

Primary Healthcare and Maternal Mortality in Selected Areas in Rivers State, Nigeria

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Abstract. The study focused on the effectiveness of Primary Health Care to reduce maternal mortality in selected areas in Rivers State from 2001-2010. The work observed that primary Health Care is an attempt to address health challenges of low income majority. Given this government did not only establish more health centers but introduced free medicals services among other instruments. In spite of these, most pregnant women patronize Traditional Birth Attendants during delivery. The work is guarded by three hypotheses, system theory was adopted for the work, Survey research design was used. A sample of 400 was drawn from a population of 2,039,040 using Taro Yamane formula but 365 questionnaires were retrieved, this became the sample size. Primary sources and secondary sources of data were used. The hypotheses were analyzed using Chi-Square and student T-Test. Deductions from the analysis shows a rejection of the null hypotheses but maternal mortality reduced due to pregnant women high patronage of antenatal and post natal services in the health centres among other reasons. The work recommended integrative approach involving home base health workers from primary health care centres and Traditional Birth Attendants, women empowerment, compulsory primary and secondary education with bias in health education and maternal education, more employment of health personnel, among others.

Keywords: Primary Health Care, Maternal Mortality.

1. Introduction

Health concern for women, especially those within the reproductive age is an integral aspect of development. Generally, good health is very crucial to the nation's growth and development. A healthy labour force ordinarily is expected to make meaningful contributions to a nation's development. Healthy population is one that is physically and mentally energetic and robust and not likely to miss work due to ill health either of themselves or any member of their family. In this sense the more good health a people enjoy the more their poverty tends to reduce. This is akin to the saying that health is wealth and health is a valued possession. A healthy population is an engine house for economic growth (World Health Organization (WHO) Working Group Report, 2002). This prima facie suggests that the economy has problem when individual especially the reproductive elements are poor in health. Health is one of the most important basic needs of man and a critical index of the nation's welfare (Oluwatuyi, 2010).

It is on this basis, that Primary Health Care (PHC) and maternal mortality (the death of a woman due to pregnancy complications) cannot be ignored. Onuzulike (2005) quoting WHO (1978) define PHC as an essential health care based on social, acceptable methods and technologies made accessible to individuals and families in the community through their full participation and at a cost that the community can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. Globally, women constitute the majority of humanity (Adeniyi, 2010).

According to Ekong (2003) women population is significant in most Nigeria population censuses. In another development several scholars; Agbor (2001); Girigiri (2000); Omolabi (1994); Anikpo (1996) and Population Reference Bureau (2001) in Oladipo, (2009) agree that rural areas have greater population concentration with women and children constituting a greater proportion.

Ekong (2003) citing 1991 Nigeria population census revealed that there were 28.64 million rural females (representing 50.51%) in the rural population. Out of this number, adults of marriageable age constituted 16.09 million representing 56.2%. Nigeria Demographic Health Survey (NDHS) (2008), reveal that Total Fertility Rate (TFR) in Nigeria is 5.7 children per women with a variation of 4.7 in the urban area and 6.3 children in the rural area. WHO, United Nations Children Education Fund (UNICEF), and United Nations Population Fund (UNFPA) (2007) in Nigeria National Health Conference (NNHC) (2009) reveal that each year, about 6 million women get pregnant. Out of which 5 million end in still birth. In Nigeria's 2006 population census, women population is 65 million (2006 Nigeria Population Census). Out of these, 30 million are of reproductive age (15-49 years).

A report by the Nigeria Health Review (2007) reveals that Nigeria is only two percent of the global population, but contributes 10 percent of the global population, but contributes 10 percent of the global maternal burden. The report further states that, annually an estimated 52,900 Nigerian women die from pregnancy – related causes; out of a global total of 529,000. A Nigerian woman's lifetime chance of dying from pregnancy related causes is very high. According to NDHS (2003) a Nigerian woman is 500 times more likely to die in child birth than her European counterpart as maternal mortality ratio is about 800-1,500/100,000 live births. Given this, Nigeria maternal mortality is the second highest after India and most of these deaths are avoidable (Ladipo, 2009). It is on this observed prevalence of maternal deaths that Nigeria's case seems unacceptably high and the need for active collaboration between all

stakeholders to reduce the trend. The crisis situation is more in rural communities because most rural dwellers do not have access to adequate health care. Where health centres exist, there is lack of fund to purchase drugs and as a result, rural women now patronize faith healers, Traditional Birth Attendants (TBA) or give birth at home instead of seeking medical solution to their problems (Olusegun, 2009; Felix, 2007).

It is on the basis of this scenario and other equally important health related challenges that PHC has become quite inevitable as a strategy to address maternal mortality in Nigeria and in Rivers State.

On the basis of the place of health in the society and maternal mortality in particular that UNO through its agencies: WHO and UNICEF organized a conference in Kazakh, USSR in 1978. The conference was necessitated by the unabated global health problem especially in developing countries (maternal problem inclusive). As a result of this, alternative approach in meeting the practical health needs of the populace was sort. At the end of the conference, a declaration was made called Alma-Ata declaration. This declaration gave birth to PHC in the world.

In support of the above WHO (2002) opines that a healthy population is an engine house for economic growth. This perhaps informs the understanding that the health sector is critical to social and economic development of the nation. In the same vein, the Nigeria National Strategic Health Development Plan Framework 2009-2015 (NNSHDPF) (2009) did argue that the centrality of health to national development and poverty reduction is self-evident, as improving health status and increasing life expectancy contributes to economic development in many regards. Above all, health is also a fundamental human right and attaining the best possible level of health is the most important world-wide social goal whose realization requires the action of many other social and economic sectors (Lucas & Gilles, 2003).

Since the initiation of PHC according to Omordu (2012) PHC have not done significantly well in

achieving the objective of the programme in Nigeria and Rivers State. According to him, PHC lack adequate health facilities, their services are expensive while most of the health care receivers are poor, this made PHC services underutilized. Observation over the years has shown that most low income individuals rely on alternative health care in addressing their health challenge. It is against this background that this study examined how PHC been able to reduce maternal mortality in selected areas in Rivers State.

1.1 Statement of the Problem

The role of PHC in Nigeria health sector and in the reduction of maternal mortality has been stressed by both Scholars and government. The 2004 Revised National Health Policy recognized PHC as the cornerstone of the nation's national health care. As a cornerstone, the policy observed that PHC is the entry point in Nigeria Health system and that it is an instrument of providing general health services. For Osotimehin (2009) PHC is health instrument that meets the majority of the people where they live; it is healthcare that is community – owned. For Olalekan, Olusegun, and David (2009) PHC is a corner stone of achieving Health For All (FA); it is accessible and affordable health care that is planned to reach the populations so as to assist them to lead an economically productive social life. To fulfill this, Nigeria Government has established PHC centres 317. In 2011 60 PHC were commissioned across the Local Government Areas in Rivers State. The State has recruited 460 Medical Doctors, 300 Nurses, 20 pharmacists, and 40 Record Officers. This excludes Free medical Care programme and Mother and Child hospital in the Air Force base. Currently there is Public Private Partnership in health. Through it, Millennium Development Goal (MDG) has procured and supply equipment and furniture including desktop computers, printers and accessories for 66 model PHC and 15 marine ambulance boats while Niger Delta Development Commission build and furnished the mother and Child hospital at the Air force base Rivers State Ministry of Health, 2013). These exclude partnership with the Empowerments Support Initiative and Rotary

Club International. In the same manner, UNICEF has spent N975,901,732 between 8/07/04 and 30/01/2012 in PHC in Rivers State (Rivers State Ministry of Health, 2012).

However, globally improving maternal mortality has been key concern of several international summits and conferences since late 1980. Such conferences include Submit for Children in 1990, International Conference on Population and Development in 1994 and Fourth World Conference on Women in 1995 and their respective follow up evaluating programs in 1999 and 2000 and presently, MDG also advocated for reduction in maternal mortality. In spite of these, Rivers State Ministry of Health (2006) and Rivers State MDG and United Nations Development Programme (UNDP) 2006, report claim that maternal mortality is as high as 89 deaths for every 1000 live births in 2005. By 2008 Rivers State Government report puts the state maternal mortality at 889 per 100,000 live births. The report equally claims the figure is one of the worst in the word. NDHS (2008) puts Nigeria maternal mortality rate at 545 deaths per 100000 live births. This approximately mans that in every 20 live births one (1) Nigerian woman die of pregnancy related complication.

Iyayi (2009) asserted that PHC problem is due to lack of political will on the part of the government; lack of fund; obsolete equipment/infrastructure; poor motivation of workers; poor staffing; religious/cultural factors; corruption; insufficient medical personnel; too much concentration of medical personnel in the urban area and security problem. Commenting further on security Iyayi (2007) in Iyayi (2009) claim that war and violent conflicts produce debilitating consequences for the health of the population as health institutions may be destroyed, health professionals may relocate from or refuse to accept posting in the affected areas. According to him, violent social conflicts increase death rates and incidence of disease that usually accompany wars and violent social conflicts. In that instance individuals and communities may find their ability to cope with disease greatly reduced. The situation of war and armed conflicts in Nigeria's Niger Delta has

resulted into 'dislocation of social life' and therefore undermined in a very real sense the ability of PHC institutions to function. These according to Omordu (2012) made alternative medicine practice which is devoid of basic medical knowledge to thrive. The lack of skilled birth attendance predisposes pregnant mothers to life-threatening complications (Zibim, 2013). According to Igarase (2012) TBAs' lack of basic birth education has made it difficult for them to recognize common danger and symptoms in obstetrics.

Studies are available that most people especially rural women prefer patronizing traditional healers, spiritualists and TBAs (NDHS, 2003; Onuzulike, 2005; NDHS, 2008; Felix, 2007 and Olusegun, 2009). This confirms Uzuigwe and Fubara (2003) observation in their analysis of 1,225 maternal death cases from ruptured ectopic pregnancies performed in the Anatomy and Pathological Department of university of Port Harcourt Teaching Hospital between 1990 and 2001. The study observed that 71 percent of the cases came from the rural area of Rivers State and that age 20-30 is the vulnerable group. Similarly, Ezeunwa (2006), in a study of pregnancy outcome in Ibain, a rural community in Rivers State discovered that maternal mortality is high and that pregnancy outcomes are related to socio-cultural factors.

These scenarios indicate that the approach in PHC to reduce maternal mortality as become problematic. As more provision of PHC services is increasing, most pregnant women still patronize TBAs during child birth which lead to complications in child birth which the TBAs cannot handle hence high incidence of maternal mortality. This means that, the more effort in reducing maternal mortality through the establishment of more PHC centers in Rivers state is increasing, the more the rise in incidence of maternal mortality in the area. Also, despite government effort in establishing more PHC to reduce maternal mortality in Rivers State most pregnant women patronize TBAs. This study therefore becomes imperative as it is an investigation into effectiveness of PHC as health instrument to reduce maternal mortality in selected areas in Rivers State. In addition to this,

the study proffered solutions on how to make the programme more effective. In doing this the work identified that other works miss out in the role community mobilization and participation can play in PHC as an instrument of reducing maternal mortality in the selected areas in Rivers State and the influence of inter-sectoral link between and among the government ministries and departments in the pursuit of making PHC effective to reduce maternal mortality in the selected areas Rivers State. Again available works did not look at maternal mortality in the context of PHC (as a component).

1.2 Objectives of the Study

The main objective of this study is to examine how the influence of PHC has been able to reduce maternal mortality in the selected areas of Rivers State. The specific objectives include:

- To examine the extent of PHC delivery effectiveness in the reduction of maternal mortality in the some selected areas in Rivers State.
- To investigate how the educational level of pregnant women influence the utilization of PHC facility in the area of this study.
- The more pregnant women patronize Traditional Birth Attendants the higher the incidence of maternal mortality in the area of this study.
- The more availability of PHC services, the more the reduction in maternal mortality in the area of this study.

1.3 Hypotheses

The following hypotheses guided the study:

- The more pregnant women patronize Traditional Birth Attendants the higher the incidence of maternal mortality in the area of this study.
- The higher the level of education of pregnant women, the more likely they will patronize PHC programmes in the area of this study.
- The higher the income of pregnant women, the higher their level of patronage in PHC programmes in the area of this study.

2. Conceptual Clarification

2.1 The Concept of Primary Health Care

The concept has generated interests from many scholars. This interest is informed by the overwhelming influence/affinity between quality health care; the overall performance of any economy and the core objective of PHC to reach the less privilege majority. This perhaps informed why Carmel (1998), classified PHC into four perspectives, mainly as an Approach, a Concept, a Philosophy and as a set of activities. PHC as an Approach sees PHC as a health service led by priorities set by local service providers and service users. It is a health policy that integrates individuals and family healthcare with the public health elements required for planning and to serve the needs of communities. As an Approach PHC means healthcare that emphasis comprehensive health care system that encompass curative, preventive and rehabilitative activity which are developed and implemented with the participation and equal partnership of the people receiving healthcare and services. The people as used here represent: individual, family and community. As a Concept PHC means Health Policy that places emphasis on several health-related activities, like nutrition, sanitation, education, housing and finance. Each of these is outside the direct sphere of control of health industry. The understanding is about organic unity between PHC and other institutions of the Society.

PHC as a set of activities implies that PHC is essentially a set of first-line approach to health service delivery. In this sense it is a set of activities that is tailored towards promoting change to achieve equity in health care by changing people through strategies for empowerment, changing professional roles to enable health care professionals to work in partnership with the clients. This is in addition to changing health care systems orientation from an acute medical driven base to client-centre approach for the planning and delivery of healthcare. In Carmel's perspective, PHC is concerned with bringing about social change especially in health as it puts the individual, family and community at the heart of health care; encouraging them to take responsibility for

their own health and welfare through a process of empowerment.

Quite a number of scholars settle with the WHO/UNICEF 1978 Alma Ata Conference definition which defined PHC as an essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. This definition over the years has been accepted by scholars like Agbor (2004); Onazulike (2005); Obionu (2007) and Iragunima (2010).

Given this background, a number of perceptions abound. Onuzulike (2005) defines PHC as health approach which integrates at the community level all the elements necessary to make an impact on the health state of the people. In the sense, PHC is an integral part of the country's health system. This is basically because PHC is the first health care close to the community, thus it is accessible and socially acceptable to health consumers.

2.2 The Concept of Maternal Mortality

Maternal mortality over the years attracted the concern of people of diverse academic background, thus medical sociologists, development experts, demographer, UNO and other of its agencies have written so much on it, thus Uzumba (2008); Chukwuezi (2010) and WHO (2008) agreed that maternal mortality is the death of a woman while pregnant or within 42 day of termination of pregnancy, irrespective of the duration and site of the pregnancy from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. These causes can be direct and indirect obstetric causes. Direct obstetric causes are obstetric complications of the pregnancy state (pregnancy, delivery, and post-partum –after birth) from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above causes. In this case death due to hemorrhage and

complications due to caesarean section are examples. Indirect obstetric deaths are those that result from previous existing disease or disease that developed in cause of the pregnancy; they are caused by direct obstetric causes but aggravated by physiological effects of pregnancy (WHO, UNICEF, UNFPA & World Bank, 2005). In sum, maternal mortality is any death during pregnancy, child birth or the post-partum period.

This definition has problems mainly in terms of getting accurate measurement. This is due to several reasons. For example, it is difficult in some settings/environments to code maternal death into the nation's civil death registration systems as it is the case in developing nations where medical certificates of death barely exist. For this reason maternal deaths may be under reported. Secondly some deaths recorded as maternal deaths are questionable where the woman's pregnancy status was not considered from the onset, thus it will be difficult to determine if the death is actually related to pregnancy complication. These observed weaknesses instituted a drift on the explanations of maternal mortality to mean the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of the death and the death of a woman from indirect obstetric causes more than 42 days but less than one year after termination of pregnancy. Maternal mortality can be measured through Maternal mortality Ratio and maternal Mortality Rate. Maternal Mortality Ratio is defined as the number of maternal deaths in a population divided by the number of live births. In contrast to this, Maternal Mortality Rate is the number of deaths in a population divided by the women of reproductive age. Thus, it reflects not only the risk of maternal death per pregnancy or per birth (live birth or still birth), but also the level of fertility in the population.

3. Review of Related Literature

Globally the scale of maternal death is shocking. UNFPA (2008) observed one woman dies in Childbirth every minute, with over half a million woman dying per year. Most of these deaths are classified as preventable. Nigeria is an example

of a country with high level of maternal mortality incidence. According to (NDHS 2008) the number of maternal death in Nigeria is 545 death per 100,000 live birth, it further states that Nigeria's maternal deaths is second to India. Rivers State Ministry of Health 2006 maternal mortality report on the state in 2005 claim that maternal mortality is 89 deaths for every 1000 live births. Recognizing this as a problem, government has put in a number of policy measures to hold the increase. A number of factors account for its prevalence. Ladipo (2009) observed that causal factor of maternal mortality is an outcome of nexus of interaction of a variety of factor. These factors can be classified into four namely; medical factors, sociocultural, health and reproductive factors.

3.1 Roles of Primary Health Care in Reducing Maternal Mortality

Preventing Unwanted Pregnancies: Unwanted pregnancy is a type of pregnancy that the woman or both the woman and the man did not prepare for. It is the type that one is not ready to have. It is very common with teenagers. The role of PHC here is to educate the homes and reproductive age group on how to avoid it. This explains why family planning department exists in PHC centres. Different types of family planning exist, common among them are the use of condom, the use of injectable pills, sex abstinence etc.

Pregnancy Spacing: Non-spacing birth is a major contributor to maternal mortality problem in Nigeria. According to International Medical Advisory Panel (IMAP) (2005) in Oriji (2010) pregnancy spacing is a safety measure for maternal and child health. IMAP (2005) in Oriji (2010) further explain that large number of children due to non-spacing of pregnancy by mothers is against the function and principles/philosophies of PHC. IMAP further claim that non-birth spacing can lead to socio-economic and health problems such as low savings of income by parents due to wear and tear involved during pregnancy and birth. To achieve child spacing, registered pregnant mothers in the PHC are advised to register with FP unit immediately after birth or during post

natal. PHC can equally do this through their community sensitization programme.

Limiting the Family Size: Limiting family size is derived from PHC role in pregnancy spacing and preventing of unwanted pregnancies. When child birth is controlled and spaced family size invariably is controlled. In doing this, PHC emphasizes the link between family size and family income, health and general development. Where the family size is high PHC is faced with over stretching of infrastructure, thus effectiveness of PHC delivery is affected.

Preventing and controlling of locally endemic diseases: This role form one of the core reasons why PHC is established and is seen as the bedrock of Nigeria's health care policy. This is because about two-thirds of Nigerians, according to <http://www.fao.org/countries/profiles/index.asp> in Abdurraheem, Olapipo and Amodu (2011) reside in rural areas. These areas lack basic infrastructure including health care. It is this same place that over the years have suffered health challenge which the secondary and tertiary health care cannot handle. As a result PHC was established to tackle ill-health from this area.

Ensuring appropriate treatment of common diseases and injuries: This role is derived from the knowledge of preventing and controlling of locally endemic disease. This equally underscores the use of appropriate technology in PHC and community participation. Technical appropriateness means that whatever policies and procedures that are used in delivery of health care, should be accepted to all stakeholders. An example of this is the use of ORT in the treatment of diarrhea in steady of intravenous fluid. Over the years this approach has been in use by most mothers.

Immunization against the major infectious diseases: Immunization serves a protector against diseases such as yellow fever, tetanus toxoid, meningitis, hepatitis. This is performed by PHC staff. This diseases if not contained will lead to the deaths of patients.

Efforts in strengthening Primary Health Care to achieve reduction in Maternal Mortality:

In Nigeria public sectors play dominant role in all sectors. According to Dotun (2009), government is the principal financier of Nigeria health sector. In order to achieve its general objective in health and that of PHC, government over the years have evolve a number of policies aimed at strengthening PHC to reduce maternal mortality. This is more given the roles health can play in the development of the economy. Strengthening health sector and PHC became necessary due to the dynamics playing in Nigeria society. For example, until recently HIV/AIDs was unknown in Nigeria. Its spread presently is induced more by social than medical. As a new health challenge, government introduced National Action on AIDs and promulgated laws against discrimination of victims. As the dynamics play out, appropriate efforts are sort for and are put in place to resolve it.

In health sector over the years a number of public policies have been made to strengthen the efficiency of PHC to reduce maternal mortality among other objectives. The essence of the policies is to cover loop-holes created by the dynamics playing out in health or the initial over sights that were noted/observed in the first policy formation. For example, Nigerian National Health Policy Philosophy is founded on equity. This philosophy is clearly enunciated in the 2nd National Development plan 1970-74. It has as its objectives: to make Nigeria a free and democratic society; a just and egalitarian society. In addition to these, it is intended to make Nigeria a unified, strong and self-reliant nation and a great and dynamic economy. What actually informed the principles of social justice and equity is because of defects in colonial health policy especially its low coverage of Nigeria population mainly rural communities and the urban poor among others. So as society evolves, policies (health policies) are enacted to tackle the situation. In PHC, National Health Insurance Scheme (NHIS), National Health Policy, National Primary Health Care Development Agency (NPHCDA), MDG; PHCMA are some policy measures in this respect.

4. Theoretical Framework

In this work, System theory is used. System theory, according to Ekpo (2003), was first outlined by Ludwig Von Bertalanfy in 1950. System theory sees society as a system of interrelated parts analogous to biological organism. Specifically the theory is concerned with how large number of individuals (group) can be organized to function in ways analogous to the organs in biological organism and how this organization can smoothly be perpetuated from one generation to another so that order is maintain. The theory believes that individual parts performance collectively contributes to the overall well-being of the organism.

In this sense, the organism function optimally if all the parts perform their specific roles effectively, thus if they fail a dysfunction occurs, the organism may not survive. The understanding of any parts of the organism is necessarily an understanding of its relationship to other parts and most importantly of its contributions towards the maintenance of the organism (Haralambus & Healds, 1980). Drawing from this organismic arrangement, these parts, according to Ekpenyong (2003), represent different institutions in society such as the family, school, police, government and so on. Each part has clearly defined functions which they perform individually and collectively for the survival of the society because of their interrelationship. This coherency accounts for the persistence of the social units. Seen in this manner, System theory sees health institution within the frame work of a dynamic system, (Erinosho, 1998). A system is associated with activities which are processed into output, that is a system is compelled by human needs and desires which the system converts to legal enactments and public bodies/agencies to meet citizens' demands and expectations.

Extrapolating from these assumptions, society has parts: family, education, health institutions inclusive. None of these parts exists independently in terms of functions, as they are interdependent and interrelated in their roles. These roles are purely activities; meaning that society is essentially activities/roles. These roles

are essentially the needs of the society but in performance conceptualized and exist in formal enactments/policies/institution (PHC as one). Because these parts exist in an organismic structure, the input of each part is very essential for the overall survival of the entire system. Each part's input in the system stimulates the services of other parts of the society for the interest of the whole. By extension, each part manifests its own share of failure/success separately as roles differ.

Critically, System theory is relevance to this work because of its emphasis on institutional collaboration in the delivery of public-goods-quality health care and reduced maternal mortality. To fulfill this, all the parts/components of the society have a role to play. The family attitude towards accepting/cooperating with PHC personnel and strategy is important. Family position on this is a function of the level of education and information dissemination. This brings education industry and the mass media to the success/failure of PHC and the rising maternal mortality. Through effective communication family members will be well mobilized and even indoctrinated to accept PHC programme. Through this, all socio-cultural barriers can be removed.

Education is also a form of empowerment; knowledge empowerment is a source of wealth creation. Among other things it reduces early marriage which is a source of high risk pregnancy. Empowerment makes for effective choice of the place of delivery and keeps people informed of the dangers in the use of unorthodox birth practice. Equally important is that education has to train the required man-power either medical or other equally important health officers, even administrative job challenges whose job roles can determine the success/failure of PHC programme. For education to do all these economy must be buoyant to sustain the training of PHC personnel, the schools of health and technology must be functional, the economy must pay staff, fund research into health and cultural issues that affect maternal mortality in order to reduce it. In this, a sound democratic government that will

take decisions and allocate resources effectively is needed.

In addition PHC is health cum development policy. A close look through the components of PHC reaffirms the place of water supply, health education, food supply and environmental sanitation in PHC. This means that the present state of PHC failure and the maternal mortality problem is a product of system failure. Maternal mortality only manifest in health, other parts/components of the society manifest theirs differently. In education, it could be high illiteracy level; poor electric power supply for power sector; poor water supply for ministry of water resources and the presence of water borne diseases; bad road for ministry of works; weak political structure to elect credible persons in position of authority to take right decisions at the right time; weak economy to pay and hire qualified person into office. The inability of PHC to reduce maternal mortality in this context is a function of failure of other sectors to play their basic roles that will act as inputs for maximum performance of health sector/health policy like PHC.

5. Methodology

The larger population of this study is estimated at 2,039,040 (National population Census, 2006). Taro Yamane formula was used to determine the Sample Size. The Sample Size for the study was 400. Two Sampling Techniques was adopted in this study. The stratified

sampling technique was use to Strata Rivers State into upland and riverine Local Government areas while simple random sampling was use to select ten Local Government Five (5) each from upland and riverine areas. Through this process, 40 respondents were selected from each of the five (5) LGAs (upland 200 riverine 200). Data were collected through primary and secondary source. The data were analysed using student t-test and chi-square statistical tools.

6. Data Analysis

A total of hundred (400) copies of questionnaires were distributed both manually and via emails out of which three hundred and sixty five (365) copies were returned representing response rate of ninety two percent (92%). Student t-test and chi-square were used for the hypotheses testing. The results of the hypotheses test were interpreted accordingly.

Hypotheses One: The low level of using PHC services by pregnant women and high preference for TBAs have resulted to higher incidence of maternal mortality in the selected area.

Using the Pearson Product moment correlation coefficient to establish the relationship between the level of patronage of PHC and the high preference of TBAs in the study area noting the existing prevalent high mortality rate which is higher than national average, we have the following (see appendix):

Let X represent TBA and y represent PHC

X	Y	x^2	y^2	Xy
23	15	529	225	345
20	16	400	256	320
17	15	289	225	255
57	55	3249	3025	3135
18	15	324	225	270
15	8	225	64	120
16	9	256	81	144
13	8	169	64	104
14	7	196	49	98
15	10	225	100	150
$\Sigma 208$	$\Sigma 158$	$\Sigma 5862$	$\Sigma 4314$	$\Sigma 4941$

Comment: The calculated t-value 20 is greater than the table value of 2.306 at 8df. Thus, the null hypothesis was rejected. By implication it is true that the more pregnant women patronize TBAs, the more the incidence of maternal mortality in the selected areas of the study.

Hypothesis 2: The level of education of pregnant women does not show any significant relationship with the level of patronizing PHC facilities in Rivers State.

Chi square

0	E	0-E	(0-E) ²	$\frac{(0-E)^2}{E}$
34	39.5	-5.5	-30.25	-0.77
20	39.5	-19.5	-350	9.63
51	39.5	11.5	132.25	3.35
53	39.5	13.5	182.25	4.61
				$\Sigma 18.36$

$$\chi^2 = \sum \left[\frac{O-E^2}{E} \right] = 18.36$$

Degree of freedom N – 1

$$df = 4 - 1 = 3$$

Table value at 0.05 with 3 degrees of freedom is 7.81

Comment: The data analyzed revealed that the calculated χ^2 value of 18.36 is greater than the table value of 7.81. This means that the higher the level of education of pregnant women, the more they patronize PHC Facility in the areas of this study. Given this the null hypothesis is rejected.

Hypothesis 3: The higher the income level of pregnant women, the higher their level of patronage of PHC facilities in the selected areas of this study.

0	E	0-E	(0-E) ²	$\frac{(0-E)^2}{E}$
55	31.6	23.4	547.56	17.33
38	31.6	6.4	40.96	1.30
18	31.6	-13.9	193.21	6.11
27	31.6	-4.6	21.16	0.67
20	31.6	-11.6	134.56	4.26
				$\Sigma 29.67$

$$\chi^2 = \sum \frac{(Q - E)^2}{E} = 29.67$$

$$df = N - 1$$

$$= 5 - 1 = 4$$

Comment: At 0.05 probability level on χ^2 contingency table, the table value with 4df is 9.49. Since the calculated χ^2 value of 29.67 is greater than the table value 9.49, the null hypothesis was rejected. This means that there is a significant relationship between higher income group and patronage of PHC services to reduce maternal mortality.

7. Discussion of Findings

From the data analyzed, it is apparent that TBAs receives favorable patronage among pregnant women in the areas of this study despite government efforts in providing PHC services in Rivers State. According to Imogie (2004) in Ugal, Ushie and Ingnwu (2012) TBA has remained attractive and convenient to both users and non-users alike. That is poor utilization of health facility during pregnancy by pregnant women is one of the causes of maternal mortality. By implication TBA practice has remained as one of the health resources in the

state as a result are still attractive to most pregnant women. This finding confirms Ziblim (2013) work on maternal and child health care delivery in Yendi, Ghana. By extension, it implies that cultural factors are still the driving force in determining choice of health care. Secondly availability of health care facilities by government did not translate into massive patronage in birth but in antenatal and post services. This confirms Emejuru (2011) and Chujor (2014) work in Rivers State.

This result is similar to Karlsen et al (2011) work on the relationship between maternal

education and maternal mortality among women giving birth in health care institutions: Analysis of the cross sectional WHO global survey on maternal and prenatal health. The study established a relationship between the levels of women education with maternal mortality. In this thinking, the level of educational attainment by women enhances the capacity of women to obtain, process and understand basic health information about their reproductive health services. Such knowledge will help them make appropriate health decision or choice between alternative healthcare services and conventional health services. It is this poor educational level that opens the window for cultural practices to thrive in child birth. According to UNFPA and Rivers State Government (2004) work on socio-cultural context of reproductive health and gender issues in Rivers State, it was revealed that cultural factors still wield overwhelming influence on patronage of TBAs over modern health care in the state. The patronage of TBAs in birth corroborates the findings of this on the influence of level of education on patronage of TBAs.

The study confirmed that the higher the income of pregnant women, the higher the level of patronage of pregnant women in PHC programme. This led to the rejection of the null hypothesis. Maternal mortality is a crucial indicator of the quality healthcare. As public goods, health in all societies attracts price value. In fact, the choice of which health facility to sue is a function of income. This very fact has posed a serious threat to reproductive health. As a matter of fact it is the impetus for choice of TBAs. According to Ugal; Ushie and Ingwu (2012) most hospitals and clinics have basic registration and consultation fees. This is in addition to laboratory and prescription charges. Indeed financial considerations pose real obstacle among the low-income group. This finding is relevant to Ogunlesi (2004) in Omodu (2012). Ogunlesi (2004) affirm that cost of health care acts as a deterrent to people seeking health treatment. According to Ozumba (2012) poverty trends in maternal mortality demonstrated that poverty constrains choices that individual/even States makes in terms of safe motherhood. To remove the effect of

income in accessing health facility, government introduced NHIS.

8. Conclusion

PHC is an attempt to address health inequality. Specifically its basic intent is to make health care facility accessible to the common people who constitute the majority and are often faced with preventable health challenges like maternal mortality. Given the population of women of productive age and their economic role in the Nigeria economy, no doubt maternal death will truncate the nation's development process. It is on this basis that Rivers State Government introduced PHC. To achieve this objective Rivers State Government also introduced a number of measures like free medicals, free immunization, and introduced Public-Private Partnership in health among others. In the face of these, this work reveals that most pregnant women still patronize TBAs at birth but make high use of PHC antenatal and post natal services. Given these, the work reveals that maternal mortality has reduced in the area of this study.

9. Recommendations

Given the findings and conclusion this work recommends the following:

Integrative approach involving the use of home base health care officers equipped with delivery kits and TBAs. Home base health team should consist of retired midwives drawn from the communities where the PHC are located; a medical doctor and medical staff from the PHC centre who are mostly women. The retired midwives must be natives of the community who is conversant with the culture of the community especially the language of the people. This team should collaborate with the TBAs in pregnancy cases in their various homes. Through such collaborative effort pregnancy cases with the TBAs will receive a touch of modern health care instead of delivery that is exclusively performed by the TBAs. Of important here is that the medical team will be able track the health status of these pregnant women (even the baby in the womb) with the

TBAs; get their medical history and their date of delivery. Such information will help the home base health team to assist the TBA on the delivery day and to refer the case to a nearby health centre where necessary. The main utility of this approach is that it can reduce and even eliminate most of key problems that propel pregnant women to patronize TBAs like communication problem and the common feeling that most PHC staff is young and inexperienced which is essentially a function of low education. This is possible since the home base health care team apart from being populated by retired midwives from the communities is dominated by women.

Similarly the work recommends compulsory primary and secondary education with bias in health and maternal education. Health education is emphases here because it is subsumed under health promotion; inclusive in its curriculum are child survival, reproductive health and nutrition. This will provide women with early understanding of their reproductive health as a result will resist patronage of TBA in child birth. Education generally delays early marriage and it is a form of empowerment. Where the family is properly educated cultural myths in birth which encourage the incidence of maternal mortality will be discouraged. In addition education will increase awareness on health education particularly maternal education.

Given the role low income plays in the utilization of PHC and reduction in maternal mortality, the work recommend empowerment for women of low status. Low income level can lead to poor housing; living in an unhygienic environment, usage of poor water and food. These predispose people to malnutrition and infectious diseases which are potential risk factors in maternal issues. Such empowerment will include soft loan, free skill acquisition programme, free and compulsory primary and secondary education. These compliments will among other things eliminate basic challenges arising from payment for transport to PHC centres for antenatal, birth delivery proper, payment for card registration and other tests that may arise from the pregnancy monitoring, during birth and after birth.

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