- ₦10,000 | 112 | 11% |
| ₦10,001- ₦25,000 | 269 | 27% |
| ₦25,001- ₦50,000 | 270 | 27% |
| ₦50,001 and above | 333 | 34% |
| Parity | | |
| Nulliparous | 329 | 33% |
| Para 1 | 290 | 29% |
| Para 2 | 259 | 26% |
| Type of delivery | n=991 | |
| Spontaneous vaginal delivery | 498 | 50% |
| Assisted vaginal delivery | 7 | 1% |
| Caesarean | 486 | 49% |
| Baby pregnancy outcome | | |
| Alive | 983 | 98% |
| Dead | 17 | 2% |
| Attempted delivery elsewhere | | |
| Yes | 259 | 26% |
| No | 741 | 74% |
| Referred to facility | | |
| Yes | 214 | 21% |
| No | 785 | 79% |
| Main reason for facility delivery | | |
| Nearness | 70 | 7% |
| Cost | 77 | 8% |
| Professional care | 749 | 75% |
| I had no choice | 62 | 6% |
| Other reasons | 42 | 4% |
| Mode of travel to facility | | |
| Personal car | 330 | 33% |
| Taxi | 244 | 24% |
| Bus (Danfo or BRT) | 275 | 28% |
| Okada | 59 | 6% |
| Others | 90 | 9% |
| Previous pregnancy in government hospital | | |
| Yes | 464 | 46% |
| No | 536 | 54% |
| If yes, what type of facility | n=464 | |
| Primary health care centre | 94 | 20% |
| General hospital | 324 | 70% |
| Teaching hospital | 46 | 10% |
| Type of delivery | n=991 | |
| Spontaneous vaginal delivery | 498 | 50% |
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| Caesarean | 486 | 49% |
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difficulty in accessing facilities sometimes, due to traffic conditions. HCPs added that women appeared to have health facility preference or in some cases were being referred to the *bigger* facilities which are perceived to be able to provide better care, despite accessibility challenges (Table 3).

Cost. The consensus amongst women was that the cost of care was not affordable for families of lower socio-economic status. Relatives of these women said they worried about bringing their wives to the facilities because of the *high* cost of care, which makes it difficult for them to meet other family needs. On the other hand, providers perceived the cost of EmOC as cheap, compared to what is obtainable in private facilities. Though they acknowledged that many patients are poor and struggle to pay the current charges. Some mothers opined that such *high* cost of care deters them from using public EmOC facilities. Some women talked about additional cost of some out-sourced complementary services like laboratory tests that should be rendered within facilities (Table 3).

Timeliness/Waiting time. HCPs highlighted that they ensure *prompt* delivery of EmOC without discrimination or preferential treatment. The provision of prompt services was premised on their understanding of the implications of delayed delivery, which could result in death to mother and/or baby. Mothers however complained about administrative bottlenecks often resulting in delayed care. Though some mothers reported prompt response by HCPs on duty in emergency situations, associating this to the reason for the survival of their babies (Table 3).

Availability of EmOC

Availability of EmOC services was linked to the adequacy and competence of health workforce, available infrastructure and resources for performing signal functions.

Adequacy of health workforce

There was consensus among all stakeholders on the insufficiency of the health workforce in EmOC facilities. Some mothers perceived that nurses/midwives appeared stressed. HCPs said there has been dwindling numbers of HCPs across all cadres and ranks. This insufficiency of the health workforce often resulted in the perception that HCP are *overwhelmed and overworked*.

Competence of health workforce

HCPs perceived that the health workforce across different cadres were competent to provide quality EmOC services.

Table 1. Continued from previous page.

| Demographics | Frequency n=1000 | Percentage (%) |
|--|------------------|----------------|
| Main reason for facility delivery | | |
| Nearness | 70 | 7% |
| Cost | 77 | 8% |
| Professional care | 749 | 75% |
| I had no choice | 62 | 6% |
| Other reasons | 42 | 4% |
| Mode of travel to facility | | |
| Personal car | 330 | 33% |
| Taxi | 244 | 24% |
| Bus (Danfo or BRT) | 275 | 28% |
| Okada | 59 | 6% |
| Others | 90 | 9% |
| Previous pregnancy in government hospital | | |
| Yes | 464 | 46% |
| No | 536 | 54% |
| If yes, what type of facility n=464 | | |
| Primary health care centre | 94 | 20% |
| General hospital | 324 | 70% |
| Teaching hospital | 46 | 10% |

Table 2. Distribution of stakeholders recruited for the qualitative phase of the study.

| Stakeholder group | Mode of engagement | Number of sessions* | Number of participants |
|--------------------------------------|--------------------|---------------------|------------------------|
| HCPs (Nurses/Midwives) | KII | 13 | 13 |
| HCPs (Doctors) | KII | 6 | 6 |
| Women | FGD | 6 | 39 |
| Relatives of women | KII | 5 | 5 |
| Health facility managers | KII | 4 | 4 |
| Representative of Ministry of Health | KII | 1 | 1 |

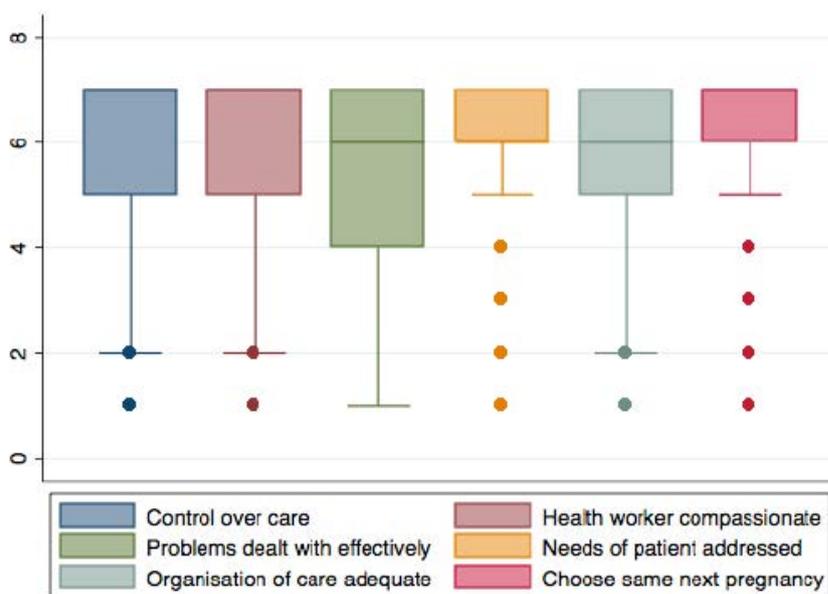


Figure 2. Median satisfaction scores across the six dimensions of satisfaction.

Table 3. Themes and sub-themes on access, availability and utilisation of EmOC in Lagos, Nigeria.

| Themes/Sub-Themes | Supply side - HCPs, facility managers, government | Demand side - Women and their relatives |
|---|---|---|
| 1. ACCESS | | |
| 1.1 Location | Government representative: <i>We have strategically built facilities across the state. In fact, with the advent of the MCCs [Maternal and Child Centres], our mothers can go anywhere and receive the care that they need</i> Facility manager [Fac. D]: ... many people are residing there [A different area far away]. Though they have a general hospital but it's not as big as here, so they come here | Woman 4 [Fac. A]: ...The traffic to get here was just too much. I was just praying that I make it to the hospital and that my baby was still ok |
| 1.2 Cost | Matron 3 [Fac. B]: ...but the bills they are paying, honestly speaking, it's very small. It is very small... Consultant Y [Fac. A]: ... the money that the government is charging them is cheap. Assuming you go to a private hospital, it is more...But I understand that some patients still struggle to pay | Woman 3 [Fac. E]: The money is too much. The poor man cannot afford it Woman 3 [Fac. E]: ...Some people will come here for antenatal, by the time they are in labour, they will not come here again, they will go somewhere else because of the money Woman 1 [Fac. E]: ...When it comes to all these lab tests and medicine, they will send you outside [to undertake such tests] |
| 1.3 Timeliness/ Waiting time | Matron 1 [Fac. B]: ...we attend to every patient promptly without discriminating...you don't have to know anybody in this hospital before you'll be attended to Nurse 1 [Fac. C]: ...In obstetrics, you are dealing with lives. At times, any delay can lead to the death of the Woman or the baby here and that of private hospital, you will choose | Woman 3 [Fac. F]: ...it was more than 30 minutes, because they said I should go get a card, and other things. But when I showed the nurse my referral note, they attended to me immediately Woman 1 [Fac. E]: ...If you look at the stress of registering the private hospital |
| 2. AVAILABILITY | | |
| 2.1 Health workforce (Adequacy) | Consultant [Fac. C]: When I got here, we were four consultants, but now we are just two...even the medical officers are reducing too, so we have shortage of personnel...everybody is complaining Doctor [Fac. E]: The only aspect is the overwhelmed work for the health workers. Yea and it's damaging to the body too | Woman 4 [Fac. B]: ...I think the people they need more hands. If you come in emergency, they will be tossing you up and down Woman [Fac. C]: ...the first ward where they took us to... it was too crowded and there were only two nurses, taking care of the babies...It was stressful |
| 2.2 Health workforce (Competence) | Consultant [Fac. C]: ... we are saying that we are short staffed but at least we have consultant obstetrician and there are always specialists on ground to attend to cases promptly | Matron 1 [Fac. B]: ... They [mothers] know when they get here, they will receive the best. At least, one, skilled personnel is there Woman 2 [Fac. A]: "...Another thing that I love in the MCCs is that in terms of specialist doctors...they will take care of you" Woman 4 [Fac. C]: I registered in a private hospital so when I detected that after the scan, that my baby was breeched... I had to run down here [MCC] because here there are many specialists |
| 2.2 Infrastructure | Matron 2 [Fac. B]: ...This place cannot occupy us... You will see this place filled with patients sitting on chairs as if we are in a conference room waiting for space, so as you discharge, another patient occupies the bed | Woman 2 [Fac. F]: ...I saw a lot of things... people came to the emergency, and there is no space Woman 4 [Fac. C]: ... The toilet, the place is not good for people like us [pregnant women] that just put to bed, we can get sick |
| 2.3 Equipment, Medicines, and products for signal functions | Matron 1 [Fac. D]: ...Misoprostol is free, we always have them. Oxygen is free, we always have. Suctioning machine is available Matron [Fac. D]: ... We have equipment... we have the latest equipment, things that they use in teaching hospitals Matron 3 [Fac. B]: ...instruments used to be original... Now, before you autoclave them, they rust Matron 1 [Fac. C]: ...Another thing is blood, if you don't have money and we have the blood in our bank, we save their [patient's] life with the blood not even asking them a kobo but later they will replace Matron 1 [Fac. B]: ...we have only one registered blood bank and at times, he too will be out of blood, so sometimes, they need to very far to get blood, and life is at stake considering the traffic Government representative: ...and another, well in terms of obstetrics because we have a mandatory blood donation program, so that's another thing that tends to discourage some people Facility manager [Fac. D]: ...We have our own bleeding centre here to bleed people not relying on the central supply... t o get as many bags of blood as possible | Woman 2 [Fac. E]:...Another thing that I love in the MCC is that they have enough equipment...that is the reason why I love MCCs Woman 1 [Fac. A]:...because when I registered here, before my husband could donate blood, my catarrh from here went through the other one |

Continued on next page.

Table 3. Continued from previous page.

| Themes/Sub-Themes | Supply side - HCPs, facility managers, government | Demand side - Women and their relatives |
|---|--|--|
| 3.UTILISATION/PROVISION | | |
| 3.1 Quality of clinical care | <p>Doctor [Fac. A]: ... <i>I guess that is still one of the attractions here. It is because of that perceived good quality of care</i></p> <p>Matron 1 [Fac. B]: ... <i>most of them [patients] would show appreciation, if not for anything, through the word of mouth, they will show appreciation, they will thank you, they will pray for you</i></p> | <p>Woman 4 [Fac. A]: ... <i>when I came here they attended to me, they did everything perfectly. I delivered my baby through vacuum"</i></p> <p>Woman 3 [Fac. A]: ... <i>Even immediately I gave birth to that baby, they rushed that baby up to go and check the sugar level to make sure that everything is fine...I am happy with them</i></p> |
| 3.2 Responsiveness of care | <p>Doctor [Fac. A]: ... <i>free healthcare services for anybody in the first 24 hours if they cannot pay...</i></p> <p>Matron 1 [Fac. E]: ... <i>for those people that are brought in a very bad or terrible state that needs an urgent surgery, we don't want to wait for the family members to look for money before we perform the surgery</i></p> <p>Facility Manager [Fac. F]: <i>the management has made provision for emergency surgeries to be done not minding whether the patient has money or not</i></p> <p>Matron 1 [Fac. B]: ... <i>it has gone to the extent of doctors putting down their own money to get drugs, to buy things for patients</i></p> | <p>Woman 1 [Fac. C]: <i>I came in here, I didn't have money, and the operation I did, I didn't even budget for it but they saved my life. It is very good</i></p> <p>Woman 1 [Fac. F]: ... <i>for me, it's the theatre. The moment you enter the theatre, they [doctors and nurses] will calm you down, laugh with you, counselling you, their matron is friendly</i></p> <p>Woman 4 [Fac. E]: ... <i>some of the nurses are good, especially these young ones, they are very good. The old ones too are good, but some of them are very nasty</i></p> |
| 3.1 Willingness to use service again and refer others | <p>Matron 1 [Fac. B]: ... <i>they [patients] are telling others... they are telling others and that is why we are having increase in the number of patients</i></p> | <p>Woman 1 [Fac. E]: ... <i>this is my first baby and I am encouraged to come back next time if I want to give birth to my second born because of the way I was handled by the doctors</i></p> <p>Woman 3 [Fac. F]: ... <i>They are saving lives. I can refer people here</i></p> |
| 2.2 Remuneration | <p>Matron 1 [Fac. B]: <i>If you wait for government [for motivation], that your salary is not okay, that your salary is small, there is no motivation, you should remember one thing at the back of your mind, you are dealing with lives</i></p> | |

Mothers agreed with the HCPs as they highlighted their confidence in the competence of health workforce and they believe HCPs can manage any complications that occurred.

Infrastructure

Despite recent government efforts, the inadequacy of health facility infrastructure, particularly space, often resulted in their inability of HCPs to accommodate patients. Mothers' perception was aligned with that of the HCPs, as they highlighted instances of overcrowded emergency rooms. Mothers also complained about the poor state of basic amenities in the facilities such as toilets with potential risk of infections (Table 3).

Equipment, medicines, and products for signal functions

Though mothers believed that the equipment were sufficient, providers highlighted the inadequacy of equipment in the facilities often leading them to improvisation in some cases to efficiently manage patients. Additionally, HCPs raised concerns around the poor quality of some supplied equipment, which consequently hinders their durability. Medicines were however perceived to be sufficient and readily available for dispensation during EmOC service delivery by the providers (Table 3).

Regarding the products for signal function, mothers particularly complained about the challenges that they and their families

encountered in donating or receiving blood and blood products. HCPs highlighted that the blood donation issues were complicated by the dearth of centralized blood banks, which often experience bloodstock out. Nonetheless, some health managers mitigate the issues regarding blood availability through an *improvised onsite bleed center*.

Provision and utilization of EmOC

Provision and utilization of care was related to the quality of clinical care, responsiveness of care, willingness to use services again or refer others and remuneration.

Quality of clinical care

HCPs perceived the service delivered to mothers as being good by inference based on the recurrent patronage of mothers. This was further corroborated through second-hand accounts of appreciation they received from some mothers after using the service. Congruently, the mothers perceived the quality of care received as good.

Responsiveness of care

Facility managers highlighted that facilities have a policy, which ensured the prompt delivery of EmOC services during emergency regardless of the capacity of the patient to pay. This was corroborated by the HCPs who implied that the survival of patients remained paramount, regardless of their capacity to pay. Providers sometimes go the extra mile by incurring out-of-pocket

expenses to cater for certain parts of EmOC service rendered to financially deprived mothers, which was corroborated by some mothers. Additionally, doctors were viewed as mostly friendly. However, some mothers complained about lack of empathy, especially from older nurses.

Willingness to use service again and refer others

Mothers expressed their willingness to use the service again based on the perceived good quality of care they received at the facilities. By inference, the HCPs validated the perceived satisfaction and willingness of mothers to reuse the service based on the increase in the number of mothers served.

Remuneration

One of the issues highlighted by the providers was poor remuneration, which was perceived incommensurate compared to their measure of input as EmOC service providers.

Discussion

This mixed-methods study provided a one-stop assessment of the entire experience of women in need of EmOC in a low-resource setting, from access to utilisation that engaged all relevant stakeholders that are key to their experiences. This is a key strength of this study. While there appeared to be consensus around some key issues of

EmOC access, availability and utilisation, there were also areas of discordance identified in our study. These areas of congruence and divergence offer critical basis to situate policy discussions towards making the necessary changes that can improve EmOC services in Lagos and in similar settings.

Regarding access to EmOC services, while government believed that EmOC facilities have been *strategically located* across the state, several women reported some difficulty in accessing facilities. The WHO recommendation is that one CEmOC facility is required for 500,000 population in every sub-district.⁴ Based on the 2013 Lagos population data estimates, the state has not met this target. In a systematic review that assessed the benchmark indicator or EmOC geographical sufficiency, the authors argued that factors such as topography in rural areas and traffic in urban areas also limit access to EmOC facilities and as such need to be taken into account in situating facilities.¹⁵ Lagos public CEmOC facilities are mostly clustered in the urban centre of the state (Figure 1). With traffic congestion in urban areas and sparsely distributed facilities in rural parts of the states, consideration for geographical factors that affect access are critical in ensuring optimum location for CEmOC facilities. In addition, women need to be incentivised to seek care in the nearest facility to their place of residence.

Fees charged for service are essential for access to EmOC. However, the overwhelming consensus was that the cost of care was too high for the low-income families who viewed the charges as restrictive to their ability to access care. A previous assessment suggests that the standard cost for normal unassisted delivery with postnatal care and assisted vaginal delivery with postnatal care in public sector EmOC facilities are ₦12,000.00 (\$80.00) and ₦50,000.00 (\$330.00) respectively.¹⁶ This is of concern in a state where two thirds of the population live in slums with over 50% living below the poverty line.¹⁷ The greater concern, however, is that these costs may indeed be prohibitive for many women to use publicly provided facility based EmOC services,^{18,19} especially when the private providers are generally deemed as more expensive. In addition, there may be a case for government to explore full in-hospital care for women as opposed to outsourced complimentary services such as laboratory tests to prevent increased costs of care that may be prohibitive to patients. Up to eighteen-fold increment in cost of care compared with has been reported in the literature when this was not avoided.¹⁹ Alternative financing options that can stimulate

increased EmOC utilisation, such as the cost-sharing option, should be explored.²⁰

Waiting time to access care appeared to be minimal particularly in emergency situations. These findings are better than those from similar studies in low-resource settings in which women reported an average waiting time of about 24 hours.²¹ The recognition by HCPs of the need to provide prompt care in situations of emergency may be contributory to this prompt care. However, it appears that there remain some administrative encumbrances that delay care, which could be dissociated from clinical care by using triage protocols to identify the most critical women.

Regarding availability of EmOC, the number of HCPs present at the facilities at any point in time and overall appeared to be limited. Shortage of EmOC providers has been reported in similar settings.²² While the mothers reported sensing the apparent stress that the available HCPs were working under, the HCPs themselves reported being overworked. Inadequate staffing and high workload affect quality of care and in combination with low remuneration, which the health workers in our study reported may lead to poor attitude of providers to women in emergencies, which may ultimately affect subsequent utilisation.²² This shortage of qualified HCPs to provide EmOC reflects the general shortage of human resources in many developing countries.²³ Increasing number of HCPs, redistributing available HCPs equitably, and ensuring that only the real emergencies come to CEmOC facilities have been used to reduce the HCPs to pregnant mother ratio in similar settings.²⁴ This will also help address the problem cited by HCPs and mothers of the wards over-flowing with women waiting to receive care.

Despite this, the competence of the available health workers was not in question. There was a general perception that there were highly skilled HCPs in CEmOC facilities, a conclusion similarly made in a survey conducted in inner-city Lagos.²⁵ The HCPs in our study did not also feel like they were under-trained. This could be because our study was conducted in secondary and tertiary health care facilities, which are expected to have highly trained medical staff. The situation may not be the same in BEmOC facilities. In any case, there is still a case for sustained on-the-job EmOC trainings,²⁶ especially as evidence suggest that knowledge and skills relating to EmOC last between 6 and 12 months before refreshers are necessitated.²⁷

However, there was significant concern regarding the availability of signal functions, not in terms of the skill to get the job

done, but the equipment and product required. This finding has been reported in similar settings.²⁸ This is a barrier to care delivery despite training.²⁹ In a study conducted in the main referral hospital in the Gambia, women raised similar concerns regarding the infrastructure and availability of blood for transfusions.¹⁹ Though the hospitals try to make up by using onsite bleeding centres, there is a need to explore other strategies to actively recruit and retain blood donors, specifically for emergency situations.³⁰ Emergency situations are not the time for patients or their relatives to be searching for blood or blood donors.

Overall, women appeared content with the technical component of the care that they received. This was corroborated by the findings of the survey, in which high median scores were recorded across different satisfaction with care dimensions. The two dimensions with the widest variation in scores were *problems dealt with effectively* and *adequacy of care organisation*, both of which can be explained in our qualitative findings, especially as women opined overloaded wards with reduced attention given to their needs. Non-clinical aspects of care such as *compassion of health worker* scored high on the survey and was further evidenced in the qualitative enquiry with women reporting that they felt the HCPs were more focused on their health rather than their monies, especially in situations when they could not pay. For this, women were willing to refer other women to come to the facilities. However, there is still a case for routine continuous medical education activities that can be used to teach and emphasise the importance of these non-medical components of care to HCPs.

Conclusions

If reducing maternal morbidity and mortality is indeed a priority in the post-2015 era in LMICs, then upscaling EmOC experiences of women from access to utilisation is critical. The beginning of that process is engaging with the several key stakeholders to borrow insight regarding best approaches to move forward.

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