

## MITIGATING THE IMPACT OF HIV AND AIDS AMONG PUPILS IN BOLIFAMBA AND MUEA COMMUNITIES OF CAMEROON

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### ABSTRACT

**Background:** In Cameroon, sensitization on HIV and AIDS for pupils is low especially as health education was not initially part of the primary education curriculum. **Objective:** To determine a baseline situational analysis of public health determinants on HIV and AIDS prevention among pupils to effectively develop a school-based intervention programme. **Methods:** A cross-sectional study using structured questionnaire was conducted among class 4 through class 6 pupils attending fourteen different primary schools in the South West Region of Cameroon. The schools were purposively selected based on the socio-economic background of people living in these communities. Assent for the pupils were obtained from their parents. Data was analysed on Epi Info 7.0 and confidence intervals were set at 95%. **Results:** Nine hundred and sixty-eight pupils participated in the study of which 547 (56.5%) were females. Out of the 968 study participants, 571 [59% (95% CI =56%-62%)] had correct knowledge of the disease and 416 [43% (95% CI =39%-47%)] knew HIV as the causative agent of AIDS. Though a majority knew that unsafe sex with infected individuals 910 [94% (95% CI: 92.3-95.3)], mother-to-child transmission 900 [93% (95% CI: 91.2-94.4)] and contaminated blood products 939 [97% (95% CI: 95.7-97.9)] were methods of transmission, wrong methods like mosquito bites 658 [68.0% (95% CI: 65.0-70.8)], witchcraft 348 [36.0% (95% CI: 33.0-39.1)] and communal use of objects 550 [56.8% (95% CI: 53.7-59.9)] were also mentioned. The pupils considered abstinence as the best method of prevention 696 [71.9% (95% CI: 69.0-74.6)]. **Conclusion:** There are gaps on the determinants of HIV and AIDS prevention and control among pupils. There is need for health education in primary schools on HIV and AIDS to increase the awareness of the disease.

**Keywords:** AIDS, HIV, Mitigating, Primary School, Cameroon

### INTRODUCTION

Acquired immunodeficiency syndrome (AIDS), caused by the human immune deficiency virus (HIV) has resulted to the greatest public health concern since the 1980s [1,2]. In Cameroon, the HIV and AIDS pandemic is a serious public health problem, with a national prevalence of 4.5% and a 14<sup>th</sup> position ranking in the world as of 2012 [3]. The current number of Cameroonian children made vulnerable by HIV and

AIDS is still not clearly known. Efforts to educate young people in Cameroon and in sub-Saharan Africa at large are being hampered by the beliefs and superstitions about it. Children, adolescents and teachers are growing up amidst multiple challenges exacerbated by the direct or indirect threat of HIV and AIDS infection in a region responsible for about 90% of all HIV infections [4].

In sub-Saharan Africa, about 12 million children had been orphaned as a result of HIV and AIDS as in 2005 [5] and a report by UNAIDS revealed that about 330,000 children had been orphaned in Cameroon by 2012 [6]. These result to children displacement, emotional stress and poverty which individually or combined can disrupt their education and lead to drop out of school. The case is further worsened if these orphans have younger siblings that need their care and support. Studies have shown that orphans in sub-Saharan Africa are 13% less likely to attend school than non-orphans [7].

Across the world, schools play a major role in shaping the attitudes, opinions and (perhaps most importantly) the behaviour of young people. Today's generation of school children especially in sub-Saharan Africa have been born into a world where HIV and AIDS are a harsh, unavoidable reality- a situation that their time at school can help them to prepare for [8]. In addition to providing an environment in which people can be educated about HIV and AIDS, schools often act as a centre-point for community discussions and activities, hence schools can serve as vital tools in monitoring the pandemic and co-ordinating a response to it. With such a capacity to reach a large number of young persons, basic school education; described as a 'social vaccine' [9], can be a powerful preventive tool used to create a tomorrow's generation that is AIDS free.

In Cameroon, a big gap in sex education exists, as primary education has no formal sexual health curriculum and hence very little knowledge about HIV and AIDS is learned. Furthermore, in rural communities, many boys and girls enter puberty before completing primary education, a stage at which many of them are forced to learn about the power of sexuality [10] from their peers. Furthermore, parents most often neglect issues related to sexuality and as such discussions could be regarded as taboos. In Cameroon, HIV and AIDS affect both youths [11, 12] and adults [13-15]. There are also HIV and AIDS co-infection because of various predisposing factors [16-20]. Hence to access the level of comprehension and awareness of the disease among primary school pupils, a baseline situational analysis is warranted.

## MATERIALS AND METHODS

A cross sectional survey using open ended questionnaires was conducted in October 2009 involving primary schools in the Bolifamba and Muea school areas to effectively target a later interventional study. The Bolifamba and Muea school areas are on the Buea-Kumba highway in the Fako Division, South West Region of Cameroon. The Schools sampled at Muea were: Catholic primary School, Miracle Bilingual primary school, Comfort Educational Centre, Government Practicing School, Government Bilingual

Primary School and Government Practicing School Group 2.

The Schools sampled at Bolifamba were: Presbyterian Primary School, Saint Veronica Primary School, Saint Jude Catholic School, Cameroon Baptist Convention (CBC) Primary School, Future Hope, Success Bilingual Primary School, Abundant Life and Government Primary School.

**Selection criteria:** The head teachers of the Muea and Bolifamba school areas were asked to have their schools participate in the study. Contacts were then established with administrative and traditional authorities in the schools and local communities of the health districts on the project sites and consent forms were then sent out to them. Among the primary schools in the areas, fourteen participated in the study. Data were analysed for pupils in classes 4 through class 6 from all participating primary schools.

The baseline knowledge on HIV and AIDS was extracted using well-structured questionnaires. These latter were tailored and designed in an easy-to-fill manner to match the capacity of primary school pupils. The questionnaire was open-ended on personal data and aspects of knowledge of aetiology, diagnosis, transmission, and prevention of HIV and AIDS infection. The questionnaires were administered by trained field assistants who recorded the pupil's response.

**Ethical consideration:** Ethical clearance was obtained from the South West Regional Delegation of Public Health. The consent from the various Schools was obtained from the Head Teachers and School Teachers. Assents for the pupils were obtained from their parents. These forms were sent to the parents through the pupils and the parents were asked to return the signed forms through the pupils to the teachers.

**Statistical Analysis:** The data from the baseline school survey questionnaires were coded using a codebook, keyed into excel sheet and later incorporated to Epi Info. It was then screened for errors and analysed at a 95% confidence level. Simple descriptive statistical analysis was performed to determine the frequencies and percentages. Confidence intervals at 95% were also determined because they are more informative than Chi square.

## RESULTS

### Participating schools

A total of 968 Primary school pupils from classes 4, 5 and 6 of fourteen different primary schools participated in the intervention. The schools were from the Bolifamba and Muea health areas. Table 1 summarises the student population by location, gender and class. Of the fourteen schools, 8 (57.1%) (95% CI: 32.6% -

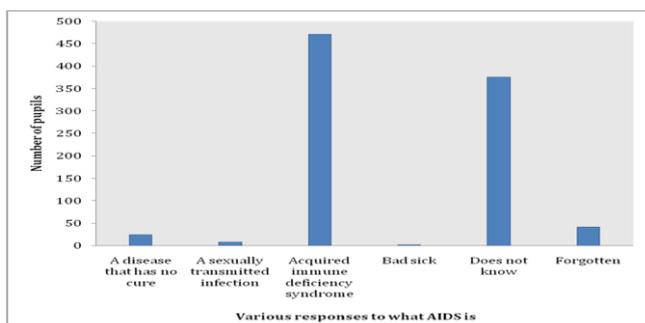
78.6%) were from the Balifamba area while 6 (42.9%) (95% CI: 21.4% - 67.4%) were from the Muea area. While the class 5 pupils formed the majority of participants 188 (55.6%) in the Bolifamba health area, a greater proportion, of the Muea area were class 6 pupils 198 (62.7%).

**Table 1: Distribution of student population in the two communities by gender and class**

Parameters	Study communities		Total No (%)
	Bolifamba No (%)	Muea No (%)	
Number of schools	8 (57.1)	6 (42.9)	14 (100.0)
Number of students	470 (48.6)	498 (51.4)	968 (100.0)
Gender	Male	204 (48.6)	420 (100.0)
	Female	254 (46.4)	548 (100.0)
Class	4	150 (47.8)	314 (100.0)
	5	188 (55.6)	338 (100.0)
	6	118 (37.3)	316 (100.0)

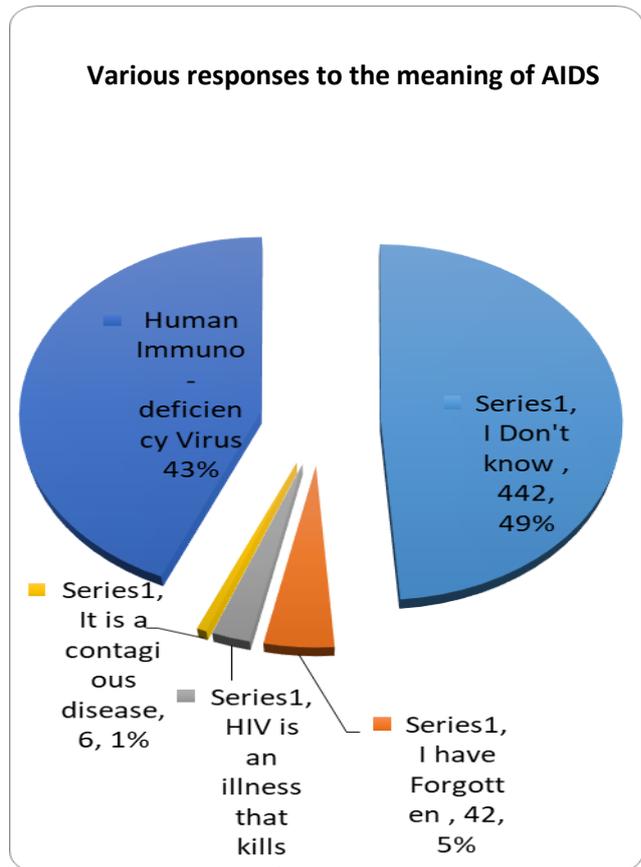
**Knowledge on HIV and AIDS**

Amongst the study participants, 397 (41.0%) (95% CI: 38.0% - 44.1%) did not know the meaning of AIDS while the remaining 571 (59.0%) had varying ideas about the disease (95% CI: 55.9% - 62.1%) as shown in Figure 1. Amongst the 571 (59.0%) who had knowledge about the disease, 416 (72.9%) (95% CI: 69.1% – 76.3%) correctly knew what AIDS was.



**Figure 1: Knowledge of AIDS among the study participants**

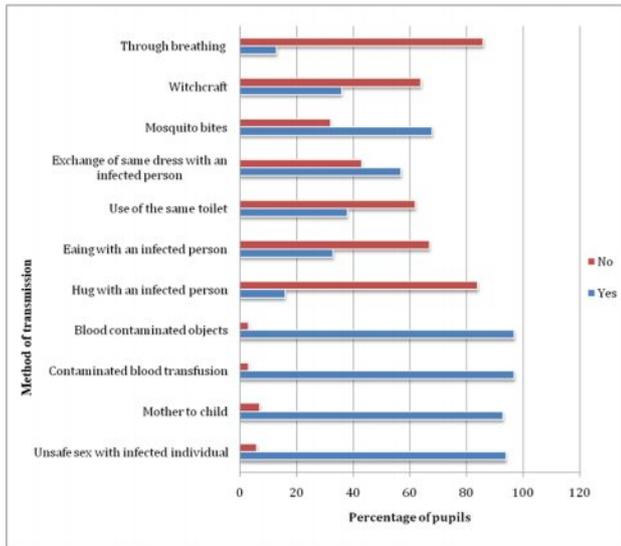
On the knowledge of the study participants on what HIV is, the proportion of pupils who knew what HIV is as opposed to those who did not know was 416 (43%) (95% CI: 40.0% - 46.1%) versus 552 (57%) (95% CI: 53.9% - 60.1%) respectively as shown in Figure 1.



**Figure 2: Pie chart showing the pupils' responses to the meaning of HIV**

With regards to the methods of HIV transmission, a wide range of responses (sex with infected persons, through witchcraft and the sharing of household facilities) was recorded from the pupils (Figure 3). The majority of pupils 910 [94% (95% CI: 92.3-95.3)], agreed HIV is transmitted through unsafe sex with infected persons. Mother-to-child transmission, contaminated blood transfusion, and infected blood contaminated objects like blades were recorded in 900 [93% (95% CI: 91.2-94.4)], 939 [97% (95% CI: 95.7-97.9)], and 939 [97% (95% CI: 95.7-97.9)] of the students respectively.

Only 591 (61.1%) of the study pupils acknowledged that HIV and AIDS is preventable (95% CI: 57.9% - 64.1%) and amongst these pupils, a majority stated that the best method of prevention is through abstinence; 696 (71.9%) versus 6 (1.0%) for cleanliness as the least method (Table 2). A majority 784 (81.0%) of the pupils had discussed HIV to some extent with their teachers, parents/guardians, classmates, church leaders or friends. Most 838 (86.6%) of the pupils were aware of HIV treatment and 749 (77.4%) of these pupils indicated that hospitals were the main sites to go for treatment (95% CI: 74.6% - 79.9%) as shown in Table 3.



**Figure 3:** Perception of the methods of transmission of HIV and AIDS by the various pupils

**Table 2:** Knowledge on how one can avoid contracting HIV

Methods of prevention	No (%)	95% CI (%)
Abstinence	696 (71.9%)	69.0– 74.6
Avoid sharing of blades, needles	51 (8.6%)	6.6 – 11.2
Faithfulness to one partner	32 (5.4%)	3.9 – 7.5
Knowing your status	32 (5.4%)	3.9 – 7.5
Not sharing household facilities	19 (3.2%)	2.1 – 5.0
Use of condoms	13 (2.2%)	1.3 – 3.7
Cleanliness	6 (1.0%)	0.5 – 2.2
Transfusion of only clean blood	13 (2.2%)	1.3 – 3.7

**Table 3:** Knowledge on HIV and AIDS treatment centres

Variables	No (%)	95% CI (%)
Awareness on HIV and AIDS treatment availability	838 (86.6%)	84.3 – 88.6
No Awareness on HIV and AIDS treatment availability	130 (13.4%)	11.4 – 15.7
Where to go for an HIV and AIDS treatment		
Hospital	749 (77.4%)	74.6 – 79.9
Antenatal clinic	6 (0.6%)	0.3 – 1.4
Church	68 (7.0%)	5.6 – 8.8
Native doctor	11 (1.1%)	0.6 – 2.0
Forgotten	134 (13.8%)	11.8 – 16.2

## DISCUSSION

The study was conducted in two communities along the Buea-Kumba highway of the Fako division, South West Region of Cameroon on HIV and AIDS awareness. In this study, there were more females as compared to males. In Cameroon, the constitution guarantees equality of opportunity for both the sexes and therefore, the de jure position is that girls and boys have equal access to education. Young people are often particularly vulnerable to sexually transmitted HIV [21], particularly those made vulnerable by HIV and AIDS [11, 12]. Thus, providing them with basic HIV and AIDS education information enables them to protect themselves from becoming infected [22]. The study revealed that less than half of the pupils 416 (43%) hitherto knew exactly what AIDS is although slightly more than half of the participants perceived AIDS as a general “cruel illness” that has no cure. Similarly, 461 (43%) of the study participants had an idea about the cause of the disease. Schools have the capacity to reach a large number of young people and can play a vital role in providing HIV and AIDS education information for them as school pupils are particularly receptive to learning new information [23]. Therefore, schools are a well-established point of contact through which young people can receive AIDS education. Unfortunately, this is not the case in our setting. Our finding is therefore, a positive indicator that the awareness of the disease had reached the level of primary schools to a certain extent. This awareness may be as a result of pupils living amongst identifiable HIV infected individuals in their communities and/or through communities’ sensitization by different health personnel and organisations. A study by Okwori and colleagues [24] in Nigeria reported a similar breadth of HIV knowledge amongst primary school children in the north central region of Nigeria

The pupils demonstrated a wide variance of ideas on the methods of transmission of HIV and AIDS. Most of the pupils indicated that HIV could be transmitted either through one or more of the correct routes: through unprotected sex [910 (94%)], vertical transmission from mother to child [900 (93%)], transfusion of contaminated blood [939 (97%)], or the used of HIV contaminated blades, needles or syringes [939 (97%)]. A study conducted among voluntary blood donors by Nsagha and colleagues in 2012 indicated blood transfusion as a potential source of contracting HIV [13]. On the other hand, however, some pupils had a misconception of the routes of HIV transmission. A portion of the pupils may have erroneously believed HIV could be transmitted through witchcraft 348 (36%); through the communal use of toilets, cloths and cutleries 552 (57%); and even through mosquito bites 658 (68%). This demonstrates a

lot of knowledge gap with regards to the methods of transmission of HIV among the pupils.

In this study only 639 (66%) of the pupils were aware on HIV being preventable and in addition, the awareness of the different methods of prevention was too low. Most of the pupils noted abstinence, as the main method of prevention [25]. However, the existence of other methods like the use of condoms and avoiding reuse of blades were poorly indicated. Okwori and colleagues [24] also had similar findings where the pupils had little knowledge on the use of condoms.

It was worth noting that a majority of the pupils were well versed with the existence of treatment for HIV and AIDS but had a lot of misconception on whom to visit for treatments. Although most children indicated hospital as the place of treatment, a significant minority indicated that churches and native doctors were the places to visit for treatment. This is because churches have been known to play a significant portal for impacting HIV and AIDS education and awareness in many communities in Africa [26]. The number of orphans and children made vulnerable by HIV and AIDS is on the rise calling for sustained efforts to educate the younger generation on the various aspects of the disease early in life [15].

Significant gaps have been identified in the awareness of HIV and AIDS. The pupils have demonstrated lack of knowledge and misconception of ideas with respect to the comprehension of what HIV and AIDS were, what the methods of transmission are, what the available methods of treatment are, and what the methods of prevention are. Therefore, the need for HIV and AIDS and sex education in all cadres of primary school children cannot be overemphasised. A bridge in this knowledge gap can be achieved by sex and health education that will not only increase their awareness of HIV and AIDS pandemic but will also shape perceptions towards pupils and persons living with HIV and AIDS.

## CONCLUSION

There are gaps in the level of knowledge about the methods of infection, methods of preventions, and treatment strategies which should be addressed appropriately. There is need for health education in primary schools on HIV and AIDS to increase the awareness of the disease.

## COMPETING INTERESTS

The authors declare that they have no competing of interests.

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