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PERCEIVED EFFECTIVENESS OF THE MIDWIVES SERVICE SCHEME AMONG BENEFICIARIES IN OYO STATE, NIGERIA

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ABSTRACT
The Midwives Service Scheme (MSS) was established by the Federal Government of Nigeria to reverse the country's unacceptably high maternal and neonatal mortality. It has been in operation for over five years (2009) and it became imperative to review its success. This study therefore assessed the effectiveness of the Midwives Service Scheme (MSS) in Oyo state. The study was carried out in Akinyele, Lagelu and Ibarapa East Local Government Areas (LGAs). Multi-stage sampling procedure was used to select 135 beneficiaries from the study area. Data on characteristics of the respondents, benefits derived, constraints to effectiveness and perceived effectiveness of the scheme were collected through structured questionnaire administered to (135) beneficiaries of MSS in Oyo state. Data were analysed using descriptive and inferential statistics, including Chi Square, Pearson's Product Moment Correlation (PPMC). Results showed that respondents benefited to a large extent from skilled birth attendants (97.0%), Antenatal care (94.1%) and 24 hours qualified managed service (94.1%). Ambulance service was the only activity which majority of the beneficiaries (97.8%) were not satisfied with. Beneficiaries (68.1%) perceived the MSS as highly effective, while poor ambulance services ($\bar{x}$ =1.93) and erratic power supply ($\bar{x}$=1.79) were the most limiting constraints faced by the beneficiaries. MSS was substantially effective in achieving its set objectives in the study area in spite of the constraints being faced. Ambulances should be made available to PHCs so as to enhance referral system.
Keyword: Effectiveness, midwives, women, child-bearing

INTRODUCTION

The health and wellbeing of the woman is closely linked to that of the family and society. Procreation is a major activity affecting the health and wellbeing of women. Having babies is a thing of cultural importance and prestige for the African woman (Nigeria world, 2011). Despite this, it could be very challenging and life threatening (Knight, 2014). Women die worldwide from pregnancy and childbirth related issues while millions also suffer from post-partum injuries. Almost all maternal deaths can be prevented, as evidenced by the huge disparities found between the richest and poorest countries. The lifetime risk of maternal death in industrialized countries is 1 in 4,000, versus 1 in 51 in countries classified as 'least developed' (WHO, UNICEF, UNFPA and World Bank, 2014).

Maternal mortality is of global concern, hence its adoption as one of the millennium development goal in the millennium summit in year 2000. Millennium Development Goal 5 focused on maternal mortality and targeted a reduction of maternal mortality rate by three quarters between 1990 and 2015 (World Health Organization, 2007). Maternal mortality remains a priority under Goal three (3) in the new Sustainable Development Goals (SGDs) agenda through 2030 (Maternal Health Task Force, u.d). Global maternal mortality ratio declined by 45% from 380 deaths in 1990 to 210 deaths in 2013 per 100,000 live births; this translates into an average annual rate of reduction of 2.6 per cent (WHO *et al,* 2014). A report by WHO in 2012 also revealed that developing countries accounted for 99% (284,000) of global maternal death, Sub Saharan Africa and Southern Asia contributed 85% of this global burden, with Sub-Saharan Africa contributing more than half of this percentage (56%). At the country level, two countries account for one third of global maternal deaths: India at 19 % (56,000) and Nigeria at 14 % (40,000). According to Mojekwu and Ibekwe (2012), Nigeria has one of the worst records of maternal mortality in the world, second only to India whose population is eight times larger than that of Nigeria.

In a recent report, World Health Organization (WHO) classifies Nigeria as one of the 10 countries of the world that contribute about 60 per cent of the world's maternal mortality burden (WHO *et al,* 2014). Though Nigeria currently has a maternal mortality ratio of 560 per 100,000 live births, the ratio improved slightly, moving from 630 per 100,000 recorded in 2010. The North East zone of Nigeria has the highest maternal mortality rate of 1,549 per 100,000 live births (UNICEF, 2016); meaning that just over one in a hundred mothers lose their lives during childbirth. Over the years, several initiatives and programmes have been introduced to reduce mortality among mothers in Nigeria. Despite these efforts, poor maternal health indices have continued to be one of the most serious development challenges facing the country. Midwives Service Scheme (MSS) was established in 2009 to provide an emergency stop gap to the human resource shortage of skilled attendance at the level of Primary Health Care in Nigeria. The aim is to facilitate an increase in the coverage of Skilled Birth Attendance (SBA) to reduce maternal, newborn and child mortality (NPHDA, 2014). Despite the apparent successes recorded by the scheme, the MSS is not without some challenges.

Muhammed (2013) opined that for MSS to be effective, problems of lack of essential drugs,

poor/insecure accommodation facilities for midwives, non-regular payment of their remuneration and lack of water/power supply to some designated facilities for the scheme should be addressed. In Oyo state, there is a record of 262 maternal mortality per 100,000 live births annually (NURHI, 2011). This figure is alarming; hence, a programme like the MSS which is targeted at reversing the trend deserves closer attention. Therefore, it is imperative to access the effectiveness of the MSS. In view of this, the objectives for this study are:

1 Determine the socioeconomic characteristics of respondents in the study area,
2 Identify the benefits derived from the scheme by the beneficiaries in the study area;
3 Determine beneficiaries' level of satisfaction with the benefits derived from the scheme in the study area and;
4 Identify the constraints faced by beneficiaries in accessing the benefits of the scheme

METHODOLOGY

Oyo state has a population of 5,591,589 people (National Population, Commission, 2006). It is situated in latitude 7^{o} 241N and longitude 3^{o} 52E as well as altitude 234m above sea level and covers a total of 27,249 square kilometres of land mass. It is bounded to the south by Ogun state, in the north by Kwara state, in the east by Osun state and in the west; it is partly bounded by Ogun and partly by the republic of Benin. The people of Oyo State may be divided into five zones which are: Ibadan, Ibarapa , Oyo, Oke-Ogun and Ogbomosho groupings (Oyo, 2014). Oyo state has University College Hospital (tertiary healthcare centre), several General Hospitals and Primary Health Care Facilities. Agriculture is the main occupation of the people of Oyo state. The climate in the state favours the cultivation of crops like maize, yam, cassava, millet, plantain etc.

The population of the study consisted of all beneficiaries of MSS in Oyo state. Multi-stage sampling procedure was used in the selection of beneficiaries (women who were in their reproductive age (18-45yrs) for this study. The first stage involved a random selection of sixty percent (60%) of the five (5) MSS clusters in Oyo state to give three (3) MSS clusters namely Akinyele, Lagelu and Ibarapa East Local Government Areas. Each cluster was made up of four (4) PHCs to give twelve (12). The second stage involved random selection of twenty percent (20%) of beneficiaries from each facility; this gave a sample size of one hundred and thirty five (135) beneficiaries used for the study. The women were approached during antenatal, post natal and immunization days at MSS facilities. Data for the study were collected using a structured questionnaire and analyzed using frequency counts, percentages, means, chi square and Pearson Product Moment Correlation (PPMC). Effectiveness was measured through frequency of use and availability to the service.

RESULTS AND DISCUSSION

Socioeconomic characteristics of beneficiaries

Table 1 reveals that majority (60.7%) of the beneficiaries fell within the age category 21 and 30 years, while the mean age was 28.13. This distribution indicates that most of the respondents were young. This agrees with the report of Sule-Odu, Fakoya, Oluwole, Ogundahunsi, Olowo, Olanrewaju, Akesode, Dada and Sofekun (2008) that the mean age for child bearing in Nigeria is 27.5. The implication of this finding in the effectiveness of MSS is that these women fall within the maternal age in which risk of child bearing is minimal, this is in line with findings of Nove, Mathew, Neal and Camacho (2014) that there is highest risk of maternal mortality in women older than 30 years.

The result also showed that most (97%) of the respondents were married. This means that most of the respondents can be regarded as responsible women who respect the marriage institution and consider it essential. This is in line with Akintola (2008) that majority of rural households are married. It was also revealed that about half (50.4%) of the beneficiaries had between 7 and 12 years of formal education, 34.1% had less than 6 years of formal education and 15.6% had above 12 years of formal education. This suggests a poor level of education among women of child bearing in rural Nigeria, which may affect their knowledge on maternal and neonatal health. This finding is alarming considering the report of Hoffman and Hoffman (2014) that formal education and literacy influence reduction in maternal and child mortality rate.

The majority (54.1%) of the beneficiaries professed the Islamic faith while 44.4% were Christians and the remaining 1.5%, Traditional religion adherents. This implies that the mosque and the church can be used to sensitize the people of the benefit of MSS and knowledge of maternal and child health. It can be deduced that 46.7% of beneficiaries were into business/trading, 25.9% were tailors, 11.9% were hair dressers, and 7.4% were teachers, 2.2% were farmers while 0.7% were full-time housewives. This implies that most of the beneficiaries had means of livelihood and suggests that finance might not have been a constraint to benefitting from the MSS services.

Results also showed that majority (96%) of the beneficiaries had between one and four children. This implies that most of the respondents had previous experience(s) of child bearing. This

predisposed them to providing valid and useful information on the effectiveness of MSS and its benefits to women and children.

Table 1: Socioeconomic characteristics of respondents (n=135)

Variables	Frequency	Percent	Mean
Age			28.13
≤ 20	9	6.7	
21-30	82	60.7	
31-40	44	32.6	
Marital status			
Single	1	0.7	
Married	131	97	
Divorced/Separated	3	2.2	
Years of formal education			10.1
≤6	46	34.1	
07-12	68	50.4	
Above 12	21	15.6	
Religion			
Christianity	60	44.4	
Islam	73	54.1	
Traditional	2	1.5	
Occupation			
Farming	3	2.2	
Business/trading	63	46.7	
Tailor	35	25.9	
Hair dresser	16	11.9	
Teacher	10	7.4	
Housewife	1	0.7	
Student	4	3	
Accountant	1	0.7	
Civil servant	2	1.5	
Number of children			5.0
0	1	0.74	
01-02	80	59.3	
03-04	50	37	
Above 5	4	2.96	

Benefits derived from MSS

Table 2 reveals that majority of the respondents benefited to a large extent from skilled birth attendant ($\bar{x}$=1.95) Antenatal care ($\bar{x}$=1.93), 24 hours qualified managed service ($\bar{x}$=1.90), immunization ($\bar{x}$=1.97), Neonatal care ($\bar{x}$=1.80), postnatal care ($\bar{x}$=1.99), health talk ($\bar{x}$=1.99), outreach service ($\bar{x}$=1.50) and infant welfare ($\bar{x}$=1.96). This implies that respondents had access to most of the services provided by MSS and this is corroborated by the findings of WHO (2008) cited by Mojekwe and Ibekwe (2012) that for women to benefit from these cost-effective interventions, they must have antenatal care in pregnancy, attended to by skilled health providers in childbirth and need support in the weeks after the delivery.

On the other hand, a large number of respondents did not benefit from family planning ($\bar{x}$=0.90), which may be due to cultural or religious beliefs. This is in line with UNICEF (2007) that discriminatory cultural attitudes and practices are barriers to reducing maternal mortality. Generally, contraceptive prevalence rate of Oyo State is 22 percent (NUHRI, 2011). Most respondents did not benefit from referral service ($\bar{x}$=0.16), this may be as a result of the availability of skilled birth attendance which tends to reduce the number of complications and none of the respondents benefited from ambulance service ($\bar{x}$=0.16). This could be an indication of the absence of ambulance service in all the PHCs hence; patients provide means of transportation when they are referred.

Table 2: Distribution of respondents based on benefits derived from MSS

Benefits	To a large extent	To a lesser extent	Not at all	Mean
Skilled birth attendant	97	0.7	2.2	1.95
Antenatal care	96.3	0.7	3.0	1.93
24 hours qualified managed service	94.1	2.2	3.7	1.90
Immunization	98.5	0.0	1.5	1.97
Neonatal care	89.6	0.7	9.6	1.80
Post natal care	98.5	0.0	1.5	1.99
Family planning	43.0	4.4	52.6	0.90
Health talk	99.3	0.0	0.7	1.99
Outreach	62.2	25.2	12.6	1.50
Referral service	3.7	8.9	87.4	0.16
Ambulance service	0.0	0.0	100	0.00
Infant welfare	97.8	0.0	2.2	1.96
Laboratory service	66.7	17.8	15.6	1.51

Level of satisfaction

Table 3 shows that majority of beneficiaries were highly satisfied with skilled birth attendant ($\bar{x}$=1.98) antenatal care ($\bar{x}$=1.99), 24 hours qualified managed service ($\bar{x}$=1.99), immunization ($\bar{x}$=1.99), neonatal care ($\bar{x}$=1.91), post natal care ($\bar{x}$=1.96), family planning ($\bar{x}$=1.87), health talk ($\bar{x}$=1.99), outreach ($\bar{x}$=1.77), referral ($\bar{x}$=1.49), infant welfare ($\bar{x}$=1.95), and laboratory service ($\bar{x}$=1.48). However, respondents were not satisfied with the ambulance service ($\bar{x}$=0.22). The implication of this finding is that beneficiaries were satisfied with most of MSS services except the ambulance service and this may be because the services were never available at the PHCs.

Further analysis on Table 4 reveals that majority (71.9%) of the beneficiaries had high level of satisfaction with the Scheme. The finding indicates the success of the MSS from the perspective of the beneficiaries.

Table 3: Distribution of respondents based on level of satisfaction with MSS

Level of satisfaction	Highly satisfactory	Satisfactory	Not satisfactory	Mean
Skilled birth attendant	97.8	2.2	0.0	1.98
Antenatal care	98.5	1.5	0.0	1.99
24 hours qualified managed service	98.3	0.7	0.0	1.99
Immunization	98.3	0.7	0.0	1.99
Neonatal care	91.1	8.9	0.0	1.91
Post natal care	95.6	4.4	0.0	1.96
Family planning	86.7	13.3	0.0	1.87
Health talk	99.3	0.7	0.0	1.99
Outreach	77.8	21.5	0.7	1.77
Referral service	53.3	43.0	3.7	1.49
Ambulance service	0.0	2.2	97.8	0.22
Infant welfare	97.0	0.7	2.2	1.95
Laboratory service	64.4	19.3	16.3	1.48

Table 4: Categorization of respondents based on level of satisfaction

Level of satisfaction	Frequency	Percent	Mean	SD	Minimum	Maximum
Low	38	28.1	22.39	1.38	19.00	24.00
High	97	71.9				

Beneficiaries' responses on the perceived effectiveness of MSS

The summary of Tables 5 and 6 as found in Table 7 shows that most of the beneficiaries (68.1%) perceived MSS as highly effective. The most effective components as perceived by the respondents in Tables 6 and 7 include: use of skilled birth attendant ($\bar{x}$ ranging from 1.90-2.00), antenatal ($\bar{x}$ranging from 1.93-1.99), 24 hours service ($\bar{x}$=1.88), immunization ($\bar{x}$ ranging from 1.96-1.97), neonatal ($\bar{x}$ranging from 1.88-1.90), post natal ($\bar{x}$ ranging from 1.93-1.97), family planning ($\bar{x}$ ranging from 1.97-1.99), health talk ($\bar{x}$ ranging from 1.97-2.0), referral (x ranging from 1.67-1.70), infant welfare (x ranging from 1.97-1.99), immunization through outreach ($\bar{x}$=1.93) and some components of laboratory service (urine test ($\bar{x}$=1.82), malaria parasite ($\bar{x}$=1.99) and PCV ($\bar{x}$=1.74). The perceived least effectiveness were: delivery through outreach ($\bar{x}$=0.00), ultrasound

($\bar{x}$=0.00) and ambulance service ($\bar{x}$=0.00). Perceived effectiveness of the components or otherwise may be due to availability.

Table 5: Beneficiaries 'assessment of the effectiveness of MSS services

Services	Responses			Mean
	Always	Sometimes	Never	
Skilled birth attendant				
Availability of skilled birth attendant	94.1	1.5	4.4	1.9
Regularity of skilled birth attendant	98.5	1.5	0.0	1.99
Punctuality of skilled birth attendant	100.0	0.0	0.0	2
Positive attitude towards patients	97.0	3.0	0.0	1.97
24 hours qualified managed services				
Availability of delivery service	91.9	4.4	3.7	1.88
Care if infants	91.9	4.4	3.7	1.88
Care of pregnant women	92.6	3.7	3.7	1.88
Outreach services				
Availability of delivery through outreach (at home with skilled birth attendant)	0.0	0.0	100	0.0
Availability immunization through outreach	92.6	7.4	0.0	1.93
Ambulance services				
Available	0.0	1.5	98.5	0.15
Accessible	0.0	1.5	98.5	0.15
Affordable	0.0	1.5	98.5	0.15
Laboratory services				
Urine tests	89.6	3.0	7.4	1.82
Malaria parasite test	98.5	1.5	0.0	1.99
Pregnancy test	91.9	8.1	0.0	1.84
Ultrasound scan	0.0	0.0	100	0.0
PCV (blood level check)	86.7	1.5	11.9	1.74

Table 6: Distribution of beneficiaries by their assessment of effectiveness of MSS services

Services	**Highly effective**	**Effective**	**Not effective**	**Mean**
Antenatal care				
Intermittent preventive treatment of malaria	98.5	1.5	0	1.99
Blood test to diagnose diseases and ascertain health status	94.1	5.9	0	1.94
Physical examination (BP, scan)	94.8	4.4	0.7	1.94
Provision of routine drugs	95.6	4.4	0	1.96
Prevention of mother-to-child transmission of HIV	98.5	1.5	0	1.99
Managing Common complaints	97	3	0	1.97
Distribution of insecticide treated nets	95.6	1.5	3	1.93
Immunization				
Provision of treatment toxoid for mothers	96.3	3.7	0	1.96
Childhood immunization (Polio, DPT, Measles)	98.5	1.5	0	1.99
Child survival interventions like vitamin A, de-worming	97	3	0	1.97
Neonatal Care				
Provision of warmth after birth	88.1	11.9	0	1.88
Cutting of the cord	89.6	10.4	0	1.9
Care of cord	89.6	10.4	0	1.9
Clearing of airways	89.6	10.4	0	1.9
Vaccination of baby against TB(BCG)	89.6	10.4	0	1.9
Postnatal Care				
Advice on early initiation of breast feeding (30mins after delivery)	93.3	6.7	0	1.93
Physical examination (blood pressure, urine test, PVC that is blood level check)	97	3	0	1.97
Tetanus toxoid vaccination for mother	95.6	3	1.5	1.94
Vitamin A supplementation	97.8	2.2	0	1.97

Services	Highly effective	Effective	Not effective	Mean
Family Planning counselling	97.8	2.2	0	1.97
Family Planning				
Counselling on child spacing	97.8	2.2	0	1.97
Education on family planning methods	99.3	2.2	0	1.97
Screening and test before family planning	97.8	2.2	0	1.99
Family planning service	98.5	1.5	0	1.99
Health Talk				
HIV counselling	97	3	0	1.97
Infant feeding	100	0	0	2
Pregnancy spacing/family planning	99.3	7	0	1.99
Birth and emergency plan	97.8	2.2	0	1.97
Referral Service				
Identification of Conditions that require referral (Anaemia, Swollen feet, Bleeding vagina)	71.9	26.7	1.5	1.7
Management of complications	69.6	28.9	1.5	1.68
Follow up on referral cases	69.6	28.1	2.2	1.67
Infant Welfare				
Treatment of minor ailments (Malaria, Diarrhoea)	99.3	0.7	0	1.99
Management of childhood diseases (Measles, Chicken Pox)	99.3	0.7	0	1.99
Treatment of minor injuries	98.5	0.7	0	1.97

Table 7: Categorization of respondents based on level of effectiveness

Level of effectiveness	F	%	Mean	SD	Minimum	Maximum
Low	43	31.9	88.65	4.37	67.00	92.00
High	92	68.1				

Constraints faced by the beneficiaries

The most limiting constraints to the effectiveness of the scheme as presented in Table 9 are: poor ambulance services ($\bar{x}$=1.93) and erratic power supply ($\bar{x}$=1.79). This could be because most of these facilities were in remote areas and referrals which required the use of ambulances were not available. In addition, many of them may not be connected to the national grid. Hence, when the solar power systems break down, electricity becomes a challenge. The implication of this finding is that some services provided at night would be difficult without electricity. Considering Lawal (2012) reports that erratic power supply can harm vaccines stored for routine immunization, resulting in contamination of these vaccines which can harm rather than protect the children.

Table 8 Distribution of respondents based on constraints encountered (women)

Constraints	Serious constraint		Mild constraint		Not a constraint		Mean
	F	%	F	%	F	%	
Unavailability of essential drugs and consumables	6	4.4	23	17.0	106	78.5	0.26
Unavailability of midwives	1	0.7	6	4.4	128	94.8	0.06
Shortage of skilled birth attendants	3	2.2	3	2.2	129	95.6	0.07
Poor referral system	2	1.5	5	3.7	128	94.8	0.07
Delay at PHCs	3	2.2	6	4.4	126	93.3	0.09
Distance of PHCs	20	14.8	16	11.6	99	73.3	0.41
Language barrier	4	3.0	3	2.2	128	94.8	0.08
Attitude of midwives	1	0.7	9	6.7	125	92.6	0.08
Affordability of services	1	0.7	0	0.0	134	99.3	0.01
Poor laboratory	24	17.8	23	17.0	88	65.2	0.53
Poor ambulance service	129	95.6	3	2.2	3	2.2	1.93
Inadequate facilities/equipments	1	0.7	33	24.4	101	74.8	0.26
Inadequate water supply	3	2.2	3	2.2	124	91.9	0.10
Erratic power supply	115	85.2	12	8.9	8	5.9	1.79

Relationship between beneficiaries socioeconomic characteristics and perceived effectiveness of MSS

The Chi square analysis on Table 9 shows that none of their characteristics had significant relationship with perceived effectiveness of MSS. In addition, on Table 10, the correlation of age, number of children and years of formal education had no significant relationship with their perceived effectiveness of MSS, r=0.047, 0.001, -0.080 respectively and p=0.589, 0.992, 0.355 respectively. This implies that the women perceive MSS as effective irrespective of their age, religion, number of children, occupation and years of formal education.

Pearson's Product Moment Correlation result on Table 11 shows that there is no significant relationship between benefits derived from MSS and the beneficiaries' perceived effectiveness of MSS. (r=-0.028, p=0.752) this implies that benefits derived from MSS did not influence their perceived effectiveness of MSS. This means whether respondents benefitted or not they still perceived the scheme as effective.

Table 12 result reveals that there was significant relationship between the constraints encountered by beneficiaries (r = -0.396, p = 0.000) and their perceived effectiveness of MSS. This implies that constraint encountered by respondents affected their perceived effectiveness of MSS. The higher the constraint the less the respondent perceived the effectiveness of MSS.

Table 9: Relationship between selected socioeconomic characteristics and perceived effectiveness of MSS

Variables	χ^2-value	df	Contingency coefficient	p-value	Decision
Religion	1.896	2	0.118	0.388	NS
Marital status	0.789	2	0.059	0.789	NS
Occupation	0.121	8	0.294	0.121	NS

Table 10: Relationship between selected socioeconomic characteristics and perceived effectiveness MSS

Variables	r-value	p-value	Decision
Age	0.047	0.589	NS
No of children	0.001	0.992	NS
Years of formal education	-080	0.355	NS

Table 11: Relationship between benefits derived and perceived effectiveness of MSS

Variables	r-value	p-value	Decision
Benefits vs. Perceived effectiveness of MSS	-0.028	0.752	NS

Table 12: Relationship between constraint and perceived effectiveness of MSS

Variable	r-value	p-value	Decision
Constraints	-0.396	0.000	S

CONCLUSION AND RECOMMENDATION

Beneficiaries generally perceived the Midwives Service Scheme to be effective in Oyo state. However, services like erratic power supply and lack of access to ambulances hindered the effective delivery of the Scheme.

Based on these findings it is recommended that for future health interventions to be sustainable government should provide regular power supply using alternative energy sources and ensure proper management and maintenance of these resources. Efficient transportation should be put in place to improve referral system that links these PHCs to secondary health facilities.

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