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## PREVENTIVE HEALTH EDUCATION APPROACHES AGAINST MOTHER-TO-CHILD TRANSMISSION OF HIV/AIDS AMONG HEALTH WORKERS IN PMTCT HOSPITALS IN ANAMBRA STATE NIGERIA

By

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**ABSTRACT:** *Preventive health approaches especially those pertaining to fundamental health of human being are of profound importance in every health institutions in Anambra state. This research work intends to assess the preventive health education approaches against PMTCT of HIV/AIDS among health workers in selected hospitals in Anambra State, Nigeria. The study design was a descriptive cross-sectional survey. The study population comprised health workers providing services for PMTCT of HIV in Anambra State. Yamane Taro sample size calculation was used to determine the sample size of the study and multi-stage sampling was used to select 237 health workers from the three levels of health institution. Self-structured questionnaire was used to obtain information from the health workers. Data obtained were presented in tables and graph form. Results show that lecture (30%), workshop (27%) and seminar as well as conference (27%) were the health education approaches that are mostly employed in the PMTCT facilities studies. Also, it was found out that ignorance (29.1%), lack of instructional materials (52.7%) and unavailability of funds (41%) were the major challenges facing the utilization of health education methods in the PMTCT health facilities. Chi-Square test for independence was applied. It gave a degree of freedom of 2.7 and a significant value of 1.000. Thus, it was observed that there is no significant difference between health education approaches among health workers and their educational qualification. Pearson correlation coefficient and Spearman rank correlation coefficient were used t. This gives a significant value of 0.196 for Pearson correlation coefficient and 0.912 for Spearman rank correlation coefficients. Thus, there is no significant difference between health education approaches utilized in the PMTCT hospitals and level of health institution. It is recommended that, instructional materials should be made available in the PMTCT, Also seminars and workshops on educational approaches should be organized in the various PMTCT hospitals.*

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**Keywords:** health, education, approaches, prevention, hospitals

## INTRODUCTION

In sub-Saharan African countries, human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) are the leading causes of morbidity and mortality amongst women and children. Large number of children who are not up to 15 years of age were newly infected by HIV in 2019 and an estimated 42 000–60 000 pregnant women died as result of HIV all over the world. In addition, more than 90% of the paediatric infections occurred through mother to child transmission. Nigeria is one of the disadvantaged nations that account for the highest estimated number of pregnant women living with HIV, while the number of new HIV infections amongst children and HIV-related deaths is virtually zero in rich countries with timely access to timely preventive services (UNAIDS, 2018).

Nigeria with nine percent of the world HIV burden came second after South Africa in terms of highest number of people living with HIV globally (UNAIDS, 2012, and WHO, 2016). Women aged between 20 and 29 years are effected by HIV than men as they accounted for 58% of the national HIV burden and this has an effect for the transmission of HIV from mothers to children. Several factors contribute to the high burden of paediatric HIV infection in Nigeria and other sub-Saharan African countries such as high prevalence of HIV infection amongst women of reproductive age, high birth rates and lack of access to effective preventive interventions of mother to child transmission of HIV (Doherty et al, 2014).

Some exposed infants (30-45%) born to positive pregnant HIV mothers in developing countries are at risk of being infected. However, rates of Mother to Child Transmission (MTCT) of HIV have fallen to as low as 2% in the developed countries. This is due to the use of the Prevention of Mother to Child (PMTCT) services (Havey, and Thame, 2012). HIV counseling and testing (HCT) is a key component of services provided. The PMTCT programme in Nigeria commenced in July 2002 with the goals of providing effective services for women in the reproductive age group in selected health facilities. Information generated from this initial implementation was to provide information for the formulation of a national policy and implementation guidelines for comprehensive PMTCT services in Nigeria. Several sites are currently providing these services in Nigeria as the country accounts for 15-30% of global burden with programme coverage rate. PMTCT services are provided in all ante natal (ANC) clinic in the country (WHO/UNICEF/UNAIDS, 2011). Nigeria has developed a national scale up plan towards elimination of mother to child transmission of HIV (2010-2015) and had in 2010 produced the guidelines on PMTCT option A and B prophylaxis regimens combination of World Health Organization 2010 (Cousoudis et al, 2015). Although these goals are clearly fitting in their scope, the disparity in the outcomes they actually target reveals a lack of clarity and consensus around how to monitor the influence of PMTCT programmes. Hence, the need for the enhancement of PMTCT health education approaches in the country is very desirable. Reliable and accurate public health information is essential towards achieving the United Nations Millennium Development Goals and hence the need for high-quality health education has never been greater (Boerma, 2016).

Mother-to-child transmission (MTCT) of HIV remains a major public health problem and continues to account for a substantial proportion of new HIV infections among young children (WHO, 2014). One of the issues that draw the researchers' attentions to this topic was the case of HIV positive mother from Umuocha in Anambra State, who gave birth to twin that were HIV positive. She blamed the health workers for not giving her adequate information on PMTCT despite the fact that she attended regular ante natal clinic and took her drugs as prescribed. The risk of MTCT of HIV can be reversed by implementing an effective community-based educational

intervention to improve knowledge and prevent risk factors (WHO, 2011). Hence, it is imperative to evaluate the health education approaches used by health workers in PMTCT unit, as proper skilled health education will improve the quality of life of people living with HIV/AIDS in Anambra state, Nigeria.

## Research Design

The research design for the study was a descriptive cross sectional analytical survey. This method deals with description of event, situations and phenomenon and it also entails the systematic collection and presentation of data to give a clear picture of a particular situation. This design is considered appropriate for the study because it was successfully used by some authors in related studies. Ariseg et al (2017), used a cross sectional study design. Another study conducted by Ashipa, et al (2017) equally used cross sectional design, hence this motivated the researchers to adopt this method in carrying out this research.

## Area of the Study

The study was carried out in Anambra State. The name Anambra was formed from the Igbo name of the Anambra River called Omambala which flows through the state. Old Anambra State was created in 1976 from part of East Central State, and its capital was Enugu.

## Population of the Study

The population of the study was all the health workers in PMTCT units of public hospitals in Anambra state. The health workers include the: Doctors, Registered Nurses/Midwives, Pharmacy technician/scientist, laboratory technician/scientist, counselors and Community health extension workers (CHEW). This totaled 516

## Sample and Sampling Technique

The Taro Yamane formula was used to determine the sample size. The Taro Yamane (1967) formula is frequently used for sample size determination, for estimating proportion in a finite population less than 10,000 (Chinweuba, Iheanacho and Agbapuonwu, 2014) with the formula;

$$n = \frac{N}{1 + N(e)^2}$$

$$\frac{516}{1 + 516(0.05)^2} = 225$$

Where: n = the sample size

N= the population size

e= the level of precision (assumed to be 0.05 at 95% confidence interval) therefore the minimum sample size for this research study was = 225.3  $\approx$  225

Adjusting calculated sample size for non - response rate, the formula below is used

$n = \frac{\text{total sample size}}{1 - 0.05}$  (Bamgboye, 2014). Where total sample size = 225

$n = \frac{225}{1 - 0.05} = 237$

$$n = \frac{225}{1 - 0.05} = 237$$

Thus, the sample size for this research is = 237 health workers

Multistage sampling technique was used to select 237 health workers that will be use for the study. The first stage was clustering the 16 PMTCT public hospitals in Anambra into different levels, primary, secondary and tertiary levels. In the second stage four PMTCT hospitals were randomly selected from primary level and two from secondary level already clustered. The two health institutions from tertiary level clustered were used in the final stage, all the health workers in the eight randomly selected health institution was used for the study as the sample size. This method of sampling helped the researcher have a good representative of health workers within the three levels of institutions used. (Appendix C).

### **Instrument for Data Collection**

A structured questionnaire was used for data collection, to assess health education approaches to the prevention of mother to child transmission of HIV/AIDS among health workers in selected hospitals in Anambra State Nigeria. Both independent and dependent variables were measured. Variables that were measured include; respondents demographic data, health education methods adopted in PMTCT of HIV/AIDS, the extent to which health workers utilize national guidelines in health education and barriers to effective utilization of health education methods. The questionnaire was grouped into five sections according to the study objectives. The five sections consist of : section A, demographic characteristics (3 questions): section B, health education methods adopted in PMTCT of HIV/AIDS (10 questions): section C, the extent to which instructional aides or materials are used in the health education methods (10 question); section D, the extent to which health workers utilize national guidelines for PMTCT; the first guideline: primary prevention (3 questions), the second guideline; preventing unintended pregnancy among women living with HIV (2 questions), third guideline: preventing HIV transmission from women living with HIV to her baby (4 questions), fourth guideline: providing appropriate treatment, care and support to mothers living with HIV and their children and families (4 questions): E, Barriers to effective utilization of health education methods (7 questions). Section B of the questionnaire contained Yes/No answer. A rating scale was used to quantify the responses in section C and D. The rating scale were a five points scale and it will be as follows; very high extent (5), high extent (4) low extent (3) very low extent (2) not utilized (1). Responses in section E will be quantified using a four point rating scales which is as follows: strongly agreed (4) agreed (3) disagreed (2) strongly disagreed (1) (Appendix A).

### **3.6. Validity of the Instrument**

Face, content and construct validity was ensured by the validators. The instrument was validated by two research experts in research ethical committee, Nnamdi Azikwe University Nnewi, a statistician in Department of Health Information Management Anambra State College of Health Technology, Obosi and a senior lecturer in the Department of Nursing Science, Nnamdi Azikwe University, Nnewi (Nursing education specialty). The validators were requested to determine the content and relevance of each item in the questionnaire to the set objectives of the study. They were also requested to justify the relevance of the contents in terms of clarity and appropriateness of the language.

### **Reliability of the Instrument**

A test-retest study was carried out in order to determine the instrument's reliability. The instrument was pre-tested on twenty (20) health workers at University of Nigeria Teaching Hospital Ituku ozala , Enugu State. They were not included in the study, but have similar characteristics and

features with the study area. Hence, to test for the internal consistency and reliability, Cronbach alpha was used. This yielded a value of 0.83 which showed a high consistency. This means that the instrument for data collection is reliable. (Appendix B).

### Method of Data Collection

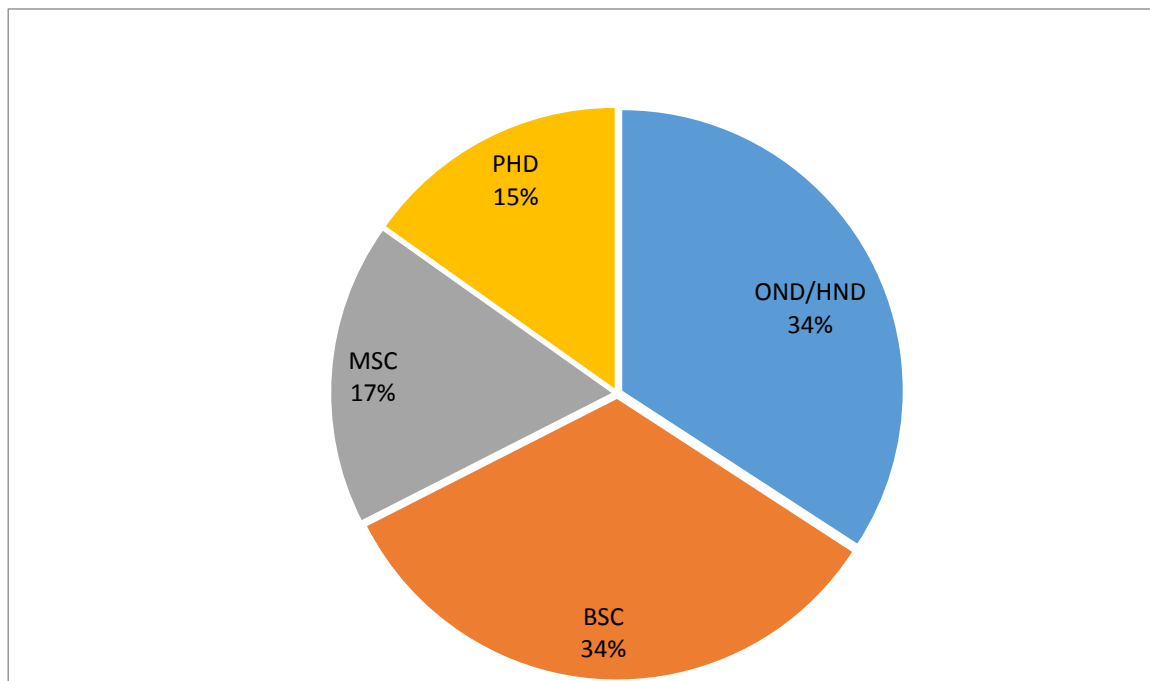
A letter of introduction endorsed by the Head of Nursing Science Department, Faculty of Health Sciences and Technology Nnamdi Azikiwe University Nnewi Campus, was presented to the chief medical Doctor (CMD) requesting for permission to conduct the research in the institution. The data were collected by the researcher and two research assistants.

### Method of Data Analysis

The data collected was analyzed using the Social Package for Social Sciences (SPSS), version 20. Descriptive statistics such as percentages, frequency tables, bar charts and pie chart were used in characterizing the respondents data and answering the research questions. While Chi square test was used to test the first hypothesis, correlation analyses using Pearson's "r" to illustrate and test the second study hypotheses. An availability question was calculated with percentages.

### RESULT OF THE FINDINGS

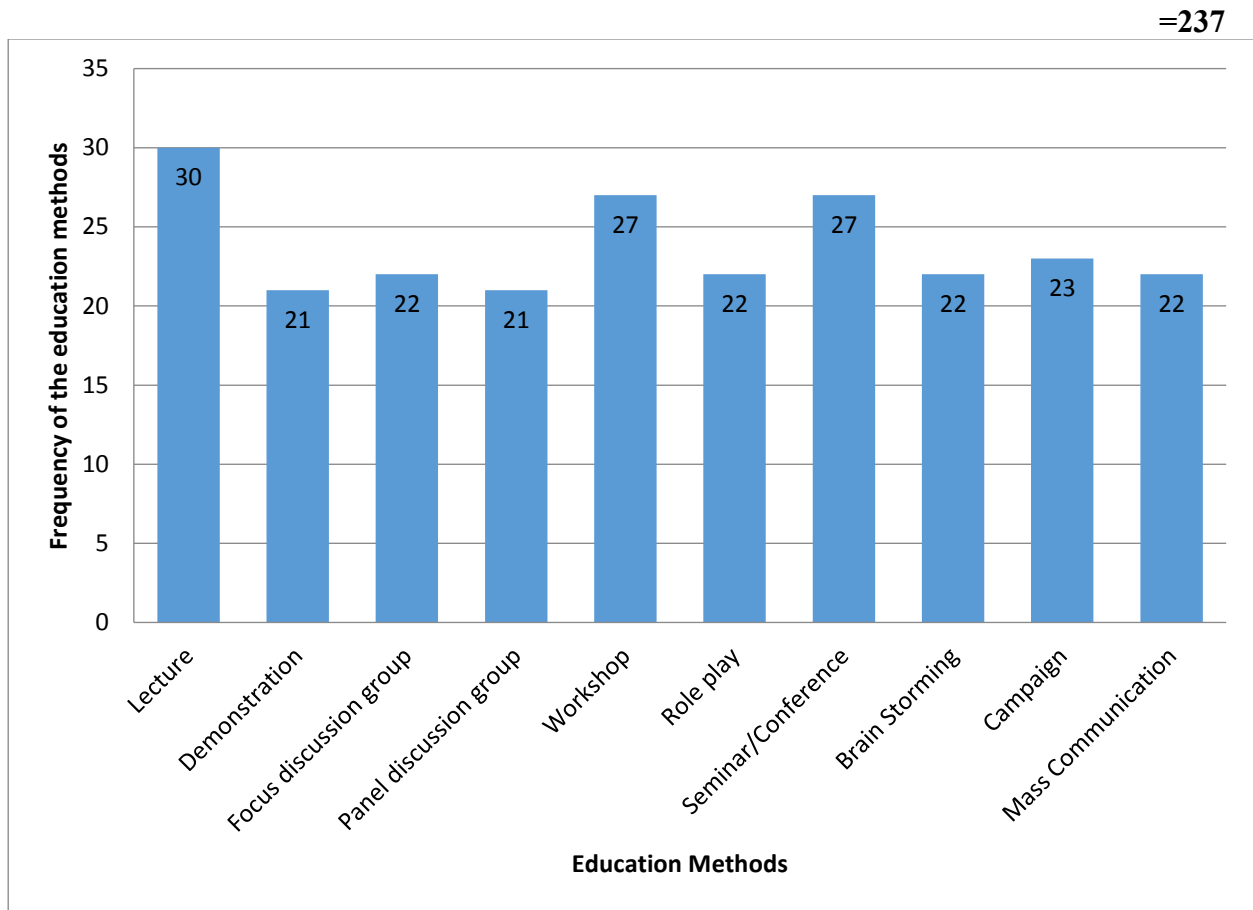
Table 4.1: Shows the categories of health workers in the different levels of health facilities that participated in the study. Among all the medical doctors selected for the study, 36% were from Teaching Hospitals and 31% were from General Hospitals. 41.2% of the registered nurses/midwives, 31.25% Pharmacy technician/Scientist, 38% Laboratory Technicians/Scientists, 36% Community Health Extension Workers (CHEW) and 46.1% Counselors were from Teaching Hospitals. While other percentages were from General Hospitals and primary health centers respectively.



n=237

Figure 4.1: Educational Qualification of health workers

Figure 4.1 reveals the educational qualifications of health workers that participated in the study. 15% respondents had PhD, 17% has masters, 34% has Bachelor of Science Degree while 34% has OND/HND qualifications.



**Figure 4.2: Health Education methods employed in PMTCT facilities**

Figure 4.2 shows the frequency distribution of respondents' health education methods employed in PMTCT health facility. 30 (30%) make use of lecture method, 21 (21%) demonstration method, 22 (22%) make use of focus discussion group, 21 (21%) make use of panel discussion group, 27 (27%) workshop method, 22 (22%) role play method, 27 (27%) seminar/conference method, 22 (22%) brain storming method, 23 (23%) campaign method and 22 (22%) make use of mass communication method.

**Table 4.2: The extent to which instructional materials are used in the Health education methods**

n=237

S/N	Instructional materials	Responses	Frequency	Percentage
1	<b>Film projector</b>	Very High Extent	51	21.5
		High Extent	53	22.4
		Low Extent	46	19.4
		Very Low Extent	43	18.1
		Not Utilized	44	18.6
2	<b>Television</b>	Very High Extent	52	21.9
		High Extent	54	22.8
		Low Extent	48	20
		Very Low Extent	42	18
		Not Utilized	41	17.3
3	<b>Charts, graphs and diagrams</b>	Very High Extent	85	36
		High Extent	72	30
		Low Extent	42	18
		Very Low Extent	24	10
		Not Utilized	14	6
4	<b>Posters and Flash cards</b>	Very High Extent	83	35
		High Extent	78	33
		Low Extent	44	19
		Very Low Extent	22	9
		Not Utilized	10	4
5	<b>Radio</b>	Very High Extent	50	21.1
		High Extent	52	22.0
		Low Extent	51	21.5
		Very Low Extent	43	18.1
		Not Utilized	41	17.3
6	<b>Tape Records</b>	Very High Extent	50	21.1
		High Extent	51	21.52
		Low Extent	50	21.1
		Very Low Extent	43	18.14
		Not Utilized	43	18.14
7	<b>Public address system</b>	Very High Extent	50	21
		High Extent	50	21
		Low Extent	52	22
		Very Low Extent	45	19
		Not Utilized	40	17
8	<b>Pictures and photographs</b>	Very High Extent	82	35
		High Extent	74	31
		Low Extent	27	11
		Very Low Extent	40	17
		Not Utilized	14	6

9	<b>Models and objects</b>	Very High Extent	78	33
		High Extent	77	32.5
		Low Extent	29	12.2
		Very Low Extent	38	16
		Not Utilized	15	6.3
10	<b>Board and specimen</b>	Very High Extent	92	39
		High Extent	85	36
		Low Extent	24	10
		Very Low Extent	22	9
		Not Utilized	14	6

Table 4.2 shows the extent to which instructional materials are used in the health education methods. Result shows that most of the respondents agreed that film projector, radio, television and tape records were utilized in a high extent with frequency of 53 ( 22.4%), 52 (22%), 54 (22.8%) and 51(21.52%) respectively. Board and sparmen, pictures and photographs, posters and flash cards, charts, graphs and diagrams and models and objects were utilized to a very high extent with frequency of 92 ( 39%), 82 (35%), 83(35%),85(36%) and 78 (33%) respectively. While public address system was utilized in a low extent with frequency of 50 (21%)

**Table 4.3: The extent to which health workers utilized national guidelines and policies for PMTCT of HIV/AIDS in their educational methods**

**n=237**

<b>National PMTCT Guidelines and policy</b>			
<b>1) Preventing new HIV infection among women of reproductive age</b>	<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
a) Educating them on voluntary HIV testing and counseling.	Very High extent	98	41
	High Extent	87	37
	Low Extent	20	8.4
	Very Low Extent	18	7.6
	Not Utilized	14	6
b) Counseling on the benefits of involving and testing the partner.	Very High extent	102	43
	High Extent	93	39
	Low Extent	32	13
	Very Low Extent	10	4
	Not Utilized	-	-
c) Counseling on abstinence, faithful to one partner and safe sex practices.	Very High extent	105	44
	High Extent	95	40.1
	Low Extent	37	15.6
	Very Low Extent	-	-
	Not Utilized	-	-



<b>2) Preventing unintended pregnancies among women living with HIV/AIDS</b>	<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
a) Educating them on family and child spacing	Very High extent High Extent Low Extent Very Low Extent Not Utilized	103 96 38 - -	43 41 16 - -
b) Education on test and stat of ART regime after diagnosis	Very High extent High Extent Low Extent Very Low Extent Not Utilized	98 96 29 14 -	41.4 40.5 12.2 5.9 -
<b>3) Preventing HIV transmission from women living with HIV to her baby</b>	<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
a) Education on importance of delivery her baby in a higher facility where ART drugs are available and safe delivery methods practice	Very High extent High Extent Low Extent Very Low Extent Not Utilized	91 89 37 20 -	38.4 37.6 15.6 8.4 -
b) Education on taking ART as prescribed medicine to prevent opportunistic infections from developing which can reduce the risk of becoming ill.	Very High extent High Extent Low Extent Very Low Extent Not Utilized	101 96 30 10 -	42.6 40.5 12.7 4.2 -
c) Education on eating enough nutritional food as recommended for all pregnant woman	Very High extent High Extent Low Extent Very Low Extent Not Utilized	110 107 20 - -	46.4 45.2 8.4 - -
d) Education on having good personal hygiene as recommended to prevent infection	Very High extent High Extent Low Extent Very Low Extent Not Utilized	98 95 26 18 -	41 40 11 8 -

<b>4) Providing appropriate treatment, care and support to mothers living with HIV and their children</b>	<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
a) Educating them on the important of continuing ART	Very High extent High Extent Low Extent Very Low Extent Not Utilized	109 97 12 10 -	46 45 5 4 -
b) Educating them on the factors that can increase the risk or the chance of PMTCT of HIV during pregnancy labour and lactation	Very High extent High Extent Low Extent Very Low Extent Not Utilized	103 97 15 12 10	43.5 40.9 6.3 5.1 4.2
c) Education on CD4 and viral load investigation	Very High extent High Extent Low Extent Very Low Extent Not Utilized	57 54 58 52 16	24.1 22.8 24.5 21.9 6.7
d) Encouraging women to join support group ( NGO,PLWHA and church organization)	Very High extent High Extent Low extent Very Low Extent Not Utilized	58 55 56 55 13	24.5 23.2 23.6 23.2 5.5

Table 4.3 shows the extent to which health workers utilized national guidelines and policies for the PMTCT of HIV/AIDS in their educational methods. In the first guideline on preventing new HIV infection among women of reproductive age, counseling on abstinence, faithful to one partner and safe sex practices, Counseling on the benefits of involving and testing the partner and Educating them on voluntary HIV testing and counseling were utilized by the respondents to a very high extent with the frequency of 105 (44.3%), 102 (43%) and 98 (41%) respectively. In the second guidelines on preventing unintended pregnancies among women living with HIV/AIDS. Educating them on family planning and child spacing and Education on test and stat of ART regime after diagnosis were utilized to a very high extent with the frequency of 101 (43%) and 98 (41.4%) respectively. In the 3rd guidelines on preventing HIV transmission from women living with HIV/AIDS to her baby, education on eating enough nutritional food as recommended for all pregnant woman, Education on taking ART as prescribed medicine to prevent opportunistic infections from developing which can reduce the risk of becoming ill.

**Table 4.4.****Section E: Barriers that hinder the utilization of health education methods in your facility**  
n=237

<b>Factors</b>	<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
a) Lack of power supply	Strongly Agreed Agreed Disagreed Strongly Disagreed	77 78 69 13	32.5 32.9 29.1 5.5
b) Ignorance	Strongly Agreed Agreed Disagreed Strongly Disagreed	127 110 - -	53.6 46.4 - -
c) Lack of instructional materials	Strongly Agreed Agreed Disagreed Strongly Disagreed	125 111 1 -	52.7 46.8 0.4 -
d) Time constraint	Strongly Agreed Agreed Disagreed Strongly Disagreed	60 61 57 59	25.3 25.7 24.1 24.9
e) Hospital policy	Strongly Agreed Agreed Disagreed Strongly Disagreed	79 78 42 38	33.0 32.9 18.0 16.0
f) Lack of management support	Strongly Agreed Agreed Disagreed Strongly Disagreed	96 93 31 17	41.0 39.0 13.0 7.0
g) Lack of Finance	Strongly Agreed Agreed Disagreed Strongly Disagreed	98 95 30 14	41.0 40.0 13.0 6.0

Table 4.4 shows the Barriers that hinder the utilization of health education methods in different health facilities. The table revealed that more of the respondents strongly agreed that ignorance, lack of instructional materials, lack of finance and lack of management support were barriers that hinder the utilization of health education methods with the frequency of 127(53.6%), 125 (52.7%), 98 (41.0%) and 96 (41.0%) respectively. While other respondents agreed that lack of power supply, hospital policy and time constraint were the barriers that hinder utilization of health education methods with the frequency of 78(32.9%), 78 (32.9%) and 61( 25.7%) respectively. some of the barriers were also disagreed or strongly disagreed by the respondents that it hinder utilization of education methods.

### **Conclusion**

The study concluded that:

1. Lecture, demonstration, focus group discussion, workshop, role play etc were the various education methods employed in the various PMTCT facilities, with the lecture method being the most commonly used method utilized by health workers.
2. That various instructional materials were utilized by health workers in the different facilities, with models/objects and Board/Specimen utilized at very high extent. While others were utilized at a high extent, low extent, very low extent and not utilized.
3. Out of the four national guidelines and policy for PMTCT, the first three guidelines were utilized to very highest extent, high extent, low extent and very low extent while some elements of the fourth guidelines were not properly utilized by health workers in their health education methods.
4. Educational qualification and level of health facility had no influence on the health workers utilization of instructional aids in health education for PMTCT of HIV/AIDS in PMTCT units.
5. Ignorance, lack of power supply, financial constraint, hospital policy etc , were strongly agreed as barriers to the utilization of health education methods for PMTCT of HIV/AIDS in PMTCT units.

### **Implications of Findings**

Findings from the study showed that health workers compliance to preventive health education approaches was partly influenced by hospital policy, lack of update in national guidelines, ignorance, lack of finance and non-availability of instructional materials. Thus using alternative methods like lecture, workshop and seminar has little impact on the client. There is therefore the need for proper education approaches like demonstration, audiovisual aids and role play in educating clients that HIV/AIDS is like any other sickness will make them not to shy away from letting people know. If Stigmatization is dealt with nationwide through appropriate health education methods, it will help to improve HIV/AIDS client's compliance to health education as the fear of letting other people know that they were positive will be allayed and the client will live more productive lives for themselves, families, friends and nation as whole.

### **Recommendations**

Based on the findings, the researchers make the following recommendations for Practice and further research.

1. It is recommended that on-going health talks given at PMTCT units should be extended even at antenatal clinics, postnatal clinics and immunization clinics in our health facilities especially in

the areas of couple counseling, follow-up counseling, family planning and stress on the need for delivery in hospitals and continued services after delivery.

2. Continuous talk on the topic will increase understanding of the issues and help the HIV positive mothers to comprehend and appreciate the implications of not using the PMTCT services.
3. All the various aspects of transmission from mother-to-child and the complete preventive packages should be emphasized during the health talks to promote a better understanding of PMTCT.
4. Regular training of health workers on the new innovations regarding PMTCT National guidelines should be communicated to them to update their own knowledge and skills in HIV/AIDS counseling, infant feeding counseling and PMTCT in order to effectively educate the pregnant women.
5. Educational campaigns should be continued at all levels to create more awareness of HIV/AIDS, promote understanding about the disease to reduce stigma and discrimination as well as provide support for those who are infected.

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