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Bayelsa State and Millennium Development Goals: Achieving Maternal Mortality Rate Reduction

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Abstract
The study examine the level of achievement of the Millennium Development Goals (MDGs) goal five : reduction of maternal mortality rate by three quarter in Bayelsa State. We employed both primary and secondary data, using a non parametric method in our analysis, result shows that Bayelsa State MDGs on maternal mortality rate has dropped from about 47 per 10,000 to 28.92 per 10,000 as against the bench mark of 25 per 10,000 live births. We therefore recommend the need for social and cultural re-orientation to meet and sustain the MDGs goals not only in the state but the nation at large. For all required to put on a mindset of not only achieving this goal but also to sustain the achieved targets.
Keywords: Bayelsa State, MDGs, Maternal Mortality Infant Mortality, Chi-square and simple percentage

Introduction

In September, 2000, many of the goals were incorporated into the resolutions of United Nations' Millennium Development Goals through the General Assembly in New York (also called Millennium Summit) and endorsed by 189 countries as Millennium Development Goals. And goal 5 is to reduce maternal mortality by three quarter by the year 2015. Bayelsa state an integral part of Nigeria which is a signatory to the MDGs pact, and thus is required to achieve the MDGs by 2015 if it must develop. Bayelsa state is rich in rural and human resources which can be mobilized for development and achievement of the set goals. However due to high population growth and large influx of settlers in the state, Bayelsa state is faced with problems of high dependency ratio which include the burden of child care, health care provision, and housing and employment generation. As state of barely 16 years old have a labour market that is predominantly consist of unskilled labour which call for a comprehensive programme for human resource development and utilization to induce ignorance, illiteracy and hostility on health management.

Scholars and development economists have over the years formulated theories, policies, set goals and targets to achieve development. The hallmark of setting goals is to achieve them on record time. Goals are not set for the sake of merely setting them. They are designed to be achieved. Global goals are expected to be achieved by all nations although penalties are not imposed for their non achievement but concerted and collaborative efforts are required. The programme is almost at the terminal phase, whereas studies have been carried out by scholars at national levels within and other countries of the world. Not much of such studies have been carried out whether midterm or in progress at the state levels. It was as a result of this premise that we decided to investigate the level of MDGs goal 5 achievements in Bayelsa State. This study is groomed with the following objective;

- To examine the impact of the Millennium Development Goals programme on maternal mortality reduction in Bayelsa State.

The study concentrates on assessing the level of Bayelsa state south-south Nigeria has achieved in the Millennium Development Goals goal five reducing maternal mortality rate by three quarter. The study covers the entire eight local government area of the state from 2000 to 2011 with a sample of 400 individuals drawn from the respective Local Government Area.

Literature review

The review of literature on the Millennium Development Goals have shown that, a number of countries have achieved major successes in reducing maternal mortality, child health, strengthening control of malaria and tuberculosis and increasing access to HIV treatment. These successes have taken place in some of the poorest countries, demonstrating that the MDGs are indeed achievable with the right policies, adequate levels of investment and international support. However, it also revealed that progress has been uneven and without additional efforts, several of the goals are likely to be missed in many countries. According to the United Nations report (2010), around 1.4 billion people still rely on less than $1.25 a day, the international poverty line defined by the World Bank. According to Bello and Hakim (2009), posited that, the MDGs will not be achieved in Nigeria under the current trends. Studies by Agenor et al (2006), White and Blondal (2007) and Easterly (2009) doubtfully acknowledged the achievement of MDGs targets in Sub-Saharan Africa. Specifically the prediction of

Bello and Hakim (2009) covering the period 2009 to 2015, shows that the population living below a dollar per day will be 67.4 by 2015, child malnutrition will be 27.8% by 2015, infant mortality 111 per 1000 and maternal mortality rate 658 per 10,000 which opposes the bench mark of 28.3 and 275 per 1000 by 2015 respectively.
In Nigeria, according to the MDGs Report (2004), on maternal mortality, report indicates a slight reduction since 1990, but at 1000 per 100,000 lives birth, it reduced to 704 in 1999. It is worthy to note that there are regional variations. For instance while urban areas have a maternal mortality of 351, in rural areas it stood at 828 per 100,000.

Commenting on the MDGs, according to Shetty (2010), represent an unpresented promise to address global poverty and health to education and living standards to be met by 2015. However, its achievement is in doubt. The United Nations has issued a clear warning that "many of the MDGs will not be met in time unless efforts are radically ramped up". In Africa and South Asia, Kenya, South Africa, and Sri Lanka adopted targets stronger than the MDGs for access to water and sanitation. Peru has taken steps towards addressing health barriers for poor women and Nepal has explored improving maternal health care.

In Bayelsa State there is no literature on maternal mortality except those of other goals like Leigha and Abraham (2008), study carried out on goal 3. However, the MDGs programme achievement is still on course though we are on the terminal stage of the programme.

Method of analysis

The study employ both primary (questionnaires administration) and secondary data, a simple percentage and Chi-square (X^2) were adopted in analyzing the data. The chi-squares a non parametric test that can be used whenever we wish to examine whether or not the frequencies which have been empirically obtained (f_o) differ significantly from those which would be expected (f_e) under a certain set of assumptions or apriori expectations. The secondary data were source from Bayelsa State Hospitals Management Board (BSHMB), the National Bureau of Statistics, the State Ministry of Health, Niger Delta University Teaching Hospital, Federal Medical Centre and the Millennium Development Goals Office.
The formula for the chi-square (X^2) test statistic is given below as:

$$X^2 = \sum_{i=1}^{n} \frac{(fo - fe)2}{fe}$$

With (r – 1)(c – 1) degree of freedom and
α Level of significance
Where:
X^2 is the chi-square symbol (tool)
$\sum$ is summation sign
i = 1 is the observation where the summation begins
n is the observation at which the summation ends
fo is the observed frequency
fe is the expected frequency
r is the number of rows in the contingency table
c is the number of columns in the contingency table.

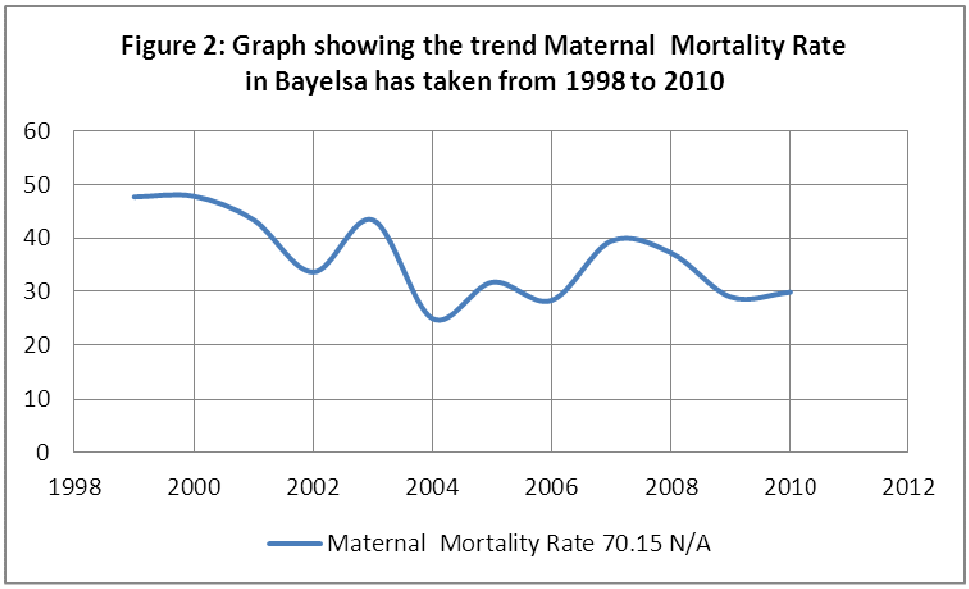
Data Presentation, Analysis and Discussion

The data collected from our tree data collection points are presented and analyze below.

Table 1[a]: Maternal Mortality Rates in Bayelsa State

Year	Live Births	Maternal Deaths	Maternal Mortality Rate
1997	2965	208	70.15
1998	2313	N/A	N/A
1999	2117	101	47.71
2000	3892	98	47.83
2001	3763	86	43.39
2002	4023	60	33.59
2003	4427	74	43.38
2004	4098	42	24.87
2005	4069	54	31.69
2006	8463	48	28.3
2007	17486	51	39.44
2008	11069	43	37.2
2009	12072	31	28.92
2010	10906	30	29.82
Bench Mark for 2015			**25 per 10,000 live Births**

Sources: Bayelsa State Ministry of Health, Federal Medical Centre and The Niger Delta University Teaching Hospital, 2011.



On maternal mortality we observed from table 10 and figure 2 that the trend was as high as 583 maternal deaths in every 10,000 live births in 1997 but reduced to 370 per 10,000 live births in 2000. The maternal mortality rate continued its downward trend and reduced to 295 deaths per 10,000 live births in the year 2010, this figure is still very high compared to the MDGs benchmark of 275 maternal deaths per 10,000 live births by 2015. Our apriori expectation is that with the implementation of the MDGs the level of maternal mortality which was very high would have declined significantly.

Table 1[b]: Before the year 2000 there were many cases of death of women during labour and just after delivery

Stratum/Response	***(SA+A) = Agreed (%)***	***(SD+D) = Disagreed (%)***	***Total (%)***
Brass	33	9	**42**
Ekeremo	26	6	**32**
Kolokuma/Opokuma	34	8	**42**
Nembe	28	5	**33**
Ogbia	23	9	**32**
Sagbama	31	7	**38**
Southern Ijaw	40	4	**44**
Yenagoa	35	11	**46**
Total	**250**	**59**	**309**
Mean	**31.25**	**7.375**	

Source: Field Survey, 2011.

Table 1[c]: Chi-Square Table

f_0	f_e	$(f_0 - f_e)^2$	$(f_0 - f_e)^2/f_e$
33	33.98	0.9604	0.02826368
9	8.02	0.9604	0.11975062
26	25.89	0.0121	0.00046736
6	6.11	0.0121	0.00198036
34	33.98	0.0004	1.1772E-05
8	8.02	0.0004	4.9875E-05
28	26.7	1.69	0.06329588
5	6.3	1.69	0.26825397
23	25.89	8.3521	0.32259946
9	6.11	8.3521	1.36695581
31	30.74	0.0676	0.00219909
7	7.26	0.0676	0.00931129
40	35.6	19.36	0.54382022
4	8.4	19.36	2.3047619
35	37.22	4.9284	0.13241268
11	8.78	4.9284	0.56132118
33	33.98	0.9604	0.02826368
Chi-Square (X^2)			**5.72545517**
$X^2_{0.05\,(7)}$			**12.02**

Source: Author's Computation.

From the mean calculated as reveals by the test of average, the average of strongly agree 31.25 is greater than that of strongly disagree 7.375, implying that there exist high maternity rate before year 2000. This is also agreed with the chi-square value of 5.725 on table 13 which is less than the theoretical value of 12.02 revealed that there was considerable high death rate of women due to labour related complications in Bayelsa state before the year 2000, that is before the implementation of the MDGs. The trend has however shown some improvement in maternal deaths with the implementation of the MDGs era.

Table 1[d]: Most of the pregnant women died because there were no antenatal facilities and care.

Stratum/Response	**(SA+A) = Agreed (%)**	**(SD+D) = Disagreed (%)**	**Total (%)**
Brass	31	10	41
Ekeremo	18	23	41
Kolokuma/Opokuma	18	13	31
Nembe	16	8	24
Ogbia	28	6	34
Sagbama	32	12	44
Southern Ijaw	21	19	40
Yenagoa	21	19	40
Total	**185**	**110**	**295**
Mean	**23.125**	**13.75**	

Source: Field Survey, 2011.

Table 1[e]: Chi-Square Table

f_0	f_e	$(f_0 - f_e)^2$	$(f_0 - f_e)^2/f_e$
31	25.71	27.9841	1.08845196
10	15.29	27.9841	1.83022237
18	25.71	59.4441	2.31210035
23	15.29	59.4441	3.88777632
18	19.44	2.0736	0.10666667
13	11.56	2.0736	0.17937716
16	15.05	0.9025	0.05996678
8	8.95	0.9025	0.10083799
28	21.32	44.6224	2.09298311
6	12.68	44.6224	3.51911672
32	27.59	19.4481	0.7048967
12	16.41	19.4481	1.18513711
21	25.08	16.6464	0.66373206
19	14.92	16.6464	1.11571046
21	25.08	16.6464	0.66373206
19	14.92	16.6464	1.11571046
Chi-Square (X^2)			20.62642
$X^2_{0.05\,(7)}$			12.02

Source: Author's Computation.

With the calculated value, we then conclude since the average of SA+ A (23.125) is greater than SD + D (13.75), hence the high maternity rate is due to high of level of illiteracy as regards to health care services. The calculated chi-square value of 20.62642 in the appendix also indicates that the respondents differ in their opinion that most women who died before the implementation of the MDGs were due largely to absence of antenatal clinics and services. This implies that inadequate healthcare facilities were a serious issue in Bayelsa State before the implementation of the MDGs.

TEST OF SIGNIFICANCE

Table 1[f]a: Maternal Mortality in Bayelsa state with the Implementation of the MDGs (2001-2010)

	Observed N	**Expected N**	**Residual**
222	1	1.0	.0
275	1	1.0	.0
281	1	1.0	.0
283	1	1.0	.0
295	1	1.0	.0
321	1	1.0	.0
340	1	1.0	.0
368	1	1.0	.0
412	1	1.0	.0
480	1	1.0	.0
Total	**10**		

Source: Authors Computation.

Table 17b: Chi-square Test Statistics

	Mmr
Chi-Square	.000[a]
Df	9
Asymp. Sig.	1.000

Source: Authors Computation.

A statistically equals zero (0) chi-square value, indicates that there is no significant reduction in the

level of maternal mortality rates in Bayelsa state with the implementation of the MDGs. This rejects the apriori expectation or the theoretical assumption that the implementation of the MDGs will significantly reduce maternal mortality rate in the State.

These goals specify that by 2015, infant mortality is expected to reduce to 28.3 per 1000 and maternal mortality drop to 275 per 10,000.

Maternal mortality has substantially reduced compared to the infant mortality rate. The maternal mortality rate from the study shows that it is at 29.82 per 10,000 as against 47.71 per 10,000 in 1999, which is still a far cry from the benchmark of 275. However, data management is still an uphill task in Nigeria. Vital statistics and other forms of statistics are never kept and portend a great threat to not only to researches but the authenticity of research results. The primary data results from the chi-square statistic also corroborate with the secondary data collected indicating that there is a reduction in maternal mortality rate in the state but the reduction rates is not significant enough to meet up with the MDGs bench marks by 2015.

Conclusion

The study reveals that the state is partly on course in achieving this goal. There exist a marginal gain or improvement in maternal mortality rate, as the states' maternal mortality rate have reduced from 47.71 per 10,000 in 1999 to 29.82 per 10,000 in 2010. We recommend: The states and local governments should be properly funded and monitored pursuing their individual achievements. This is in conformity with the MDGs aspirations. The states should upgrade their capacities for independent policy formulation, monitoring and evaluation within their jurisdictions. And finally, there is need for social and cultural re-orientation to meet and sustain the MDGs goals not only in the state but the nation in general. For instance the goals on women, girls, infant and maternal mortality requires a new kind of mindset not only to achieve them but also to sustain the achieved targets.

References

Agenor, P; Nihal, B.; Emmanuel, P.M. and Karin, E.A. (2005): "Achieving the Millennium Development Goals in Sub-Saharan Africa", *A Macroeconomic Monitoring Framework World Bank Policy Research Working Paper*.

Bello, M.A. and Abdulhakim R. (2009): "Future of Millennium Development Goals in Nigeria". *Goldman Sachs Group Inc*.

Easterly, W. (2009): How the Millennium Development Goals are Unfair to Africa, World Development Report No 37 Vol 11.

Goldman, Sachs (2007): Goldman Sachs Global Economics Research, the *Goldman Sachs Group Inc.*

Igbuzor O. (2006): "The Millennium Development Goals: Can Nigeria Meet the Goals in 2015" *A Paper Presented at a Symposium Organized by ICAN July 2007.*

Leigha, M.B. & Abraham N.M. (2005): "Enrolment Rate into Primary Schools in Bayelsa State: A Trend Analysis (2000-2006) Implications for Millennium Development Goals' Achievement", *European Journal of Social Sciences – Vol 6, No 3*.

National Bureau of Statistics (NBS), 2008

Salil, Shetty (2010): "Human Rights are Key to the MDGs", *Nairobi Kenya.*

UN (2005): United Nations MDGs Report 2005.

United Nations (2010): "Millennium Development Goals: Advances in the Sustainability of Development in Latin America and the Caribbean".

United Nations (2010): "Special Report on MDGs" *Summit 20-22 September 2010.*

White, H. and Blondal, N. (2007): "Projecting Progress Toward the Millennium Development Goals", *United Nations University, World Institute for Development Economic Research (UNU-WIDER, 2007).*

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