THE IMPACT OF MEDIA ADVERTISEMENT ON HIV/AIDS CONTROL IN TANZANIA: THE CASE OF DAR ES SALAAM

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Abstract

HIV/AIDS pandemic is threatening the whole world at large and particularly developing countries, Tanzania being no exception. AIDS was initially diagnosed in Tanzania in 1983 in Kagera region. In Tanzania, the disease has been spreading unevenly and unpredictably fast over time and to date no cure is available. Since no cure is available, prevention is a critical factor. This being the case, emphasis by the government and other non governmental bodies has been put to the media.

Thus, the power of advertisement messages in various media to contain the spread of HIV/AIDS is hereby investigated. This is done by employing contingency table analysis to data on safe sex practice particularly condom use collected by double sampling procedure in Dar es Salaam – Tanzania. The study reveals that the sampled population awareness of HIV/AIDS and safe sex practices are not directly related. However, of those using condoms as a preventive measure, it was found that messages from all media had significant impact as a source for the users. The major sources or 'educator' were radio messages (all stations), newspapers and television. It is suggested a bigger audience profile could be 'educated' if the mode of advertised messages is improved by displaying scientific type of plays which have been tested on radio and/or messages positioning condoms as modern and positive items for use in all media.

Key words: *advertisement messages, HIV/AIDS, safe sex practice, condom use, media, association*

Introduction

HIV/AIDS Epidemic in the world and Sub Saharan Africa

AIDS is a dreadful disease threatening Tanzania and the whole mankind at large. According to the UNAIDS/WHO report of 2004, the total number of AIDS deaths between 1981 and end of 2003 was estimated at 20 million. By December 2004, women

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accounted for 47% of all people living with HIV worldwide, and for 57% in Sub Saharan Africa. The same report says that in 2003, young people (15-24 years old) accounted for half of all infections world wide. During 2004, around five million adults and children became infected with HIV (Human Immunodeficiency Virus), the virus that causes AIDS, which implies that despite all efforts to contain the disease, it was still spreading out fast.

HIV/AIDS is particularly prevalent in Sub Sahara Africa with Botswana leading in the infection rate of 37.7 % followed by Lesotho and South Africa with infection rates of 28.9% and 21.5% respectively. AIDS is now by far the leading cause of death in Sub Saharan Africa. Since the beginning of the epidemic over 15 million adults have died from AIDS. During 2004 an estimated 2.3 Million adults and children died as a result of AIDS in Sub Saharan Africa (UNAIDS/ WHO, 2004).

HIV/AIDS Epidemic in Tanzania

The Rate of Infection in Tanzania is 8.8% (UNAIDS/ WHO, 2004)

AIDS was initially diagnosed in Tanzania hospitals in 1983 in Kagera Region (NACP, 1995). Cases have continued to increase and by 1986 all regions in the country had reported the existence of AIDS cases. By 1995 a cumulative total of 81,498 infections had been reported (NACP, 1995). The increase in the number of reported cases simply indicates an increasing trend but does not reflect the real situation in terms of the true number of existing cases.

The reported cases are few compared to the existing ones because only one out of 4-6 AIDS cases are reported in the country due to problems of AIDS diagnosis and other logistics which exist in many of the health care facilities (NACP, 1995). The World Bank (1992) reported that the estimated infections in Tanzania was about 800,000 people or about 3.2 per cent of the population. Simulation model estimates that only 1 out of 5 AIDS cases are reported (www.ppu.go.tz). Of the HIV/AIDS cases estimated , by the end of 2003 for example there were 1,500,000 infections among whom women were 840,000 and children were 140.000. AIDS deaths among adults and children was 110,000 and the number of orphans due to AIDS had risen to 980,000 (UNAIDS/WHO, 2004).

Taking into account the regional population sizes, Dar es Salaam region had the highest case rate followed by Mbeya and Kagera with the urban population being more affected than the rural (NACP, 1995). Thus, some regions are much more affected than others. For example in Kagera Region 17 per cent of the urban population and 5 per cent of the rural population are HIV positive (World Bank, 1992). Severity of infection differs between different population segments. The distribution of HIV/AIDS cases by age and sex during the period of January through December 1999 show that the most affected

age group was 20-49 years , the peak for females being 25-29 years and for males being 30 –34. Generally, women acquire HIV infections at an earlier age compared to males. Specific rates in 1999 indicate that males have a higher case rate (28.2 per 100,000 population) compared to females (26.5 per 100,000 population) (www.ppu.go.tz) Clearly, the number of new infections and deaths have been rising from year to year and to date, no cure is available.

HIV/AIDS Control

Many countries in Sub Saharan Africa have failed to bring the epidemic under control Nearly two-thirds of the worlds HIV positive people live in Sub Saharan Africa, although this region contains little more than 10% of the worlds population (www.avert.org/subadults.htm). AIDS will be a prominent and pervasive issue for a long time in Tanzania as elsewhere (World Bank, 2001), but there are actions that have been undertaken by the Government, communities, individuals and the international community to mitigate the severity and the consequences of the epidemic.

Possible measures include prevention measures to slow the spread of the disease as much as possible and coping measures to deal with the consequences that cannot be prevented. One form of the coping measures is the availability of the HIV antiretroviral therapy which has reduced the number of deaths in high income countries. Coping measures such as administration of antiretroviral therapy are quite costly for a poor country like Tanzania. An estimated five million people in low and middle income countries do not have the HIV/AIDS drug which could save their lives (UNAIDS, 2004). Because coping measures are difficult to undertake, and because there is no cure available, prevention is a critical factor.

One of the forms of the prevention measures is the IEC programs aimed at improvement of information, education and communication activities directed at changing peoples behaviour. These programs include advertisements of all types in all sorts of media aimed at changing people's behavior by encouraging individuals to refrain from unsafe sex, or use condoms if necessary. The aim of this study is to examine the role of media as a preventive measure in AIDS spread. Examination of the role will be centred on the use of various media and the effect of use in enhancing behavioural change.

Concept of Media in HIV/AIDS Prevention

AIDS Campaigns in the Media

The need to educate people on the danger of HIV/AIDS and how to contain its spread has been realized by Tanzanian authorities and non governmental organizations (NGOs) at all levels. The method employed is campaigns and advertisements in various media. These campaigns usually referred to as Information Education Communication (IEC) have been going on in Tanzania in the 1980s, 1990s and 2000s, particularly in Dar es Salaam, the commercial city of Tanzania where all sorts of media are

available. For example by 2004, there well over 100 NGOs involved in the control of HIV/AIDS. Notable NGO's are the Tanzania Home Economics Association (TAHEA), Religious Network on AIDS Control, Tanzania Parents', Association, (WAZAZI) among many others.

Most of these NGOs are engaged in many activities regarding HIV/AIDS control and care and indeed almost all of them are involved in the IEC programs aimed at behavioral change.

Most of the people living in Dar es Salaam have rural connections (Akarro, 2000). Hence, whatever knowledge is imparted to the Dar es Salaam residents may be indirectly communicated to the rural population because of this linkage. This campaign and in particular the IEC program involves advertisement messages, which need money. So far, the money has been obtained from friendly countries as donations, grants etc. These countries do not have unlimited resources. So whatever they donate should be used in the most effective manner. The campaigns or message advertisements should be geared at educating as many people as possible the dangers of HIV/AIDS and how to keep off it.

The advertisement messages usually stress on safe sex practices such as being faithful to ones wife or husbands, refraining from sex before marriage, refrain from sharing razors or injectables and use of condoms. In particular, condom use advertisements is one of the most advertised methods for limiting the spread of HIV/AIDS. However, we are not sure as to what extent the various types of media advertisement have been successful in making people practice safe sex especially condom use. The paper aims at looking into this basing on research conducted by the author in 2000.

Data Sources and Methods

Sampling

In order to get a representative sample, double sampling procedure was used in the sampling process (Cochran, 1977). The focus of the analysis i.e. the sampling unit was the individual man or woman aged 15 years and above. This individual was selected with a belief that she/he is sexually active and therefore prone to HIV/AIDS epidemic. The sampling design was a two-stage sampling procedure. The first stage involved stratification of the several wards in the three districts of Dar es Salaam region. Stratification was done on the basis of income level and population density with a view that low income level individuals, who are more likely to be in high density areas, were not very likely to have access to certain types of media because of their income. Also, they had a great chance of contact between individuals and perhaps more likely exposed to HIV/AIDS because of their high density. Using 1978 census, enumeration areas, a sub-sample of these wards, were selected randomly.

The second stage involved sampling of the individuals in the wards. A list of Ten-cell leaders was invariably available at the ward level. Every Ten-cell leader had a list of his/her members within his/her jurisdiction. A simple random sample of Ten-cell leaders was selected from which information of the individuals of interest and the Ten-cell leader himself was collected. Logistical reasons limited the number of areas/wards within Dar es salaam to be covered in the study to 17 with a total of 1471 interviewees, 658 men and 813 women, thus with slightly a higher bias for women. However, to ensure that the whole area of Dar es Salaam were represented, both large and small wards were included.

The information sought was the newspapers read by the individuals, radio stations they listen to, TV they watch, their population characteristics (i.e. age, sex, education level, work, marital status, etc.), HIV/AIDS awareness and if they use condom or any other method in HIV/AIDS control because of the advertisements. On the basis of the research, the impact of media advertisement on safe sex practices particularly condom use, could be evaluated.

Information on the sample size is presented in table 1.

Table 1: Sample Information

District	Ward	Number of interviews		Total
		Men	Women	
Kinondoni	Manzese	75	75	150
	Ubungo/Kimara	90	100	190
	Mbezi/Masaki	50	50	100
	Kawe/Kinondoni/Mwananyamala	64	90	154
		Sub total		594
Temeke	Mbagala	64	80	144
	Temeke	60	90	150
	Keko	42	50	92
	Kigamboni	42	50	92
		Sub total		478
Ilala	Kariakoo	50	50	100
	Ilala	50	50	100
	Upanga	49	50	99
	Buguruni/Kipawa	40	60	100
		Sub total		399
		Grand total		1471

Source: Akarro (2000)

The Analysis

An evaluation of the impact of media advertisement in terms of safe sex practices particularly condom use was done by analyzing how various variables of interest relate to each other. The method employs use of contingency tables in cross-classifications.

The general null hypothesis to be tested by 2 x 2 contingency table is that there is "no association" between the two classification variables. That is, the two classification variables are independent. Independence means that knowledge of the classification level of objective relative to characteristic has no bearing on its level relative to the other characteristic. The alternative is that there is an association.

The chi-square test provides a rigorous test of the hypothesis that there is no relationship: that is, the two variables of classification are independent. The test is referred to as a contingency table test. In order to apply the x^2 (chi-square) test, we must arrive at a set of theoretical frequencies based upon the hypothesis of independence.

Theoretical frequencies or expected frequencies are computed by reference to observed marginal frequencies only. Theoretical frequencies are usually designated as ei while the observed frequencies are designated o_i. For the ith cell, the statistic

$$\chi^2 = \sum_{i=1}^{k} \frac{(o_i - e_i)^2}{e_i}$$ where x^2 is a value of a random variable x^2, whose sampling distribution

is approximated very closely by the chi-square distribution.

If the observed frequencies are close to the expected frequencies, the x^2 will be small, indicating acceptance of null hypothesis of independence of variables of classification. If x^2 are large, the null hypothesis of independence is rejected. Fortunately, SPSS (SPSS Inc.) has a routine that can compute the value of Pearson Coefficient, which is the value of test statistic associated with the contingency table. This test statistic is then compared to values of chi-squared distribution with the appropriate degrees of freedom and level of significance to obtain the p-value, which is the probability that the observed association in the data could have arisen by chance if the null hypothesis were true.

This analysis was used to test the hypothesis as to whether there was any relationship between HIV/AIDS awareness and condom use and to test the relationships between condom use with the type of the media in which the advertisements were made.

Results and Discussion

Using SPSS PC+, contingency table analysis show that the majority of the people are aware of HIV/AIDS but few take precautionary measures. For example, out of the

sampled population of 1471, 1462 or 99.4% were aware of HIV/AIDS, while 9 or 0.6% were not. When it comes to the use of condoms as a preventive measure, 412 or 28% used condoms, while 1059 or 72% did not; the relationship between the variables being not significant at 5% level as shown in table 2.

Table 2: Relationship between HIV/AIDS Awareness and Condom Use

Count	Do not use condom	Use Condom	Row Total
Aware of HIV/AIDS	1051	411	1462
Not Aware of HIV/AIDS	8	1	9
Column Total	1059	412	1471

Source: Akarro (2000)

Chi-square	Value	DF	Significance
Pearson coefficient	1.28282	1	0.25749

The null hypothesis (H_o) to be tested is that there is no relationship between HIV/AIDS awareness and condom use. The alternative (H_1) is a relationship. From chi-square distribution tables, $x^2 \alpha, 1 = 3.841$ is the critical value where $\alpha = 0.05$. The Pearson Coefficient value is 1.2828. Since the Pearson Coefficient is less than the critical value, we accept the null hypothesis. We therefore do not reject the null hypothesis of independence: i.e. HIV/AIDS awareness and condom use are not related. We therefore accept the null hypothesis of independence of the variables .

Despite this high degree of awareness coupled with over 80%, knowing the major routes of transmission is sexual intercourse, high-risk behavior remains common. Similar remarks were made by the World Bank, 1992, National Policy on HIV/AIDS (2001) that although knowledge of condoms was fairly high, they were rarely used. These results are also in line with Weinstein et al (1995) findings which showed that 97.7% of women and 98.5% of men were aware of HIV/AIDS in the whole country but only 49.4% of women and 35.5% of men used condoms for preventive purposes.

When it comes to the media advertised in as a source of information on HIV/AIDS awareness and prevention measures, all media were used and the distribution is as follows:

Table 3: Distribution of Media Used and Number (Frequency) of Users

Number of Media	Frequency	Percentage
None	775	52.7
1	507	34.5
2	116	7.9
3	73	4.9
Total	1471	100

Source: Akarro (2000)

In table 3, the first column (number of media) refers to the type of media or combinations there of. None refers to no particular media was used, one refers to the usage of one media only such as radio only, TV, only etc. Two refers to the usage of two media such as TV and radio, radio and newspapers or newspapers and TV. Three refers to the usage of all three media i.e. TV, radio and newspapers. The major source was radio 459 cases (31.2%), television 170 cases (11.6%) and newspapers 329 cases (22.4%). Regarding radio as a major source of media is also an observation by World Bank, 1992 and NACP (1995). Radio advertisements in Tanzania are one among several programs of the Information, Education and Communication (IEC).

Although data on them were limited, a program relying on radio spots was considered the most cost effective in a recent review involving a committee of experts under the auspices of the NACP. The committee also concluded that posters/calendars, cartoons, newspaper flashes and family counseling were respectively 20, 18,15 and 3 percent, as effective as radio spots (NACP, 1995). Advertisements in all these media had a significant effect at 5% level of significance or less on the use of condoms and other prevention measures as shown in Tables 4 and 5.

Table 4: Relationship Between Condom Use and Number of Media Advertised in

Number of Media	Do not use condom	Use condom	Row total
None	767	8	775
1	260	247	507
2	4	112	116
3	28	45	73
Column Total	1059	412	1471

Source: Akarro (2000)

Chi-square	Value	DF	Significance
Pearson	698.78414	3	0.0000

The null hypothesis H_0 is that there is no relationship between condom use and number of media advertised in. The alternative H1 is that there is a relationship. From chi-square distribution tables, $x^2\alpha,3 = 7.815$ is the critical value where $\alpha = 0.05$.

The Pearson coefficient value is 698.78414 . Since the Pearson Coefficient is larger than the critical value, we reject the null hypothesis of independence. That is there is no relationship between condom use and number of media advertised in is rejected. In other words there is a relationship between condom use and number of media advertised in.

The very small p-value for this test suggest that the observed association between condom use and number of media advertised in is very unlikely to have arisen by chance, suggesting that there is a significant relationship.

Table 5: Relationship Between Other Forms of Prevention Measures and Number of Media Advertised in

Control Measure	Number of Media				
	None	One	Two	Three	Row total
None	176	33	1	1	211
One	590	469	113	64	1236
Two	4	3	2	8	17
Three	4	1			5
Four	1				1
Five		1			1
Column Total	775	507	116	73	1471

Source: Akarro (2000)

Chi-square	Value	DF	Significance
Pearson	165.07761	15	0.0000

The null hypothesis is that there is no relationship between control measure undertaken and the number of media advertised in vs there is a relationship. Following the same arguments as for table 4, number of media advertised in and control measure undertaken is significant. That is control measure undertaken is related to the number of media in which advertisements are made. The first control measure refers to the type of control undertaken. None refers to no control undertaken at all. One refers to only one form of control undertaken which can be condom only or sticking to one partner only, two refers to two types of control measures undertaken such as condom use and sticking to one partner or combination thereof and so on.

Media Use

The most popular media among condom users were radio, newspapers and television respectively. Those who got information from radio only were 276 (60.1%), radio with another source were 110 (24.0%) and radio with all other sources were 73 (15.9%). The most popular radio station was Radio One (354 cases, 24.1%) followed by Radio Tanzania Dar es Salaam (113 cases 7.7%), Radio Tumaini (27 cases 1.8%) and City Radio (17 cases 1.2%). People interviewed read a maximum of 5 papers and the distribution was as follows:

Table 6: Distribution of the Papers Read

Number of Papers Read	Frequency	Percent
None	1145	77.8
1	280	19.0
2	32	2.2
3	10	.7
4	2	.1
5	2	.1
Total	1471	100.0

Source: Akarro (2000)

From table 6 above, 1145 people did not read any newspaper while 4 people only read 4 or 5 papers. The most read newspapers were *Majira* (117 cases), *Nipashe* (109 cases) and *Uhuru* (45 cases), respectively. The rest of the papers were not so popular.

The most watched TV channel was ITV (144 cases, 10.1%) followed by DTV (44 cases, 3%) and CTN (20 cases, 1.4%). The most popular times for radio listeners and TV viewers were evenings. That is to say, the adverts should be aired mostly in the evenings to capitalize on the big audience profile.

Discussion/ What is to be Done?

Despite the various advertisements and the IEC programs, the rate of HIV/AIDS is increasing. A situation analysis of HIV/AIDS in Tanzania was performed in 1997 and has shown a worsening epidemiological situation, whereby the epidemic has rapidly spread into the rural areas, thereby increasing the previously low prevalence to more than 10% in some areas. (www.ppu.go.tz). As it has already been shown, though awareness is high, condom use is on a very small scale. Thus, is there fore a need for safer sex campaigns and other forms of intervention to help people cope with condoms or any other form of safe sex practice. Thes advertisements messages on condom use differ from time to time. The advertisements on condom use during the 1998 world cup for example was character selective; the message content was geared at encouraging

young people rather than the whole population segment (Akarro, 2003). Advertisement messages on ITV and Radio One currently are aimed at encouraging married people not to flirt around with their marriage but should keep to their partners only. So, advertisement of 'condom normalization' campaigns are designed to reduce the embarrassment associated with condoms by positioning them as everyday items is necessary, i.e. advertisement with a positive purpose at all levels of population segments.

Conclusion and Recommendations

The majority of the people are aware of HIV/AIDS but not many people use condoms as a preventive measure. Of the few that use condoms, information on the use is obtained from various media especially radio (all stations), ITV during prime time and certain newspapers as shown from the results. This research has therefore shown to us that advertisements for limiting the spread of HIV/AIDS is not a waste. Irrespective of the funds available, efforts should be directed to advertise more and more in these media.

However, considering the small number of people who use condoms, advertisement messages should be designed with a more positive and appealing image. Advertisements on condom use should not aim at segregating people in terms of gender, age and social strata.

The current method can be improved for example by designing cartoons to be displayed on newspapers and/or sharp plays on TVs that are scientifically tested. Such designed advertisements should be tested to ascertain their effectiveness and acceptance before they are made operational. It may be necessary to redesign and to retest the advertisements before they are made fully operational.

References

Akarro, R.R.J. (2000), "Advertising Media Selection in HIV/AIDS Spread. A case study of Dar es Salaam Region". Unpublished Research Report, Faculty of Arts and Social Sciences, University of Dar es Salaam.

Akarro, R.R.J. (2003), "Selected Population Characteristics and Their Association With Condom Use for the Prevention of AIDS/HIV Spread in Dar es Salaam, Tanzania." *Tanzania Journal of Population Studies and Development:* Vol. 10, Nos. 1 &2.

A World Bank Country Study, "Tanzania at the Turn of the Century, Background Papers and Statistics". Government of the United Republic of Tanzania. The World Bank, Washington.

Cochran, W.G. 1977, *Sampling Techniques,* 3rd edition, John Wiley and Sons.

National Aids Control Programme (NACP), " HIV/AIDS/STDs Surveillance," Ministry of Health, *Tanzania Mainland, Report* No. 10, December 1995.

National Aids Control Programme (NACP), "Work Plan and Budget: 1996-1997". Tanzania Mainland. Ministry of Health, Tanzania Mainland, November 1995.

National Policy on HIV/AIDS, United Republic of Tanzania. Prime Minister's Office 2001.

SPSS Inc., Chicago, ILlinois.

UNAIDS/WHO (2004 (a)), " Aids Epidemic Update," December 2004.

UNAIDS/WHO (2004 (b)), " Report on the Global AIDS Epidemic."

www://.avert.org/aidsinafrica.htm: "HIV and AIDS in Africa."

www.ppu.go.tz (Tanzania National Website.

Weinstein, K.L.; Ngallaba, S.; Cross, A.R. and Mburu, F.M., 1995, "Tanzania Knowledge, Attitudes and Practices Survey," Calverton, Maryland, Bureau of Statistics, Planning Commission and MACRO International Inc.

1978 Population Census, Bureau of Statistics Publication.

World Bank (1992), "Tanzania: AIDS Assessment and Planning Study," World Bank, June, 1992. Population and Human Resources Division Southern Africa Department, African Regional Office Document of the World Bank No 9825 – TA