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BRIEF COMMUNICATION

COMPARISON OF PROCESS-BASED AND TRADITIONAL APPROACHES IN DEVELOPING STUDENTS' KNOWLEDGE AND ATTITUDE TOWARDS THE PREVENTION OF HIV/AIDS IN GIMIJABET ELEMENTARY SCHOOL

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ABSTRACT

Background and Aim: *The purpose of this study was to examine the effectiveness of a school-based HIV/AIDS education through the process-based approach. More specifically, the process-based approach and lecture methods of providing AIDS education were compared to see their effects in developing students' knowledge and attitude towards the prevention of HIV/ AIDS.*

Method: *This study employed the experimental method of research. Out of 187 Grade 6 students, 60 were randomly selected and grouped into experimental and control groups using random assignment. The experimental group were taught by the process-based approach and the control group by the lecture method. In order to assess students' knowledge and attitude towards HIV/ AIDS, a questionnaire adapted from WHO was given to the experimental and control groups before and after they were taught about AIDS. Paired Sample t-test was employed on the data to test the statistical significance of the difference between the two groups.*

Results: *The result in the pre-test indicated that both groups had a similar level of knowledge and attitude towards preventing the spread of HIV/AIDS. However, the post-test result revealed a statistically significant difference in favor of the experimental group.*

Conclusion: *The process-based approach of providing AIDS education is an effective method to develop knowledge and attitude on preventing AIDS. Teaching, regardless of the kind of method employed, brought significant changes in both cognitive competence and attitude tests.*

INTRODUCTION

For more than 23 years, AIDS has been stalking the world. Currently, HIV is reckoned to have destroyed the immune system of 42 million people across the world, of which, 35.7 Million were adults. In 2009, 1.8 million people died from HIV/AIDS and another 2.6 million people were infected with the virus. Subsaharan Africa has been hit harder by HIV/ AIDS than any other region in the world. Two-thirds of the people living with HIV/AIDS and three-quarters of deaths from HIV/AIDS are in Subsaharan Africa. (1). 14.8 million African children have already lost one or both parents to HIV/AIDS. The disease targets people during their most productive years, making economic progress in many Subsaharan African countries even more of a challenge (2). Each day, 8,200 people are dying of AIDS in the world. It is also estimated that due to the deterioration of public health in the developing countries, there will be 100 million AIDS cases by the year 2015 (3)

In Ethiopia, HIV/AIDS is spreading across almost all corners of the country causing the loss of thousands of lives and growing resistance to every attempt made to control its spread. This explicitly portrays the need for designing an appropriate strategy to control the spread of this deadly disease (4).

Despite intensive, extensive and rigorous efforts made by scientists all over the world, no vaccine or medicine has been discovered so far to prevent or cure the disease. Hence, education remains the major and probably the only weapon to fight AIDS(5). However, many researches have expounded that the methods employed to teach AIDS and health education have significant impacts on the effectiveness of AIDS education. Studies conducted in Zimbabwe (6), the United States (7), and Trinidad and Tobago (3) have reported that the application of process

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based teaching is more effective than the lecture method in providing AIDS education. Although the process-based approach has been criticized for its relative consumption of time, it is found to be effective to develop the ability to solve real life problems. These varying research findings regarding the importance of different methods of delivering AIDS education have triggered the investigator to compare the process-based approach and the traditional lecture methods in providing AIDS education in Ethiopia. More explicitly, the purpose of this study was identifying the proper means of transmitting HIV/AIDS education to the specific target groups with the belief that the results of this finding will contribute to the efforts that are being made to control the spread of AIDS by stressing the importance of selecting appropriate teaching methodology during offering the contents of AIDS education. In doing so, the following basic questions were formulated:

- A process based approach to teach AIDS education is an effective method to develop both the required knowledge and attitude of students to prevent the spread of AIDS as compared to the lecture method of delivering AIDS education.
- Regardless of the type of teaching methods utilized to teach students about AIDS, teaching increases their cognitive competence about AIDS and develop their attitude towards AIDS.

METHODS

Subjects: The subjects of the study were Grade 6 students of Gimjabet Elementary School in the year 2008. In that year, there were 187 Grade six students in three sections, each consisting of 63, 62, and 62 students. Out of 187 students, 60 (40 male and 20 female) were selected using the simple random sampling technique (using random table). That is, first the list of students from the three sections was arranged and a random table was used until the required number of students was selected. Grade 6 students were selected as a target population to control the influence of the school curriculum on the students' level of knowledge and attitude about AIDS. This was done because a study conducted to evaluate the adequacy of integration of contents of AIDS education has revealed that contents of AIDS education were included in Grade 6 Science text books. (8).

The sample students were divided into experimental and control groups using a simple random assignment. That is, male and female students were divided into two using the lottery method. Before dispatching the questionnaire, consensus was obtained from the school principal, the homeroom teacher, and the students.

Data Collection Methods and Instruments: Two sets of tests (30 knowledge and 16 attitude items) adapted from WHO (16) and translated into Amharic were administered before and after the experiment to both the control and experimental groups to measure their knowledge and attitude on preventing the spread of AIDS. The knowledge items were scored out of 30 and the attitude items out of 80.

The items used to measure the students' level of knowledge were answered "Yes" and "No" with the values "1" to each "correct" answer and "0" to each "incorrect" answer. The items used to measure the students' level of attitude had five choices, ranging from "strongly agree", "agree", "not sure", "disagree", to "strongly disagree" with values ranging from 1 to 5 with 3 points to "not sure".

After the pre-test, the control group were offered the contents of AIDS education as recommended by WHO (9) through the lecture method for a total of 12 periods, (3 periods per week). The lecture was given by the researcher himself. The experimental group were taught by the process based approach. That is, first they were divided into 5 groups, each group containing 6 students. After grouping, they were made to discuss everything they knew about AIDS and the sources of information they had about AIDS without giving them any prior information about the issue. The group members were made to evaluate both the relevance of the information and the credibility of the sources. This was done under the guidance of the investigator by giving some corrections and modifications while conducting discussion for 12 periods.

After doing this, each group was assigned to bring information about the contents of AIDS education from wherever available. For the experimental group, however, the investigator identified such sources of information as health workers, teachers, the Family Planning Office, television, radio, posters, etc. Finally, the post-test was administered to both the control and experimental groups.

Data analysis procedures: First, the mean difference of the control and experimental groups in the pre-test (pre-experiment) was calculated and the t-test was used to see whether the difference was significant or not. Second, the t-test was employed to see whether **there** existed a significant difference in the knowledge and attitude scores of the control and experimental groups in the post- test (after the experiment).

RESULTS

As indicated in Table 1, the computed t-values of the knowledge and attitude scores were less than the table values of t. This finding revealed that the difference between the knowledge and attitude mean scores of the experimental and the control groups before they were taught about AIDS by utilizing different methods of teaching was not-significant at a=0.05.

Table 1- t. Value of knowledge and attitude score differences between the Experimental and Control Groups in the Pre - test

	Experimental		**Control**		**df**	**t***
	mean	**Sd**	**mean**	**Sd**		
Knowledge	17.46	1.19	17.24	1.10	58	0.75
Attitude	48.08	2.28	48.41	2.83	58	0.53
	P³0.05					

As shown in Table 2, students in the experimental group obtained a greater mean score in both the knowledge and attitude tests than students in the control group. This was indicated by t-test values that revealed statistically significant differences (t=8.45, df=58, p-0.001, for knowledge; and t=5.25, df=58, p=0.001, for attitude).

Table 2 - t- values of knowledge and attitude difference between experimental and control groups in the post-test

	Experimental group		**Control group**		**df**	**t-value**
	mean	**Sd**	**mean**	**sd**		
Knowledge	28.13	.77	25.74	1.88	58	8.45*
Attitude	72.86	2.95	63.6	2.58	58	5.23*
	*P≤0.05					

Table 3 displays that there is a low but positive relationship between the pretest and posttest scores of knowledge items for the control group, while a high and positive relationship is observed in the pretest-posttest comparison of attitude items. Table 3 further reveals low and negative relationship between the pretest and post test scores of both knowledge and attitude items of the experimental group. Further analysis of Table 3 portrayed that there is a statistically significant difference between the pre-test and posttest results of both the control and experimental group students in knowledge and attitude tests in favor of post-test. That is, teaching, regardless of variations in teaching methods has brought a change in the knowledge and attitude of students to prevent the spread of AIDS.

Table 3 - t- value of Pre test- Post test results (Inter-group Comparison)

		Mean	S/D	r	t	df	Significance
Control Knowledge	Post-test	25.77	1.89	0.18	22.56	29	01<
	Pre-test	17.27	1.23	-	-	-	-
Control Attitude	Post-test	63.60	2.58	0.86	59.41	29	01<
	Pre-test	48.07	2.27	-0.01	29.83	29	
Experimental Attitude	Post-test	72.87	2.18	-0.14	38.53	29	01<
	Pre-test	28.13	.78	-0.14	38.53	29	01<
Experimental Knowledge	Post-test	28.13	.78				01<
	Pre-test	17.47	1.20	-	-	-	-

DISCUSSION

The major purpose of this study was to compare the effectiveness of the process-based approach and lecture methods of providing AIDS education in order to understand the position of the former in relation to the latter which is the most popular in schools and the media.

The result in Table 1 revealed that both the experimental and the control groups had almost similar level of knowledge and attitude in preventing the spread of AIDS. This might be attributed to the fact that students in both groups had an equal exposure to different mass media or other sources of information about AIDS, or, it may be due to the impact of randomization. However, this kind of generalization should be proved by an in-depth research.

A further look at the results in Table 1 indicated that apart from the school AIDS education, children are getting information about AIDS from different sources. The mean scores of both the experimental and control groups of students in both the knowledge and attitude items in the pre-test were encouraging. The result in Table 1 is not in accord with the studies conducted by Ashebir (10) and Fikirte (11) which unraveled that different mass media haven't contributed to knowledge and attitude development of students to prevent HIV/AIDS. This difference seems to result from the improvements made in the nature of the content of AIDS education and the frequency of the transmission of the contents of AIDS education over various media.

However, the results in Table 2 highlighted the need to consider the utilization of appropriate methods of teaching AIDS or sex education to bring the required attitude and behavioral change. This seemed to be true because students who were taught about AIDS through the process based approach obtained greater mean score in both the knowledge and attitude tests in the post-test than those students who were taught by the traditional method.

In the first instance, the process-based approach is important to identify the pre existing level and extent of knowledge of the participants which in turn helps to identify the misconception and the knowledge gaps about AIDS (12). In this study, the experimental group were asked to explain what they knew about AIDS. They were also asked to discuss the reliability of the information and its source. This might have helped them to evaluate their preconceptions about AIDS. Secondly, it is important to know which sources of information about AIDS give the correct information to the people so as to take corrective measures. In this study, the experimental students were discussing which source they heard about AIDS and whether or not that source was a reliable source of information.

Thirdly, the process-based approach, as opposed to the traditional method which focuses on mere transmission of information, gives an appropriate learning experience which goes in line with students' ability, interest and past experience (13 and 14). In the experimental group, that the discussion was held among groups with similar age level, experience, awareness, and attitude towards the nature of HIV/AIDS (proved by the pre-test results) might have given them an opportunity to share experiences

freely. To this end, Moss (15) said that health and sex education programs can be effective if they consider past experience and specific health problems of the learners.

Other studies also seem supporting the finding of this study. The study conducted to measure the effectiveness of the process-based approach to teach AIDS education in various American States revealed that the method was found effective in bringing the required behavioral change (16), while a study conducted to measure the effect of the lecture method in teaching medical professionals with the aim of developing favorable attitude towards AIDS patients, revealed that the method was ineffective in developing the required attitudinal and behavioral changes (17)
However, literature also revealed that lessons given about AIDS by using teachers' presentations by avoiding the authoritarian approach followed by student discussion was found to be effective in developing both knowledge and attitude towards risk reduction behaviors.

The current study and the results of other studies discussed above uncover the importance of learner participation starting from collecting information about AIDS up to evaluating the relevance of the information and the credibility of the source (process -based approach) to arrive at decisions to protect the spread of HIV/AIDS.

In contrast to Haufer's biased argument that expressed the impossibility of bringing attitudinal and behavioral changes through education in developing countries (15) and that of the philosophical justifications of Pettigrew (18 and 19) which stated that attitude could not be formed through persuasive education. The result of this study, however, revealed something different. That is, regardless of the variations in the types of teaching methodology, students taught by both the process-based and the lecture methods obtained a greater mean in the knowledge and attitude tests after the experiment when the students' results were compared with the mean in the pretest (before the experiment).

Here, what one can understand is that what matters is not being in developed/developing countries. What is important is designing appropriate AIDS education that best fits the experience, age, and health problems of students and selecting appropriate ways of conveying the contents of AIDS education.
Hence, the failure of the mass media, health workers presentations, and other informal means of transmitting health education seems to be the problem of choosing the proper ways of information transmission to the needy.
Finally, it seems important to note that any type of AIDS information, communication, and education has relevance to prevent the spread of AIDS, though their effectiveness varies.

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