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Full Length Research Paper

Impact of HIV/AIDS on Farmers' Productivity in Nigeria: Evidence from Benue State, Nigeria

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ABSTRACT: The study focused on HIV/AIDS' impact on farm productivity in Benue State, Nigeria. The study compared the labour force and productivity of infected and non-infected farming households in the study area. 120 HIV/AIDS-infected and 180 non-infected farmers were selected using a multi-stage sample technique. Questionnaires collected data. Analyses employed descriptive statistics, multiple regression, and mean score. Most infected farmers (55.0%) were between the ages of 21 and 40, whereas non-infected farmers (68.1%) were between 41 and 60. Most HIV/AIDS infected farmers were female (61.7%), while non-infected farmers were male (66.7%). Both infected (43.3%) and non-infected (80.6%) farmers were married and had 1-5 family members. Infected farmers (37.5%) spent 1-6 years in education, while non-infected farmers (53.9%) spent 7-12 years. Both infected (71.7%) and non-infected (75.6%) had yearly farm incomes of N1000 – N50,000 and spent N1000 – N50,000 on medicals. The OLS regression analysis on the productivity of HIV-infected and non-HIV infected farmers in the study area showed that the coefficient of hired labour used (0.9171) was positive and statistically significant at 1 percent level for HIV-infected farmers, while for non-HIV infected farmers, farm size showed a positive and significant coefficient (2.96E-05) at 1 percent level of significance and family labour showed a positive and significant coefficient. Infected homes had a mean labour productivity of 2302.042kg/manday (t = 8.612), while non-infected households had 3898.972kg/manday (t = 10.631). The result demonstrates a significant difference between infected (average labour force = 5 per family) and non-infected (average labour force = 10 per household) means at 5 percent significance. In light of this, the study recommends that Community Based Organizations (CBOs), Faith Based Organizations (FBOs), and other bodies intensify awareness and sensitization campaign programmes to reduce the spread of the scourge and the level of stigmatisation and discrimination, leading to increased adoption of agricultural improved technologies by the victims, increased farm output, and the growth and development of the nation.

Keywords: Impact, HIV/AIDS, health, infected farmers, farm, household productivity, Nigeria

INTRODUCTION

AIDs is caused by the human immunodeficiency virus (HIV). It attacks immune system cells, the body's defence against illness, and impairs the body's ability to fight infections and some types of cancer. The virus infects and replicates inside CD4 cells, which are white blood cells in the immune system. Infected people gradually become immuno-deficient as the virus destroys and affects the function of immune cells. The body's ability to fight infections and disease deteriorates, leaving it prone to opportunistic infections and cancer. The CD4 cell count is commonly used to assess immune function.

The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS), which can take anywhere between two and fifteen years to develop depending on the individual (WHO, 2018). Depending on the stage of infection, HIV symptoms differ. Although people living with HIV are most infectious in the first few months following infection, many remain ignorant of their status until it is too late. People may have no symptoms or an influenza-like sickness, including fever, headache, rash, or sore throat, in the first few weeks following infection. As the infection impairs the immune system,

patients may have various symptoms such as swollen lymph nodes, weight loss, fever, diarrhoea, and cough. They may also acquire severe illnesses such as tuberculosis (TB), cryptococcal meningitis, severe bacterial infections, and malignancies such as lymphomas and Kaposi's sarcoma if they do not receive therapy. HIV can be transferred through the interchange of infected people's body fluids such as blood, breast milk, sperm, and vaginal secretions. During pregnancy and delivery, HIV can potentially be passed from mother to kid. Individuals cannot acquire infected through routine contact such as kissing, hugging, shaking hands, or sharing personal items, food, or water. People with HIV who are on ART and are virally suppressed, on the other hand, do not transfer HIV to their sexual partners. Early access to ART and support to stay on treatment are thus crucial not just for improving the health of people living with HIV but also for preventing HIV transmission. Having unprotected anal or vaginal sex; having another sexually transmitted infection (STI) such as syphilis, herpes, chlamydia, gonorrhoea, and bacterial vaginosis; sharing contaminated needles, syringes, and other injecting equipment and drug solutions when injecting drugs; receiving unsafe injections, blood transfusions, and tissue transplantation, and medical procedures that (WHO, 2021).

One of the world's most critical public health issues is HIV. There is no cure. It is still a major global public health hazard, having claimed the lives of 36.3 million [27.2-47.8 million] people. Since the outbreak began, 79.3 million (55.9 - 110 million) persons have been infected with the virus (WHO, 2021). In 2020, there will be roughly 37.7 million HIV-positive people worldwide, with more than two-thirds (25.4 million) living in the WHO African Region. There were 36 million adults and 1.7 million children aged 0-14 years. More than half (53%) were females and girls. The WHO African area continues to be the most badly hit, with approximately one in every 25 persons (3.6 percent) infected with HIV. An estimated 1.5 million individuals worldwide acquired HIV in 2020. Of these new HIV infections, 1.3 million were individuals aged 15+ and 160,000 were among children aged 0-14 years. The vast majority of people with HIV are in low- and middle-income countries. In 2020, there were 20.6 million people with HIV (55%) in eastern and southern Africa, 5.7 million (15%) in Asia and the Pacific, 4.7 million (13%) in western and central Africa, and 2.2 million (6%) in Western and Central Europe and North America. Sub-Saharan Africa is home to two-thirds (67%) of people living with HIV (UNAIDS, 2021). In 2020, 680 000 [480 000–1.0 million] people died from HIV-related causes (WHO, 2021).

Despite advances in scientific understanding of HIV and its prevention and treatment, as well as years of significant effort by the global health community and leading government and civil society organizations, far too many people with HIV or at risk of HIV continue to lack access to prevention, care, and treatment, and there is no cure. Furthermore, the HIV epidemic affects not just people' health, but also households, communities, and nations' development and economic progress. Many of the countries most affected by HIV also have other infectious diseases, food insecurity, and other major issues. Despite the availability of a growing number of effective HIV prevention tools and methods, as well as a massive scale-up of HIV treatment in recent years, UNAIDS warns that progress in reducing new HIV infections, increasing access to treatment, and ending AIDS-related deaths has been uneven, with too many vulnerable people and populations left behind. Stigma and discrimination, as well as other social inequities and exclusion, are proving to be significant impediments (HIV.gov, 2021).

In poorer countries, HIV is a major public health concern. In Nigeria, an estimated 3.3 million people were living with HIV, and 220,000 died from the disease in 2009. (UNAIDS 2010). The country suffers from the world's second-largest HIV pandemic (Avert, 2020; Public Health Nigeria, 2020). Although the prevalence of HIV among adults in Nigeria is lower (1.3%) than in other Sub-Saharan African countries such as South Africa (19%) and Zambia (11.5%), the country's population suggests that 1.8 million people were infected in 2019. Nonetheless, according to the Joint United Nations Programme on HIV and AIDS (UNAIDS), Nigeria accounted for around two-thirds of new HIV infections in West and Central Africa in 2019. Every year, the country accounts for over half of all new HIV diagnoses in Sub-Saharan Africa, along with South Africa and Uganda. Despite a 13 percent decrease in new infections between 2010 and 2019, (UNAIDS, 2019). According to the National Agency for the Control of AIDS, an estimated 51,000 people in Nigeria living with HIV/AIDS died in the first two quarters of 2020. (NACA, 2020).

Unprotected heterosexual sex accounts for 80% of new HIV infections in Nigeria, with the majority of remaining HIV infections occurring in key affected populations such as sex workers (UNAIDS, 2019). In 2020, 1.7 million people lived with HIV/AIDS in Nigeria. Women were the most affected group, accounting for 960,000 individuals while children under the age of 14 accounted for 130,000 (Oguntola and Abeku, 2021). According to the National Agency for the Control of HIV AIDS in Nigeria, 48 out of every 1,000 persons selected at random in the states are likely to test positive for HIV. South South (Nigeria) was the zone with the highest prevalence, namely 3.1 percent. Overall, the prevalence amongst women aged between 15 and 64 was 1.9 percent as compared to 1.1 percent for men. The HIV Prevalence Rate in the states is as follows: Akwa Ibom 5.6%, Benue 4.9%, Rivers

3.8%, Taraba 2.7%, Anambra 2.4%, Enugu 2.1%, Abia 2.1%, Delta 1.9%, Nasarawa 1.9%, Edo 1.8%, Bayelsa 1.8%, Cross River 1.7%, Imo 1.6%, Plateau 1.5%, FCT 1.5%, Lagos 1.3%, Borno 1.3%, Adamawa 1.3%, Ogun 1.2%, Gombe 1.2%, Kaduna 1.0%, Kogi 1.0%, Kwara 1.0%, Ondo 0.9%, Osun 0.9%, Oyo 0.9%, Ebonyi 0.8%, Niger 0.7%, Ekiti 0.7%, Kebbi 0.6%, Kano 0.5%, Zamfara 0.5%, Yobe 0.4%, Bauchi 0.4%, Sokoto 0.4%, Jigawa 0.3% and Katsina 0.3% (NAIIS, 2019; Public Health Nigeria, 2020; NACA, 2020).

HIV/AIDS has a huge influence on affected people and their families, as well as their extended family and the community as a whole. In the case of family businesses, micro-enterprises, and self-employment, the influence at the individual and household levels is mirrored at the enterprise level. The impact occurs as soon as a member of the household's HIV status is discovered and is exacerbated when he or she develops HIV-related illnesses. When a person is known to be HIV-positive, he or she is frequently the target of stigma, discrimination, or even aggression in the community and at work, especially when community members and coworkers have limited understanding of HIV/AIDS. As a result, persons living with HIV/AIDS are sometimes compelled to quit their employment and become alienated in their communities. Some of them opt to leave their town and start over wherever they are unknown (Brookings, 2016; Jelilov et al., 2020).

Infectious illnesses cause significant losses in agricultural production. Farmers who are ill are unable to work or must cease farm activities. Furthermore, money that could have been utilized to purchase farm inputs, enhance equipment, or hire tractors and labourers is diverted for treatment, resulting in low output (Fanello and Baker, 2010; Kughur et al., 2015). Due to small farm sizes and poor salaries, the agricultural sector relies heavily on physical labour, which is almost often obtained from family members or hired from the local population. As a result, the farms are subject to changes in home labour. One of the causes of the disruptions is illness in the household, which may divert labour away from the farm to treat the condition or care for the sick person, or drain money that could have been used to employ labour to pay for health care costs. Total household productivity falls, and poverty persists. Health-care spending may also influence impoverished households' adoption of technologies and utilization of inputs, lowering total factor productivity. AIDS is one of the diseases that has had a significant impact on farm labour productivity and production, particularly in Africa (Asenso-okyere et al., 2018). The HIV/AIDS epidemic has resulted in significant reductions in food production, a decrease in labour supply for food and livestock production, and shifts in production from cash crops to food crops in AIDS-affected households, as well as a loss of knowledge about farming methods and a decrease in skilled and experienced labour. The evidence on the impact of HIV/AIDS on farmer production is fragmented and incomplete. Most studies are limited in scope, and many do not include a control or comparative group of HIV/AIDS-free homes. Furthermore, nothing is known about the epidemic's long-term effects, particularly on agriculture. Nonetheless, recent research shows that HIV/AIDS is having a negative impact on commercial agricultural companies and agricultural labour, as well as productivity or output and the economic sustainability of AIDS-affected households in Nigeria, especially Benue State. Moreover, despite attempts by the government and non-governmental organizations to contain the spread of HIV/AIDS in Nigeria, the pandemic is still growing rapidly, particularly among Nigerians who are unaware of its mechanism of transmission. As a result, it is vital to evaluate the impact of HIV/AIDS on farmer productivity in Nigeria using data from Benue State.

Objectives of the study

The broad objective of this study was to investigate the impact of HIV/AIDS on farmers' productivity in Nigeria with evidence from Benue State.

Specifically, the objectives were to:

Identify the demographic and socioeconomic characteristics of infected and non – infected farming households in the study area.

Estimate the productivity of infected and non-infected farming households in the study area.

Determine the difference in labour force and productivity for both infected and non-infected farming households.

Statement of Hypothesis

H_O: There is no significant difference in the labour productivity of infected and non – infected farm households in the study area.

METHODOLOGY

The study area

The research was carried out in Nigeria's Benue State. It is situated in Nigeria's centre belt, in the North Central geopolitical zone. It contains 23 local government districts and a population of 5.2 million people (National Population Commission, 2006), with Makurdi serving as

its capital. It is located between latitudes 6o30'N and 8o10'N and longitudes 6o35'E and 10oE. It is bounded to the north by Nasarawa, to the east by Taraba, to the south by Cross River, and to the west by Enugu and Kogi. With a total land mass of 69.740 million square kilometres, the state has an estimated arable land mass of 5.09 million hectares, accounting for 5.4 percent of the nation's total land mass (Benue Agricultural Development Agency, 2004). Yearly rainfall ranges from 1750mm in the south to 1250mm in the north, with an average annual temperature ranging from 32oC to 38^{o}C. The state is mostly rural, with an estimated 75% of the inhabitants involved in rain-fed subsistence agriculture (Asogwa and Umeh, 2012). Yam, cassava, sweet potato, sorghum, maize, millet, groundnut, soya beans, rice, sweet orange, mangoes, and cashew are among the food and cash crops grown in the state.

Population and sampling procedure

All infected and non-infected farming households in Benue State were included in the study population. A multi-stage sampling procedure was employed to determine the sample size. The state has three (3) agricultural zones: A, B, and C. Due to the frequency of HIV/AIDS infection in these locations, two Local Government Areas were purposefully picked from each of the three zones in the first stage, for a total of six Local Government Areas. Zone A includes Ukum and Katsina-Ala Local Government Areas, Zone B includes Makurdi and Tarka Local Government Areas, and Zone C includes Otukpo and Okpokwu Local Government Areas. In the second step, HIV/AIDS infected homes were identified and randomly selected with the assistance of extension agents, community health workers, and records collected from health information centres located inside Local Government Areas. Finally, twenty (20) HIV/AIDS infected farming homes and thirty (30) non - infected farming households were chosen at random, for a total of one hundred twenty (120) HIV/AIDS infected farming households and one hundred eighty (180) non - infected farming households.

Data collection

The primary data were collected through the administration of structured questionnaires designed in line with the objectives of the study while secondary data were collected through various publications related to the study, journals, extension and community health workers and the internet.

Data analytical techniques

To discuss the demographic and socioeconomic characteristics of farming households in relation to the HIV/AIDS scourge and farm labour productivity, simple descriptive statistics such as frequency distribution, percentages, tabular presentation, and mean were used. Inferential statistical tools such as OLS regression analysis were used to compare the productivity of inputs by infected and non-infected farm households in the study area, while the t-test was used to test the stated hypothesis that there is no significant difference in the labour productivity of HIV/AIDS infected and non-HIV/AIDS infected farm households.

Model specification

Ordinary Least Square regression was used to determine the effect of HIV/AIDS on farm productivity of infected and non-infected households, specified as:

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6)$

Where
Y= Output (kilogrammes)
X_1 = Family labour (mandays)
X_2 = Hired labour (mandays)
X_3 = Farm size (hectares)
X_4= Quantity of fertilizer (kilogrammes)
X_5 = Seeds/seedlings (Naira)

RESULTS AND DISCUSSION

Socio-Economic Characteristics of HIV/AIDS – Infected and Non HIV/AIDS - Infected Farming Households in the Study Area

The results of socioeconomic characteristics of households are reported in (Table 1). The findings revealed that 55.0 percent of rural farming family heads were between the ages of 21 and 40. This means that the majority of responders are in their active, working, and productive years but have been compromised by the HIV/AIDS pandemic. This also suggests that they are of sexually active age, which may make them more vulnerable to HIV/AIDS. This has a direct impact on the availability of skilled labour for primary production, the ease with which innovations may be implemented, and the degree of risk aversion. These have the potential to significantly increase agricultural productivity and production. This is consistent with the findings of Ater et al. (2018), who discovered that 55.3 percent of HIV-infected farmers were between the ages of 21 and 40, showing that farmers on average are sexually active, which may enhance their exposure to HIV/AIDS. Topouzis (2003), Abu et al. (2010), and Shaibu et al. (2015) found that HIV/AIDS primarily affects the most

Table 1: Socioeconomic Characteristics of HIV/AIDS Infected and Non-Infected Farmers in Benue State.

Variables	HIV/AIDS - Infected Households (N = 120)	Percentage	Non HIV/AIDS - Infected Households (N = 180)	Percentage
Age (Years)				
1 – 20	1	0.83	2	1.11
21 – 40	66	55.0	41	22.8
41 – 60	46	38.3	123	68.3
> 60	7	5.83	14	7.78
Sex				
Male	46	38.3	120	66.7
Female	74	61.7	60	33.3
Marital Status				
Single	33	27.5	15	8.33
Married	52	43.3	145	80.6
Divorced	18	15	5	2.78
Widow	17	14.2	15	8.33
Household Size				
1-5	63	52.5	91	50.6
6 – 10	47	39.2	81	45
11 – 15	9	7.50	7	3.89
>15	1	0.83	1	0.56
Education (years)				
1-6	45	37.5	31	17.2
7-12	39	32.5	97	53.9
13-17	9	7.5	51	28.3
>17	2	1.67	1	0.56
0	25	20.8	0	0
Farm Income (₦)/Annum				
1000 – 50,000	86	71.7	136	75.6
50001 – 100,000	15	12.5	15	8.33
100001 – 150,000	4	3.33	5	2.78
150001 – 200,000	3	2.50	5	2.78
200001 – 250,000	6	5.0	1	0.56
250001 – 300,000	1	0.83	5	2.78
>300,000	5	4.17	13	7.22
Cost of Medicals				
1000 – 50,000	108	90	161	89.4
50001 – 100,000	11	9.17	18	10.0
100001 – 150,000	1	0.83	1	0.56

Source: Field Survey, 2022

productive and economically active age group of men and women aged 15 to 49 years—the primary breadwinners and heads of households raising families and supporting the elderly and their children. The majority of non-infected responders (68.3 percent) were between the ages of 41 and 60. In general, the results indicate that both infected and non-infected respondents are in their productive and economic active years, necessitating a continuous sensitization effort and intervention to manage the pandemic. The majority of HIV-infected farmers (61.7 percent) were women. As a result, women are more vulnerable to HIV/AIDS than men. The findings are consistent with those of Abu et al. (2010) and Shaibu et al. (2015), who found a larger proportion of female HIV-infected respondents. The findings contradict those of Ater et al. (2018), Abua et al. (2016), and Iya et al. (2012), who reported a larger percentage of male HIV-infected respondents. Furthermore, the majority of non-infected homes were male, according to the findings (66.7%). This means that men are less vulnerable than women. This result is consistent with the findings of Ater et al. (2018), who found a larger proportion of non-infected male household heads.

According to marital status, the majority of infected farmers (43.3%) were married; 27.5% were single; 15% were divorced; and 14.2% were widowed. The data showed that 8.33% of non-infected people were single, 80.6% were married, 2.78% were divorced, and 8.33% were widowed. These findings suggest that intervention efforts should pay more attention to married people. The findings also revealed that the majority of both infected (52.5%) and non-infected respondents had 1 to 5 people per household. Members of the household are expected to assist in farming and healthcare-related activities,

Table 2: OLS Regression results for productivity of HIV-Infected farmers in Benue State.

HIV - Infected Households (N = 120)			
Variables	Coefficients	t Statistics	P-value
Intercept	13.9714	3.3066	0.0013
Family Labour	-1.5E-06	-1.0823	0.2814
Hired Labour	0.9171	7.3703	0.0000**
Farm size	0.0096	0.1086	0.9137
Fertilizer	0.0881	2.9395	0.0040**
Seedlings	0.0325	0.6200	0.5365

Multiple R = 0.6895
R^2 = 0.4754
Adjusted R^2 = 0.4524
F = 20.6635
Significant at 1% (**P < 0.01)
Source: Field Survey, 2022

Table 3: OLS Regression results for productivity of Non HIV/AIDS – Infected farmers in Benue State.

HIV – Negative Households (N = 180)			
Variable	**Coefficients**	**t Statistics**	**P-value**
Intercept	26.8714	1.7627	0.0797
Family Labour	0.4493	2.4464	0.0154***
Hired Labour	0.2315	0.6943	0.4885
Farm size	2.96E-05	9.0121	0.000**
Fertilzer	7.63E-05	0.2944	0.7688
Seedlings	0.0108	0.2317	0.8171

Multiple R = 0.6413
R^2 = 0.4112
Adjusted R^2 = 0.3943
F = 24.3038
Significant at 1% and 5% (***P < 0.05, **P < 0.01)
Source: Field Survey, 2022

particularly those infected with HIV/AIDS.

The majority of infected farmer respondents (37.5%) had 1-6 years of education, whereas the majority of non-infected (53.9%) had 7 to 12 years of education. Education is advantageous because it promotes understanding of the negative effects of HIV/AIDS and the prophylactic actions to be implemented, reducing their vulnerability to infection. This conclusion is consistent with the findings of Iya et al. (2012) in Adamawa State and Ater et al. (2018) in Cross River State, who found that the majority of infected farmers (58.3%) did not receive formal education.

The majority of infected (71.7%) and non-infected (75.6%) farmers reported an annual agricultural income of less than N50,000. This suggests that the majority of respondents had poor income and household welfare. This could imply that the majority of afflicted farmers transferred funds intended for farm input purchases to cover medical expenses. Furthermore, the majority of infected (90%) and non-infected (89.4%) farmers spent between N1000 and N5000 on medical treatments. Such expenditures may reduce the amount of money available for farming, particularly for afflicted farmers. This finding is consistent with the findings of Abubakar et al. (2014) in Otukpo, Benue State, who indicated that high expenditure on treatment/medication by HIV-infected farmers could reduce the level of money available for farming.

OLS Regression analysis on the productivity of HIV/AIDS – infected and non HIV/AIDS - infected farming households in the study

Tables 2 and 3 show the results of the OLS regression analysis on the productivity of HIV-infected and non-HIV-

Table 4: Descriptive statistics for labour productivity and labour force for infected and non-infected households.

Variable	Mean	Farm labour productivity/manday	Df	t– cal.	t-crit.
Infected Households*	4.96	2302.042 kg	119	8.612	1.9801
Non – infected Households*	9.98	3898.972kg	179	10.631	1.9733

Source: Field survey, 2022, *people aged 18 and above

infected farmers in the study region. The coefficient of multiple correlation (R) for HIV-infected households in the research area is 0.6895 (69%). It means that the explanatory variables and farmer output have a very strong direct relationship. The R^2 value is 0.4754. This implies that fluctuations in the stated independent variables examined in the model collectively explain 48 percent of the variability in the respondents' outputs. The adjusted R^2 value is 0.4524 (45%). The F-Value obtained (20.6635) indicates that the overall equation is statistically significant at 1 percent ($p<0.01$). For the non HIV – infected households in the study area, the coefficient of multiple correlation (R) equals 0.6413 (64%). It means that there is a very strong direct relationship between the explanatory variables and the farmers' output. The R^2 is 0.4112. This suggests that 41 percent of the variability in the outputs of the respondents is jointly explained by variations in the specified independent variables considered in the model. The adjusted R^2 is 0.3943 (39%). The F-Value obtained (24.3038) indicates that the overall equation is statistically significant at 1 percent ($p<0.01$) and 5 percent ($p <0.05$). For HIV-infected farmers, the coefficient of hired labour used (0.9171) was positive and statistically significant at the 1% level. At the 0.01 level of significance, this means that an increase in hired labour utilised by infected farmers raises productivity by 91.71. This indicates that infected farmers used hired labour to complement family labour due to the relative impact of HIV/AIDS on family labour (-1.5E-06), which is statistically insignificant. Farm size, on the other hand, exhibited a positive and significant coefficient (2.96E-05) at the 1% level of significance, while family labour showed a positive and significant coefficient (0.4493 or 44.93) at the 5% level of significance. This means that non-infected farmers may be able to raise output and productivity through increased family labour. This finding is consistent with the findings of Ater et al. (2018), who indicated that the positive coefficient for the non-infected means that farmers have the ability to raise output and productivity if family labour use is increased.

Farm labour productivity for infected and non-infected farm households in the study area

The labour productivity and labour force results for infected and non-infected families are reported in (Table 4). According to the findings, the mean labour productivity for infected homes was 2302.042 kg/manday ($t = 8.612$), whereas that of non-infected households was 3898.972 kg/manday ($t = 10.631$), which was greater than that of infected households. This means that in the research area, there is a considerable variation in labour productivity between infected and non-infected agricultural households. At the 5% level of significance, the results likewise demonstrate a significant difference between the means of infected (average labour force = 5 persons per family) and non-infected (average labour force = 10 persons per household). This demonstrates that healthy farmers produce more than sick farmers. This finding is consistent with the findings of Ater et al. (2018), who discovered that healthy farmers outperform sick farmers in terms of productivity.

Conclusion and Recommendations

The study looked at the impact of HIV/AIDS on farm productivity in Nigeria, with a focus on Benue State, the country's food basket. In terms of productivity, HIV/AIDS-infected farmers were compared to non-infected farmers. The findings showed that non-infected farmers had more active working household members who comprised the labour force and were more productive than infected farmers. Due to the tiny farm sizes cultivated in comparison to non-infected farmers, the health status of the infected farmers was responsible for low farm productivity. The pandemic had also had a significant negative impact on family income, as resources earmarked for the purchase of farm inputs were diverted to cover medical expenditures, and family labour available for farm work had been reduced as it is frequently divided for care providing by household members. Due to illness, farmer victims, particularly female-headed households in Nigeria and Benue State in particular, are forced to cut farm labour, farm inputs, and farm visits. This results in low output. The study therefore recommends the following:

Community Based Organizations (CBOs), Faith Based Organizations (FBOs) and other bodies concerned, should intensify awareness and sensitization campaign

programmes so as to reduce the spread of the scourge and the level of stigmatization and discrimination, leading to increased level of adoption of agricultural improved technologies by the victims, increased farm output and the growth and development of the nation.

Government at all levels as well as NGOs should ensure an intensive HIV/AIDS education programme among the Nigeria farming populace.

Government at all levels and NGOs should provide adequate HIV/AIDS testing kits and free counseling services to determine every household status and consequently take the necessary steps to prevent the spread and manage those already affected thereby enhancing their productivity.

The government should design and implement effective, appropriate policies and programmes for soft loans, special input subsidy and poverty alleviation, targeting HIV/AIDs farmer victims.

Governments at all levels should assist the HIV/AIDS victims by providing their most pressing needs and taking care of their families.

The Government should also encourage them to form or join cooperatives in order to enhance their accessibility to medication and farm inputs.

REFERENCES

Abu, G. A., Ekpebu, I. D. and Okpachu, S.A (2010). The Impact of HIV/AIDS on Agricultural Productivity in Ukum Local Government Area of Benue State, Nigeria. *Journal of Human Ecology, 31(3): 157-163.*

Abua, T., Ekele, G. E., and Agbulu, O. N. (2016). Impact of HIV/AIDS on the Socio-Economic Lives of Infected Farmers in Benue State. CARD International Journal of Agricultural Research and Food Production (IJARFP), 1(3): 2536-7307. Available online at: http://www.casirmediapublishing.com

Abubakar, B. Z., Yakubu, D. H., Onoja, J. and Oladosu, I. O. (2014). Effect of HIV/AIDS on crop production among farmers in Oturkpo Local Government Area of Benue State, Nigeria. *International Journal of Agricultural Science Research, 3(8):136-140*. Available online at http://academeresearchjournals.org/journal/ijasr.

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):001 – 010*.

Asogwa,B. C and Umeh J. C. (2012). Food Insecurity Determinants among Rural Farm Household in Nigeria. International Conference on Ecology, Agriculture and Chemical Engineering (ICEAS'2012). 18-19 December, 2012. Phaket , Thailand.

Ater, P. I., Biam, C. K., Abu, G. A. and *Ewung, B. F. (2018). Rural Households' HIV/AIDS Menace on Productive Labour Force and Productivity in Cross River State, Nigeria. *Journal of Agricultural Economics, Extension and Science, 4(2):55-67.*

Avert (2020). Global HIV and AIDS Statistics -2020 Report. At www.avert.org

Benue Agricultural Development Agency (BNARDA) (2004). Impact of AIDS on Rural Livelihoods in Benue State; Implication for policy makers. Occasional Paper, 3: 2-4.

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

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

HIV.gov (2021). Global Statistics – 2021 Report. https://www.hiv.gov/hiv-basics/overview/data-and-trends/global-statistics

Iya, I. B., Purokayo, S. G. and Gabdo, Y. (2012): The Effects of HIV/AIDS Scourge on Production and Income among Rural Households in Adamawa State of Nigeria. *Global Journal of Health Science Vol. 4, No. 1. Published by Canadian Center of Science and Education.*

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.*

NACA (2020). Nigeria HIV/AIDS Prevalence Rate. At htpps//naca.gov.ng/Nigeria-prevalence-rate/

NAIIS (2019). HIV Prevalence in Nigeria. NAIIS Report, 2019. *Nigeria Health Watch.* At https//nigeriahealthwatch.com/results-of-naiis-the-largest-hiv-survey-ever-done-are-in-nigeria-not-doing-as-badly-as-we-thought/

National Population Commission (NPC) (2006). Nigeria National Population Census Report, Abuja, Nigeria.

Oguntola, I. and Abeku, T. C. (2021). *Nigeria Health Watch.* At https://nigeriahealthwatch.com/world-aids-day-2021-end-inequalities-end-aids-end-pandemics/

Public Health Nigeria (2020). States with the Highest HIV/AIDS Rate in Nigeria 2020/2021. At https://www.publichealth.com.ng/wp-content/uploads/2020/11/States-With-Highest-HIV-Rate-In-Nigeria-2020

Shaibu, M. U., Onuche, U. and Ibitoye, S. J. (2015). Effect of HIV/AIDS Prevalence on Farm Income of People Living with HIV/AIDS (PLWHA) in Kogi State, Nigeria. *Journal of Advances in Biological and Basic Research 01(01):47-52*, Available at: www.asdpub.com/index.php/jabbr

Topouzis, D. (2003). Implications of HIV/AIDS for rural development policy and programming; focus on sub-Saharan Africa, Study paper No.6.UNDP.

UNAIDS (2010). UNAIDS Report on Global AIDS Epidemic.

UNAIDS (2019). Global HIV & AIDS statistics—2019 fact sheet 2019. https:// www.unaids. org/ en/ resou rces/ fact- sheet. Accessed 20 April 2022.

UNAIDS (2021). Global HIV & AIDS statistics—2021 fact sheet 2021. https:// www.unaids. org/ en/resou rces/ fact- sheet. Accessed 20 April 2022.

WHO (2018). WHO Report on Global AIDS Epidemic.

WHO (2021). Global Health Observatory - HIV/AIDS statistics—2021 fact sheet. https:// www.who.int/data/gho/data/themes/hiv-aids. Accessed 20 April 2022.

WHO (2021). Global HIV/AIDS statistics—2021 fact sheet. https:// www.who.int/news-room/ fact- sheets/detail/hiv-aids. Accessed 20 April 2022.