

THE EFFECTIVENESS OF ROLL BACK MALARIA IN IDAH NATIVE TOWN, IDAH LOCAL GOVERNMENT AREA, KOGI STATE, NIGERIA

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Abstract: This work was carried out to assess ‘The Effectiveness Of Roll Back Malaria’ programme in Idah native town, Idah Local Government area, Kogi state, Nigeria. Nineteen (19) out of the Thirty-five (35) government health institutions in the study area were randomly selected for this work. Two hundred and fifty (250) respondents were selected from each of the four wards that make up Idah native town giving a total of one thousand (1000) respondents. Questionnaires and information gathered from the Health Information Management System Unit of Idah L.G.A were the instruments used for data collection. Tables and simple percentage were used to analyse data generated in this work. Results showed that, there were mosquitoes (Vectors of Malaria) in the study area with *Anopheles gambiae*, *Culex quinquefasciatus*, *Aedes aegypti* and *Aedes albopictus* as dominant species. Investigation also revealed that the inhabitant of Idah native town used insecticide treated nets (I.T.N) to protect themselves from mosquito bites and that the nets were distributed to them free by government agents. Results also revealed that there were reported cases of malaria, and malaria cases among children were significantly higher 64.7% ($p > 0.05$) than pregnant women 22.6% and others 12.7%. It implies that children were mostly affected by malaria fever. There were significant progressive reduction in yearly cases of malaria after the commencement of the roll back malaria programme in the study in the study area ($p > 0.05$). ‘The Rollback Malaria’ programme is effective in the study area. The researchers recommended that people should continue to use insecticide treated net to protect themselves from mosquito bites. Research should be carried out to assess the effect of the use of insecticide treated net on the health of man. There should be policies that will provide adequate trained health workers to serve among rural communities.

Keywords: Rollback Malaria, Mosquito species, Idah native town, Kogi, Nigeria.

1. INTRODUCTION

Malaria is a major public health problem, endemic in over 100 countries in the world. The World Health Organization (WHO) estimates shows that, there are over 300 million clinical cases every year, with over a million deaths. Over 90% of the burden occurs in Africa. WHO, has reiterated that malaria in Africa must be tackled malaria as a priority health disease. A global partnership to ‘Rollback Malaria’ in the world was initiated (W.H.O., 1999).

The objective of the ‘Rollback Malaria (RBM)’ partnership is to half the malaria burden in participating countries through interventions that are adapted to local needs and by reinforcement of the health sector. The principal mechanism for achieving this is through intensified national action by country-level partnerships working together toward common goals

within the context of health sector development and using agreed strategies and procedures. Country partnerships will be supported by a global partnership, and technical support networks will provide the necessary technical assistance. Roll Back Malaria will also encourage strategic investments in the development of better tools and intervention strategies

'Rollback Malaria' was launched in October 1998, during the preparatory phase, which lasted until February 2000. Activities concentrated on partnership building, 'Rollback Maria' inception at country level and development of mechanisms to facilitate Rollback Malaria.

One of these preparatory activities was the development of a framework and indicators for monitoring the outcome and impact of Rollback Malaria. An effective system for monitoring progress and outcome will be critical for the success of Rollback Malaria. Monitoring is needed to provide local feedback to 'Rollback Malaria' operations and to monitor the progress and impact of 'Rollback Malaria' at the country, regional, and global levels. 'Rollback Malaria' will need to report on progress and lessons learned and identify which general modifications are needed in later phases of 'Rollback Malaria' by the Federal Ministry Health (F.M.H) 2005.

One of the major challenges for effective monitoring and evaluation of the impact of the initiative is the inaccuracy of the information on clinical cases and death due to malaria as a result of irregular reporting and underreporting, especially in areas known to be highly endemic, such as, in Africa South of the Sahara. This article describes the framework and indicators for monitoring the outcome and impact of Rollback Malaria (Murray et. Al.. 1997).

Malaria presents a huge burden to Africa and continues to cripple the economic development of the continent. (Nabarro et al 2008).

In Nigeria the disease is responsible for 60 per cent of outpatient visits to health facilities, 30 per cent of childhood deaths, 25 per cent of deaths under one year and 11 per cent of maternal deaths.

In financial terms, the disease is estimated to cost the country about one hundred and thirty two billion naira (US\$862.4 million) every year taking into account treatment and prevention costs, and loss of working hours. Since the introduction of the 'Rollback Malaria' (RBM) initiative in 1999, malaria control in Nigeria has been transformed (FMH 2005, 2015).

In line with the roadmap to achieve the 2010 RBM targets, Nigeria is currently distributing 63 million long-lasting insecticide-treated nets; with an additional 9 million nets currently being procured under the debt-relief gains to fill the gap and ensure comprehensive nationwide coverage but this target has not been achieved.

Malaria is an infectious disease caused by the parasite of genus Plasmodium. The four identified species of this parasite causing human malaria are Plasmodium falciparum, P. vivax, P. ovale and P.malariae. In Nigeria 98% of all cases of Malaria is due to Plasmodium falciparum. This is the species that is responsible for the severe form of the disease that leads to death. It is transmitted from bites of an infected female anopheles mosquitoes to man. (Jomboet. al. 2010).

Malaria is highly endemic in Nigeria. It poses a major challenge in the country as it impedes human development. It is both a cause and consequence of underdevelopment and remains one of the leading causes of morbidity and mortality in the country. Malaria accounts for about 63% of all visits to public health facilities (Out-patient –attendances). Thirty per cent of hospital admissions are also due to malaria. It is responsible for 29% of childhood death, 25% of infant mortality and 11% of maternal mortality (WHO 1998).

The economic loss to Nigeria due to malaria is estimated at one hundred and thirty two billion annually (R.B.M. Action plan 2 008) due to loss of man hours resulting from sickness absence and cost of treatment. It is a major cause of absenteeism from work and school. It contributes to poverty and results in poor pregnancy outcome.

Malaria remains of the most serious health problems worldwide (Narain, 2008) and it is a major health problem in Nigeria (FMOH 2005). Malaria increases the morbidity and mortality rates as well as health problem in developing countries, including Nigeria (Cooper 2012).

Despite that malaria is a general phenomenon; children and pregnant women are at greater risk of malaria attacks and of suffering long-term after care effects. Evidence from global malaria action plan (G.M.A.P, 2009), suggested that approximately 25million pregnant women in Africa are at risk of Plasmodium falciparum malaria and nearly 86% of Africa total population is a risk in the endemic areas, therefore, it is a serious problem in Nigeria. National Malaria

Control Program (N.M.C.P, 2005) reported that a child sick of malaria between 2 and 4 times in a year and it was estimated that malaria was responsible for nearly one hundred and ten (110) million clinical cases and three hundred thousand(300,000) dies per year, including up to 11% material mortality.

Monetary loss due malaria is estimated to be about 132 billion naira in terms of treatment cost, prevention and loss to man hours (FMOH, 2007) in order to restrain malaria epidemic, Nigeria government and International bodies have developed series of control measures. Thus, it is desirable to investigate the extent of malaria burden and the effectiveness of various control measures in Nigeria. The findings are expected to generate awareness, which could lead to improvement in the level of government participation in the effective prevention and control of malaria in Nigeria.

Malaria attacks result in morbidity, disability and mortality (Hussani et al, 2009). Therefore, the two major costs of malaria disease are morbidity and mortality cost malaria morbidity household welfare as a result of an increase in the cost treatment and prevention of the disease and decline productivity through lost time. In the case of mortality, losses to households include loss of future income and emulative investment on the dead due to malaria (Alaba and Alaba, 2006). Beside mortality "malaria causes morbidity through fever, weakness, malnutrition, anemia, spleen disorders and vulnerability to other diseases. Malicious patient also experiences asymptomatic parasitemia, acute febrile, chronic debilitation and pregnancy complication. (Bremen, 2001).

The 'Rollback Malaria' in Nigeria started in 1998. There have been divided views as regards its success; some are of the view that the program is successful while others view it as a total failure, waste of time and resources. Yet, others believe that the success of the program in Nigeria is little but significant and of economic value. So is the controversy about the success of rollback malaria Nigeria hence the topic, the effectiveness of rollback malaria in Idah native town, Idah local government Area, Kogi State, Nigeria.

2. MATERIALS AND METHODS

In this work, primary and secondary data were the procedures employed.

The methods or approaches used in this work were descriptive in nature. The research design for this study was the investigative and survey research which was the most suitable research procedure capable of finding solution to the research problem. Questionnaires were used in the collection of data from the study population.

The population for this study was drawn from Idah native town. Idah native town is made up of four (4) wards which include Ukwaja, Igaocheba, Owoliapa and Igalaogba. Two hundred and fifty (250) respondents were randomly sampled from each ward for this work making a total of one thousand (1000) respondents. Nineteen (19) government health institutions out of the thirty-five in Idah native town were also randomly sampled for this work.

For the purpose of this study, the sample size was selected using simple random sampling technique.

Basically, two data types (primary and secondary) were utilized. Examples of secondary data used in this study include journals, internets, and textbook. The primary data for this work was collected from the government health institutions in Idah native town as well as responses to the questions in the questionnaires retrieved from respondent's across Idah native town.

Mosquitoes were caught for identification using sweep net of 15 inches in diameter with 2 feet long handle and they were immobilised by placing them in a deep freezer for 30 minutes. Identification of mosquito was done using pictorial keys to mosquito by Pratt and The Water Reed Biosystematics Unit (WRBU) keys to the medically important mosquito species.

The descriptive and inferential statistics were employed using simple percentage and tables to analyse data generated in this work..

3. RESULTS

Malaria cases in sampled government health institutions before and after the commencement of Rollback Malaria program in the study area

Ofeji Primary Health Care (PHC)

Table 1: BEFORE THE COMMECEMENT OF ROLL BACK MALARIA

| Year | Children | Pregnant women | Others |
|------|----------|----------------|--------|
| 1994 | 340 | 130 | 50 |
| 1995 | 336 | 124 | 53 |
| 1996 | 344 | 132 | 63 |
| 1997 | 288 | 120 | 5.2 |
| 1998 | 290 | 110 | 5.1 |

AFTER THE COMMENCEMENT OF ROLL BACK MALARIA

| Year | Children | Pregnant woman | Others |
|-------|----------|----------------|--------|
| 2011 | 170 | 78 | 48 |
| 2012 | 78 | 42 | 40 |
| 2013 | 80 | 20 | 32 |
| 2014 | 69 | 30 | 25 |
| 2015 | 68 | 30 | 25 |
| Total | 480 | 200 | 269 |

The above was carried out in all the nineteen PHC selected for this study.

TABLE 2: YEARLY CASES OF MALARIA IN THE NINETEEN PRIMARY HEALTH CARE CENTRES SELECTED FOR THIS STUDY HEALTH

| HEALTH CENTRES | BEFORE THE ROLL BACK MALARIA 1994 – 1998 | | | AFTER THE ROLL BACK MALARIA 2011 - 2015 | | |
|--------------------|--|----------------|--------|---|----------------|--------|
| | Children | Pregnant women | Others | Children | Pregnant women | Others |
| OFIJI | 1598 | 616 | 269 | 480 | 200 | 170 |
| ADEALABA | 1585 | 1462 | 364 | 781 | 349 | 255 |
| ALOKOINA | 1042 | 632 | 228 | 545 | 426 | 102 |
| CHEKENE | 513 | 418 | 272 | 385 | 138 | 65 |
| FSP | 1658 | 1009 | 410 | 308 | 120 | 67 |
| INACHALO | 1368 | 569 | 332 | 527 | 314 | 164 |
| IGALAOGBA | 1420 | 551 | 338 | 731 | 403 | 56 |
| ONAH | 1073 | 430 | 750 | 659 | 320 | 201 |
| OKETEONOWA | 1473 | 961 | 285 | 823 | 583 | 280 |
| ANGWA | 3227 | 1690 | 440 | 1580 | 647 | 247 |
| FAMILY HEALTH CARE | 3823 | 2697 | 379 | 892 | 431 | 284 |
| UGWODA | 974 | 495 | 333 | 298 | 127 | 64 |
| SABOGARI | 1592 | 535 | 315 | 834 | 460 | 167 |
| EGA | 1677 | 896 | 275 | 692 | 440 | 178 |
| ATANEGOMA | 3227 | 1483 | 400 | 1580 | 647 | 257 |
| OFULOKO | 1379 | 817 | 898 | 836 | 558 | 216 |
| ZONAL HOSPITAL | 49717 | 23266 | 8462 | 13409 | 4469 | 2300 |
| UGWAJA | 974 | 495 | 333 | 298 | 127 | 64 |
| UGBETULU | 1598 | 616 | 269 | 465 | 200 | 160 |

Table 3: Total malaria cases before (1994 - 1998) and after (2011 - 2015) the commencement of roll back malaria in study area

| Target group | Before | Percentage % | After | Percentage % |
|----------------|--------|--------------|---------|--------------|
| Children | 79938 | 59.2 | 26123 | 61.5 |
| Pregnant women | 39638 | 29.4 | 10, 977 | 25.8 |
| Other | 15352 | 11.4 | 5397 | 12.7 |
| Total | 134928 | 100 | 42497 | 100 |

Table 4: Mosquito species sampled from the four wards that make up Idah native town.

| | Ukwaja | Igaocheba | Owoliapa | Iglogbaa |
|---------------------|--------|-----------|----------|----------|
| Anopheles gambiae | 30 | 28 | 27 | 31 |
| Culexquenuifaciatus | 31 | 29 | 30 | 22 |
| Aedesegypti | 41 | 40 | 43 | 38 |
| Aedesalbipictus | 46 | 43 | 45 | 44 |

Table 5: Mosquito species caught.

| Mosquito species | Mean. |
|------------------|-------|
| A.gambiae | 29.0c |
| C.quinuefaciatus | 28.0c |
| Ae. Aegypti | 40.5a |
| Ae. albipictus. | 44.5a |

Figures followed by the same letter are significantly similar at $p > 0.05$ (DMRT: SNK).

4. DISCUSSION

The results of this work showed *Anopheles gambiae*, *Culexquenuifaciatus*, *Aedeseegypti*, and *Aedesalbipictus* as dominant mosquito species in the study area. This agreed with the work of Coluzzi et.al. And WHO (Coluzzi et. al. 1979 and WHO1999), who stated that they were dominant species in tropical Africa. These species were also dominant in Port Harcourt (Ogbalu, 2006, Ogbalu et. al.2010, Abdullahi, et. al. 2009 and Amadi et al 2015). *Anopheles gambiae* abundance was similar to the result obtained by Awolola et. al. at Poka in the rain forest area of Lagos Nigeria (awolola et. al. 2005). Ogbalu and Ownuteaka, (2015) reported on the microhabitat of mosquitoes within Port Harcourt and environs. Earlier on a Niger delta plant, *Lepidagathisalopecuroides* Vahl was used in household mosquito control and this caused a reduction of mosquito larval population of between 97.5 -98.8 percent (Ogbalu, 2006). *L. alopecuroides* had been used in impregnating mosquito nets for roll back malaria (Ogbalu and Abdullahi, 2018).

Result also revealed that the inhabitant of Idah native town used insecticide treated nets (ITN) to protect themselves from mosquito bite. The ITN was given to them free by government agents. This was also the case in Lagos Ibadan, Akure, and Abuja (FMH 2005, 2010). Investigations also revealed that cases of malaria among children and pregnant women were higher than other members of the community. This was similar to the work of Alaba and Alaba (2002) who stated that children were more affected by malaria than any other group in a society. There was progressive reduction in malaria cases in Idah native town after the commencement of roll back malaria programme. Reduction in malaria cases was similar to the result obtained by Obekpa et. al. 2015 in Makurdi Benue State Nigeria.

5. CONCLUSION

This study was an assessment of the effectiveness of rollback malaria programme in Idah native town, Idah local government area of Kogi state, Nigeria. In doing this a number of objectives were formulated. The objectives is to determine malaria cases in the study area, identify methods of mosquito's bites prevention in the study area, to identify the presence of mosquito in the study area and make policy recommendation from finding. The rollback malaria Nigeria program was effective in the study area.

The study reveals that, mosquito was present in the study area and the major method of preventing mosquito's bites was the use of insecticide treated nets. The study also showed that children and pregnant women were more vulnerable to malaria attack than any other group of people in the study area. And there were reported cases of malaria in the study area.

Malaria is a major public health problem endemic in over hundred(100) countries in the world. The World Health Organization (WHO) estimated that, there are approximately three hundred million (300,000,000) clinical cases every year, with over a million deaths. Over 90% of the burden occurs in African the director general of WHO, in consultation with African heads of states, agreed to tackle malaria as a priority health disease. A global partnership to rollback malaria in the world was initiated.

In financial terms, the disease is estimated to cost the country about 132 billion naira (US & 862.4 million) every year taking into account treatment and prevention costs and loss of working hours. Since the introduction of rollback malaria (RMB) initiative in 1999, malaria control in Nigeria has been transformed.

Challenges hindering the success of Rollback Malaria in Nigeria can be categorized into two; the huge population and vast geographical area of the country and the gap in funding. These have meant that some targets could not be met on time with operational costs causing particular problem for many initiatives.

The integration of material, newborn and child health program will have a beneficial effect. Long-lasting insecticide treated nets are a cheap and effective means of protection. Malaria a case in the study area was reducing significantly with the commencement of the malaria free nations of the initiator of rollback malaria program. The roll back malaria program will be a reality with time.

The researchers which to recommend the following:

- (1.) There should be policy that will enhance the efficiency of the Rollback Malaria Nigeria
- (2.) Policy to provide adequate trained health workers to serve among rural communities.
- (3.) The use of insecticide treated nets should be encouraged among communities.
- (4.) Studies should be carried out to assess the effect of the use of insecticide treated nets on the health of man.

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