

## Meeting Report

# Preventive programs in public health: seminar presentations on HIV, malaria and visual impairment

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### ABSTRACT

Preventive programs are standardized behavioral interventions that either stop or reduce course of diseases. Indeed, it is known that much of public health programs are synonymous to preventive medicine, which constitute major theme in primary healthcare. The objective of this study was to provide preliminary summaries of research programs, which determined nutritional status on visual impairment (VI) among children, utilization of ITNs and reduction of HIV/AIDS infection in Nigeria. The studies adopted intervention approaches. In Delta state, antioxidant vitamins and ferrous sulphate were administered to participants, to assess impact on visual impairment. In health education on utilization of ITNs in Bayelsa and Rivers states; as well as on HIV/AIDS infection in Northern Nigeria. Statistically, the studies followed a quantitative method. Baseline percentages of vitamin A and C deficiencies, anaemia, and VI differed with respective post-intervention levels. Post-intervention result showed that 92.1% owned ITNs, improved knowledge of causes and consequences of malaria. On HIV, community-based television, and radio awareness programs on the use of condom influenced the reduction of HIV/AIDS infection by up to 30%. In conclusion, the preliminary reports indicate that antioxidant vitamins and iron supplementation ameliorated anaemia and VI. Public health awareness campaign influenced behavioural change wheel on use of ITNs as well as use of condom for the reduction of HIV/AIDS infection in Nigeria.

**Keywords:** Visual impairment, ITNs, HIV/AIDS infection, Utilization, Awareness programs

### INTRODUCTION

Preventive health programs are standardized behavioral interventions involving high level of motivation on the part of the participants as a form of disease management in public health.

The behavioural intervention may be combined with contextual interventions to change risk behaviors to either stop or reduce both natural and man-made course of diseases. Preventive programs allow for rapid, effective, and targeted responses to health-related needs.<sup>1</sup> These include both communicable and non-communicable diseases.

Visual impairment, as well as malaria and HIV infections are serious public health burden leading to morbidity and mortality, thus making the need for better prevention and control programs of these ailments are imperative. Malaria prevention and control is best practiced as an integrated approach involving first-line drugs, case management, indoor residual spraying (IRS) and the use of insecticide-treated nets (ITN).<sup>2</sup> Health education and prevention programmes are the primary way of decreasing the risk and rate of HIV/AIDS among youths in Africa.<sup>3</sup> Annual screening and treatment for eye diseases prevent clinically significant number of legal blindness which results in substantial cost savings to the federal budget.<sup>4</sup>

The seminar presentations here cover these three topics. Each presentation is an abstract of research work in progress. Recommendations are presented for comments and further research discussion.

## **STUDY OF NUTRITIONAL STATUS ON VISUAL IMPAIRMENT AMONG PRIMARY AND SECONDARY SCHOOL CHILDREN IN DELTA STATE, NIGERIA**

### **Background**

The eyes being the most delicate organ and window of the body to the world need to function optimally to perform daily task. Functional limitation of the eye or vision system known as visual impairment can lead to inability of the person so see objects as clearly as a healthy person. In 2010, world health organization estimated 285 million people to be visually impaired and 39 million blind.<sup>5</sup> The 90% of visually impaired live in developing countries.<sup>6</sup>

### **Objectives**

The objective of this study was to determine the distribution and determinants of anaemia, antioxidant vitamins deficiencies and nutritional status disorders on visual impairment among primary and secondary school children in Delta State, Nigeria.

### **Methods**

The study was a pretest-posttest study of 201 respondents randomly selected from three (3) primary and three (3) secondary schools in the three senatorial districts of Delta State. Samples were randomly selected from Warri South LGA (Delta South), Ethiope East LGA (Delta Central) and Ukwuani LGA (Delta North). Baseline sociodemographic information were collected using self-administered questionnaires. Anthropometric data and visual acuity assessment were performed. Haemoglobin and serum antioxidant vitamins A, C and E were done using JENWAY 6320D spectrophotometer and absorbance value for each sample were read at 540 nm, 620 nm, 540 nm and 520 nm respectively. Single dose of 200,000 IU vitamin A, 5 weeks administration of daily 100mg of vitamin C, weekly 1000 IU of vitamin E and twice weekly 200 mg of ferrous sulphate supplements as were as performance of refraction on respondents with poor visual acuity were done. Post-test data were collected, and all variables were analyzed using statistical package for social science (SPSS) version 28.

### **Results**

The 83 (41.3%) of the respondents were male and 118 (58.7%) were female with mean age of 12.2985 years $\pm$ 3.14173 standard deviation. The 72 (35.8%) were of primary school age (6-12 years), while 129 (64.2%) were of secondary school age (12-19 years). The percentages of vitamin A deficiency, vitamin C deficiency, anaemia,

stunting, underweight, thinness and visual impairment at baseline were 12.4%, 12.9%, 38.3%, 7.0%, 14.3%, 15.0% and 28.9% respectively and percentages after intervention were 6.0%, 15.9%, 0%, 5.5%, 8.7%, 8.5% and 5.5% respectively. The main causes of visual impairment among respondents were refractive error (23.4%), glaucoma (4.5%) and cornea opacity (1.0%). There was a significant positive correlation between visual impairment and body mass index ( $r=0.147$ ,  $p=0.037$ ) and a strong significant negative correlation between anaemia and underweight ( $r=-0.399$ ,  $p=0.005$ ). Vitamin A and C, and iron supplementation were predicted to decrease the risk of having severe visual impairment with odds ratios of 0.964 times, 0.873 times, and 0.984 times respectively as well as decrease the risk of having severe anaemia with odds ratios of 0.491 times, 0.037 times, and 0.829 times respectively less than those not taking the supplements. The association between severe anaemia and severe visual impairment with vitamin A and C, and iron supplementation were not statistically significant.

### **Conclusion**

This research findings showed that anaemia and visual impairment which were public health problem and exacerbated by nutritional deficiencies were ameliorated by antioxidant vitamins and iron supplementation.

### **Recommendations**

Implementation of school health policy for vitamins A and C, and iron supplementation as well as regular eye examination in primary and secondary schools will ameliorate the public health burden of anaemia, visual impairment, antioxidant vitamins and nutritional deficiencies in Delta State.

## **UTILIZATION OF INSECTICIDE-TREATED NETS AMONG PREGNANT WOMEN AND CAREGIVERS OF CHILDREN UNDER-FIVE IN SELECTED COMMUNITIES IN BAYELSA AND RIVERS STATES**

### **Background**

Globally, malaria remain a constant cause of sickness and death among at risk groups.<sup>7</sup> Preventing the spread of malaria infection is by scaling up utilization of ITNs to increase use of ITNs among pregnant women and care givers of children under-five years. Progress in malaria control in Africa could be frustrated by the COVID-19 pandemic effect.<sup>8</sup>

### **Objectives**

The objective of this study was to determine levels of capacity, motivation and opportunity of pregnant women and care givers of children under five years in the utilization of ITNs in selected communities of Sagbama,

Kolokuma/Opokuma LGAs (Bayelsa state); Ahoada-West LGA (Rivers state).

### **Methods**

The research was based on review of literatures using google scholar Mendeley, pre-field intervention (August-October, 2021 raining season) and post-field intervention (November-December 2021, dry season). Descriptive cross-sectional survey of pregnant women and care givers of children in fifteen (15) selected communities from three (3) LGAs on use of ITNs was adopted. Baseline and post field intervention information on socio economic, knowledge on cause of malaria, consequence of malaria, prevention of malaria and practice of ITNs were collected.

### **Results**

A total of 330 respondents involved. Post intervention result indicate majority of the respondents 304 (92.1%) owned ITNs. The largest proportion 312 (94.5%) had good knowledge of cause of malaria, 314 (95.2%) had good knowledge of the consequence of malaria in pregnancy include: anaemia, fetal death, still birth and abortion, 319 (96.7%) respondents had good knowledge of consequence of malaria in children under-five to include anaemia, cerebral malaria, fever and malnutrition, majority of them 227 (68.8%) had moderate knowledge of best way to prevent malaria in pregnancy and under-five children using ITNs.

Majority 321 (97.3%) of the respondents had good attitude towards the use of ITNs. This was so as they either disagreed or strongly disagreed with the “negatively-worded” questions asked to elicit their attitude towards the use of ITNs. There was a decrease in the practice of ITNs in the previous night after post intervention 131 (39.7%) compared to baseline intervention 224 (67.9), this is associated to effect of weather which influence poor attitude in use of ITNs during heat period. Majority were of the opinion that they hung and tucked-in the net when they were about to sleep 284 (86.1%) which was the correct method of use. It was found that their occupation was statistically significant factor associated with the knowledge of ITN use (OR: 2.566; 95%CI: 0.956-6.889;  $p=0.054$ ), in the post intervention the skilled 22 (31.9%) had good knowledge on ITNs compared to unskilled 68 (26.1%) that had good knowledge on ITNs. It was found that their education had a borderline statistically significant association with their attitude towards ITN use. It was found that educated respondents were 4 times more knowledgeable than their uneducated counterparts (OR: 4.300, 95%CI: 0.838-22.064;  $p=0.058$ ).

### **Conclusion**

Intensive public health awareness campaign during dry season be adopted to influence good attitude on use of ITNs.

### **Recommendations**

Government should introduce a building policy that will accommodate construction of permanent vent on lintels of residential homes. This will help to reduce heat as experienced by users of ITNs.

## **RELATIONSHIP BETWEEN AWARENESS PROMOTION AND REDUCTION OF HIV/AIDS INFECTION IN NORTH-EAST NIGERIA**

### **Background**

Human immunodeficiency virus (HIV) is a disease that has ravaged the world over the past 30 years and it's still a public health issue across the globe today.<sup>9</sup> Through the awareness promotion programmes information about HIV/AIDS disease and what is needed to prevent, curb, and hopefully totally overcome it is taught.

### **Objectives**

The objective of this study was to determine the impact of awareness on the reduction of HIV/AIDS infection in North-East Nigeria.

### **Methods**

The design used for this study was the correlation research design. The sample size used for this study are the representative of each of the organization in each of the local government or public health centers in communities to be selected for this study. There are a total of 114 local government areas in the Northeast region of Nigeria. The questionnaire was handed to the respondents directly and collected at a given date by the respondents. Data collected were collated and analyzed SPSS version 25. The data were analyzed using descriptive statistics and correlation.

### **Results**

The results obtained showed that there was a significant correlation between community-based awareness program and reduction of HIV/AIDS infection in North-East Nigeria ( $p<0.05$ ). The correlation between community-based awareness and reduction in HIV is a positive correlation ( $p<0.05$ ). There was a significant positive correlation between television awareness program on the use of condom influenced the reduction of HIV/AIDS infection in North-East Nigeria ( $p<0.05$ ). There was a significant correlation between radio awareness programs and reduction of HIV/AIDS infection in North-East Nigeria ( $p<0.05$ ); HIV awareness targeted at cultural belief of the people on the use of condom influenced the reduction of HIV/AIDS infection in North east Nigeria influenced by 30%. HIV awareness targeted at cultural belief of the people against homosexuality/sex work/drug addiction influenced the reduction of HIV/AIDS infection in North-East Nigeria by 67%.

## Conclusion

Communities based awareness program, television awareness program and radio awareness programs influenced the cultural belief of the people on the use of condom in the reduction of HIV/AIDS infection in North-East Nigeria.

## Recommendations

The government and non-governmental organizations should put in more efforts into community-based awareness, particularly with the aid of mass media, as well as social media so as to further enhance the reduction in HIV/ AIDS. This will also help reduce mother to child transmission of HIV/ AIDS.

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