Public health issues: Assessing the current state of malaria control programmes in Idemili South Local Government Area, Anambra State, Nigeria

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Abstract

Malaria control programmes are part of global schemes targeted at reducing high rate of mortality caused by parasitic diseases which have become endemic over the past few decades, especially in developing nations like Nigeria. Yet, the current state of malaria control programmes in Idemili South L.G.A remains unknown despite its vulnerability to malaria as a rainforest zone. This study assessed the current state of malaria control programmes in Idemili South L.G.A, Anambra State, Nigeria. The study employed the mixed method survey research design. The population of the study consisted of adults aged 18 years and above, from where 400 respondents were selected through the multi-stage sampling procedure. Data were collected through questionnaire administration and In-Depth Interviewee. Quantitative data collected were analysed using descriptive statistics, while the study hypothesis was tested using Mann Whitney U test. In addition, the qualitative data were analysed using thematic content analysis. Result of the study revealed that the current state of malaria control programmes in Idemili South L.G.A was relatively impressive. However, there were some inconsistencies in the implementation of the programmes in the area. The study therefore recommended that the Ministry of Health should design separate malaria control programmes which should target on specific remote communities within Idemili South L.G.A; so as to reach out to those remote areas where the programme implementers find difficult to cover.
Keywords: Malaria, Programmes, Current State, Public Health.

Introduction

Malaria control programmes are part of global schemes targeted at reducing high rate of mortality caused by parasitic diseases which have become endemic over the past few decades, especially in developing nations like Nigeria. By recognizing the seriousness of malaria disease and the menace it causes in the lives of many people in different countries, international communities and national governments of countries affected by the disease have often developed several policies and programmes targeted at controlling/preventing or eliminating malaria as the case may be. For instance, the agenda 3(3) of the Sustainable Development Goals (SDGs) is to end the epidemics of Acquired Immuno Deficiency Syndrome (AIDS), malaria, and other diseases (United Nations, 2017). Also, the World Health Organisation Global Malaria Programme (WHO-

GMP) is a global technical strategy that provides technical framework for all malaria-endemic countries working towards malaria control and elimination within the time frame of year 2016 - 2030. The WHO-GMP has four major agenda which include: 1) reducing malaria case incidence by at least 90%; 2) reducing malaria mortality rates by at least 90%; 3) eliminating malaria in at least 35 countries; and 4) preventing a resurgence of malaria in all countries that are malaria free (World Health Organisation (WHO), 2019). The Roll Back Malaria (RBM) is another strategic plan which targets to combat the malaria disease at global, regional, country and local levels.

At the national and other local levels, especially within the Nigerian context, several programmes have existed over the past few years including: Roll back malaria, National Malaria Control Programme (NMCP), Global Malaria Action Plan (GMAP), Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), among other numerous programmes initiated in partnership with international agencies like WHO, United Nations International Children Emergency Fund (UNICEF) and other international healthcare partners. These strong agencies have been in the fore-front in the fight against malaria especially in the malaria endemic zones of Sub Saharan Africa (SSA) (Farid, 2016).

Malaria parasite is one of the vectors that are transmitted through the bite of a female anopheles mosquito. Signs and symptoms of malaria include fever caused by the simultaneous rapture of red cells following large scale parasites multiplication, or fever caused and accompanied by chills and sweating. Other symptom may include: headache, joint pains and anemia (Chukwuocha, 2012). Anemia caused by repeated malaria infection can make a person susceptible to other infections and even death; and malaria infection contracted during pregnancy can cause low birth weight. The disease is however, easily preventable (WHO, 2007); treatable and curable, but remains one of the major health problems in Nigeria (WHO, 2015).

Malaria control programmes are thus, all proactive actions targeted at ensuring not only the coverage in terms of policy implementation, but also to ensure that factors

responsible for the escalation of malaria in various communities are controlled to the barest minimum; and ensure that individuals acquire appropriate behaviours that prevent the survival of malaria parasites. According to Federal Ministry of Health National Malaria Control Programme (2010), malaria control programme encompasses multi-dimensional approaches to disease control including:

- service or system level - Improved quality of services, appropriate Malaria in Pregnancy care, correct diagnosis, adherence, client satisfaction,

- community level - improved vector control, working with communities for improved participation in community-oriented interventions, and

- individual level - prevention of malaria transmission through Integrated Vector Management (IVM) strategy including acceptance and acquisition of Long Lasting Insecticide-treated Nets (LLINs), and accepting and supporting Indoor Residual Spraying (IRS) in selected sites; good care seeking behaviour and treatment at health facility, caregivers providing prompt malaria treatment for children under five with fever; and prevention of malaria in pregnancy through regular attendance of free antenatal care, intermittent preventive treatment using Sulphadoxine-Pyrimethamine (SP) during pregnancy, sleeping under the LLINs at nights during pregnancy and early diagnosis and treatment of malaria in pregnant women.

It is however, the view of different scholars that malaria control programmes in Nigeria may be far from implementation; as by and large, factors affecting the implementation of malaria control programmes within the ambit of extant literature are linked to socio-economic, demographic, cultural and political dimensions. These may cut across several factors including: socio-cultural health belief systems, affordability of healthcare service delivery, knowledge about appropriate ways of preventing malaria disease, poor service delivery of healthcare workers, access or distance to healthcare facilities, previous experiences with healthcare delivery system, stock-outs of sulfadoxine-pyrimethamine (SP) and Insecticide Treated Nets (ITNs), inconsistent national policies, etc (Federal Ministry of Health National Malaria Control Programme, 2010; Gomez, Gutman, Roman, Dickerson, Andre, Youll, Eckert & Hamel, 2014).

Hence, the effectiveness, as well as progress of malaria control programmes could be facilitated through careful investigation of the current level of practice or implementation within malaria endemic communities. However, such investigation is lacking within the context of Idemili South L.G.A in Anambra State despite its vulnerability to malaria as a rain forest zone. This is considering the view that as much as the research is aware of, no single research prior to the period of this study has assessed the current state of malaria control programmes in Idemili South L.G.A. Although few research interests on the issue of malaria in Idemili South L.G.A have been documented within the academic literature (Ogolo, Urindwanayo, Obieze, Ogbuagu & Ekwunife, 2015; Okonkwo, Obiechina, Irikannu, Obianumba, Okoye-Uzochukwu, Iwuora and Chinweoke, 2014; Obiechina, 2012), yet none of the studies assessed the current state of malaria control programmes within the present study area. Thus, there is a gap in knowledge which needs to be filled in order to influence policy measures that would properly address the challenges associated with malaria control. It is against this backdrop that this study was positioned to assess the current state of malaria control programmes in Idemili South L.G.A, Anambra State.

Objective of the Study

1. To assess the current state of malaria control programmes in Idemili South Local Government Area in Anambra State.

Literature Review

Concept of Malaria Control Programmes According to Centers for Disease Control and Prevention (2018), the goal of most current National Malaria Control Programmes and most malaria activities is to reduce the number of malaria-related cases and deaths; or to reduce malaria transmission to a level where it is no longer a public health problem. Hence, malaria control programmes are policies and programmes that are formulated both locally and internationally to control the disease epidemic caused by malaria transmission. Malaria control programmes focus on using scientific and socio-cultural methods to ensure that the spread of malaria across regions are contained through various socio-cultural and health or scientific methods. Malaria control programmes may include the following:

a) Use of anti-malarial drugs for prevention: the use of malaria control drugs have been a common practice since the last two decades (WHO, 1994). WHO recommended that pregnant women and young children in malaria-endemic areas should receive a full anti-malarial treatment on their first contact with the antenatal and postnatal services, followed by weekly chemoprophylaxis with chloroquine. However, the implementation of this policy was limited by a number of factors including: spread of chloroquine resistance, poor compliance with a weekly regimen throughout pregnancy and childhood, adverse drug effects, the contraindication of alternative drugs during different stages of pregnancy and childhood and perceived cost of chemoprophylaxis (WHO, 2005).

b) Use of ITNs: this is one of the very important malaria control measures accepted globally because it reduces malaria morbidity and mortality by preventing mosquitoes which are the carriers of malaria vectors, from gaining access to bite individuals especially during sleeping hours. A number of previous researches have proved that ITNs are effective in reducing malaria disease especially in endemic localities, among infants and pregnant women (Alonso, Lindsay, Shellenberg, Keita, Gomez, Shenton, Hill, David, Fegan, Cham & Greenwood, 2010; Rhee, Sissoko, Perry, McFarland, Parsonnet & Doumbo, 2011)

Selected Malaria Control Programmes Available in Nigeria A number of programmes have been initiated over the past decades both internationally and locally. Some of the malaria control programmes are however reviewed in this section.

a) Roll Back Malaria (RBM): This is a WHO programme initiated in April, 2001following the meeting of the African Heads of State in Abuja; meant to mobilize resources and actions against malaria especially in endemic countries of Sub-Saharan Africa. This programme focuses on three major interventions which include case management, prevention treatment and the use of insecticide treated Nets (ITNs) vector management. They are linked to cross cutting issues such as monitoring and evaluation, focused research and information, education and communication. This programme by the time of its initiation, also aimed at ensuring that all pregnant women receive IPTp and at least 80% of people at risk from malaria in areas of high-intensity transmission use ITNs by

2010 (Roll Back Malaria Partnership, 2008), although this time frame has elapsed without significant achievements in the Nigerian context, pending to different socio-cultural factors that hindered its implementation. The extended RBM programme has facilitated Nigeria to obtain support from partner agencies and countries including Global Fund for AIDS, Tuberculosis and Malaria (GFATM), World Bank (WB), Presidential Malaria Initiative (PMI-USAID), United Kingdom's Department for International Development (DFID), United Nation agencies (WHO and UNICEF), etc (Federal Republic of Nigeria, 2014).

b) Support to National Malaria Programme (SuNMaP): this is a £50 million support to National malaria programme in Nigeria. It is being implemented by a Malaria Consortuim-led partnership of international and national companies and non-governmental organizations including; Malaria Consortium, Health Partners International, Health Reform Foundation of Nigeria, Christian Health Association of Nigeria, among others (Malaria Consortium, 'n.d'). The programme offers Nigeria the technical expertise and experience it needs for comprehensive fight against malaria and focuses on the following expectations;

- Improved national, state and local government level capacity for policy development, planning and coordination.
- Effective harmonisation of all agencies' support for the malaria sub-sector at federal, state and local levels.
- Improved population coverage of effective measures for the prevention of malaria
- Improved access of the population to effective treatment for malaria.
- Increased community awareness and demand for effective malaria treatment and prevention.
- Operational research into key areas of prevention and treatment that provides the evidence base for more effective strategies.
- Four million long-lasting insecticidal nets given to households previously without nets and net coverage targets over three years.
- Five million Intermittent Preventive Treatment doses given out to pregnant women.

- Affordable Artemisinin-based Combination Therapies (ACTs) to under-fives with fever and nets by support of the commercial sector; and
- Improved quality of care in targeted health facilities in the project states (Malaria Consortium, 'n.d').

c) National Malaria Elimination Programme (NMEP): this is a new rebranding of the National Malaria Control Programme in Nigeria. The programme rebranding is to give further credence to the commitment of the Federal Government of Nigeria towards the goal of malaria elimination. The programme was redesigned to provide equitable, comprehensive, cost-effective, efficient and quality malaria control services that ensure transparency, accountability, client satisfaction, community ownership and partnership (Federal Republic of Nigeria, 2014). Its key goals are highlighted by Federal Republic of Nigeria (2014) as:

- To ensure that at least 80% of targeted population utilizes appropriate preventive measures by year 2020.
- To test all care-seeking persons with suspected malaria using Rapid Diagnostic Test (RDT) or microscope by year 2020.
- To provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment measures by year 2020.
- To ensure the timely availability of appropriate antimalarial medicines and commodities required for prevention and treatment of malaria in Nigeria wherever they are needed by 2018.
- Ensuring that at least 80% of health facilities in all L.G.As report routinely on malaria by 2020, progress; and
- To strengthen governance and coordination of all stakeholders for effective programme implementation towards and 'A' rating by 2017 sustained through 2020 on a standardized scorecard.

Theoretical Framework

The AGIL Model

This is a sociological theoretical model developed by Talcott Parsons (1902-1979) as an extension of the general functionalist theoretical blueprint. Generally, in agreement with the assumptions of functionalism, Parsons believed that the society requires four major functional pre-requisites or systems for its survival. These systems are summarized in what is known as AGIL Model. The model stands for: Adaptation (A), Goal attainment (G), Integration (I) and Latency (L). Parsons believed that in order for the society to survive, certain institutions are indispensable in providing these functions.

1. Adaptation: the functional need to cope with external situational exigencies.
2. Goal attainment: the functional need to define and achieve the primary goal of institutions in the society.
3. Integration: the functional need to regulate the inter-relationship of its component parts.
4. Latency (pattern maintenance): the functional requisite to furnish, maintain and renew both the motivation of individuals and the cultural patterns that create and sustain the motivation.

Applying the tenets of this theory to this study, it could be deduced that malaria control programmes are part of the Adaptation functional need as enshrined in the AGIL model. Adaptation ensures that certain institutions in the society must provide adaptive mechanisms through which people can overcome both external and internal challenges affecting their survival in their social milieus. Malaria is one of the serious public health challenges affecting the survival need of people in developing nations especially in Nigeria. Thus, the health sector of the nation is expected to provide functional health assets to various communities, to ensure that people cope with the challenges posed by diseases such as malaria within their social environment. Such health assets to ward-off malaria may include establishment of functional health centres, provision of anti-malarial diagnostic and treatment to severe or malaria endemic communities, providing socialization or sensitization to various communities on measures to prevent the survival

of malaria parasites, provision of ITNs and periodic house-to-house community assessment of malaria prevalence in various communities, among others.

The goal attainment institutions such as the health sector of the government, international health organisations and private health organisations are important in this. These institutions provide directions or policies that would ensure the attainment of health needs for the proper adaptation of the people in their environments. In a nutshell, malaria control programmes are all part of the adaptation functional prerequisite that Parsons espoused in his AGIL model, which is to address the health needs of the people in order for them to adapt and survive in their environments. As an offshoot of the general functionalist perspective, Parsons equally believed that when there is a lapse in the provision of a functional prerequisite, then there is functional disequilibrium within the system that is expected to provide such functions; hence, an adjustment is required in such institutions. In the case of malaria control, institutions that play crucial functions include the family, the local community and the health sector of the governmental and non-governmental agencies. Where programmes of malaria control are not yielding the intended benefits for the health needs of the community, then certain adjustments have to be made through institutional reforms, community re-orientation and checks and balances in the government's health programmes implementation modalities.

Methods

This study employed the mixed method research design, using Idemili South Local Government Area in Anambra State as the study area. The area is one of the 21 L.G.As in Anambra state, South-East Nigeria. It lies between Latitude 6^0 20'60 North and Longitude 7^0 East of the Nigeria. It is comprised of seven (7) major Igbo speaking towns which include: Akwaukwu, Alor, Awka-Etiti, Nnobi, Nnokwa, Oba and Ojoto. The head quarter of the L.G.A is located at Ojoto. Towns in Idemili South L.G.A are mainly located in the tropical rain forest zone of Nigeria with network of streams and other water bodies that favour the breeding of mosquito vectors which transmit malaria parasite to human body. Thus, people in this study area may be more vulnerability to malaria disease. However,

the state of malaria control programmes in this area remains unclear. This therefore informed the choice of this study area.

The target population of this study comprised of adult residents within the selected communities, aged 18 years and above. This age group was chosen based on the consideration of their level of maturity, knowledge and experience on issues within their communities including that of malaria control programmes. Based on the total population projections, the target population for this study was put at 129,556. Using this population, a sample of 400 respondents was determined using the Yamane (1967) formula for calculating sample sizes. The multi-stage sampling procedure was used in selecting the respondents for the study. This involved a series of steps or stages in the sampling process and application of different probability and non-probability sampling techniques at different stages in the sampling process.

Researchers'- developed questionnaire and In-Depth Interview (IDI) guide were used to collect quantitative and qualitative data respectively for the study. The questionnaire was administered on a face-to-face basis to the selected respondents, by the researchers and two research assistants who helped in the distribution as well as the collection of the filled questionnaire copies. Out of the 400 copies of the questionnaire distributed, only 377 copies (representing 94.3% of the total questionnaire copies) were returned while 23 copies (representing 5.6% of the total questionnaire copies) were lost. However, after thorough sorting of the returned copies, only 368 copies were considered valid for the data analysis; while 9 copies were considered invalid due to improper and incomplete filling of major sections of the questionnaire. The quantitative data collected were processed using the Statistical Package for Social Sciences (SPSS) software. Data processed were analysed using descriptive statistics and presented in tables and charts, while the study hypothesis was tested at 0.05 significant levels using Mann-Whitney U test. In addition, the qualitative data were analysed using thematic content analysis. Important extracts from the interviewees' transcript were used to support the quantitative data where necessary.

Findings/Results

Table 1: *Analysis of Socio-Demographic Characteristics of the Respondents*

Demographic Variables	Frequency	Percent
Age Categories		
18 – 27 Years	131	35.6
28 – 37 Years	154	41.8
38 – 47 Years	52	14.1
48 – 57 Years	28	7.6
58 – 67 Years	3	.8
Total	368	100.0
Marital Status		
Single	113	30.7
Married	189	51.4
Divorced	26	7.1
Separated	13	3.5
Widowed	27	7.3
Total	368	100.0
Level of Educational Attainment		
No formal education	21	5.7
FSLC	31	8.4
GCE/SSCE/WAEC	136	37.0
OND/NCE	44	12.0
HND/B.Sc	119	32.3
M.Sc/PhD	17	4.6
Total	368	100.0
Occupational Status		
Farming	60	16.3
Trading	76	20.7
Self-Employed/Small Scale Business	53	14.4
Artisan/Handwork	21	5.7
Civil/Public Service	110	29.9
Unemployed	46	12.5
Others	2	.5
Total	368	100.0
Place of Residence		
Urban	198	53.8
Rural	170	46.2
Total	**368**	**100.0**

Data analysed in table 1 showed that the respondents aged between a minimum of 18 years and a maximum of 67 years; with a mean age of 31.7. Meanwhile, a majority (41.8%) of the respondents aged between 28 – 37 years old, while the least age group (0.8%) within the samples occurred among those who aged between 58 – 67 years old. These data implies that the respondents were mature enough to provide reliable data for this study. The data also shows that a majority (51.4%) of the respondents were married, compared to a lower proportion (30.7%) of them who were single.

With regards to the respondents' level of educational attainment, the data analysed indicated that a majority (37.0%) of them attained up to the secondary school level of education, while the least in the sample were 4.6% of the respondents who attended up to the post-graduate level of education. The data also indicated that a majority (29.9%) of the sampled respondents were civil/public servants. This is followed by 20.7% of them who were traders and 16.3% of them who were farmers.

Current State of Malaria Control Programmes in Idemili South L.G.A
First, the respondents were asked about the existence of malaria control programmes in their communities. Analysis conducted on their responses is shown in table 2.

Table 2: *Respondents' Views about malaria control programmes being carried out within their communities.*

Options	Frequency	Percent
Yes	294	79.9
No	62	16.8
Not Certain	12	3.3
Total	**368**	**100.0**

Data analysed in table 2 shows that a majority (79.9%) of the respondents affirmed that malaria control programmes were carried out within their communities. Only 16.8% of them indicated contrary to this; while 3.3% of them were uncertain about it. This finding implies that malaria control programmes are available in Idemili South L.G.A of Anambra state. The respondents, who indicated that malaria control programmes were carried out

in their communities, were further probed to ascertain the nature of the available malaria control programmes in their communities.
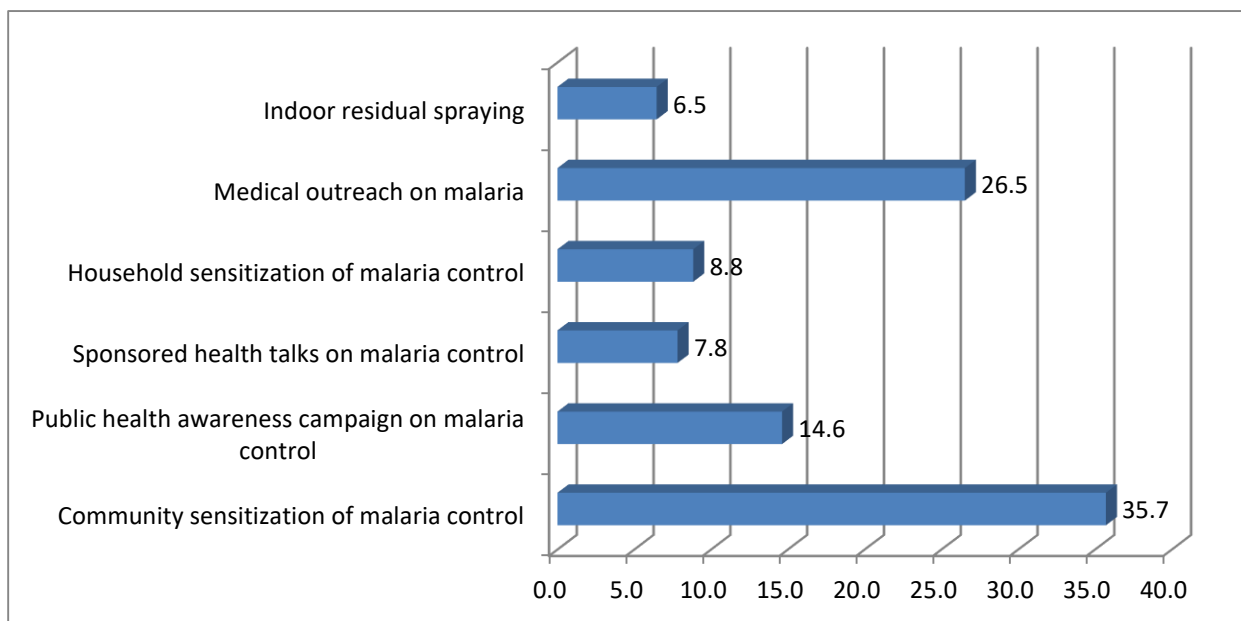

Figure 1. Respondents' Views about the nature of existing Malaria Control programmes

Data analysis as contained in figure 1 showed that a majority (35.7%) of the respondents indicated that community sensitization of malaria control was the most existing malaria control programme within their communities; while the least programmes as indicated by 6.5% of the respondents is that of indoor residual spraying. These findings are apt considering that malaria sensitization has been the major control mechanism adopted by the Ministry of Health, with the view that when a significant proportion of the people become aware of risks of malaria disease and its preventive measures, they will be able to take actions to prevent the occurrence of malaria disease within their households.

To determine how consistent the programmes are carried out, the respondents were provided with options and asked to indicate how consistent the programmes are carried out within their communities. Findings to this are shown in table 5.

Table 3: *Respondents' Views on the consistency of Existing Malaria Control programmes*

Options	Frequency	Percent
Very Frequently	117	31.8
Occasionally	207	56.3
At least once in every six months	44	12.0
Total	**368**	**100.0**

Data analysed in table 3 showed that a majority (56.3%) of the respondents indicated that the existing malaria control programmes are carried out occasionally within their communities. Meanwhile, only 31.8% of them indicated that the programmes are carried out very frequently; while a lower proportion (12.0%) of them indicated that the programmes are carried out at least once in every six months. This finding implies that malaria control programmes are not optimally carried out within Idemili South L.G.A. This finding coincides with the view of an interviewee, who said,

> Well, it varies from place to place. In some communities, the programmes are done consistently; but in some other communities, it is either done occasionally or rarely. But if I am to rate the consistency of the programmes generally, I will say that I am not quite satisfied with the consistency. They have to improve on the regularity of the programmes especially in the most remote communities (Male, 52 years, Community Leader, Idemili South L.G.A, Anambra State).
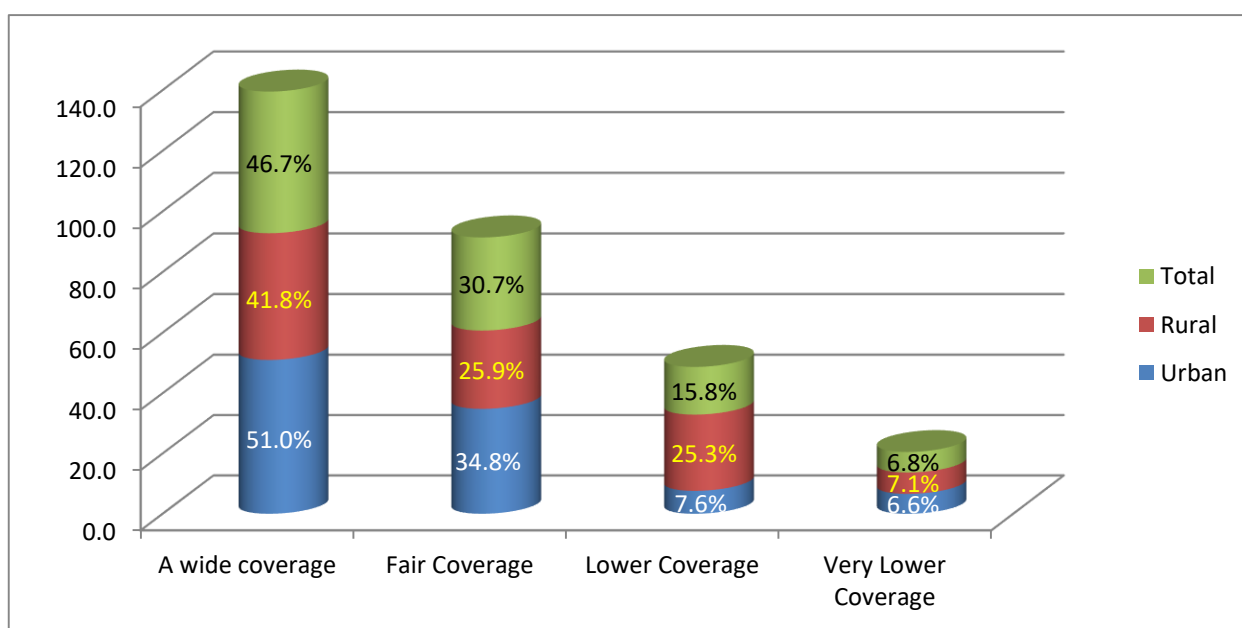

Figure 2. Respondents' Estimates on the coverage of malaria control Programmes in their communities

In the series containing the total as shown in Figure 2, a majority (46.7%) of the respondents estimated that the existing malaria control programmes in Idemili South L.G.A had a wide coverage; while the least proportion (6.8%) of them estimated that the programmes have a very lower coverage. Meanwhile further comparative analysis was performed to assess the level of coverage within the urban and rural settings in Idemili South L.G.A. The analysis shows that although the proportion (51.0%) of urban dwellers, who claimed that there was a wide coverage of the programmes, was slightly higher than among the proportion (41.8%) of rural dwellers who claimed the same, the difference is not significant. This goes to suggest that at the overall, the coverage of the programmes within this area is appreciable. This is in line with the submission of an interviewee, who opined that,

> …well I believe that so far the programmes have gotten to the nuke and crannies of Idemili South L.G.A, even within the interior villages and people within those localities are able to assess treated nets and also come to the nearby health facilities to assess drugs and other materials which are used to control malaria within the community, I can say that the scope is getting larger than it used to be (Male, 42 Years, Public Health Practitioner, Idemili South L.G.A).

However, another interviewee countered that,

> …there has not been consistency in the implementation of the programmes within the local government in the sense that the programmes implementers only come at long intervals; sometimes once in a year which often affects the programmes because by the time they come again, some of the nets owned by people must have become damaged. So because they are not quite regular and families do not have access to those nets, it then predisposes people become vulnerable to malaria (Female, 45 Years, Medical Health Worker, Idemili South L.G.A).
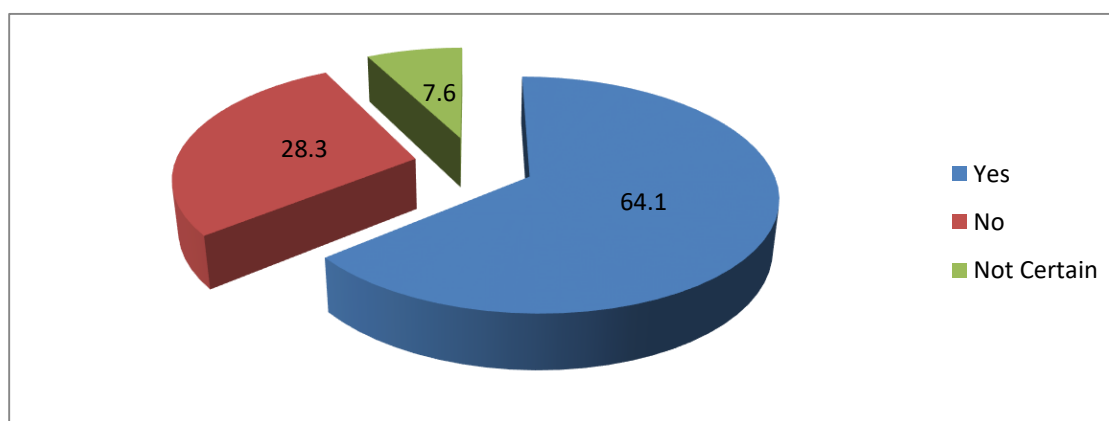

Figure 3. Respondents' Indication of Whether or not they or any member of their families had ever received long lasting mosquito treated nets as part of malaria control programmes in the past five years

Data analysis as contained in figure 3 showed that a majority (64.1%) of the respondents affirmed that they or their relatives had received long lasting mosquito treated nets in the past five years prior to the period of this study; while a lower proportion (28.3%) of them disaffirmed on that view.

Table 4: *Respondents' indication of how often they see health officers talking to the members of their communities about Malaria Control*

Options	Frequency	Percent
Very Often	112	30.4
Occasionally	136	37.0
Not Quite Often	84	22.8
I don't see them at all	36	9.8
Total	**368**	**100.0**

Field Survey, 2019.

In table 4, a majority (37.0%) of the respondents indicated that they only see health officers 'occasionally' talking about malaria control to the members of their communities; while the least proportion (9.8%) of them claimed that they do not see health officers at all.

Assessing the current state of malaria control programmes in Idemili South L.G.A within the period of this study through the qualitative data, results show that the interviewees had a diverse opinion about the state of the programmes at the period of this study. For instance, an interviewee noted that,

> ...malaria awareness programmes in Idemili South L.G.A is very high. I am 100% certain that many people are aware of the programmes because there is no family in Idemili that will say they do not know anything about what they can do to prevent malaria. However, one of the best programmes that the government has initiated to control malaria is the distribution of mosquito treated nets and I can tell you that it is a very good and efficient programme in Idemili South L.G.A. At least in my community, almost if you go to any family and ask them if they have malaria treated nets, they will tell you that they have. That is to show you that it is a popular awareness programme in the area. ... also in terms of coverage, the programme is universal within Idemili South L.G.A. So for me, I am satisfied with the current state of awareness created within Idemili South L.G.A in relation to malaria control (Male, 47 Years Old, Civil Servant, Idemili South L.G.A).

Another interviewee concurred with the above assertions by noting that,

...I believe that people are now aware of the programmes which are being put forward by the government and also the international organizations like world health bodies and UNICEF and then even some private organizations. They have been coming to our local government and sensitizing people about malaria control; and bringing materials to help control malaria in our community. ... so with these programmes, people have become much aware of malaria control and also assess most of the public health facilities in the community health centres; whey they have access to drugs provided by the government and also treated nets so as to control the spread of malaria especially in their respective households. People are also sensitized on the need to sleep under mosquito nets to prevent the reoccurrence of malaria in their homes and I believe that with such steps, people are becoming more aware of malaria control programmes (Male, 42 Years, Public Health Practitioner, Idemili South L.G.A).
Another interviewee added that,

> I think that the awareness created about malaria control programmes in Idemili South L.G.A to my knowledge is ok. At least an average person can understand what causes malaria and how to control or prevent its reoccurrence. With that, I think there is a good level of awareness about malaria control in Idemili. ... talking about the scope or coverage of the programmes in Idemili South L.G.A, to some extent, there is a wider coverage - at least many villages have wider coverage; though the most interior parts do not have good access to healthcare facilities, which is where the focus should be focused on.

Table 5: *Summary of Mann-Whithney U test showing Difference in Respondents' Places of Residence and their Knowledge on the existence of Malaria Control Programmes within their Communities*

Place of Residence	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig.
Urban	198	188.74	37370.00	15991.000	.236
Rural	170	179.56	30526.00		
Total	**368**				

The Mann-Whitney U test was run to determine if urban residents of Idemili South L.G.A varied significantly from rural residents regarding their knowledge about the existence of malaria control programmes within their communities. The result of the test shows that knowledge about the existence of malaria control programmes was actually not statistically significantly greater for urban residents (M = 188.74) than for the rural residents (M = 179.56), U = 15991.000, p = .236. This is an evidence to reject the stated alternate hypotheses; implying that the level of knowledge about the existence of malaria

control programmes cut across both urban and rural residents of Idemili South L.G.A in Anambra State.

Discussions

The specific objective of this study was to assess the current state of malaria control programmes in Idemili South L.G.A, Anambra State. Findings that emerged through analysis of both quantitative and qualitative data showed that malaria control programmes within the period of this study, were conducted in various communities of the study area; with community sensitization on malaria control and medical outreach on malaria prevention being the major malaria control programmes which the residents of the area were aware of. Result of Mann-Whitney U test showed that people's indication on the existence of the programmes cut across both urban and rural dwellers in Idemili South L.G.A – which implies that the programmes were covered within both urban and rural areas of the L.G.A. However, findings of this study equally found that although such programmes actually existed in the study area, there were some levels of inconsistency observed in carrying out the programmes. It was actually found that the programmes implementers only carry out the programmes at long intervals; despite the fact that an appreciable majority of the local people were very active and willing to participate in such programmes partly due to the fact that they have been sensitized on the dangers of malaria within their environments. Regarding the coverage of the programmes, both the quantitative and qualitative findings showed that there was a wide coverage of the programmes within the period of this study, even though some interviewees claimed that such programmes were not covered in very remote areas of the zone. A majority of the people sampled in this study equally claimed that they or some of their family members had received long lasting mosquito treated nets within the last five years prior to this study. These findings go a long way to suggest that the state of malaria control programmes within period of this study was to some extent carried out effectively, in contrast to earlier researches which suggest that such programmes are often not conducted effectively in most African countries like Nigeria (Okeibunor et al, 2011; Salomao et al, 2017). However, the findings of this study in relation to community participation in malaria control programmes is consistent with Bamidele et al (2012)

who found that community participation in their study area remained above average; even though the study was conducted in a different geographical location.

Conclusion/Recommendations

Malaria has remained a public health challenge particularly within tropical rain forest zones in Nigeria including Idemili South L.G.A, Anambra State. Despite massive resources provided by the federal government of Nigeria through the Federal Ministry of Health (FMH), in conjunction with other relevant international health organizations, it is feared that malaria continues to ravage a significant proportion of the populace, particularly those within the lower households in the rural communities. Thus, malaria control programmes were introduced as part of the global fight against the scourge caused by malaria parasite. Through this initiative, quite a number of programmes were established by the government and have mainly targeted towards the most endemic zones. However, arguments have often arisen over the past few years that such programmes may have fallen short of expectations due to some socio-cultural factors. It was in a bid to evaluate such arguments that this present study was designed to assess the current state of malaria control programmes in Idemili South L.G.A, Anambra State. Based on the results of data analysed in this study, it was concluded that the current state of malaria control programmes in Idemili South L.G.A was relatively impressive. However, this does not negate the fact that there were equally inconsistencies in the implementation of the programmes in the area.

The findings of this study are therefore important for further policy directions on the implementation and promotion of malaria control programmes within malaria endemic communities, particularly in Idemili South L.G.A, in order to help achieve the SDG focused on achieving health for all. In order to do this, it is recommended that the Ministry of Health should design separate malaria control programmes which should target on specific remote communities within Idemili South L.G.A; so as to reach out to those remote areas where the programme implementers find difficult to cover. This is considering the fact that this study found inconsistency in the implementation of the programmes on the part of the programme implementers as one of the drawbacks in the malaria control programme within the study area. It is equally important that the Federal

Ministry of Health re-organises the malaria control programmes in order to develop the capacity of health workers for management and optimal implementation of the programmes at the grassroots level and equally set up monitoring and evaluation teams that would periodically assess the progress of the programmes; so as to ensure that there is transparency in the management of resources provided for the implementation of the malaria control programmes.

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