

EXPANDING ACCESS TO VOLUNTARY HIV COUNSELLING AND TESTING IN THE RURAL COMMUNITIES OF OYO STATE, NIGERIA;- HOME BASED APPROACH FOR IMPROVING UPTAKE

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Abstract

This study assess the impact of home based HIV counselling and testing in expanding access to HIV voluntary counselling and testing in rural Nigeria. The participants of the study were 1, 200 drawn from five constituent wards in Saki town in four streets, in 12 households using multistage sampling techniques. The participants aged 15 – 55 years. The instrument used for data collection was HIV counselling and testing client intake form. The design adopted for this study was pre-post quasi experimental design.

Three research questions and two hypotheses guided this study. Data analysis employed was data analysis employed was Descriptive statistics of percentage, and ratio odd for the research questions raised while Analysis of Covariance (ANCOVA) was utilized for the two research hypotheses formulated.. The results of the study indicates that Home based approach had a significant impact for improving uptake of HIV counselling and testing in rural Nigeria. Again, there was a significant reduction in multiple partners (especially among those tested) and reduction in casual partners in intervention group compared with control group.

Keywords: Access to voluntary hiv, counselling and testing, rural communities, home based approach

Introduction

Nigeria is the most populous African country with an estimated population of 162,265,000as at mid-2011 and Total Fertility Rate (TFR) of

5.7. Nigeria's annual growth rate is estimated to be 2.6% in 2012. Nigeria is composed of more than 250 ethnic groups; languages include English (Official), Hausa, Yoruba, Igbo and over 500 indigenous languages. Approximately 50% of the population lives in urban areas with the rate of urbanization estimated at 3.5% annual rate of change. The first case of AIDS in Nigeria was reported in 1986 thereby establishing the presence of the epidemic in the country. Consequently, and in line with WHO guidelines, the government adopted ANC sentinel surveillance as the system for assessing the epidemic. The first HIV Sentinel Survey in 1991 showed a prevalence of 1.8%. Subsequent sentinel surveys produced prevalence of 3.8% (1993), 4.5% (1996), 5.4% (1999), 5.8% (2001), 5.0% (2003), 4.4% (2005), 4.6% (2008) and 4.1% (2010), a trend signalling a general reversal of the epidemic in the country.

Nigeria's epidemic is generalized (above 1% prevalence among ANC attendees), with wide variation of prevalence within the country. An analysis of the 2010 prevalence rates (4) in the country's six geopolitical zones shows that the highest concentration is in the North Central Zone (7.5%) and the lowest prevalence rate is in the North Western Zone, at 2.1%. There are also differences between and within urban and rural areas with prevalence figures in urban areas varying between 2.7% and 18.0%, while that of the rural area range from 0.7% to 21.3%. Socio-demographic differences in the HIV prevalence are also observable with women, youths, and people with low level of formal education being worst affected by the epidemic.

With an estimated population of 162,265,000, Nigeria is the most populated country in sub-Saharan Africa, a region which carries the globe's heaviest burden of HIV/AIDS. In estimated numbers this represents about 3.5 million people, still keeping Nigeria as the country with the second highest burden of HIV in the world, only after South Africa. Recent studies show a reduction (4.1%) in the 15-24 years age group down from 4.2% in 2008 and 5.8% in 2001. The number of persons requiring ART stands at 1,449,166 in 2011, a decrease from the number requiring same in 2010, attributed mainly to the massive scale up in HCT services. HIV prevalence among young people aged 15 – 24 is measured using the HIV prevalence among women attending ANC. Trend analysis of HIV prevalence in this age group in Nigeria this constitutes more than a quarter of the population (WHO 2010). Young people are a heterogeneous group and an incredibly rich resource. Although young people are generally seemingly healthy, more than 1.8 million of these young people die as a result of preventable causes. The incidence and prevalence of HIV especially among young people is still a major concern to the world. Young people 15 to 24 years old are the most affected population and account for over 40% of all new HIV infections among adults (Ross, Dick & Ferguson 2006; FM,; 2006

&Babalola ,2007) . It was noted that high incidence rate among young people especially in Nigeria may be the result of multiple factors that include early sexual experimentation, multiple sexual partnerships, and inconsistent use of condoms(WHO 2006). Despite this alarming situation, in sub-Saharan Africa, most national epidemics particularly countries worst hit by HIV have stabilized or begun to decline. For instance, the Nigeria National Sentinel Surveillance reports show decline in prevalence for 3 consecutive periods; from 5.8% in 2001 to 5.0% in 2003 to 4.4% in 2005 and then 4.1% in 2010 (Federal Ministry of Health 2010). The Nigerian National Strategic Plan (NSP) for HIV/AIDS in Nigeria has as its main goal to stop further spread and possibly reverse the spread of HIV by 2015 through Universal access to comprehensive HIV prevention, treatment, care and support. However, HIV prevention effort remains the corner piece in the national response to the epidemic (National Agency for the Control of AIDS 2010). Moreso, the NSP as well as the WHO strategic document for universal access to HIV/AIDS services by 2010 recognizes HIV counseling and testing as a priority intervention (World Health Organization 2010). Therefore, Nigeria as a member of UN Assembly subscribes to both Universal access and Millennium Development Goals with targets to reach at least 80% of adults with HIV Counseling and Testing (HCT) services in an equitable and sustainable way by 2010 and 2015 respectively(WHO 2006).Group has shown a consistent decline from 6% in 2001, plateauing at 4.3% in 2005 and 4.2% in 2010. Within this group, HIV prevalence among young women aged 20 – 24 was found to be higher at 4.6% than that of women aged 15 – 19 at 3%.

Patterns observed in a previous population based survey (NARHS 2007) shows that gender inequality is an important driver for the epidemic. Prevalence rates were generally higher among females (4.0%) than males (3.2%). Findings also showed higher early vulnerability and infections for girls and women relative to boys and men.

Even among key target populations, women showed a higher HIV prevalence than men. The prevalence of HIV among female injecting drug users was almost seven times that of male IDUs 21.0% vs. 3%. Globally, women living with HIV account for half of all HIV infected people and in many countries HIV infected women outnumbered HIV infected men. HIV affects both younger and older women.

The current international consensus on HIV counselling and testing is that more people urgently need to learn their HIV status so that they can benefit from prevention , care and treatment. In the past, in Nigeria and around the world , the primary way people learned their HIV status was by making the decision to seek HCT service .Most clients accessed services at

public and private health facilities or a stand –alone or mobile counselling and testing sites hosted by non- governmental organisations (NGOS).

This client – initiated model, which requires individuals to seek counselling and testing, has been limited in reaching a lot of people. For HCT to reach more people in this era of expanding access to antiretroviral therapy (ART), additional approaches are needed to complement the client-initiated model. One of such model is Home –based or Provider –initiated HCT that refers to situation in which the client does not seek HCT, but rather HCT is offered to the client by a health care provider or a trained tester/ counsellor.

It is important to note that client- initiated and Provider –based HCT are not in conflict or competition with one another. Rather, both approaches are necessary and complement one another so that more people in Nigeria especially the rural communities can know their HIV status and make plans for the future of themselves and their families. Thus to benefit the Nigerian people and increase access to prevention, care and treatment , the National HCT guidelines embraces and strengthens both client –initiated and Home –based HCT. This is to ensure that there are different models to meet different needs in different settings.

Testing is necessary as it serves as a means of detecting and controlling the virus. However, people do not want to get tested, they do not actively seek the HCT service. Failure to test for HIV means that people can easily be infected or infect others and opportunities for the control and prevention of HIV/AIDS are being compromised. Uptake of HCT is low globally, UNAIDS report of 2006 indicated that only 10% of HIV-infected individuals worldwide are aware of their HIV status (Bataganya, Abdulwadud&Kiene, 2007), and in Nigeria, over 60% of HIV positive people still don't know their HIV status. Youths are particularly underrepresented among those accessing HCT service. HCT uptake among the students of tertiary institutions in Nigeria ranges from 8.3% to less than 30% (Adewole, &Lawoyin, 2004; Ikechebelu, Udigwe, Ikechebelu&Imoh, 2006; Ike, &Aniebue, 2007; Folaranmi, Kutu, Omole, Olarenwaju&Fatusi, 2008). Since the youths are not accessing HCT, HIV infections are likely to go unrecognised and untreated and opportunities for prevention and control will not be utilised. Young people offer the greatest hope for changing the course of the HIV/AIDS epidemic; therefore they must be assisted to see the need for HCT uptake.

HIV Counselling and Testing

HIV Counseling & Testing (HCT) is defined as the process by which an individual undergoes counseling enabling him or her to make an informed choice about being tested for HIV. HIV Counseling and Testing refers to the

intervention that gives individual or couples an opportunity to confidentially discuss risk of HIV infection and be assisted to learn HIV status for purpose of prevention, care and treatment. HCT can either be client initiated testing or voluntary counseling and testing, and provider initiated counseling and testing. Irrespective of the type, HCT involves a pre - test counseling, post - test counseling, and follow up counseling. HIV counseling and testing is recommended as a routine service as part of health care for young people (WHO 2007&WHO/UNAIDS 2001). Similarly, UNFPA is committed to promote increased use of HIV counseling and testing among young people. Thus HCT service for young people and women should be readily accessible and appropriate (UNFPA 2010).

HCT Achievement in 2012

Number of health facilities that provide HIV counselling and testing services increased from 1,046 in 2010 to 2,624 in 2012. Number of men and women aged 15-49 who received HIV testing and counselling in the last 12 months and who know their results (excluding pregnant women)2,628/103 (FMOH 2012). Percentage of young women aged 15-24 who are HIV infected 4.15% (ANC 2010).Percentage of injecting drug users who received a HIV test in the last 12 months and who know their results -19.4% (males -54.3% (males -18.4%, females -36.9%) (IBBSS 2010).Percentage of sex workers who received a HIV test in the last 12 months and who know their results 41.75% (males 17.5%, females 44.8%) (IBBSS 2010).Percentage of men who have sex with men who received an HIV test in the last 12 months and who know their results 24.9% (IBBSS 2010).

The number of HCT Sites between 2006-2012 are as follows;-

2006- 200;
2007- 864;
2008- 897;
2009-1074;
2010-1046;
2011-1357;and
2012-2624 (FMoH2012).

Home – Based Voluntary Counselling and Testing

Expanding the coverage of HIV testing requires innovative approaches such as home based HIV counselling and testing(Hayes, Sabapathy&Filder 2011; World Health Organization 2012) Home based approaches to HIV counselling and testing have been implemented in several countries in sub-Saharan Africa, and an implementation handbook has been published by the World Health Organization (**Sabapathy, Ven den Bergy,**

Hayes & Ford 2012) but little rigorous evidence of the effectiveness of this approach exists (Batengaya, Abdulwadud & Kiene 2010) A recent (WHO 2012) Cochrane review of home based HIV counselling and testing in low and middle income countries identified only one eligible study (a randomised controlled trial in Lusaka, Zambia) for inclusion (Umzimkhulu 2010). The Zambian study randomised community clusters to HIV counselling and testing either at a local clinic or at an optional location (most commonly the home) and found an almost fivefold (relative risk 4.7) increase in counselling and testing in the optional location group. This trial was undertaken in an urban area and this approach has never been evaluated in a rural setting with a high prevalence of HIV. The Cochrane review concluded that data are insufficient to recommend large scale implementation of this approach (Fylesnes & Siziya 2004).

HIV and AIDS present multi-dimensional challenges to individuals, families and communities. These challenges may present as feeling of hopelessness, rejection and stigma at various levels. Some people may feel that knowing their HIV status may not help them or their communities. Perhaps with greater knowledge of the benefits of counselling and testing more individuals, couple and communities would be willing to access the service. Therefore, HCT is seen as an intervention that empowers clients to take charge of their decision for HIV prevention and care and support needs, provide several benefits to individuals, couples and the community at large.

Benefits of HCT for individual client include the fact that it empowers the uninfected person to protect his or she from becoming infected with HIV, assists infected persons to protect others and to live positively. Researches have shown that people who are aware of their sero-status are more likely to practice safer sex (National Agency for the Control of AiDs 2010). and offer the opportunity for treatment of HIV and of infections associated with HIV. For some couples/family, HCT supports safer relationships – enhances faithfulness, encourages family planning and treatment to help prevent mother-to-child HIV transmission and allows the couple / family to plan for the future as it promotes better spousal communication (Federal Ministry of Health 2010). The community benefits from HCT in that it generates optimism as large numbers of persons test HIV-negative, impacts community norms (HIV testing, risk reduction, discussion of status, condom use, accessing ARVs), reduces stigma as more persons “go public” about having HIV, serves as a catalyst for the implementation of care and support services and reduces transmission and changes the tide of the epidemic In addition, several studies (WHO 2010; FMOH 2010&UNFPA 2010) among adults have reported other benefits of HCT. HCT assists the individual to understand the nature of HIV infection and to come to terms with the diagnosis, thereby providing the confidence to

make the necessary changes in lifestyle, helps people living with HIV (PLHIV) to understand the nature of the problem in order to make realistic decisions that will affect members of their families/friends. It provides psycho-social support to meet the emotional needs of the individuals with HIV and AIDS and/or their families.

It equally encourages sustained positive change in lifestyle, encourages the infected to disclose his or her condition to family members (shared confidentiality). It also prepares relatives emotionally to take on the responsibility of looking after the infected persons and their orphans after their death, helps family members especially spouse(s) and children.

This study therefore intends to use Home- Based voluntary counselling and testing to increase the availability of HCT services among people in the rural areas of Oyo state, Nigeria.

Objectives

The main purpose of this study is to assess the impact of Home – Based voluntary counselling and testing on prevalence of HCT services in the rural areas. Other objectives include;-

To assess behaviour changes in the participants after the treatment.

To see if there is reduction in the number of multiple partners of the participants.

To see if there is decrease in the number of casual sexual partners of the participants.

To see the pattern of condom use among male and female participants.

Research Questions

The following research question guided this study;-

What is the pattern of behaviour change of the participants after exposure to Home – Based voluntary counselling and testing?

Is there increase in the number of couples who participated in the voluntary counselling and testing after exposure to home –based HCT

Is there reduction in the number of multiple partners of participants after exposure to home based voluntary counselling and testing

Is there decrease in the number of casual sexual partners of participants after exposed to home based voluntary counselling and testing.

What is the pattern of condom use among the participants after the home based counselling and testing.

Hypotheses

The following null hypotheses guided the study at 0.05 level of significant

Ho₁: There is no significant main effect of treatment on prevalence of HIV testing on the rural communities

Ho₂: There is no significant main effect of treatment on sexual risk behaviours of the participants.

Methods

Design

This study adopted a pre-post quasi experimental design to access the impact of home based HIV counselling and testing on the prevalence of testing for HIV, including HIV awareness, sexual behaviour and access to care.

Sample and Sampling Techniques

The home based HIV counselling and testing took place in Saki town the headquarters of Saki West Local Government Area of Oyo State in Nigeria. Saki is a community of an area of 2, 014 km² and a population of 278, 002 according to the 2006 census.

Saki is a rural town located in the North West of Oyo State, Nigeria. The land topography is predominantly agrarian. Its mass of land spreads to the border of Nigeria the Republic of Benin.

The major residents of Saki are Yoruba people who are the indigenous dwellers. The major language spoken in Saki is Yoruba. A number of other groups from bordering communities also migrate to Saki. These include the Egede people from Benue State, the Hausa, the Fulani's, the Igbo people either engage in farming or other business activities. These are also immigrants from as far as Ivory Coast, Burkina Faso, Togo and Benin Republic in West Africa who migrate to settle in Saki town. The nomadic Fulani cattle herders also find the land in Saki town a good pasture land for their cattle and place of temporary settlement.

People in Saki are predominantly farmers and account for 70 percent of the estimated population. Traders account for 20 percent artisans for 5 percent, miners for 3 percent and civil servants constitute only 2 percent.

Generally, there is poor social infrastructure in Saki with fair road network, sporadic power supply only to a few communities. The major sources of the water supply are well and few wells and water boreholes which exist are not sufficient to provide public potable water for the resident of Saki.

According to a 2003 official report, HIV/AIDS prevalence in Saki was 5 percent. The various NGOS, APIN, SACA and NACA reports that there has been little or no applicable decline in the report to date, even though the Oyo State aggregate percentage dropped from 5 percent in 2003 to 3.9 percent in 2008. Some reason identified for the non-reduction include

the influx of immigrants, cross-border trading which keeps people away for too long from their homes, poor social facilities in Saki especially recreation facilities which lead people to engage in sex and alcohol consumption as a main recreational activity. Also included is the high level of illiteracy and non-responsiveness of people to voluntary counselling testing.

It could be said that over 60% of the households live below the poverty line. The area is characterized by dispersed rural settlements with minimum economic activity and out-migration to urban centres for work is common.

The sample of this study consists of 1,200 people with age ranging from 15 – 55 years. Multistage sampling techniques were used to recruit the respondents. Saki town consists of eleven (11) constituent wards, five wards were randomly selected from the lists of constituent wards, from each selected ward, four streets were randomly selected from the list of constituent streets. From each constituent street, 12 houses were randomly selected from the lists of constituent streets. From each selected house, five respondents were randomly chosen from the list of all the eligible respondents.

Research Instrument

HIV counselling and Testing client intake form was the instrument used for data collection. This instrument consists of three sections with section A consisting of Demographic data such as State, LGA, Facility name, setting, client name, code, age, sex, State of residence, marital status, number of children, number of wives, type of counselling etc. Section B contains the Pre-test counselling items covering knowledge Assessment, HIV Risk Assessment, clinical TB screening and syndrome SCI screening. While section C consists of items dealing with HIV test result. This instrument was first translated into Yoruba and later into English to ensure content validity. The reliability of the instrument was established on another set of people different from the participants of the study and a coefficient of 0.88 was obtained after three weeks interval of test-retest.

Procedure

Permission to carry out the research was obtained from the chairman of Saki West Local Government who later directed the researcher to the Local Agency for the Control of AIDS (LACA) Officer who was in charge of HIV/AIDS activities in that LGA.

In collaboration with AIDS Prevention Initiative in Nigeria (APIN) Officers based in Saki the researcher developed the home based HIV counselling and testing intervention whereby indigenes were trained as counsellors and testers after consultation with the street chiefs, because it

would not be culturally appropriate for men to engage in counselling women without the consent of their husbands or alien counselling the natives without the consent of their leaders. Inclusion criteria for selecting trained counsellors include completion of Secondary School Certificate Examination, knowledge of HIV counselling and testing, participation in the training for HIV counselling and testing, residence in the intervention area, and a history of community work.

The intervention team included a clinical nurse as supervisor, 12 trained counsellors/testers (three in each of the four streets) they were all from Saki town and spoke the local language and onko dialect. All the intervention team completed a two weeks training in HIV counselling and testing organized by APIN and the counsellors spent two months being supervised by the Society for Women and AIDS in Africa, Nigeria chapter, Oyo State branch (SWAAN) during their participation in HIV counselling and testing in five Local Governments in Oke-Ogun area of Oyo State to ascertain their experience in the counselling and testing.

At the beginning of the intervention programme there was extensive community mobilization and sensitization. Advocacy visits were paid to the Chiefs of various traditional leaders, heads of households of various intervention areas. During this period, the counsellors discussed with local Chiefs and traditional leaders about HIV and HIV counselling and testing. Based on these discussions the community leaders appointed a town crier to sensitize members of the community on HIV counselling and testing counsellors also met and discussed HIV and HIV counselling and testing various group meetings such as the Chiefs' meeting, women's meeting, various artisans' meetings. Some churches and mosques were also visited for the same purpose.

Between July and December 2013, the trained counsellors carried out door to door visits to all households in the intervention programme. In each of the households, permission were sought from the households head, and then the trained counsellor offered pre-test counselling, HIV testing and post testing counselling to all household members aged 18 years and older. Adolescents aged 15 – 17 years were also offered testing after seeking for the consent of their parents/guardians. Counsellors also engaged in HIV counselling and testing for couples.

Trained counsellors gave basic education on HIV/AIDS, after which clients were allowed to make choice regarding participation. Those who volunteered to participate were then met individually (or as a couple) in a private room or section of the home, where pre-test counselling, HIV testing, and post-testing counselling took place.

The counsellors used the same rapid HIV test kits that were used by the Saki General Hospital (Control Group) during the study period. The counsellors then engage in steps to perform the finger-prick and testing.

The counsellors first put on protective clothing, wash their hands and dry them. He/she then puts on his/her gloves, explain the procedure to the client, and choose the finger with the least callus area, clean the finger with alcohol swab, starting in the middle and working out to avoid re-contaminating the area. The counsellor allows the alcohol to dry air. The Lancer was shown to the client to assure him/her that it is new. The counsellor then use an auto-lancet, and held the finger firmly, and then place the lancet on the fingertip and then press the lancet against the skin and puncture the skin. He/she holds the finger firmly and makes a quick firm pick. The first drop of blood was wiped away with sterile dry gauze/cotton wool. To help the blood flow, the counsellor holds the finger and apply pressure to the base of the finger. He/she then collects the blood specimen according to the manufacturer's instructions. The counsellor now gave the client a dry gauze pad or cotton wool to place on the finger until the bleeding stops. Before the client leaves the testing area the counsellor properly dispose the gauze pad or cotton wool into non sharp waste containers and lancet into sharps container.

The counsellors use one strip per test. He/she records the client identification at the top of the test strip. The foil covering the test strip is then removed. The blood collected is added onto the absorbent pad on the test strip, the counsellor then waits one minutes until the blood is absorbed on the pad. A drop of chase buffer is added to the blood specimen on the pad. The counsellor starts the timer and read the results in 15 minutes.

A positive result indicates that there are two red time/spot on the test strip: one line/spot on the control window and another line/spot on the patient window. Negative result indicates that there is one red line on the control window only.

Invalid result indicates that there is a line on patient test window.

Discordant means when the same specimen gives two different results on two different test kits. UNI-GOLDTM HIV is used to further test invalid or discordant results and again for confirmation of HIV positive results. Those who tested positive were given a referral letter to be taken to a HIV/AIDS clinic inside Saki General Hospital for CD₄ testing and other HIV related services. HIV positive clients were also contacted three times a week by their counsellor after diagnosis to assess progress and access to needed health and social services. Post-test measure was admonished after testing.

Control group

HIV counselling and testing services standard care was available at Saki General Hospital. (The participants here were the control group). During the study period, in 2013, State Action Committee on AIDS (SACA) launched HIV counselling and testing campaign in all the 33 LGAS of Oyo State. The campaign intended to promote HIV testing in clinics and government hospitals and in mobile units going from clinics into communities. Thus, the various government hospitals and clinics, private hospitals and NGOS commenced counselling and testing. Home-based testing was not part of the campaign.

However, the pre-test was administered to the participants at the General hospital before the pre-test counselling and testing and post-test measure was administered after post-test counselling and testing by the researcher with the help of nurses in the General hospital.

Statistical Data Analysis Descriptive statistics of percentage and ratio odds were utilized to analyse the research questions while Analysis of Covariance (ANCOVA) was employed to process two research hypotheses raised in the study

Results

Table 1: Characteristics of Home-Based HIV Counselling and Testing Values are numbers (percentage) of participants

Characteristics	Baseline survey	
	Intervention	Control
Interviewed		
No of participants		
Drinking water source	1, 564	1, 648
Pipe water on the house or yard	90 (6)	214 (13)
Borehole or public tap	563 (36)	346 (21)
Well water and others	907 (58)	1088 (66)
Type of Toilet		
Flush	31 (2)	49 (3)
Pit or ventilated improved pit	1, 283 (82)	1, 269 (77)
None or open	250 (16)	330 (20)
Type of Cooking Gadget		
Electricity cooker	16 (1)	49 (3)
Gas cooker	32 (2)	33 (2)
Stove	360 (23)	346 (21)
Coal pot	438 (28)	412 (25)
Firewood	719 (46)	808 (49)
Ownership of mobile phone	657 (42)	643 (39)
Mean (SD) No of household member age > 18	1, 204 (77)	1, 302 (79)
Female	985 (63)	1, 005 (61)
Mean (SD) age years	39.6 (17.8)	39. 5 (17.8)

Educational level		
None	172 (11)	214 (13)
Some primary	422 (27)	396 (24)
Completed primary	281 (18)	264 (16)
J. S. 3	187 (12)	214 (13)
Completed Senior Secondary School	172 (11)	198 (12)
Grade II	90 (6)	115 (7)
Complete NCE	125 (8)	148 (9)
Complete University education	109 (7)	99 (6)
Had an HIV test	532 (34)	544 (33)

Table 2: Estimates of Effect of Home Based HIV counselling and testing on prevalence of HIV testing values are number with variable (number in group percentage)

Testing for HIV during study period	Intervention	Control	Prevalence ratio (95% CI)
Overall	864/1200 (72)	673/1320 (51)	1. 53 (1.31 to 1.79)
Women	924/1200 (77)	713/1320 (54)	1. 50 (1.28 to 1.76)
Men	588/1200 (49)	462/1320 (35)	1. 51 (1.17 to 1.93)
First Ever HIV test	528/1200 (44)	436/1320 (33)	1. 29 (0.97 to 1. 47)
Test results given	1164/1200 (97)	1241/1320 (94)	1. 04 (0.93 to 1.09)
HIV positive	84/1200 (7)	145/1320 (11)	0.63 (0.45 to 0.89)
Outcomes Among people who had an HIV Test during the study period			
Outcomes	Intervention	Control	Prevalence ratio (95% CI)
Disclosed results of most recent HIV test to someone	707/972 (73)	648/876 (74)	0. 93 (0.77 to 1. 16)
Received couple counselling and testing with most recent HIV test	252/862 (29)	92/834 (11)	2. 21 (1. 47 to 3. 01)
Experience of Intimate partner violence after disclosing HIV status	29/972 (3)	32/648 (5)	0. 55 (0. 33 to 0.97)
Outcomes among HIV Positive Individuals			
Any stigmatization behaviours experience by HIV positive individuals in the past years	21/108 (19)	30/108 (28)	0. 55 (0. 29 to 1. 09)
HIV positive had CD ₄ count since testing	75/82 (92)	77/87 (89)	0. 99 (0. 88 to 1. 09)

The prevalence of HIV testing increased between baseline and post-intervention in both interventions in both interventions 34 to 72%; 35 % to 51% in the control with a greater increase in the intervention group compared with control group (prevalence ratio 1. 53, 95% confidence interval (1. 31 to 1. 79). The intervention impact was similar among males and females. The recent HIV test was the first ever such test for 44% (528/1200) of participants in the intervention group and 33% (436/1320) in the control group receiving of test results after testing was high in both groups. Among those who were tested during the study period, the

prevalence of HIV was 11% (145/1320) in the control group and 7% (84/1200) in the intervention group.

Table 3: Estimates of Effect of Home Based Counselling and Testing on Secondary outcomes values are number with outcome number in group percentage

Outcomes	Intervention	Control	Prevalence ratio (95% CI)
Outcomes with the whole sample HIV knowledge			
Knowledge that someone with HIV can feel and look healthy for many years	924/1200 (77)	952/1320 (72)	0.84 (0.69 to 1.03)
Stigma			
Agree that people with HIV are treated badly in the community because of their status	312/1200 (26)	346/1320 (33)	0.75 (0.49 to 1.25)
Any stigmatizing behaviour observed in the community in the past years towards people with HIV/AIDS	444/1200 (37)	568/1320 (43)	0.69 (0.49 to 1.04)
Sexual Behaviour			
More than one sexual partner in the past 3 months	24/1200 (2)	106/1320 (8)	0.47 (0.31 to 0.59)
Among people who had HIV test	27/912 (3)	38/635 (6)	0.35 (0.22 to 0.56)
Among people who have never had an HIV test	14/278 (5)	46/515 (9)	0.71 (0.45 to 1.15)
Any casual partner in the past three months	48/1200 (4)	132/1320 (10)	0.53 (0.45 to 0.71)
Among people who have never had HIV test	28/278 (10)	62/515 (12)	0.77 (0.51 to 1.17)
Condom use during the last sexual intercourse	150/516 (29)	174/726 (24)	0.85 (0.63 to 1.13)
Ever been forced to have sex by a partner	21/516 (4)	36/726 (5)	0.76 (0.46 to 1.26)

Table4: Pre-Post Treatment comparison of prevalence of HIV Testing of the experimental and control group using ANCOVA

Source of variation	DF	SS	MS	F-Ratio obs.	F-Ratio Crit.	Test decision
Between Group	65	158832.05	2443.57	67.31	2.07	Reject HO
Within Group	1134	328213.62	289.43			
Total	1199	487045.67	2733.00			

Critical value F, (65, 1134) = 67.31, P>0.05

The findings as shown in table 4 compared pre-test outcome of procedure of HIV testing of participants indicates that ANCOVA has critical value F, (65, 1134) = 67.31, P>0.05 which suggests the existence of statistical significant difference in the prevalence of HIV testing of the participants. Thus the null hypothesis was rejected. This also indicates

significant main effect of treatment on prevalence of HIV testing of the participants.

Table 5: Pre-Post Treatment comparison of Sexual Risk Behaviours of Participants using ANCOVA

Source of variation	DF	SS	MS	F-Ratio obs.	F-Ratio Crit.	Test decision
Between Group	65	210445.95	3237.63	63.73	2.29	Reject HO
Within Group	1134	359806.86	317.29			
Total	1199	570252.81	3554.92			

Critical value $F(65, 1134) = 63.73, P > 0.05$

The finding as revealed in table 5 shows that the compared pre-post treatment outcome following ANCOVA has critical value $F(65, 1134) = 63.73, P > 0.05$ which indicates the existence of significant main effect of treatment on sexual risk behaviour of the participants. It follows therefore that the tested hypothesis was not supported by this findings.

Discussion

Home based HIV counselling and testing approach had a significant impact for improving uptake of HIV counselling and testing in rural areas of Nigeria. Again there was a significant reduction in multiple partners (especially of those tested) and reduction in casual partners in the home based approach compared to the control group. The sexual risk behaviours also increased among those who participated in the home based approach.

There was an increase in HIV testing between the baseline and post intervention periods. Probably this was due to SACA. HIV counselling and testing during this period It is true that SACA campaign achieved increase individual HIV testing, however, the home based HIV counselling and testing approach yielded additional benefits, including awareness, reaching more people who never previously been tested for HIV especially reaching more couples who under normal circumstances avoid not go to clinic together for testing. Another benefit of home based approach was that of community mobilization and trained counsellor home visits in increasing awareness and improves willingness to go and be tested in the health centres.

Home based HIV counselling and testing in addition to health clinic testing services and mobile outreach is necessary to achieve improvement in the level of coverage of HIV testing.

Home based HIV counselling and testing, if combine with health facility testing services and mobile outreach is likely to achieve high population coverage of HIV testing. The effect of home based HIV Counselling and testing on couple counselling and testing is likely to be larger in urban areas where couples are more likely to live together.

The rural area of Nigeria is most likely to have high levels of stigma, with over a quarter of participants in the control group reporting that people with HIV are badly treated because of their status and a high percentage observe stigmatizing behaviour towards people with HIV/AIDS in the previous year. The impact of home based intervention on HIV testing has really improved the uptake in the study area.

Lesson learnt

One of the lessons learnt from the result obtained from this research is that the research was carried out under real condition using people from that locality speaking language and dialect of the area. Again, the large sample size for both the intervention and control groups reduced selection bias.

However, the research has its limitation in the sense that outcomes were self reported and could have been subject to recall bias. More so, questions related to numbers of partners were restricted to the last three months.

The implication of this study is that it provides supporting evidence that home based HIV counselling and testing by local counsellor could be wonderful and can have wider benefits outside the actual testing. It follows therefore that home based intervention HCT with a proven effect on testing uptake should be utilized for scale up.

Conclusion

This study indicates that home based testing intervention carried out with local counsellor can achieve high uptake of HIV testing, increase couple counselling. It is therefore suggested that home based HIV testing should be improved upon and utilized for scale-up as an intervention to reach higher population in order to prevent further spread of HIV and provision of treatment for infected individuals.

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