Journal of Integrated Sciences
Volume 4, Issue 4, September 2024
ISSN: 2806-4801

ACCESSIBILITY AND EFFECTS OF HIV AWARENESS PROGRAMS ON SMALLHOLDER AGROFORESTRY FARMERS' PRODUCTIVITY IN AKINYELE COMMUNITY, OYO STATE

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ABSTRACT

Human immunodeficiency virus, HIV could hamper the livelihood activities of any people irrespective of their economy and population. However, the creation of constant awareness could decimate its spread and negative effects on the health of active people. The study investigated the accessibility and effect of HIV programs on smallholder agroforestry farmers' productivity in the Akinyele community, Oyo State. A proportionate and random sampling procedure was used for the selection of 130 respondents. The test instrument used was a questionnaire with an interview session. Data were analyzed with descriptive and inferential statistics. The results showed 56.9% of respondents were male, 23.8% were in the age range of 31-40 years, 67.7% of respondents were married, about 70.0% had formal education and about 50.0% had household sizes of 1-5 persons respectively. In addition, about half the respondents (50.0%) had household size of 1-5 persons, and about 54.0% of the respondents practiced Islamic religion. Furthermore, the majority of farmers (94.6%) received awareness

Journal of Integrated Sciences
Volume 4, Issue 4, September 2024
ISSN: 2806-4801

information programs on HIV/AIDS through radio, 67.7% received awareness information programs on television, 56.0% of respondents received awareness information on HIV/AIDS programs from friends and neighbors while about 40.0% of the respondents received HIV/AIDS information from public lectures through religious organizations. The survey also, revealed that the majority of respondents had a high level of information reception from the awareness programs, and 83.1% of respondents had a high level of productivity implying that farmers' access to information on HIV/AIDS informed high productivity of farmers. The Chi square statistic showed no significant relationship between sex (χ^2 =1.54), age (χ^2 = 9.04), household size (χ^2 = 0.77), and other demographic characteristics and farmers' productivity. The extent of HIV/AIDS awareness information had a significant relationship with farmers' productivity (r = -0.36, p = 0.00). The study recommends that awareness programs and their sources of dissemination must be further strengthened and be made available to agroforestry farmers in the Akinyele community through extension agents with adequate result-oriented approaches of extension teaching methods and demonstrations, and health communications from health-extension workers.

Keywords: *Information sources, HIV programs, Awareness, Livelihood means, Productivity.*

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1. INTRODUCTION

The human immunodeficiency virus, HIV is the origin of the disease called Acquired Immune Deficiency Syndrome (AIDS) according to Cleveland Clinic (2021). In the initial stage of the infection, the carrier experiences influenza without symptoms (WHO, 2001). In addition to the flu were the opportunistic sickness pneumonia, tuberculosis, and candidiasis, which appear as a result of the weakened immune systems of the carrier (Chu and Selwyn, 2011). Also, the prolonged fever, sweats, general body deficiency, and continuous dysentery of the carrier of the disease (Saurabh *et al*., 2017). Between 1981 and 2012, AIDS has been estimated with 36 million deaths and 35.3 million people living with HIV across the globe (UNAIDS, 2008). Presently, its spread has a tremendous effect with attendant stigmatization (Sharp and Hahn, 2011). As reported by Akinsete (2001), there is a poor awareness campaign at the national and individual level, with a low level of perception of risk factors among men and youth driving the pandemic in Nigeria. Some other factors that also contribute to the disease among Nigerian people include the early age of first sexual intercourse, poverty, inferiority complex among women, long-distance travelers especially truck drivers, migrant laborers, and poor access to awareness programs. The HIV pandemic is not within the cities alone, but also spreading among the rural population, thereby affecting their means of livelihood (Harvey, 2003). In most rural settings of Nigeria, the rate of spread is more predominant especially with most people living with HIV/AIDS (Oono *et al*., 2015). However, the impact has further led to a loss of assets, farmlands, cash savings, increased number of dependents (Drimie, 2002). Several studies have

focused on the prevalence of HIV infection among vulnerable health practitioners, children, pregnant women, and adolescent mothers (Toska *et al*., 2020). However, misconceptions and inadequate awareness information programs to the people also influence the spread of HIV infection (Alhasawi *et al*., 2019). Despite past studies conducted on HIV/AIDS, it is still spreading and affecting the livelihood activities of many people. Hence, a necessity to understudy the accessibility and how programs on HIV affect smallholder agroforestry farmers' productivity. Therefore, the study aimed to examine the demographic characteristics of respondents; identify information sources on HIV/AIDS; examine awareness information programs available to the respondents; assess the reception of awareness information programs among the respondents; and assess the productivity of the respondents. Also, the following hypotheses were tested as no significant relationship exists between demographic characteristics of respondents and productivity of respondents; and no significant correlation exists between the extent of HIV awareness Information and productivity.

2. REVIEW OF LITERATURE

2.1 Categories and Classification of Drugs That Are Usually Abused by Some Youths and Adolescents

The effect of HIV/AIDS on the African continent clearly indicates the highest prevalence rate of the pandemic when it is compared to other continents of the world on the basis of the UNAIDS *Report on the Global HIV/AIDS Epidemic* (2000). Most countries across the globe were drawing attention to the profound effect of the pandemic on the African continent.

Attention was drawn to countries that were most hit with the pandemic and as clearly articulated in the global context are predominantly African. This continent could afford direct and indirect costs in connection with the disease which is characterized by a lack of education, poverty, inadequate housing, health care, and nutrition. According to Schonteich (2001), about 16 countries were put together in Sub-Saharan Africa with more than one-tenth of the adult population aged between 15 and 49 years infected with HIV. In the ranking of countries based on the prevalence of HIV report, it showed that the eight highest rates of infection are in the Southern African region with South Africa and Lesotho carrying the major burden of HIV/AIDS, and also in the world while Nigeria currently ranked 4th in the world with regards to HIV burden (UNAIDS, 2020).

The great majority of the population in the countries mostly affected by HIV/AIDS live in rural areas, and in many African countries, farming and other rural occupations provide a livelihood for more than 70 percent of the population (UNDESA, n.d). The implication of this UNDESA data shows that it is expected that the HIV/AIDS epidemic could propel serious damage to the agriculture sector in African countries, especially in countries that rely heavily on manpower for production. In sub-Saharan African agricultural households, the family provides the majority of support and care for the PLWA (Mukiza-Gapere, 1995). During the AIDS patient's sickness, most of the health care is done by women, including wives, mothers, sisters, daughters, aunts, and grandmothers (Lado, 1992). In most countries in the world, caring for the sick is considered to be a woman's task, while grandparents also

traditionally accept the responsibility of caring for their grandchildren (Williams, 2003). Parker et al. (2009) further corroborated that caretaking responsibilities fall most heavily on women and girls, and revealed that quantitative estimates indicate that these responsibilities can absorb the majority of the caretaker's time as the illness progresses, representing a substantial loss of labor for the household. They also concur that household and agricultural labor is also lost due to the PLWA's lowered ability to work.

Agricultural production requires high inputs of physical labor and technical skills. HIV/AIDS mostly affects young adults, usually the most active and productive group in society, and this greatly affects the availability, quality, and human capital of the agricultural labor force (Drimie, 2003; Donovan & Bailey, 2005). Beyond changes in cropping patterns, reductions in household labor and resources can be expected to lead to reductions in agricultural cultivation and output. With less labor, household farms may be reduced to a more manageable size or left to f allow (Agboh-Noameshie *et al*., 2007). In other cases, the time demands of caring for the PLWA may lead to delays or to skipping of weeding, tillage, or planting, further reducing agricultural productivity (Bishop-Sambrook, 2004; UNAIDS, 2000). The death of an adult male head of household is particularly associated with declines in cultivated area since adult males are generally responsible for land clearing and cultivation (Onyango, *et al*., 2005). Beegle (2005), citing reductions in the production of food crops (maize, cassava, and beans), makes the important point that reductions in agricultural output may be expected following a death, since household nutrition and subsistence needs have fallen. Jayne

(20060 reported reductions in agricultural output and land productivity, especially following the death of a male head of household and other poorer households. As reported by Parker *et al*. (2009) some residents in rural areas intensified strategies that often include switches to higher-valued market outputs, such as vanilla, aloe-vera, and poultry production. They reported that cropping changes seemed to depend on the household resources of residents with sufficient labor and financial capital which corroborates the past studies.

2.2 Effect of HIV on Farmers' Productivity in Nigeria

HIV has affected many people their families, and the community as a whole. The effect of the pandemic is shown when members of a household are discovered with HIV status and it becomes exacerbated when he or she develops HIV-related illnesses. Stigmatization frequently sets in when an individual person is discovered to be HIV-positive. Therefore, persons living with HIV/AIDS were usually forced out of employment and alienated from rural communities due to discrimination and aggression (Brookings, 2016; Jelilov *et al*., 2020). Farmers who are ill due to the attendant effects of HIV, find it hard to engage in farm activities. Furthermore, due to the depreciating effect of HIV, live savings of farmers meant to buy farm inputs, equipment, or hire tractors and laborers were diverted to health treatment, thereby resulting in low output (Fanello and Baker, 2010; Kughur *et al*., 2015). One of the causes of disruptions in production is an illness that may divert labor away from the farm to treat an ill-health condition of a sick person, or gulp finances which could be used to employ labor. Healthcare spending may influence impoverished

households' adoption of technologies and utilization of inputs, lowering total productivity. AIDS is one of the diseases with a significant effect on productivity which has reduced production, particularly in Africa (Asenso-okyere *et al*., 2018). The HIV epidemic has significantly reduced the size of food production, decreased labor supply for food and livestock production, and shifted the production of food crops to non-farm activities among HIV-affected households, as well as discouraged knowledge of farming methods. Moreover, despite attempts by government and non-government organizations on reducing the spread of HIV/AIDS in Nigeria, the pandemic is still on the rise, particularly among average rural Nigerians who are unaware of HIV transmission.

As reported by UNDESA (n.d) HIV/AIDS can affect agriculture in many ways, such as absenteeism caused by HIV-related illnesses and the loss of labor from AIDS-related deaths may lead to the reduction of the area of land under cultivation and to declining yields resulting in reduced food production and food in- security; loss of labor may also lead to de- clines in crop variety and to changes in cropping systems, particularly a change from more labor-intensive systems to less intensive systems. Livestock production may become less intensive, and weeding and pruning may be curtailed. A shift away from labor-intensive crops may result in a less varied and less nutritious diet; a reduction in labor supply through the loss of workers to HIV/AIDS at crucial periods of planting and harvesting could significantly reduce the size of the harvest, affecting food production; loss of knowledge about traditional farming methods and loss of assets will occur as members of rural households are struck by the disease and are not able to pass

on their know-how to sub- sequent generations; and loss or reduction of remittances is likely to occur in areas where agricultural workers send money home while working abroad. When the workers become sick, they can no longer earn money to send home.

2.3 Awareness of HIV/AIDS to the Rural People

The HIV/AIDS pandemic has a resultant effect on the health care of many people with serious economic challenges all over the world. The recognition of this pandemic has brought about an attempt to tackle its increase by the National AIDS and Sexually Transmitted Disease Control Programme (NASCP) established in 1988. Congruently, NARHS (2005) opined that government should support NASCP by setting up an implementation council called National Action Committee on AIDs (NACA) and Presidential Committee on AIDs (PCA) in 2001. The establishment of NACA gave birth to State owned Committee on AIDs which was meant to control the spread at the state and grass-root levels as well as create awareness through adequate public enlightenment campaigns. Consequently, there was a need for counseling among farmers to enhance voluntary testing, in addition to inducing optimum adjustment to the realities of life. Hence, counseling is the wheel upon which the campaign revolves. Furthermore, apart from the use of counselors, the utilization of information and communication gadgets is germane, and radio stands as one of the greatest information sources for passing awareness and enlightenment programs to users. This corroborates Udoma (2002) who reported that awareness creation is projected through information sources such as radio and television have

the highest means of information dissemination. According to the submission of Zamawe *et al*. (2016), the use of mass media is germane for the dissemination of public health information and in changing health behaviors. Therefore, dissemination could reach many people in Nigeria, especially the population in rural communities, when importance and value are attached to the wide usage of mass media.

In Western China, many citizens have an HIV awareness rate (the rate of knowing of the existence of HIV) of 80.9%, which represents the majority of the population in the studied region as reported by Zhang *et al*. (2019). They reported that subgroup analysis was applied to regional factors, socio-demographic factors, and access to health knowledge. In addition, three regional factors, regional rural residents' economic status, regional ethnic composition, and regional HIV prevalence were constructed, respectively, by province-level per capita annual net income of rural households, proportion of minority population, and cumulative cases of HIV/AIDS.

Further, In Imo state, Nigeria a study was conducted in a rural community among 434 women and 734 girls surveyed to express their awareness about HIV/AIDS. The percentages of awareness of AIDS by sources among the respondents showed that thirty-five percent (35%) of the women reported that they had heard of AIDS from the radio, 24.1% from television, and 17.8% from friends and relatives (Nwagwu, 2008). In contrast, 55%, 44.2%, and 23% of the girls have heard of AIDS from television, radio, and friends and relatives. This result shows clearly that, although radio, television, and friends and relatives constitute a great source of information about AIDS to the

people, each of these sources serves the various groups differently although they live in the same community (Nwagwu, 2008). With respect to the effectiveness of the sources, she further reported that friends or relatives emerged as the most effective source of AIDS awareness for women. For 29% of the women, friends or relatives were the only source of information about AIDS. The second most effective source for the women was community meetings, these being the only source of information about AIDS for more than 26% of the women. Television was the third most effective source of AIDS awareness for rural women, with 20% of the women having heard about AIDS from television only. For the girls, the situation is a little bit different. The most effective source was the television with more than 28% of them reporting having heard of AIDS from this source alone. The second and third most effective sources for the girls were friends and relatives and radio with (17%) and (14.4%) of the girls having heard of AIDS from these two sources, respectively. The study showed clearly that evidence of availability and even actual use of information sources about HIV/AIDS are not sufficient to understand the level of awareness that the targeted audiences are receiving from the information sources. Each of the information sources accounts for different degrees of awareness and consciousness about the pandemic. Overall, there is evidence that HIV/AIDS awareness is still high among the respondents, with all the respondents' expressing awareness about the existence of the disease.

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Volume 4, Issue 4, September 2024
ISSN: 2806-4801

3. RESEARCH METHODOLOGY

3.1 Study Area

The Akinyele community of Oyo State was chosen as the study site. It was named after the Local Government Area Headquarters. The LGA is a rural setting that occupies a land area of 464.892Km^2. It is located on the map with geographical coordinates of 7 ˚31′ 42′′North and 3 ˚54′ 43′′East. The LGA comprises twelve (12) wards with a population of 302,700 people[1]. It is a tropical climate in nature with a lengthy rainy season and constant temperature throughout the year. The wider land area of the LGA is covered by rainforest broadly dominated by palm trees and plantain. The available crops in the LGA are maize, cassava, yam, and vegetables among others.

3.2 Sampling Procedure and Data Collection

The selected population for the study was smallholder farmers in Agroforestry practices. Proportionate and random sampling procedures were used for the study. Akinyele LGA consists of 12 wards from which 30% of the wards were selected resulting in 4 wards namely; Arulogun, Moniya, Ojoo, and Alabata. The sample size was selected from these selected four wards and communities with a random selection of 130 farmers in Agroforestry practices. A well-structured questionnaire with an interview section was used for the collection of information from the respondents. Data were analyzed with frequencies, and simple percentages.

[1] https://www.citypopulation.de>oyo

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Volume 4, Issue 4, September 2024
ISSN: 2806-4801

3.3 Analytical Tools

Chi-square and Pearson product moment correlation were used to test the hypotheses.

1. Chi-square

$$\chi^2 = \Sigma\left[\frac{(f_o - f_e)^2}{f_e}\right] \quad \text{..... (i)}$$

Where:

χ^2 = Chi-Square.

Σ = Sum total.

f_O = Number of observed variables such as sex, religion, marital status; that is the socio-economic variables and other qualitative parameters.

f_e = expected number of occurrences.

2. Pearson Product Moment Correlation, PPMC

$$r = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{(n\sum X)^2 - (\sum X^2)(n\sum Y^2) - (n\sum Y)^2}} \quad \text{..... (ii)}$$

Where;

r = Correlation coefficient.

n = Sample size.

$\sum$ = Summation.

X = Information Sources on HIV/AIDS, the awareness information programs available to the respondents, HIV/AIDS Programs to respondents.

Y =Productivity of Smallholder Agroforestry Farmers.

4. RESULTS AND DISCUSSION

4.1 Demographic Characteristics of Respondents in the Study Area

The results in Table 1 revealed that 57.0% of respondents were male. This implies that male farmers were more predominant than their female counterparts. About 24.0% of respondents were in the age bracket of 31and 40 years. The result implies that middle-aged respondents were productive farmers. This result corroborates Adiel (2004) who reposed that the active aged group formed the majority who participated in agricultural production. About 68.0% of respondents were engaged in marital relationships. They indicated that married people are responsible and more engaged in agricultural activities. This finding corroborated with Gebre *et al*. (2021) who reposed that married people engaged more in agricultural practices. Also, about 70.0% of respondents were having formal education. This negates Yerdaw (2002) who submitted that most rural people who engage in farming work are illiterate. Furthermore, about half the respondents (50.0%) had household size of 1-5 persons. This result corroborates Azuonwu *et al.* (2024) who reported that about 57.5% of residents with HIV infection and risk factors had a household size of 1-4 persons in Port Harcourt, Rivers State, Nigeria. In addition, about 54.0% of the respondents signified practicing of Islam as a religion. This concurs with Amoko *et al.* (2023) who submitted that the majority of people living with HIV/AIDS in Northwestern Nigeria were practicing Islam as a religion.

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Table 1. Demographic Characteristics of Respondents in the Study Area

Demographic Parameters	Frequencies	Percentages
Gender		
Male	74	56.9
Female	56	43.1
Age in years		
≤21	11	8.5
21- 30	23	17.7
31- 40	31	23.3
41-50	10	7.7
51-60	20	15.4
61-70	22	16.9
≥71	13	10.0
Marital Status		
Single	26	20.0
Married	88	67.7
Widow (er)	16	12.3
Education		
No formal	39	30.0
Primary	32	24.7
Secondary	18	13.8
Post-Secondary	28	21.5
Adult school	13	10.0
Religion		
Christianity	45	34.7
Islam	70	53.8

Traditional worship	15	11.5
Household size		
1-5	65	50.0
6-10	42	32.3
≥ 10	23	17.7

Note: Multiple responses

4.2 Sources of Information on HIV/AIDS among Respondents

The results from Table 2 showed most respondents (94.6%) received awareness information programs on HIV/AIDS through radio. It indicated that most farmers in the community have a radio in their possession as their major source of receiving information. This finding agrees with the assertion of the Department of International Development, DFID (2015) that radio is a powerful communication tool of the 21st century. Furthermore, 67.7% received awareness information programs on television. This result concurs with Nwachukwu and Odoemelam (2004) who submitted that television viewing has a wide coverage among its users in developing countries. In addition, about 56.0% of respondents received awareness information on HIV/AIDS programs from friends and neighbours whereas about 60.0% of the respondents failed to receive HIV/AIDS information from religious organizations like churches or mosques. This finding negated the assertion of Nwafor-orizu (2003) that communications from religious institutions, friends/neighbors, and oral communications from radio, television, bulletins, and handbills help in the dissemination of information which eliminates ignorance and superstitious beliefs. The findings indicated that radio,

television, friends, and neighbors were sources of information on HIV/AIDS awareness programs with a high level of information passage to the respondents.

Table 2. Sources of Information on HIV/AIDS

Parameters	Yes		No	
	F	%	F	%
Radio	123	(94.6)	7	(5.4)
Television	88	(67.7)	42	(32.3)
Friends/ Neighbor	72	(55.4)	58	(44.6)
Extension agents	52	(40.0)	78	(60.0)
Posters/Handbills/Billboards	57	(43.8)	73	(56.2)
Mosque/Church	52	(40.0)	78	(60.0)
Seminar/Symposium/Worksh ops	38	(29.2)	92	(70.8)
Newspapers	57	(43.8)	73	(56.2)

Note: F = Frequencies, % = Percentage in parentheses (Multiple responses)

4.3 Awareness information programs

Table 3 showed the majority of the respondents (90.7%) had access to HIV/AIDS awareness information programs on local radio broadcasts tagged “Abule Olokemerin” Village, Jingles on “Use of Condom” (75.4%); “One thing at a time” (36.9%), “Future dreams” (33.8%). The result implies accessibility of respondents to awareness information programs on the radio was influenced by their educational status. The respondents had access to the information broadcast in Pidgin/Yoruba language than those in English/Pidgin. This finding concurs with Kuponiyi (2000) who submitted that education is a veritable means that enforces communication among the users of radio programs. The Table further showed that most respondents

(60.8%) had access to HIV/AIDS awareness information programs on television; "Zip UP short drama on HIV/AIDS prevention", "Simulation on Use of Condom for prevention of HIV/AIDS" (71.5%). The result implies that HIV/AIDS awareness information programs available to the respondents could have been a result of pictures combined with sound transmission on television. This finding agrees with the contribution of Obono (2009) that television serves as a medium with appealing messages to the viewers. Also, the Table showed that most respondents (71.5%) had no access to HIV/AIDS awareness information programs such as pamphlets, handbills, posters/billboards; "NACA says Sex without Protection is Dangerous, Use Condom", "Zip Up handbills/billboards" (82.3%). The findings indicate that the majority of the respondents were literate to the extent they could either read or write to access information on pamphlets, handbills, posters/billboards. This finding is in line with the works of Yahaya (2002) and Tologbonse (2006) that bulletins, newspapers, and handbills were not considered germane sources by which agricultural information is made available to the rural farmers in Nigeria. Moreover, the table shows that HIV/AIDS awareness information programs through seminars/symposiums were not available to the respondents. This corroborates Nwaopara *et al*. (2019) who reported that most respondents were dissatisfied with interventions in the community settings of Ekpoma, Edo State, Nigeria. HIV/AIDS talks are organized in churches and mosques (63.8%) while HIV/AIDS talks are in town hall meetings by health experts (59.2%). The result indicated that most respondents had a high level of awareness of HIV/AIDS awareness programs through

radio and television. This concurs with Ruma (2009) that television, radio, and public lectures were the main sources of awareness among residents of Katsina State, Nigeria.

Table 3. Awareness Information Programs

Parameters	Yes		No	
	F	%	F	%
ON RADIO				
English/Pidgin program tagged "One thing at a time"	48	(36.9)	82	(63.1)
English program tagged "Future dreams	44	(33.8)	86	(66.2)
Local Yoruba program tagged "Abule Olokemerin"	118	(90.7)	12	(9.3)
Pidgin/Yoruba jingles on Use of Condom	98	(75.4)	32	(24.6)
Pidgin/Yoruba-HIV Jingles with PLWHAs narrating their experiences	91	(70.0)	39	(30.0)
English/Pidgin program tagged "Flavour: A Radio Drama"	59	(45.4)	71	(54.6)
ON TELEVISION				
Short Drama on HIV/AIDS Prevention tagged "Zip-Up"	79	(60.8)	51	(39.2)
Adverts on "Say No to HIV/AIDS"	67	(51.5)	63	(48.5)
Stage Drama Simulation on the Use of Condom for HIV Prevention	93	(71.5)	37	(28.5)
ON POSTERS / HANDBILLS / BILLBOARDS				
NACA Says Sex without Protection is Dangerous	37	(28.5)	93	(71.5)
Zip-Up	23	(17.7)	107	(82.3)

ABC of AIDS: "Abstinence, Be Faithful..., Condom Use..."	39	(30.0)	91	(70.0)
ORGANISED SEMINARS / SYMPOSIUMS				
HIV/AIDS Talk Shows Organised in Churches and Mosques	47	(36.2)	83	(63.8)
Town-hall Meetings by Health Experts on HIV/AIDS Prevention	53	(40.8)	77	(59.2)

Note: F = Frequencies, % = Percentage in parentheses

4.4 Extent of HIV/AIDS Information Reception

Results in Table 4 revealed that most respondents (81.5%) always receive information through radio while about 43.8% of them signify HIV/AIDS information reception through television. It implies that radio is the most frequently listened to source of HIV/AIDS information due to its ability to get hold of the listeners' attention without pictures. This is closely followed by the use of television among the respondents due to the level of their income. The result corroborates Obono (2009) who stated that radio conveys public health messages to a greater audience whereas television serves as a medium with appealing messages to the viewers. The implication is that the extent to which respondents receive information through radio and television is very high compared to other sources. This showed the extent of information reception influences the use of HIV/AIDS tips from awareness programs. Table 4.1 revealed that 84.6% of respondents had a high level of information reception from the awareness programs. This indicated that many of the respondents received the awareness programs from either radio or television and other sources.

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ISSN: 2806-4801

Table 4. Extent of HIV/AIDS Awareness Information Reception among Respondents

Parameters	Always	Occasionally	Rarely	Never
Radio	106 (81.5)	13 (10.0)	4 (3.1)	7 (5.4)
Television	57 (43.8)	18 (13.8)	13 (10.0)	42 (32.3)
Newspapers	32 (24.6)	18 (13.8)	7 (5.4)	73 (56.2)
Friends/Neighbors	29 (22.3)	32 (24.6)	11 (8.5)	17 (8.5)
Extension workers	13 (10.0)	22 (16.9)	17 (13.1)	78 (60.0)
Seminars/Symposium	12 (9.2)	18 (13.8)	8 (6.2)	92 (70.8)
Posters/Billboards	30 (23.1)	17 (13.1)	10 (7.7)	73 (56.2)
Church/Mosque	39 (30.0)	27 (20.8)	15 (11.5)	49 (37.7)

Note: Percentage in parentheses

Table 5. Level of Information Reception among Respondents

Level	**Frequencies**	**Percentages**
Low	20	15.4
High	110	84.6

4.5 Level of Respondents' Productivity

Table 6 revealed that 60.0% of respondents worked 4-7 hours daily on the farm. This result corroborates Adeoye (2014) who stated that about 60.0% of farmers in the rural areas work on the farm for 4-6 hours per day. Also, about 43.0% of the

respondents cultivated 1-2 acres of land. This finding concurs with Yusuf *et al*. (2010) who stated that an average of 1 acre of land was cultivated among farmers. It also showed that about 43.0% of farmers had 1,100 to 1,500kg yield per acre. The indication from the findings was that about 43.0% of respondents were productive. This implies some of the smallholder farmers had access to information on HIV/AIDS which enhanced the use of preventive measures leading to a healthy lifestyle and resulting in high productivity. This is supported by Table 5.1 which revealed 83.1% of respondents had a high level of productivity. This indicated that farmers' access to information on HIV/AIDS informed high productivity of farmers in the study area. Abu & Kotur (2022) supported these findings that information accessed from infected farmers with HIV revealed a relatively significant and positive productivity among them in the rural areas of Benue State, Nigeria.

Table 6. Respondents' Productivity

Productivity	Frequencies	Percentages
Daily Man-hours		
1-3	28	21.5
4-7	78	60.0
8-10	19	14.6
>10	5	3.9
Number of acres		
1-2	56	43.1
3-4	54	41.5
5-6	14	10.8
>6	6	4.6
Kilogram per acre		

< 1,000	29	22.3
1,100-1,500	56	43.1
1,600-2,000	33	25.4
>2,100	12	9.2
Annual Income (₦)		
< 120,000	55	42.3
121,000-125,000	25	19.2
126,000-130,000	45	34.6
>130,000	5	3.9

Table 7. Level of Productivity of Respondents

Productivity Level	Frequencies	Percentages
Low	22	16.9
High	108	83.1

4.6 Hypotheses Testing

Table 8 showed that sex (χ^2 =1.54), age (χ^2 = 9.04), household size (χ^2 = 0.77), and other demographic characteristics were not significant in respondents' productivity. This result indicated that sex, age, and other personal characteristics do not influence the productivity of the smallholder farmers. These results contradict Anyiro et al. (2013) who reported that agro-productivity was significantly related to education, household size, and sex of smallholder farmers. However, the result corroborates Onogwu *et al.* (2017) who submitted that there was no significant relationship between farmers' productivity and age, religion, and sex (gender).

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Table 8. Relationship between Respondents' Demographic Characteristics and Their Productivity

Variables	χ^2	p-value	Decision
Sex	1.54	0.22	Not significant
Age	9.04	0.17	Not significant
Marital status	0.75	0.69	Not significant
Education	2.52	0.64	Not significant
Household size	0.77	0.68	Not significant
Religion	2.01	0.37	Not significant

Note: χ^2 = Chi square; p-value is the level of significance @ $\alpha_{0.05}$

Table 9 revealed there was a significant relationship between the extent of HIV/AIDS awareness information and farmers' productivity (r = -0.364, p = 0.00). This implies that the extent of HIV/AIDS awareness information could positively influence and contribute to farmers' productivity. It therefore indicated that the higher the extent of HIV/AIDS awareness information, the higher the productivity of smallholder Agroforestry farmers. This further showcases that the more the agroforestry farmers have access to information on the negative effects of being infected with HIV, the more they painstakingly adopt all forms of protection against the disease and the higher their productivity. This corroborates UNDESA (n.d) which submitted that low productivity would occur when there is a loss of assets due to a lack of information and knowledge of HIV as many farmers become devastated by the disease and not able to engage in their farming activities.

Table 9. Relationship between the Extent of Awareness Information of HIV/AIDS and Farmers' Productivity

Parameters	Correlation coefficient	p-value	Decision
Awareness Information Extent against Farmers' Productivity	-0.36	0.00	Significant

Note: p-value is the level of significance @ $\alpha_{0.05}$

5. CONCLUSION

The study concludes that the majority of smallholder agroforestry farmers were male, followed by about 24.0% of them having an age range of 30 years to 40 years. In addition, the majority of residents (70.0%) had formal education with a household size of 1 to 5 persons. Further, HIV/AIDS awareness information programs were mostly available and accessible to smallholder agroforestry farmers through radio and television. By implication, most smallholder Agroforestry farmers had high reception of HIV/AIDS awareness information which contributed to their high level of productivity. Finally, to further improve and enhance the productivity of the rural farmers in the Akinyele community, the study recommends that extension agents must be saddled with the responsibility of educating the farmers on family health and nutrition through communication materials such as print media/flip charts and social media outlets, and farmers should be encouraged to enroll in adult education classes for easy access to health information relevant for a good living condition and strengthening of persons living with HIV/AIDS (PLWHA) with method and result in demonstration-oriented approaches through health-extension and community development officers.

REFERENCES

Abu, G.A. & Kotur, L.N. (2022). Impact of HIV/AIDS on farmers' productivity in Nigeria: Evidence from Benue State, Nigeria. Direct Res. J. Agric. Food Sci. 10 (8): 185-192 August 2022. https://doi.org/10.26765/DRJAFS20551591

Adeoye, A.S. (2014). Farmers' Knowledge of Jatropha Cultivation as a Potential Renewable Crop for Sustainable Environment in Oyo State, Nigeria. An Unpublished Master's Thesis, University of Ibadan, Nigeria. 2014; 118pp

Adiel, R.K. (2004). Assessment of Factors Affecting Adoption of Soil Fertility Improvement Technologies in Eastern Kenya: The Case Study of Kirege Location, Chuka Division. Master Thesis, Kenyatta University (Unpublished). 2004; 121pp

Agboh-Noameshie, R.; Coulibaly, O.; Gbaguidi, B.; Allomasso, R.; Kormawa, A.; Adeoti, R.; Kormawa, P.; Adetonah, S. (2007). Impact of HIV/AIDS on Rural Livelihood in West Africa: An Explorative Study in Benin and Ghana (SWIHA); Systemwide Initiative on HIV/AIDS and Agriculture (SWIHA): Cotonou, Benin, 2007.

Akinsete, I. (2001). Breaking the Silence of HIV/AIDS. Nigerian Tribune Tuesday September 4, 2001, Ibadan. The Nigerian Tribune Publishing Limited. 2001; p27

Alhasawi, A., Grower, S.B., Sadek, A., Ashoor, I., Alkhabbaz, I. and Almasri, S. (2019). Assessing HIV/AIDS knowledge,

awareness and attitudes among senior high school students in Kuwait. *Med. Princ. Pract*. 2019; 28 (5): 470-476. Available at https://doi.org/10.1159/000500307

Amoko, A., MacLeod, E.T. & Dr Koforade, A.Y. (2023). Common facts and fictions about HIV transmission, prevention and treatment among PLWHA attending a tertiary healthcare centre in Northwestern Nigeria. *Res. J. Health Sci.* 11 (4): 317-326 December, 2023 http://dx.doi.org/10.4314/rejhs.v11i4.4

Anyiro, C.O., Emerole, C.O., Osondu, C.K., Udah, S.C. & Ugorji, S.E. (2013). Labour-use efficiency by smallholder yam farmers in Abia State, Nigeria: A labour-use efficiency requirement frontier approach. *Int. J. Food Agric. Econ.* 1 (1): 151-163 https://www.foodanagriculturejournal.com>...

Asenso-Okyere, K., Aragon, C., Thangata, p., Kwaw Andam, K. and Daniel Ayalew Mekonnen, D. A. (2018). HIV and AIDS and farm labor productivity: A review of recent evidence in Africa. *International Journal of Medical Sociology and Anthropology*, 9(2):1-10.

Azuonwu, O., Dimkpa, F.B. & Ben-Chioma, A. (2024). HIV infection associated risk factors among female sex workers in Port Harcourt, Niger-Delta, Nigeria. *J. Microbio. Exp.* 12 (2): 53-61 https://10.15406/jmen.2024.12.00416

Beegle, K. (2005). Labor effects of adult mortality in Tanzanian households. Econ. Dev. Cultural Change 2005, 53, 655-683. https://acfh.ng.org

Bishop-Sambrook, C. (2004). Addressing HIV/AIDS through Agriculture and Natural Resource Sectors: A Guide for Extension Workers; FAO: Rome, Italy, 2004. https://www.researchgate.net

Brookings (2016). https://www.brookings.edu/wp-content/uploads/2016/06/cr09.pdf

Cleveland Clinic (2021). HIV/AIDS: Symptoms, causes, test and prevention. 9500 Euclid Avenue, Cleveland, Ohio 44195 2021; Available at https://my.clevelandclinic.org>health

Chu, C. and Selwyn, P.A. (2011). Complications of HIV/AIDS Infection: A System-based Approach. *American Family Physicians*. 2011; 83 (4): 395-406

Department for International Department, DFID. Radio: One of the most powerful communication tools of the 21st century. Myriad Global Media. 2015; Available at http://www.myriadglobalmedia.com>...

Drimie, S. (2002). The impact of HIV/AIDS on rural households and land issues in Southern and Eastern Africa. A background paper prepared for Food and Agriculture Organization, Sub-Regional Office for Southern and Eastern Africa. 2002; 31pp. Available at http://www.fao.org>...

Drimie, S. (2003). HIV/AIDS and land: case studies from Kenya, Lesotho and South Africa. Dev. South Afr. 2003, 20, 647-658. https://www.researchgate.net

Donovan, C.; Bailey, L. (2005). Understanding Rwandan Agricultural Households' Strategies to Deal with Prime Age Illness and Death: A Propensity Score Matching Approach. Presented at the International Conference on HIV/AIDS and Food and Nutrition Security, Durban, South Africa, April 2005. https://ebrary.ifpri.org

Fanello, B. T. And Barkar L. F. (2010). Transmission of Serum Hepatitis. *Journal of the American Medical Association.* 276 (10).

Gebre, G.G., Isoda, H., Rahut, D.B., Amekawa, Y. and Nohura, H. (2021). Gender differences in Agricultural productivity: evidence from maize farm households in Southern Ethiopia. Geo. Journal 2021; 86: 843-864. Available at https://doi.org/10.1007/s10708

Harvey, P. (2003). HIV/AIDS: What are the implications for humanitarian action? A Literature Review. Humanitarian Policy Group, Overseas Development Institute. 2003; 72pp. Available at https://www.unhcr.org>...

Jayne, T.S. (2006). Community-level impacts of AIDS-related mortality: panel survey evidence from Zambia. Rev. Agric. Econ. 2006, 28, 440-457.

Jelilov, G., Sike, E., Celik, B. and Akyuz, M. (2020). The Impact of HIV/AIDS on Rural Farmers' Productivity in Abuja. *J. Res. Med. Dent. Sci.*, 2020, 8 (4):94-98.

Kughur, P. G., Daudu, S. and Yaikyur, I. V. (2015). Effects of Selected Diseases on Farmers in Agricultural Production in Ukum Local Government Area of Benue State, Nigeria.

IOSR Journal of Humanities and Social Science (IOSR-JHSS), 20(7):59-62

Kuponiyi, F.A. (2000). Mass Media in Agricultural Development: The Use of Radio by Farmers of Akinyele Local Government Area of Oyo State, Nigeria. *Nigeria Agricultural Development Studies*. 2000; 1 (1): 1-7

Lado, C. Female labour participation in agricultural production and the implications for nutrition and health in rural Africa. Soc. Sci. Med. 1992, 34, 789-807.

Mukiza-Gapere, J.; Ntozi, J.P.M. (1995). Impact of AIDS on the family and mortality in Uganda. *Health Transit Rev.* 1995, *5*, 191-200. https://www.scirp.org

NARHS (2005). National HIV/AIDS and Reproductive Health Survey (NARHS): Nigeria 2005. https://search.worldcat.org>oclc

Nwachukwu, I. and Odoemelam, I.C. (2004). Effectiveness of Television Farm Broadcast in Transfer of Technology to Farmers in Abia State. A Paper Presented at the 9th Annual Conference of AESON, Ile-Ife, Nigeria. 2004; p3

Nwafor-orizu, U.E. (2003). Do Something about HIV/AIDS Now. New Horizon Volunteers on AIDS. (HOVA). 2003.

Nwagwu, W.E. (2008). Effectiveness of sources of HIV/AIDS awareness in a rural community in Imo State, Nigeria. *Health Info. Lib. J.* 25 (1): 38-45 https://doi.org/10.1111/j.1471-1842

Obono, K. and Obono, O. (2009). Effect of Home Video on Sexuality Aspirations of Secondary Schools Students in Ibadan. *Journal of Communication and Media Research*. 2009.

Oono, I.P., Ong, E., Shahaduz, Z. and Pearce, M.S. (2015). Understanding the patterns of spread of HIV/AIDS in Nigeria: A systematic review and primary research articles. *J. Human Virol. Retrovirol*. 2015; 2(4): 00047 Avaialable at www.doi.10.15406/jhvrv.2015.02.00047

Onogwu, G.O., Audu, I.A. & Igbodor, F.O. (2017). Factors influencing agricultural productivity of smallholder farmers in Taraba State, Nigeria. *Int. J. Agric. Innov. Res.* 6 (1): 114-118. https://ijair.org>publications>IJAIR_2395_FINAL...

Onyango, S.O.; Swallow, B.; Mukoya-Wangia, S. (2005). Effects of HIV/AIDS-Related Illness and Deaths on Agricultural Production in the Nyando River Basin of Western Kenya. Presented at the International Conference on HIV/AIDS and Food and Nutrition Security, Durban, South Africa, April 2005. https://researchgate.net

Parker, D.C., Jacobsen, K.H. & Komwa, M.K. (2009). A qualitative study of impact of HIV/AIDS on agriculture households in Southeastern Uganda. *Int. J. Environ. Res. Pub. Health* 2009. 6: 2113-2138 www.mdpi.com/journal/ijerph

Ruma, M.M. (2009). Knowledge awareness of HIV/AIDS among some senior secondary students in Katsina State, Nigeria.

Bayero J. Pure Appl. Sci. 2 (2): 121-126 https://www.ajol.info>bajopas>article>view

Saurabh, K., Sami, S.A. Sabiya, Q., Anant, A., Naeem, A and Taseer, B. (2017). AIDS related complex: A case report. Marshall, C. (2017). Diseases and Disorders. Tarrytown, NY. 2008, 25 ISBN 978-0-7614-7771-6 International Journal of Applied Research. 2017; 3 (4): 801-803 Available at https://www.allresearchjournal.com>...

Sharp, P.M. and Hahn, B.H. Origins of HIV/AIDS Pandemic. Cold Spring Harbor Perspectives in Medicine. 2011; 1 (1):1-6

Schonteich, M. (2001). 'A generation at risk: AIDS orphans, vulnerable children and human security in Africa', paper published at a conference on "Orphans and Vulnerable Children in Africa", Nordic Africa Institute, Uppsala, Sweden.

Tologbonse, E.B., Mesini, O. and Tsado, J.H. (2006). Farmers Perception of Sources of Information in Relation to Adoption of Improved Technology by Farmers in Inland Valley Swamps of Middle-belt Zone of Nigeria. *Journal of Agriculture*. 2006; 9: 63-73

Toska, E., Laurenzi, C.A., Roberts, K.J., Cluver, L. and Sherr, L. (2020). Adolescent mothers affected by HIV and their children: a scoping review of evidence and experience from sub-Saharan Africa. *Global Public Health Journal*. 2020; 15 (11): 1655-1673. Available at https://doi/10.1080/17441692.2020.1775867

Udoma, G.M (2002). Attitudes of youths towards HIV/AIDS and condom use in Abak area of Akwa Ibom State. *Nigerian Journal of Rural Sociology*, 4 (1):152-155.

UNAIDS. (2000). Report on the global HIV/AIDS epidemic; UNAIDS: Geneva, Switzerland, 2000. https://data.unaids.org

USAID (2000). 'Children on the brink – updated estimates and recommendations for intervention', Washington DC.

UNDESA- Unied Nations Department of Economic & Social Affairs/Population Division (n.d). https://www.un.org>pdf>hiv>impact

UNAIDS. (2008). 2008 report on global AIDS epidemic. Joint United Nations Programme on HIV/AIDS. 2008; Pp29-62. Available at https://www.unaids.org>files

Williams, A. (2003). Ageing and Poverty in Africa: Ugandan Livelihoods in a Time of HIV/AIDS; Ashgate Publishing: Surrey, UK, 2003.

WHO. (2021). Infections and infectious diseases: A manual for nurses and midwives in the WHO European region 2021; 282pp. Available at https://www.euro.who.int>p...

Yahaya, M.K. (2002). Gender and Communication Variables in Agricultural Information Dissemination in Two Agro-Ecological Zones of Nigeria. *Research Monograph*. Ibadan; Corporate Graphics Limited. 2002.

Yerdaw, M., Teshome, N., and Fikre, E. (2002). "Assessment of Awareness of HIV/AIDS among Selected Target Groups

in and around Addis Ababa, *Ethiopia. African Journal of Reproductive Health.* 2002; 6 (2): 30-38

Yusuf, T.M., Okumadewa, F.Y., Adenegan, K.O. and Oyekale, A.S. (2010). Productivity of Women Farmers in Derived Savannah Zone of Nigeria: Panacea to Food Crisis. *Journal of Research in National Development*. 2010; 8 (1): 1-8 Available at https://agric.ui.edu.ng>files

Zamawe, C.O.F., Banda, M., Dube, A.N. (2016). The impact of a community driven mass media campaign on utilisation of maternal health care services in rural Malawi. *BMC Pregnancy & Childbirth* 16 (21): 2016 https://bmcpregnancychildbirth.biomedcentral.co...

Zhang, T., Miao, Y., Li, L. & Bian, Y. (2019). Awareness of HIV/AIDS and its routes of transmission as well as access to health knowledge among rural residents in Western China: a cross-sectional study. *BMC Public Health* 2019 19:1630 https://doi.org/10.1186/s12889-019-7992-6