



SPATIO-TEMPORAL ANALYSIS OF REPRODUCTIVE HEALTH INDICATORS IN NIGERIA

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ABSTRACT

Reproductive health is a state of complete physical, mental and social well being instead of absence of reproductive disease. It is a matter of universal concern and an important aspect of social development goals. Poor reproductive health outcomes are manifested in the rate of maternal mortality. Medical and socio economic factors that cause maternal deaths are preventable if there is access to adequate reproductive health services. However, access to health services itself is influenced by certain socio economic factors. Nigeria at present has one of the highest rates of maternal mortality in the developing world. The present study attempts to analyze few indicators that directly and indirectly influence the state of reproductive health in Nigeria. Reproductive health index have been computed with the help of relevant indicators (median age at first birth, antenatal care for most recent birth, antenatal care from a skilled provider, tetanus toxoid injection, percentage of delivery in a health facility, delivery by a skilled provider, postnatal checkup, current use of contraception and problems in accessing health care facility) to show state wise differential in reproductive health in Nigeria. Secondary data sources from Nigeria's Demographic and Health Survey (2008 and 2013) have been used to compute the index. The study reveals the change in reproductive health in the country.

Keywords: *Reproductive health, maternal mortality, reproductive health index, antenatal care and postnatal checkup.*

INTRODUCTION

Women's health reproductive health is an important pillar to the social development goals. Socio cultural construct of the society tends to influence women's health status more than biological factors through its manifestations of gender discrimination in education, nutrition, access to health care services, power of decision making and employment. Thus the outcome is poor reproductive health. The importance of improving women's health has been recognized ever since the first International Safe Motherhood Conference in 1987. With very little improvements in maternal health, especially in the developing nations, International Conference for Population and Development (ICPD) in 1994 again emphasized its importance followed by the Fourth World Conference on Women in 1995, and ICPD+5 in 1999. When the international community met in Cairo in 1994 at the Conference on Population and Development, there was an emerging consensus that women's reproductive health is important in its own right and that population control objectives should be integrated with broader social development goals and women's reproductive health needs (Wang and Pillai, 2001). The women's

reproductive age span is most vital, as it is in this phase only that she has to go through pregnancy, child birth, child rearing, and household work and if earning then occupational stress also. Maternal Mortality Rate (MMR) is an important indicator of women's reproductive health status and considerable number of women dies due to reasons associated with pregnancy and childbirth. To address the issue of MMR worldwide, reproductive health approach was adopted in Cairo Conference. The reproductive health approach implies that women's right to make reproductive decisions and the improvement in their socio-economic status may increase their reproductive health status (Fathalla, 1992). Reproductive decisions and improvement in women's socioeconomic status may influence utilization of maternal health care services, therefore improving reproductive health status. Improvements in reproductive health status may improve maternal mortality rates. Age at marriage, age at first child birth, number of children, child birth interval, use of contraception, number of still births, number of live births, number of abortions, institutional delivery, antenatal and postnatal checkups and immunization are certain parameters that determine women's reproductive health.

Other factors such as women's education, occupation, husband's occupation and income influences reproductive health indirectly.

Study Area

Nigeria lies on the west coast of Africa between latitudes 4°16' and 13°53' north and longitudes 2°40' and 14°41' east. It occupies approximately 923,768 square kilometres of land stretching from the Gulf of Guinea on the Atlantic coast in the south to the fringes of the Sahara Desert in the north. The territorial boundaries are defined by the republics of Niger and Chad in the north, the Republic of Cameroon on the east, and the Republic of Benin on the west. Nigeria is the most populous country in Africa and the 14th largest in land mass. The country's 2006 Population and Housing Census placed the country's population at 140,431,790 (NDHS, 2013). The objective is to assess the spatio-temporal change in reproductive health status of women in Nigeria.

Methodology

The study has been conducted through secondary data source. Data from Nigeria's Demographic and Health Survey (2008 and 2013) have been used for the study. Indicators such as, (a) antenatal care for most recent birth, (b) antenatal care from skilled provider, (c) tetanus toxoid injection (immunization), (d) median age at first birth, (e) live birth at age 15-19, (f) institutional delivery or delivery in a health facility, (g) delivery by a skilled provider, (h) postnatal checkup in less than four hours, (i) percentage of persons currently not using any contraception and (j) problem in accessing health care facility were taken to compute reproductive health index. The index (RHI) has been computed with the help of the frequency tables of the relevant indicators. This index was used by Population Foundation of India in a monograph titled State of India's Population. An attempt has been made to apply the methodology to assess the reproductive health status of women in Nigeria. a, b, c, d, f, g and h are positive indicators and e, i and j are negative indicators. The data for each indicator was standardized by the given formula:

For positive indicators: $100 \cdot (V_i - V_{\min}) / (V_{\max} - V_{\min})$

For negative indicators: $100 \cdot (V_{\max} - V_i) / (V_{\max} - V_{\min})$

[Where V_i is the actual value, V_{\min} is the minimum value V_{\max} is the maximum value in the series]

The state with the lowest value got a score of 0 and state with the highest value got a score of 100. After standardization of each variable, a composite index was computed for each state. The composite index is the mean of all the indices. The values were then divided

into categories of very high, moderate and low. States were then classified into the above mentioned categories.

RESULTS AND DISCUSSION

Reproductive health is a prerequisite for social, economic and human development. Nigeria at present has one of the highest rates of maternal mortality in the developing world (Akokuwebe, M.E. and Okafor, E.E., 2015). A recent report (Hogan et al., 2010) listed Nigeria as one of six countries that account for 50% of global estimates of maternal deaths. Haemorrhage, sepsis, unsafe abortion, obstructed labour, and hypertensive diseases of pregnancy are some of the medical causes of maternal deaths. Most of these causes of deaths are preventable if there is access to adequate reproductive health services. The non medical causes of poor reproductive health are socio-economic factors that have a direct influence on the knowledge, behavior, attitude and utilization of reproductive health services. Present study takes into consideration few social factors such as median age at first birth, problem in accessing health care facility and other factors pertaining to utilization of reproductive health services such as antenatal care for most recent birth, antenatal care from skilled provider, tetanus toxoid injection, live birth at age 15-19, institutional delivery or delivery in a health facility, delivery by a skilled provider, postnatal checkup in less than four hours, persons currently not using any contraception.

(a) Antenatal care for most recent birth: Antenatal checkups during pregnancy are the first step towards ensuring a good health to both mother and child. Number of women who received antenatal checkup during the most recent birth has been taken as an indicator to reproductive health. There has been an overall increase in the number of women receiving antenatal care except Abuja FCT, Benue, Kogi, Plateau, Abia, Anambra, Imo, Akwa, Ibom, Bayelsa, Delta, Edo, River, Lagos, Ogun.

(b) Antenatal care from skilled provider: Antenatal care provided by a skilled health worker enables (1) early detection of complications and prompt treatment (e.g., detection and treatment of sexually transmitted infections), (2) prevention of diseases through immunisation and micronutrient supplementation, (3) birth preparedness and complication readiness, and (4) health promotion and disease prevention through health messages and counselling for pregnant women. 29% of the total states show a declining trend in the percentage of women who received antenatal checkup from a skilled provider.

(c) Tetanus toxoid injection: Immunization of women during pregnancy is an important factor which ensures safe child birth and maternal health. Neonatal tetanus is a leading cause of neonatal mortality in Nigeria which is primarily due to delivery at home without the presence of skilled attendant. Nationally, 48 percent of women received two or more tetanus injections during their last pregnancy, and 53 percent had their last birth protected against neonatal tetanus (NDHS, 2013). Present study takes into account the percentage of women who received two or more injections during the last pregnancy. 35% of the states show a declining trend and depicts women's ignorance towards their and child's health.

(d) Median age at first birth of women of 20-49 age: Delay in first birth as a result of an increase in the age at marriage contributes to low fertility and better reproductive health. According to NDHS (2013) the overall median age at first birth among women age 20-49 in Nigeria is 20.2 years. Socio-economic status of the household largely influences the age at marriage. In the year 2008, for 21 states of the 37 were omitted because less than 50 percent of the women had a birth before reaching the beginning of the age group within those states. In 2013, 40% of the states had the median age at first birth below 20 years.

(e) Live birth at age 15-19: In Nigeria percentage of women who had a live birth at the age 15-19 changed slightly from 18% in 2008 to 17.1% in 2013. Even though the percentage of women having first child birth at the age below 20 years is not alarming, still there is a need to look into the states having higher percentage of it such as Katsina and Zamfara. This is a vital indicator as it is linked with maternal and child morbidity.

(f) Institutional delivery or delivery in a health facility: Institutional delivery assisted with trained personnel is important for safe child birth. It is equally important for maternal health and reducing deaths arising from complications of pregnancy. Women in rural areas are more likely to deliver at home (77 percent) than their urban counterparts (37 percent). The North West has the highest proportion of deliveries at home (88 percent), followed by the North Eastern states (79 percent) (NDHS, 2013). In the year 2013, except six states namely Benue, Zamfara, Abia, Anambra, Delta and Edo, all the states showed a rise in percentage of women having institutional delivery.

(g) Delivery by a skilled provider: Only 38% of the births in Nigeria are attended by a skilled birth assistant. This is a serious concern as it

may lead to maternal and child mortality. Osun state has the highest percentage of women having institutional delivery and delivery assisted by a skilled assistant. Jigawa, Katsina, Kebi, Sokoto and Zamfara have less than 10 % of women who had delivery assisted by a skilled assistant. To reduce the risk of deaths related to complicated pregnancy especially in rural areas, both institutional delivery and delivery by a skilled provider is necessary.

(h) Postnatal checkup in less than four hours: Postnatal checkups are as important as antenatal checkups. There should be at least one postnatal checkup after the child birth. It is important to have a checkup in less than four hours after child birth or within 2 days of child birth. In Nigeria overall 58% of women did not have postnatal check up after child birth in 2013. Except Sokoto all the states have an increasing trend for this indicator.

(i) Persons currently not using any contraception: Use of contraceptives depicts respondent's awareness of reproductive rights and reproductive health. Overall, 15 percent of currently married women in Nigeria are using a contraceptive method, an increase of only 2 percentage points since the 2003 NDHS. Therefore, the nonusers of contraceptives are more than 80% in 48% of the total states. The remaining states also have more than 60% nonusers of contraceptives for both 2008 and 2013. Religious reasons stand as major barrier in using contraception in this region.

(j) Problem in accessing health care facility: According to the NDHS report of 2013, 53% of women respondents reported at least one problem in accessing a health facility. Lack of money and greater distance were reported to be the main reasons behind it. Osun state has the least percentage of women who had at least one problem in accessing health facility in both 2008 and 2013 (22% and 32.8% respectively).

Reproductive Health Index

The computation of reproductive health index for the states of Nigeria revealed that Katsina has the lowest value and Lagos has the highest value of RHI indicating poor and better reproductive health status of women respectively. 73% of the total states have shown an increasing trend in RHI from 2008 to 2013. The states which lag behind are Bauchi, Yobe, Jigawa, Kano, Kebi, Sokoto, Katsina, Abia, Akwa Ibom, and Edo. They rank 30th, 32nd, 33rd, 28th, 35th, 36th, 37th, 15th, 19th and 10th respectively in RHI (2013). Kwara has improved its rank from 19th in 2008 to 5th in 2013 whereas Benue's rank has gone down from 10th in 2008 to 23rd in 2013.

To understand the spatiotemporal change in reproductive health indicators, the RHI have been categorized into five categories of very low, low, medium, high and very high. Osun and Lagos are the two states which stands in very high category of RHI (2013) indicating a good reproductive health status in the states (table 5). They have shifted from high (2008) to very high category in 2013. Similarly, Yobe state has shifted from low category (2008) to very low category in 2013; Nasarawa, Plateau, Kaduna and Ebonyi states have shifted from low (2008) to medium (2013) category; Abuja, Kogi, Kwara, Enugu, Delta and Ogun states have shifted from medium (2008) to high (2013) category. For Lagos and Osun state, positive change (2008 to 2013) in median age at marriage, antenatal care and institutional delivery and postnatal checkup have contributed to its very high RHI. For Yobe state, negative change in indicators such as antenatal care from a skilled provider, immunization and problems in accessing a health facility has contributed to its negative shift in category. For Nasarawa, Plateau, Kaduna and Ebonyi states almost all the positive indicators had a positive change and negative indicators had negative change from 2008 to 2013 except a few such as negative change in antenatal checkup by skilled attendant in Nasarawa, antenatal checkup and immunization in Plateau, antenatal checkup by skilled attendant in Kaduna and teenage pregnancy in Ebonyi. For Abuja positive change in institutional delivery and negative change in problems facing in accessing health facility; for Kogi negative change in percentage not using contraception and problems facing in accessing health facility; for Kwara and Enugu all the positive indicators had a positive change and negative indicators had negative change from 2008 to 2013; for Delta state negative change in percentage not using contraception and problems facing in accessing health facility and in and in Ogun negative change in problems facing in accessing health facility has contributed to its negative shift in category (Table No.3 and 4) (Fig. No.1).

Apart from the above mentioned indicators there are many other factors such as social and economic conditions, education, employment, living conditions, gender relationships, and the traditional and legal structures that influence reproductive behaviors. This in turn influence reproductive health. Therefore, interventions by the health sector alone cannot succeed in the attainment of reproductive health. In Nigeria poverty, corruption, political insensitivity, cultural factors and Boko Haram

insurgency has affected the reproductive health status of women. Moreover, there is north and south divide among the states of Nigeria. Socio cultural constructs that are specially based on religion are the main reason behind it. Higher mortality rate in northern states of Nigeria is attributed to corruption, either by diversion of healthcare facilities to private use of outright sale to other people thereby living the people at the mercy of what befalls them or outright diversion of funds from the source (Family Care International, 2005). Poverty limits access to healthcare services, transportation and adequate nutrition especially for women who are financially incapable of providing for themselves (Harrison 1997).

Poverty is widespread in this country in spite of its rich natural resources to the extent that indicators place it among the twenty poorest countries in the world (BBC News <http://www.news.bbc.com>). It has been observed that the probability of death among children born to illiterate mothers is two times as high as those born to literate mothers (Oxaal and Baden, 1996). Illiterate women and men are more likely to be ignorant about the benefits of better reproductive health. Across the geopolitical zones of Nigeria, the North East and North West lag behind others in educational attainment, with more than 60 percent of females and about half of males having no education (NDHS, 2013). According to Okunna (2002), 'culture and tradition continue to exert overbearing influences on Nigerian women and deny them their fundamental human rights. The prevalence of patriarchy in all spheres in Nigerian society promotes gender-bias practices like female genital mutilation, child marriage, rape, and polygamy, thus affecting women's reproductive health.

Nigeria has shown an increasing commitment to the health by formulating policies and plans such as:

1. National Reproductive Health Policy and Strategy,
2. National HIV/AIDS policy
3. National Health Policy
4. National Policy on Health and Development of Adolescents and Young People in Nigeria.
5. National Youth Policy and Strategic Plan of Action
6. National Family Planning/Reproductive Health Policy Guidelines and Standards of Practice.

Still, Nigeria is far behind in improving women's reproductive health status because of the gaps in policies, funding and political commitment with major underlying problems such as poverty, low literacy levels, negative health seeking behaviors and cultural practices.

Therefore, the policy interventions should aim on the social and cultural aspects of people in order to have its goal and objectives met. Above all the policies should also consider the qualitative indicators, such as women's satisfaction with services, perceptions of

quality, maternal discomfort and dissatisfaction, perceived reproductive morbidities, opportunities for choice, and enabling environments for a deep understanding of the barriers to reproductive health.

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Appendix

**Reproductive Health Index
2008 and 2013**

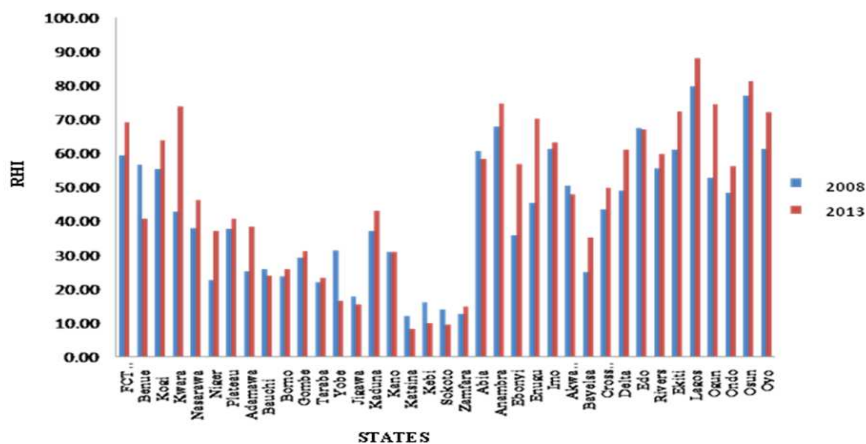


Figure 1: Reproductive Health Index (2008 and 2013)

Special Conference Edition, November, 2017

Table 1: Reproductive Health Indicators of States of Nigeria, 2008

States	Antenatal care for most recent birth	Antenatal care from a skilled provider	Tetanus toxoid injection	Median age at first birth among women age 20-49	Live birth at age 15-19	Percentage of delivery in a health facility	Delivery by a skilled provider	Post-natal checkup in < 4 hrs	Currently not using contraception (%)	At least one problem faced in accessing health care facility
1.FCT Abuja	153	89.2	69.6	a	5.3	54.2	64.3	52.5	72	49.8
2. Benue	366	63.2	46	19.1	16	50.9	52.3	24.1	8.5	89.2
3. Kogi	278	81.6	67.1	a	12.3	77.3	75.8	52.6	90.3	68.5
4. Kwara	195	58.1	46.1	a	23.6	48.8	53.2	43.2	75.4	67.6
5. Nasarawa	172	72.6	35.3	a	14	32.9	33.8	27.7	88	55.1
6.Niger	336	36.6	29.4	19	31.8	15.9	17.2	15.7	95.4	84.9
7.Plateau	355	84.1	65.5	a	12.7	30.2	30.7	18	88.9	87.1
8.Adamawa	275	61.2	42.2	19.4	19.2	10.7	14.6	13.4	97.2	86.9
9. Bauchi	357	44.9	24.1	17.4	41.3	13	15.7	14.3	97.3	92.6
10.Borno	211	32.6	23.3	17.6	35.9	11.8	13.2	20.8	93.5	96.5
11.Gombe	194	44.5	40.7	18.3	34.8	17.2	18.3	22.9	94.4	72.9
12.Taraba	166	39.3	33.7	19.7	16.6	21.1	25.9	19.8	95	95.7
13.Yobe	134	36	25.2	17.7	36.5	6.1	9.3	53.9	98.1	65.3
14.Jigawa	142	20.1	10.3	18.4	34.1	4.5	5.1	20.6	99.8	71.7
15.Kaduna	492	62.1	41.5	19.2	23.5	18.4	21.8	38.5	90.4	72
16.Kano	729	49.8	30.8	18	34.7	11.1	12.7	11.9	97.7	81.4
17.Katsina	146	14.4	10.7	17.6	51.9	4.2	4.7	6	99.2	89.7
18.Kebi	61	12.3	11.7	18.4	28.9	4.8	6.2	14.2	98.1	75.3
19.Sokoto	87	13.8	6.8	17.9	37.4	4.4	5.1	5.4	97.9	81.1
20.Zamfara	72	13.1	10	18.5	32.5	6.5	7.7	12.3	97.5	90.9
21.Abia	256	89.1	86.8	a	10.7	74.4	87.1	27.2	76.1	51.9
22.Anambra	419	97.7	93.4	a	3.9	87.8	95.2	25.2	65.6	64.4
23.Ebonyi	209	75.7	57.2	a	6.7	40.7	46.3	14.9	93.9	92.6
24.Enugu	250	68.1	67	a	5.8	53.6	65.5	24.8	78.9	89.2
25.Imo	346	96.3	91.5	a	5.5	94.3	98	18.6	77.3	81.1
26.Akwa Ibom	318	66.8	65	a	13.9	36.9	44	62.8	67.3	77.2
27.Bayelsa	136	35	49.7	19.5	18.1	18.4	21.6	22.9	89.9	92.3
28.Cross river	316	68	61.9	a	16.8	38.5	44.2	30.6	79.7	68.4
29.Delta	353	78.1	71.6	a	6.3	57.2	61.5	8.7	73.4	74
30.Edo	334	90.5	75.1	a	2.3	76.2	79.9	49.4	68.4	46.6
31.Rivers	413	66.6	76.4	a	8.6	47.9	63.6	48.1	72.8	65.1
32.Ekiti	242	93.4	91	a	7.3	75.2	81.2	24.2	82.7	43.1
33.Lagos	960	87.6	83	a	4	76.9	82.8	66	50.4	57.3
34.Ogun	432	89.9	72.8	a	10.2	65.8	71.8	43.1	86.1	93.1
35.Ondo	302	70.1	64.2	a	6.5	46.9	50.5	26.5	78.8	59.2
36.Osun	351	93.6	93.1	a	3.8	85.1	89.2	59.2	62	32.8
37.Oyo	599	87.6	73.6	a	14.5	67.1	76.4	49.4	78.1	65.4

Source: Demographic and Health Survey, 2008

a = omitted because less than 50 percent of the women had a birth before reaching the beginning of the age group (20-49) within the states.

Special Conference Edition, November, 2017

Table 2: Reproductive Health Indicators of States of Nigeria, 2013

States	Antenatal care for most recent birth	Antenatal care from a skilled provider	Tetanus toxoid injection	Median age at first birth among women age 20-49	Live birth at age 15-19	Percentage of delivery in a health facility	Delivery by a skilled provider	Post-natal checkup in < 4 hrs	Currently not using contraception (%)	At least one problem faced in accessing health care facility
1.FCT Abuja	135	88.5	59.7	23.6	6.9	69.1	70.2	69.2	74.8	31.5
2. Benue	368	57.4	40.3	18.9	11.2	50.9	51.6	31.1	83.5	64.4
3. Kogi	263	87.5	79	21	13.7	78.9	70.9	66.8	89.5	41.6
4. Kwara	264	89.2	80.4	22.1	3.9	76.7	79.6	55.8	59.8	37.1
5. Nasarawa	214	63.2	49.4	20.6	11.9	40.1	40.7	47	81.9	47.6
6.Niger	658	59.9	51.4	19.8	19.6	25.3	28.6	35.5	93.4	65.4
7.Plateau	228	63.1	44	21.9	8	35.8	35.8	31	84.8	70.8
8.Adamawa	397	85.1	58.8	19.1	21	33.4	36.3	30.8	95.6	64.6
9. Bauchi	555	55.8	32.1	17.7	37	16.9	16.3	36	97.8	59.7
10.Borno	293	39.2	28.6	20.4	22.7	17	22.3	15.6	98.2	43.1
11.Gombe	279	58.2	50.7	18.1	28.7	27.6	26.6	30.8	96	43.2
12.Taraba	299	31.8	41.1	18.9	22.7	23.4	14.3	23.5	92	70
13.Yobe	200	33.2	24.1	18.9	20.7	7.6	10.2	20.6	98.9	70.6
14.Jigawa	513	49.7	30.1	17.7	43.5	6.7	7.6	11.7	99.1	54.9
15.Kaduna	582	54.6	44.9	19.4	20.9	32.4	35.5	45.3	79.8	44.3
16.Kano	1232	64.3	34.1	18.2	17.3	12.9	13.7	12.4	99.4	64.8
17.Katsina	364	22.7	23.8	17.3	41.2	9	7.7	11.6	98.7	70.4
18.Kebi	222	24.3	14.4	17.9	26.4	8.5	9.3	5.5	98.7	66
19.Sokoto	141	17.4	12.6	17.4	24.7	4.7	5.4	5.7	98.9	49.8
20.Zamfara	249	22.4	15.5	17.6	31.4	5	6.1	14.3	97	29.1
21.Abia	189	90.1	88.7	a	4.6	72.8	77.2	47.9	66.6	78.5
22.Anambra	356	88.4	83.9	24.8	2.7	84.6	87.6	34.8	65	48.5
23.Ebonyi	434	85.1	70.3	21.4	7.9	59.6	62.1	43.7	84.3	63.1
24.Enugu	344	95.6	88.6	22.9	8.5	85.5	91.5	45.3	68.6	71.2
25.Imo	311	95.9	85.3	a	9.3	90.9	96.5	38.6	65.9	67.4
26.Akwa Ibom	257	73.3	62.4	21.2	16.2	43.2	45.6	30	74.5	54.7
27.Bayelsa	73	47.7	59.3	19.2	14.2	28.4	32.1	42.1	86.7	65.3
28.Cross River	317	72.6	67.2	21	17	40.4	41.3	54.6	76	64.9
29.Delta	303	72.5	67.7	22	7.1	57.6	59.8	45.8	71.3	37.4
30.Edo	226	83.9	69.8	22.5	3.4	74.7	78.3	62.9	69.7	63.2
31.Rivers	406	75.5	76.5	23.1	13.7	49	63.4	31.8	65.5	51.9
32.Ekiti	136	86.8	85.4	22.8	4.5	86.3	84.7	37.2	65.5	31.3
33.Lagos	855	93.9	81.7	24.5	3.5	77.2	87.2	65.5	51.7	30.9
34.Ogun	484	94.8	76	21.6	7.1	74.7	84.7	47.7	74	9.5
35.Ondo	328	78.6	60.9	21.9	11	56.2	67.2	36.6	68.9	62.2
36.Osun	302	98.2	62.5	23.5	1.1	89.1	94.2	64	61.7	24
37.Oyo	700	87.2	71.1	21.4	10.3	74.7	78.3	58.9	62.6	44.6

Source: Demographic and Health Survey, 2013

a = omitted because less than 50 percent of the women had a birth before reaching the beginning of the age group (20-49) within the states.

Table No. 3: Standardized Reproductive Health Indicators (2008)

States	Antenatal care for most recent birth	Antenatal care from a skilled provider	Tetanus toxoid injection	Median age at first birth among women age 20-49	Live birth at age 15-19	Percentage of delivery in a health facility	Delivery by a skilled provider	Post-natal checkup in < 4 hrs	Currently not using contraception (%)	At least one problem faced in accessing health care facility	RHI
1.FCT Abuja	5.35	88.00	61.89	84.00	86.32	74.71	71.13	100	51.57	68.12	69.11
2. Benue	25.45	49.50	36.40	21.33	76.18	53.60	50.71	40.19	33.33	20.43	40.71
3. Kogi	16.39	86.76	87.25	49.33	70.28	86.08	71.90	96.23	20.75	53.48	63.85
4. Kwara	16.48	88.86	89.09	64.00	93.40	83.53	81.45	78.96	83.02	60.00	73.88
5. Nasarawa	12.17	56.68	48.36	44.00	74.53	41.07	38.75	65.15	36.69	44.78	46.22
6.Niger	50.47	52.60	50.99	33.33	56.37	23.90	25.47	47.10	12.58	18.99	37.18
7.Plateau	13.37	56.56	41.26	61.33	83.73	36.08	33.37	40.03	30.61	11.16	40.75
8.Adamawa	27.96	83.79	60.71	24.00	53.07	33.29	33.92	39.72	7.97	20.14	38.46
9. Bauchi	41.59	47.52	25.62	5.33	15.33	14.15	11.96	47.88	3.35	27.25	24.00
10.Borno	18.98	26.98	21.02	41.33	49.06	14.27	18.55	15.86	2.52	51.30	25.99
11.Gombe	17.77	50.50	50.07	10.67	34.91	26.57	23.27	39.72	7.13	51.16	31.17
12.Taraba	19.50	17.82	37.45	21.33	49.06	21.69	9.77	28.26	15.51	12.32	23.27
13.Yobe	10.96	19.55	15.11	21.33	53.77	3.36	5.27	23.70	1.05	11.45	16.56
14.Jigawa	37.96	39.98	23.00	5.33	0.00	2.32	2.41	9.73	0.63	34.20	15.56
15.Kaduna	43.92	46.04	42.44	28.00	53.30	32.13	33.04	62.48	41.09	49.57	43.20
16.Kano	100.00	58.04	28.25	12.00	61.79	9.51	9.11	10.83	0.00	19.86	30.94
17.Katsina	25.11	6.56	14.72	0.00	5.42	4.99	2.52	9.58	1.47	11.74	8.21
18.Kebi	12.86	8.54	2.37	8.00	40.33	4.41	4.28	0.00	1.47	18.12	10.04
19.Sokoto	5.87	0.00	0.00	1.33	44.34	0.00	0.00	0.31	1.05	41.59	9.45
20.Zamfara	15.19	6.19	3.81	4.00	28.54	0.35	0.77	13.81	5.03	71.59	14.93
21.Abia	10.01	89.98	100.00		91.75	79.00	78.81	66.56	68.76	0.00	58.49
22.Anambra	24.42	87.87	93.69	100.00	96.23	92.69	90.23	46.00	72.12	43.48	74.67
23.Ebonyi	31.15	83.79	75.82	54.67	83.96	63.69	62.24	59.97	31.66	22.32	56.93
24.Enugu											
	23.38	96.78	99.87	74.67	82.55	93.74	94.51	62.48	64.57	10.58	70.31
25.Imo	20.53	97.15	95.53		80.66	100.00	100.00	51.96	70.23	16.09	63.22
26.Akwa Ibom											
	15.88	69.18	65.44	52.00	64.39	44.66	44.13	38.46	52.20	34.49	48.08
27.Bayelsa	0.00	37.50	61.37	25.33	69.10	27.49	29.31	57.46	26.62	19.13	35.33
28.Cross River	21.05	68.32	71.75	49.33	62.50	41.42	39.41	77.08	49.06	19.71	49.96
29.Delta	19.84	68.19	72.40	62.67	85.85	61.37	59.71	63.27	58.91	59.57	61.18
30.Edo	13.20	82.30	75.16	69.33	94.58	81.21	80.02	90.11	62.26	22.17	67.04
31.Rivers	28.73	71.91	83.97	77.33	70.28	51.39	63.67	41.29	71.07	38.55	59.82
32.Ekiti	5.44	85.89	95.66	73.33	91.98	94.66	87.05	49.76	71.07	68.41	72.33
33.Lagos	67.47	94.68	90.80	96.00	94.34	84.11	89.79	94.19	100.00	68.99	88.04
34.Ogun	35.46	95.79	83.31	57.33	85.85	81.21	87.05	66.25	53.25	100.00	74.55
35.Ondo	22.00	75.74	63.47	61.33	76.65	59.74	67.84	48.82	63.94	23.62	56.32
36.Osun	19.76	100.00	65.57	82.67	100.00	97.91	97.48	91.84	79.04	78.99	81.32
37.Oyo	54.10	86.39	76.87	54.67	78.30	81.21	80.02	83.83	77.15	49.13	72.17

Table No. 4 : Standardized Reproductive Health Indicators (2013)

States	Antenatal care for most recent birth	Antenatal care from a skilled provider	Tetanus toxoid injection	Median age at first birth among women age 20-49	Live birth at age 15-19	Percentage of delivery in a health facility	Delivery by a skilled provider	Post-natal checkup in < 4 hrs	Currently not using contraception (%)	Atleast one problem faced in accessing health care facility	RHI
1.FCT Abuja	10.23	90.04	72.51		93.95	55.49	63.87	77.72	56.27	73.31	59.34
2. Benue	33.92	59.60	45.26	26.08	72.37	51.83	51.01	30.85	184.8	11.45	56.72
3. Kogi	24.13	81.14	69.63		79.83	81.13	76.20	77.88	19.23	43.95	55.31
4. Kwara	14.90	53.62	45.38		57.05	49.50	51.98	62.37	49.39	45.36	42.95
5. Nasarawa	12.34	70.60	32.90		76.41	31.85	31.18	36.79	23.88	64.99	38.09
6.Niger	30.58	28.45	26.09	30.43	40.52	12.98	13.39	16.99	8.90	18.21	22.65
7.Plateau	32.70	84.07	67.78		79.03	28.85	27.86	20.79	22.06	14.75	37.79
8.Adamawa	23.80	57.25	40.87	13.04	65.92	7.21	10.61	13.20	5.26	15.07	25.22
9. Bauchi	32.92	38.17	19.97	100	21.37	9.76	11.78	14.68	5.06	6.12	25.98
10.Borno	16.68	23.77	19.05	91.30	32.25	8.43	9.11	25.41	12.75	0	23.87
11. Gombe	14.79	37.70	39.14	60.86	34.47	14.42	14.57	28.87	10.93	37.04	29.28
12.Taraba	11.67	31.61	31.06	0	71.16	18.75	22.72	23.76	9.71	1.25	22.17
13.Yobe	8.12	27.75	21.24	86.95	31.04	2.10	4.93	80.03	3.44	48.97	31.46
14.Jigawa	9.01	9.13	4.04	56.52	35.88	0.33	0.42	25.08	0	38.93	17.93
15.Kaduna	47.94	58.31	40.06	21.73	57.25	15.76	18.32	54.62	19.02	38.46	37.15
16.Kano	74.30	43.91	27.71	73.91	34.67	7.65	8.57	10.72	4.25	23.70	30.94
17.Katsina	9.45	2.45	4.50	91.30	0	0	0	0.99	1.21	10.67	12.06
18.Kebi	0	0	5.65	56.52	46.37	0.66	1.60	14.52	3.44	33.28	16.20
19.Sokoto	2.89	1.75	0	78.26	29.23	0.22	0.42	0	3.84	24.17	14.08
20.Zamfara	1.22	0.93	3.69	52.17	39.11	2.55	3.215	11.38	4.65	8.79	12.77
21.Abia	21.69	89.92	92.37		83.06	77.91	88.31	35.97	47.97	70.01	60.72
22. Anambra	39.82	100	100		96.77	92.78	96.99	32.67	69.23	50.39	67.86
23.Ebonyi	16.46	74.23	58.19		91.12	40.51	44.58	15.67	11.94	6.12	35.88
24.Enugu	21.02	65.33	69.51		92.94	54.82	65.16	32.01	42.30	11.45	45.45
25.Imo	31.70	98.36	97.80		93.54	100	100	21.78	45.54	24.17	61.29
26.Akwa Ibom	28.58	63.81	67.20		76.61	36.29	42.12	94.71	65.78	30.29	50.54
27.Bayelsa	8.34	26.58	49.53	8.69	68.14	15.76	18.11	28.87	20.04	6.59	25.06
28.Cross River	28.36	65.22	63.62		70.76	38.06	42.33	41.58	40.68	44.11	43.47
29.Delta	32.48	77.04	74.82		91.93	58.82	60.87	5.44	53.44	35.32	49.02
30.Edo	30.36	91.56	78.86		100	79.91	80.60	72.60	63.56	78.33	67.58
31.Rivers	39.15	63.58	80.36		87.29	48.50	63.12	70.46	54.65	49.29	55.64
32.Ekiti	20.13	94.96	97.22		89.91	78.80	81.99	31.02	34.61	83.83	61.25
33.Lagos	100	88.17	87.99		96.57	80.68	83.70	100	100	61.53	79.86
34.Ogun	41.26	90.86	76.21		84.07	68.36	71.91	62.21	27.73	5.33	52.79
35.Ondo	26.80	67.68	66.28		91.53	47.39	49.08	34.81	42.51	58.55	48.46
36.Osun	32.25	95.19	99.65		96.97	89.78	90.56	88.77	76.51	100	76.97
37.Oyo	59.84	88.17	77.13		75.40	69.81	76.84	72.60	43.92	48.82	61.25

Table 5: RHI categories of States of Nigeria, 2008 and 2013

Categories		States S.No. (2008)	States S.No. (2013)
Very low	< 20	14,17, 18, 19 20	13,14,17,18, 19, 20
Low	20-40	5,6,7,8,9,10,11,12,13,15,16,23,27	6, 8,9, 10, 11, 12, 16, 27
Medium	40-60	1,2,3,4,24,26,28,29,31,34,35	2,5,7,15,21,23,26,28,31,35
High	60-80	21, 22, 25,30,32,33, 36, 37	1,3,4,22,24,25,29,30,32,34
Very high	>80	-----	33,36

Source: Categorized on the basis of table 3 and 4.