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# **Knowledge, counseling and test acceptability regarding AIDS among secondary school students, Khartoum, Sudan**

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### **Abstract**

An interventional study was implemented in Khartoum locality, Sudan on Knowledge, Counseling and test acceptability regarding AIDS among Secondary School Students. Three secondary schools for boys and three for girls were selected by simple random sampling as intervention schools. Also three schools for boys and three for girls were selected to be the comparison schools. The target students were 422 students from intervention school and 422 from comparison schools. A questionnaire designed by WHO was used to collect the data before and after intervention from intervention and comparison groups of students, but the health education intervention was directed to intervention schools only which lasted one academic year. The percentages of knowledge about AIDS (from 7.8% to 88.6%), its causative agent (from 41.2% to 97.9%), modes of transmission and prevention methods (from 41.2% to 100.0%); among students have increased after health education intervention with statistical significant change. About 28.2% of the students in the intervention schools discussed frankly the topic of AIDS with their friends before the intervention and increased to 79.4% after the intervention (P. value= 0.000), while p value was 0.161 in comparison schools. In table 6 about 27.5% of the students in the intervention schools discussed frankly the topic of AIDS with their families before the intervention. This increased to 59.5% after the intervention (P. value = 0.000). Half (50.9%) of the students in the intervention schools accepted to do HIV test before the intervention. The acceptability became 88.9% after the intervention (P. value = 0.000). In comparison schools there were no significant changes in all studied variables. There was an effective role of health education in changing knowledge about AIDS.

**Keywords:** AIDS, knowledge, counseling, secondary, student, Sudan

### **Introduction**

According to World Health Organization (WHO) reports, it has been estimated that at the end of 2001, approximately 40 million people worldwide were living with HIV/AIDS [1]. Every day 5,000 young people aged between 15 and 25 years in the world become infected with HIV, which translates into almost 2 million new infections per year [2]. In Sudan estimated number of people living with HIV was 260,000, most of them above the age of 15 years. The death rate due to AIDS was estimated at 12,000 [3]. Badreldin and Mohamed (2013) mentioned that the prevalence of AIDS among general population of Sudan was 1.6% [4].

Special groups such as rickshaw drivers, who are mostly otherwise unemployed (and often illiterate) adolescents, are abundant in Sudan and have been found to have poor knowledge about HIV/AIDS [5]. School is considered to be a very important setting for health education among children and adolescents, and school health programs are one of the most efficient strategies that use to prevent major health and social problems, schools are the major institution for providing the instruction and experiences that prepare young people for their roles as healthy and productive adults [6]. Young people in schools can be educated about AIDS prevention using various interventions, including the involvement of peers, lectures, posters, focus group discussion etc, given a chance, young people can contribute a lot to combat the epidemic [7].

Therefore, health education that is designed to improve knowledge, attitudes, and practices is urgently needed from all sources such as media, schools, and health care providers,

especially with adolescents e.g. secondary school students, in a carefully planned flexible school-based sexual education [8].

## Materials and Methods

### Study Area

The study was conducted in Khartoum locality which is located in the central of Khartoum, capital of Sudan, where the educational services are adequate. There are 186 secondary schools throughout the locality. The Health authority in the locality visits such schools weekly and checks solid and liquid waste disposal, food safety in addition to health education services regarding different health issues e.g. communicable diseases.

### Study population and sampling

The groups targeted by the study were the students in the secondary schools with a total number of 86787 students distributed in the governmental and non-governmental schools in the Khartoum Locality

Three secondary schools for boys and three secondary schools for girls were selected by simple random sampling to participate in the study. Also three schools for boys and three schools for girls were selected to be the comparison schools. According to adequate statistical equation, the study sample included 844. They were taken as 422 students from intervention school and 422 from comparison schools.

### Data collection

#### Primary Phase

The World Health Organization (WHO) pre-coded questionnaire was directed to the students in both intervention and comparison schools to gather relevant data before the health education activities, which were considered as baseline data.

### Intervention Phase

School teachers in the intervention school were trained to be health educators in order to conduct the health education activities for their students throughout an academic year. These activities included lectures presentation, group discussion, distribution of pamphlet, and cinema show as regard to AIDS.

**Table 1:** The effect of health education on knowledge about AIDS among secondary school students

Level of knowledge	Intervention schools		Comparison schools	
	Pre	Post	Pre	Post
	No. (%)	No. (%)	No. (%)	No. (%)
More	33 (7.8%)	374 (88.6%)	7 (1.4%)	10 (2.4%)
Little	160 (38%)	5 (1.2%)	175 (41.6%)	165 (39%)
Medium	109 (25.8%)	43 (10.2%)	105 (24.9%)	112 (26.5%)
Don't know	120 (28.4%)	0 (0%)	135 (32.1%)	135 (32.1%)
Total	422 (100%)	422	422 (100%)	422 (100%)

$\chi^2$  for intervention schools = 579.9 P. value = 0.000

$\chi^2$  for comparison schools= 26.44 P. value = 0.678

**Table 2:** The effect of health education on knowledge about causative agent of AIDS among secondary school students

Knowledge about causative agent of AIDS	Intervention Schools		Comparison Schools	
	Pre	Post	Pre	Post
	No. (%)	No. (%)	No. (%)	No. (%)
Virus "Yes"	174 (41.2%)	413 (97.9%)	185 (43.8%)	190 (45%)
Virus "No"	164 (38.9%)	9 (2.1%)	44 (10.4%)	53 (12.6%)
Don't know	84 (19.9%)	0 (0%)	193 (45.8%)	179 (42.4%)
Total	422 (100%)	422 (100%)	422 (100%)	422 (100%)

$\chi^2$  for intervention schools = 320.1 P. value = 0.000

$\chi^2$  for comparison schools = 1.429 P. value = 0.490

### Evaluation Phase

It is implemented at the end of the academic year after the target students in the intervention schools have received various types of health education activities. The same questionnaire was used in both intervention and comparison schools.

### Results

In table 1, only 7.8% of the students in the intervention schools had more knowledge about AIDS before the intervention. This increased to 88.6% after the intervention (P. value = 0.000). While in comparison schools p value = 0.678. In table 2, about 41.2% of the students in the intervention schools knew the causative agent of AIDS as a virus before the intervention. This increased to 97.9% after the intervention (P. value = 0.000). There was no significant change in the comparison schools (P. value = 0.678). In table 3, about 41.2% of the students in the intervention group knew the modes of transmission of AIDS before the intervention. The percentage became 100.0% after the interventional education (P. value = 0.000). In contrast there was no significant change in the comparison schools (P. value = 0.197). Approximately, 1.4% of the students in the intervention schools knew the prevention methods of AIDS before the intervention. After intervention the percentage increased to 92.9% (P. value = 0.000). In comparison group p value was 0.310 as shown in table 4. About 28.2% of the students in the intervention schools discussed frankly the topic of AIDS with their friends before the intervention and increased to 79.4% after the intervention (P. value= 0.000), while p value was 0.161 in comparison schools (table 5). In table 6 about 27.5% of the students in the intervention schools discussed frankly the topic of AIDS with their families before the intervention. This increased to 59.5% after the intervention (P. value = 0.000). There was no significant change in the comparison school (p value = 0.402). Half (50.9%) of the students in the intervention schools accepted to do HIV test before the intervention. The acceptability became 88.9% after the intervention (P. value = 0.000), in comparison schools p value was 0.81 (table 7).

**Table 3:** The effect of health education on knowledge of secondary school students about AIDS modes of transmission

Knowledge on AIDS transmission mode	Intervention Schools		Comparison Schools	
	Pre	Post	Pre	Post
	No. (%)	No. (%)	No. (%)	No. (%)
Know	174 (41.2%)	422 (100%)	131 (31%)	114 (27%)
Don't know	248 (58.8%)	0 (0%)	291 (69%)	308 (73%)
Total	422 (100%)	422 (100%)	422 (100%)	422 (100%)

 $\chi^2$  for intervention schools = 351.1 P. value = 0.000 $\chi^2$  for comparison schools = 1.66 P. value = 0.197**Table 4:** Knowledge of Secondary School Students about Prevention Methods of AIDS

Knowledge about Modes of prevention	Intervention Schools				Comparison Schools			
	Pre		Post		Pre		Post	
	No.	%	No.	%	No.	%	No.	%
Know	6	1.4	392	92.9	51	12.1	61	14.5
Don't know	416	98.6	30	7.1	371	87.9	361	85.5
Total	422	100	422	100	422	100	422	100
	$\chi^2 = 708.4$				P. value = 0.000			

**Table 5:** AIDS Information Counseling among Secondary School Students with their Friends

AIDS Information Counseling with Friends	Intervention Schools				Comparison Schools			
	Pre		Post		Pre		Post	
	No.	%	No.	%	No.	%	No.	%
Yes	119	28.2	335	79.4	76	18.0	61	14.5
No	303	71.8	87	20.6	346	82.0	361	85.5
Total	422	100	422	100	422	100	422	100
	$\chi^2 = 222.3$				P. value = 0.000			

**Table 6:** AIDS Information Counseling among Secondary School Students with their Families

AIDS Information Counseling with Families	Intervention Schools				Comparison Schools			
	Pre		Post		Pre		Post	
	No.	%	No.	%	No.	%	No.	%
Yes	116	27.5	251	59.5	48	11.4	56	13.3
No	306	72.5	171	40.5	374	88.6	366	86.7
Total	422	100	422	100	422	100	422	100
	$\chi^2 = 87.8$				P. value = 0.000			

**Table 7:** Acceptability of HIV Test among Secondary School Students

Acceptability of HIV Test	Intervention Schools				Comparison Schools			
	Pre		Post		Pre		Post	
	No.	%	No.	%	No.	%	No.	%
Yes	215	50.9	375	88.9	181	42.9	176	41.7
No	67	15.9	20	4.7	103	24.4	111	26.3
Don't know	140	33.2	27	6.4	138	32.7	135	32.0
Total	422	100	422	100	422	100	422	100
	$\chi^2 = 145.2$				P. value = 0.000			

## Discussion

The student's knowledge was increased more after health education process while the situation in the comparison schools reflected no significant difference (in intervention schools P. value = 0.000 while in comparison schools P. value = 0.678). In details, there was increasing in knowledge about Causative agent (for intervention schools p. value = 0.000 when p value for comparison schools was 0.490); mode of transmission (p value for intervention schools was 0.000 and for comparison schools was 0.197); and the knowledge among the students in the intervention schools clearly increased (in intervention group p value was 0.000 and for comparison group was 0.310). This result indicates the effectiveness of health education in increasing the knowledge of student and may be the appropriate method for advocacy. It is going along with the data that mentioned in a study conducted in Nigeria which found that health

education is effective in improving HIV knowledge and changing from practice of high risk behaviors [9].

Before the intervention some of the students (28.2%) discussed the topic of AIDS frankly with their friends. This increased to (79.4%) after the intervention. It was significant (P. value = 0.000). There was no significant change in the comparison schools. This was similar to that study conducted by Vicki, *et al.*, 2002, A randomized controlled trial of peer-led sex education in English secondary schools. Peer educators reported positive changes in sexual knowledge and changes towards more liberal attitudes. There was an increase in confidence in relationships and on their sexual behaviour [10]. Also, a study carried out by Aryeetey, 2000, in Ghana aiming to provide students with current and accurate information on HIV/AIDS and to use students as agent of change among families and peers, 20

student's members underwent training to reach out to other young people between 10 – 35 years [11].

A considerable group of students (27.5%) discussed the topic of AIDS frankly with their families before the intervention. This increased to (59.5%) after the intervention. This was found to be significant change (P. value = 0.000). Which emphasized the efficiency of the school health education intervention, where there were no significant changes in the comparison schools. The change was found to be similar to the findings of Adu – mireku, 2003 in a study carried out in Accra, Ghana with an aim to evaluate the relationship between family communication about HIV/AIDS and sexual activity among school – going adolescents. Results revealed that (73.6%) of the students had talked about HIV/AIDS with parents or other family members [12].

Before the intervention half of the students (50.9%) accepted to do HIV test in intervention schools. This increased to (88.9%) after the intervention. This increase was strongly related to the intervention (P. value = 0.000). But there was no significant change in the comparison schools after the period of intervention. This complied with what was stated by SNAP strategic plan and sectoral plans on HIV/AIDS 2004 – 2009, who mentioned that one of the objectives of the plan to provide voluntary testing and counselling in government and private health institutions.

### **Conclusion**

The study confirmed the effective role of the school health education intervention in the promotion of the knowledge, attitudes and practices among the secondary school's students in Khartoum Locality of HIV infection which was reflected a high significant in the promotion of KAPs among students in the intervention schools when compared to the students in the comparison schools as shown in the following findings.

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