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Assessment of the outcome of tasking shifting some maternal and child health services to community extension workers in a rural hospital in Ebonyi State

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Abstract

Background: The dearth of skilled birth attendants in Nigeria's health sector has never been more critical than now because of the massive brain drain in the country's health sector. The task-shifting policy of the Federal Government of Nigeria has been in effect since August 2014; if properly implemented, this policy can be the antidote to the shrinking health workforce.
Objectives: To implement and assess the outcome of task shifting some maternal and child health services to community extension workers.
Methodology: This was a randomized controlled trial conducted at Sudan United Mission hospitals in Izzi, Ebonyi State, utilizing both purposive and convenience sampling methods, and mixed data collection methods were used. Collected data were analyzed with the Statistical Package for Social Sciences (SPSS) version 20 using descriptive and inferential statistics.
Result: The study recorded a significant increase in both knowledge and clinical skills of the 10 CHEWs at the intervention site (Onuenyim) ($p<0.00$), a statistically significant decline in neonatal death ($P< 0.014$), and a reduction in expulsion of the intrauterine contraceptive device (IUCD) ($P <0.015$). The study established a knowledge and clinical skills gap in the control site (Onuenyim). There were no significant differences in the outcome of other maternal and neonatal services after the intervention.
Conclusion: This study revealed improved neonatal and IUCD retention outcomes due to an increase in the knowledge and skills of the CHEWs. It demonstrated the huge potential of CHEWs as the newest member of skilled birth attendants in Nigeria, and holds a very good promise for reproductive, maternal, neonatal and child health if fully maximized through the task-shifting policy

Keywords: Task-shifting, Maternal, Childhood, Health Services, CHEWs

Introduction

The 2023 UN Report on Trends in Maternal Mortality from 2000-2020 revealed that Nigeria has 2.5% of the global population, but nearly 28.5% of global maternal deaths occur in Nigeria. The report further stated that a Nigerian woman's lifetime risk of dying in pregnancy, childbirth, or postpartum is 1 in 19 compared to 1 in 59 in sub-Saharan Africa and 1 in 160 for the rest of the low-income countries[1,2].

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According to a UNICEF report, Nigeria loses about 2,300 under-five and 145 women of childbearing age daily, making the country the second largest country with under–five and maternal mortality rate in the world[3].
The deaths of newborn babies in Nigeria represent a quarter of the total number of deaths of children

under five. The majority of these occur within the first week of life, mainly due to complications during pregnancy and delivery reflecting the intimate link between newborn survival and the quality of maternal care[3].

Similarly, many maternal deaths are preventable, but the coverage and quality of health care services in Nigeria continue to plummet because of the unbearable situations that have further depleted the already deficient health workforce. Currently, fewer than 20% of health facilities offer emergency obstetric care, and only 35% of deliveries are attended by skilled birth attendants[3]. This highlights the close relationship between the well-being of the mother and the child, justifying the need for a radical implementation of the federal government's task-shifting policy.

A skilled attendant at delivery has become an important global measure of efforts to reduce maternal mortality.

The World Health Organization (WHO) has defined a skilled birth attendant (SBA) as

> "an accredited health professional such as a doctor, midwife, or nurse who has been trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management, and referral of complications in women and the newborn[4]."

Health systems can only function with a health workforce; improving health service coverage and health outcomes depends on a fit-for-purpose and fit-to-practice workforce[5].

A health workforce of adequate size and skills is critical to the attainment of any population health goal. The current health workforce situation in Nigeria is alarming. The World Health Organization (WHO) recommends a minimum threshold of 4.45 healthcare workers (doctors, nurses, and midwives) per 1,000 people to achieve adequate health coverage. In Nigeria, however, this ratio stands at a grossly depleted 0.77 healthcare workers per 1,000 people, which is significantly far below the benchmark. This severe shortage undermines the effectiveness of the healthcare system, leading to increased morbidity and mortality rates, particularly among vulnerable populations[6,7]. Nigeria has approximately 20 CHEWs per population of 10,000, representing a largely untapped resource for maternal and child health care[6].

To increase access and utilization, especially in primary healthcare in the face of these daunting challenges, Community Health Extension Workers (CHEWs) provide a critical and essential link with the health systems in resource-constrained settings. There has been glaring evidence of the potential of CHEWS in improving the health of populations where health workforce resources are limited.

Community health workers (CHOs, CHEWs, and JCHEWs) constitute 42% of all human resources at the PHC level, with nurses, midwives, or doctors (recognized as SBAs) constituting only 7%. To address this problem of shortage of skilled birth attendants at this level, a clear policy on task-shifting and task-sharing in Nigeria was put in place to guide the different cadres of health care workers (especially CHEWs) on how they can best contribute to the reduction of maternal and newborn mortality in Nigeria[6].

This therefore, led to the recommended definition of SBA, modified from the World Health Organization's definition:

"A skilled birth attendant is an accredited health professional such as a doctor, midwife, nurse or a community health worker (CHO and CHEW) who has been trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management, and referral of complications in women and the newborn"[6].

Task shifting was an intervention program popularized by the World Health Organization (WHO) to increase access to HIV/AIDS services during the high incidence period of the disease in the African continent. Task shifting has also been adopted in many other health settings and intervention programs to solve access problems.

Task shifting is defined as delegating tasks to existing or new cadres with either less training or narrowly tailored training.

The objective is a streamlined, rationalized chain of care that relieves pressure on each worker involved while maintaining quality standards for patients and increasing access to interventions[8,9]. Task shifting is not new. In 19th-century France, Officiers de Santé were an officially recognized and commonly used class of non-physician health care workers, while in China, so-called barefoot doctors were widely

deployed across the country in the mid-20th century[10]
In Nigeria, task shifting some reproductive, maternal, newborn and child health services was one of the efforts put forward to solve the problem of poor access to these services, which made the country's maternal and neonatal indicators/outcomes the worst in the whole world despite past interventions[11].
The overall goal of the task-shifting and sharing policy is to reduce maternal and newborn morbidity and mortality. Specifically, the objectives are to increase access of pregnant women in hard-to-reach areas to skilled attendance at birth.
Although the policy of task shifting to CHEWs to improve access to reproductive, maternal, newborn, and child health (RMNCH) services has been part of Nigeria's Health Policy since August 2014, there is a significant gap in its implementation[12]. This gap highlights the crucial need for this intervention study.
Over 300 studies and research were reviewed during this investigation, many of which were conducted in sub-Saharan Africa, but most of them did not involve formally trained health workers. Some focused solely on a specific task rather than holistic care, as illustrated in this study. Examples include the administration of anticonvulsants[13], the use of long-acting reversible contraceptives[14], and the active management of the third stage of labour[9]. Most of these studies led to implementation without assessing the impact of such task shifting on intervention outcomes. This study is notable because it addressed all the gaps in previous research on task shifting by building capacity while simultaneously evaluating the effects on maternal and neonatal health outcomes.

Methodology

Study setting:

The study was conducted in Sudan United Mission Hospitals, Onuenyim Agbaja, and Iziogo, both in Izzi LGA of Ebonyi State, Nigeria. The hospitals operate a hub and spoke healthcare delivery with 6 primary healthcare centres (PHC) (Iboko, Effium, Odoke, Ekirigwe, Oguzarowiya, and Epfunagu) located in 3 local government areas of Ebonyi State, South East Nigeria and 2 PHCs in 2 local government areas of Benue State, North Central Nigeria as the spokes.

Study Design

The study was a randomized controlled trial designed to investigate the "Implementation and assessment of the outcome of task shifting some maternal and child health services to community extension workers". The study design was designed to eliminate the possibility of confounding variables and increase the validity of the study. Two sites were used for the study: Onuenyim and Iziogo hospitals. Onuenyim was designated the intervention site while Iziogo was the control site.

Intervention

The intervention was done in 3 phases.

Pre-intervention phase

The training protocols, which were adapted from the "Task Shifting Policy" (TSP) document[6] were prepared during this phase. A total of 54 tasks that CHEWs were authorized to perform were summarized into 13 questions to assess their knowledge and 12 questions to assess their skills in basic emergency obstetrics/neonatal care and family planning. The baseline data from the two study sites were also collected.

Intervention Phase

The intervention started with a pretest of the knowledge and skills of the CHEWs using the 13 knowledge and 12 skill set (practical) questions with weighted options 1-4. Some of the skill questions were simulated. The participants were then given vigorous simulated and hospital-based training on the 63 tasks allowed for CHEWs in the TSP document. The training lasted for 3 weeks. The training ended with a posttest of the 13 knowledge and 12 skill questions with options weighted 1-4 (Likert question format) to assess the level of knowledge and skills of the CHEWs after the intervention or training. Ten CHEWs from the intervention site (Onuenyim) were trained. The questions were pre-tested on final year CHEWs in training at Sudan United Mission School of Health and the questions were very similar to the ones used by USAID Maternal and Child Survival Program to train health workers in Ebonyi and Kogi State, as well as the study in Adamawa[12].

Post-intervention/evaluation phase

The trained participants were deployed in the

Table 1: Task shifting/sharing policy recommendation for frontline health care workers (2)

TASK					
	Antenatal Care Task		**Immediate Post-Natal Task**	37	Screens women and families for signs of domestic and sexual violence, takes first-line measures, and ensures effective referral
1	Takes a detailed history by asking relevant questions	20	Performs active management of the third stage of labour	38	Takes preventive measures against malaria
2	Assesses the needs of women and their families	21	Administers uterotonic (Oxytocin or misoprostol)		Identifies post-natal complications (puerperal sepsis, cord sepsis, depression, anaemia, mastitis), performs first-line management, life-saving procedures and ensures effective referral
3	Gives appropriate advice and guidance	22	Performs manual removal of retained placenta with active bleeding	39	Manages mild to moderate anaemia, mild puerperal depression, mastitis, and uncomplicated malaria, refering when necessary
4	Calculates the expected date of delivery	23	Refers women with retained placenta and no active bleeding		**Post-Miscarriage Care**
5	Performs screening tests, including VCT for HIV	24	Performs Bi-manual compression of the uterus in case of uncontrolled haemorrhage	40	Provides contraceptive method or refers as necessary
6	Assists pregnant women and their families in Birth Planning and Complication Readiness (BPCR)	25	Applies an anti-shock garment in case of uncontrolled haemorrhage	41	Provides emergency contraceptive
7	Educates a woman and her family regarding self-care during pregnancy, childbirth, and the postnatal period	26	Starts and maintains administration of IV fluids	42	Screens women and families for signs of domestic and sexual violence, takes first-line measures and ensures effective referral
8	Identifies prenatal complications (anaemia, pre-eclampsia, Eclampsia, bleeding, malaria, other medical complications) life-saving procedures and ensures effective referral	27	Repairs episiotomy	43	Identifies complications to miscarriage (bleeding, sepsis), performs first-line management, life-saving procedures and ensures effective referral
	Labor and Delivery Tasks	28	Repairs a simple vaginal laceration	44	Manages complications of miscarriage (bleeding, sepsis)
9	Perform vaginal examination	29	Identifies preeclampsia/eclampsia, performs first-line management, and ensures effective referral	45	Performs uterine evacuation (MVA) for incomplete miscarriage
10	Identifies the onset of labor	30	Manages preeclampsia and eclampsia	46	Screens women for STIs/HIV, take first-line measures and ensures effective referral
11	Uses partograph to monitor the progress of labor, maternal and fetal well-being and take appropriate action, including referral where required		**Immediate Newborn Care**	47	Treats women with STIs
12	Identifies labor complications (malpresentations, prolonged and/or obstructed labor, hypertension, bleeding, and infection), performs first-line management, lifesaving procedures and ensures effective referral	31	Provides essential newborn care (warm, dry, wrapping, cord care)	48	Supports women living with HIV/AIDS, including ART
13	Provides supportive care		**Promotes initiation of breastfeeding**		**Family Planning Task**
14	Facilitates support by the companion of choice	32	Identifies newborn complications (asphyxia, low birth weight, anomaly), performs first-line management, life-saving procedures, and ensures effective referral	49	Provides FP education/counselling and helps woman choose their preferred method of contraception
15	Promotes infection prevention		**Post-Natal Care Task**	50	Promote dual protection for HIV position women
16	Provides pain relief	33	Provides information and counselling on self-care, nutrition, safer sex, breastfeeding, family planning, and a healthy lifestyle	51	Provides contraceptive method or refers as necessary
17	Performs episiotomy	34	Assesses maternal well-being, including maternal nutrition	52	Inserts and removes a contraceptive implant
18	Manages normal vaginal delivery	35	Supports exclusive breastfeeding	53	Inserts and removes intrauterine contraceptive device (IUCD)
19	Performs vacuum extraction delivery	36	Supports women living with HIV/AIDS, including ART	54	Initiation and maintenance of injectable contraceptives

Source: Adapted from the task shifting policy (TSP) document of the Federal Ministry of Health, Abuja, Nigeria.

maternity section of the intervention hospital with quarterly supportive supervision for one year. The effect of the intervention/training of the CHEWs on maternal and neonatal outcomes (live births, neonatal deaths, maternal deaths and injuries, use of contraceptives, abortion care, etc.) was evaluated at every supervisory visit.

Sample Size

All the CHEWs working at the maternity section of each of the hospitals (10 CHEWs from Onuenyim and 8 CHEWs from Iziogo) participated in the study, while 32 persons which included 24 women (ANC and postnatal) and 8 other clinical staff, with the 10 CHEWs from the intervention site, participated in the focus group discussions (FGD).

Sampling Methods

The purposive sampling method was used in the selection of the CHEWs working at the maternity unit of the intervention and control sites while convenience sampling was used in selecting members of the FGD groups.

Data Collection Method

Mixed methods of data collection were adopted in the data collection. Primary quantitative data were collected using a Likert-designed pretest-posttest questions weighted 1-4, while the secondary data were collected from the daily records of the maternal and neonatal health services.

Five focus Group Discussions (FGDs) (8 persons per group), which comprised 2 FGDs for ANC clients, 1 FGD for postnatal women, 1 FGD for CHEW (10 of them participated) and 1 FGD for other medical staff. Each of the FGDs lasted for one hour and was used to gain more insight into the intervention outcome and participants' perspectives of the training/intervention. All participants were drawn from the intervention site following the results of the quantitative data. Self-developed FGD guides were used as an instrument for undertaking FGD discussions. Each FGD session started by a clear explanation of the purpose of the study. The discussion with the women (FGD 1-3) was in local dialect, while the discussion with the health workers (FGD 4-5) was in English and centred on participants' perception of the training and the effect of the training on maternal and neonatal outcomes. The discussions were moderated by the investigator, assisted by 2 doctors and a primary health care tutor in the institution's School of Health Technology, who was asking the questions in the local Izzi dialect while the doctors recorded the sessions and took notes as well. The field notes from the doctors were compared, and consensus reached where there were dissimilarities in statements.

Data Analysis

The data collected were analyzed with Statistical Package for Social Sciences (SPSS) version 20 using descriptive and inferential statistics. The Mann-Whitney U test was used to draw inferences on independent samples while the Wilcoxon Rank test was used for dependent (paired) samples as a p-value of 0.05 was considered significant. Questions on the 4-point Likert scale were graded from 1-4, with a mean score (MNS) of 3 and above accepted as knowing the TSP task package and proficient with the needed clinical skills. Net intervention effect (NIE) was calculated, and the significant difference was determined using an independent sample t-test, as a p-value of 0.05 was considered significant. Focus group discussions at different sites were recorded and later transcribed and grouped according to headings based on the category or designation of the focus group and analyzed inductively.

Ethical clearance

Ethical clearance was obtained from the ethics committee of the institution. The rationale for the study, the objectives of the study, the benefits of the study, and the expectations from the study were clearly stated in the proposal that accompanied the ethics request form and to the participants before getting their informed consent to participate in the study. However, the participants were also at liberty to opt out of the study at any time and stage of the study.

Limitations

The study did not eliminate confounders created by the fact that CHEWs do not work in isolation but as part of the medical team with doctors and nurses in rendering reproductive, maternal, neonatal and child health (RMNCH) services.

Results

The knowledge of the CHEWs in basic emergency obstetrics and neonatal care/family planning (BEmONC/FP) at the intervention site increased from values before the intervention. The increase was statistically significant after the intervention report, as p<0.001 and also statistically significant when compared with the control site (p<0.0001). There was no statistically significant increase at the control site (p=0.999) (Table 2).

There was a statistically significant increase in the clinical skills of the CHEWs at the intervention site when compared with the control site (p<0.0001) and a statistically significant increase in clinical skills at the intervention site when compared with the skills before the intervention (0<001). There was no increase in the clinical skills of CHEWs at the control site (p=0.07).

There was no statistically significant difference in maternal and neonatal outcomes in both the intervention and control sites after the intervention, except for neonatal death, which significantly reduced at the intervention site (p=0.014) (Table 4).

More IUDs were expelled at the control site, and the difference between the 2 sites was statistically significant (p=*0.015). There was no significant difference in the number of infection cases following IUCD insertion. (Table 5)

Table 2: Knowledge of CHEWs in both intervention (Onuenyim) and control (Iziogo) sites

Items	Onuenyim				Iziogo				P-value (Onu./Izo.)
	Pre-Mean	Post-Mean	Mean diff	P-value	Pre-Mean	Post-Mean	Mean diff	P-value	
Does your institution use the partograph to monitor labour?	3.8	4.0	0.2	0.04*	3.5	3.5	0.0	1.00	0.046*
Is the WHO manual 'Managing Complications in Pregnancy and Childbirth' available in your institution?	3.2	3.5	0.3	0.03*	2.6	2.4	-0.2	0.09	0.000*
Do you know about antenatal clients?	3.9	3.9	0.0	1.00	3.5	3.5	0.0	1.00	1.000
Do you know about labour?	3.5	4.0	0.5	0.02*	3.1	3.0	-0.1	0.90	0.000*
There are 3 stages of labour.	3.1	3.9	0.8	0.01*	3.6	3.5	-0.1	0.90	0.000*
Delivery can be spontaneous or assisted	3.3	3.7	0.4	0.03*	3.3	3.3	0.0	1.00	0.000*
Perineal/episiotomy repairs are done in layers	3.1	3.9	0.8	0.00*	3.4	3.4	0.0	1.00	0.000*
Active management of 3rd stage of labour is a method for preventing PPH.	3.6	3.8	0.2	0.04*	3.0	3.0	0.0	1.00	0.045*
Misoprostol is the drug used in the management of PPH.	3.5	3.1	-0.4	0.03*	3.1	3.1	0.0	1.00	0.000*
Immediate assessment of the newborn after delivery is done using the Apgar score	3.9	4.0	0.1	0.05	3.1	3.1	0.0	1.00	0.155
Postpartum IUD is best inserted immediately after delivery	2.8	3.9	1.1	0.00*	2.5	2.5	0.0	1.00	0.000*
An implant is inserted at the medial side of the upper arm of the non-dominant hand	3.4	3.7	0.3	0.03*	2.9	2.9	0.0	1.00	0.009*
Excessive vaginal bleeding and weight gain can be a complication of family planning	3.3	3.3	0.0	1.00	2.6	2.6	0.0	1.00	1.000
Grand Total/ Average	**3.0**	**3.7**	**0.7**	**0.00***	**3.1**	**3.1**	**0.0**	**1.00**	**0.000***

Table 3: Clinical skills of CHEWs in both intervention (Onuenyim) and control (Iziogo) sites

Items	Onuenyim				Iziogo				P-value
	Pre-Mean	Post-Mean	Mean diff	P-value	Pre-Mean	Post-Mean	Mean diff	P-value	
Antenatal Care	3.6	4.0	0.4	0.02*	3.6	3.9	0.3	0.05	0.153
Counselling women on birth preparedness and complication readiness	3.5	4.0	0.5	0.02*	2.8	3.0	0.2	0.06	0.041*
Monitoring Labor Using Partograph	3.2	3.9	0.7	0.00*	2.8	2.4	-0.4	0.03*	0.000*
Active management of the third stage of labour	3.0	4.0	1.0	0.00*	3.1	3.1	0.0	1.00	0.000*
Postpartum care	2.4	3.8	1.4	0.00*	2.9	3.0	0.1	1.00	0.000*
Neonatal Resuscitation	2.9	3.8	0.9	0.00*	2.8	2.9	0.1	1.00	0.000*
Manual removal of the placenta	3.3	3.6	0.3	0.04*	3.5	3.5	0.0	1.00	0.006*
Repair of episiotomy	2.9	3.9	1.0	0.00*	3.1	3.4	0.3	0.08	0.000*
Repair of first- and second-degree perineal tears	2.8	3.9	1.1	0.00*	2.8	3.0	0.2	0.07	0.000*
Management of PPH	3.1	3.8	0.7	0.00*	2.9	3.1	0.2	0.07	0.000*
Insertion of IUD	2.4	3.2	0.8	0.00*	2.0	2.8	0.8	0.02*	0.044*
Insertion implant	2.8	4.0	1.2	0.00*	2.3	3.0	0.7	0.03*	0.000*
Grand Total/ Mean	**3.0**	**3.8**	**0.8**	**0.00***	**2.9**	**3.1**	0.2	0.07	0.000*

Table 4: Outcome of assisted vaginal deliveries in the intervention and control sites for each year

Year	AVD	Sites	No	Mean Rank	Sum of Ranks	Mann-Whitney U	P-value
	Live birth	Izogo	12	11.79	141.50	65.500	0.610
		Omuenyim	12	13.21	158.50		
	Neonatal death	Izogo	12	15.00	180.00	42.000	0.014*
		Omuenyim	12	10.00	120.00		
	Maternal injury	Izogo	12	12.50	150.00	72.000	1.000
		Omuenyim	12	12.50	150.00		
	Maternal death	Izogo	12	12.50	150.00	72.000	1.000
		Omuenyim	12	12.50	150.00		

Table 5: Outcome of IUD insertion in the intervention and control sites for each year

Year	FP-IUD	Sites	No	Mean Rank	Sum of Ranks	Mann-Whitney U	P-value
	Infection	Izogo	12	11.50	138.00	60.000	0.249
		Omuenyim	12	13.50	162.00		
	Expulsion	Izogo	12	10.00	120.00	42.000	0.015*
		Omuenyim	12	15.00	180.00		

Result of the focus group discussion.

Perception of the CHEWs on the training

The CHEWs were very elated about the training. They were happy for the insight gained from their training, which included some radical departures from what they used to know or do. They unanimously appreciated the trainers and emphasized the need for such training and retraining from time to time as medical and health practices keep evolving. It was also discovered that most of them did not even know about the task-shifting policy, as those services were what they had been carrying out without the nurses and midwives.

"I'm very grateful to God and the organizers of this training because the training was an eye-opener. I discovered from the training that most of the things we do after delivery are no longer tenable. Examples are the use of olive oil to clean the baby immediately after birth, the use of spirit alcohol to clean the umbilical stump and waiting for the breast milk to start coming before putting the newborn child on the breast. Unfortunately, most of us don't even know that we were not authorized to be doing what we have been doing for pregnant women, but imagine what disasters it would have been if we didn't do anything at all" (CHEW No. 6)

The CHEWs expressed shock about the task-shifting policy and wondered if their professional body and other stakeholders were aware of the policy. They explained that they have not been communicated with or trained since the policy came into force in August 2014

"I think sir, that we have so many good policies in this country, and most of them end up as paperwork. Imagine if you had not come on your own, unsponsored by the people who brought out the policy, we would have been doing the wrong things, thinking that we were helping the people. How can you make a policy for me when I'm not even aware of its existence? Such a policy is as good as non-existent, and that's why Nigeria cannot come out of its bad maternal and child health indices unless we change. This is disheartening. Why can't they call a town hall meeting to communicate with us, but they can come to the remotest part for our votes?" (CHEW No. 2).

Effect of the interventions on maternal, neonatal and utilization of services

All the FGDs were unanimous on the positive effect of the training on maternal and neonatal outcomes and utilization of services. They all agreed that they have fewer neonatal deaths, stillbirths, and more live births because of the skills in neonatal resuscitation and other manoeuvres during assisted vaginal deliveries from the training. They concluded that more people are coming for ANC even though it has always been high because of the free ANC, more people are coming to deliver and for family planning.

"We are very happy with the wonderful way the nurses (CHEWs) are working now. There is a great change, and that's why many of us are spreading the news of their successes, and more people are coming; we have more celebrations now from Favour Room (Labor Room), and many of us who never believed in family planning are now having one like myself. (PNC N0 1)"

Other participants said almost the same things as the other discussants.

"My ANC was much better than what it used to be. I have my ANC here, but I usually go to deliver where my husband works. During the ANC, I was fully prepared by the nurses (CHEWs), so I decided to deliver in the hospital here. I had a better treatment in this delivery than all my babies. They told me to get chlorhexidine for the cord, Teramycin for the eye, etc. I was happy with the

great changes and innovations. I am happy that it's not only I who is talking about these changes" (PNC No. 4).

Participants from FGD 5, who are other categories of medical staff in the hospital, praised the training and intervention, which they said was the first of its kind in the hospital. They clamoured for more of such training in future for all the medical staff, not just the CHEWs, and talked highly about the positive outcome of the intervention on the number of live births and increased hospital delivery and family planning utilization, which increased astronomically.

"We don't need a prophet to tell us that a lot has been achieved by the training and unleashing of these highly skilled CHEWs on the pregnant mothers and newborns. All we heard and saw from the labour room was no more wailing but beaming smiles and jubilations. More women are coming for our services, and the hospital is now booming at every service point, including family planning, which used to be deserted. This was a great program indeed, and should be extended to all the workers and not just the CHEWs. All of us, including myself, need such skill upgrades and retraining. I thank your group for the sacrifice." (FGD 5 No. 1)

Discussion

Knowledge and clinical skills

The study on the outcome of task shifting some maternal and neonatal health services to CHEWs in a rural hospital in Ebonyi State is one of the first efforts to implement and assess the policy of task shifting, which came into force in August 2014. The intervention started with building the capacity of the CHEWs in the needed knowledge and skills for the tasks assigned to them. The result of the intervention showed an increase in the knowledge of the participants on basic emergency obstetric and neonatal care/ family planning. This study revealed that the participants and their counterparts at the control site already had good knowledge and skills for running ANC even before the intervention. This was because this task and more were already carried out by this cadre of workers even before the task-shifting policy, despite a lack of legal backing and skills upgrades. This finding confirmed the assertion by Dogba & Fournier[16] that CHEWs find themselves alone in remotely located primary health care centres (PHCs) where the communities have great expectations and, by necessity, they must perform lifesaving procedures for which they have not been trained or allowed to practice by regulation. The consequence of such forays into the unknown is generally mismanagement of complicated pregnancies and childbirth. The training was very impactful as almost all the tasks assessed for knowledge and clinical skills revealed a significant increase at the intervention site and showed that professional competence can be achieved by using a more skills-based training approach, supported by regular clinical supervision and mentoring[17,18]

The findings in this study were very similar to those of the study by Ameh CA. et al[11] revealed that short in-service training in emergency obstetrics and neonatal care was associated with improved knowledge and skills for all cadres of healthcare providers working in maternity wards in both sub-Saharan Africa and Asia.. A similar study in Adamawa State by an international organization, the MacArthur Foundation and Jhpiego, showed increased knowledge for 173 CHEWs trained on BEmONC from 40% to 77%. The study also recorded an increase in the skill of 169 CHEWs trained in postpartum family planning from 35% to 68%[12]. The quantitative result of this study was very similar to the outcome of the focus group discussion, where the participants were unanimous that the knowledge and skill training in Basic Emergency Obstetrics, Neonatal and Child/Family planning (BEmONC/FP) allowed them to learn new things and correct many of the practices they thought were right.

Maternal and neonatal outcomes of task shifting to CHEWs.

The study revealed that there was no difference in maternal and neonatal outcomes at both the intervention and control sites before and after the intervention, except for neonatal deaths, which decreased significantly at the intervention site following the deployment of the trained CHEWs in the maternity unit. These significant increases in livebirth and reduction in neonatal death must not be unconnected with the neonatal resuscitation skills acquired by the CHEWs during the training,

underscoring the importance of SBA during delivery. The studies of Ljungblad, et. al[13,19,20] indicated a reduction in early neonatal deaths and fresh stillbirths after training skilled birth attendants in newborn resuscitation. Overall, increased knowledge, skills, and performance were reported, and action within "the golden minute" is needed. Yakoob and his colleagues[14] also concluded in their work that both SBA and Emergency/or Essential Obstetric Care (EOC) have the potential to reduce the number of stillbirths seen globally. The findings in this study were further strengthened by the result of the focus group discussion where all the participants attested to the increase in livebirths and a reduction in neonatal deaths The above finding was very similar to what Mombo and Kaeje[20] saw in their work in Rural Butere Sub County, Western Kenya where healthcare consumers agreed that task shifting had significantly increased access to health services and improved health outcomes.

On family planning, the study revealed a significant increase in IUDs retained after the training in the intervention. This is very similar to the result of an operational research in Northern Nigeria, which concluded that with training and supportive supervision, CHEWs in Nigeria safely and effectively provided contraceptive implants and intra-contraceptive devices (IUDs), and almost all the clients said that they were satisfied[8].

Conclusion

This study identified huge potential in manpower for health in CHEWs as the newest member of skilled birth attendants in Nigeria and holds a very good promise for reproductive, maternal, neonatal and child health (RMNCH) if fully maximized by the task shifting policy. The intervention demonstrated a marked increase in the knowledge and skills of the CHEWs, which in turn resulted in reduced neonatal deaths and a reduction in the expulsion rates of IUCD after insertion.

The study recommended the use of the tools developed in this study, which were carefully adapted from the tasks allowable for CHEWs in the TSP document, for the skill upgrade of CHEWs working or planning to work as skilled birth attendants in Nigeria and developing countries.

A scale-up of the implementation of the task shifting policy introduced in August 2014 is highly recommended as a way to reverse the country's poor maternal and neonatal health indices.

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