



Health Education as Intervention in Promotion of Knowledge, Attitudes and Practices among School Pupils as Regards Schistosomiasis

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Abstract:

An interventional study was conducted in East Nile Locality, Khartoum, Sudan to identify the role of school health education in the promotion of the knowledge, attitudes and practices among the pupils as regards Schistosomiasis. The target population is composed of 6 boys' schools, and 6 girls' schools, each was considered as a cluster. A sample of 324 pupils from the intervention schools, and 324 pupils from the comparison schools were selected to participate in the study. Data were collected using a pre- and post - KAP survey. It was found that half of the pupils (58%) in the intervention schools knew Schistosomiasis as a disease before the intervention and such knowledge increased to include all the pupils (100%) after the intervention. Only 17% of the pupils knew that Schistosomiasis is a parasitic disease before the intervention and 81.5% after.

Data before intervention revealed that most of pupils had positive attitudes regarding swimming, defecation and urination in water bodies, these attitudes were changed after health education intervention. A small group of pupils (6.2%) mentioned all the practices that lead to Schistosomiasis transmission. They increased to include most of the pupils 69.1% after the intervention .The changes were significant p value =0.001 The study concluded that health education intervention induced a significant change on KAPs among the pupils as regards Schistosomiasis in the intervention schools.

Key words: knowledge, attitudes, practices, schistosomiasis, Sudan

Introduction

Schistosomiasis or Bilharzias is a chronic and debilitating disease caused by blood flukes of the genus schistosoma. The most important species parasitizing human are; *S. heamatobium*, *S. jahonicum*, and *S. mansoni*. While the former causes genitourinary tract lesions, the latter two affect the intestines and liver. It is estimated that 779 million people are at risk of Schistosomiasis with 207 million people infected (Fenwick et al, 2009).

Schistosomiasis is considered as endemic in Sudan before tens of years. Schistosomiasis cases can be detected in all states except the Red Sea State. In 1925 a new era of Schistosomiasis began in Sudan with the opening of the agricultural schemes in Gezira province where Schistosomiasis was particularly unknown expect for a few sporadic cases on the bank of the Blue Nile (Hasaberasoul ,2004). The risk for schistosomiasis in Sudan is widespread.

Knowledge, attitudes and preventative practices of risk groups for neglected tropical diseases such as intestinal schistosomiasis are important aspects for their control (Humphrey et al, 2010). It is a behavioral disease which always occurs where sanitary standards are low and man is the final sole host. Schoolchildren who live in such endemic areas are at risk of Schistosomiasis as they tend to swim and bath in water channels and get exposed to the infective cercariae (Mustafa and Ahmed, 2012).

The school and the community are strategic settings for the success of health promotion. They contribute to the prevention, and control of diseases. Teachers and students are active agents for introducing new concepts in the community as they are their permanent members. Due to its

representativeness, the school atmosphere offers favorable conditions to the change of attitudes, and new alternatives to individuals and communities (Massaro, Schall, 2004).

Materials and Methods:

The target population is composed of 6 boys' schools, and 6 girls' schools, each was considered as a cluster. The sample size was determined by using the proportion formula since the prevalence rate of Schistosomiasis among the pupils in the basic schools of Elaelafoon Unit was 12%, to obtain accordingly, a sample of 324 pupils from the intervention schools, and 324 pupils from the comparison schools ending up with a total of 648 pupils, out of 2816 pupil in the intervention and comparison schools.

Data were collected using a pre KAP survey, and also reviewing the basic school's curriculum, and interviewing teachers. By using the same questionnaire a post survey was carried out after different health education sessions regarding schistosomiasis were held for pupils.

Results

Table 1 shows that (58%), of the pupils knew Schistosomiasis before the intervention. They increased to reach (100%) after the intervention. There was no significant change in comparison schools. The causative agent was correctly identified by 17% of the pupils before the intervention and 81.5% after the intervention, which is a highly significant positive change in identifying the causative agent ($p=0.01$). There was no significant change in comparison schools (table2). The knowledge among the pupils about the prevention of Schistosomiasis was that 3.1% mentioned all the ways of prevention as increasing to 61.7% after the intervention, which is a highly significant result ($p=0.001$). There was no significant

change in the comparison schools (table 3). Recreation was a reason for bathing for 16% of the pupils reduced to 6.2% after the intervention, which is a highly significant result ($p=0.001$). There was no significant change in the comparison schools (table 4). Recreation was a reason for bathing for 16% of the pupils reduced to 6.2% after the intervention, which is a highly significant result ($p=0.001$). There was no significant change in the comparison schools (table 5). About 69.1% of the pupils had a positive attitude as regards defecation and urination in or near the water canals. This decreased to 4.9% after the intervention, which is a highly significant result ($p=0.001$). There was no significant change in the comparison groups (table 6). In table 7, only 8% of the pupils mentioned all the practices that lead to transmission of Schistosomiasis before the intervention. This increased to 69.1% after the intervention, which is a highly significant positive change in their knowledge ($p=0.001$). There was no significant change in the comparison schools.

Table (1): Pupils' knowledge of Schistosomiasis as a disease
(n=324) (n=324)

Knowledge	Intervention Schools				Comparison Schools			
	Pre		post		pre		post	
	No	%	No	%	No	%	No	%
Know	188	58	324	100	99	30.6	119	36.7
Do not Know	136	42	0	0	225	69.4	205	63.3
Total	324	100	324	100	324	100	324	100

$\chi^2 = 275.3$ P. value = 0.001 $\chi^2 = 1.26$ P. value= 0.9

Table (2): The causative agent of Schistosomiasis according to the pupils' knowledge.

(n=324) (n=324)

AGENT	INTERVENTION SCHOOLS				COMPARISON SCHOOLS			
	PRE		POST		PRE		POST	
	NO	%	NO	%	NO	%	NO	%
PARASITE	55	17	264	81.5	16	4.9	24	7.4
BACTERIA	28	8.6	14	4.3	18	5.6	20	6.2
VIRUS	15	4.6	17	5.2	15	4.6	27	8.3
NOT KNOW	226	69.8	29	9	275	84.9	253	78.1
TOTAL	324	100	324	100	324	100	324	100

$X^2= 337$

P. value = 0.01

$X^2= 6.02$

P. value = 0.2

Table (3): The prevention methods of Schistosomiasis as mentioned by the pupils.

(n=324) (n=324)

Prevention	Intervention Schools				Comparison Schools			
	Pre		post		pre		post	
	No	%	No	%	No	%	No	%
Avoiding bathing and wading	95	29.3	90	27.8	30	9.3	33	10.2
Avoiding urination and defecation in canals	25	7.7	7	2.2	12	3.7	14	4.3
Control snails	8	2.5	5	1.5	10	3.1	11	3.4
Treating patient	7	2.2	6	1.9	11	3.4	10	3.1
All mentioned	10	3.1	200	61.7	17	5.2	18	5.6
Not know	179	55.2	16	4.9	244	75.3	238	73.4
Total	324	100	324	100	324	100	324	100

$X^2= 315.7$

P. value = 0.001

$X^2=0.64$

P. value = 0.95

Table (4): The reasons behind pupils bathing, and swimming in water canal, and rivers.

(n=324)

(n=324)

Reasons	Intervention Schools				Comparison Schools			
	Pre		post		pre		post	
	No	%	No	%	No	%	No	%
No water in house	30	9.3	6	1.9	37	11.4	40	12.3
Recreation	52	16	20	6.2	44	13.6	38	11.7
Friend approval	30	9.3	14	4.3	19	5.9	20	6.2
Not bath	212	65.4	284	87.6	224	69.1	226	69.8
Total	324	100	324	100	324	100	324	100

$X^2= 46.5$ P. value = 0.001 $X^2=0.63$ P. value = 0.90

Table (5): The attitude among the pupils as regards swimming and bathing in canals and rivers.

(n=324) (n=324)

Attitude	Intervention Schools				Comparison Schools			
	Pre		post		pre		Post	
	No	%	No	%	No	%	No	%
Positive	243	75	40	12.3	259	79.9	250	77.2
Negative	81	25	284	87.7	65	20.1	74	22.8
Total	324	100	324	100	324	100	324	100

$X^2 = 284$ P. value = 0.001 $X^2 = 0.75$ P. value = 0.50

Table (6): The attitude among the pupils as regards defecation and urination in, or near the canals.

(n=324) (n=324)

Attitude	Intervention Schools				Comparison Schools			
	Pre	post			pre		post	
		No	%	No	%	No	%	No
Positive	224	69.1	16	4.9	227	70.1	220	67.9
Negative	100	30.9	308	95.1	97	29.9	104	32.1
Total	324	100	324	100	324	100	324	100

$X^2 = 286.1$ P. value = 0.001 $X^2 = 0.56$ P. value = 0.50

Table (7): The practices that lead to Schistosomiasis transmission as mentioned by the pupils.

(n=324) (n=324)

Ways	Intervention Schools				Comparison Schools			
	Pre		post		pre		post	
	No	%	No	%	No	%	No	%
Bathing in polluted water	16	4.9	50	15.4	11	3.4	18	5.6
Wading in canals	18	5.6	25	7.7	8	2.5	5	1.5
Drinking canal's water	10	3.1	15	4.7	7	2.2	12	3.7
All mentioned	26	8	224	69.1	12	3.7	13	4
Not know	254	78.4	10	3.1	286	88.2	276	85.2
Total	324	100	314	100	324	100	324	100

$X^2 = 421.7$ P. value = 0.001 $X^2 = 3.94$ P. value = 0.5

Discussion

The overall knowledge of Schistosomiasis among the pupils was that the knowledge among the pupils in the intervention schools increased to (100%) when compared to the situation before the intervention which was (58%). It was insignificant in

the comparison schools. This situation reflected the efficiency of intervention.

This increase in knowledge among the pupils in the intervention schools was similar to the findings of Yuan, et al (2000) among the primary schools students in Dongting Lake Region in China, where after the intervention there was a significant increase in knowledge about Schistosomiasis among the intervention students. Also WHO (2008) mentioned that school based health education has expanded children's knowledge of Schistosomiasis in Nigeria.

The majority of the pupils (81.5%) said that Schistosomiasis is a parasitic disease after the intervention in the intervention schools, as compared to (17%) before the intervention. This was found to be significant (P value =0.001). But there was no significant change in the comparison schools. The variation in the study schools and comparison school indicated that the efficiency of the school health education intervention. This knowledge about Schistosomiasis as a parasitic disease was similar to that study carried out by Gazinelli et al 2006 who said that in communities in Minas Gerais, children in Caju knew that schistosomiasis is a parasitic disease.

The majority of the pupils (69.1%) mentioned all the practices that lead to Schistsomiasis transmission in the intervention schools after the intervention when compared to the situation before the intervention .There was an increase of about (62.2%) in the knowledge, as regards the practices of transmission which was found to be significant (P value =0.001)

There was a significant increase (P value <0.001) in knowledge among the pupils in relation to the practices and methods of Schistosomiasis prevention in the intervention schools. The pupils who said all the mentioned options for prevention were only a small group (3.1%) before the intervention; they reached (61.7%) after the intervention. This indicated the role of school health education. Han et al (2005) in

a study in Poyang Lake Area China, examining the short effects of health education and health promotion in the control of Schistosomiasis, the one- year post - intervention follow- up showed that both awareness and appropriate behaviour were strengthened in all the three study groups along with a significant increase in the level of knowledge on how to avoid Schistosomiasis.

The attitude among the pupils in the intervention schools towards swimming and bathing were reduced from (75%) had a positive attitude as regards to swimming and bathing to (12.3%). This change was significant (P value = 0.001) where there was no significant change in the comparison schools. As it was known swimming and bathing definitely increase the risk of Schistosomiasis among pupils. A study carried out by Yuan et al (2000), in China, revealed that the impact of educational videotapes on water- contact behaviour of primary schools' students in the Dongting Lake regions , revealed that multimedia have become increasingly important in educational programs in schools in all societies ,and have a potential value for health education. Videotapes were developed, as well as comic books of transmission and prevention of Schistosomiasis for the use of primary schools in order to increase children's knowledge of Schistosomiasis as an environmental disease, and to encourage them to reduce their contact with unsafe water sources .The intervention showed a significant increase in knowledge about Schistosomiasis in the intervention schools. Significantly this change was associated with the decrease in contact with unsafe water sources.

Before the intervention most of the pupils 69.1% had a positive attitude as regards defecation and urination in or near water bodies and canals. This reduced to 4.9% after the intervention .It was significant p value =0.001. There was no significant change in the comparison schools.

Conclusion

The study confirmed the effective role of the school health education intervention in the promotion of the knowledge, attitudes, and practices among the basic schools pupils in Sharg Elneel Locality, Khartoym, which was reflected as a sharp variation in the promotion of KAPs among students in the intervention schools when compared to the pupils in the comparison schools.

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