Extended Abstract

Introduction

In 2015, the World Health Organization (WHO) estimated that about 58,000 maternal deaths occur in Nigeria annually, accounting for 19% of global maternal deaths (World Health Organization, 2015). The majority of these deaths occur in rural communities and are linked to extreme poverty and its attendant indicators: lack of access to health services, weak infrastructure, and adverse socio-cultural factors. Despite the fact that policymakers recognize that primary health care (PHC) should play a key role in improving rural women's access to skilled pregnancy care, PHC is often poorly utilized (Egbewale & Odu, 2013; Okonofua et al., 2018). This paper aims to present a community-driven approach that is being implemented by Women's Health and Action Research Centre (WHARC) to increase demand for skilled maternal health care services in two rural Local Government Areas (LGAs), Esan South East and Etsako East in Edo State, South-South Nigeria. This paper presents the mid-term evaluation results on the primary outcome indicators.

Method

The conceptual framework of our intervention derives from three theoretical models: 1) the three delay model, describing the interlinking nature of the different factors that prevent women from accessing evidence-based maternal health care. The model identifies the different barriers that women face in accessing essential .care needed to prevent maternal complications. 2) The Health-seeking behaviour model, proposes that the use of maternal health services is influenced by predisposing factors such as maternal age, educational background, household size, number of previous pregnancies and health related attributes. 3) The four dimensions of access model, which includes availability, geographical accessibility, affordability and acceptability.

Administratively, Nigeria is made up of 36 states and the federal capital territory, Abuja. Each state is divided into LGAs and each LGA is made up of wards and wards consist of several communities. The two project LGAs have 20 wards (10 in each LGA). A formative study was conducted in 8 wards and 20 communities which were randomly selected in the two LGAs, to identify the demand and supply factors for low utilization of PHCs in order to design interventions to increase women's access to skilled pregnancy care. The two LGAs have a total population of 313,717 persons, with Esan South East accounting for 167,721 and Etsako East accounting for 145,996. PHC centres are the principal source of maternal health care in the two LGAs. Data were collected through a mixed-method approach that involved community conversations, focus group discussions, key informant interviews, household survey and exit interviews. The results of the formative research were presented and discussed with traditional rulers, council of chiefs, ward development committee (WDC) members, women leaders and heads of PHCs in the LGAs, and policy makers in Edo State. A consensus was reached on community-led strategies for intervention. The interventions include: 1) Memorandum of understanding with transport business owners for transportation of women to PHCs, 2) Use of rapid SMS to link pregnant women to health providers and transport owners, 3) Local community fund-raising and contributory insurance called "Igho Omoh" and "Ikpagie Omo" for funding of maternal health care, 4) Drug revolving fund 5) increased staffing and staff re-training, and 6) Community health talk.

Of the 8 baseline wards, two were randomly selected for the intervention which started in March 2019: ward 3 in Esan South East and ward 10 in Etsako East. Each of the intervention sites has two PHC facilities. The primary outcome indicators were number of women who register in the project PHCs for antenatal care, number of women who attend antenatal care and number of women who give birth in the PHC facilities. Data are collected on these indicators and several secondary indicators every month from October 2017 to date. This paper reports preliminary analysis of data collected over 20 months from October 2017 to May 2019. The data is categorized into 5-month phase: pre-intervention phase (October 2017-February 2018), early intervention (March 2018-July 2018), mid-intervention phase 1 (August 2018 – December 2018) and mid intervention phase 2 (January 2019 – May 2019).

Preliminary Results

A substantial increase in the three primary indictors was observed over time. The mean number of women who registered for antenatal care in the project PHCs increased by 178% from pre-intervention to mid-intervention phase 1 and by 126% at mid-intervention phase 2. The mean number of antenatal care attendees increased by 197.4% from pre-intervention to mid-intervention 1 and by 317.2% by mid-intervention phase 2. Also, the mean number of women who gave birth in the facilities increased by 119.6% at mid-intervention phase 1 and 141.3% at mid-intervention phase 2.

Preliminary analysis (Table 1-3 below) using one-way analysis of variance (ANOVA) shows a significant difference in the three indicators across the four phases. Turkey post hoc test indicates a significant difference in the number of women who registered for antenatal care between the pre-intervention phase, early intervention, mid-intervention 1 and 2 phases ($p<0.05$). The mean number of women who attended antenatal care did not differ significantly between the pre-intervention and early intervention phase, but there was a significant difference between the pre-intervention phase and the mid-intervention phase 1 and 2. There was no significant difference between the mean number of births at pre-intervention phase and early intervention phase, but there was a significant difference between the pre-intervention phase and the mid-intervention 1 and 2 phases ($p<0.05$).

Table 1: Number of women who registered for antenatal care

	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
pre-intervention	11.40	2.302	1.030	8.54	14.26	9	15
early intervention phase	24.40	6.309	2.821	16.57	32.23	19	35
mid intervention phase 1	31.80	5.450	2.437	25.03	38.57	24	37
mid intervention phase 2	25.80	8.871	3.967	14.78	36.82	14	37
Total	23.35	9.516	2.128	18.90	27.80	9	37

$F(3, 16)=9.612$, $p<0.01$ eta = 064

Table 2: Number of women who attended antenatal care

	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
pre-intervention	23.20	3.421	1.530	18.95	27.45	19	26
early intervention phase	39.20	11.883	5.314	24.45	53.95	30	59
mid intervention phase 1	69.00	13.019	5.822	52.83	85.17	53	83
mid intervention phase 2	96.80	15.320	6.851	77.78	115.82	73	109
Total	57.05	30.920	6.914	42.58	71.52	19	109

$F(3,16)=38.142$, $p<0.001$); eta 0.88

Table 3: Number of women who gave birth in the PHC

	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
pre-intervention	9.20	1.924	.860	6.81	11.59	7	12
early intervention phase	13.20	4.087	1.828	8.13	18.27	10	20
mid intervention phase 1	20.20	6.058	2.709	12.68	27.72	13	26
mid intervention phase 2	22.20	6.834	3.056	13.71	30.69	13	28
Total	16.20	7.127	1.594	12.86	19.54	7	28

$F(3,16)=7.065$, $p<0.01$); eta 0.56

Discussion and Conclusion

Previous studies indicate that implementing multiple interventions simultaneously is a preferred approach in rural communities and it tends achieve more results (Brazier et al., 2009; Brazier, Fiorentino, Barry, Kasse, & Millimono, 2014; Oguntunde et al., 2018). These approaches recognize the wisdom of community women and elders, and enlist their full participation to increase project support and effectiveness, in order to strengthen its impact and sustainability over time. By working with communities to create workable and sustainable theories of change, the project will address cultural factors, gender issues, maternal and community risk factors, and

can reduce the remaining bottlenecks that hinder women's access to skilled pregnancy care in rural areas.

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