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MANAGEMENT PRACTICES AS CORRELATES OF INFORMATION AND COMMUNICATION TECHNOLOGY USE FOR HEALTH EDUCATION DELIVERY AMONG PRACTITIONERS IN OYO STATE NIGERIA

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Abstract

Health education is a proven cost effective disease prevention strategy. Effective health education delivery to heavy disease-burden-carrying- community people depends largely on the use of Information and Communication Technology (ICT). This study therefore examined management practices as correlates of information and communication technology use for health education delivery among practitioners in Oyo State, Nigeria. A descriptive survey research design was adopted for the study. The population was all community health practitioners in Oyo State. The instrument used for data collection was a self-constructed questionnaire with 0.87 reliability coefficient. The collected data were analysed using Pearson's Product-Moment Correlation, Analysis of Variance and Regression statistics. Findings show that variables of management practices correlated significantly with effective health education delivery. It was concluded that good management practices can enhance use of Information and Communication technology in the delivery of health education. Therefore, it is recommended that infrastructure maintenance, personnel training, usage of monitoring and supporting policy that can

facilitate the use of ICT by community health practitioners to deliver health education effectively should be put in place.

Keywords: *Information and Communication Technology, Health Education, Community Health Practitioner, Management Practices, Disease-burden.*

Introduction

Health of majority of the people in African continent seems to have continued to be ravaged largely by preventable diseases. This is because community people tend to lack adequate basic health knowledge resulting in poor health attitude culminating into deficit in health practice. The existence of such practices as inadequate nutrient consumption, poor sanitary behaviour, abuse of substances, unsafe road practices, poor sexual health behaviour, low level of immunization uptake and sedentary lifestyle would continue to increase the already heavy disease burden being carried by Africans. Therefore, the need to enhance health knowledge, attitude and practice of the people through information and communication technology is compelling.

Thus the health status of the people in African countries is not impressive and this has continued to be of concern to researchers in the field of health education. According to the World Health Organisation, (WHO) (2017), African region has 11% of the world's population but with 60% of the people with HIV/AIDS; more than 90% of the estimated 300-500 million malaria cases that occur worldwide every year are in Africans; of the 20 countries with the highest mortality ratio worldwide, 19 are in Africa; the region has the highest neonatal death rate in the world. There is, therefore, the strain on African health systems imposed by high burden of life-threatening communicable diseases coupled with increasing rates of non-communicable diseases such as hypertension and coronary heart diseases (WHO, 2017).

In Nigeria, health, health care and general living conditions are poor especially for children and women; infant and under-five mortality rates are high; the weakened Primary Health Care System with low coverage of key interventions has resulted in the persistence of high disease burden (UNICEF, 2017). Road traffic injuries, HIV/AIDS, suicide, respiratory infections and interpersonal violence are leading causes of death among adolescents in Nigeria

(Health Action Incorporated, 2017). Abegunde and Owoaje (2013) identified cardiovascular and musculoskeletal diseases as prevalent in elderly population in Nigeria.

Health care service delivery in Nigeria is, therefore, weak. This is further by poor access to health care services, inadequate supply of health professionals, decayed infrastructure and deplorable quality of health care. In this way, Nigerians are underserved in terms of medical care. Meanwhile, prevention is a cost-effective and better disease prevention strategy. WHO (2015) defined health education as any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes. Health Education aims at empowering individuals and communities with necessary health information to prevent diseases.

Again, in Nigeria, community health practitioners comprise community health officers, junior community health extension workers and community health extension workers. According to the Bureau of Labours Statistics (2015), community health practitioners implement strategies to improve the health of community people. They also educate people about the importance and availability of health care services. Okerche (2002), in Anie (2011), stated that most information needed by rural dwellers centre on health education, maternal and child health including family planning, prevention and control of local endemic diseases, provision of essential drugs, appropriate treatment of common diseases and injuries, immunization against major infectious diseases, and adequate supply of safe water and basic sanitation. However, community people are largely confronted with the problem of poor access to health information. Anie (2011) asserted that there is no effective health education anywhere in the world without application of information and communication technology.

Information and Communication Technology (ICT) is an extended term for Information Technology (IT) which stresses the role of unified communications and the integration of communications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information (Murray, 2011 and FOLDOC, 2008). ICT can benefit both the community people and the practitioner if effectively used in the delivery of health education. Communities can

be connected with one another for the purpose of health information sharing thereby increasing network opportunities. Also, ICT allows community people to have access to health information through various learning-engaging devices that abound.

Management practices refer to the working methods and innovations that managers use to improve the effectiveness of work systems which include: empowering staff, training staff, introducing schemes for improving quality, and introducing various forms of new technology (Siebers, Aickelin and Clegg, 2008). Management practices in this study is used to mean efforts made by managers of Primary Health Care at local government level in Nigeria to encourage the use of ICT by practitioners in the delivery of effective health education to community people.

The information and communication technology indices examined in this study are ICT infrastructure provision, infrastructure maintenance, personnel training, ICT usage monitoring and ICT policy. Infrastructures which include computer hardware and software, bandwidth/access, connectivity should be made available to facilitate the use of ICT for health education delivery. Also, electricity, which is the main driver of ICT should be supplied regularly. Moreover, infrastructures must be cleaned and serviced on regular basis to prevent them from breaking down. Opaleke and Babafemi (2017) identified access, maintenance of the system and competent manpower to handle the aspect of automation and digitization as factors that facilitate the use of ICT. Efficient use of ICT for health education delivery requires that health educator undergo regular training. This is in agreement with the observation of Mwawasi (2014) that teachers need to have prerequisite skills to integrate ICT in teaching and learning. Usage monitoring by Primary Health Care management is important to enhance appropriate and adequate use of ICT by community health practitioners.

In realization of the importance of health education to the improvement of population health status, one of the objectives of Nigeria ICT policy states that IT health care information system shall be used to educate on preventable diseases. However, the use of ICT in the delivery of health education to community people seems to have continued to experience setbacks in the country. Therefore, this study was designed to examine management practices as

correlates of ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Statement of the Problem

The health status of the people in Nigerian communities seems to have continued to deteriorate as a result of preventable diseases. This is against the background of the weakened health care delivery system in the country. Health education provides basic health knowledge needed by community people to correct poor health habits that always put them at the risk of contracting diseases. People are underserved in terms of health education provision in some communities probably due to administrative lapses.

Meanwhile, Anie (2011) found in a study that Primary Health Care Programme in Niger Delta Region of Nigeria recorded good performance as a result of information and communication technology. Therefore, this study examined management practices as correlates of Information and Communication Technology use for health education delivery among practitioners in Oyo State, Nigeria.

Objectives of the Study

The broad objective of the study was to examine management practices as correlates of Information and Communication Technology use for health education delivery among practitioners in Oyo State Nigeria. Specifically the study was to determine:

(i) Management practices indicators.
(ii) Contributions of management practices to the use of information and communication technology in the delivery of health education to community people.
(iii) The correlation between management practices variables (ICT infrastructure, ICT infrastructure maintenance, personnel training, ICT usage monitoring and ICT policy) and practitioners' use of ICT for health education delivery.

Research Hypotheses

1. There is no significant relationship between ICT infrastructure provision and ICT use for health education delivery among practitioners in Oyo State, Nigeria.
2. There is no significant relationship between ICT infrastructure maintenance and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

3. There is no significant relationship between personnel training and ICT use for health education delivery among practitioners in Oyo State, Nigeria.
4. There is no significant relationship between ICT usage monitoring and ICT use for health education delivery among practitioners in Oyo State, Nigeria.
5. There is no significant relationship between ICT policy and ICT use for health education delivery among practitioners in Oyo State, Nigeria.
6. There is no significant relationship between the combined management practices indices and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Research Methodology

Research Design

A descriptive survey research design was adopted for the study.

Population

The population for the study comprised all the 2,053 Community Health Practitioners in Oyo State, Nigeria.

Sample and Sampling Technique

Simple random sampling technique was used to select 15 out of the 33 local governments in Oyo State representing 45.5%. Preference was given to local governments with rural areas. Also, proportionate sampling technique was used to select 472 representing 23% of the total population of 2,053 community health practitioners. Twenty-three percent of each of the cadres in each of the selected 15 local governments areas was selected using simple random sampling technique giving the sample size of 472.

Research Instrument

A self-developed questionnaire structured according to the variables in the hypotheses formulated was the instrument for the study. It was a 4-point modified Likert format of strongly agree (4), agree (3), disagree (2) and strongly disagree (1) options. The reliability of the questionnaire was established through a test-retest procedure yielding a correlation and reliability coefficient of 0.87.

Procedure for Data Collection
The researcher with four assistants administered the questionnaire on the respondents.

Procedure for data analysis
The data collected from questionnaire administration was analysed using Pearson's Product-Moment Correlation (PPMC), Analysis of Variance (ANOVA) and Regression Statistics.

Results

Hypothesis One: There is no significant relationship between ICT infrastructure and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Table 1: Analysis of relationship between ICT infrastructure provision and ICT use for health education delivery among practitioners in Oyo State, Nigeria

Variable	N	Mean	SD	r	P value	Remark
ICT infrastructure	472	16.89	2.17	0.55	0.005	Significant
ICT Use for Health education delivery	472	33.35	3.50			

Correlation significant at P<0.05 level

Table 1 shows a positive significant relationship between ICT infrastructure provision and ICT use for health education delivery among practitioners in Oyo State, Nigeria. (r=0.55; p<0.05). Therefore, the hypothesis is rejected.

Hypothesis Two: There is no significant relationship between ICT infrastructure maintenance and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Table 2: Analysis of relationship between ICT infrastructure maintenance and ICT use for health education delivery among practitioners in Oyo State, Nigeria

Variable	N	Mean	SD	r	P value	Remark
ICT infrastructure maintenance	472	17.01	2.25	0.26	0.003	Significant
ICT Use for Health education delivery	472	33.35	3.50			

Correlation significant at P<0.05 level

Table 2 shows a positive significant relationship between ICT maintenance and ICT use for health education delivery among practitioners in Oyo State, Nigeria (r=0.26; P<0.05). Therefore, the hypothesis is rejected.

Hypothesis Three: There is no significant relationship between personnel training and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Table 3: Analysis of correlation between personnel training and ICT use for health education delivery among practitioners in Oyo State, Nigeria

Variable	N	Mean	SD	r	P value	Remark
Personnel training	472	17.32	1.84	0.38	0.003	Significant
ICT Use for Health education delivery	472	33.35	3.50			

Correlation significant at P<0.05 level

Table 3 shows a positive significant relationship between personnel training and ICT use for health education delivery among

practitioners in Oyo State, Nigeria. (r=0.38; <0.05). Therefore, the hypothesis is rejected.

Hypothesis Four: There is no significant relationship between ICT usage monitoring and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Table 4: Analysis of correlation between ICT usage monitoring and ICT use for health education delivery among practitioners in Oyo State, Nigeria

Variable	N	Mean	SD	r	P value	Remark
ICT usage monitoring	472	16.73	2.44	0.22	0.004	Significant
ICT Use for Health education delivery	472	33.35	3.50			

Correlation significant at P<0.05 level

Table 4 shows a positive significant relationship between ICT usage monitoring and ICT use for health education delivery among practitioners in Oyo State, Nigeria (r=0.22; P<0.05). Therefore, the hypothesis is rejected.

Hypothesis five: There is no significant relationship between ICT policy and ICT use for health education delivery among practitioners in Oyo State, Nigeria.

Table 5: Analysis of relationship between ICT policy and ICT use for health education delivery among practitioners in Oyo State Nigeria

Variable	N	Mean	SD	r	P value	Remark
ICT policy	472	17.00	2.17	0.47	0.00	Significant
ICT Use for Health education delivery	472	33.35	3.50			

Correlation significant at P<0.05 level

Table 5 shows a positive significant relationship between ICT policy and ICT use for health education delivery among practitioners in Oyo State Nigeria. (r=0.47, P<0.05). Therefore, the hypothesis is rejected.

Hypothesis six: There is no significant relationship between combined management practices indices and ICT use for health education delivery among practitioners in Oyo State Nigeria

Table 6: Analysis of combined relationship between variables of management practices and ICT use for health education delivery among practitioners in Oyo State Nigeria

R = 0.713
R^2 = 0.509
Adjusted R^2 = 0.504
Standard Error of Estimation = 2.46255

ANOVA

	Sum of Squares	Df	Mean Square	F	P	Remark
Regression	2928.018	5	585.604	96.568	0.000	Significant
Residual	2825.895	466	6.064			
Total	5753.913	471				

Table 6 shows a coefficient of multiple relationships (R) of 0.713 and a multiple R-square of 0.509. It was observed that 50.4% (Adj. R^2=0.504) of the variance in the practitioners' use of information and communication technology for health education delivery was accounted for by variables of management practices when taken together. The significance of composite contribution was tested at P<0.05 using F-ratio at the degree of freedom df=5/466. Table 6 also shows that the Analysis of Variance for the regression yielded an F-ratio of 96.568 (significant at 0.05 level). This implies that the joint contribution of the independent variables to the dependent variable was significant and that other variables not included in this model may have accounted for the remaining variance. In other words, variables of management practices

correlated significantly with use of ICT for health education delivery among practitioners in Oyo State, Nigeria.

Discussion of the Findings

The results of the findings from this study show a significant relationship between the independent variable, dimension and the dependent variable. In other words, ICT infrastructure, ICT infrastructure maintenance, personnel training, ICT usage monitoring and ICT policy are significant correlates of effective health education delivery.

The findings from the result of the study indicate that the variables of ICT infrastructure, ICT infrastructure maintenance, personnel training, ICT usage monitoring and ICT policy when taken together contributed significantly to use of ICT for effective health education delivery. This is in agreement with the submission of Opaleke and Babafemi (2017) that one of the materials that facilitates academic work nowadays is constituted by information and communication technology facilities. Adebowale and Oyinloye (2008) postulated that infrastructure such as Satellite Internet Service Providers (ISPI), Integrated Digital System Network (ISDN), computer and printing devices could aid utilization of ICT in service delivery. Provision of ICT infrastructure is an important strategy to encourage health educators to use ICT in the delivery of health education to community people.

In this study, ICT infrastructure maintenance contributed to the use of ICT for effective health education delivery. Efficient functioning of ICT infrastructure is a function of regular maintenance. It is therefore important to carry out regular cleaning, servicing and prompt repair of ICT infrastructure if damaged to ensure its regular use.

It was found in this study that personnel training in ICT contributed significantly to use of ICT for effective health education delivery. The finding is in line with the postulation of Kent, Surrey and Sussex Education (2015) that technology enhanced learning can only be truly effective if it is supported by educators with well-developed skills and knowledge in using the technologies. In this study, ICT usage monitoring by the management is a significant contributor to effective use of ICT for health education delivery. Effective management connotes good supervision of human and material resources in an organisation. Community health workers

must be seen to be using ICT in the delivery of health education by the management. This is because, it gives opportunity to the management to ascertain level of expertise as well as problems encountered in the use of ICT.

It was revealed in this study that ICT policy contributed significantly to effective use of ICT for health education delivery. Government policy that allows use of ICT in public and private establishments, availability of ICT infrastructure, personnel training and robust funding is necessary to allow for effective use of ICT in the delivery of health education.

Conclusion and Recommendations

Health education is a potent strategy for prevention of diseases ravaging the health of community people in Nigeria. The use of ICT in the delivery of health education can enhance its effectiveness in bringing about improved health knowledge, attitude change and good health practice among community people in the country. In this study, infrastructure provision, infrastructure maintenance, personnel training, usage of monitoring and policy identified as indices of management practices correlated significantly with effective use of Information and Communication Technology for health education delivery. It is along this line that the following recommendations are made:

1. ICT infrastructure should be provided in Primary Health Care Centres for use by community health practitioners in all local governments all over the country. Collaboration with various stakeholders in education should be initiated to provide ICT infrastructure. Philanthropists, Associations, Groups and Clubs should be involved in the provision of funds to build ICT infrastructures.
2. Poor maintenance culture associated with Nigerians should be reversed. There should be regular upgrading of ICT facilities. Also, new software that could offer improved services should be acquired and used.
3. Appropriate, adequate and maximum use of ICT by community health practitioners should continuously be ensured through training at workshops. Retraining is also necessary to keep abreast of new hardware and software being developed and introduced to market on daily basis.

4. Management should further ensure that ICT is put into maximum use and the infrastructures are handled professionally. This can be done by regular monitoring.
5. Additional appropriate ICT policy must be put in place and be made to function. This could be made possible by giving ICT priority in terms of funding in Primary Health Care Centres in Nigeria.

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