

## Gaps in Quality of Antenatal Care Offered by the Traditional Birth Attendants in Southern in Nigeria

Abayomi Joseph Afe<sup>1</sup>✉, Ganiyu Agboola<sup>1</sup>, Abimbola Oduola<sup>1</sup>,  
Maduakolam Onyema<sup>1</sup>, Timothy Akinmurele<sup>1</sup>, Florence  
Olaosebikan<sup>1</sup>, Adeola Olatoun<sup>1</sup>

<sup>1</sup>Equitable Health Access Initiative, Lagos, Nigeria

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### ABSTRACT:

**Introduction:** In Nigeria, the annual number of pregnancies is estimated at over 6 million. Of this number, about 58% of pregnant women attended antenatal care at least once while 45% visited antenatal clinics at least 4 times. Also only about 35% of births occurred in health facilities (20% and 15% in public and private sector facilities respectively). About 62% of births occur outside the health facility, majority of which are in the rural areas. Overall, 39% of births are delivered by skilled personnel, 41% by Traditional Birth attendants (TBAs) and relatives while 20% had unassisted delivery). Traditional Birth attendants are traditional, independent (of the health system), non-formally trained and community-based providers of care during pregnancy, childbirth, and the postnatal period. When trained, TBAs can augment their traditional function of conducting delivery with risk assessment in the prenatal period and referring mothers to health centers if complications are anticipated or in emergency. Trained TBAs can also perform deliveries and cord care hygienically and use appropriate methods to prevent and control post-partum haemorrhage. This study was conducted to show the presence or absence of some essential components ANC care at TBA and use their availability to measure the quality of care available at the TBA centers.

**Methods:** This was a cross sectional questionnaire-based study conducted in 3 southern Nigerian states over a 6 months period. Data were collected from 450 TBAs using interviewer-administered questionnaires. The data analysis was done using statistical package for the social sciences (SPSS) for windows version 20.0 software (SPSS Inc; Chicago, IL, USA). Frequency counts were generated for all variables and statistical test of significance was performed with chi-square test. Significance was fixed at  $P < 0.05$  and highly significance if  $P < 0.01$ .

**Results:** There was wide gap in the accessibility of pregnant women attending care at TBA to blood investigations. These gaps ranged from as high as 92% for Hepatitis B test, 87% for blood genotype, 80% for Packed Cell volume(PCV), 74% for syphilis infection test(VDRL) to as low as 50% for HIV antibody blood rapid test and 30% for blood group investigation. Tetanus toxoid immunization service was also very low at 38% availability among the TBAs. The commonest service among the TBA was referral services, which was provided by about 94% of the TBAs. Other less common service were group health talks, monitoring of blood pressure, weight measurement, antimalarial prophylaxis and local concoction mixture.

**Recommendations:** There is need to work with TBAs to plug the gaps in the quality of services they provide to their clients.

**Keywords:** Traditional Birth Attendants (TBA), Antenatal care (ANC), Prevention of Mother to child transmission of HIV(PMTCT)

### INTRODUCTION

**Background:** The total fertility rate of 5.7 in Nigeria has remained high. The annual number of

pregnancies is estimated at over 6 million (1). One of the major reasons for the high fertility level is the pronatalistic attitude of the population and low use of

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Abayomi Joseph Afe (Correspondence)



abayomiafe@yahoo.com



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contraceptive methods. In 2008, up to 58% of pregnant women that delivered attended antenatal care at least once. Forty-five percent of these women visited antenatal clinics at least 4 times (2). Also only about 35% of births occurred in health facilities (20% and 15% in public and private sector facilities respectively). About 62% of births occur outside the health facility, majority of which are in the rural areas, where about 60% of Nigerians live (3). Overall, 39% of births were delivered by skilled personnel, 41% by Traditional Birth attendants (TBAs) and relatives while 20% had unassisted delivery. Only 28% of women receive post-natal checkup within two days of delivery. Up to 41 days after delivery, 56% of women have not received any form of postnatal care. Because of this huge unmet need for skilled birth attendance, the national Maternal Mortality Ratio (MMR) has remained high at 545 deaths per 100,000 live births and the infant mortality rate at 75 per 1000 live births(4). Also, coverage of PMTCT services among pregnant women in Nigeria was only about a third (30.3%) of pregnant women who attended ANC in 2012 received a HIV test in the country(5 ). To extend PMTCT services to these women who receive ANC and delivery services outside of health facilities engagement of TBAs in Community-based PMTCT services is one way out. Community-based PMTCT is the provision of PMTCT services by formal (trained health personnel) or informal care providers such as traditional birth attendants (TBAs), volunteer health workers (VHWs), family members and other stakeholders outside the hospital settings usually within communities(6). The term TBA refers to traditional, independent (of the health system), non-formally trained and community-based providers of care during pregnancy, childbirth, and the postnatal period. The function most universally associated with TBA is assistance of mother and family at the time of birth. This usually delivery of baby, cutting of the cord, and disposal of placenta. It may also involve maternal and infant care, including bathing and massaging, domestic chores and counselling during pregnancy and postnatal period. Additionally, TBAs also perform other functions, depending on local customs and individual interest and expertise, such as giving advice on family planning, abortion and infertility. Some also perform circumcision. Others exercise the broader functions of traditional healers as herbalists or spiritualists. However, when trained, TBAs are expected to augment their traditional function of conducting delivery with risk assessment in the prenatal period and referring mother s to health centers if complications are anticipated or in emergency. Trained TBAs are also expected to perform deliveries and cord care hygienically and use appropriate methods to prevent and control post-partum haemorrhage. Many trained TBAs have also taken on expanded primary health care function in a

variety of fields. These include family planning, first aid, health education about nutrition, breast feeding, personal and environmental hygiene, prevention of mother to child transmission of HIV(PMTCT) and the importance of bringing infants to the clinic for growth monitoring,immunization,and treatment of infections. Some trained TBAs distribute oral rehydration salts, condoms and oral contraceptives. Some trained TBAs are also engaged to collect data, especially mortality of mother s and infants.

Antenatal care (ANC) can be defined as the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy. The components of ANC include: risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion.

ANC reduces maternal and perinatal morbidity and mortality both directly, through detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of developing complications during labour and delivery, thus ensuring referral to an appropriate level of care (7). In addition, as indirect causes of maternal morbidity and mortality, such as HIV and malaria infections, contribute to approximately 25% of maternal deaths and near-misses (8), ANC also provides an important opportunity to prevent and manage concurrent diseases through integrated service delivery (9).

A scoping review conducted by WHO revealed that every pregnant woman wants to have a “positive pregnancy experience”. A positive pregnancy experience is defined as maintaining physical and sociocultural normality, maintaining a healthy pregnancy for mother and baby (including preventing and treating risks, illness and death) having an effective transition to positive labour and birth, and achieving positive motherhood (including maternal self-esteem, competence and autonomy) (10).All women from high-, medium- and low-resource settings valued having a positive pregnancy experience, the components of which included the provision of effective clinical practices (interventions and tests, including nutritional supplements), relevant and timely information (including dietary and nutritional advice) and psychosocial and emotional support, by knowledgeable, supportive and respectful health-care practitioners, to optimize maternal and newborn health .The major ANC interventions that can lead to a positive pregnancy experience can be grouped into the following categories according to WHO

A. Nutritional interventions e.g counselling and health education on nutrition

B. Maternal and fetal assessment: include and abdominal palpation, symphysifundal height measurement and ultrasound scanning for fetus, laboratory screening for anaemia (FBC), blood sugar (FBS), urinary tract infections (MSU MCS), and HIV infection.

C. Preventive measures: Include the use of routine haematinics, antimalarial prophylaxis, tetanus toxoid vaccination etc.

D. Interventions for common physiological symptoms e.g nausea and vomiting, heart burn, low back pain and pedal oedema

E. Health systems interventions to improve the utilization and quality of ANC e.g Community-based interventions to improve communication and support like home-based care, home visits, Task shifting components of antenatal care delivery to lower cadres like the lay workers and auxiliary nurses. Adherence to antenatal care contact schedules that stipulate a minimum of 8 contacts as recommended by WHO would also strengthen the health system to improve ANC quality and uptake.

These components of ANC are commonly offered at most orthodox health facilities and also serve as indicators to gauge the quality of antenatal care available to pregnant women in most settings. However, there has not been any study that demonstrated the availability of these components of ANC at TBAs centers. This study was therefore

conducted to show the presence or absence of these ANC components at TBA and use their availability to measure the quality of care available at the TBA centers.

**Objectives:**

**Main objective:** The purpose of this study was to identify the gaps in the quality of services pregnant women are offered by TBAs in some communities in the southern region of Nigeria.

**Specific Objectives**

- 1) Demography of TBAs
- 2) Components of Antenatal care available at the TBAs
- 3) HIV-related Services available at TBA centers.

**METHODS**

This was a cross sectional questionnaire-based study conducted in 3 southern Nigerian states (Ogun, Edo, Enugu) over a 6 months period. Data were collected from 450 TBAs using interviewer-administered questionnaires. The data analysis was done using statistical package for the social sciences (SPSS) for windows version 20.0 software (SPSS Inc; Chicago, IL, USA). Frequency counts were generated for all variables and statistical test of significance was performed with chi-square test. Significance was fixed at  $P < 0.05$  and highly significance if  $P < 0.01$ .

## RESULTS

**Table 1:Demography of TBAs**

	Edo		Ogun		Enugu		Total	
Variables	Frequenc	Percent	Frequenc	Percent	Frequenc	Percent	Frequenc	Percent
<b>Location of Practice</b>								
Rural	120	80%	49	37%	118	70%	287	64%
Urban	30	20%	82	63%	51	30%	163	36%
Total	150	100%	131	100%	169	100%	450	100%
<b>Gender</b>								
Male	4	2.70%	127	96.90%	16	9.5	147	32.67%
Female	146	97.30%	4	3.10%	153	90.5	303	67.33%
Total	150	100.00%	131	100.00%	169	100.00%	450	100%
<b>Age of TBAs</b>								
below 10 years	0	0.00%	0	0.00%	0	0	0	0.00%
10-20 years	0	0.00%	0	0.00%	0	0	0	0.00%
21-30 years	5	3.3	1	0.80%	60	35.5	66	14.67%
31-40 years	16	10.7	54	41.20%	42	24.9	112	24.89%
41-60 years	73	48.7	71	54.20%	64	37.9	208	46.22%
61 years and above	56	37.3	5	3.80%	3	1.8	64	14.22%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Religion</b>								
Christianity	97	64.60%	97	74.00%	169	100	363	80.67%
Islam	4	2.70%	34	26.00%	0	0	38	8.44%
Traditional	49	32.70%	0	0.00%	0	0	49	10.89%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Marital status</b>								
Single	4	2.70%	3	2.30%	37	21.9	44	9.78%
Married	101	67.30%	125	95.40%	118	69.8	344	76.44%
Separated	11	7.30%	1	0.80%	3	1.8	15	3.33%
Divorced	1	0.70%	0	0.00%	0	0	1	0.22%
Widowed	33	22.00%	2	1.50%	11	6.5	46	10.22%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Educational Level</b>								
Tertiary Institution	0	0.00%	16	12.20%	20	11.8	36	8.00%
Technical School	0	0.00%	14	10.70%	12	7.1	26	5.78%
Primary	57	38.00%	11	8.40%	41	24.3	109	24.22%
Secondary	33	22.00%	90	68.70%	96	56.8	219	48.67%
No Formal Education	60	40.00%	0	0.00%	0	0	60	13.33%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%

**Demographics:** Most of the of the TBAs practice in rural areas(60%) except in Ogun where there were more TBAs practicing in the urban centers compared with the rural areas. Females also constituted more than half of (60% ) of the TBAs population in the with the exception of ogun state where over 90% of the TBAs were men. About half (50%) of the TBAs belonged to the middle aged group(41-60yrs),followed by the 31-40yr age category which constituted about 24% of the TBAs while the two extremes of 21-30yrs and above 61yrs age groups accounted for 14% each . Most TBA (81%) were Christians especially in Enugu where all the TBAs were of the Christian faith, followed by the adherents of traditional religion (11%) who were mostly seen in Edo state, and Muslims (8%). Most of the TBAs (70%) were married while 9% and 3% were single and separated respectively. Only 10% were widows. While only 13% were illiterates with no formal education, about 50% had some secondary school education, 24% had elementary (primary) education .About 8% and 6% claimed to have attended tertiary and technical institutions respectively. All the TBAs with higher levels of education (tertiary and technical education) were distributed between Ogun and Enugu states. Edo state accounted for all the TBAs with no formal education.

Variables	Edo		Ogun		Enugu		Total	
	Frequenc	Percent	Frequenc	Percent	Frequenc	Percent	Frequenc	Percent
<b>Group Health Information</b>								
Yes	26	17.3	101	77.10%	157	92.9	284	63.11%
No	124	82.7	30	22.90%	12	7.1	166	36.89%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Weight Measurement</b>								
Yes	28	18.7	129	98.50%	142	84.0	299	66.44%
No	122	81.3	2	1.50%	27	16.0	151	33.56%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>B.P Measurement</b>								
Yes	7	4.7	129	98.50%	113	66.9	249	55.33%
No	143	95.3	2	1.50%	56	33.1	201	44.67%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Antimalaria Prophylaxis</b>								
Yes	66	44.0	73	55.70%	86	50.9	225	50.00%
No	84	56.0	58	44.30%	83	49.1	225	50.00%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Tetanus immunization</b>								
Yes	5	3.3	73	55.70%	93	55.0	171	38.00%
No	145	96.7	58	44.30%	76	45.0	279	62.00%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Local medicine (Agbo,Aseje)</b>								
Yes	139	92.7	28	21.40%	121	71.6	288	64.00%
No	11	7.3	103	78.60%	48	28.4	162	36.00%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Anaemia test (PCV)</b>								
Yes	1	.7	78	62.00%	10	8.0	89	19.78%
No	149	99.3	53	38.00%	159	92.0	361	80.22%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Blood Group test</b>								
Yes	66	44.0	99	79.00%	153	87.20%	318	70.67%
No	84	56.0	32	21.00%	16	12.80%	132	29.33%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Genotype(sickle cell disease) test</b>								
Yes	20	16.00%	28	21.40%	10	8.00%	58	12.89%
No	130	84.00%	103	78.60%	159	92.00%	392	87.11%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>HIV Test for every client</b>								
No	141	94.00%	22	16.80%	57	33.70%	220	48.89%
Yes	9	6.00%	109	83.20%	112	66.30%	230	51.11%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>HBSAg(Hepatitis B) test</b>								
Yes	28	2.40%	5	0.40%	5	0.40%	38	8.44%
No	122	97.60%	126	99.60%	164	99.60%	412	91.56%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Syphilis(VDRL) test</b>								
Yes	27	21.60%	78	62.00%	10	8.00%	115	25.56%
No	123	78.40%	53	38.00%	159	92.00%	335	74.44%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Where Do you do blood test</b>								
does not do blood test	50	33.4	0	0.00%	32	13	82	18.22%
On site	1	.7	4	3.10%	36	21.3	41	9.11%
Private Lab	2	1.3	101	77.10%	88	52.1	191	42.44%
Govt Lab	97	64.7	26	19.80%	13	7.7	136	30.22%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%
<b>Referral Services for Complications</b>								
Yes	142	94.7	125	95.40%	155	91.7	422	93.78%
No	8	5.3	6	4.60%	14	8.3	28	6.22%
Total	150	100.00%	131	100.00%	169	100.00%	450	100.00%

**Components of ANC Services available** : More than half(63%) of the TBAs give group health information during their clinic especially in Enugu and Ogun states but in Edo state most(83%) of the TBAs do not offer such service to their clients. Only 66% of the TBAs do routinely measure the weight of their clients especially in Enugu and Ogun state, while most Edo state TBAs(81%) do not monitor their clients weights. About 55% of the TBAs measure the blood pressure of their TBAs, mostly in Enugu and Ogun states while virtually all the TBAs(95%) in Edo state do not measure the blood pressure of their clients . Across the three states, about half(50%) of the TBAs offer antimalarial chemoprophylaxis to their clients ,but less than half(44%) of TBAs in Edo state offer such service. A meagre 38% of the TBAs offer anti-tetanus toxoid immunization to their clients across the 3 states; worse still in Edo state where an appalling 3% of them offer anti-tetanus toxoid to their clients. Other blood test such as Hepatitis B surface antigen (HBsAg) test for Hepatitis B infection screening is only provided by 2% TBAs in Edo state and 0.4% TBAs in Ogun and Enugu states. Blood test for genotype was only available at 16%,21% and 8% TBA centers in Edo ,Ogun and Enugu states respectively. Blood group test on the other hand was provided by 44% ,79% and 87% of the TBAs in Edo, Ogun and Enugu states respectively. Test for anaemia (PCV-Packed cell volume) on the other hand is provided by 0.7%,62% and 8% of the TBAs in Edo, Ogun and Enugu states respectively. Test for maternal syphilis infection is only available at 22%,62% and 8% TBA centers in Edo ,Ogun and Enugu states. Interestingly, over 90% of the TBAs offer referral services to their clients with complications in each of the three states. Local herbal concoction, a form of traditional drug mixtures, is offered to pregnant women client by 93% of the TBAs in Edo state, 72% TBAs in Enugu state and only 21% TBAs in Ogun state

Variables	Edo		Ogun		Enugu		Total	
	Frequenc	Percent	Frequenc	Percent	Frequenc	Percent	Frequenc	Percent
<b>Have You heard of HIV</b>								
No	8	5.3	2	1.50%	17	10.1	27	6.00%
Yes	142	94.7	129	98.50%	152	89.9	423	94.00%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>How do think HIV can transmitted:</b>								
<b>i)By mosquito bite:</b>								
Yes	39	26.0	37	28.20%	7	4.1	83	18.44%
No	111	74.0	94	71.80%	162	95.9	367	81.56%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>Spiritual Attack:</b>								
Yes	80	53.3	12	9.20%	16	9.5	108	24.00%
No	70	46.7	119	90.80%	153	90.5	342	76.00%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>ii)Touching someone that has HIV infection</b>								
Yes	35	23.3	7	5.30%	6	3.6	48	10.67%
No	115	76.7	124	94.70%	163	96.4	402	89.33%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>iii)Sharing sharp instruments</b>								
Yes	136	90.7	127	96.90%	158	93.5	421	93.56%
No	14	9.3	4	3.10%	11	6.5	29	6.44%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>iv)Sexual intercourse</b>								
Yes	140	93.3	128	97.70%	158	93.5	426	94.67%
No	10	6.7	3	2.30%	11	6.5	24	5.33%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>v)Can HIV be transmitted from mother to Child</b>								
No	40	26.7	13	9.90%	52	30.8	105	23.33%
Yes	110	73.3	118	90.10%	117	69.2	345	76.67%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>Do you do HCT for every client</b>								
No	141	94.0	22	16.80%	57	33.7	220	48.89%
Yes	9	6.0	109	83.20%	112	66.3	230	51.11%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>Do you deliver women who are HIV positive?</b>								
Yes	121	80.70%	131	100.00%	30	17.8	282	62.67%
No	29	19.30%	0	0.00%	139	82.3	168	37.33%
<b>Total</b>	<b>150</b>	<b>100.00%</b>	<b>131</b>	<b>100.00%</b>	<b>169</b>	<b>100.00%</b>	<b>450</b>	<b>100.00%</b>
<b>What do you do when your client is HIV positive?</b>								
<b>i)continue to see/manage</b>								
No	149	99%	128	98%	159	94%	436	97%
Yes	1	1%	3	2%	10	6%	14	3%
<b>Total</b>	<b>150</b>	<b>100%</b>	<b>131</b>	<b>100%</b>	<b>169</b>	<b>100%</b>	<b>450</b>	<b>100%</b>
<b>ii)Try to send her away</b>								
No	131	87%	129	98%	169	100%	429	95%
Yes	19	13%	2	2%	0	0	21	5%
<b>Total</b>	<b>150</b>	<b>100%</b>	<b>131</b>	<b>100%</b>	<b>169</b>	<b>100%</b>	<b>450</b>	<b>100%</b>
<b>iii)refer to health facilities</b>								
No	41	27%	35	27%	32	19%	108	24%
Yes	109	73%	96	73%	137	81%	342	76%
<b>Total</b>	<b>150</b>	<b>100%</b>	<b>131</b>	<b>100%</b>	<b>169</b>	<b>100%</b>	<b>450</b>	<b>100%</b>
<b>iv)refer and continue to manage</b>								
No	138	92%	97	74%	146	86%	381	85%
Yes	12	8%	34	26%	23	14%	69	15%
<b>Total</b>	<b>150</b>	<b>100%</b>	<b>131</b>	<b>100%</b>	<b>169</b>	<b>100%</b>	<b>450</b>	<b>100%</b>
<b>v) give herbal medication</b>								
No	142	95%	130	99%	169	100%	441	98%
Yes	8	5%	1	1%	0	0	9	2%
<b>Total</b>	<b>150</b>	<b>100%</b>	<b>131</b>	<b>100%</b>	<b>169</b>	<b>100%</b>	<b>450</b>	<b>100%</b>
<b>vi)Prayer</b>								
No	148	99%	124	95%	169	100%	441	98%
Yes	2	1%	7	5%	0	0	9	2%
<b>Total</b>	<b>150</b>	<b>100%</b>	<b>131</b>	<b>100%</b>	<b>169</b>	<b>100%</b>	<b>450</b>	<b>100%</b>

**HIV-related Services available at TBA centers.** About 94% of them have heard about HIV infection, while just 6% were hearing it for the first time, 80% were able to correctly identify routes of HIV transmission while less than 20% could not. Mother-to-child transmission (MTCT) as a route of HIV infection was correctly identified by about 80% of the TBAs. Half (50%) of the TBAs offer HCT to every clients while the other half do not, yet 60% claimed they had taken delivery of HIV+ women. Most (90%) are comfortable with attending to HIV+ clients but would still refer (80%) them to health facilities. Most (90%) are already used to referring difficult (complicated) cases to hospitals with preference for public hospitals. Over 90% are willing to co-manage clients including HIV+ women with orthodox hospitals. Female TBAs ( $P=0.01$ ), TBA without any formal training in the care of pregnant women ( $P=0.00$ ) and TBAs registered with a regulatory agency ( $P=0.01$ ) were more likely co-manage their clients with orthodox health centres. With respect to the availability of some components of quality ANC at the TBAs; 63% of the TBAs offer group health information which offer information on nutrition, healthy living, exercise in pregnancy

## DISCUSSION

Wide gaps were observed in the availability of blood tests for pregnant women at TBAs as compared to other non-invasive services. This gap in the accessibility to blood investigations in ANC care ranged from as high as 92% for Hepatitis B test, 87% for blood genotype, 80% for Packed Cell volume(PCV), 74% for syphilis infection test(VDRL) to as low as 50% for HIV antibody blood rapid test. The gap in the availability of blood group investigation was also low at 30%, meaning about 70% of the TBAs provided this service. Tetanus toxoid immunization service was also very low at 38% availability among the TBAs. The commonest service among the TBA was referral services, which was provided by about 94% of the TBAs. Other non-invasive services such as group health talks, monitoring of blood pressure, weight measurement and provision of antimalarial prophylaxis were fairly common at 50-60% availability at the TBA centers. The only peculiarity in the services available at the TBAs was the provision of local concoctions made from plant leaves and roots either boiled in water, mix with cold water or other solvent such as alcohol. This service was provided by about 60% of the TBAs.

Recommendations: There is need to work with TBAs to plug the gaps in the quality of services they provide to their clients. Some of the interventions that can be put in place to reduce this gaps include education/trainings in the care of pregnant women and their newborns and logistics support to provide some of the missing laboratory blood tests. The 50% gap in provision of HIV counselling and testing as

components of community-based PMTCT needs to be addressed if the Nigerian national PMTCT coverage must be improved and the goal of eliminating mother to child transmission of HIV infection in the nation is to be achieved.

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