

EVALUATION OF KNOWLEDGE AND ATTITUDE OF SCHOOL PUPILS ON MALARIA AND HIV/AIDS PREVENTION THROUGH THE GRASSROOTSOCCER INITIATIVE IN LAGOS, NIGERIA

*SUBMITTED
TO*

YOUTH EMPOWERMENT AND DEVELOPMENT INITIATIVE (YEDI)
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EXECUTIVE SUMMARY

School-based health programmes has been recognized as an important strategy in disease control and prevention. The current National Malaria Strategic Plan, 2014-2020 (NMSP) is designed to attain the pre-elimination phase by 2020. Malaria and HIV are diseases of public health significance that requires all population groups to be involved using innovative approaches. The Youth Empowerment and Development Initiative (YEDI) is focused on educating, empowering and inspiring the development of children and youth. YEDI, through her innovative “Grassroots soccer” programme using the power of football “educate youths about malaria, HIV/AIDS and other diseases, as well as develop them with important life coping skills through participatory engagements in fun activities in schools in disadvantaged communities”. This is expected to enable them have relevant and important discussion about life as regards malaria and HIV transmission, prevention and other areas of the disease. While the YEDI’s “grassrootsoccer” programme has been implemented in public schools in Lagos State, its impact has not been independently evaluated though some internal monitoring and evaluation is done internally. This evaluation reports the impact of YEDI’s “grassrootsoccer” initiative in changing malaria- and HIV-related knowledge, attitudes, self-reported behavior and communication among pupils attending public schools in Lagos State.

The study, conducted between May and July 2014, was done among pupils from public owned Primary and Junior Secondary Schools, age, 11 - 16 years. The schools were randomly selected from three Local Government Areas (LGAs), where the grassrootsoccer initiative was yet to be implemented- Apapa, Mushin and Agege LGAs. A total of sixteen schools, four from each LGA, were used for the survey with 640 students enrolled in two arms of 320 each for the intervention and control group respectively. Structured questionnaires were used to obtain quantitative data from the respondents in two phases: (1) Pre-intervention (2) Post-intervention after the base-line pre-intervention assessment in intervention and control schools. Complementary to the questionnaire Focus Group Discussions (FGDs) and Key Informant interviews with school pupils, school teachers (game officials) and YEDI Coaches were conducted. Ethical best practices were deployed as all pupils with incorrect answers and those in the control schools were educated on all aspects of the study by the research team at the end of the pos-assessment evaluation.

Generally, the findings of this study in both the intervention and control schools were not consistent following post-intervention assessment when compared with the control schools where the grassrootsoccer initiative was not implemented. While some significant improvement were observed in the intervention group, the proportion of pupils with knowledge gap remained high and sometimes fell below what was observed in the control schools. The proportion of pupils in the intervention and control schools that knew the causative parasite for malaria was less than 30% at the pre-assessment survey. This increased significantly at the intervention schools (from 26.6% to 50.6%) and in the control school (from 29.2% to 43.8%). The improvement in knowledge among the pupils in the intervention schools increased from 13.4% to 24.7%. Furthermore, over 80% of the pupils responded that malaria is contracted by drinking dirty water with minimal though

significant change in knowledge in the post-intervention group. Despite the incorrect responses to other causes of malaria, the pre-assessment knowledge on *Anopheles* mosquitoes as the vector for malaria was about 80% in both groups but dropped at the post-intervention in both arms. The true responses on the risk of malaria among children and pregnant women increased significantly in both the intervention and control arm following post-assessment evaluations. Remarkably, knowledge on the link between cleanliness and risk of malaria was high in both the intervention and control arm but improved significantly at the intervention group following the post-assessment evaluation. Impressive improvement was observed in the intervention group in the following among others: protection from malaria by sleeping under LLIN every night; completion of full dose of antimalarial medicines and not stopping before completion even if the person felt better. Schools as a source of malaria information, willingness of pupils to promote and monitor the use of LLINs at home were observed as potential opportunities to be leveraged for LLIN distribution/campaign. A pilot is recommended.

The pre- and post assessment improvement in the pupil's ability to correctly define the acronym "HIV" was significantly higher in the intervention than in the control schools; same finding was observed for the definition of "AIDS", sex as a means of HIV transmission, transmission through body fluids such as blood, semen, vaginal fluid and breast-milk; sexual abstinence as a preventive measure for HIV etc. Remarkably, though most of the pupils would stay away from their friend if infected by HIV at the pre-assessment, this was altered at the post-assessment intervention especially in the intervention group, thus indicating that with good knowledge-build up, the pupils were not likely to stigmatize persons living with HIV. Impressively, majority of the pupils in the intervention group responded that they would provide care for a sero-positive person when the occasion arises, as well as indicating at the post-assessment that a sero-positive teacher should not be dismissed. No significant improvement in knowledge for practice was observed among the pupils in the intervention arm on their capacity to resist peer pressure as a way of preventing HIV. About 90% of all the participants were yet to undertake an HIV test while over 60% were willing to be tested for HIV. Schools were still the major source of information on HIV and malaria and should be leveraged upon to deepen the impact of the YEDI grassrootsoccer programme.

Coaches and Games Masters in the schools are critical in the successful implementation of the grassrootsoccer initiative. For an effective curriculum delivery, job satisfaction will promote stronger commitment and effectiveness. The current ad hoc volunteer arrangement may be used by some to keep busy while looking for some other opportunities. The selection process of the coaches and their training is satisfactory. While the grassrootsoccer initiative has great promise in providing knowledge for behavioural modification, communication and development of early life skills in youths to handle the challenges of malaria and HIV in the community, several critical modification and adjustments on the approaches to implementing the programme are recommended: (1) Reduction of the curriculum, to permit very short and strong communication of key messages on malaria and HIV between the coaches and pupils and not just "running through" the curriculum that may not make the required impact (2) The grassrootsoccer

curriculum should be split into “junior” and “senior” curricula with considerations for maturity based on age and exposure (3) Follow-through mechanisms should be developed to sustain knowledge gain that is strong enough to build the expected life-skills to handle malaria and HIV challenges, for example occasional documentary/film shows, simple reading or malaria and HIV game materials and short feed-back sessions (4) YEDI should assess how the current curriculum fits into basic science/social science and other related subjects of the pupils for consolidation so that the identified gaps can be filled(5) public schools in the communities are “disadvantaged” with poor educational infrastructure and pedagogical capacity and therefore requires a delivery strategy that recognizes the complexity of the dynamics of the poor governance in public schools when compared to the private schools. A clinical approach should be used in designing the suggested modification of the curriculum along with the teachers in the public schools for effective programme delivery.

The strength and opportunities of the YEDI grassrootsoccer as a unique, bold, innovative initiative in promoting health through inspired leadership and teamwork to transform the lives of youths using the power of football, outweighs the likely threats and some weakness identified in this evaluation. ThA full programme evaluation that entails funding, programme management, and the thematic aspects of the project should be conducted in two years after implementing the recommendations of this assessment.

SECTION ONE - BACKGROUND AND OBJECTIVES

Background

The prevalence of the human immunodeficiency virus (HIV) in the country is 4.1% with an estimated 3.1% living with human immune-deficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) while the entire population is at risk of having malaria. On the other hand, the prevalence of malaria in children under five years of age using community data is 42% (National Population Commission, 2012) while children and pregnant women are vulnerable because of their lowered immunity. No vaccine is currently approved for malaria and HIV but treatment is available to manage both conditions. Consequently, the prevention of these diseases is the most sustainable way of reducing infection and the burden of the diseases. For HIV and also for malaria, the younger population have very important role to play and they have been targeted as a veritable population to commence various intervention. Protection against the spread of HIV is focused on the youth who are likely to undertake risky behaviours if information on disease prevention is not effectively communicated to them early enough.

Social change through sports has been used severally in creating awareness toward behavioral and attitudinal modifications in the society especially as it relates to health. The commonality of interest in sports especially soccer has found great use in promoting HIV prevention in a number of countries with high acceptance and impact. Grassroot Soccer is built upon the premise of the “social learning theory” popularized by Dr. Albert Bandura that “most behaviour is learned observationally through modeling”. The power of football to stimulate social change has therefore been explored and still currently used.

The Youth Empowerment and Development Initiative (YEDI), a Non-governmental organization, is registered with the Corporate Affairs Commission (CAC). The programmes and projects adopted by the YEDI is focused on educating, empowering and inspiring the development of children and youth. YEDI through her “Grassroots soccer” programme adapts the model of football for development to the Nigerian context in which basic life skills is built among children between the ages of 11-15. This would enable them have relevant and important discussion about life, take small steps to achieve their goals, stay strong when faced with challenges and protect themselves and others from diseases such as HIV/AIDS and malaria.

The programme was designed to achieve the following expected outcomes among children 11-15 years of age in Lagos through: increase in knowledge on HIV/AIDS and Malaria; Reduce stigma and discrimination in the community; and the development of positive community role models and to demonstrate that football effectively can be used as a hook for mobilizing and engaging communities i.e. demonstrating principal and secondary audience impact. This programme targets the youths and by extension the community through awareness creation, change in attitude and practices as a first step in the prevention of malaria and the transmission of HIV.

The YEDI’s “Grassroot soccer” initiative is innovative and programmes are planned in 243 schools in five Local Government Areas (LGAs) of Lagos State namely: Mushin (77), Eti Osa (34), Lagos Island (37), Apapa (24) and Agege LGAs (74). In line

with best practices, it is imperative for this initiative to be evaluated to document impact and also to elucidate areas for improvement.

Statement of the problem

Malaria remains an important public health disease in Nigeria. The current 2014 – 2020 National Malaria Strategic Plan for malaria is designed to take the country into the pre-elimination phase of malaria (FMOH-NMSP, 2014). The mission of the National Malaria Elimination Programme is to have a malaria-free Nigeria. The objectives and action plans listed for the various thematic areas such as prevention and case management (diagnosis and treatment) have outlined actions with which set targets can be achieved. There are no data on the use of grassroots soccer approach in building knowledge toward malaria prevention in Nigeria though it has been used in other countries in HIV prevention among young school pupils.

The health community is making some advances in the treatment of HIV/AIDS, and the World Health Organization (WHO) and the United Nations (UN) are also recommending a strong focus on prevention; specifically, in the most susceptible populations namely: children and adolescents. The new Millennium Development Goal (MDG) stated that by 2015, no child shall be born with HIV (World Health Organization, 2011). This new goal, paired with the facts that 2.5 million children are currently infected with HIV and 40% of the new cases come from individuals aged 15-24, has placed a distinct focus on HIV/AIDS prevention in youth (Botcheva & Huffman, 2004; UNAIDS, 2010; World Health Organization, 2011). Within this youth population, females are at a greater risk of contracting the disease than males due to cultural norms and the opportunities afforded to them (UNAIDS, 2010; World Health Organization, 2011).

Children and youth are not only more susceptible to contracting malaria and HIV, but they often lose the last vestiges of childhood due to the burden of frequent disease episodes, infection of family members, and death. A considerable number of these children impacted by HIV, for example, are receiving a primary education. The need to take on adult responsibilities often limits not only the quality of their own health but the opportunities afforded to them to live a healthy life (Botcheva and Huffman, 2004).

Information on the cause, transmission, and prevention of malaria and the human immuno-deficiency virus (HIV)/acquired immune -deficiency syndrome (AIDS) are important ways by which knowledge could be applied to the prevention and control of these diseases. This is cost-effective and ensures that prevention is practiced.

A targeted programme among the youths is strategic in modifying their behavior through knowledge at an early age as a first step in preventing the spread of these diseases. Several approaches to disease prevention are currently employed to create awareness. Some of these include: advertisement in newspapers, vehicles and the electronic media; drama in television, documentary, road shows etc. While these approaches are now familiar, the need for a more interactive and systematically

designed approach – “Grassroots soccer” initiative, currently used by YEDI, that is incorporated with school activities has the potential of making a huge impact on malaria and HIV/AIDS prevention practices. Grassroots soccer has been used mostly to promote HIV prevention and support and less of malaria though the same principle could be applied to any condition.

This out-of-the-box initiative through knowledge creation could be scaled-up for wider application by incorporating it in the primary and secondary school curricula if an assessment of its impact is done. There is no current documentation on the impact of the Grassroots soccer initiative on malaria and HIV knowledge and attitudes among the target groups in schools where it is practiced in Lagos though evidence exists that the programme is a success and has high potential for scale-up.

Research Questions

Some research tailored around the primary and secondary objectives are listed below:

1. Is a football based health education intervention effective in creating malaria related knowledge among the participants?
2. Was the knowledge gained through the football based intervention sufficient in changing attitudes of the participant towards malaria?
3. Do the participants communicate to their peers and others in their community about the malaria related information that they learnt from the intervention?
4. Does the participants’ exhibit self-reported behavior in relation to malaria?
5. Is a football based health education intervention effective in creating HIV and AIDS related knowledge, attitudes and communication in relation to stigma, age-disparate sex and multiple sexual partners?
6. Did the intervention result to a high knowledge about HIV/IDS?
7. What lessons has been learned by the program to improve quality and sustainability of the programme?
8. Has the program developed community role models from the participants?
9. Does the GRS programme design need improvement?
10. How effective is the programming approach in the school setting?
11. Would the schools like the programme to continue with them?
12. Do communities (parents, siblings, teachers etc) acknowledge the football based programme and its execution in their community?

Objectives of the Evaluation

Primary Objectives

The objectives of the evaluation were to:

1. Assess whether a football-based educational programme is effective in changing malaria-related knowledge, attitudes, self-reported behavior and communication.

2. Determine whether a football-based educational programme is effective in changing HIV-related knowledge, attitudes, and communication-- specifically as related to stigma, age-disparate sex, and multiple sexual partners

Secondary Objectives

The secondary objectives were to:

1. Highlight lessons learned to improve quality and sustainability.
2. Elicit the perception of the school body and the hosting communities about the GRS programme.

SECTION TWO - METHOD

Study Area

Lagos State is a commercial area with a diverse population of over 20 million people drawn from other states of Nigeria and West Africa. Lagos is located between latitude and longitude; 6°35'N 3°20'E with an altitude of 40 m (131 ft). The average temperature is 26.4 °C (80°F) while the range of average monthly temperatures is 35°C. Mean relative humidity for an average year is recorded as 84.7% and on a monthly basis it ranges from 80% in March to 88% in June, July, September and

October. Lagos State is holoendemic with transmission occurring all through the year while malaria prevalence in the community range from 4% - 19%. The prevalence of HIV in Lagos State is approximately 3.3% though an area of the state, Lagos Island, is reported to have a prevalence of 9%. There are three political senatorial zones in Lagos out of which four health zones were carved out for the purpose of health governance. There are a total of 20 Local Government Areas (LGAs) based on the Federal Government's records. However, for the purpose of facilitating development, 57 Local Council Development Areas (LCDAs) were created out of the original 20 LGAs by the Lagos state Government. The schools were selected from three LGAs of the state, namely: Agege, Apapa and Mushin. The estimated population of Agege LGA is 1,033,064; Apapa (524, 971) and Mushin (1,321, 517)(Lagos State Government website: <http://www.lagosstate.gov.ng/pagelinks.php?p=6> accessed, 3/17/2015).

Study population.

The study population was made up of pupils from public owned Primary and Secondary Schools, age, 11 – 15 years.

Study design and Sampling procedure

The evaluation was quasi-experimental in design while selected pupils in primary and junior secondary schools where YEDI grassrootsoccer programme was being established. First, three of the 20 local government areas (LGAs) in Lagos State where the YEDI grassroots soccer programme is operational were purposively selected. The three LGAs selected for the study were Agege, Apapa and Mushin. Second, a total of sixteen (16) schools were selected from the list of schools available in each selected LGA using the systematic sampling method. The number selected from each LGA was proportional to the number in each LGA relative to the total number of schools in the three LGAs pooled together. Third, a list of students participating in the YEDI grassroots soccer programme in each selected school using their class register was obtained from the school management. Here, the required sample size was thereafter selected using the simple random sampling method. The sampling matrix is presented in Table 2.1. A total of sixteen schools, four from each LGA, were used for the survey (Table 2.2).

The **Control group** was targeted to comprise of 500 participants and the **intervention group** was also targeted to comprise of 500 participants. However, due to logistics and financial consideration, a total of 640 students were interviewed i.e. 320 students per arm.

Sample Determination

A total sample size of 1,000 students was calculated for the survey. The sample size was in two arms of 500 for the intervention and control group respectively.

Sample Size Calculation

Using $N = Z^2 pq / d^2$

N = Minimum sample size

Z = Standard normal deviation, usually 1.96 which corresponds to 95% confidence interval

p = Proportion in the target population estimated to have the particular characteristic of interest in the study; i.e. P = 50%.

$$q = 1 - p$$

$$d = \text{precision} = 5\% = 0.05; q = 1 - 0.5 = 0.5$$

$$n = (1.96)^2 \times (0.5 \times 0.5) / (0.05)^2$$

$$n = 384$$

Considering 20% estimated missing data

$$N = 384 + (20\% \text{ of } 384)$$

$$n = 384 + 76.8$$

$$N = 460.8$$

$$N \approx 500 \text{ subjects}$$

Table 2.1: Schools in Local Government Areas (LGAs) and number of schools selected for the evaluation

Local Government Area (LGA)	Number of available schools	Intervention	Control	No. of schools selected for the study
Apapa	24	80 students from two schools	80 students from two schools	4
Agege	74	120 students from 3 schools	120 students from 3 schools	6

Mushin	77	120 students from 3 schools	120 students from 3 schools	12
TOTAL	175	320 students	320 students	16

Table 2.2. List of schools surveyed at the pre-assessment and post-assessment evaluation in the three LGAs

Apapa LGA

Code	School	Address
01	Arakan Nur/Pry School (Intervention)	26/28 Point road Apapa
02	Ire Akari Nur/Pry School (Control)	4 Adekunle deen close Sari-Iganmu
03	St. Theresa Nur/Pry School (Intervention)	1 Bonny road Marine Beach
04	Methodist Nur/Pry School (Control)	32/34 Randle road

Agege LGA

Code	School	Address
	Intervention	
05	Jubril Martins Primary School	Adebisi Awosanya Street off Oniwaya street
06	AUI Primary School	Adebisi Awosanya Street off Oniwaya street
07	A/C Primary School	Oniwaya Road
	Control	
08	Ifeoluwa Primary School	Sebiotimo street off Agege Capitol Road
09	Community Primary School	Sebiotimo street off Agege Capitol Road
10	Oduduwa Primary School	Sule Street Idimangoro

Mushin LGA

Code	School	Address
	Intervention	
11	Christ Central Primary School	Ajenifuja Street Ilupeju Mushin
12	Shyllon Primary School	70, Shyllon Street Onipan
13	LG Primary School Megbon	Ademolu Street by Megbon Police Station Isolo Road
	Control	

14	Muslim Mission Primary School	44 Shokunbi Street Mushin
15	St. Joseph Primary School	13 Atunrase Street Mushin
16	NUD Primary School	52/58 Ayantuga Street Mushin

Tool development, Pre-study training and Pre-test of tools

The tools used were developed before the pre-assessment training that held for four days after which the tools were pre-tested. Challenges with tools were addressed and the questions duly modified to ensure they elicited the appropriate response to each of the questions. Generally, the questions were developed from the YEDI's Grassroot soccer curriculum with additional questions that covered current realities in HIV and malaria prevention. Similarly, before the post-assessment evaluation, a one-day pre-training was done using the pre-assessment tool.

YEDI obtained permission for the survey from the Ministry of Education, Lagos State while assent/consent was obtained from each participant before they were included in the pre- or post assessment evaluation (Appendix 1). The evaluation was quasi-experimental in design and the data source included the following:

Survey to assess Knowledge, Attitude and Communication.

Structured questionnaires were used to obtain quantitative data from the respondents in two phases: (1) Pre-intervention (2) Post-intervention after the base-line pre-intervention in intervention and control schools (schools where no intervention was done after the pre-assessment baseline survey) (Appendix 2). The survey tool was divided into four sections, covering the Demographics, Knowledge, Attitude and communication of the respondents toward knowledge, attitude and communication of malaria and HIV/AIDS prevention and support. Briefly, the questionnaires were administered to 40 pupils between the ages of 11 and 15 years in all the schools. Though the study design was to interview same students at the pre- and post-assessment evaluation, this was not possible as some of the students interviewed at the pre-assessment were not available during the post assessment evaluation. The questions were read out to the students and the responses reviewed by the administering staff to ensure that each question was answered.

In line with ethical best practices, corrective engagement between the research staff and the pupils was done to address wrong answers at the post-intervention assessment in the intervention and control schools. This was done to ensure that the knowledge of the pupils on malaria and HIV was corrected and reinforced. This made a direct impact in closing knowledge gap when identified and not ignored.

Qualitative studies - The study included Focus Group Discussions (FGDs) and Key Informant interviews with school pupils, school teachers (game officials) and YEDI Coaches (Appendix 3i – 3iii). Audio tape recorders as well as notes were used for the qualitative data collection

Study Timeline:

This was short given the time available between when the students were interviewed for the pre-assessment evaluation baseline in May 2014 and when they were to be interviewed after the intervention in the post-assessment survey conducted in July 2014.

Pre-Assessment (Baseline):

The pre-assessment was done from 14th to 20th of May, 2014, immediately after the third term resumption in the 2013/2014 academic session.

Post-Assessment

The post-assessment evaluation was conducted from the 7th to the 11th of July, 2014, just before the close of the third term of the 2013/2014 school academic calendar.

INTERVIEW PROCESS

The questionnaires were read to the students by the Research Associates after obtaining consent form the research participants. Confidentiality of all information and voluntariness was ensured for all participants. Those that opted not to participate were allowed to withdraw after explaining the process to them. In some of the cases, the local language, “*Yoruba*” or “*Pidgin*” was used for the interview as this was the means by which a number of the students expressed themselves.

A total of 16 FGD sessions [8 sessions per pre- and post-intervention phase] among students and YEDI in-school grassroots soccer coaches and 6 key informant interviews held among school teachers (game masters/mistresses) engaged as YEDI in-school grassroots soccer coaches were conducted for this study. In each phase of the study, 3 FGD sessions were held among the male and female group of pupils. In addition, one FGD session was held among male and female groups of coaches in each phase of the study respectively. The focus groups were formed to be fairly homogenous with respect to age and sex in order to minimise inhibitions in the flow of the discussions. The number of participants in each FGD session held among the pupils and coaches in each phase of the study ranged from 8 to 14 with an average of 10 participants. The ages of the pupils who participated in the FGDs ranged from 11 to 15 years with an average of 12.2 years and 14.3 years in the pre-assessment and post-assessment survey respectively.

The six key informant interviews held among school teachers (game masters/mistresses) engaged as YEDI in-school grassroots soccer coaches comprised of 3 in each arm of the study groups in both phases of the study. The ages of the key informants interviewed ranged from 54 to 56 years with an average of 54.5 years. Most of the YEDI in-school grassroots soccer coaches were married with a few who were never married while some were separated. High literacy level was reported among the coaches as most had a minimum of secondary education.



Fig 2.1. (A-F).Research Associates engaging with pupils during the interview process.



Fig. 2.2. (A-D). Pupils with Game Masters, Research Associates and YEDI's Coach (Yellow T-shirt).



Fig. 2.3. Post-assessment corrective action engagement with pupils to address wrong responses to questions at the intervention and control groups. All pupils in the control schools where intervention was not conducted were enlightened on HIV and malaria interventions.

Data Entry and Analyses

The quantitative data obtained were entered by two data entry clerks (double data entry) and the data was later cleaned. Proportions were determined from all quantitative data obtained from structured questionnaires while qualitative data

were synthesized and reported as appropriate. The Statistical Package for Social Sciences (SPSS) software (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0; Armonk, NY: IBM Corp.) was used for data entry and analyses. Single and multiple associations were tested through comparison tests such as Pearson Chi-Square as statistical p-value for significance in cross-tabulations/comparison and for association was set at 0.05. Generally, impact of intervention was inferred from all positive changes in the proportion of correct responses and/or reduction in the proportion of false responses as well as responses that the pupils did not know at the post-intervention assessment survey.

The qualitative data collected through the recordings of the FGDs and key informant interviews were recorded and later transcribed by two trained transcribers. The qualitative data for the study were analyzed through textual analysis. In analysing the data, the tapes of responses from participants of the FGDs were first transcribed and typed accordingly. The transcripts were subsequently summarised, categorised, coded and sorted into text segments according to similarities and differences in individual opinions and views. It was possible to then sort and then compare patterns of opinions and views as discussed by the respondents.

Limitations of the Survey

There were limitations to this study that may have affected some of the outcome of this evaluation. It was possible that with the short duration available for the coaching before the post-assessment, the coaches may not have been able to sort out the logistics of connecting with the schools for the intervention and if they did, the time available for the implementation of the “Grassrootsoccer” curriculum may not be adequate and thus could have affect knowledge uptake in the interactions with the pupils. The post-assessment was done within the period when the students were preparing for their examinations and could have distracted their attention to the “out-of-school” grassrootsoccer programme. Finally, questions on relevant knowledge on malaria and HIV not covered in the curriculum though included in the assessment were not included in the intervention sessions.

SECTION THREE: FINDINGS

Socio-demographic characteristics of respondents

A total of 640 pupils from both the intervention and control schools were interviewed in this study. At post-assessment for the intervention and non-intervention group (Control arm), it consisted of 158 (49.4%) males/162 (50.6%) females and 146 (45.6%) males/174 (54.4%) females respectively. The mean age of the pupils ($\pm$ SD) in the intervention and non-intervention (Control) group was 11.92 ± 1.39 years (range, 8-15 years) and 12.07 ± 1.2 (range, 10-16 years) respectively. Further, majority of the pupils belonged to the *Yoruba* tribe (about 74%). Other tribes were: *Igbo* (approx 12%), *Hausa* (approx 6%) and the minority tribes such (*Edo, Efik, Ijaw etc* (approx 12%). Majority of the pupils interviewed were in Primary Four, Five and Primary Six (Table 3.1a).

Table 3.1a: Distribution of Pupils in Primary and Junior Secondary Classes

Description	Intervention Group		Non-intervention Group (CONTROL)	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
JSS One	7(1.1)	2(0.6)	3(1.0)	0(0.0)
JSS Two	6(0.9)	15(4.8)	4(1.3)	9(2.9)
JSS Three	17(2.7)	10(3.2)	14(4.4)	10(3.2)
Primary Four	120(18.9)	82(26.5)	58(25.3)	79(25.3)
Primary Five	186(29.3)	106(34.2)	96(30.5)	102(32.7)
Primary Six	299(47.1)	95(30.6)	140(44.4)	112(35.9)
			$\chi^2=12.088$; df = 5; P-value = 0.034	

KNOWLEDGE, PERCEPTION AND ATTITUDES ON MALARIA

Cause, vector, burden and prevention of malaria.

Plasmodium species is the parasite responsible for malaria. The knowledge of the causative parasite, the vector mosquitoes responsible for the transmission of malaria and use of long lasting insecticidal nets (LLINs) are critical in prevention of malaria especially in settings where there are myths on the cause of malaria.

The proportion of pupils in the intervention and control schools that knew the causative parasite for malaria was less than 30% at the pre-assessment survey. This increased significantly at the intervention schools as well as a reduction in the proportion of pupils that did not know ($X^2 = 39.092$; $df = 2$; $P\text{-value} = 0.000$) and also at the control schools ($X^2 = 14.535$; $df = 2$; $P\text{-value} = 0.001$) in the post-assessment survey (Fig. 3.1).

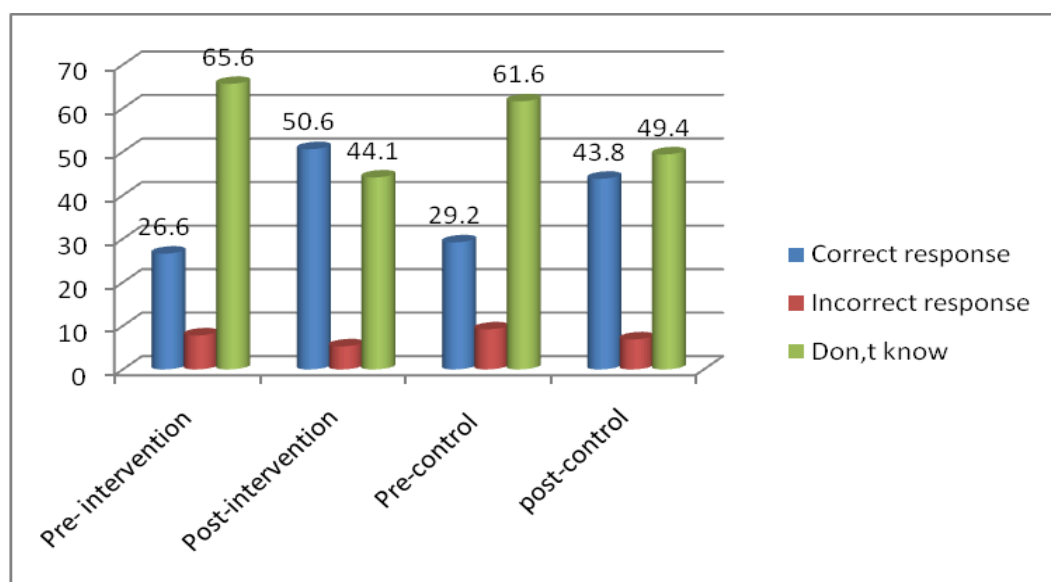
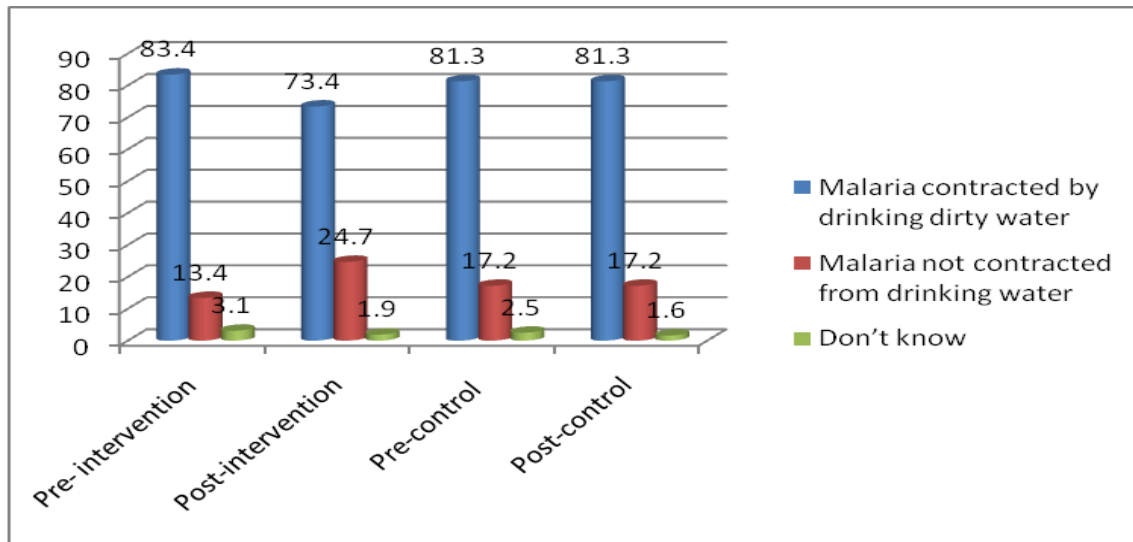


Fig. 3.1: Pupils' knowledge of *Plasmodium* as the causative parasite of malaria

Furthermore, on the cause of malaria, over 80% of the pupils interviewed reported that malaria can be contracted by drinking dirty water. The improvement in knowledge among the pupils in the intervention schools increased from 13.4% to 24.7% (Fig. 3.2). This was significant when compared to the control schools though over 70% of the pupils still reported that malaria can be contracted by drinking dirty water in the post-assessment survey.

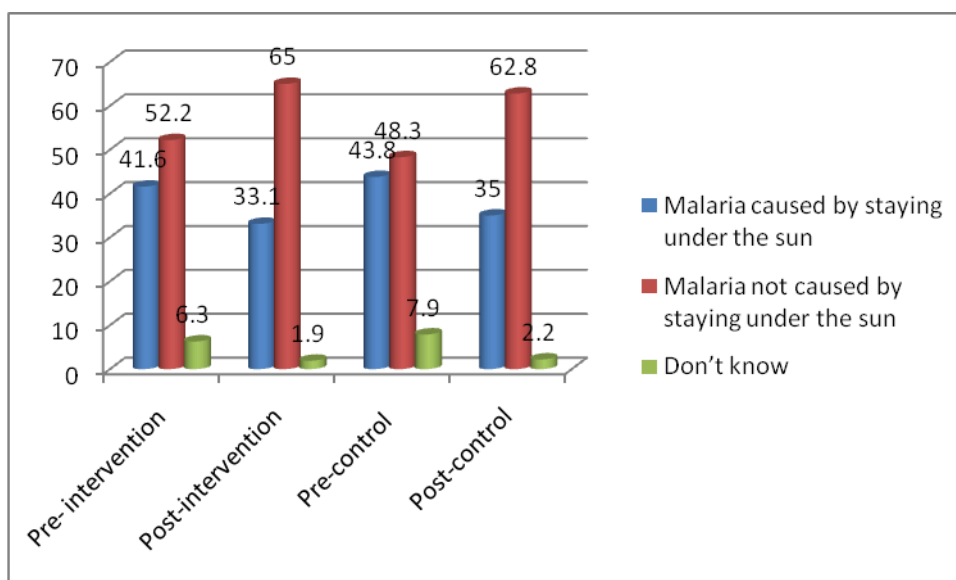


Pre-intervention and post-intervention: $\chi^2 = 13.663$; $df = 2$; $P\text{-value} = 0.001$

Pre-control and post-control: $\chi^2 = 1.280$; $df = 2$; $P\text{-value} = 0.527$

Fig. 3.2: Drinking dirty water as the cause of malaria

The myth on the contraction of malaria by staying under the sun for long period was amplified in the responses of about 40% of the pupils at the pre-assessment survey (Fig. 3.3). Pupils who related malaria and the sun and those that did not know in the intervention schools decreased slightly but significantly at the post-assessment survey with 65% reporting that malaria cannot be caused by staying in the sun for a long period of time ($p < 0.001$). The result was interestingly similar among pupils in the control schools where intervention was not done.

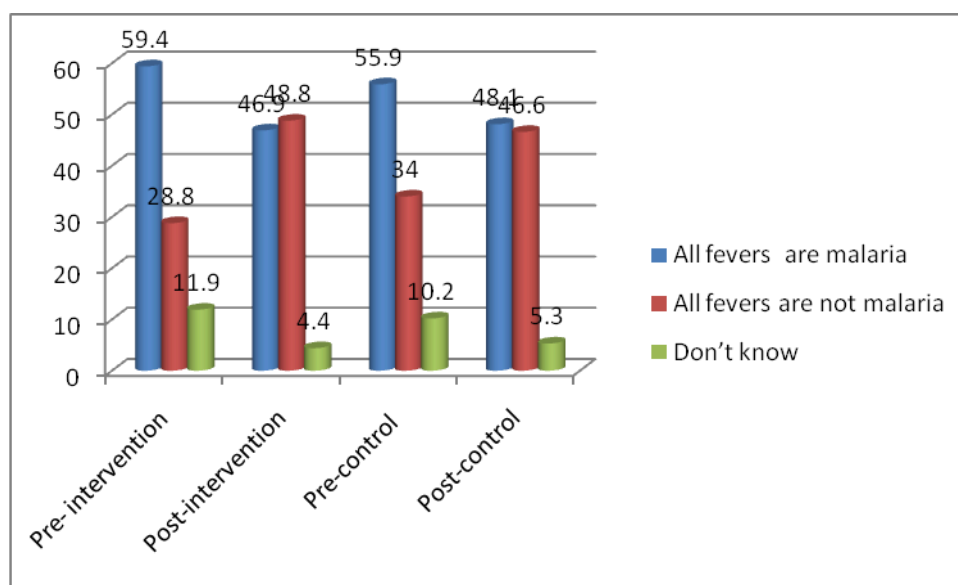


Pre-intervention and post-intervention: $\chi^2 = 15.071$; $df = 2$; $P\text{-value} = 0.001$

Pre-control and post-control: $\chi^2 = 19.593$; $df = 2$; $P\text{-value} = 0.000$

Fig. 3.3: Staying under the sun as the cause of malaria

The concept of all fevers being malaria is one of the challenges of presumptive malaria diagnosis that is done on the basis of fever or history of fever. Over 55% of the pupils interviewed responded that all fevers are malaria (Fig. 3.4). There was a small but significant increase in knowledge on the concept of fevers and malaria with an increase in the proportion of pupils that did not agree that all fevers are malaria and also those that did not know if all fevers are malaria or not.



Pre-intervention and post-intervention: $\chi^2 = 32.299$; $df = 2$; $P\text{-value} = 0.000$

Pre-control and post-control: $\chi^2 = 12.911$; $df = 2$; $P\text{-value} = 0.002$

Fig. 3.4: Pupils' knowledge on fevers and malaria

The pupils' correct response for female *Anopheles* mosquitoes as the vector for malaria transmission was over 70% at the pre-assessment survey but there was a decrease in the proportion of pupils that gave the correct response at the post-assessment survey, especially in the intervention schools ($\chi^2 = 4.768$; $df = 2$; $P\text{-value} = 0.092$)(Fig. 3.5). The decrease in the proportion of pupils in the control school ($\chi^2 = 5.648$; $df = 2$; $P\text{-value} = 0.059$) was expected as no intervention was done but not so for the intervention school where there was also an increase in the proportion of pupils who did not know that female *Anopheles* mosquitoes are responsible for the transmission of malaria (Fig. 3.5).

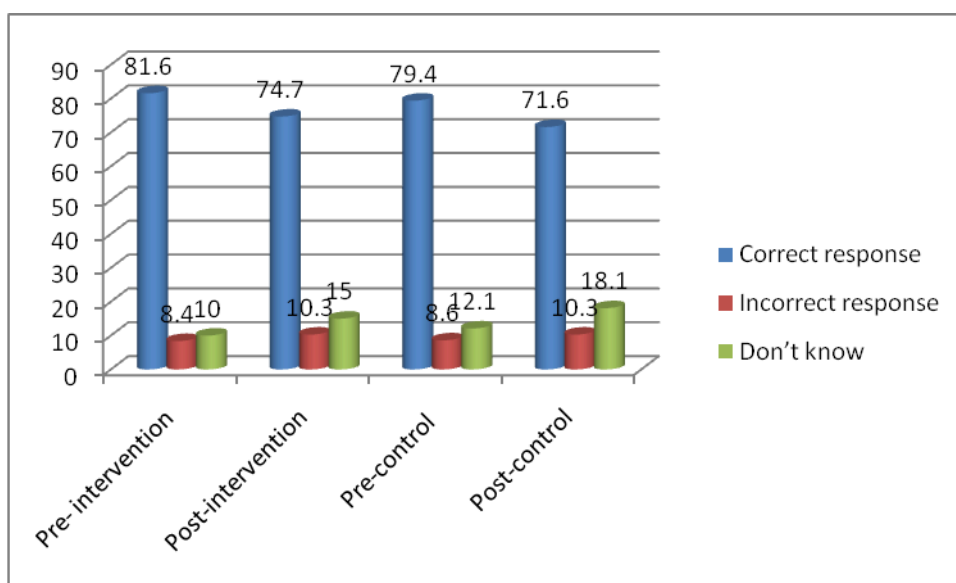


Fig. 3.5: Pupils' knowledge of female *Anophele* mosquitoes as the vector for malaria.

Burden and risk of malaria

The knowledge of the burden and risk of diseases are important information that could promote the prevention of diseases generally and this also applies to malaria. The school pupils' knowledge on the changing epidemiology of malaria as it relates to burden showed that less than 35% of them responded correctly to the question on the estimated death in children attributable to malaria every 60 seconds (1 minute) (Table 3.1b). At the pre-assessment survey in the intervention schools, the proportion that did not have any answer was reduced from 50.9% to 21.9% after the intervention in the post-assessment survey. The pre- and post assessment in the interventional and control schools were significant though the effect of the intervention was more among the pupils in the interventional schools.

Table 3.1b: Attributable death due to malaria in children every sixty seconds

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
A child dies every 60 seconds in Africa due to malaria				
True	104(32.5)	180(56.3)	104(33.0)	151(47.2)
False	53(16.6)	70(21.9)	83(26.3)	73(22.8)
Don't know	163(50.9)	70(21.9)	128(40.6)	96(30.0)
P-value	$\chi^2 = 59.808$; df = 2; P-value = 0.000		$\chi^2 = 13.837$; df = 2; P-value = 0.001	

Furthermore, on the risk of malaria in children and pregnant women, about 50% of the children were aware that these groups were special groups with high morbidity and mortality due to malaria (Table 3.2). The increase in the proportion of pupils between the pre-assessment and post-assessment survey of 21.8%, though significant within the pupils in the intervention schools, was however not significant when compared with the responses from pupils in the “control” school ($p>0.05$). Following on this, the proportion of pupils in the “Intervention” and “Control” schools that responded correctly at the pre-assessment survey that cleaning of the environment that included clearing of drains, removal of dirty materials that could reduce the risk of malaria was very high ($> 80\%$) and this response increased significantly in the intervention schools at the post-assessment survey when compared with the statistically insignificant increase in the “control” schools (Table 3.3).

Table 3.2: Pupils’ knowledge on the risk of malaria in children less than five years and pregnant women.

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Children under five years and pregnant women are most at risk of malaria				
True	151(47.2)	221(69.1)	166(52.7)	229(71.6)
False	79(24.7)	61(19.1)	68(21.6)	59(18.4)
Don’t know	90(28.1)	38(11.9)	81(25.7)	32(10.0)
P-value	$X^2 = 36.611$; $df = 2$; P-value = 0.000		$X^2 = 31.896$; $df = 2$; P-value = 0.000	

Table 3.3: Pupils’ knowledge on the impact of cleanliness and risk of malaria.

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Cleaning of our surroundings reduces the risk of malaria.				
True	256(80.0)	295(92.2)	264(83.8)	288(90.0)
False	48(15.0)	21(6.6)	46(14.6)	30(9.4)
Don't know	16(5.0)	4(1.4)	5(1.6)	2(0.6)
	$\chi^2 = 20.526$; df = 2; P-value = 0.000		$\chi^2 = 5.659$; df = 2; P-value = 0.059	

Knowledge on malaria prevention following regular use of LLINs and correct methods of air-drying LLINs before use was high among pupils in both the "Intervention" and "Control" schools at the pre-assessment survey – over 80% and greater than 70% respectively (Table 3.4 and Table 3.5). In the intervention schools general improvement in knowledge that the use of LLINs protect against malaria was significantly higher (P=0.000) compared with the improvement in the control schools (P = 0.036)(Table 3.10a). Similarly, the pupils in both the "Intervention" and "control" schools had significantly improved knowledge on the period required for LLINs to be dried before use (Table 3.5)

Table 3.4: Protection from malaria by sleeping regularly under LLINs

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Sleeping under a treated bed net (LLIN) every night can protect one from malaria				
True	270(84.4)	304(95.0)	269(85.4)	294(91.9)
False	37(11.6)	14(4.4)	42(13.3)	24(7.5)
Don't know	13(4.1)	2(0.6)	4(1.3)	2(0.6)
	$\chi^2 = 20.453$; df = 2; P-value = 0.000		$\chi^2 = 6.647$; df = 2; P-value = 0.036	

Table 3.5: Air-drying of LLINs in the shade before use.

Description	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
The LLIN has to be air-dried in the shade for 24 hours before use.				
True	237(74.1)	287(89.7)	239(75.9)	264(82.5)
False	19(5.9)	20(6.3)	24(7.6)	34(10.6)
Don't know	64(20.0)	13(4.1)	52(16.5)	22(6.9)
P-value	$\chi^2 = 38.576$; df = 2; P-value = 0.000		$\chi^2 = 15.090$; df = 2; P-value = 0.001	

Malaria Testing and Treatment

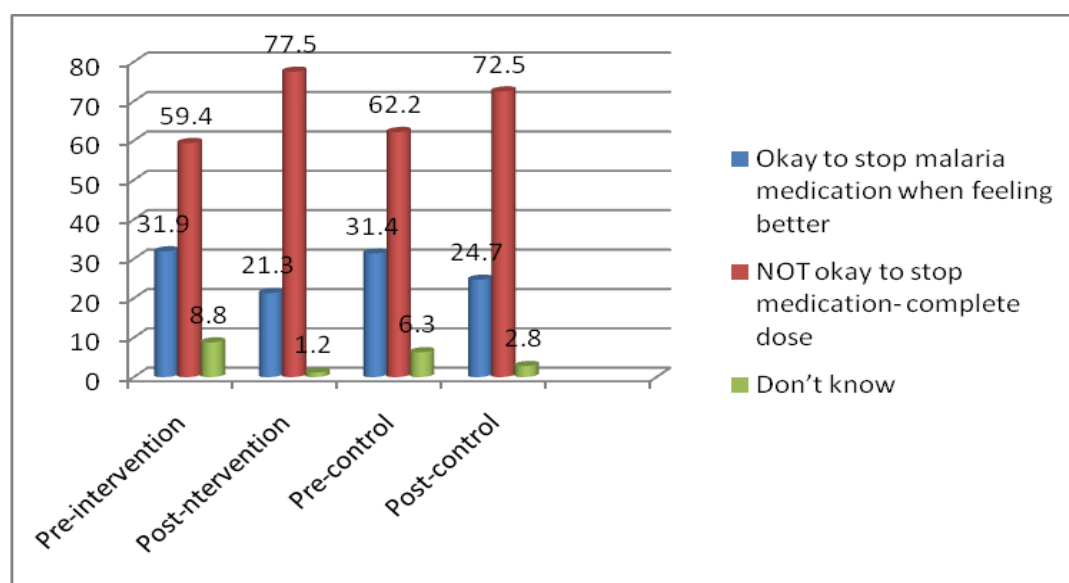
Prior testing before treatment is the current recommendation in the case management of malaria in the country. The reported awareness of the pupils on testing for malaria before treatment in the “Intervention” and “Control” schools was over 80%. This proportion of pupils increased significantly in both groups at the post-assessment survey (Table 3.6). A high proportion (over 80%) of the pupils in the “Intervention” and “Control” schools acknowledged that malaria is treatable and can be cured. This proportion of students increased significantly in the intervention schools as well as the control schools (Table 3.6). Similar responses were obtained on the consequences of not treating malaria (Table 3.7)

Table 3.6: Awareness of pupils on malaria testing and treatment.

Description	Intervention Group		Non-intervention Group	
	Pre-assessm ent No. (%)	Post assessment No. (%)	Pre-assessm ent No. (%)	Post assessment No. (%)
Malaria test is recommended before treatment is done.				
True	263(82.2)	301(94.1)	260(82.5)	304(95.0)
False	21(6.6)	11(3.4)	22(7.0)	9(2.8)
Don't know	36(11.3)	8(2.5)	33(10.5)	7(2.2)
P-value	X ² =23.503 df = 2; P-value = 0.000		X ² = 25.746; df = 2; P-value = 0.000	
Malaria can be cured				
True	259(80.9)	285(89.1)	262(83.20)	281(87.8)
False	40(12.5)	32(10.0)	31(9.8)	33(10.3)
Don't know	21(6.6)	3(0.9)	22(7.0)	6(1.9)
P-value	X ² = 15.632; df = 2; P-value = 0.000		X ² = 9.831; df = 2; P-value = 0.007	
Without treatment it is possible to die from malaria				
True	244(76.3)	284(88.8)	246(78.1)	276(86.3)
False	53(16.6)	27(8.4)	49(15.6)	34(10.6)
Don't know	23(7.2)	9(2.8)	20(6.3)	10(3.1)
P-value	X ² = 17.605; df = 2; P-value = 0.000		X ² = 7.729; df = 2; P-value = 0.021	

Compliance with the full dosage of antimalarial medicines is one important way of ensuring that the malaria parasites are cleared in any malaria episode. Over 50% of the pupils in both the "Intervention" and "Control" schools were aware of the need to complete the antimalarial treatment dose no matter how well they feel prior to completion of treatment (Fig. 3.6). There was an 18.1% post-assessment survey increase in the proportion of pupils in the intervention schools from the pre-assessment survey proportion among pupils in the "Intervention" schools when

compared with the 10.3% increase in the responses from pupils in the “control” schools though both were significant (Fig. 3.6). A higher knowledge gain (7.6%) was also observed among the proportion of pupils who did had no response in the “Intervention” schools compared with those in the “control” schools (3.5%).



Pre-intervention and post-intervention: $X^2 = 32.480$; $df = 2$; $P\text{-value} = 0.000$
 Pre-control and post-control: $X^2 = 9.409$; $df = 2$; $P\text{-value} = 0.009$

Fig. 3.6: Pupils' responses to the incomplete and complete compliance with malaria treatment doses of antimalarial medicines.

The pupils' awareness on the recommended malaria medication was low generally as a higher proportion of them do not know what medicines should be used for the treatment of malaria (Table 3.7). This is however expected as these pupils for their age do not make treatment decisions. These questions were included to gauge awareness of these pupils on recommended malaria medications because of the continued use of ineffective and outlawed medications such as chloroquine and sulphadoxine-pyremethamine (Fansider) for the treatment of malaria and to see opportunities for children to ask questions when these medicines are used when they have malaria. The YEDI grassrootsoccer initiative could promote rational use of malaria medicines so that drugs like chloroquine that are still currently used in the informal private sector for treating malaria should no longer be used as they are already compromised. The potential of children to influence parents' decision on malaria treatment should be explored and leveraged upon.

Table 3.7: Awareness of pupils on recommended malaria medications.

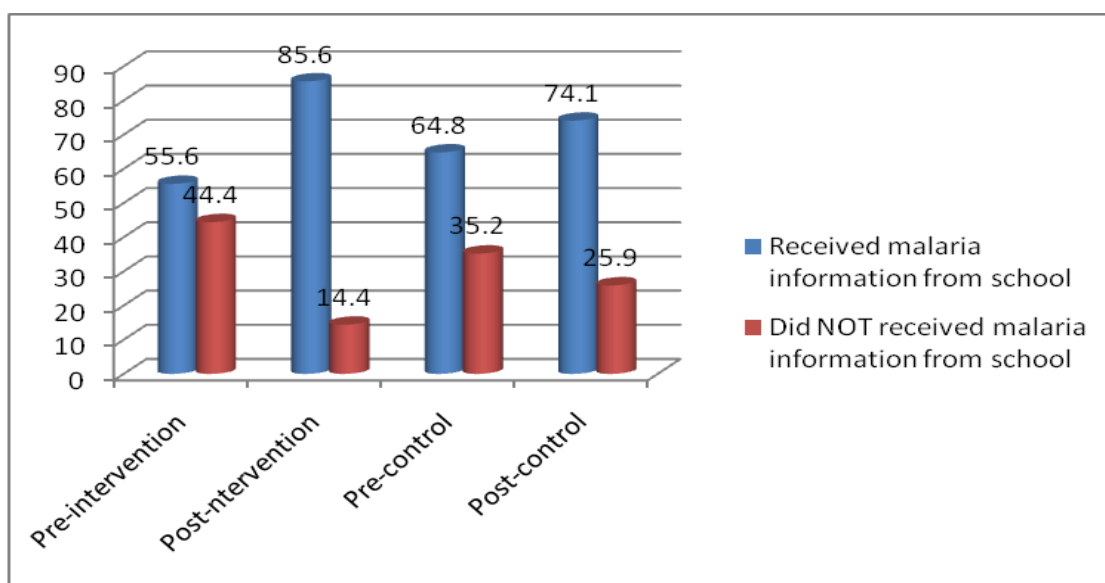
Description	Intervention Group		Non-intervention Group	
	Pre-assessm ent No. (%)	Post assessment No. (%)	Pre-assessm ent No. (%)	Post assessment No. (%)
Chloroquine is the currently recommended drug for treating malaria.				
True	90(28.1)	118(36.9)	91(28.9)	129(40.3)
False	14(4.4)	39(12.2)	24(7.6)	42(13.1)
Don't know	216(67.5)	163(50.9)	200(63.5)	149(46.6)
P-value	X ² = 22.973; df = 2; P-value = 0.000		X ² = 18.887; df = 2; P-value = 0.000	
Fansidar is the currently recommended drug for treating malaria.				
True	38(12.2)	58(18.1)	49(15.6)	58(18.1)
False	23(7.2)	65(20.3)	34(10.8)	66(20.6)
Don't know	258(80.6)	197(61.6)	232(73.7)	196(61.3)
P-value	X ² = 31.945; df = 2; P-value = 0.000		X ² = 13.987; df = 2; P-value = 0.001	
ACT is the currently recommended drug for treating malaria.				
True	34(10.6)	53(16.6)	44(14.0)	53(16.6)
False	19(5.9)	29(9.1)	19(6.0)	25(7.8)
Don't know	267(83.4)	238(74.4)	252(80.0)	242(75.6)
P-value	X ² = 7.898; df = 2; P-value = 0.019		X ² = 1.816; df = 2; P-value = 0.403	

Sources of Malaria Information among school pupils.

The major source of information on malaria among the pupils interviewed is from the school (55.6-64.8%) and this was followed by family/relations, television (39.4-43.8%) while the minor sources included the internet, pharmacy shops, posters and chemist stores (Table 3.8). There was however a significant increase in the proportion of pupils in the “Intervention” schools (55.6-85.6%) during the pre- and post-assessment survey that acknowledged that schools are important source of malaria information (Fig. 3.7). This increase in the “control” school (64.8-74.1%) though significant had a higher p-value. As a result, this finding confirmed the importance of schools as a potential channel for effective malaria interventions should be fully exploited as the impact of the grassroots soccer interaction was obvious in the intervention school than in the control schools. In addition, it is acknowledged that school pupils are also taught basic sciences that cover health as part of the educational curriculum though not fully motivated to make impact in households. Family/relations and broadcast media (television and radio) are also important sources of malaria information and could be reinforced by other projects.

Table 3.8: Summary of sources of information to pupils on malaria

Source of Information on malaria to pupils.	Intervention Schools (Pre-assessment) Responses -%	Control Schools (Pre-assessment) Responses -%
Family/ relations	39.4	43.8
Friends	22.5	24.4
Hospitals/Clinics	20.6	24.4
Newspapers/magazine/journals	9.7	7.3
Radio	23.8	21.9
Television	34.1	38.7
Poster	1.6	2.9
Pamphlets/brochures	2.2	0.6
Pharmacy stores	0.6	3.5
Chemist shops	1.3	10.9
Community meetings	2.2	2.5
Place of worship	11.3	9.2
School	55.6	64.8
Internet	0.9	1.0



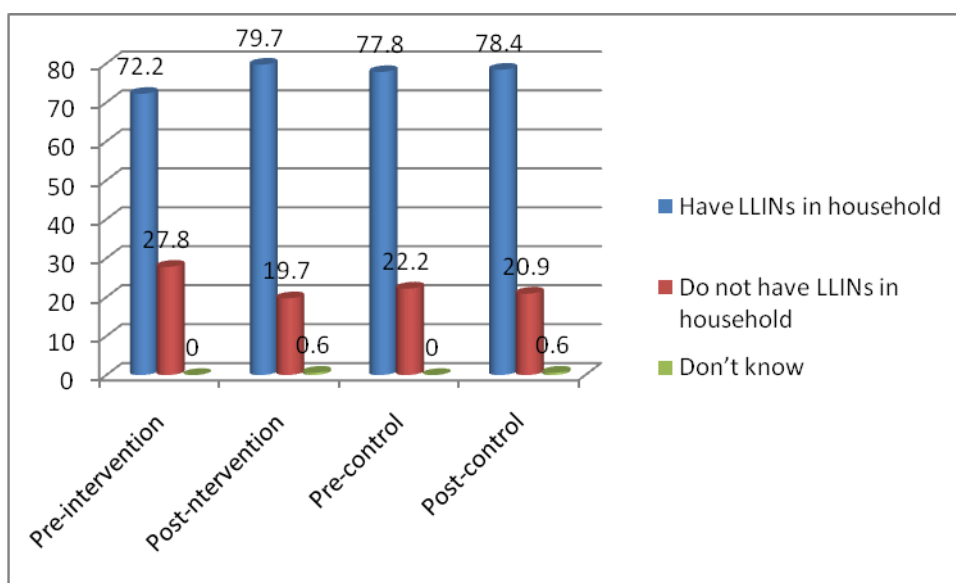
Pre-intervention and post-intervention: $\chi^2 = 69.411$; $df = 1$; $P\text{-value} = 0.000$

Pre-control and post-control: $\chi^2 = 6.472$; $df = 1$; $P\text{-value} = 0.011$

Fig. 3.7: School as a major source of information on malaria among pupils.

Source of Long lasting Insecticide Nets and use in Pupils' households.

The pupils in the schools were asked to provide information on the source of LLINs and their use in households. This was done to provide indication of net use and potential of using school pupils to rapidly access LLIN use in household rather than direct household distribution or campaigns. The pupils are also likely to promote LLIN use at home by insisting to sleep under it, provide information on LLIN to their parents/guardians and influence continued and effective use of LLINs in the household. Furthermore, there is need to explore the potential of the pupils to promote and influence the ownership and use of LLINs at home as they readily believe what they have been taught. The ownership of LLINs in the homes of pupils in the intervention and control schools was over 70% at the pre-assessment survey with a significant increase in net ownership in the homes of pupils in the intervention schools at the post-intervention ($p < 0.05$) (Fig. 3.8; Table 3.9). The increase in the ownership of LLINs in the homes of pupils in the control schools was however not significant. Up to 80% LLIN usage was reported by the pupils generally in all the schools and no significant increase in the use of LLINs was observed (Fig. 3.9). The impact of the knowledge on LLIN ownership and use will require a longer time to measure. Nevertheless, the Grassrootsoccer initiative has a unique potential of positively altering attitude, behaviour and practices in households through the pupils' awareness and guidance.

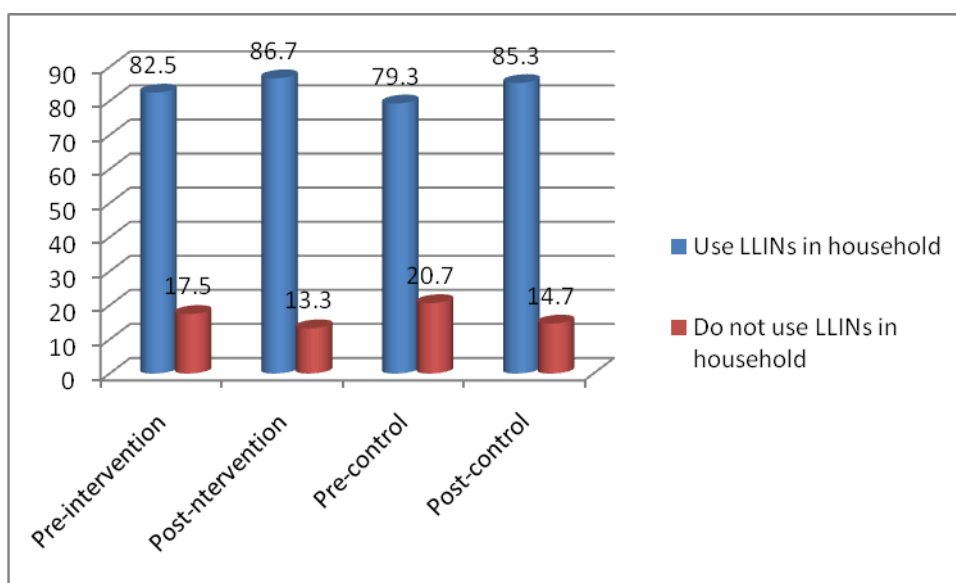


Pre-intervention and post-intervention: $\chi^2 = 7.633$; $df = 2$; $P\text{-value} = 0.022$
 Pre-control and post-control: $\chi^2 = 2.099$; $df = 2$; $P\text{-value} = 0.350$

Fig. 3.8: Possession of LLINs in households of pupils.

Table 3.9: Ownership of LLIN in Pupils' household.

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Do you have LLINs in your household?				
Yes	231(72.2)	255(79.7)	245(77.8)	251(78.4)
No	89(27.8)	63(19.7)	70(22.2)	67(20.9)
Don't know	0(0.0)	2(0.6)	0(0.0)	2(0.6)
	$\chi^2 = 7.633$; $df = 2$; $P\text{-value} = 0.022$		$\chi^2 = 2.099$; $df = 2$; $P\text{-value} = 0.350$	



Pre-intervention and post-intervention: $\chi^2 = 1.646$; df = 1; P-value = 0.200
 Pre-control and post-control: $\chi^2 = 3.117$; df = 1; P-value = 0.077

Fig. 3.9: Use of LLINs in pupils' households.

A breakdown on the use of LLINs by parents/guardian, children and pregnant women and other adults by the pupils interviewed varied among the various groups. This presentation will focus more on the pre-intervention survey from the children as no intervention on net usage in the home was done either through the direct provision of nets or capacity development in the grassrootsoccer initiative to guide the provision and use of LLINs in the households. However, the post-intervention response will provide information from pupils that could be assessed for their consistency.

According to the pupils, the use of LLINs among pregnant women was less than 15% (Table 3.10). Similarly, children less than 5 years of age that slept under LLIN in the households of the pupils interviewed was less than 32% while in children above five years of age was higher (50-74%)(Table 13.14a). Furthermore, among the Head of households, the use of LLIN by fathers in the home ranged from 32% - 55% while among non-pregnant women, it ranged from 45-65% (Table 3.11). It is possible therefore that school pupils could potentially promote demand for ownership and use of LLINs if properly organized. Importantly, some level of cost-effective and rapid assessment of net ownership and use in household in communities could be done through schools to gauge the dynamics in the homes and the appropriate intervention implemented.

Table 3.10: Use of LLIN among pregnant women and children in Pupils' Household

Description	Intervention Group		Non-intervention Group	
	Pre-interven tion No. (%)	Post intervention No. (%)	Pre-interven tion No. (%)	Post intervention No. (%)
Pregnant women Who slept under the LLINs last night in your household?				
Yes	21(11.7)	31(14.5)	9(4.3)	26(11.4)
No	158(88.3)	183(85.5)	199(95.7)	202(88.6)
	X ² = 0.644; df = 1; P-value = 0.422		X ² = 7.378; df = 1; P-value = 0.007	
Children under five years who slept under the LLINs last night in your household?				
Yes	43(24.0)	67(31.3)	37(17.8)	64(28.1)
No	136(76.0)	147(68.7)	171(82.2)	164(71.9)
	X ² = 2.567; df = 1; P-value = 0.109		X ² = 6.460; df = 1; P-value = 0.011	
Children over five years who slept under the LLINs last night in your household?				
Yes	132(73.7)	149(69.6)	111(53.4)	138(60.5)
No	47(26.3)	65(30.4)	97(46.6)	90(39.5)
P-value	X ² = 0.811; df = 1; P-value = 0.368		X ² = 2.277; df = 1; P-value = 0.131	

Table 3.11: Use of LLIN among parents/adults in Pupils' household.

Description	Intervention Group		Non-intervention Group	
	Pre-interven tion No. (%)	Post intervention No. (%)	Pre-interven tion No. (%)	Post intervention No. (%)
Father who slept under the LLINs last night in your household?				
Yes	82(45.8)	118(55.1)	66(31.7)	117(51.3)
No	97(54.2)	96(44.9)	142(68.3)	111(48.7)
	X ² = 3.395; df = 1; P-value = 0.065		X ² = 17.130; df = 1; P-value = 0.000	
Non-pregnant women who slept under the LLINs last night in your household?				
Yes	98(54.7)	138(64.5)	93(44.9)	138(60.5)
No	81(45.3)	76(35.5)	114(55.1)	90(39.5)
	X ² = 3.852; df = 1; P-value = 0.050		X ² = 10.601; df = 1; P-value = 0.001	

Sources of LLINs, ownership promotion and use in households.

The source of LLINs in the homes, from the pupils' responses showed that most of nets were obtained from the public hospitals (34% to 51%) and house-to-house distribution in the community (29-41%) (Table 3.12).

The willingness of the pupils to use LLINs in their homes in the pre-intervention survey was up to 80% and this proportion increased significantly in both the intervention and control schools in the post-intervention survey (Table 3.13). The pupils responded that they were sure that their siblings and parents will be willing to use LLINs (Table 3.14). The pupils were also willing to promote LLINs' use in their homes (Table 3.15).

Table 3.12: Summary of source of LLINs in pupils' households

Source of Information to pupils on Malaria	Intervention Schools (Pre-intervention) Frequency (%)	Control Schools (Pre-intervention) Frequency (%)
Pharmacy	0.6	0.5
Chemist/Patent Medicine Store	2.4	1.5
Street/Market vendor	15.4	16.8
Wholesale/Retail Shop	1.2	0.0
Private Hospital	3.6	3.6
Public Hospital	50.9	34.0
House-to-house distribution	28.4	40.8
Gift from family/friends	4.1	3.6

Table 3.13: Willingness of pupils to use LLINs at home.

Description	Intervention Group		Non-intervention Group	
	Pre-intervention No. (%)	Post intervention No. (%)	Pre-intervention No. (%)	Post intervention No. (%)
If you were given LLINs at school for use at home, would you use the net at home?				
Yes	274(93.8)	287(99.0)	259(87.5)	286(97.6)
No	18(6.2)	3(1.0)	37(12.5)	7(2.4)
	$\chi^2 = 11.009$; df = 1; P-value = 0.001		$\chi^2 = 21.777$; df = 1; P-value = 0.000	

Table 3.14: Willingness of members of household to use LLINs.

Description	Intervention Group		Non-intervention Group	
	Pre-assessm ent No. (%)	Post assessment No. (%)	Pre-assessm ent No. (%)	Post assessment No. (%)
Would siblings be willing to hang LLINs and use it at home?				
Yes	277(95.5)	272(95.1)	256(88.0)	280(95.6)
No	13(4.5)	14(4.9)	35(12.0)	13(4.4)
	X ² = 0.055; df = 1; P-value = 0.815		X ² = 11.151; df = 1; P-value = 0.001	
Would your Parents/Guardians be willing to hang LLINs and use the net at home?				
Yes	275(94.5%)	276(96.8)	252(86.0)	285(96.9)
No	16(5.5)	9(3.2)	41(14.0)	9(3.1)
	X ² = 1.900; df = 1; P-value = 0.168		X ² = 22.506; df = 1; P-value = 0.000	

Table 3.15: Willingness of pupils to promote malaria testing before treatment and use LLINs at home.

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
I am willing to inform my family members to do a malaria test before treatment				
Strongly agree	133(41.6)	193(60.3)	153(48.6)	182(56.9)
Agree	159(49.7)	117(36.6)	138(43.8)	131(40.9)
Disagree	22(6.9)	9(2.8)	18(5.7)	7(2.2)
Strongly disagree	6(1.9)	1(0.3)	6(1.9)	0(0.0)
P-value	X ² = 26.457; df = 3; P-value = 0.000		X ² = 13.494; df = 3; P-value = 0.004	
I am willing to teach my family members how they can protect themselves from malaria.				
Strongly agree	152(47.5)	204(63.8)	163(51.7)	181(56.6)
Agree	141(44.1)	100(31.3)	133(42.2)	119(37.2)
Disagree	9(2.8)	15(4.7)	10(3.2)	19(5.9)
Strongly disagree	18(5.6)	1(0.3)	9(2.9)	1(0.3)
P-value			X ² = 10.874; df = 3; P-value = 0.012	

SYNOPSIS OF FOCUS GROUP DISCUSSIONS AND INDEPTH INTERVIEWS

Knowledge and perception of causes, signs/symptoms and prevention of malaria

The knowledge and perception of majority of the pupils and coaches who participated in the FGDs and the ones interviewed improved in the post-intervention survey compared to the outcome of the pre-intervention survey. They showed adequate knowledge of malaria considering their ability to state and describe the cause of malaria, the signs/symptoms of the disease and how it can be prevented in the former phase of the study than the latter phase..

There was a general consensus among the FGD participants and the key informants interviewed that mosquito bite is the major route of malaria infection. Most of the FGD participants had correct knowledge of the bite of a mosquito as the main route of malaria transmission. It was a general consensus among the participants that malaria is very endemic in their neighbourhoods particularly among young people.

A larger proportion of the FGD participants and coaches interviewed correctly identified mosquito bite as the route of transmission of the parasite that causes malaria. A female coach in an intervention school in Apapa for example pointed out that, *"Malaria is a disease that is mainly caused by the bite of a mosquito...it is the mosquito that transmits the infection."* A male coach in a focus group explained that, *"...there are primary and secondary causes of malaria. The primary cause of malaria is mainly mosquito bite while the secondary causes of malaria include stagnant water, and dirty environment. And mosquito bites at night, but the major emphasis is personal hygiene."* Similarly, a male coach in the post assessment phase pointed out that, *"...malaria is caused by mosquito; malaria can kill if not properly taken care of. To prevent malaria one must make use of the long lasting insecticide nets, drain all water and keep the drainage clean."* A male pupil in an intervention school in the post-assessment phase emphasised that *"Malaria is caused when we don't sleep under the mosquito net, that's why the government distributes mosquito nets free of charge."* A large number of those studied admitted the fact that malaria can actually kill if not treated early and appropriately. A pupil in a focus group attested to this saying, *"...malaria can kill someone."*

On the contrary, a few of the pupils in the focus group discussion however had the misconceptions about the cause of malaria in both the intervention and control schools with more in the pre-intervention phase of the study than in the post-intervention phase. Some of their misconceptions included eating food cooked beside the toilet, drinking dirty water, living in dirty environment, using dirty plates to eat, eating bad or left-over food, excessive exposure to the sun by working or walking too much in the sun, eating too much, sleeping too much and not washing ones hands after toilet use as causes of malaria. The proportion of pupils that gave this responses in their personal response in the quantitative assessment was high. A female coach in the pre-assessment phase of the study for example stated that, *"...someone tends to have malaria when the weather is so hot."* This poor knowledge on the cause of malaria by a coach is likely to reflect on the quality of coaching in the implementation of the grassrootsoccer initiative.

The proportion of pupils who knew and mentioned sleeping under treated mosquito nets as effective measure of preventing malaria increased in the post-intervention phase compared to the pre-intervention phase. Other preventive measures believed

could be taken against malaria by the pupils and coaches studied included using mosquito repellents such as coils, maintenance of good personal hygiene and environmental sanitation, and spraying of chemicals such as insecticides.

Many of the pupils and coaches also demonstrated the ability of correctly identifying fever, headache, catarrh, loss of appetite, vomiting, cough, change in eye and urine colour, weakness of the body, loss of weight, joint ache and pain, dizziness, weakness, cold as some of the common signs/symptoms of malaria. A female coach in an intervention school in Apapa for example stated that, “...signs of malaria?...one will feel cold, have high body temperature and be shivering.”

A significantly large number of the FGD participants and those interviewed agreed that malaria is treatable because it has a cure in the post- intervention phase than the pre- intervention phase of the study. A male coach for example said. “...there is cure for malaria; so many drugs are available for malaria treatment.” These responses aligned with the quantitative data obtained using structured questionnaire earlier presented.

KNOWLEDGE, PERCEPTION AND ATTITUDES ON HIV/AIDS

KNOWLEDGE ABOUT HIV/AIDS

What is HIV?

The knowledge of HIV based on the ability of the pupils to correctly define HIV in the intervention group increased by over 100% from the pre-assessment level of 23.4% to 48.8% at the post-assessment survey compared with those in the non-control group where there was no intervention (Table 3.16 and Fig. 3.10).

Table 3.16: Pupils Knowledge of the acronym, HIV.

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post -assessment No. (%)
What is HIV?				
Correct response	75(23.4)	156 (48.8)	80(25.5)	137(42.8)
Wrong response	245(76.6)	164 (51.2)	235(74.6)	183(57.2)
P-value	$\chi^2 = 44.444$; df = 1; P-value = 0.000		$\chi^2 = 21.403$; df = 1; P-value = 0.000	

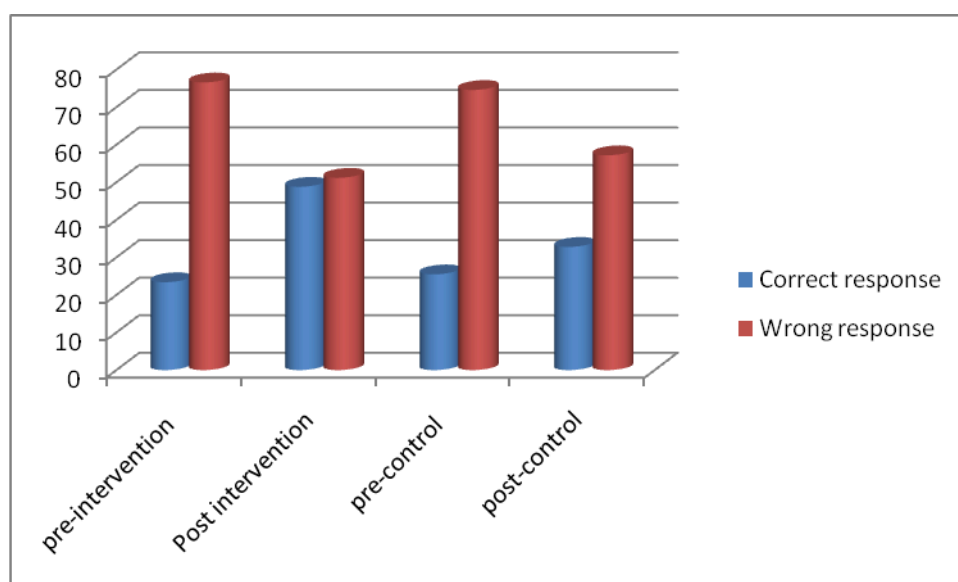


Fig. 3.10 Responses of the pupils on the acronym, HIV in the intervention and non-intervention group.

Pupils' definition of the acronym, AIDS.

The knowledge of the acronym, AIDS by both the intervention and control schools was generally low (about 20%) and was wrongly defined by 257 (80.3%) of the pupils interviewed in the intervention group at the pre-assessment survey. This decreased to 64.1% post-assessment survey in the intervention schools ($X^2=21.044$; $df = 1$; $P\text{-value} = 0.000$) compared with the control schools that decreased marginally from 80% at the pre-assessment to 71.3% at the post-assessment survey. Correct definition of HIV improved by about 80% in the post-assessment survey in the intervention schools (Fig. 3.11). This was not seen in the control schools.

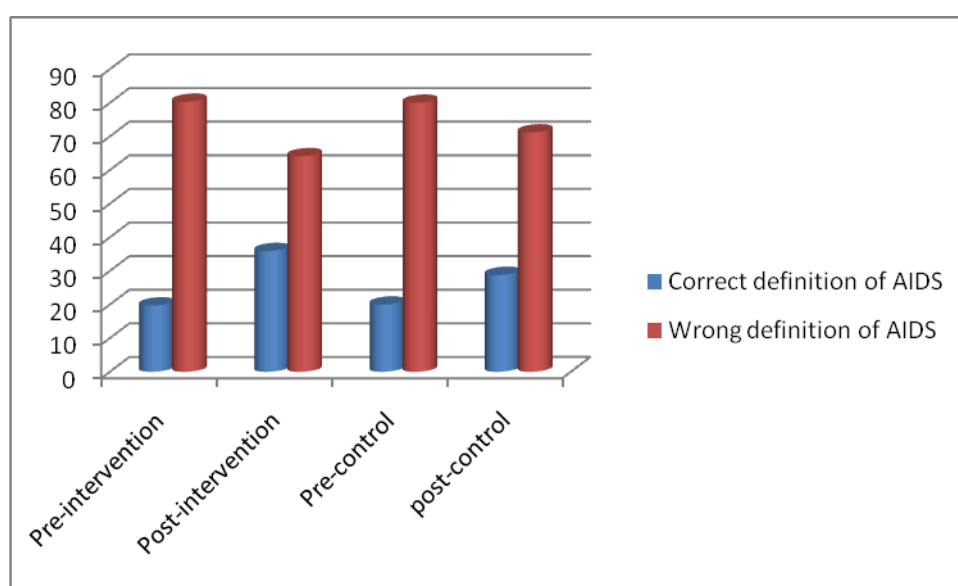


Figure 3.11 Pupils' knowledge of AIDS in the intervention and control group in the pre-assessment and post-assessment surveys.

Mode of Transmission of HIV

The pupils were interviewed on various modes of transmission of HIV. The correct responses of the pupils on the transmission of HIV through sexual intercourse, mother-to-child transmission but not by mosquitoes in the intervention and control schools were considerable at the pre-assessment survey (Table 3.17). Similarly, there was considerable knowledge (>70%) on the transmission of HIV through body fluids such as semen, breast milk, vaginal fluid and unscreened transfused blood at the pre-assessment survey (Table 3.18, 3.19). There was significantly high improvement on the knowledge on the transmission of HIV through sex, unscreened blood for transfusion, mother-to-child and breast milk in the post-assessment survey in the intervention and control schools.

Table 3.17: Perceived mode of HIV transmission of HIV (Sex, Mosquito, mother-to-child)

Description	Intervention Group		Non-intervention Group	
	Pre-assessme nt No. (%)	Post assessment No. (%)	Pre-assessm ent No. (%)	Post assessment No. (%)
HIV can be spread by sex				
True	246(76.9)	292(91.3)	254(80.6)	296(92.5)
False	35(10.9)	23 (7.2)	34(10.8)	18(5.6)
P-value	X ² =32.689; df = 2; P-value = 0.00		X ² =21.456; df = 2; P-value = 0.000	
HIV can be spread by mosquito				
True	136(42.5)	101(31.6)	140(44.4)	123(38.4)
False	148(46.3)	212(66.3)	152(48.3)	190(59.4)
Don't know	36(11.3)	7(2.2)	23(7.3)	23(7.3)
P-value	X ² = 36.105; df = 2; P-value = 0.00		X ² =13.816; df = 2; P-value = 0.001	
HIV can be passed from a mother to her baby (mother-to-child).				
True	210(65.6)	254(79.4)	238(74.4)	203(64.4)
False	74(23.1)	58(18.1)	76(23.8)	85(27.0)
Don't know	36(11.3)	8(2.5)	6(1.9)	27(8,6)
P-value	X ² =23.930; df = 2; P-value = 0.00		X ² =16.606; df = 2; P-value = 0.000	

Table 3.18: Mode of HIV transmission (body fluids and unscreened blood)

Description	Intervention Group		Non-intervention Group (Control)	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
HIV can be transmitted through body fluids such as blood, semen, vaginal fluid and breast milk.				
True	255(79.7)	281(87.8)	265(84.9)	275(85.9)
False	27(8.40)	26(8.1)	23(7.3)	33(10.3)
Don't know	38(11.9)	13(4.1)	27(8.6)	12(3.8)
P-value	$\chi^2 = 13.535$; df = 2; P-value = 0.010		$\chi^2 = 7.701$; df = 2; P-value = 0.021	

Table 3.19: Mode of HIV transmission (transfusion of unscreened blood)

Description	Intervention Group		Non-intervention Group (Control)	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Transfusion of unscreened blood				
True	234(73.1)	277(86.6)	289(90.3)	257(81.6)
False	50(15.6)	33(10.3)	25(7.8)	43(13.7)
Don't know	36(11.3)	10(3.1)	6(1.9)	6(1.9)
P-value	$\chi^2 = 21.796$; df = 2; P-value = 0.000		$\chi^2 = 10.459$; df = 2; P-value = 0.005	

Knowledge of Risk factors to HIV transmission

There was considerable improvement in knowledge on the risk factors that could contribute to the transmission of HIV such as the window period for HIV infection and sexual relationship with older partners in the intervention schools compared with the control schools with significant reductions in the proportions of those that did not know (Table 3.20). Baseline knowledge among the pupils on multiple partners as a risk factor was high (>80%) with improvement recorded after the post-intervention assessment survey (Table 3.21). Further, there was an average base-line knowledge on the reduced risk of HIV with condom use; increased knowledge following intervention with a significant reduction in the proportion of those who did not know. However, knowledge on the implication of alcohol use as a risk factor for HIV was below 50% but increased at the post-assessment survey in the intervention group (Table 3.22)

Table 3.20: Risk of HIV transmission (within 6-8 weeks after infection, sexual relationship with an older partner).

Description	Intervention Group		Non-intervention Group	
	Pre-assessm ent No. (%)	Post assessment No. (%)	Pre-assessm ent No. (%)	Post assessment No. (%)
Someone is most likely to spread HIV during the first 6-8 weeks after being infected				
True	148(46.3)	200(62.5)	174(55.2)	208(65.0)
False	83(25.9)	73(22.8)	72(22.9)	81(25.3)
Don't know	89(27.8)	47(14.7)	69(21.9)	31(9.7)
P-value	X ² = 21.382; df = 2; P-value = 0.00		X ² =17.957; df = 2; P-value = 0.000	
Having sexual relationship with an older partner increases the risk of getting HIV				
True	195(60.9)	224(70.0)	188(59.7)	213(66.6)
False	54(16.9)	84(26.3)	73(23.2)	90(28.1)
Don't know	71(22.2)	12(3.8)	54(17.1)	17(5.3)
P-value	X ² = 50.469; df = 2; P-value = 0.00		X ² =22.575; df = 2; P-value = 0.000	

Table 3.21: Knowledge of Risk factors for HIV transmission (multiple sexual partners and use of condom).

Description	Intervention Group		Non-intervention Group	
	Pre-assessm ent No. (%)	Post assessment No. (%)	Pre-assessm ent No. (%)	Post assessment No. (%)
Having more than one sexual partner increases risk of having HIV.				
True	264(82.5)	304(95.0)	258(81.9)	280(87.5)
False	27(8.4)	10(3.1)	37(11.7)	36(11.3)
Don't know	29(9.1)	6(1.9)	4(1.3)	4(1.3)
P-value	X ² = 25.742; df = 2; P-value = 0.001		X ² =11.541; df = 2; P-value = 0.003	
Using condom during sex reduces the risk of having HIV.				
True	174(54.4)	211(65.9)	176(55.9)	213(66.6)
False	59(18.4)	89(27.8)	68(21.6)	86(26.9)
Don't know	87(27.2)	20(6.3)	71(22.5)	21(6.6)
P-value	X ² = 51.590; df = 2; P-value = 0.00		X ² =32.760; df = 2; P-value = 0.000	

Table 3.22: Alcohol as a risk factor for HIV transmission

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Alcohol use and HIV transmission				
True	100(31.3)	160(50.0)	118(37.5)	146(45.6)
False	168(52.5)	132(41.3)	155(49.2)	156(48.8)
Don't know	52(16.3)	28(8.8)	42(13.3)	18(5.6)
P-value	$\chi^2 = 25.366$; df = 2; P-value = 0.00		$\chi^2 = 12.534$; df = 2; P-value = 0.002	

The risk factors presented here should be carefully reinforced in the implementation of the grassrootsoccer initiative as important life skills for the pupils to prevent HIV.

Abstinence from sex as a form of prevention, HIV burden, recognition and cure

The pupils' baseline knowledge on abstinence from sex in HIV prevention was over 60% and this improved significantly after the intervention at the post-assessment survey (Table 3.23). Conversely, baseline knowledge amongst all the pupils interviewed on cure for HIV was low (<36%) with marginal improvement in knowledge in the intervention arm (Table 3.24). On the burden of HIV in Nigeria when compared with global HIV prevalence, considerable proportion of the pupils interviewed could not proffer an answer but this proportion declined significantly after the intervention (Table 3.24).

Table 3.23: Abstinence from sex as a preventive measure against HIV.

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
Sexual abstinence as an HIV preventive measure				
True	204(63.8)	241(75.3)	211(67.0)	236(73.8)
False	65(20.3)	54(16.9)	75(23.8)	72(22.5)
Don't know	51(15.9)	25(7.8)	29(9.2)	12(3.8)
P-value	$\chi^2 = 12.988$; df = 2; P-value = 0.02		$\chi^2 = 8.469$; df = 2; P-value = 0.014	

Table 3.24: Cure for and burden of HIV

S/No.	Description	Intervention Group		Non-intervention Group	
		Pre-assess ment No. (%)	Post assessment No. (%)	Pre-assess ment No. (%)	Post assessment No. (%)
HIV/AIDS is curable					
	True	98(30.6)	124(38.8)	113(35.9)	140(43.80)
	False	174(54.4)	178(55.6)	161(51.1)	161(50.3)
	Don't know	48(15.0)	18(5.6)	41(13.0)	19(5.9)
	P-value	X ² = 17.727; df = 2; P-value = 0.00		X ² =10.909; df = 2; P-value = 0.004	
Nigeria has the second largest population of people living with HIV					
	True	133(41.6)	175(54.7)	141(44.8)	169(52.8)
	False	43(13.4)	77(24.1)	59(18.7)	67(20.9)
	Don't know	144(45.0)	68(21.3)	115(36.5)	84(26.3)
	P-value	X ² = 42.606; df = 2; P-value = 0.00		X ² = 7.827; df = 2; P-value = 0.020	

Recognition of HIV infected individual by physical appearance

The baseline responses of the pupils interviewed on the use of physical appearance to recognise an HIV infected person was high as over 60% of them responded that it was not possible (Table 3.25). However, the intervention did not result in any significant improvement in knowledge among pupils at the post-assessment survey. The proportion of pupils who reported that they did not know if it was possible for physical appearances could be used to recognise an HIV infected person was significantly reduced at the post-assessment survey ($p < 0.05$).

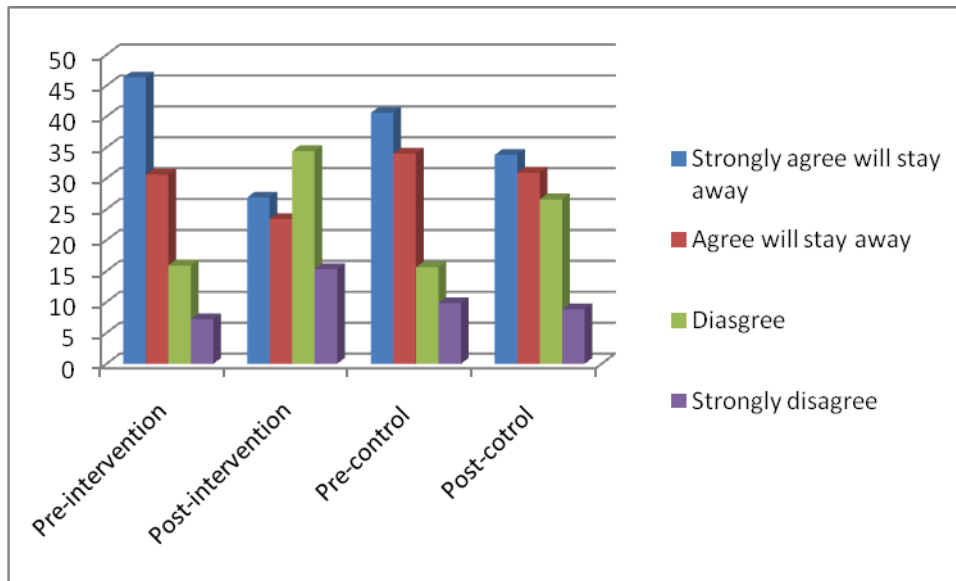
Table 3.25: Recognition of HIV sero-positive persons by physical observation

Description	Intervention Group		Non-intervention Group	
	Pre-assessment No. (%)	Post assessment No. (%)	Pre-assessment No. (%)	Post assessment No. (%)
I can tell if someone has HIV by looking at him/her.				
True	68(21.3)	63(19.7)	72(22.9)	72(22.5)
False	220(68.8)	253(79.1)	221(70.2)	243(76.9)
Don't know	32(10.0)	4(1.3)	22(7.0)	5(1.6)
	$\chi^2 = 24.271$; df = 2; P-value = 0.00		$\chi^2 = 11.708$; df = 2; P-value = 0.003	

PERCEIVED ATTITUDE OF PUPILS ON HIV/AIDS

Association with and care for persons with HIV/AIDS

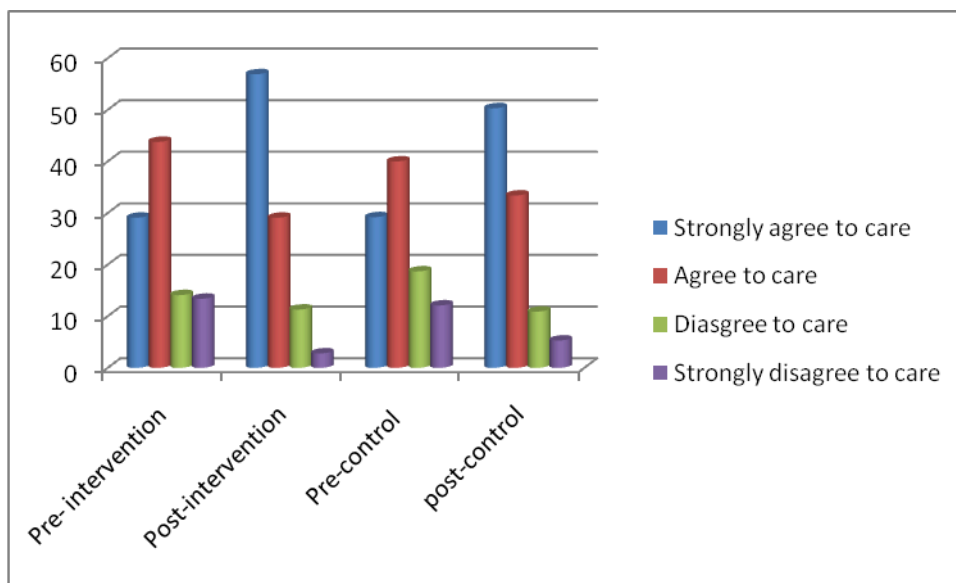
The pupils' knowledge on attitude concerning HIV/ AIDS transmission, and support was elicited. At the pre-assessment interview, majority of the pupils would most likely stay away from their classmate with HIV. This changed at the post-assessment survey, especially among the pupils in the intervention schools when compared with the control schools (Fig. 3.12). While the proportion of pupils in the intervention schools that strongly agreed that they would stay away from an HIV sero-positive pupil at the pre-assessment survey was 46.3%, this proportion decreased to 26.9% at the post-assessment survey. Those that disagreed rose from 7.2% to 15.3% (Fig. 3.12). Similarly, the attitude of the pupils toward an HIV sero-positive family member would have been negative given their pre-assessment knowledge but this perceived attitude was positively altered after the post-assessment survey (Fig. 3.13). A stronger and well delivered message on HIV transmission and stigmatization would result in a stronger conviction to associate with HIV sero-positive persons.



Pre-intervention and post-intervention: $\chi^2 = 51.430$; $df = 3$; $P\text{-value} = 0.001$

Pre-control and post-control: $\chi^2 = 11.791$; $df = 3$; $P\text{-value} = 0.008$

Fig. 3.12: Pupils' attitude toward a classmate with HIV/AIDS



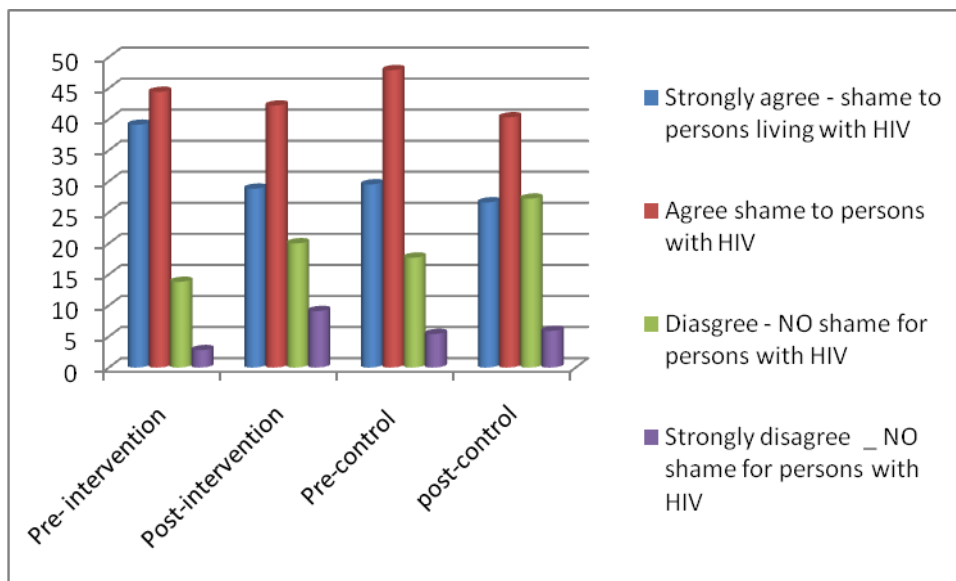
Pre-intervention and post-intervention: ($\chi^2 = 60.637$; $df = 3$; $P\text{-value} = 0.000$)

Pre-control and post-control: $\chi^2 = 34.476$; $df = 3$; $P\text{-value} = 0.000$

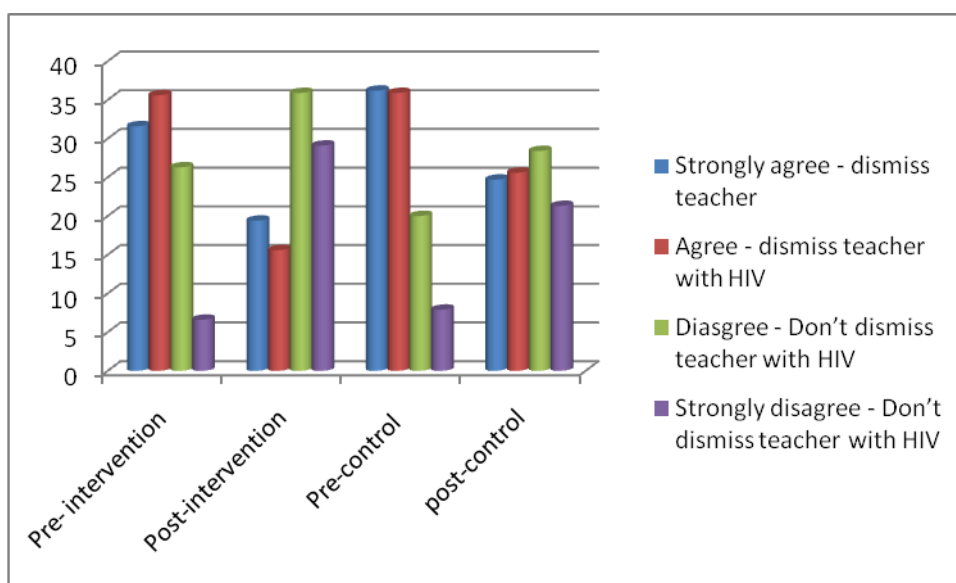
Fig. 3.13. Perceived attitudes of pupils in providing care for family members with HIV/AIDS.

Attitudes toward persons with HIV/AIDS

Over 60% of pupils at the pre-assessment evaluation in the intervention and control schools responded that they would show a negative attitude toward persons with HIV sero-positive persons around them. (Fig. 3.14 and 3.15). 267 (83.5%) of the pupils in the intervention schools agreed that people living with HIV/AIDS should be ashamed of themselves, with 53 (16.5%) disagreeing at the pre-assessment survey. This indicated a high likelihood of stigmatization of HIV/AIDS persons by the pupils. After the intervention, the proportion of those that agreed that HIV sero-persons should be ashamed of themselves was reduced to 227 (71%) ($p < 0.05$). Similarly, the proportion of pupils at the intervention schools who suggested that an HIV sero-positive teacher should be dismissed decreased from 215 (67.2%) at the pre-assessment survey to 102 (35%) at the post-assessment survey ($p < 0.05$) (Fig. 3.15). There was obvious increase among pupils in the intervention schools at the post-assessment survey that disagreed generally compared to pupils in the control schools.



Pre-intervention and post-intervention: $X^2 = 19.425$; $df = 3$; $P\text{-value} = 0.000$
 Pre-control and post-control: $X^2 = 9.884$; $df = 3$; $P\text{-value} = 0.020$
 Fig. 3.14. Perceived attitude of pupils toward persons with HIV/AIDS



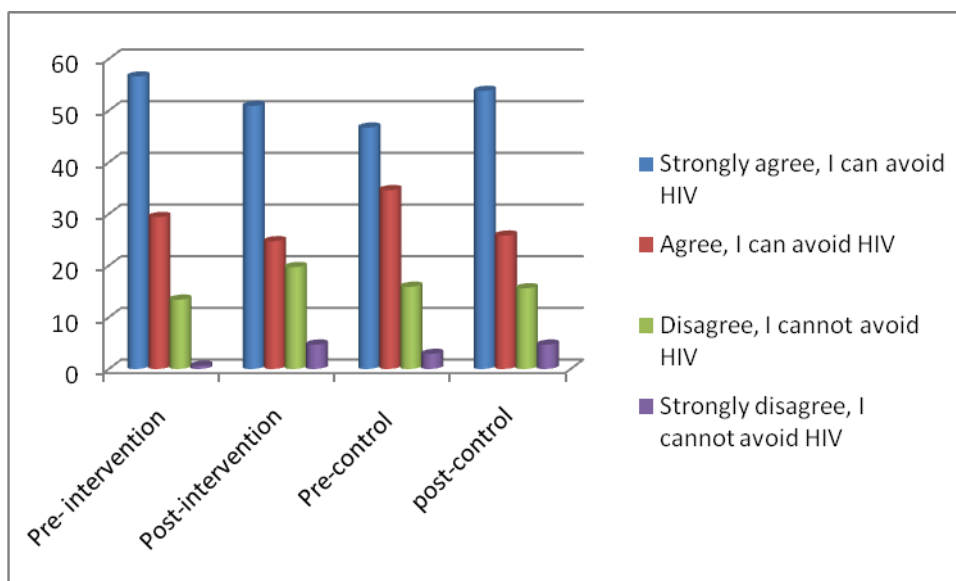
Pre-intervention and post-intervention: $\chi^2 = 84.610$; $df = 3$; $P\text{-value} = 0.000$

Pre-control and post-control: $\chi^2 = 36.211$; $df = 3$; $P\text{-value} = 0.000$

Fig. 3.15. Pupils' suggestions on the dismissal from the school if a teacher was living with HIV.

PRACTICES

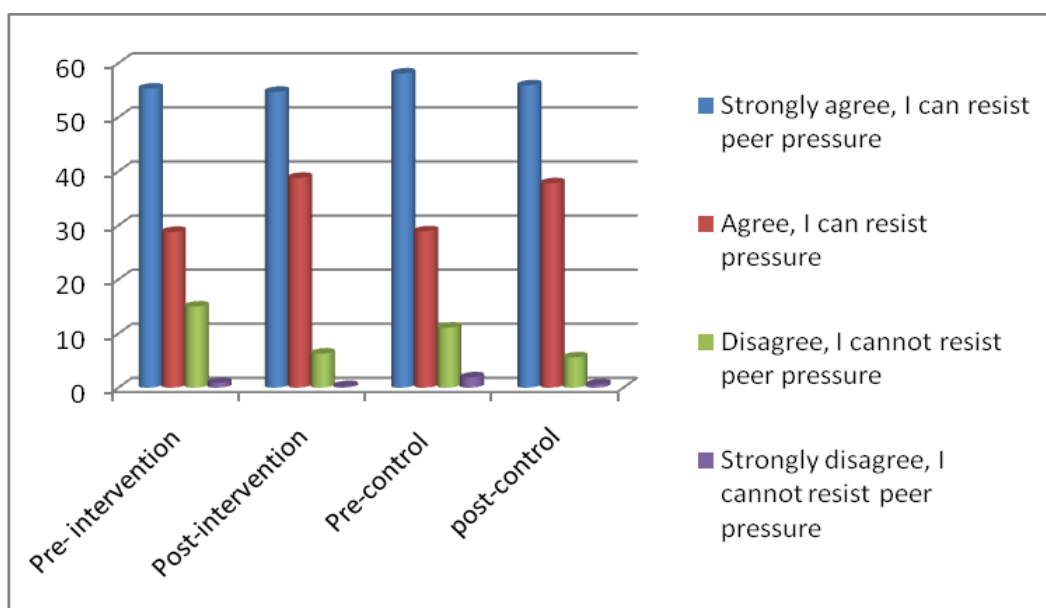
Responses were generated from the pupil's as an indicator of how knowledge could drive the practice toward care, support and prevention of HIV. Indication on the capacity of the pupils to avoid HIV infection was high in the intervention and control group at the pre-assessment survey (>80%) (Fig. 3.16). While there was no increase in the proportion of pupils that agreed that they would avoid HIV at the post-assessment survey, there was a 100% reduction in the proportion of pupils that disagreed that they could not avoid HIV infection. Furthermore, 269 (84.1%) of pupils from the intervention schools agreed (sum of those who strongly agreed and those that agreed) that they would resist peer pressure that could influence and expose them to risky behaviours to contract HIV at the pre-assessment survey (Fig. 3.17). Those that agreed increased to 299 (93.5%) at the post-intervention post-assessment survey.



Pre-intervention and post-intervention: $\chi^2 = 15.957$; $df = 3$; P-value = 0.010

Pre-control and post-control: $\chi^2 = 6.941$; $df = 3$; P-value = 0.074

Fig. 3.16: Individual capacity to avoid HIV infection



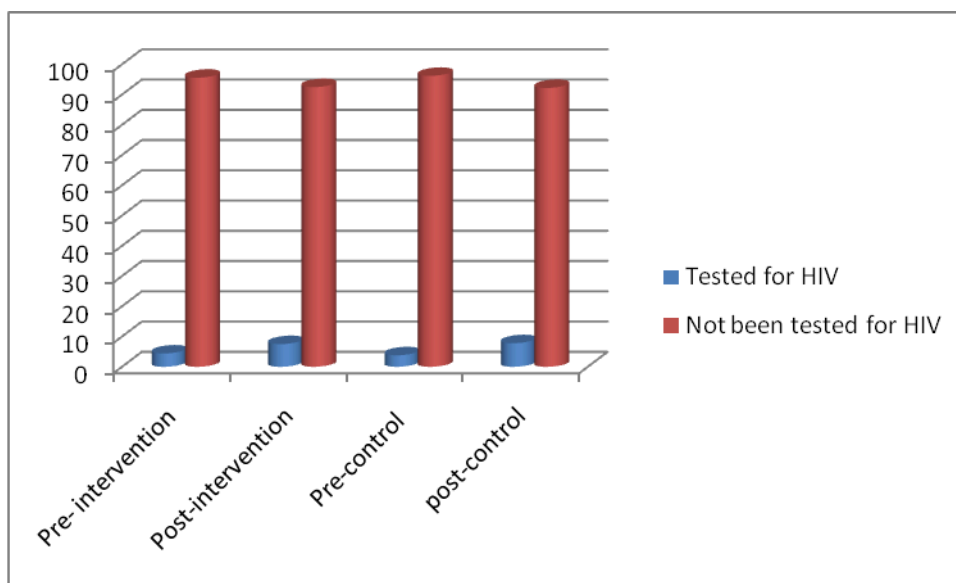
Pre-intervention and post-intervention: $\chi^2 = 17.282$; $df = 3$; P-value = 0.01

Pre-control and post-control: $\chi^2 = 11.704$; $df = 3$; P-value = 0.008

Fig. 3.17: Individual capacity to resist peer pressure in HIV prevention

HIV Testing: Pupils' tested for HIV, willingness to be tested and information about HIV testing centres.

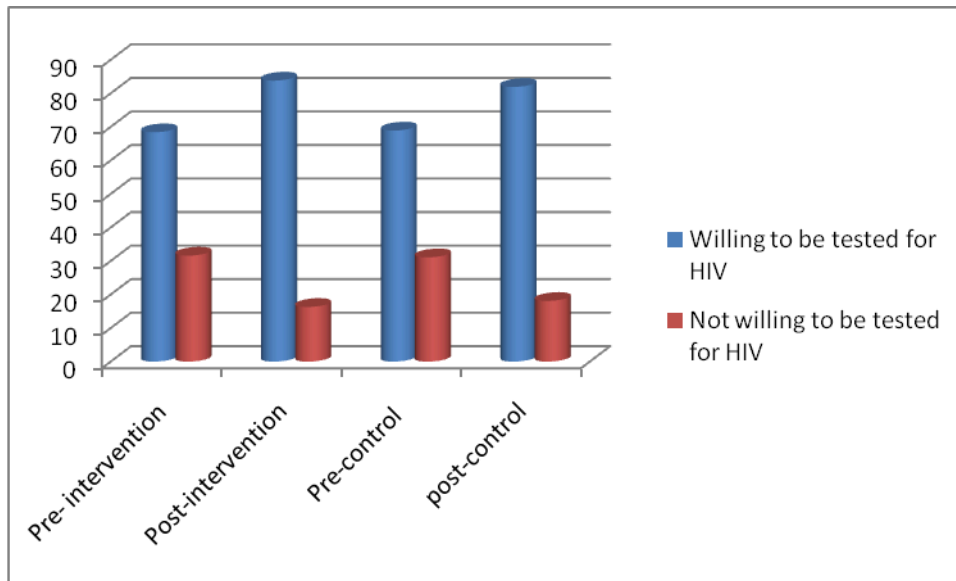
The responses from pupils that have been tested for HIV in the schools showed that only very few of these pupils had been tested (<10%). In the intervention schools at the pre-assessment survey, 14 (4.4%) of the pupils had been tested for HIV and this increased to 7.5% at the post-assessment survey (Fig. 3.18). A similar result was observed in the control schools. The proportion of pupils willing to undertake HIV tests in the future if provided in their community increased from 68.4% to 83.8% at the pre- and post-assessment survey respectively in the intervention schools (Fig. 3.19). Awareness on where HIV testing could be done was between 30.9% and 41.6% in intervention and control schools at baseline with moderate increase at the post-assessment survey (Fig. 3.20). No increase in the proportion of pupils tested was expected given the short period between the pre and post-assessment evaluation.



Pre-intervention and post-intervention: $X^2 = 2.798$; $df = 1$; $P\text{-value} = 0.094$

Pre-control and post-control: $X^2 = 4.636$; $df = 1$; $P\text{-value} = 0.031$

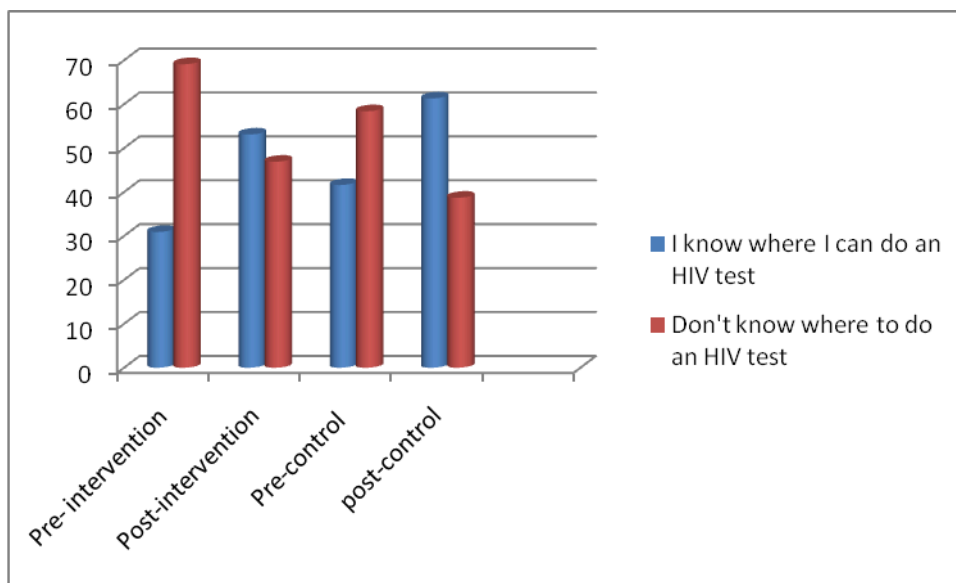
Fig. 3.18: HIV testing among pupils



Pre-intervention and post-intervention: $X^2 = 20.623$; $df = 1$; $P\text{-value} = 0.000$

Pre-control and post-control: $X^2 = 14.445$; $df = 1$; $P\text{-value} = 0.000$

Fig. 3.19: Willingness of pupils to undergo HIV testing



Pre-intervention and post-intervention: $X^2 = 32.327$; $df = 1$; $P\text{-value} = 0.000$

Pre-control and post-control: $X^2 = 24.571$; $df = 1$; $P\text{-value} = 0.000$

Fig. 3.20: Knowledge of where an HIV test could be done

Source of Information on HIV/AIDS

The source of information on HIV/AIDS among the pupils interviewed at the pre-assessment survey in the intervention and control schools which is an important indicator of the most effective channel for HIV/AIDs awareness among pupils surveyed is the school (67.5% and 71.4% - intervention and control schools respectively) (Table 3.26). This was followed by television, 39.7% and 42.9 and with the internet as the least source, 0.6% and 1.9% in the intervention and control school respectively. That 67.5% of the pupils heard of HIV/AIDS at the pre-assessment evaluation showed that school-based programmes are likely to create the desired awareness for an effective HIV prevention programme (Fig. 3.21).

Table 3.26: Summary of sources of information on HIV/ AIDS among pupils

Source of Information to pupils on HIV/AIDS	Intervention Schools (Pre-assessment) Responses -%	Control Schools (Pre-assessment) Responses -%
Family/ relations	33.1	37.5
Friends	18.4	21.9
Hospitals/Clinics	15.6	19.0
Newspapers/magazine/journals	11.9	7.3
Radio	20.0	21.3
Television	39.7	42.9
Poster	3.4	3.5
Pamphlets/brochures	1.9	1.9
Pharmacy stores	1.3	2.2
Chemist shops	0.9	1.6
Community meetings	1.6	2.9
Place of worship	8.1	13.0
School	67.5	71.4
Internet	0.6	1.9

Note: Only the pre-assessment response was useful in capturing the sources of information on HIV.

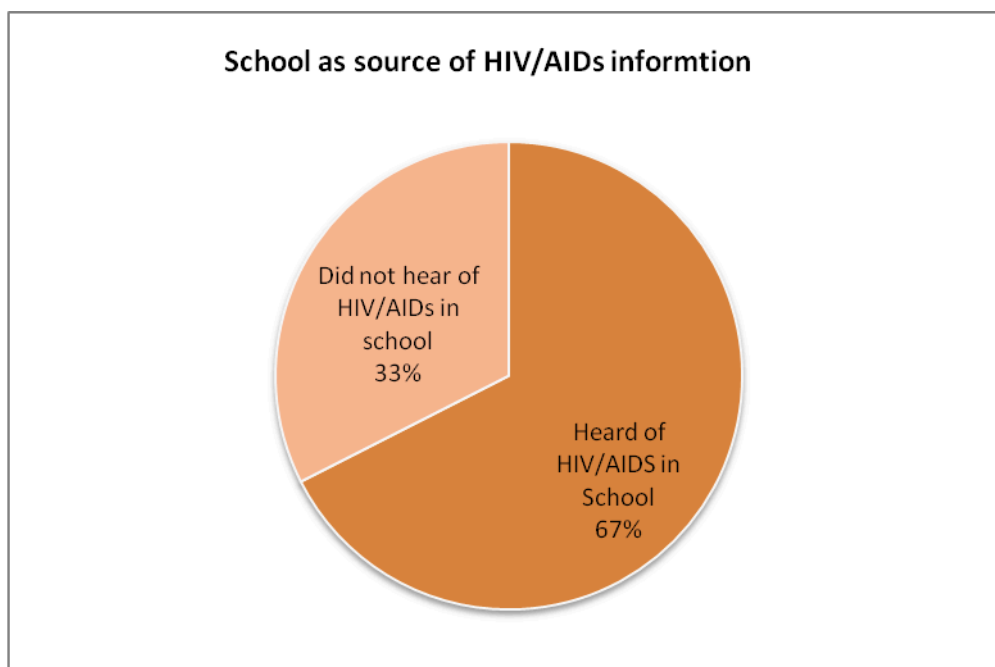


Fig. 3.21: School as the source of HIV/ AIDS information among pupils in the intervention schools at the pre-assessment survey.

SYNOPSIS OF FGDS AND KEY INFORMANT INTERVIEWS ON HIV/AIDS

The students interviewed demonstrated various knowledge, attitudes and communication on malaria and HIV/AIDS. Generally, the responses to the discussion were far below average on key knowledge issues, for example, the meaning of AIDS was a challenge as well as the cause of malaria in the pre-intervention phase of the study. There was improvement in the responses however among the pupils and coaches studied in the post- intervention phase. Awareness on sexuality and the major cause of HIV transmission was higher in the post-intervention phase than the pre- intervention phase. However, there was general agreement on the usefulness of the Grassrootsoccer in-school programme in creating awareness with high potential of modulating behaviour towards malaria and HIV prevention.

Knowledge and perception of HIV transmission, signs/symptoms and prevention

Virtually all the FGD participants i.e. pupils and coaches and those interviewed knew about HIV/AIDS and expressed their strong belief in the reality of the disease but with very low self-perceived risk of HIV infection in both pre- and post-assessment phases of the study.

Majority of the pupils and coaches who participated in the FGDs and those interviewed in the post- intervention survey had adequate knowledge of HIV/AIDS considering their ability to vividly state the full meaning of the acronyms, HIV and AIDS, differentiate HIV from AIDS and describe the different modes of HIV transmission, the signs/symptoms of the disease and how one can prevent the infection than in the pre- intervention survey. While some improvement was recorded in the quantitative aspect of the survey, a good proportion of the students could not define the acronym, AIDS. Only a very few number of the coaches and none of the pupils reported knowing about the possibility of HIV transmission from mother to child during pregnancy, delivery and/or breastfeeding in the pre- intervention phase compared to the post- intervention phase of the study. A male coach in a focus group for example mentioned this route of transmission in addition to others in his response thus, *"HIV can be transmitted by having unprotected sex, having multiple sexual partners, through blood transfusion, mother and child transmission."*

There was no gender difference in the knowledge of the FGD participants and those interviewed on the different modes of HIV transmission, the signs/symptoms of the disease and how one can prevent the infection. A male participant in an intervention school for example pointed out that, *"HIV is a virus, and one can get the infection through unprotected sex and sharing of razor blade."* Another male participant in a focus group discussion explained that, *"... one can get the infection through unprotected sex, sharing sharp objects such as shaving stick, needle and tooth brush."* In addition, a male

participant was of the view that, "...HIV can be transmitted through sharing of syringe of an injection, sharing of unsterilized hair clipper and transfusion of blood." Among the female pupils, a participant in a female focus group stated that, "HIV can be transmitted through sharing of sharp objects such as razor blade and hair clipper used in the barber's shop to barb one's hair." Another participant in the female focus group emphasised that, "HIV can be transmitted through transfusion of unscreened blood." It needs be emphasised that there was a general consensus in the focus group discussions and interviews that unprotected sex is the major route of HIV infection. This correlated with the findings from the quantitative evaluation. A male coach in the post- intervention survey phase for example pointed out thus, "I believe the commonest way in which people can transmit HIV is through sex."

There was little or no significant difference in the misconception of the route through which HIV could be transmitted and or prevented among the pupils who participated in the FGDs in the intervention and control groups in the 3 LGAs studied. Few of the pupils in both phases of the study had misconceptions about how one could be infected with HIV. These included belief that HIV could be transmitted by coughing, drinking and or bathing with dirty water, living in dirty environment, poor personal hygiene such as wearing dirty clothes, using someone else sponge and soap to bath, bathing together with others and sharing same cutlery, comb and towel with others.

Majority of the pupils had low self-perceived risk of HIV infection. They expressed their strong belief of not being vulnerable to HIV infection by responding in chorus "...Ha!...no...no...God forbid." A male pupil in one of the intervention schools in Mushin expressed his non-vulnerability to HIV infection stating that, "...because I'm very strong and it can't happen." Among the few of the pupils who had the self-perceived risk of HIV infection, a male pupil said, "...if someone who is HIV positive uses a blade that cut him/her, and someone else uses it, one can be infected with HIV."

When asked if they could identify someone who was infected with HIV, more of the FGD participants in the post- intervention than the pre- intervention survey were of the consensus that only blood test can determine if someone is actually infected with HIV or not. A pupil in a focus group stated that, "We cannot know except the person visited a hospital and is tested." The coaches who participated in the FGDs and those interviewed in both phases of the study emphasized that one cannot know an infected person by mere physical looks. This FGD finding correlated with the response from a high proportion of pupils in the quantitative analyses. There was little or no significant difference between those in intervention and control groups. A female coach interviewed in one of the intervention schools revealed that. "...according to information, we hear that if someone has HIV, it take about ten years before the infection starts manifesting as AIDS." A male coach in an interview in the post-assessment phase emphasised that, "HIV infection is the incubation stage while AIDS is the latent stage."

In their expression of perceived signs/symptoms of AIDS, the major sign attributed to AIDS is loss of weight because most of the pupils were of the belief that the

person having AIDS will become thin. A male pupil who participated in the FGD in the control group illustrated the sign of AIDS thus, *"There is an aunty in our compound, she has HIV, she didn't know how and when she became infected with HIV, but when she knew she had HIV, it was late, then she couldn't stand upright without supporting herself by holding something, she became so thin, she couldn't even walk on her own and then people started running away from her."* More of pupils in the intervention schools were however knew the signs/symptoms of AIDS than those in the control schools.

On how to prevent HIV infection, the pupils and coaches interviewed were of diverse view about how this can be done. Majority of the coaches and pupils mentioned the need to abstain from sexual intercourse if not married as the most effective method of preventing HIV/AIDS. A coach explained that they emphasize abstinence from sex in their teaching of the young people in their interaction with the pupils during training, *"...we still tell them (pupils) that abstinence is the best form of preventing HIV, we just have to inform and educate them on the dangers of sharing blade, sharp object, you know that they are still little children and they tend to even carry out what you tell them...so we do really hit it hard on them until the word abstinence rings in their ear, we always preach the word abstinence, no matter what you are going to teach the students, you have to remind them of the word abstinence."* Many of them also mentioned avoidance of indiscriminate and unprotected sex, transfusion of unscreened blood and sharing of sharp objects such as clippers and razor blade as well as tools used for manicure and pedicure. A few others in addition, mentioned avoidance of sharing personal items such as toothbrush, eating good food, taking good drugs as prophylaxis and avoidance of contact with anyone known to have HIV such as not eating with him/her.

Some of the coaches however stressed the need for mutual fidelity in marriage as a way of preventing HIV infection particularly among couples. They emphasized the need to take more precautionary measure of having protected sex by using condoms particularly when engaged in illicit sex. Some pupils in a focus group for example stated that, *"One can prevent the infection by not sleeping with prostitutes, sharing sharp objects such as needle and syringes, avoid taking blood from a source you're not sure of or properly screened before you take it."* A female FGD participant opined that, *"...people should stop sharing sharp objects, personal things and this entire thing called tattoo. You can also prevent it through practicing of safe sex using condom."* To confirm the knowledge of the pupils that sexual intercourse is the common route of HIV transmission in the country, a female pupil said the virus can be prevented *"...by not going into prostitution."* A male pupil in an intervention school stated that HIV infection can be prevented *"...by not sleeping (having sex) with somebody who is known to have HIV."* Another male pupil opined that HIV can be prevented *"...by having only one sexual partner and by abstaining from sex."*

A female coach interviewed in an intervention school in Apapa pointed out that *"...preventing is like if a man and a woman want to have sex, they have to use the condom and if you want to use any sharp object that is not yours, make sure you clean the object by sterilising it."* A male pupil in an intervention school in Agege pointed out that, *"...we've been taught about the risk of having many boyfriends and girl friends as a way of avoiding HIV/AIDS."* Similarly a female coach interviewed in a control school in

Agege in the post-assessment phase explained that HIV can be prevented “...by not having multiple sexual partners, avoid sharing razor blades, blood should be screened before transfusion, avoid sharing clippers.” Another female coach interviewed in an intervention school in Agege explained that, “...one can prevent HIV infection by keeping to one’s spouse. If you’re a married man or woman, keep to your spouse, avoid having indiscriminate sexual intercourse because you don’t know their status. People should also avoid using other people’s blades and hair clippers by having their own. People should also avoid calling commercial nail cutters who hawk around town to cut their finger nails.”

Perception of and attitude towards persons known to be HIV positive or have AIDS

Many of the pupils indicated their willingness to care for a family member or friends with HIV/AIDS. They reported that they would not discriminate against identified persons who have HIV/AIDS by staying away from such person(s). This response from the FGD correlated with improved knowledge among the pupils at the pre-assessment and post-assessment survey using structured questionnaires presented previously. It was emphasized that they can play with such a person but not have sexual intercourse with such a person. A pupil for example stated that, “...we can play with such (HIV positive) person but cannot sleep (have sex) with such person.” Another pupil reiterated that, “we can eat together but we should not use the same toothbrush.”

A very few of these pupils in both the intervention and control school still demonstrated tendency of discrimination and stigmatization against persons identified to have HIV/AIDS in the post- intervention phase. There was however an improvement in the degree of discriminatory tendency they exhibited by a larger proportion of them in the pre- intervention phase. The discriminatory tendency expressed by the few pupils is summarized in the response of a boy in an intervention school in Agege who said, “...one should not get close to the person that has HIV.” Another pupil was of the opinion that people should not live with anyone known to be living with HIV/AIDS stating thus: “...do not live with someone that has HIV.”

Availability and access to health education on malaria and HIV/AIDS

Many of the pupils attested to the availability and access to health education on issues relating to malaria and HIV/AIDS in both their schools and communities at large. They pointed out that they have had access to information on the cause, signs and symptoms and how to prevent these diseases both at home and in school. Teachers and non-governmental organizations (NGOs) were mentioned as the major sources of information and personal life skills to mould the knowledge, attitude, perception, sexual behaviour and practices of the pupils in their schools. At home, family and relations, and peers were mentioned by many of the pupils as their sources of information, while the print and electronic media that include magazines, newspapers, radio and television were sources of information to some pupils and others made reference to NGOs that visited their neighbourhoods to carry out public health activities such as vaccination, distribution of health commodities e.g. LLINs and condoms, as well as provision of health education on the two diseases. These

responses were consistent with findings from the quantitative data on the source of information on HIV.

Perceived contributions of coaches to attitudinal change

Many of the coaches believed they serve as agent of change in the lives of the students who are believed could be easily influenced by their peers and or older people to indulge in risky behaviours that may jeopardize their health. The response of a coach in a focus group for example reflected this line of thought, stating: *"...you know, most of the little children are easily influence and they must be able to identify the good attitude from the bad attitude. For instance, in the case of a young girl that is being influenced to engage in an illicit affair must know she must not involve in such as an affair, so we try to encourage them to know the kind of friends they keep, what they say, you know what starts this bad attitude is communication and what can change this bad attitude to good attitude is communication."* A coach for example said, *"...our paramount objective is to educate the kids."* Another coach expatiated that, *"...our objective is to educate them (pupils) and impact unto them the knowledge about malaria and HIV/AIDS and ways of prevent themselves from these diseases."* A coach also pointed out that, *"...we try to change their attitude toward certain things that might bring illness to them or that might destroy them...what we do at YEDI is that we try to educate, inform them about these diseases (HIV/AIDS and malaria) and ways of preventing them and don't mix up with bad people that might influences you negatively."*

Challenges of programme implementation by coaches

One of the difficulties the coaches reported that they experienced in the process of implementing the programme was role conflict on the part of the pupils. They reported the pupils in some of the schools faced the dilemma of choosing either their school scheduled curriculum programme or the YEDI grassroots soccer in-school programme. They explained that the two programmes at times conflicted in terms of time schedule. One of the coaches revealed that, *"It is always difficult for the coaches to assemble the students because their teacher will tell us (coaches) that the students are going for another programme. They will not attend to us on that day. So I think we need to work with their time, that is, coming during school hours, in order to be attended to."*

Suggestions on how the YEDI grassroots soccer in-school programme can be improved and sustained

Both the pupils and coaches were very satisfied with the programme from the trend of their discussions. The pupils and coaches responded both similarly and differently to question probing their perceived ways of sustaining the YEDI grassroots soccer in-school programme.

On the one hand, the pupils were of the opinion that the involvement of the community, parents and teachers in the programme by way of creating the

awareness in them about the programme probably in terms of its purpose and benefits of participating in it would be useful. A pupil in a male focus group in an intervention school stated that, *"We can sustain this programme by teaching other young people about malaria and HIV/AIDS in our neighbourhood (urging them) to join the programme."* Another pupil in the focus group was of the opinion that, *"We can sustain the program by calling parents-teachers association meeting."*

The analyzed data of the focus groups among the pupils post-intervention in the intervention schools showed that, overall, they were very satisfied with the programme and expressed their intention to use the acquired knowledge and skills. A pupil for example was of the view that critical message being taught in the programme can be perpetuated by them as peer educators if *"we can teach those that do not understand the program in our school...we can teach other people in our community about the programme so that they can understand too."*

Some of the pupils further suggested that the programme can be sustained if the organizers can visit their schools for the YEDI grassrootsoccer in-school programme regularly.

On the other hand, the coaches had divergent views on how they believed the YEDI grassroots soccer in-school programme could be sustained and improved for better quality service. Majority of the coaches suggested the need for regular reviews of the curriculum to update it with more current information on HIV/AIDS and malaria. In his own view, a male coach stated that, *"...I think such information should be included in the programme...there should be a review of the syllabus perhaps annually or in every two years because new information are coming up every day."* A small number of the coaches however emphasized the importance of capacity building programme for teachers engaged as coaches in the grassrootsoccer programme in selected schools. This opinion was reflected in the response of a coach in a focus group who said, *"Another thing I think that can improve this programme is that the teachers of the schools where we hold this programme should also have undergone trainings before we come in, because if they have been trained, they won't be asking for these incentives."* A few pupils expressed similar view and opined that the programme can be effectively sustained *"if the managers of the programme are nice to the teachers."*

The need to introduce some form of incentives such as access to free medical tests, drugs and LLINs when the students are taught and not necessarily money for the coaches particularly those in schools selected for the programme implementation was also suggested by a few coaches. They opined that YEDI should earmark part of its budget to make this provision. This reflected in the response of a male coach who said, *"...not just drugs, there are other things like HIV test, LLINs which we keep talking about. If these things are being given out, the schools will want to have YEDI anytime any day."*

Another coach for example stated that, *"the teachers keep asking for some things like souvenirs as incentives, complaining if it's only the certificate the children would be issued."* A coach also opined that, *"there should be refreshment such as cake or any other thing*

eatable served during the graduation ceremony. Another thing I want to suggest is that YEDI should try and organize some tests like cancer screening, HIV tests, malaria tests in place of those souvenirs they (teachers) are asking for."

Some of the coaches in the focus groups, particularly among the males, also had the strong belief that the YEDI grassroots soccer in-school programme can be sustained if there is encouragement of the coaches and the existence of cordial relationship between the coaches and YEDI programme managers. In his opinion, a male coach said, *"I think this programme can be sustained if we make the students and coaches happy."* Another coach stated that, *"...as my colleague said about making the coaches happy, yes, I'm in support of that. They YEDI really need to make the coaches happy."* One of the coaches admonished YEDI thus: *"There is an adage that says what is worth doing at all is worth doing well... the coaches are trying their best and we want YEDI to do more. Secondly, YEDI should try as much as possible to go to remote villages to spread the news."*

The need for the involvement and participation of coaches in the programme intervention design and development decisions was summarized in the response of one of the coaches who said, *"...when making decisions on the design and development of programme interventions in future, there is a need that some of the field coaches should participate and be involved in order to make contributions based on their field experiences."*

SECTION FOUR: GENERAL DISCUSSION

Sport-based youth development programmes such as the grassrootsoccer initiative uses sports to provide the support and opportunities youth needed to be healthy now and as future adults. The grassrootsoccer programme offers the youth an experience in which they learn and master sports' skills along with life and leadership skills in a safe, fun, supportive, and challenging environment. This experience involves caring relationships, facilitated learning, experiential learning, and vigorous physical activity (Up2Us, 2015). As it has been recognized, health promotion through inspired leadership and teamwork underscores the notion that sports is not "just a game" as it has one of the most powerful tools to positively transform lives, especially kids.

The outcome of the knowledge, attitude and likely practices among students interviewed and coaches, and interface with teachers and coaches on vital areas of the grassrootsoccer initiative showed that the programme is well accepted and has a strong potential of positively delivering on its objectives. The opportunities and strengths is premised on formative knowledge development and consolidation at an early age as a means of controlling and preventing malaria and HIV which is anchored on the well known adage that "prevention is better than cure". Effectively and strategically delivered information on malaria and HIV prevention is in line with various strategies for effective diseases control using out-of-the-box initiatives.

Improvements in pupils' knowledge, attitude and perception on malaria and HIV transmission, diagnosis, care, support, prevention etc improved significantly in most cases but in lower proportions. This indicated a marginal positive impact as indicators in control schools, where intervention was not done were similar with the intervention schools in most of the cases. The direct observation of the Research Associates with these pupils at the post-assessment evaluation was not impressive on the impact of the grassrootsoccer programme. The consensus at a post-review meeting among the research group was that the "attention of the pupils still wandered despite the fact that they were taking the test a second time and that fewer questions will hold the pupils' attention". Furthermore, a review of the grassrootsoccer curriculum will help boost the participants' knowledge especially on malaria.

The knowledge of the burden and risk of diseases are important information that could promote the prevention of diseases generally and this also applies to malaria and HIV/AIDS. It is encouraging that the level of knowledge of HIV/AIDS among many of the pupils particularly as it relates to vulnerability to HIV infection, mechanisms of HIV transmission (particularly mother-to-child transmission), signs/symptoms of HIV/AIDS, and how it can be avoided was high. The misconceptions about how HIV spreads, how to avoid it and the benefits of seeking HIV testing demonstrated by some of the respondents captured in both categories of schools in the study particularly in the intervention schools despite the intervention

activities are not encouraging. The results provide insights and an optimistic foundation for planning promotional programmes needed to further boost knowledge and perception about HIV/AIDS among the study population.

The implication of misconceptions about the sign/symptom of malaria as evident in the study is that such persons will be taking inappropriate steps in both the prevention and treatment of malaria out of ignorance. The consequences of such misconceptions about the cause and prevention of malaria and HIV/AIDS cannot be overemphasized.

There is also an obvious need to correct the pupils' misconceptions about malaria and HIV/AIDS, build on their positive knowledge, and find a strategy that reduces the tendency of discrimination, stigmatisation and rejection of people living with HIV and the fear of same, as these experiences typically form barriers to utilisation of HIV counselling and testing. This can be achieved through the use of the pupils' acclaimed main sources of information and it is suggested that these channels be considered in continuous mobilization and sensitization of this targeted young population taking cognizance of their key roles as agents of change who can help educate, inspire and mobilise, sensitise and enlighten their households and communities to control malaria and stop the spread of HIV/AIDS which is crucial to the success of the goal of YEDI grassroots soccer in-school programme.

In contrast to the high knowledge and belief in the reality of HIV/AIDS, there was a very low self-perceived risk of HIV infection among the pupils particularly among the FGD participants following the intervention activities. It is apparent that the respondents seemed not to connect their knowledge of HIV/AIDS and risk perception. Hence, sensitisation efforts need to be aggressively intensified on vulnerability to HIV infection among the pupils.

Not surprisingly, school, television and radio were among the pupils' major sources of knowledge about malaria and HIV/AIDS. This is understandable due to several vigorous and successful HIV prevention campaigns carried out in Nigeria by interest groups using these media to disseminate information on malaria and HIV/AIDS. It is suggested that radio and television airtime be used to broadcast a youth-oriented programme projecting the aspirations of the YEDI grassroots soccer programme during which messages could be disseminated to address the teeming young people who listen and watch radio and television programming respectively through an interactive platform.

The encouraging improvement of the individual capacity of the pupils to resist peer pressure to indulge in high risk behaviours and also make them mindful of preventive measures against diseases such as HIV infection. This improved individual self-belief if effectively sustained by these pupils alongside the significant changes in their self-perceived risk of HIV infection is expected to further strengthen their personalities and make them serve as role models for other young people in their neighbourhoods which is essential for the goal of YEDI programme for the ensuring good health behaviour among the youths.

The need for teachers' education as suggested by some of the coaches is critical for the sustainability and support of the programme. This becomes important given that the teachers serve as the last resort for the pupils for answers to questions they might have after participation in the YEDI in-school programme. It is critical to avert a situation where the teachers lack the required capacity to provide the adequate and appropriate answers to the pupils' questions or provide the pupils with answers contrary to what they had learnt from coaches of the YEDI programme.

While it was noted that not all the students who were interviewed in the pre-assessment survey were evaluated in the post-assessment survey, the assumption was that a well delivered intervention should have high impact on almost all students given the delivery strategy of the grassrootsoccer programme. The expectation was that the cause of malaria and HIV, including the mode of transmission should be clear to all students in the intervention school when measured. The notion that malaria is contracted by staying under sun or drinking dirty water opened up several challenges that included: effectiveness of course delivery, support from the participating schools (management and Games Masters), the implementing organization, YEDI, coaches that train the students in the grassrootsoccer programme and the poor knowledge infrastructure in public schools.

It was observed that the state of infrastructure for learning in most of the public schools was very poor and not appropriate for learning. The roofs were leaking and when it rained, the students had to abandon their classes or be involved in scooping water from the classes; morale of teachers were low and the pupils were generally distracted by several factors. With these challenges, the public schools were already disadvantaged in many ways while the students are vulnerable. Therefore, an effective course delivery strategy has to be developed to ensure uptake of learning. Given this environment, the scope of the curriculum is too heavy for a poor learning environment as well as the conflict of time that the coaches alluded to for their training. Well motivated coaches to painstakingly train the students with short messages and storey lines on malaria and HIV will impact on the expected knowledge uptake for behavioural modification among these students who live in disadvantaged communities.

The YEDI grassrootsoccer programme has very strong strength and opportunities that could positively impact school pupils and by extension, the communities. However, the coaches complained that they were not given sufficient time to deliver the curriculum due to conflict with other planned school activities. The curriculum as it is will require very good time to implement in the various sessions but this luxury time is not available and may be difficult to have. This challenge will affect the quality of implementation and thus the impact. A football-based programme should be fun with integrated learning infused into it. In addition, it raises the question on the effectiveness of a vertical grassrootsoccer programme implementation by coaches of YEDI against a horizontal school-based programme where the Games Masters implement the curriculum along with other school health subjects such as basic science, health education, social studies etc. It is likely, therefore that the coaches may not have been able to effectively deliver the

curriculum from which most of the evaluation was raised to the students and is consistent with the observation from the research team that the attention of the students wandered at the post-assessment evaluation. This prompted an ethically appropriate intervention by the research team to re-teach the students on areas where they lacked the appropriate knowledge at the post-assessment evaluation.

The coaches wanted more support from YEDI in terms of remuneration, training and recognition. As a full programme evaluation was not done, funding support for the grassrootsoccer was not assessed. Other programmatic areas were not evaluated to elucidate the preparedness of YEDI to implement the programme in public schools that already have programme-wide challenges. Two critical elements required for a successful implementation of the grassrootsoccer programme are: (1) the coaches' capacity to painstakingly and effectively deliver the curriculum assuming optimal support is available (2) the Head of schools/Games Masters who are clear about the objectives of the innovative YEDI programme that will ensure effective participation of the teachers and the students toward owning the initiative. In the in-depth interviews, some of the Games Masters wanted incentives and the coaches identified this as important.

Overall, the strength and opportunities of the grassrootsoccer in developing life-long skills toward malaria and HIV are strong and should work especially in disadvantaged communities where fun is appreciated. The possibility of leveraging a well implemented programme to successful malaria and HIV control and prevention programme was shown in the evaluation. The reported use of LLIN by the students against ownership is consistent with reports on low LLIN utilization despite very high ownership (Oresanya et al., 2008).

Recommendations

The YEDI grassrootsoccer made some achievement but more improvement in knowledge gain was expected given the curriculum of the programme. While the grassrootsoccer initiative has great promise in providing knowledge for behavioural modification, communication and development of early life skills in youths to handle the challenges of malaria and HIV in the community, several critical modification and adjustments on the approaches to implementing the programme are recommended:

- (1) Reduction of the scope of the curriculum, to permit very short and strong communication of key messages on malaria and HIV between the coaches and pupils and not just “running through” the curriculum that may not make the required impact. Messages built around important storey lines will be helpful.
- (2) The grassrootsoccer curriculum should be split into “junior” and “senior” curricula with considerations for maturity based on age and exposure.
- (3) Follow-through mechanisms should be developed to sustain knowledge gain that is strong enough to build the expected life-skills to handle malaria and HIV challenges, for example occasional documentary/film shows, simple reading or malaria and HIV game materials and short feed-back sessions.
- (4) YEDI should assess how the current curriculum fits into basic science/social science and other related subjects of the pupils for consolidation so that the identified gaps can be filled. Integration of the Games Masters into the delivery of the grassrootsoccer with follow-up by the coaches may be useful for consideration toward allowing the schools to own and drive the programme with support from YEDI.
- (5) Public schools in the communities are “disadvantaged” with poor educational infrastructure and pedagogical capacity and therefore require a delivery strategy that recognizes the complexity of the dynamics of the poor governance in public schools when compared to the private schools. A clinical approach should be used in designing the suggested modification of the curriculum along with the teachers in the public schools for effective programme delivery.
- (6). At least one concise paper should be written from this report on School Pupils’ awareness on HIV and Malaria transmission, treatment and prevention practices in Lagos, Nigeria.
- (7). Another review should be done in 2017 after implementing the recommendations contained herein using lessons learned.

Conclusion

The strength and opportunities of the grassrootsoccer in developing life-long skills toward malaria and HIV are strong and should work especially in disadvantaged communities where fun is appreciated. The possibility of leveraging a well implemented programme to successful malaria and HIV control and prevention programme was shown in the evaluation. The recommendations should be implemented in preparing a shorter curriculum in two phases – junior and senior curricula. The grassrootsoccer has a strong potential of delivering on her objectives among students with greater spin-off effect on the community given the fragile socio-economic conditions of the pupils and their poor learning environment. The

programme will directly impact on the students in preventing malaria and HIV through knowledge-driven behavioural modification.

SECTION FIVE: REFERENCES

Botcheva, L., & Huffman, L. (2004). *Grassroot soccer foundation: HIV/AIDS education program: An intervention in Zimbabwe*. Palo Alto: Children's Health Council.

NPC (2012). 2010 Malaria indicator survey. Publication of the Federal Ministry of Health, Abuja, and The National Population Commission.

WHO (2011). *Draft: WHO HIV Strategy 2011-2015*. Geneva, Switzerland: World Health Organization.

United Nations. (2011). UN at a Glance. Retrieved from:

<http://www.un.org/en/aboutun/index.shtml>. Accessed March 16, 2014.

Up2Us. (2015). *Center for Sport-Based Youth Development*. Retrieved from <http://www.up2us.org/index.php?page=sports-based-youth-development>. Accessed April 2, 2015.

APPENDICES

Appendix 1

YEDI EVALUATION

ASSENT/CONSENT DOCUMENT AND CERTIFICATE

INTRODUCTION: We are conducting a survey on knowledge, transmission and prevention of HIV/AIDS and malaria, and the roles everyone in the community can play in reducing the burden. As a member of this school, we would like you to participate in this study. Your participation is voluntary and you may wish to discontinue at anytime if you are no longer

interested. We will ask you several questions about yourself, as well as your knowledge, attitudes, and perceptions of HIV/AIDS and malaria. Whatever information you disclose for the purpose of this study will be kept confidential. Please, feel free to let me know if you are not comfortable or do not understand any aspect of this interview. Thank you.

Name of student:

Class/Year:.....

School:..... **Code:**.....

Certificate of assent/consent

The study has been explained to me and I have been told that my information would not be disclosed to any one; that my information would be kept confidential; and that I am free to discontinue with the interview if I am not comfortable with the questions or if I am no longer interested. It was also explained to me that no information that could connect me to any statement(s) related to this interview would be made either through publication or in any other means of communication.

.....
Signature of student

.....
Date

Name of investigator:.....

.....
Signature of investigator

.....
Date

Appendix 2 YEDI EVALUATION QUESTIONNAIRE FOR STUDENTS

General Information: *to be filled out by the interviewer*

Questionnaire Number: _____

Date of

interview: ____/____/2014

School name:

_____/CODE: _____

School address:

Participant's ID Number: _____

LGA (circle one):

1. Agege -AG	2. Apapa - AP	3. Eti-Osa - EO	4. Lagos Island - LI	5. Mushin - MS
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Name of interviewer:_____

Instructions

We are conducting a survey on knowledge, transmission and prevention of Malaria and HIV/AIDS and the roles everyone in the community could play in reducing the burden. As a member of this school, we would like you to participate in this study. Your participation is voluntary and you may wish to discontinue at anytime if you are no more interested. We will ask you several questions about yourself, your knowledge, attitudes and perception of HIV/AIDS and malaria. Whatever information you disclose for the purpose of this study will be kept confidential. Please, feel free to let me know if you are not comfortable or do not understand any aspect of this interview. Thank you.

SECTION A: Background of respondent

First, I am going to ask you some questions about your background.

1. How old are you now? Please fill in the blank: _____
2. Are you male or female? Circle one: (1) Male (2) Female
3. What class in school are you? Please fill in the blank: _____
4. What is your religion? Circle one:
(1) Christianity (2) Islam (3) Indigenous (4) Other (*please specify*): _____
5. What is your tribe? Circle one:
(1) Hausa (2) Igbo (3) Yoruba (4) Ijaw (5) Efik (6) Edo (7) Other (*please specify*): _____
6. How many people are in your household? Fill in the blank: _____
7. How many siblings do you have? Fill in the blank: _____
8. What is your father's occupation? Circle one:
(1) Unemployed (2) Farming (3) Trading (4) Retired (5) Artisan (e.g. carpenter, hair dresser, etc.) (6) Formally employed in public sector (e.g. civil servant)
(7) Formally employed in private sector (e.g. banker) (8) Other (*please specify*): _____
9. What is your mother's occupation? Circle one:
(1) Unemployed (2) Farming (3) Trading (4) Retired (5) Artisan (e.g. carpenter, hair dresser, etc.)
(6) Formally employed in public sector (e.g. civil servant)
(7) Formally employed in private sector (e.g. banker) (8) Housewife
(9) Other (*please specify*): _____
10. What is your guardian's occupation (*if applicable*)? Circle one:
(1) Unemployed (2) Farming (3) Trading (4) Retired (5) Artisan (e.g. carpenter, hair dresser, etc.)
(6) Formally employed in public sector (e.g. civil servant)
(7) Formally employed in private sector (e.g. banker) (8) Housewife

(9) Other (please

specify):_____

11. What is the marital status of your parents/guardian? Circle one:

(1) Married (2) Single (3) Separated (4) Widowed (5) Divorced

12. In what residential area do you live (E.g Olorunsogo, Mushin)?

Fill in the blank:

SECTION B: Knowledge and attitudes towards HIV/AIDS

13. What is HIV and AIDS?:

HIV_____

AIDS_____

I am going to begin by asking you some questions about communication. Please circle "Yes" or "No."

Example. Do you attend school? Circle one.	☒ Yes	No
14. I have talked about HIV with a parent or guardian in the past 2 months.	Yes	No
15. I have talked about HIV with a friend in the past 2 months.	Yes	No

I am going to begin by reading a list of statements about HIV/ AIDS. I would like you to write down if you think the statements are true or false. Please circle "True" or "False."

Example. Nigeria will play in the 2014 Brazil World Cup.	☒ True	False	Don't know
16. HIV can be spread by sex.	True	False	Don't know
17. HIV can be spread by mosquitos.	True	False	Don't know
18. HIV can be passed from a mother to her baby.	True	False	Don't know
19. I can tell if someone has HIV by looking at him or her.	True	False	Don't know

20. Someone is most likely to spread HIV during the first 6-8 weeks after they get infected.	True	False	Don't know
21. Having an older sexual partner increases your risk of getting HIV.	True	False	Don't know
22. Having more than one sexual partner increases your risk of getting HIV.	True	False	Don't know
23. Using condoms during sex reduces your risk of getting HIV.	True	False	Don't know
24. HIV can be transmitted through body fluids such as blood, semen, vaginal fluid and breast milk.	True	False	Don't know
25. Sexual abstinence the best means of preventing HIV infection.	True	False	Don't know
26. Drinking alcohol can increase your risk of getting HIV.	True	False	Don't know
27. HIV can be transmitted through transfusion of unscreened/untested blood.	True	False	Don't know
28. HIV/AIDS is curable	True	False	Don't know
29. Nigeria has the second largest population of people living with HIV.	True	False	Don't know

Now I am going to ask you some questions about how you feel in general. Please read the statement and circle whether the respondent "Strongly Agree", "Agree", "Disagree", or "Strongly Disagree".

Example. During their first 2014 Brazil World Cup game, Nigeria will lose 0-4.	Strongly Agree	Agree	Disagree	Strongly Disagree
30. I am certain I can avoid getting HIV.	Strongly Agree	Agree	Disagree	Strongly Disagree
31. I can resist peer pressure.	Strongly Agree	Agree	Disagree	Strongly Disagree
32. I would stay away from a classmate with HIV.	Strongly Agree	Agree	Disagree	Strongly Disagree

33. I would be willing to care for a family member with HIV.	Strongly Agree	Agree	Disagree	Strongly Disagree
34. People with HIV should be ashamed of themselves.	Strongly Agree	Agree	Disagree	Strongly Disagree
35. A teacher with HIV should be dismissed from working in a school.	Strongly Agree	Agree	Disagree	Strongly Disagree

Now I am going to ask you some questions about HIV testing. Please circle “Yes” or “No.”

Example. Do you attend school? Circle one.	Yes	No
36. Have you ever been tested for HIV?	Yes	No
37. If HIV testing is provided in your community, would you be willing to test?	Yes	No
38. If you wanted to have a HIV test, do you know a place where you could get it done?	Yes	No

39. What is/are your most common source(s) of information about HIV/AIDS?

You can circle **more than one**:

- (1) Family/Relations (2) Friends/neighbours (3) Hospital/Clinic
 (4) Newspapers/Magazines/Journals (5) Radio (6) Television (7) Poster
 (8) Awareness pamphlet/brochure (9) Pharmacy (10) Chemist shop
 (11) Community meetings (12) Place of worship (e.g. church/mosque)
 (13) School (14) Internet (15) Other (please specify)_____

SECTION C: Knowledge and attitudes towards malaria

Now, I am going to read you some statements about malaria. I would like you to tell me if you think the statements are true or false. Just circle "True" or "False."

Example. Nigeria will play in the 2014 Brazil World Cup.	True	False	Don't know
40. Plasmodium parasite is the cause of malaria	True	False	Don't know
41. Malaria is transmitted through the bite of a female anopheles mosquito.	True	False	Don't know
42. Sleeping under a treated bed net (LLIN) every night can help protect one from malaria.	True	False	Don't know
The LLIN has to be aired in the shade for 24 hours before use	True	False	Don't know
43. Without treatment, it is possible to die from malaria.	True	False	Don't know
44. A child dies of malaria every 30 seconds in Africa.	True	False	Don't know
45. Children under five years and pregnant women are most at risk of malaria.	True	False	Don't know
46. I can get malaria from drinking dirty water.	True	False	Don't know
47. Malaria can be caused by staying under the sun.	True	False	Don't know
48. When I have fever I have malaria.	True	False	Don't know
49. Cleaning of our surroundings reduces the risk of malaria.	True	False	Don't know
50. Malaria test is recommended before treatment is done.	True	False	Don't know
51. Malaria can be cured.	True	False	Don't know
52. It is okay for someone with malaria to stop taking their medication as soon as they start to feel better.	True	False	Don't know
53. Chloroquine is the currently recommended drug for treating malaria.	True	False	Don't know
54. Fansidar is the currently recommended drug for treating malaria.	True	False	Don't know
55. ACT is the currently recommended drug for treating malaria.	True	False	Don't know

56. What is/are your most common source(s) of information about malaria?

You can circle **more than one**:

- (1) Family/Relations (2) Friends/neighbours (3) Hospital/Clinic
 (4) Newspapers/Magazines/Journals (5) Radio (6) Television (7) Poster
 (8) Awareness pamphlet/brochure (9) Pharmacy (10) Chemist shop
 (11) Community meetings (12) Place of worship (e.g. church/mosque)
 (13) School (14) Internet (15) Other (please specify)_____

Now I am going to ask you some questions about malaria. Please read the statement and circle whether you “Strongly Agree”, “Agree”, “Disagree”, or “Strongly Disagree”.

Example. During the first 2014 Brazil World Cup game, Nigeria will lose 0-4.	Strongly Agree	Agree	Disagree	Strongly Disagree
57. When feeling sick, I would go to a hospital or clinic, even if it is more expensive than a chemist.	Strongly Agree	Agree	Disagree	Strongly Disagree
58. If I am to take malaria medicine for 3 days and feel better after 2 days, I would stop taking the medicine.	Strongly Agree	Agree	Disagree	Strongly Disagree
59. I am willing to teach my family members how they can protect themselves from malaria.	Strongly Agree	Agree	Disagree	Strongly Disagree
60. I am willing to inform my family members to do a malaria test before treatment.	Strongly Agree	Agree	Disagree	Strongly Disagree

SECTION D: Bed net usage

Finally, I am going to read you some statements about bed nets.

61. Do you have LLIN(s) in your household? Circle one:

(1) Yes (2) No

If Q61 is "Yes", please ask questions 63-65. If Q61 is "No", skip to Q66.

62. How many LLIN(s) do you have in your household?

Fill in the blank: _____

63. Do you use the LLIN(s) in your household? Circle one:

(1) Yes (2) No

64. Who slept under the LLIN(s) last night in your household (the night before the survey)?

You can circle **more than one**:

(1) Pregnant mother (2) Children *under* five years (3) Children *over* five years

(4) Father

(5) Non-pregnant mother (6) Other (*please specify*) _____

65. Where did you get/buy the LLIN(s)? Circle one:

(1) Pharmacy (2) Chemist/Patent medicine store (3) Street/Market vendor

(4) Retail/Wholesale shop (5) Private hospital (6) Public hospital

(7) House-to-house distribution (8) Acquired as a gift from family/friends

(9) Other (*please specify*) _____

66. If you were given a LLIN at school for use at home, would you use the net at home?

Circle one:

(1) Yes (2) No

67. Would your siblings be willing to hang the LLIN and use it at home? Circle one:

(1) Yes (2) No

68. Would your parents/guardians be willing to hang and use the LLIN at home? Circle one: (1) Yes (2) No

Thank you for your time, attention and cooperation.

APPENDIX 3
YEDI GRASS ROOT SOCCER EVALUATION SURVEY
PRE-ASSESSMENT

Focus Group Discussion Guide for Pupils

1. What are some of the problems affecting young people of your age in this community? Probe for malaria and HIV/ AIDS among young people in the area.
2. What do you know about: (1) malaria and (2) HIV/ AIDS? Probe for mode of transmission of the two diseases, the most common transmission route of HIV infection in Nigeria. Probe pupils' self perceived risk of HIV infection.
3. What are the signs and symptoms of (1) malaria and (2) HIV/ AIDS?
4. How can malaria and HIV infections be prevented?
5. What efforts are being taken in the community including school to increase knowledge and change attitude relating to malaria and HIV/ AIDS among the population? Probe for awareness of the YEDI Grassroot Soccer In-school Programme.
6. Let us discuss about YEDI Grassroot Soccer In-school Programme, what do you know about it? Probe for knowledge of organizers and focus(es) of the programme.
7. What are your expectations from the programme?
8. What benefits do you think you will derive from participating in the YEDI Grassroot Soccer In-school Programme?
9. In what ways can/should the community support the programme?
10. In your own opinion how do you think the YEDI Grassroot Soccer In-school Programme can be effectively operated for sustainability?

Thank you for your time, attention and cooperation

Appendix 4

YEDI GRASS ROOT SOCCER EVALUATION SURVEY

Post-Intervention

Focus Group Discussion Guide for Pupils

11. What are some of the problems affecting young people of your age in this community? Probe for malaria and HIV/ AIDS among young people in the area.
12. What do you know about: (1) malaria and (2) HIV/ AIDS? Probe for mode of transmission of the two diseases, the most common transmission route of HIV infection in Nigeria. Probe pupils' self perceived risk of HIV infection.
13. What are the signs and symptoms of (1) malaria and (2) HIV/ AIDS?
14. How can malaria and HIV infections be prevented?
15. What efforts are being taken in the community to increase knowledge and change attitude relating to malaria and HIV/ AIDS among the population? Probe for awareness of the YEDI Grassroot Soccer In-school Programme.
16. Let us discuss about YEDI Grassroot Soccer In-school Programme, what do you know about it? Probe for knowledge of organizers, process(es) and focus(es) of the programme.
17. How many of your children/ wards will be involved in the YEDI Grassroot Soccer In-school Programme? _____

18. What are your expectations from the programme?
19. How effective has the football-based educational programme been in changing your knowledge about malaria and HIV/ AIDs?
20. Was the knowledge gained through the football-based intervention sufficient in changing your attitudes towards malaria and HIV/ AIDS in relation to stigma, age-disparate sex and multiple sex partners?
21. How do you communicate to your peers and others in your community about the malaria and HIV/ AIDS-related knowledge and skills you learnt from the intervention?
22. How do communities including parents, siblings and teachers acknowledge the YEDI Grassroot Soccer In-school Programme and its execution in the community?
23. What lessons has been drawn from the programme to improve quality and sustainability of the programme?
24. What are the strengths, weaknesses, opportunities and threats of the programme?

25. What benefits do you think you have derived from participating in the YEDI Grassroot Soccer In-school Programme?
26. Now that we have identified the benefits, can we look at the problems you or other pupils face(d) during the different inter-phase of the programme implementation? Probe for any complain of inconveniences and challenges participants may have experienced.
27. In your own opinion, how do you think your participation in the YEDI Grassroot Soccer In-school Programme has affected the rate of malaria incidence in your households?
28. Would you recommend the YEDI Grassroot Soccer In-school Programme to other schools in the community? Probe for reasons why and why not.
29. In what ways can/should the community support the programme?
30. Does the YEDI Grassroot Soccer In-school Programme design need improvement?
31. Kindly state the effective way(s) in which the implementation of the In-school programme could be improved and successfully promoted for the prevention of malaria and HIV/ AIDS in the community.
32. In your own opinion how do you think the YEDI Grassroot Soccer In-school Programme can be effectively operated for sustainability?

Thank you for your time, attention and cooperation

Appendix 5
YEDI GRASS ROOT SOCCER EVALUATION SURVEY
FGD Participants' Sheet - Pupils/Teachers/Coaches

Date: ____/____/2014

Venue: _____

S/No	Name	Sex	Age	Class	Role (Participant, Moderator, or Note taker)		
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							

Appendix 6

YEDI GRASS ROOT SOCCER EVALUATION SURVEY PRE-ASSESSMENT

Focus Group Discussion Guide for Coaches/Teachers

1. What are the some of the problems affecting young people in this community? Probe for malaria and HIV/ AIDS among young people in the area.
2. What do you know about: (1) malaria and (2) HIV/ AIDS? Probe for mode of transmission of the two diseases, the most common transmission route of HIV infection in Nigeria.
3. What are the signs and symptoms of (1) malaria and (2) HIV/ AIDS?
4. How can malaria and HIV infections be prevented?
5. What efforts are being taken in the community to increase knowledge and change attitude relating to malaria and HIV/ AIDS among the population? Probe for awareness of the YEDI Grassroot Soccer In-school Programme.
6. Let us discuss about YEDI Grassroot Soccer In-school Programme, what do you know about it? Probe for knowledge of organizers and focus(es) of the programme.
7. How many of your children/wards will be involved in the YEDI Grassroot Soccer In-school Programme? _____

8. What are your expectations from the programme?
9. What benefits do you think the pupils who will participate in the YEDI Grassroot Soccer In-school Programme derive from it?
10. Would you recommend the YEDI Grassroot Soccer In-school Programme to other schools in the community? Probe for reasons why and why not.
11. How many of your children/pupils members of your household are involved in the YEDI Grassroot Soccer In-school Programme? _____

12. In what ways can/should the community support the programme?
13. Does the YEDI Grassroot Soccer In-school Programme design need improvement?

14. Kindly state the effective way(s) in which the implementation of the In-school programme could be improved and successfully promoted for the prevention of malaria and HIV/ AIDS in the community.
15. In your own opinion how do you think the YEDI Grassroot Soccer In-school Programme can be effectively operated for sustainability?

Thank you for your time, attention and cooperation

Appendix 7

YEDI GRASS ROOT SOCCER EVALUATION SURVEY

Post-Intervention

Focus Group Discussion Guide for Coaches/Teachers

1. What are the some of the problems affecting young people in this community? Probe for malaria and HIV/ AIDS among young people in the area.
2. What do you know about: (1) malaria and (2) HIV/ AIDS? Probe for mode of transmission of the two diseases, the most common transmission route of HIV infection in Nigeria.
3. What are the signs and symptoms of (1) malaria and (2) HIV/ AIDS?
4. How can malaria and HIV infections be prevented?
5. What efforts are being taken in the community to increase knowledge and change attitude relating to malaria and HIV/ AIDS among the population? Probe for awareness of the YEDI Grassroot Soccer In-school Programme.
6. Let us discuss about YEDI Grassroot Soccer In-school Programme, what do you know about it? Probe for knowledge of organizers, process(es) and focus(es) of the programme.
7. How many of your children/ wards will be involved in the YEDI Grassroot Soccer In-school Programme? _____

8. What are your expectations from the programme?
9. How effective has the football-based educational programme been in changing malaria and HIV/ AIDs-related knowledge among the pupils?
10. Was the knowledge gained through the football-based intervention sufficient in changing attitudes of participants towards malaria and HIV/ AIDS in relation to stigma, age-disparate sex and multiple sex partners?
11. How do the participants communicate to their peers and others in their community about the malaria and HIV/ AIDS related knowledge and skills they learnt from the intervention?
12. Explain how the participants' exhibit self-reported behaviour in relation to malaria and HIV/ AIDS? Probe if the programme has developed community role models from the participating pupils.
13. How effective is the programme approach in the school setting?
14. Would the schools like the programme to continue with them?

15. How do communities including parents, siblings and teachers acknowledge the YEDI Grassroot Soccer In-school Programme and its execution in their community?
16. What lessons has been drawn from the programme to improve quality and sustainability of the programme?
17. What are the strengths, weaknesses, opportunities and threats of the programme?
18. What benefits do you think the pupils who participate in the YEDI Grassroot Soccer In-school Programme have derived from it?
19. Now that we have identified the benefits, can we look at the problems you or other coaches face(d) during the different inter-phase of programme implementation? Probe for any complain of inconveniences and challenges participants may have experienced.
20. In your own opinion, how do you think the implementation of the YEDI Grassroot Soccer In-school Programme in the some schools around your community has affected the rate of malaria incidence?
21. Would you recommend the YEDI Grassroot Soccer In-school Programme to other schools in the community? Probe for reasons why and why not.
22. How many of your children/pupils members of your household are involved in the YEDI Grassroot Soccer In-school Programme? _____

23. In what ways can/ should the community support the programme?
24. Does the YEDI Grassroot Soccer In-school Programme design need improvement?
25. Kindly state the effective way(s) in which the implementation of the In-school programme could be improved and successfully promoted for the prevention of malaria and HIV/ AIDS in the community.
26. In your own opinion how do you think the YEDI Grassroot Soccer In-school Programme can be effectively operated for sustainability?

Thank you for your time, attention and cooperation



Some members of the research team that conducted the evaluation.

S/N	Name	Role
1	Adeneye A.K.	Coordinator Supervisor (Team Leader 1 – Medical sociologist)
2	Dicta Oyibo	Coordinator/Supervisor(Team Leader 2 – Medical Parasitologist)
3	Omoriegie Queen	Supervisor
4	Babalola Olaniyi	Supervisor/ Transcriber
5	Adeyanju Adeyinka	Research Assistant
6	Oluwakemi Oladiran	Research Assistant
7	Dacosta Okikiade	Research Assistant
8	Ani Godwin	Research Assistant
9	Akinola Ronke	Research Assistant
10	Olalekan Olubunmi	Research Assistant
11	Nwaizugbo Rita	Research Assistant
12	Anumodu Christopher	Research Assistant
13	Ezeamaramu Faustina	Transcriber
14	Nwosu Chinonye	Research Assistant
15	Bolawa Lanre	Research Assistant
16	Israel Joseph	Research Assistant
17	Akpobome Anthony	Supervisor
18	Onwuachusi Ginika	Supervisor