

# **Association between Cultural Practices, Government Policy and Preventive Health Behavior. The Mediating Role of Radio Education Program on HIV Prevention in Jigawa State Nigeria**

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## **Abstract**

This study explored the role of radio education program on HIV/AIDS prevention as a mediator of the association between Cultural practices and Government policy and preventive health behavior in HIV prevention. Data were collected from 471 household in Jigawa state, using self-administered questionnaires. SPSS soft ware was used and Sobel mediation test was employed. The major finding of this study is that part of the effect of the Cultural Practices and Government Policy were mediated by radio education program and their indirect effect on Preventive health behavior via radio education program is significant ( $p= 0.0001$ ). The findings provide evidence for partial mediation, as the result of the test statistics does not drop to zero. The result of the test statistics for Cultural Practices is 0.427, and significance ( $p=0.0000$ ) and the test statistic for Government Policy is 0.069, and significance ( $p = 0.003$ ). Thus, it can be concluded that radio education program on HIV prevention is a statistically significant partial mediator of the effect of Cultural practices and Government Policy on Preventive Health Behavior.

**Keywords:** Culture, Government policy, Preventive Health Behavior, Mediation

## **1. Introduction**

The global AIDS epidemic summary of 2009 reported that there is increasing evidence of HIV/AIDS risk among population in diverse countries worldwide. However the overall growth of the global AIDS epidemic appears to have stabilized. (UNAIDS Global report, 2010) Sub-Saharan Africa remains the region most heavily affected by HIV/AIDS. In 2009 an estimated 1.8 million people became infected with HIV (UNAIDS Global report, 2010). In most countries the HIV epidemic is associated to behaviors that expose individuals to the risk of contracting the disease. These includes; personal risk perception, multiple concurrent sexual partnership, intense transaction and inter-generational sex, intravenous drug use, same-sex intercourse, discrimination, general inadequate access to health care services.etc (HIV fact sheet, 2008; NACA, 2009; UNAIDS, 2010)

Consequently sexual behaviors of the general population became the focus in the fight against the deadly disease. The global concerned about this disease is that, up to date there is no effective method for cure or treatment and the disease has a long incubation period

(10 year, or more); infected persons may go on infecting others for years before they are discovered to be HIV positive (Badri, 1997).

Therefore, there is an urgent need to intensify HIV prevention efforts in both size and scale to halt growing infection rates and sustain the gains that have already been made (UNAIDS global report, 2006). The global community resolved to intensify and accelerate prevention. Thus, UNAIDS member countries adopted, launched and embarked on HIV prevention campaign to increasing people's knowledge about sexual transmission hoping to overcome the misconceptions and total behavioral changes toward safer sex behaviors.

This campaign utilizes the services of Mass-media organization as an institutions appropriately for information dissemination because mass-media campaign for health promotion has been proven to be effective for information dissemination on health related issues such as; family planning, cancer, smoking, alcohol drinking, and drug abuse. Several researches showed that media is effective in changing knowledge, attitudes, misconception and general behaviors of human being (Faith, & Lee, 1997; Kofi, 2005; Surunchi, Corime, Rogers, & Senguta, 2005)

In Nigeria, HIV/AIDS prevention efforts can be traced back to 1998. However this effort recorded very poor result due to some implementation weakness, administrative inadequacies psychosocial, and environmental peculiarities. Therefore the federal government of Nigeria in 2003 re-launched its preventive campaign against HIV through various mass- media organizations such as radio, televisions, billboards, pamphlets, newspapers, and traditional town carries.

However some state government started their program around 2008-2009, For example Jigawa HIV preventive effort was given serious attention in the late 2009, with launching of HIV prevention campaign through state owned radio station. This program was pursued with seriousness and commitment because the prevalence rate of the disease in the state is increasing from 0.6% in 1985 to 1.8% in the year 2009 (HSS, 2009).

This situation worried the state government because some factor inherent in the community has been increasing the intensity and prevalence of HIV/AIDS in the state such factors might include, illiteracy, poverty, cultural practices, parental influence and so forth. These factors were believed to be detrimental to the success of the HIV prevention campaign in the state and indeed behavioral change. Therefore, the state government provided an intensive radio education program on HIV/AIDS prevention to reduce myths, misconceptions, stigma, denial, etc and at the same time increases knowledge about HIV prevention through preventive health behavior method and expose citizens of the state to public discussion on sex and sexuality (JISACA, 2009).

Even though much has been written about health behavior particularly through radio education and entertainment programs in many underdeveloped nations which revealed success in promoting preventive behavior (Suruchi, Rogers, Corinne, & Manisha, 2006; Celeste, Kim, Kassa, & Merand, 2005; CADRE, 2005; Singhal, Cody, Rogers, & Sabido, 2004; Faith, & Lee, 1997; Yoder, Hornik, & Chirwa, 1996) Yet less has been done about preventive behavior and HIV/AIDS prevention in Jigawa state in particular. Undeniably there are some

studies that have discussed factors such as knowledge of HIV, attitude, belief, and practices (KABP), but mostly are base line and need assessment surveys.

Accordingly, from the available literature reviewed in the state about preventive health behavior study no attempt has been made to look into cultural practices, government policy associations with preventive health behavior and mediating role of radio education program on this association in HIV/AIDS prevention in the state. Hence, the current study intent to looks into the use of radio education program on HIV/AIDS for preventive health behavior specifically the mediating role of this program on the relation between cultural practices, government policy and preventive health behavior.

Since at present, there is inadequate research which relates individual preventive health behavior to HIV prevention that promotes general behavior change in the study area. Hence, the result reported in this study extends the current, limited knowledge base by empirically investigating the influence of radio education program on the association between culture, government policies, and preventive health behavior among the people of Jigawa state. The aim was to contribute to the current understanding of this relationship as well as to provide a basis for further investigation. This study would contribute to the body of knowledge in understanding the impacts of radio education program on the success of preventive health behavior program to prevent HIV in Jigawa state of Nigeria, and thereby reducing the prevalence rate of the disease in the state.

## **2. HIV and AIDS Policy Response and Prevention in Nigeria**

The first AIDS case in Nigeria was reported in 1986, since then, the epidemic has steadily grown. By 1991, the prevalence rate had raised to 1.8%, it progressed rapidly to 4.5% in 1996, 5.5% in 2001 and it dropped to 5% in 2003 and 4.4% of the entire population by 2005 and in 2009 it's stabilized at 4.4% at national level. However some parts of the country are worse affected than others, but no state is unaffected. All the states of Nigeria have general population prevalence over 1% (Health Sentinel Survey, 2003; 2005; 2007; 2009). The epidemic in the country is now common in the general population.

The government gives special consideration to prevention and engages a number of stakeholders. Moreover in 2003 federal government established a National Technical Working Group to harmonize all prevention programs as well as to provide a technical guidance for all the three levels of government in the country. The outcome of the working group assignment served as a blueprint on how to achieve the goals set within the National Strategic Framework. The majority of the government policies on HIV/AIDS mainly focused on prevention as the only available and viable remedy to HIV/AIDS pandemic (National HIV/Syphilis Sero-Prevalence Sentinel Survey, 2005)

Furthermore, the behavior change communication (BCC) program has been designed to increasing knowledge, promote essential attitude change, reduce stigma and discrimination, stimulate community dialogue, promote services for prevention, care and support, improve skills and sense of self-efficacy and create a demand for information and services, thus, tailored messages were developed using a variety of communication

channels purposely to promote and sustain individual, community and societal behavior change.

### **3. Literatures Reviews**

#### **Environmental Factors and Preventive Health Behavior**

Environment is primarily an important factor in HIV campaign program due to its relation to behavior. The major environmental factors that usually get attention in health preventive behavior include; mass- media, cultural practices, ethnicity, religious belief, political institutions and government policies etc. Therefore in this study and based on the literature reviewed in addition to social cognitive theory of Bandura (1977, 1986) two major environmental factor are considered for investigation these are; cultural practices and government policy

#### **Cultural Practices and Preventive Health Behavior**

Culture has been defined as a learned phenomena, shared, transmitted intergenerational, and reflected in-group's values, norms, belief, behavior, communication, family and social roles (Mazrui, 1986). Culture is believed to influence health decision, health priority, and behavior and health belief directly or indirectly (Mazrui, 1986; UNESCO, 1998; Leininger, 2002). Cultural context can profoundly affect the transmission of disease. A tragic example is the spread of HIV/AIDS particularly in some African countries, where economic necessity shapes choices that are often hazardous to health. The combination of limited education, migratory labor that separates men from their wives and families, wife inheritance, female genital mutilation, and the breakdown of traditional family networks creates a context in which men may seek multiple sexual partners.

Similarly Airhihenbuwa, & Webster (2004) examined the link between environment and behavior from the context of culture and concludes that in the case of HIV illness certain human behavior are directly determine by the culture for example, denial, social rejection, stigma, blame etc. as such understanding cultural practices in the community are very imperative and mandatory for effective prevention program.

Therefore, study of the influences of culture, and other cultural practices is necessary in order to understand how health behaviors are protected and endangered by current prevention theories that focus on reducing risk among community, in particular, understanding people's behavior in relation to their cultural practices and belief is very important in addressing HIV/AIDS epidemic and effective behavior change.

#### **Government Policy and Preventive Health Behavior**

Government policy is another critical variable that affect HIV/AIDS prevention program. Lieberman (2007) observed that understanding government policy response on HIV/AIDS is very vital in ensuring success of preventive health behavior and reducing the spread of AIDS epidemic in particular. His findings suggests that it is often necessary for the leaders to convince people to accepts new rules and engage in behavior adjustment. He further argued

that adoptions and implementation of certain public health policies needs credible constructions of risk, because, the dissemination of ideas about risk can easily politicized and may gain momentum or be derailed, depending on the underlying social and political conditions prevailing in the country.

In a study by Gauri and Lieberman (2006) in South Africa explained the long standing racial boundaries, such data about HIV transmission are rumors and guided consistently along ethnic lines, generating competition and changes of conspiracy. In a separate study Lieberman (2007) reported that more homogeneous countries or those with less sharp ethnic divisions or boundaries such as Brazil, Botswana, and Senegal have responded to HIV epidemic quite aggressively, this further support the intuition that ethnic politics has negative effect on policy.

In this study attention was given to government policies that are meant to contain the disease and give hopes to positive person at the same time preventing new infection

### **Mass – Media Education Program on HIV Prevention**

More recently mass-media role in the fight against HIV/AIDS come to the lime light. The Global community accepted that education through media houses is the best vaccine for HIV/AIDS (UNAIDS, 2004) Many countries have risen to the challenge of using media organization to promote awareness about HIV/AIDS especially factual information of the epidemic and how to stop it. For instance in surveys conducted in United State, United Kingdom and India on information received about HIV/AIDS from media organization shows an enormous influence on their awareness and knowledge and this made them to avoid contracting HIV (UNAIDS,2004) .

Radio has been identified as one of the mass-media organizations that have a lot of programs which can easily disseminate information and messages to a large number of audience/listeners at a time. Surunchi et al. (2006) reported that individuals who were exposed to the radio HIV/AIDS campaign were more likely to be:

- (i) Aware of sexually transmitted infection, HIV/AIDS, and condom use
- (ii) To know about the sexual routes of HIV transmission,
- (iii) To have fewer misconception about HIV and (iv) to be able to talk to others about STIs, HIV, AIDS and condom use than those who were not exposed to campaign messages.

Similarly Scheepers 2001, and Underword, 2001 found that an AIDS radio drama program in Zimbabwe, Uganda and South Africa increased assessment of risk, knowledge about AIDS transmission and condom use. In addition Yoder et al. (1996) confirmed that a radio drama called Nshilakamona in Zambia had substantially improved on the listeners' knowledge of AIDS and reduced risky behavior. Therefore, this study accorded a very great importance to radio programs on HIV/AIDS because it has been testified to have affected the behavior change of individual as such is considered as a mediator variable in this study.

Radio education program is considered as a mediating variable between the relationship of cultural practices and government policy and preventive health behavior. The impact of radio on preventive health behavior is developed based on Becker's Health Belief Model, which has been widely used in health related campaign. This model assumed that Mass-media will affect individual perceptions of the severity and seriousness of a disease, perceived benefit and barrier to assessing such service and likelihood of accepting and adopting the recommended actions (Yoder et al., 1996; Airhihenbuwa, & Obregan, 2000).

Furthermore In Nigeria radio has been established to have a broad range of users across the country The citizen of Nigeria irrespective of their socio economic status are believed to be listing to radio either everyday or most days (Society for Family Health, 2003). SFH reported that 65% of adult population in Nigeria listens to radio at least once every day. SFH further suggested that the use of radio for HIV/AIDS education and Family Planning can reach both literate and illiterate audience with message in their own language .Radio is relatively inexpensive to many people, radio can use batteries, so it is useful in areas without electricity and broadcast can be repeated many times during the day. The radio education program is considered as a mediating variable between cultural practices, government policy and preventive health behavior.

#### **4. Method and Materials**

##### **Sampling Design**

Sampling in social sciences can take place at several different stages of the research process, including; the selection of research units, the selection of research sites, and the choice of indicators by which the researcher wishes to measure the theoretical concepts. The sampling design that has been proposed for this study is simple random sample. Simple random sample is a sample in which every member of the population has an equal and independent chance of being selected, ensuring the sample will be representative of the population (Keppel, 1991). Precisely in this study a multistage cluster sampling was used. In this case the sampling stages look as follows: **Stage 1:** Random selection of four local governments each from three Senatorial districts in the state (total  $4 \times 3 = 12$  local governments) **Stage 2:** Random selection of one urban area and one rural area form the selected local governments (total  $12 \times 2 = 24$  communities) **Stage 3:** Random selection of twenty households from the selected communities and one person is selected from these households (total  $20 \times 24 = 480$ ) this served as the sample population of this study. SPSS software was used and Sobel mediation text was employed for data analysis.

##### **5. Mediation Analysis Results**

The objective of the study is to determine the mediating effect of radio education program on the relation between Preventive health behavior, cultural practices and government policy, thus two hypotheses were propounded and tested using Sobel test analysis. The results of Sobel test of mediation analysis explaining the mediating effect of radio education program on the relation between Cultural practices, Government policy and Preventive Health Behavior is hereby presented below.



### 5.1 Research Hypothesis 1

H<sub>1</sub>: There is a positive and significant relationship between preventive health behavior and Cultural practices and radio education program mediates this relationship.

After careful examination of the data, Sobel test of mediation analysis was performed to determine the effect of mediator (radio education program) on the relation between Cultural Practices and Preventive Health Behavior. Therefore, the results of a mediated regression analysis can be reported in tables below

**Table1: Direct and Total Effects**

Matrix	Coefficient	Standard Error	T	Sig-p(two)
(YX)	0.3903	0.0291	13.4303	0.0000
(MX)	0.8398	0.0241	14.8953	0.0000
(YM.X)	0.5082	0.0506	10.0341	0.0000
(YX.M)	0.0364	0.0501	4.7273	0.0029

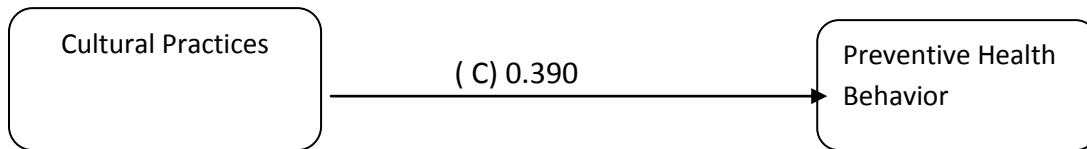
The mediation analysis result indicated that Cultural practices had a significant total effect on preventive health behavior (TE = 0.390, SE = 0.0291, P = 0.0000), a significant direct effect (DE = 0.036, SE = 0.050, P = 0.003), and a significant indirect effect (IE = 0.427, SE = 0.044, LL = 0.340, UL = 0.514, P = 0.0000) and it explained a total of 0.2071 variance in the dependent variable that is about 20.7 percent.(see table1 above and table 2 below)

**Table2: Indirect effects and Significance Using Normal Distribution and Variance Accounted in Y**

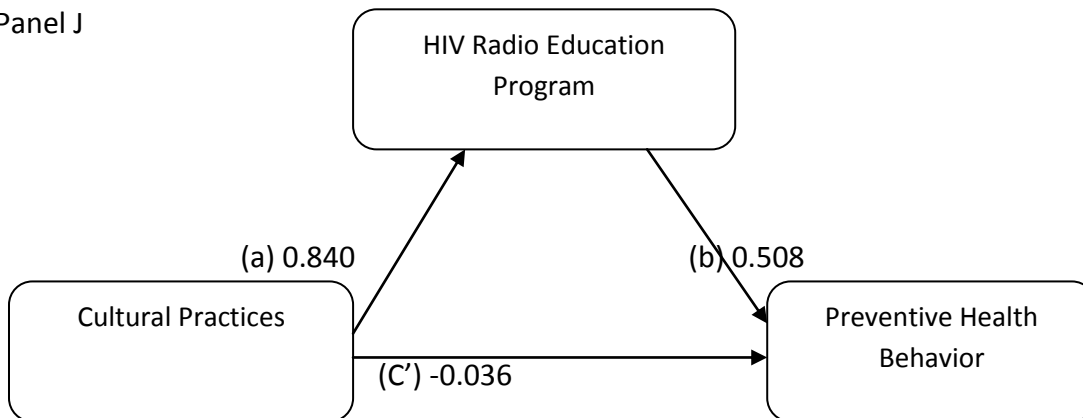
	Value	SE	LL 95 CI	UL95 CI	Z	Sig(two)	Variance
Effect	0.4268	0.0443	0.3400	0.5135	9.6397	0.0000	0.2071

It is also useful to present a graphic showing the mediation analysis, with the coefficients for the effect of the Cultural practices on the Preventive Health Behavior in both direct, total and indirect analysis. (Fig.1)

Panel I



Panel J



**Figure 1: Panel I: Illustration of a direct effect, Cultural Practices affects Preventive Health Behavior .Panel J: Illustration of mediation design, Cultural Practices affects Preventive Health behavior indirectly through HIV radio education Program**

5.2 Research Hypothesis 2

H<sub>2</sub>: There is a positive and significant relationship between preventive health behavior) and Government Policy and HIV radio education program mediates this relationship.

Sobel test of mediation analysis was performed to determine the effect of mediator (radio education program) on the relation between Government policy and Preventive Health Behavior. Therefore, the results of a mediated regression analysis was reported in a tabular form below

**Table3: Direct and Total Effects**

Matrix	Coefficient	Standard Error	T	Sig-p(two)
(YX)	0.2376	0.0288	8.2355	0.0000
(MX)	0.3037	0.0387	7.8426	0.0000
(YM.X)	0.4368	0.0279	15.6602	0.0000
(YX.M)	0.1049	0.0249	4.2169	0.0000

Table 3 and table 4 reveals that the total effect of government policy on preventive health behavior was significant(TE = 0.238, SE = 0.029, P = 0.0000) , and the direct effect was (DE =



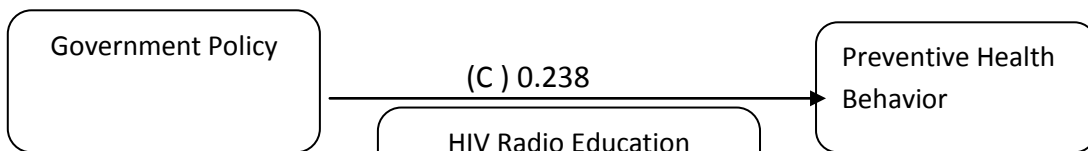
0.105, SE = 0.025, P = 0.0000), and also a significant indirect effect(IE = 0.133, SE = 0.019, LL = 0.096, UL = 0.170, P = 0.0000 the possibility of complete ,or perfect mediation was ruled out and the analysis showed is partial mediation (Preacher and Hayes, 2004)

**Table 4: Indirect effects and Significance Using Normal Distribution and Variance Accounted in Y**

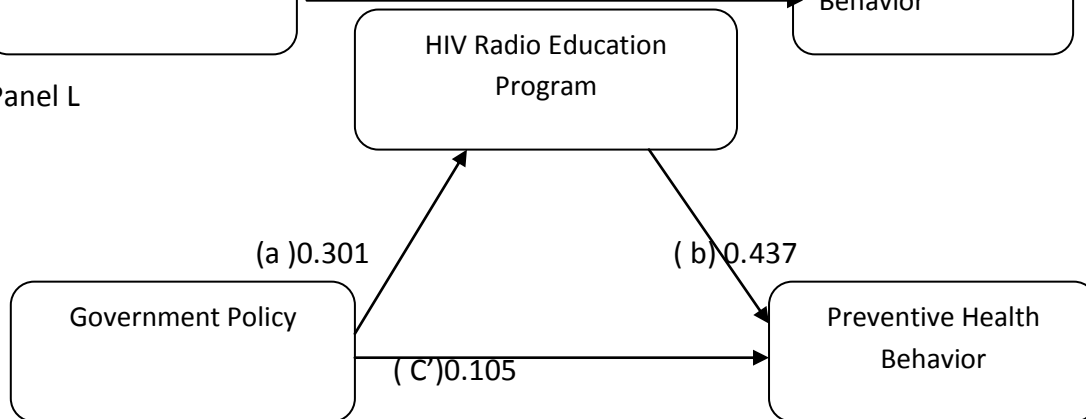
	Value	SE	LL 95 CI	UL95 CI	Z	Sig(two)	Variance
Effect	0.1327	0.0189	0.0955	0.1698	7.0010	0.0000	0.1046

It is also useful to present a graphic showing the mediation analysis, with the coefficients for the effect of the HIV knowledge on the Preventive Health Behavior in both direct, total and indirect analysis.

Panel K



Panel L



**Figure 2: Panel K: Illustration of a direct effect, Government Policy affects Preventive Health Behavior .Panel L: Illustration of mediation design, Government Policy affects Preventive Health behavior indirectly through HIV radio education Program**

## 6. Discussion

Table 1 to table 4 comprises of different result of the mediation analysis conducted using Sobel analytical approach. From the above result, it is confirmed that the mediator (radio education program) significantly mediates the relationship between Cultural Practices and Preventive Health Behavior. The test statistic is 0.036, with standard error 0.050 and the statistical significance is equal to 0.003. Thus, the research hypothesis was fully supported.

The Sobel test in the mediation analysis described here has provided the researcher a way to check whether the reduction when mediation variable was controlled was significant. The mediation analysis has used unstandardized regression coefficients rather than correlation coefficients to measure the effects of the Cultural practices on Preventive Health Behavior. Subsequently the test P-value is less than 0.05 ( $p=0.0001$ ), Thus it can be concluded that HIV radio education program is a statistically significant partial mediator of the effect of Cultural practices on Preventive Health Behavior. In other words there is a statistical significant indirect effect of Cultural practices on Preventive Health Behavior through radio education program. Therefore according to this analysis, it is confirmed that the mediator (radio education program) significantly mediates the relationship between cultural practices and Preventive Health Behavior.

Meanwhile the mediation analysis results on the relationship between government policy and preventive health behavior has used unstandardized regression coefficients rather than correlation coefficients to measure the effects of the Government policy on Preventive Health Behavior. Subsequently the test P-value is less than 0.05 ( $p=0.0001$ ), Thus it can be concluded that HIV radio education program is a statistically significant partial mediator of the effect of government policy on Preventive Health Behavior. In other words that there is a statistically significant indirect effect of Government policy on Preventive Health Behavior through HIV radio education program in Jigawa state, Nigeria

Subsequently ,the outcome of this analysis has an implication that the result explained only part of the effect of government policy is mediated by the radio education program about 0.1048 or 10.46 percent of the variance in preventive health behavior was explained or accounted by indirect effect. More so, the size of the indirect effect of government policy on preventive health behavior through radio program is statistically significant ( $P < 0.05$ ).

This further buttress that other parts are either direct or mediated by other variables not included in the initial model, thus, this finding implied that government policy leads to more action towards preventive health behavior among the respondents through the mediator (radio education program on HIV/AIDS prevention). So from this result an evidence for partial mediation was provided, because the result of the test statistics indicated it does not decreases to zero. In conclusion it can be summarized that the relationship between government policy and preventive health behavior was mediated by the radio education intervention program at alpha 0.05.

## 7. Conclusion

Since the main objective of this study is to find out the mediating effect of radio education program on the relation between (cultural practices and government policies) and Preventive health behavior. Thus, the total variance explained by the equations are statistically significant, More importantly the results provide an evidence for partial mediation since all the results reveals that the test statistics (Direct effect ) does not decrease below zero or to zero.(Preacher and Hayes,2004). This also ruled out the possibility of complete, full or perfect mediation. This means that as radio education program is added as another predictor in the model there was an increase of influence of these variable in predicting the dependent variable. This supported all the hypotheses that radio education program mediates the association between preventive health behavior and cultural practices and Government policy.

This finding concurred with a research conducted in Ethiopia by (Lee, 2004) on the use of radio entertainment education for behavioral change on HIV/AIDS prevention. The result revealed that there exist a relationship between health behavior and listening to radio. The more people listen to radio on susceptibility to HIV/AIDS, the more they show an interest to use whatever they heard from the radio to prevent themselves from HIV/AIDS infection. Furthermore the current study has supported the mediating effect of radio education program in prevent HIV. This result gives additional information which complements other studies on mass-media program and HIV prevention through educative programs that disseminate correct information and raises awareness on safe sex practices. Therefore the habit of frequent radio listening should be encourage and maintain in the study area at individual or at group level.

The implication is that government should continue demonstrating sense of commitment to policy application and implementation which would definitely enhance positive behavior subsequently reduces the prevalence rate of the new HIV infection.

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