

Extension Professionals' and Farmers' Perception of the Effect of HIV/AIDS Pandemic on Agricultural Activities in Southwestern Nigeria

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ABSTRACT The study ascertains extension professionals' and farmers' perception of the effect of HIV/AIDS pandemic on agricultural activities in Southwestern Nigeria. Data were collected from 194 respondents comprising 59 Agricultural Development Programme (ADP) staff and 135 farmers through the use of questionnaire and structured interview schedule using a multi stage random sampling technique. Data were analysed using percentages, mean scores and t-test. The findings reveal that the major perceived effects of HIV/AIDS on agricultural activities by the respondents were loss of labour as a result of sickness and death ($\bar{x}$ = 3.41; 3.77) and reduction in the yield/productivity of crops ($\bar{x}$ = 3.17; 3.42). There was a significant difference (t = -3.27, P < 0.05) between the perception of extension professionals and farmers of the effect of HIV/AIDS on agricultural activities but there was no significant difference (t = -0.251, P < 0.05) between the perception of extension professionals and farmers on how best the spread of HIV/AIDS on agricultural activities could be minimized. The extension professionals and farmers opined that sensitizing individuals on the effect of HIV/AIDS on agricultural activities through the use of mass media and other traditional modes of communication aimed at changing the attitude and behaviour of the general populace will help to reduce the spread of HIV/AIDS. The study therefore recommended that a comprehensive response to HIV/AIDS, through treatment and prevention efforts should be accelerated, simultaneously. HIV/AIDS prevention programme must address the contexts in which both the extension professionals and farmers live their lives.

INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS) was first reported in the United States of America in 1981 and has since become a major worldwide epidemic (National Institute of Allergy and Infectious Disease [NIAID], 2004). The Joint United Nations Programme on AIDS (UNAIDS) (2000) report estimated that 70 percent of all HIV/AIDS cases worldwide are in sub-Saharan Africa, which is the most severely affected region. Also in terms of national level comparison, the 21 countries with the highest HIV prevalence are all in Africa. The total number of people living with the Human Immunodeficiency Virus (HIV) rose in 2005 to reach its highest level ever. As at December 2005, an estimated 40.3 million (36.7-45.3 million) people were living with the virus. Close to 5 million people were newly infected with the virus in 2005 (UNAIDS/WHO, 2005) as indicated in Table 1.

Today AIDS threatens the lives and well being of millions of rural people throughout the developing world. Africa with its predominantly rural population remains the worst hit (Jacques and Peter, 2003). Sub-Saharan Africa remains the

worst-affected region with the death rate put at 2.4 million people as at the end of 2004 (UNAIDS/WHO, 2005). The Joint United Nations Programme on AIDS (UNAIDS) noted that women and girls make up almost 57% of all HIV infection in sub-Saharan Africa, where a striking 60% of young people (aged 15-24 years) living with HIV are female.

Nigeria, with an estimated population of 126 million has 6 million people living with HIV/AIDS and 5.4% HIV prevalence rate (World Health Organization [WHO]/Joint United Nations Programme on AIDS [UNAIDS]/United States Agency for International Development [USAID], 2004). Kenneth (2005) reported that more than 800,000 people have died in Nigeria due to HIV/AIDS. Over 80% of infections in Nigeria are believed to be through sexual transmission while other modes are through blood transfusion and mother to child transmission as well as use of unsterilized needles and other skin piercing instruments.

According to Slater and Wiggins, (2005), early outbreaks of HIV/AIDS occur predominantly in urban areas, however, the tendency for those showing symptoms of AIDS to return to their

Table 1: Regional HIV and AIDS statistics and features, 2003 and 2005

Region	Adults and children living with HIV (in millions)		Adult and child death due to AIDS (in millions)	
	2005	2003	2005	2003
Sub-Saharan Africa	25.8	24.9	2.4	2.1
North Africa and Middle East	0.51	0.50	0.05	0.05
South & South-East Asia	7.4	6.5	0.48	0.39
East Asia	0.87	0.69	0.04	0.02
Oceania	0.07	0.06	0.003	0.002
Latin America	1.8	1.6	0.06	0.05
Caribbean	0.39	0.30	0.024	0.024
Eastern Europe and Central Asia	1.6	1.2	0.06	0.03
Western and Central Europe	0.72	0.70	0.01	0.01
North America	1.2	1.1	3.1	2.8
Total	40.3	37.5	3.1	2.8

Source: UNAIDS/WHO, 2005

villages, means that the majority of people living with HIV/AIDS are now in rural areas. In some geo-political zones in Nigeria such as South West, North East and South South, rural infection rates are higher than urban rates (National AIDS & STD Control Programme, Federal Ministry of Health, 2002).

The mandate of agricultural extension services, whether public or private, has always been rural human resources development with the aim of increasing food production through the introduction of improved agricultural technologies. The very survival of these human resources, both within the extension organization and among the clientele, however, is currently at stake due to the HIV/AIDS menace (FAO, 2001). The challenges currently posed by the HIV/AIDS epidemic to agricultural extension are quite unusual as it affects both staff and clientele.

Given the high HIV prevalence rate in Nigeria and the increasing number of people living with AIDS in rural areas of southwestern Nigeria where a majority of the farmers reside and produce food for the entire population (National AIDS & STD Control Programme/FMOH, 2002), do extension professionals and farmers in the area have knowledge of HIV/AIDS at all? If they do, what are their level of HIV knowledge and sources of information? What are their perceptions of the effects of HIV/AIDS on agricultural activities? And how can these effects be minimized?

Purpose of the Study

The overall purpose of the study was to ascertain extension professionals' and farmers'

perception of the effect of HIV/AIDS pandemic on agricultural activities in southwestern Nigeria. The specific objectives were to:

1. ascertain the knowledge level of HIV/AIDS among extension professionals and farmers in southwestern Nigeria;
2. find out the perception of both extension professionals and the farmers of the effect of HIV/AIDS on agricultural activities; and
3. ascertain the opinion of extension professionals and farmers on how best HIV/AIDS infection can be minimized.

Research Hypothesis

1. The perception of extension professionals and farmers of the effect of HIV/AIDS on agricultural activities are not significantly different.
2. The perception of extension professionals and farmers on how best the effect of HIV/AIDS on agriculture can be minimized are not significantly different.

METHODOLOGY

The study was carried out in southwestern Nigeria. Three states namely Ondo, Oyo and Osun states out of six were purposively selected for the study because of the nature of the HIV/AIDS in these states. Multi stage random sampling technique was used in selecting extension staff and farmers. In the first stage, three (3) local government areas (LGAs) were randomly selected from each of the three (3) states (Ondo, Oyo and Osun states); this gave a total of nine (9) LGAs.

In the second stage, three (3) town communities were randomly selected from each of the LGAs giving a total of nine town communities per state and twenty seven (27) for the three states. In the third stage, five (5) farmers were randomly selected from each of the town communities giving a total of forty-five (45) farmers per state and a total of one hundred and thirty-five (135) farmers. For extension staff, twenty-one (21) staff of Agricultural Development Programme (ADP) were randomly selected from the list of ADP extension agents, block extension supervisors, subject matter specialists and directors in each state, giving a total of sixty-three (63) extension professionals. However, only fifty-nine (59) correctly filled questionnaires were used for the study. Thus, a total of one hundred and ninety four (194) respondents (extension professionals and farmers) constituted the sample size.

A set of structured interview schedule and questionnaire were used for primary data collection. Content validation of the research instruments was done by specialists (both academics and practitioners) in the area of agricultural extension before field administration. The data were collected between December 2005 and January 2006.

To ascertain the knowledge level of the respondents, 10 open and close ended (structured) questions were asked. A maximum of 1 point each was awarded to each question. The highest score was 10 points and the lowest was 0. The respondents were then categorized into three (3) groups based on their knowledge level, namely:

- a) Low knowledge (for those respondents with 1-3 scores)
- b) Moderate knowledge (for those respondents with 4-7 scores)
- c) High knowledge (for those respondents with 8-10 scores).

To find out the perceptions of both extension professionals and farmers of the effect of HIV/AIDS on agricultural activities, a Likert-type format with four response options (4 = to a very great extent, 3 = to a great extent, 2 = to a little extent, and 1 = not at all) was used. The values of the Likert-type scale were summated to 10, and divided by four, to get a mean score of 2.5. The respondents' mean scores were obtained for each response item such that any one lower than 2.5 was regarded as not having any perceived effect on agriculture while variables with mean scores equal or above 2.5 were regarded as having great effect on agricultural activities.

To ascertain the respondents' opinions on how best the effect of HIV/AIDS on agriculture can be minimized, a three point Likert-type scale (very effective = 3, effective = 2, not effective = 1) was used. Strategies with mean scores greater or equal to 2.0 were regarded as "effective" while strategies with mean responses lower than 2.0 were regarded as not effective. Percentage and mean scores were used to summarize the data. Research hypothesis 1 and 2 were tested using t – test statistic at five percent ($p \leq 0.5$) level of significance.

RESULTS AND DISCUSSION

Knowledge Level of Respondents of HIV/AIDS: Entries in Table 2 reveal that all (100%) of the extension professionals were knowledgeable about how someone can determine his/her HIV status, "that the practices of sharing needles to inject drugs can spread HIV/AIDS rapidly" and the local names given to HIV and AIDS. Also, 98.3% of the extension professionals asserted that youth were mostly affected by HIV/AIDS, 96.6% said that HIV/AIDS couldn't be contacted by eating together while about 93% of the extension

Table 2: Overall knowledge scores of the respondents on HIV/AIDS

Variables	Extension professionals		Farmers	
	Score	%	Score	%
How someone can determine his/her status	59	100.0	131	97.0
Practices of sharing needles to inject drugs	59	100.0	104	77.0
HIV/AIDS can be contacted by eating together.	57	96.6	97	71.9
Symptoms associated with HIV infections	38	64.4	83	61.5
AIDS is a killer and deadly disease	59	100.0	130	96.3
Local name given to HIV/AIDS	59	100.0	122	90.4
Group of people mostly affected by HIV/AIDS	58	98.3	128	94.8
Transmission of HIV/AIDS from mother to child	53	89.8	96	71.1
Transmission of HIV/AIDS through insect bites such as mosquito	51	86.4	95	70.4
Prevention of HIV/AIDS	55	93.2	105	77.8

professionals were knowledgeable about prevention of HIV/AIDS. However, 89.8%, 86.4% and 64.4% were knowledgeable about HIV/AIDS being transmitted from mother to child, and that HIV/AIDS could not be transmitted from insect bites such as mosquito and also about the symptoms associated with HIV/AIDS infection.

On the other hand, 97% of the farmers were knowledgeable about how someone can determine his/her HIV status, 96.3% knew that AIDS is a killer and deadly disease, and 94.8% asserted that young people were the major group of people mostly affected by HIV/AIDS. Also, 90.4% of the farmers understood that someone is HIV positive if he/she is a carrier of HIV. About 79% were knowledgeable about the prevention of HIV/AIDS, while 77%, 71.9%, 71.1% and 70.4% knew that sharing needles to inject drugs can spread HIV/AIDS rapidly, that HIV cannot be contacted by eating together, transmission of HIV/AIDS from mother to child is possible and that insect bites such as mosquito cannot transmit HIV/AIDS. However, only 61.5% of the farmers were knowledgeable about the symptoms associated with HIV infection. This finding shows that extension professionals and farmers were not knowledgeable in all areas. This calls for greater awareness creation among these people.

Further categorization on the basis of scoring shows that all (100%) of the extension professionals had a high level of knowledge about HIV/AIDS (Table 3). On the other hand, 71.1% of the farmers had high knowledge of HIV/AIDS, while 26.7% of them had moderate knowledge level. Only 2.2% of the farmers had low knowledge level. This implies that the extension professionals were more knowledgeable about this deadly disease than the farmers. This might be as a result of their better education and exposure to media sources.

Table 3: Distribution of respondents on the basis of knowledge level on HIV/AIDS

Level of knowledge on HIV/AIDS	Extension professionals %	Farmers %
Low (1-3 Scores)	0.0	2.2
Moderate (4-7 scores)	0.0	26.7
High (8-10 scores)	100.0	71.1

Perceived Effect of HIV/AIDS on Agricultural Activities:

The results of the responses of extension professionals and farmers as regards the effects of HIV/AIDS on agricultural activities

are shown in Table 4. The table reveals that loss of labour as a result of sickness and death ($\bar{x}$ = 3.41; 3.77); reduction in the yield/productivity of crops ($\bar{x}$ = 3.17; 3.42); reduction in the size of land under cultivation as a result of sickness ($\bar{x}$ = 2.88; 3.28); borrowing from informal sector and money lenders, often at exorbitant interest rates ($\bar{x}$ = 2.97; 2.81); withdrawal of children from school to work on or off the farms for wages ($\bar{x}$ = 2.81; 3.08); food insecurity caused by reduction in production ($\bar{x}$ = 2.89; 3.19); increased expenditures for medical care which can push farmers further into poverty ($\bar{x}$ = 2.78; 3.47); reduction in saving ($\bar{x}$ = 2.76; 3.22) and reduction in income as a result of high cost of labour ($\bar{x}$ = 2.75; 3.43) were perceived major effects of HIV/AIDS on agricultural activities. These findings are in agreement with the findings of Daudu, Okwu and Shaibu (2006), which reported that there is significant reduction in agricultural production and income, spending of a tangible portion of the household savings and income on medications of members affected with the HIV/AIDS, reduction in quantity and quality of food consumption and withdrawal of children from school. Yield may decline as a result of delays or poor timing in essential farming operations. Subsistence farming requires labour at critical times. If labour is not available for planting, weeding or tillage and cannot be hired, then production will suffer. The findings of this study also agree with that of Topouzis (2000) that AIDS increases household expenditure on medical care and funeral expenses, as many urban dwellers and migrant labour return to their home villages when they fall ill, putting a higher burden of the cost of HIV/AIDS on rural communities. A study of the smallholder sector in Zimbabwe as reported by Kwaramba (1997) found reductions in production in households with AIDS death ranging from 61% for maize to 29% for cattle. Households may also lack the labour to keep up with important land conservation measures such as irrigation maintenance. Cash and credit available for agricultural production and purchases of key inputs such as seed and fertilizer may be diverted to meeting medical and funeral expenses.

Other effects of HIV/AIDS on agricultural activities as perceived by both extension professionals and farmers include: change in cropping patterns and/or animal production to less labour intensive practices ($\bar{x}$ = 2.69; 2.90); increase in the prices of food items ($\bar{x}$ = 2.66; 3.18);

family members' time diverted to care giving ($\bar{x}$ = 2.63; 2.99); increase dependency ratio as adults die, leaving young and orphaned children ($\bar{x}$ = 2.56; 3.21); reduction in income due to HIV/AIDS related illness which can prolong absence from farm work ($\bar{x}$ = 2.54; 3.43); loss of farming knowledge and skills as adults die before passing these on to their children ($\bar{x}$ = 2.54; 3.35) and stigmatization of individuals suffering from HIV/AIDS ($\bar{x}$ = 2.53; 3.48). In addition, the farmers perceived loss of access to land by widows as a result of the death of their husbands ($\bar{x}$ = 3.11) and less livestock production ($\bar{x}$ = 2.60) as major effects of HIV/AIDS on agricultural activities. According to Yamano and Jayne (2002) the death of an adult male in rural Kenya resulted in less land being devoted to highly valued cash crops.

Also, HIV/AIDS hits the agricultural workforce severely, leading to sharp profit-losses as a result of the loss of workers and decreased working hour due to illness, death, stress and home care of ill dependents (Rugalema, 1999).

Differences in Perception of Extension Professionals and Farmers of the Effect of HIV/AIDS on Agricultural Activities: The difference in perception of the extension professionals and farmers on the effect of HIV/AIDS on agricultural activities was ascertained using t-test statistics and presented in Table 5. The result shows that there was a significant difference (at $p < 0.05$) for 20 of the 26 perceived effects. These include: loss of labour as a result of sickness ($t = 3.70$); reduction in farm income as a result of high cost of labour ($t = 5.49$); reduction in income due to

Table 4: Means and standard deviations for extension professionals and farmers on perceived effects of HIV/AIDS on agricultural activities

S. No.	Perceived effect of HIV/AIDS on agricultural activities	Extension professionals		Farmers	
		$\bar{x}$	S.D	$\bar{x}$	S.D
1	Loss of labour as a result of sickness and death	3.41*	0.87	3.77*	0.48
2	Reduction in farm income as a result of high cost of labour	2.75*	1.02	3.43*	0.67
3	Reduction in income due to HIV/AIDS related illness which prolonged absence from farm work	2.54*	0.91	3.43*	0.68
4	Reduction in the yield/production of the crop	3.17*	0.91	3.42*	0.78
5	Increase in the price of food	2.66*	0.93	3.18*	0.85
6	Reduction in saving	2.76*	1.00	3.22*	0.77
7	Loss of farming knowledge and skills as adults die before passing it on to their children	2.54*	1.11	3.35*	0.83
8	Reduction in the size of land under cultivation as a result of sickness	2.88*	1.06	3.28*	0.89
9	Loss of access to land by widows as a result of the death of their husbands	1.95	0.87	3.11*	0.85
10	Food insecurity caused by reduction in production	2.89*	0.94	3.19*	0.83
11	Increase dependency ratio as adults die, leaving young and orphaned children	2.56*	1.05	3.21*	0.91
12	Family members' time diverted to care giving	2.63*	0.92	2.99*	0.92
13	Less livestock production	2.00	0.78	2.60*	0.95
14	Less labour intensive crops	2.30	0.89	2.48	0.96
15	Loss of household tangible assets	1.93	0.98	2.41	0.98
16	Reduction in land tenure system	1.73	0.88	2.38	1.01
17	Reduction in nutritional status of the children	2.10	1.01	2.47	0.94
18	Reduction in access to human resources	2.05	0.93	2.36	0.95
19	Decline in crop varieties	1.69	0.70	2.32	1.01
20	It leads to borrowing from informal sectors and money lenders (often at exorbitant interest rate)	2.97*	1.12	2.81*	1.06
21	Decline in on-farm conservation and/or irrigation practices	1.86	0.88	2.29	1.05
22	Decrease biodiversity due to asset stripping, selling of firewood, increase harvesting of wild food and game	1.86	0.91	2.20	1.13
23	Withdrawal of children from school to work on or off the farm for wages	2.81*	1.09	3.08*	1.05
24	Change in cropping patterns and/or animal production to less labour-intensive practices	2.69*	1.22	2.90*	1.07
25	Increase expenditures for medical care can push farmers further into poverty	2.78*	1.08	3.47*	0.88
26	Stigmatization of individuals suffering from HIV	2.53*	1.00	3.48*	0.93

Note: Scale: 4 = to a very great extent; 3 = to a great extent; 2 = to a little extent; and 1 = not at all;

* Major effects

HIV/AIDS related illness which prolonged absence from farm work ($t = 7.45$); increase in the price of food ($t = 3.75$); reduction in saving ($t = 3.39$); loss of farming knowledge and skill as adults die before passing on to the children ($t = 5.56$); reduction in the size of land under cultivation as a result of sickness ($t = 2.69$); loss of access to land by widows as a result of the death of their husbands ($t = 8.65$); food insecurity caused by reduction in production ($t = 2.85$); increased dependency ratio as adults die, leaving young and orphaned children ($t = 4.32$); family members' time diverted to care giving ($t = 2.52$) and less livestock production ($t = 4.23$).

Other perceived effects that had a significant difference include; loss of household tangible

assets ($t = 3.13$); reduction in land tenure system ($t = 4.30$); reduction in nutritional status of children ($t = 2.47$); reduction in access to human resources ($t = 2.05$); declines in crop varieties ($t = 4.27$); declines in on-farm conservation and / or irrigation practices ($t = 2.74$); decrease biodiversity due to asset stripping, selling of firewood, increase harvesting of wild food and game ($t = 2.00$); increase expenditures for medical care which may push farmers further into poverty ($t = 4.67$) and stigmatization of individuals suffering from HIV/AIDS ($t = 6.39$).

However, there was no significant differences in the following perceived effects; reduction in yield / productivity of the crop ($t = 1.90$); less labour intensive crops ($t = 1.20$); borrowing from

Table 5: Test of difference between perception of extension professionals and farmers on effect of HIV/AIDS on agricultural activities

S. No.	Perceived effect of HIV/AIDS on agricultural activities	Extension professionals		Farmers		t - value
		$\bar{x}$	S.D	$\bar{x}$	S.D	
1	Loss of labour as a result of sickness and death	3.41	0.87	3.77	0.48	3.70*
2	Reduction in farm income as a result of high cost of labour	2.75	1.02	3.43	0.67	5.49*
3	Reduction in income due to HIV/AIDS related illness which prolonged absence from farm work	2.54	0.91	3.43	0.68	7.45*
4	Reduction in the yield/production of the crop	3.17	0.91	3.42	0.78	1.90
5	Increase in the price of food	2.66	0.93	3.18	0.85	3.75*
6	Reduction in saving	2.76	1.00	3.22	0.77	3.39*
7	Loss of farming knowledge and skills as adults die before passing on to their children	2.54	1.11	3.35	0.83	5.56*
8	Reduction in the size of land under cultivation as a result of sickness	2.88	1.06	3.28	0.89	2.69*
9	Loss of access to land by widows as a result of the death of their husband	1.95	0.87	3.11	0.85	8.65*
10	Food insecurity caused by reduction in production	2.89	0.94	3.19	0.83	2.85*
11	Increase dependency ratio as adults die, leaving young and orphaned children	2.56	1.05	3.21	0.91	4.32*
12	Family members' time diverted to care giving	2.63	0.92	2.99	0.92	2.52*
13	Less livestock production	2.00	0.78	2.60	0.95	4.23*
14	Less labour intensive crops	2.3	0.89	2.48	0.96	1.20
15	Loss of household tangible assets	1.93	0.98	2.41	0.98	3.13*
16	Reduction in land tenure system	1.73	0.88	2.38	1.01	4.30*
17	Reduction in nutritional status of the children	2.10	1.01	2.47	0.94	2.47*
18	Reduction in access to human resources	2.05	0.93	2.36	0.95	2.05*
19	Decline in crop varieties	1.69	0.70	2.32	1.01	4.27*
20	It leads to borrowing from informal sectors and money lenders (often at exorbitant interest rates)	2.97	1.12	2.81	1.06	0.93
21	Decline in on-farm conservation and/or irrigation practices	1.86	0.88	2.29	1.05	2.74*
22	Decrease biodiversity due to asset stripping, selling of firewood, increase harvesting of wild food and game	1.86	0.91	2.20	1.13	2.00
23	Withdrawal of children from school to work on or off the farm for wages	2.81	1.09	3.08	1.05	1.61
24	Change in cropping patterns and/or animal production to less labour-intensive practices	2.69	1.22	2.90	1.07	1.19
25	Increase expenditures for medical care can push farmers further into poverty	2.78	1.08	3.47	0.88	4.67*
26	Stigmatization of individuals suffering from HIV	2.53	1.00	3.48	0.93	6.39*

Note: Scale: 4 = to a very great extent; 3 = to a great extent; 2 = to a little extent; and 1 = not at all;

* $P < 0.05$; S.D = Standard Deviation;

Table 6: t-test on respondents' mean perceived effects of HIV/AIDS on agricultural activities

	<i>t-test for equality of means</i>				
	<i>t</i>	<i>df</i>	<i>Sig.</i> (2-tailed)	<i>Mean</i> <i>differences</i>	<i>Std. Error</i> <i>difference</i>
Perceived effect of HIV/AIDS on agricultural activities	-3.276	50	0.002	-0.61108	0.18641

* $P < 0.05$; S.D - Standard Deviation

informal sectors and money lenders ($t = -0.93$); withdrawal of children from school to work on or off the farm for wages ($t = 1.61$) and changes in cropping patterns and / or animal production to less labour - intensive practices ($t = 1.19$). The result further revealed that the mean of responses of the farmers were higher than that of the extension professionals in all items except for "borrowing from informal sectors and money lenders (often at exorbitant rate)" (Table 5).

Entries in Table 6 reveal the mean perception of both the extension professionals and farmers discussed in Table 5. There was a significant difference ($t = -3.27$, $P < 0.05$) between the total mean perception of extension professionals and farmers of the effect of HIV/AIDS on agricultural activities. It then implies that the two categories of respondents hold different opinions as regards the effect of HIV/AIDS on agricultural activities. The implication of this finding therefore is that the null hypothesis, which stated that there was no significant difference in perception of extension professionals and farmers of the effect of HIV/AIDS on agricultural activities, is therefore rejected at $p < 0.05$.

Strategies for Minimizing the Spread of HIV/AIDS: The results of the responses of extension professionals and farmers as regards perceived strategies on how the spread of HIV/AIDS can be minimized are shown in Table 7. The table reveals that the respondents were of the opinion that sensitizing the extension professionals and farmers on the effect of HIV/AIDS on agricultural activities through the use of mass media and other traditional modes of communication like talking drums and town criers ($\bar{x} = 2.75$; 2.88) and being faithful to one's spouse ($\bar{x} = 2.77$; 2.75) were effective strategies to minimize the effect of HIV/AIDS on agricultural activities. This finding is in support of Popoola (2005) opinion in which he advocated that the media should intervene positively by leading the campaign against further spread of HIV/AIDS through news, news analysis, headlines, editorials, cartoons, and

documentaries as well as news commentaries.

Other effective strategies on how the spread of HIV/AIDS can be minimized include: abstinence from sexual intercourse with non regular partners ($\bar{x} = 2.73$; 2.67), screening of blood before being transfused ($\bar{x} = 2.71$; 2.87), getting tested for HIV/AIDS with partners before marriage ($\bar{x} = 2.61$; 2.82), discouraging the use of sharp objects like razor blades by more than one person for manicuring ($\bar{x} = 2.56$; 2.79), avoiding cultural practices such as female genital mutilation and tribal marking that will lead to blood letting ($\bar{x} = 2.53$; 2.40), organizing in-service training for field extension staff on HIV/AIDS ($\bar{x} = 2.51$; 2.43), sterilizing clippers and manicure kits before use and if possible having one's own ($\bar{x} = 2.48$; 2.69), incorporating HIV/AIDS programme in extension services ($\bar{x} = 2.46$; 2.22), awareness creation to change attitude and behaviour of the general populace through campaign against HIV/AIDS ($\bar{x} = 2.44$; 2.75) and introducing the issue of HIV/AIDS in secondary schools for proper understanding of the disease by the youths ($\bar{x} = 2.41$; 2.63).

Other strategies perceived by the extension professionals and the farmers as being effective include giving moral, financial and resources support by government, NGOs and other private sectors for prevention and care programmes ($\bar{x} = 2.36$; 2.49), inclusion of HIV/AIDS programme in all sectors of the economy at the national, state and local level ($\bar{x} = 2.36$; 2.19), establishment of health centres close to the farmers villages to cater for their health needs ($\bar{x} = 2.27$; 2.60); use of latex condom during sexual intercourse ($\bar{x} = 2.24$; 2.39), incorporating HIV/AIDS in the curriculum of agricultural colleges training institutions and universities ($\bar{x} = 2.20$; 2.22) and proper nutritional management to reduce diseases associated with HIV infection ($\bar{x} = 2.15$; 2.14).

In addition, the extension professionals further perceived formation of free counseling units in the villages ($\bar{x} = 2.24$), voluntary and confidential counseling and testing (VCCT) ($\bar{x} =$

Table 7: Means and standard deviations for extension professionals and farmers on perceived strategies to minimize the effects of HIV/AIDS on agricultural activities.

S. No.	Strategies	Extension professionals		Farmers	
		$\bar{x}$	S.D	$\bar{x}$	S.D
1	Sensitizing the extension professionals and the farmers on the effect of HIV/AIDS on agricultural activities though the use of mass media and other traditional mode of communication like town criers and talking drums	2.75*	0.43	2.88*	0.32
2	Organizing in-service training for field extension staff on HIV/AIDS	2.51*	0.56	2.43*	0.68
3	Incorporating HIV/AIDS programme in extension service	2.46*	0.53	2.22*	0.83
4	Discouraging the use of sharp objects like razor blades by more than one person	2.56*	0.56	2.79*	0.44
5	Establishment of health centres close to the farmers' villages to cater for their health needs	2.27*	0.61	2.60*	0.62
6	Blood should be screened before being transfused	2.71*	0.49	2.87*	0.34
7	Awareness creation and change in the attitude and behaviour of the general populace through campaign against HIV/AIDS	2.44*	0.56	2.75*	0.51
8	Get tested for HIV/AIDS with your partner before marriage	2.61*	0.49	2.82*	0.40
9	Abstinence from sexual intercourse with non regular partners	2.73*	0.44	2.67*	0.48
10	Use of latex condom during sexual intercourse	2.24*	0.65	2.39*	0.62
11	Introducing the issue of HIV/AIDS in secondary schools for proper understanding of the disease by the youth	2.41*	0.52	2.63*	0.55
12	Incorporating HIV/AIDS in the curricular of agricultural colleges, training institutions and universities	2.20*	0.58	2.22*	0.74
13	Being faithful to your spouse	2.77*	0.42	2.75*	0.49
14	Proper nutritional management to reduce diseases associated with HIV infection	2.15*	0.66	2.14*	0.75
15	Sterilizing clippers and manicure kits before use and if possible having your own	2.48*	0.56	2.69*	0.49
16	Giving moral, financial and resources support by government, NGOS for prevention and care programmes	2.36*	0.58	2.49*	0.58
17	Inclusion of HIV/AIDS programme in all sectors of the economy at the national, state and local level.	2.36*	0.60	2.19*	0.67
18	Avoiding cultural practices such as female genital mutilation and tribal marking that will lead to blood letting	2.53*	0.59	2.40*	0.68
19	Formation of free counseling units in the villages	2.24*	0.59	1.99	0.75
20	Early diagnosis and effective treatment of STIs	2.12*	0.67	1.79	0.76
21	Voluntary and confidential counseling and testing (VCCT)	2.14*	0.57	1.79	0.77

Note: Scale: 3 = very effective; 2 = effective; 1 = not effective. * Effective

2.14) and early diagnosis and effective treatment of STIs ($\bar{x}$ = 2.12) as strategies on how the spread of HIV/AIDS can be minimized in agricultural activities. However, farmers were of the view that formation of free counseling units in the villages ($\bar{x}$ = 1.99), voluntary and confidential counseling and testing (VCCT) ($\bar{x}$ = 1.79) and early diagnosis and effective treatment of STIs ($\bar{x}$ = 1.79) were not effective strategies in minimizing the spread of HIV/AIDS in agricultural activities.

Differences between Extension Professionals and Farmers on how to Minimize the Effects of HIV/AIDS on Agricultural Activities

The difference in the perception of extension professionals and farmers on how the spread of HIV/AIDS can be minimized was ascertained

using t-test statistics and presented in Table 8. The result shows that the mean responses of the extension professionals and farmers as regards strategies for minimizing the effect of HIV/AIDS in agricultural activities were significantly different for 12 of the 21 strategies. These include: sensitization programme through the use of mass media and other traditional modes of communication, incorporating HIV/AIDS programme in extension services, discouraging the use of sharp objects like razor blades by more than one person, establishment of health centres in the villages to cater for the health need of the people, screening of blood before transfusing, awareness creation and changes in the attitude and behaviour of the general populace through campaigns against HIV/AIDS, and being tested for HIV/AIDS with partner before marriage. Others that were also

Table 8: Result of test of difference between the responses of extension professionals and farmers on strategies to minimize the effects of HIV/AIDS on agricultural activities.

S. No.	Strategies	Extension professionals		Farmers		t-value
		Mean	SD	Mean	S.D	
1	Sensitizing the extension professionals and the farmers on the effect of HIV/AIDS on agricultural activities through the use of mass media and other traditional mode of communication like town criers and talking drums	2.75	0.43	2.88	0.32	2.39*
2	Organizing in-service training for field extension staff on HIV/AIDS	2.51	0.56	2.43	0.68	-0.77
3	Incorporating HIV/AIDS programme in extension service	2.46	0.53	2.22	0.83	-1.99*
4	Discouraging the use of sharp objects like razor blades by more than one person	2.56	0.56	2.79	0.44	3.09*
5	Establishment of health centres close to the farmers' villages to cater for their health needs	2.27	0.61	2.60	0.62	3.39*
6	Blood should be screened before being transfused	2.71	0.49	2.87	0.34	2.55*
7	Awareness creation and change in the attitude and behaviour of the general populace through campaign against HIV/AIDS	2.44	0.56	2.75	0.51	3.71*
8	Abstinance for HIV/AIDS with your partner before marriage	2.61	0.49	2.82	0.40	3.01*
9	Abstinance from sexual intercourses when not with your regular partner	2.73	0.44	2.67	0.48	-0.73
10	Use of latex condom during sexual intercourse	2.24	0.65	2.39	0.62	1.57
11	Introducing the issue of HIV/AIDS in secondary schools for proper understanding of the disease by the youths	2.41	0.52	2.63	0.55	2.60*
12	Incorporating HIV/AIDS in the curricular of agricultural colleges, training institutions and universities	2.20	0.58	2.22	0.74	0.10
13	Being faithful to one's spouse	2.77	0.42	2.75	0.49	-0.19
14	Proper nutritional management to reduce diseases associated with HIV infection	2.15	0.66	2.14	0.75	-0.10
15	Sterilizing clippers and manicure kits before use and if possible having your own	2.48	0.56	2.69	0.49	2.75*
16	Giving moral, financial and resources support by government, NGOS for prevention and care programme	2.36	0.58	2.49	0.58	1.54
17	Inclusion of HIV/AIDS programme in all sectors of the economy at the national, state and local level.	2.36	0.60	2.19	0.67	-1.59
18	Avoiding cultural practices such as female genital mutilation and tribal marking that will lead to blood letting	2.53	0.59	2.40	0.68	-1.22
19	Formation of free counseling units in the villages	2.24	0.59	1.99	0.75	-2.27*
20	Early diagnosis and effective treatment of STIs	2.12	0.67	1.79	0.76	-2.83*
21	Voluntary and confidential counseling and testing (VCCT)	2.14	0.57	1.79	0.77	-3.05*

Note: Scale: 3 = very effective; 2 = effective; 1 = not effective.

* P < 0.05; S.D = Standard Deviation

significantly different include: introduction of the issue of HIV/AIDS in secondary schools for proper understanding of the disease, sterilization of clippers and manicure kits before use, formation of free counseling units in the villages, early diagnosis and effective treatment of STIs and voluntary and confidential testing.

However, the remaining 8 strategies; organizing in-service training for field extension staff on HIV/AIDS, abstinence from sexual intercourse, use of latex condom during sexual intercourse, incorporating HIV/AIDS in the curriculum of agricultural colleges, training institutions and universities, being faithful to one's spouse, proper nutritional management to reduce diseases associated with HIV infections,

giving moral, financial and resources support by government, NGOs for prevention and care programme, inclusion of HIV/AIDS programme in all sectors of the economy at the national, state and local level and avoiding cultural practices such as female genital mutilation and tribal marking that lead to blood letting were not significantly different between respondent groups.

The result of this study presented in Table 9 also further revealed that, there was no significant different ($t = -0.251$, $P < 0.05$) between the total mean perception of extension professionals and farmers on how best the spread of HIV/AIDS on agricultural activities can be minimized. It then implies that the two categories of respondents hold the same opinion as regards these items.

Table 9: t-test of respondents' mean perceptions on strategies to minimize the effects of HIV/AIDS on agricultural activities.

	<i>t-test for equality of means</i>				
	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean differences</i>	<i>Std. Error difference</i>
Perceived strategies of minimizing the spread of HIV/AIDS on agricultural activities	-0.251	40	0.803	-0.0219	0.5715
					0.2091

* $P < 0.05$

Source: Field survey, January, 2006

The null hypothesis is therefore accepted (at $p < 0.05$).

CONCLUSION AND RECOMMENDATIONS

The study revealed that all (100%) the extension professionals had high knowledge of HIV/AIDS while about 71% and 29% of the farmers had high and moderate knowledge of HIV/AIDS respectively. The low knowledge level was recorded on symptoms associated with HIV infection. The respondents perceived the following effect of HIV/AIDS on agricultural activities: loss of labour as a result of sickness and death, reduction of farm income as a result of high cost of labour and also due to HIV/AIDS related illness which prolonged absence from farm work, reduction in yield/productivity in crops, reduction in the size of land under cultivation as a result of sickness and stigmatization of individuals suffering from the diseases. However, the best perceived strategies for curbing the spread of HIV/AIDS include sensitizing the extension professionals and farmers on the effect of HIV/AIDS on agricultural activities through the use of mass media and other traditional modes of communication (like town criers and talking drums) in the rural areas, awareness creation and avoiding cultural practices such as female genital mutilation and tribal marking that may lead to blood letting.

The findings further revealed that there was a significant difference ($t = -3.27$, $P < 0.05$) between the perception of extension professionals and farmers on the effect of HIV/AIDS on agricultural activities. However, there was no significant difference ($t = -0.251$, $P < 0.05$) between the perception of extension professionals and farmers on how best the spread of HIV/AIDS on agricultural activities can be minimized. The study therefore recommends that a comprehensive response to HIV/AIDS, treatment and prevention efforts should be accelerated simultaneously.

These prevention programmes must address the contexts in which both the extension professionals and farmers live their lives.

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