

Survey of Trend of HIV/AIDS Epidemic in Awka Metropolis, Nigeria

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Abstract

This research study reports the state of HIV/AIDS infection amongst the attendants of General Hospital Arnaku and Regina Caeli hospitals, Awka for screening between 2012 and 2013 the attendees were screened for HIV, data on demographics and sexual behavior were collected through the admission of questionnaires at baseline. The overall HIV prevalence was 8.4% and 10% of the women involved were at risk of HIV infection. The spread of HIV in Nigeria is predominantly through heterosexual transmission (68.5%). The study revealed that the attendees' married, but involved into extra-marital affairs (multiple Partners) were vulnerable to HIV infection among the attendees. Nevertheless, they were high level prior knowledge of existing of HIV infection especially among the female attendees, due to the impact created by National Agency for HIV control in Nigeria. The use of condoms (43.7%) was given attention to and this was through adequate efforts of counseling and education by Heart to Heart units in Nigeria, hence considerably reduction in incidence of HIV acquisition. HIV infection was prevalence amongst the commercial drivers, (Bus, Tricycles, Taxi drivers) 37.0%. They were socially closed to free women, especially commercial sex workers, and lack of knowledge of HIV contributed to the incidence of HIV among male attendees. The need for focused targeted interventions at this group, through awareness creation and appropriate education to reduce the risk of HIV infection by both the privates. Non-Governmental Organizations and Governmental Agencies are recommended.

Keywords: AIDS; Awka metropolis; HIV infection; Serological test; Survey; Titre

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Introduction

HIV/Aids is an increasing health and development problems in the world, it will continue to occupy a significant place in health research, as various aspects of HIV are being studied. More than 4.5% of Nigerians are being living with HIV/Aids infection of 160 million in population. In 2012, Nigeria, the prevalence rate among adults ages 15-49 was 3.5 percent; Nigeria has the second largest number of people living with HIV/Aids infection in the world. The epidemic Nigeria is complex and varies widely by region to region, in some region the epidemic is more concentrated and are driven by high-risk behaviors', while other states have more generalized epidemics that are sustained primarily by multiple sexual partnerships in the general population, youth and young adults in Nigeria are particularly vulnerable to HIV (NACA) with young women at higher risk than young men. There are many risk factors that contribute to the spread of HIV in Nigeria, including prostitution, high prevalence of sexually transmitted

infection (STI) clandestine high risk heterosexual practices, international trafficking of women, children and lack of regular blood screening. The necessity to co-ordinate programmers' simultaneously at the Federal, States, and Local Government levels introduces complexity into planning. The larger private sector is largely unregulated and more importantly has no formal connection to the public health system where most HIV infection is delivered [1]. Training and human resources development are severely limited in all sectors and will surely hamper the programme implementation at all level care and support are limited because the existing are over stretched and most have insufficient training in key services (NACA) [2].

Awka, the capita! City of Anambra State of Nigeria in Eastern part of Nigeria has undergone rapid economic growth and fast industrial development in recent times. The dynamic city in terms of population is estimated at 500,000. With two Universities (Private and Federal) Federal and State Ministries, Secondary

Schools, Commercial and Business Centres of high reputes. The City has a growing numbers of vulnerable segments of young migrants, doing one business or another, motor cyclist, keke riders, buses and taxi operators make the city a home for all The socioeconomic status of Awka metropolis is prone or susceptible to high risk behaviors' for HIV infection to thrive. The present study is carried out to determine the trends of HIV/Aids infection in Awka metropolis, to investigate risk factors associated with and recommend intervention pathways [3].

Materials and Methods

Materials

Sites used: All the materials used in this study were obtained from the Regina Caeli General Hospital Amaku and General Hospital Awka, Anambra state of Nigeria and were of analytical quality. The two hospitals are located at the centre of Awka town, and were used for collection of samples and analyzed.

Tool used: A compound structured, open and closed ended questionnaires that contained the frequency use of condoms with sexual partners, sexual orientation, occupation, sex, age, sexual partners and other risk behaviors were obtained to determine individuals HIV infection relationship.

Reagents used: 0.05% solution of sodium hypochlorite. 0.09% sodium alcohol solution, 70% alcohol solution, Buffer phosphate saline, Tap water, Wash buffer, Western blot reagent, Cambridge Biotech PARTEC GmbH no Lyse buffer, commercially made enzyme linked immunosorbent Assay kit for identification of Hiv-1 and Hiv-2 antibodies (recommbigen HIV-2 Cambridge biotech-Galway, Ireland).

Apparatus used: Micro pipettes, Micro pipette tips, Disposable hands gloves, Mouth mask, Laboratory coat, Wastes bin, Western blot kit (Immunitics -Qualicode™ HIV -1/ kit), Cotton wool, EDTA bottles, Forceps (blunt), 5 mL Syringes/Needles (Sizes: 38 x 0.8 mm), Tourniquet, Time watch (stop watch). Rocking flat form, Vacuum system (water aspirator with trap), Graduated cylinders (25 mL and 1 L capacity), Automatic pipette for dispensing volumes of 10 uL to 1 mL, Flask (25 mL and 1 L), and Multichannel pipette [4].

Methods

Distribution of questionnaires: The compound structured, open and closed ended questionnaires were distributed to the respondents or populace and were guided on the filling of questionnaires. The filled-in Questionnaires were retrieved back from the respondents. Data were collected and analyzed.

Samples collection: MI blood samples used in this study were collected from patients attended the two hospitals for serological screening for HIV infection status. All HIV infected and HIV uninfected individuals were provided with intensive reduction pre-test and post - test counseling at each visit before collection of blood samples. Before samples collection, informed consents were obtained from the patients.

Laboratory analyses: Serological Tests: All clinical samples were

aseptically collected. All blood serum samples obtained from patients were screened on collection with a commercially made enzyme linked immunosorbent Assay kit for identification of Hiv-1 and Hiv-2 antibodies (recommbigeu HIV-2 Cambridge biotech, Gal way,.lr land) specimens tested positive by this method were confirmed by a Rapid test for HIV-1 and HIV-2. Specimen with wide discrepancy (two test results) was confirmed with a Western blot Assay Cambridge Biotech. The results were interpreted according to the criteria described by the Center for Disease Control and Prevention method (CDC).

Data analysis

Data obtained in this research study were subjected to simple statistical tool package of analysis by using total, mean and percentage in order to ascertain, and verify the dispersion and central tendency of variables being obtained as described by Stroud and Booth and as performed (**Tables 1-20**) [5].

The result has made attempt to examine the trends of HIV/AIDS infection in Awka metropolis. The prevalence of HIV infection was significantly high among the female attendees as shown in **Table 1**, the same table revealed that females were more likely

Table 1 Shows Male Attendees, HIV Status at Regina Caeli Hospital in 2013 on Serological screening.

| Month | No. of Attendees | HIV Status Positive | Negative (re) HIV Status |
|--------------|------------------|---------------------|--------------------------|
| January | 257 | 34 | 223 |
| February | 319 | 25 | 294 |
| March | 374 | 20 | 354 |
| April | 317 | 18 | 299 |
| May | 473 | 24 | 413 |
| June | 350 | 20 | 330 |
| July | 491 | 31 | 460 |
| August | 612 | 31 | 580 |
| September | 387 | 38 | 349 |
| October | 576 | 34 | 542 |
| November | 502 | 31 | 471 |
| December | 334 | 23 | 311 |
| Total | 4992 | 326 | 4626 |

Table 2 Shows Female Attendees, HIV Status at Regina Caeli Hospital in 2013 on Serological Screening- Female Attendees.

| Month | No. of Attendees | HIV Status Positive | Negative (re) HIV Status Negative |
|--------------|------------------|---------------------|-----------------------------------|
| January | 33 | 29 | 4 |
| February | 70 | 48 | 22 |
| March | 51 | 49 | 2 |
| April | 57 | 50 | 7 |
| May | 73 | 68 | 5 |
| June | 56 | 42 | 14 |
| July | 61 | 56 | 5 |
| August | 86 | 54 | 32 |
| September | 67 | 57 | 16 |
| October | 42 | 30 | 12 |
| November | 50 | 40 | 10 |
| December | 37 | 32 | 5 |
| Total | 616 | 482 | 134 |

than males attended HIV/AIDS screening test clinics. At the ages of 22-32 years, it was observed that there was high prevalence of HIV infection among the attendees, this particular age group might have had a wrong sexual orientation from peer groups or initialed into sexual life at a tender age of 8 years. **Table 5** informed the level of prior knowledge of HIV infection (58.80%) in Awka as there were increased in awareness on transmission and prevalence of HIV infection, and this lead to minimized spread of HIV infection, especially among the males (8.4%) [6].

Table 6 reported on consistent use of condom among the attendees it was observed that (43.7%) used condom especially with commercial sex workers, (16.3%) the attendees constantly used condoms during sex with regular or casual sex partners. This is mark of adherence to counseling advice of HIV Heart to Heart officers in Nigeria. The regular condoms used have reduced HIV infection, but increased sexual proscurity among the adults. On risk behaviors, heterosexual attendees recorded high prevalence (63.5%) this could be traced to multiple sex partners of the attendees.

Table 3 Shows Male Attendees, Hiv Status of male attendees at Regina Caeli Hospital in 2014 on Serological screening.

| Month | No. of Attendees | HIV Status Positive | Negative (re) HIV Status |
|--------------|------------------|---------------------|--------------------------|
| January | 49 | 31 | 18 |
| February | 27 | 6 | 21 |
| March | 8 | 4 | 4 |
| April | 12 | 6 | 6 |
| May | 13 | 5 | 7 |
| June | 22 | 11 | 11 |
| July | 12 | 6 | 6 |
| August | 15 | 5 | 10 |
| September | 28 | 8 | 20 |
| October | 40 | 10 | 30 |
| November | 50 | 10 | 40 |
| December | 45 | 10 | 35 |
| Total | 321 | 219 | 209 |
| | 321 | 112 | |

Table 4 Shows Female Attendees, HIV Status of attendees at Regina Caeli Hospital in 2014 on Serological screening.

| Month 2014 | No. of Attendees | HIV Status Positive | HIV Status Negative |
|------------|------------------|---------------------|---------------------|
| January | 90 | 30 | 60 |
| February | 118 | 48 | 70 |
| March | 130 | 50 | 80 |
| April | 120 | 50 | 70 |
| May | 135 | 70 | 65 |
| June | 122 | 42 | 80 |
| July | 141 | 56 | 85 |
| August | 118 | 53 | 65 |
| September | 96 | 51 | 45 |
| October | 80 | 30 | 50 |
| November | 120 | 40 | 80 |
| December | 92 | 32 | 60 |
| | 1362 | 542 | 810 |

Table 5 Shows male Attendees, HIV Status of Male attendees at Amaku General Hospital, Awka in 2013 on Serological screening.

| Month | No. of Attendees | HIV Status Positive | HIV Status Negative |
|-----------|------------------|---------------------|---------------------|
| January | 101 | 31 | 70 |
| February | 95 | 20 | 75 |
| March | 68 | 18 | 50 |
| April | 60 | 15 | 45 |
| May | 70 | 20 | 50 |
| June | 81 | 15 | 66 |
| July | 68 | 28 | 40 |
| August | 50 | 20 | 30 |
| September | 68 | 28 | 40 |
| October | 84 | 24 | 60 |
| November | 73 | 28 | 45 |
| December | 81 | 21 | 60 |
| | 899 | 216 | 631 |

Table 6 Shows Female Attendees, HIV Status of female attendees at Amaku General Hospital in 2013 on Serological screening.

| Month | No. of Attendees | HIV Status Positive | HIV Status Negative |
|-----------|------------------|---------------------|---------------------|
| January | 89 | 29 | 60 |
| February | 118 | 48 | 70 |
| March | 129 | 49 | 80 |
| April | 126 | 56 | 70 |
| May | 133 | 68 | 65 |
| June | 122 | 42 | 80 |
| July | 141 | 56 | 85 |
| August | 118 | 53 | 65 |
| September | 96 | 51 | 45 |
| October | 80 | 30 | 50 |
| November | 120 | 40 | 80 |
| December | 92 | 32 | 60 |
| | 1364 | 554 | 860 |

Table 7 Shows Male Attendees, Hiv Status of Male attendees at Amaku General Hospital, Awka in 2014 on Serological screening.

| Month | No. of Attendees | HIV Status Positive | HIV Status Negative |
|-----------|------------------|---------------------|---------------------|
| January | 51 | 18 | 33 |
| February | 64 | 21 | 43 |
| March | 60 | 14 | 46 |
| April | 82 | 25 | 57 |
| May | 81 | 27 | 54 |
| June | 58 | 26 | 32 |
| July | 83 | 30 | 53 |
| August | 81 | 22 | 59 |
| September | 85 | 25 | 60 |
| October | 90 | 30 | 60 |
| November | 91 | 26 | 65 |
| December | 45 | 20 | 25 |
| | 871 | 284 | 587 |

Table 8 shows occupation of the attendees, there was a marked Increase of HIV infection among Keke, Bus and taxi drivers who attended screening test clinics; this can be traced to poor

knowledge of HIV infection and contact interaction with women and lack of safe methods practicing during sex.

Table 9 shows attendees regular sexual partners, it was observed that spouse with extra marital sex recorded high prevalence to HIV infection to HIV infection (25.8%). This is so as all multiple sex partners are prone to multiple sex infections, STD and HIV infections. The findings indicate a need to define strategies for increase awareness to HIV infection in the Metro polices, and control measures, especially among females. The measure for success in HIV/AIDS targeted to education on acceptance of condom use with regular sex partners, as absence to sex not yielded results, effective counseling of couples to adhere to their spouses will reduce high risky sexual behaviors regular status

Table 8 Shows Female Attendees, Hiv Status of Female attendees at Amaku General Hospital, Awka in 2014 on Serological screening.

| Month | No. of Attendees | HIV Status Positive | HIV Status Negative |
|-----------|------------------|---------------------|---------------------|
| January | 80 | 30 | 50 |
| February | 86 | 40 | 46 |
| March | 70 | 40 | 30 |
| April | 68 | 36 | 32 |
| May | 70 | 30 | 40 |
| June | 72 | 40 | 32 |
| July | 90 | 50 | 40 |
| August | 101 | 45 | 56 |
| September | 110 | 40 | 70 |
| October | 100 | 50 | 50 |
| November | 125 | 45 | 80 |
| December | 110 | 40 | 70 |
| | 1082 | 401 | 556 |

Table 9 Attendees Heart to Heart Clinics at Regina Caeli and Amaku General Hospitals.

| Year | Hospital attended for screening | Total Attendees |
|-----------|---------------------------------|-----------------|
| 2013/2004 | General Hospital Awka | 4216 37% |
| 2013/2014 | Regina Caeli Hospital, Awka | 7291 63% |
| | | 11,507 100 |

Table 10 Shows total occurrence of Attendees in 2013 and 2014.

| Female sex (2013) | No of Occurrence | Percentage % Occurrence |
|-------------------------|------------------|-------------------------|
| Female positive 2013 | 1036 | 50.3 |
| Female negative 2013 | 994 | 8.6 |
| Total Attendees | 1.980 | 25% |
| Male positive 2013 | 542 | 9.8 |
| Male Negative 2013 | 5257 | 98.2 |
| Total Attendees | 5891 | 75% 50 |
| Female negative 2014 | 1366 | 57 |
| Female positive 2014 | 953 | 43 |
| Total Attendees | 2444 | 67% |
| Male positive 2014 | 328 | 27 |
| Male negative 2014 | 8.40 | 73 |
| Total Attendees 2014 | 1220 | 33% |
| Total | 11507 | 100 |
| Total attendees in 2013 | 7871 | 64.4% |
| Total attendees in 2014 | 3636 | |

screening is highly stressed for effective monitor of spread of HIV infections.

Results

The present study was carried out with the heart to heart Clinics for the HIV screening attendees in Awka, and hence cannot be generalized to the population of Awka. The study enhanced appropriate measures to identifying transmission mode, control mechanism, and appropriate intervention pathways for HIV/AIDS in Awka metropolis. As shown in **Table 9**. Regina Caeli hospital, Awka recorded the highest attendees of (63%) [7]. We observed that the highest attendees recorded (64.4%) was in 2013, with a sharp decrease in 2014 this might have caused by constant awareness creation. It was observed in **Table 10** that HIV infection prevalence was high among the female attendees (71%), while the attendees with risky sexual behavior that include those with wives and husbands extra-marital affairs (45.4%) were vulnerable to HIV infection in Awka metropolis **Table 12** data on demographics and sexual behavior were obtained through the admission of questionnaires the high prevalence of HIV infection was high among the attendees of 28-32 (31.% age groups this is a matured age, but the high rate might be a result of lack of consistent use of condoms during their extra marital affairs and lack of awareness of AIDs transmission. At was observed in **Table 1** that incidence of HIV infection within the two years was decreasing with HIV negative (75%) and there was high level in **Table 7** prior knowledge of existing of HIV infection especially

Table 11 Composite Data for sex Distribution of HIV.

| Gender and HiV status | Number of Occurrence | Percentage of Occurrence (%) |
|---------------------------|----------------------|------------------------------|
| Total Male Hiv positive | 870 | 30.4 |
| Total male Hiv negative | 6697 | 70.0 |
| Total female Hiv positive | 1989 | 71.0 |
| Total female Hiv Negative | 2360 | 29.0 |
| | 2859 | |

Table 12 Trends of HIV positive among sexual partners Attendees.

| Sex Par1ners. | Number of Occurrences | Percentage of Occurrence |
|---------------------|-----------------------|--------------------------|
| Wife/Girl Friends | 59 | 2.2 |
| Wife Friends | 1300 | 45.4 |
| Commercial Sex Work | 900 | 31.4 |
| Casual Partners | 2859 | 100 |

Table 13 Age Distribution of HIV Infection among the attendees at the Hospitals.

| Age Groups (years) | Incidence | Percentage incidence |
|--------------------|-----------|----------------------|
| 10 – 15 | 59 | 2.3 |
| 16 – 21 | 200 | 7.7 |
| 22 – 27 | 650 | 23.0 |
| 28 – 32 | 900 | 31.0 |
| 33 – 37 | 550 | 19.0 |
| 38 – 40 | 300 | 10.0 |
| 44 – Above | 200 | 7.0 |
| | 2859 | 100.00 |

among the female attendees. This impact was made by National Agency for HIV control in Nigeria (NACA) through education and awareness.

In other words female were likely than their male counterparts in Awka Metropolitans attendee HIV/AIDS heart to heart screening status.

In sexual orientation as shown in **Table 15**, by sexual attendees had HIV infection (56%) in others risky behavior this is a favorable attitude towards increased in HIV/Aids infection and an is 32 years were said to have the highest infection rate of sexually transmitted infection (STV) worldwide, and in line with MDG policy expecting yours to determine their voluntary HIV AIDs, screening fests. The attendees occupation that had high incidence of HIV [8,9].

Table shows the attendees occupation and HIV infection that the higher incidence was recorded amongst the drivers, keke and bus drivers 5500 (49.0%) [10].

Table 14 Trends of HIV Positive among Sexual Partners Attendees.

| HIV Status | Incidence | Percentage |
|----------------------|--------------|------------|
| Total HIV – Positive | 2859 | 25.0 |
| Total HIV – Negative | 8459 | 75.0 |
| Total | 11316 | 100 |

Table 15 Awareness/Knowledge of HIV/AIDS Infection Among The Attendees of Screening Status 2013/2014.

| Prior Awareness Knowledge | Responds | Percentage of Responds (%) |
|---------------------------|------------|----------------------------|
| Yes Awareness | 1659 | 58.2 |
| No Awareness | 700 | 24.4 |
| No Responds & Neutral | 500 | 17.4 |
| Total | 800 | 100 |

Table 16 Condoms Used By Attendees with Regular Sex.

| Partner | No of Occurrence | Percentage (%) |
|------------------------|------------------|----------------|
| Always use condoms | 1459 | 51 |
| Sometimes used condoms | 800 | 28 |
| Never used condoms | 600 | 21 |
| Total | 2859 | 100 |

Table 17 Risk Behaviour of the Attendees Sexual Orientation.

| | No: of Occurrence | Percentage (%) |
|----------------------|-------------------|----------------|
| Bisexual Attendees | 6318 | 56 |
| Homosexual Attendees | 1000 | 9 |
| Heterosexual | 4000 | 34 |
| Total | 11,316 | 100 |

Table 18 Regular Sexual Partner of the Attendees (Males/Females).

| Regular Sex Partners | No: of Occurrence | Percentage (%) |
|-------------------------------|-------------------|----------------|
| Wife | 1500 | 1314 |
| Wife/Husband and Girl Friends | 3000 | 27 |
| Girl Friends | 2000 | 18 |
| Commercial Sex Workers | 2,318 | 28 |
| Casual Sex Partners | 2500 | 223 |
| Total | 11,316 | 100 |

Table 19 Trends of HIV Positive Attendees Occupation.

| Occupation | No: of Occurrence | Percentage (%) |
|---------------------------|-------------------|----------------|
| University Undergraduates | 118 | 1.0 |
| Secondary School Students | 300 | 1.4 |
| Civil / Public Servants | 1000 | 9 |
| Skilled/Unskilled Workers | 4500 | 40 |
| Drivers: Keke, Bus, Taxi | 5500 | 49 |
| Total | 11316 | 100 |

Table 20 Trends of HIV Positive attendees among Sexual Partners.

| Sex Partners | No: of Occurrence | Percentage of Occurrence |
|-----------------------------|-------------------|--------------------------|
| House wife | 59 | 2.2 |
| Spouse / Girl / Boy Friends | 1300 | 45.4 |
| Commercial Sex Worker | 900 | 31.4 |
| Casual Partners | 600 | 21 |
| Total | 2859 | 100 |

Discussion

The study of this nature has enhanced appropriate measures to identifying transmission mode, control mechanisms and intervention pathways for HIV/AIDS in Awka metropolis [11]. Female youth appeared to have a propensity than their male counterparts to ascertain their HIV status. HIV/AIDS screening behavior, data in **Table 1** tended to reveal that more females (91.6%) than males (8.4%) had known or had prior knowledge of HIV infection. In other words, females were more likely than their male counterparts in Awka attended HIV/AIDS screening or knowledge of HIV infection. The age was categorized, the ages of 22-32 young adults populations tended to reveal that HIV/AIDS prevalence is higher among bisexual attendees (56%) appeared to be a progression favorable attitude towards increased in HIV/AIDS infection, in Awka, and this is in agreement with some other research studies this was important, partly because at the ages of 22-32 years were said to have the highest infection rate of sexually transmitted infections (STI) worldwide, and in line with MDG policy expecting youth to determine their voluntary HIV/AIDS screening tests among the Obstacles to HIV/AIDS [12]. In Awka Were Apathy, Fear, Stigmatization and Ignorance, females appeared to have a propensity than their male counterparts to ascertain their HIV status. The use of condom among attendees was highly encouraged (51%) this could be traced to awareness and society in Nigeria. **Table 17**, it was observed that HIV positive among Drivers, keke, taxi, and bus drivers is common among the group of profession due to risk behavior they always occupied, having multiple sexual partners and social contacts with women it could also be traced to lower level of education, awareness and increase in the number of sexual partners. In the whole, it has been observed that despite remarkable increase in public awareness regarding HIV prevention, control and mode of transmission. There has been no corresponding change in attendees sexual high risk behavior [13].

References

- 1 Anderson RM (1998) Transmission Dynamics of Sexually Transmitted Infections, Sexually transmitted disease. (3rd edn.), New York, Me Graw Hill, pp: 25-26.
- 2 NACA (2014) National Agency for Control of AIDS Reports. Daily Sun News Paper 10: 2920.
- 3 Baeten JM, Mostad SB, Hughes MP (2001) Selenium deficiency is associated with Shedding of Hiv-1 infected cells in the female genital tract. J Acquired Immune Deficiency Syndrome 26: 360.
- 4 Adimora AA, Schoenbach VJ (2002) Contextual factors and the black-white disparity in heterosexual HIV transmission. Epidemiology 13: 707-708.
- 5 Brahme RG, Sahay S (2005) High risk behavior in your men attending sexually transmitted disease clinics in pune, India. AIDS care month 16: 1-4.
- 6 Centres for Disease control and prevention (1993) Sexually transmitted disease treatment quid lines 42-1-10.
- 7 Centres for disease control (1995) Interpretation and use of the western bolt assay for serodiagnosis of human immune deficiency virus type 1. Seroconversion in patients attending sexually transmitted clinics in India. J infects DIS 42: 1-1Q.
- 8 Federal government of Nigeria (2004) National policy in population for sustenance development, federal government of Nigeria. NACA Report National News Paper 2: 20-22.
- 9 Key M, Naidu KU (2008) Reports on global Aids epidemic. J med Philos 27: 180-181.
- 10 Rdera M (2003) the strategy treating 3 million by making it happen in Rural Tazania. Nat Rev immune 2: 201.
- 11 SEII FT (2007) why should Africa's women continue crying for life, WHARC Benin city Nigeria.
- 12 UNAIDS-WHO (2003) Epidemic update, joint united nationals program on HIV/AIDS and world health organization Progress report
- 13 UNAIDS (2004) Fourth report on the global AIDS epidemic Geneva, Switzerland: UNAIDS.