Adolescent’s Knowledge towards the Causes of HIV/AIDS (The Special Study in the Ganjam District of Odisha)

Dr Jyotsnarani Panda (Ph.D)

The Guest faculty of the Department of Home Science, Rama Devi Women’s University, Bhubaneswar (Odisha) India.
Email: jyotsnaranipanda986@gmail.com

Received 2017-11-05; Accepted 2017-11-25
DOI: https://doi.org/10.15520/ctst.v7i12.156

Abstract:

Aims/purpose: Adolescents are a rich human resource and an important part of the development process. Good health of adolescents will help in raising the health status of the community. Adolescents, especially girls, mostly from disadvantaged communities and families, are trafficked for the purposes of early forced marriages, domestic workers commercial sex work and are forced to work in inhospitable, unsafe and exploitative conditions are the main components for development of HIV/AIDS. The present study was attempted to assess the different causes among 13 to 17 years old adolescent girls who all were studying in class 9th, 10th, 11th and 12th in different high schools and women’s college’s

Methodology of study: The total sample for the present study included 400 adolescents 200 from deferent girls high schools and 200 from women’s colleges which are the most HIV prevalence blocks of the Ganjam district of Odisha state. To analysis data the researcher used frequency percentages and the t-test is computed.

Findings: The study found out that nearly 10% girls have wrong knowledge about the causes. Whereas more than 90% of adolescents having right knowledge about the causes of HIV/AIDS. It is inferred from the above table that a considerable majority of the respondents (79.5%) reported virus to be cause of HIV infection which is correct answer where as others reported it wrongly answered as bacteria (8.8%) again few of them reported HIV/AIDS spread because of god’s anger or parasites and 7.5 percent of them did not have any knowledge about it.

Conclusion and recommendation: The present study will help to focuses of adolescent’s level of knowledge to import for better life for better future because adolescents are the really dormant state of mind regarding HIV/AIDS they need extra guide line to increase coping skills and need for adequate support system. Right knowledge right action right time can change the life of an individual as well as the society.

Key words: Knowledge of HIV/AIDS, Adolescents and causes.
Introduction:

The period of adolescence is the second decade of life and it is a powerful formative period of transition from childhood to adulthood. It is a time of physical development, identity formation, relationship development and a time when vocational direction and life goals are expected to be formulated and create a conducive environment for their implementation. It is also one of the most crucial periods in the life of an individual, because between the ages of 10-19 years, many key biological, social, economical, demographical and cultural events occur that set the stage for adult life. It is the period during which rapid physical growth, physiological and psychosocial changes occur. Changes that occur within adolescents are manifold and their sexuality is characterized by experimentation, developing intimacy and relationship. During adolescence an intensive sexual drive develops and adolescents typically start exploring relationship with the opposite sex. Their engagement in sex related activities with known or unknown partners is risky and may lead to the spread of HIV/AIDS (Prabhakar, et.al, 2009). Adolescents are vulnerable because they often do not know how serious the problem of HIV/AIDS is, how it is caused or what they can be done to protect themselves. Many adolescents do not even go to school, and do not have access to information about AIDS, or opportunities to develop the life skills that they need to turn this information into action. They also do not have access to services that take their specific needs into consideration.

Vulnerabilities of adolescent girls (related to gender):

The male and female ratio of HIV positive people is changing very dramatically and feminization of epidemic is happening as 39% of all HIV positive persons are females (Dhar 2011). Reasons for this change in the profile of epidemic is due to many reasons while some of them are listed below.

- **a)** Immature local immune system: young girls have had less lifetime exposure to STIs than older individuals and, consequently, fewer mucosal defenses. Protective hormonally driven mechanisms have not yet had time to develop fully.
- **b)** Inability to say no to sex whether in wedlock or out of wedlock due to gender issues, lack of life skills and poor place in negotiations as they are economically dependent on the partner. Safe practices and health behavior helps in prevention of HIV/AIDS and STIs.

The Nature of the Virus:

HIV selectively infects specific white blood cells CD4 that are an essential part of the body’s immune defense system. HIV attacks and inactivates these particular kinds of white blood cells. The CD4 helper cells are vital in controlling the body’s defense to many diseases the CD4 helper cells stimulate the production of a large army of white blood cells to fight the infection. Sometimes they are successful in this. Sometimes the body itself suffers from a weakness of the cells that provide immunity, such as the CD4 cells, and so the disease overwhelsms the body. This partly explains why people can die from any illness. In the case of HIV, the virus progressively destroys the ability of the CD4 cells to counter some of the many diseases to which the body is immune. When the CD4 cell counts falls to 200 or less then the individual develops AIDS. When the CD4 cells are destroyed, the infected person becomes susceptible to range of opportunistic infectious diseases and cancers and the group of such conditions is called AIDS. HIV may also directly infect nerve cells and cause neurological disorders. HIV takes a long time to cause damage. HIV infection is presumed to be live long and the infected person is likely to remain infectious for life.

Consequence of HIV/AIDS:

HIV (Human immunodeficiency virus) major public infection has now spread to every country in the world and continues to be a health issue. Statistics show that approximately 40 million people currently living with HIV infection and an estimated 40 million have died from this disease since the beginning of the epidemic. The scourge of HIV has been particularly devastating in sub-Saharan Africa which account for almost 70% of new HIV infections globally. However, infection rates in other countries also remain high. In the United States, approximately 1 million people are currently infected, about 50,000 new HIV infections per year. In 2012 an estimated 156 youth died, out of 1% of the 13,712 people who died that year. Sub-Saharan Africa continues to have the highest number of HIV/AIDS cases, with close to 70 percent of the global total of HIV positive people. A vast majority will die in the next 10 years or so due
to the lack of awareness, lack of proper treatment due to infection and the existing poor socio-economic condition of that region till date 1459 patient have died in Odisha and 1276 died in Ganjam district due to HIV/AIDS (ICTC-REPORT-2017). The medications do not actually rid the body of the virus, which has the ability to elude medications by lying dormant in cells called CD4+ T cells, which signal another type of T cell, the CD8, to destroy HIV-infected cells. When a person with HIV stops treatment, the virus emerges and replicates in the body, weakening the immune system and raising the likelihood of opportunistic infections or cancers that can sicken or kill the patient.

Researchers have been looking for ways to eliminate the "reservoirs" where the virus hides, and researchers from UCLA, Stanford University and the National Institutes of Health may have developed a solution. Their approach involves sending an agent to "wake up" the dormant virus, which causes it to begin replicating so that either the immune system or the virus itself would kill the cell harboring HIV.

"The findings are significant because several previous attempts to activate latent virus have had only limited success," said senior author Jerome Zack, professor and chair of the UCLA department of microbiology, immunology and molecular genetics at the Geffen School, and director of the UCLA Center for AIDS Research. "Most studies showed weak activation of the virus, or severe toxicity, with little effect on the reservoir."(July 2017).

Global HIV/AIDS an over views:

HIV, the views that comes AIDS is one of the world’s most serious health and development challenges. According to UNAIDS there is approximately 37.7 millions of people worldwide living with HIV/AIDS in the end of 2015. Currently 36.7% living in HIV/AIDS (july 2017). Currently, only 60% of people with HIV knew their status. The remaining 40% (over 14 million people) still need to asses HIV testing centre. As of (june2016), 18.2 million people living with HIV were accessing anti retroviral therapy (ART) globally up from 15.8 million in June 2015 UNAIDS has get global target to be achieved by 2020 in the global response to HIV

Scenario of Odisha:

About 3300 new AIDS and HIV patients are indentified in Odisha every year (July 2017) more than 15,00 hundred have been indentified , 4year back it was 13,218 official sources said the total number of AIDS and HIV patients has crossed 35,000 by now, but in official sources claim the number is over 80,000 in Gajam followed by cuttack with 4696 patients,Angul 1237,Balaswar 1119,Khordha 1705,Koraput 1927 and Sambalpur 1856 ,Boudh district has the least number of patient with only 34 .Till date 1149 patients have died of the disease, as per the survey by as intentional NGO, deadly disease is no more confined among the migrant works, gays, lesbians and sex workers as has been generally believed. The served has also said Odisha is among the five states there is every possibility of the easy spread the disease. The turn of the number of AIDS and HIV patients in odisha presently ranks 14th in the country. In the state, 87% (29372) have been affected due to unsafe sex while 2138 have been inherited the disease form their parents i.e by their HIV-positive mothers during pregnancy, child birth or breast feeding (OSACS July, 2017).

District scenario:

AIDS claimed 1,400 lives in seven years in Odisha's Ganjam Over 1,400 people died in Ganjam from 2009 to October 2016 due to HIV/AIDS. At least 14,036 persons in 22 blocks of Ganjam district have been identified as HIV positive while Rangeilunda has the highest 2,824 HIV+ and Jagannathprasad block the lowest 140 HIV+ cases, the Odisha State AIDS Control Society (OSACS), the State-level nodal agency for fighting the dreaded disease, stated (2016).

Knowledge of Adolescents regarding HIV/AIDS:

The studies indicates that the circumstances of adolescents in developing countries with respect to sexual behavior and knowledge vary tremendously both across and within the regions (Blanc and Way, 2001).

The Causes of HIV/AIDS: The disease is caused by a new and deadly virus called HIV (The Human Immune Deficiency Virus). HIV can remain in the body for years perhaps even decades before any damage shows up as visible symptoms. The term AIDS (Acquired Immune Deficiency Syndrome) refers strictly speaking only to the last fatal stage of
HIV infection. This is often also “full-blown AIDS”. Viruses are the smallest of all disease-producing organisms: much smaller than the bacteria which are too small to be visible through an ordinary microscope only. For the virus which cause AIDS. The internationally accepted name is now HIV. The AIDS virus gradually disables the body’s immune system. The infected person becomes increasingly vulnerable to all most any infection by another virus, a bacterium, a fungus or a parasite. The infections mainly occur in the skin, the lungs, the digestive system, the nervous system and the brain. He or she suffers a long period of illness and disease.

a) Poverty - HIV infection is mostly due to low socio-economic status, marked by low income levels, poverty, low educational levels, subordination especially in sexual decision making within the family and community. Economic hardship coupled with commercial sexual explosion, sex tourism and negative attitude towards the women dignity and security, it further perpetuates the risk exposure HIV/AIDS. Poverty is often cited as a cause of child prostitution. Many unfortunate girls are sold in various part of world by their parents. Who are unable to maintain their children due to acute poverty but those who act as pimps of brokers in flesh trade and brothel keepers, who hunt for these teenage girls to make money rather purchase or kidnap hem by deceitful means and force them into the flesh trade. These victims are taken into the brothels where they are brutally treated and brutally treated and confirmed in complete seclusion in a tiny room without food until they give their consent to enter into prostitution. Poverty is driving children from small villages in to brothels of cities across the borders (Panu 2010).

b) Trafficking - Because of increase in tourism, the trafficking in human beings has become an international phenomenon. Prostitution attracts foreign tourists and thus helps in bringing foreign exchange. Thousands of rural and women and girls from small towns are trafficked in to urban and city year where they work under conditions tantamount. Forms of international trafficking range from bride syndicates, forced marriages, abuse of entertainment work, to contract work as domestic helpers, all of such can result in sexual explosion and yet occur under the legal cover of labour migration. Those are sending, transit or receiving centers for the trafficking of girls children.

C) Role of Family- In general for juvenile prostitution family plays as essential role, this leads minor to prostitute them. Majority of girl prostitute had experience of sexual violence during infancy. Particularly on the part of family members like father, step father, uncles, brothers, step brothers and grandfather. Usually it is the family itself that decides to trade its daughters as the item of trade.

d) Cultural tradition- India has had a unique history linked to Jogini and Devdasi system of temple dances. From ancient times young girls were dedicated to Hindu temples at early ages and they become brides of god and were barred from marriage. Devdasis, little girls of just 12 or 13 years are from 80% of brothel’s population in Maharashtra and Karnataka. In certain communities religion sanction is given to child prostitution.

e) Natural disasters- Natural disasters like earthquakes, floods, cyclones or manmade cause like displacement for mega projects, without proper rehabilitation schemes also form the reason for this evil. Thus the desire to escape from chronic economic and social crises makes many girl children highly vulnerable to sexual exploitation.

f) Biological Factors- Biologically women are twice more likely to become infected with HIV through unprotected heterosexual intercourse with men. Women’s susceptibility to infection is manifested in their proneness to get RTIs (reproductive tract infection), the complications of which are more serious in women as the infection is transmitted to the offspring. They are limited in their ability to protect themselves from high-risk sex or negotiate condom use with the partner, more apt to suffer from asymptomatic infections and remains untreated and less likely to seek treatments, even for symptomatic infections (BuragohainTurujyoti; 2008).

g) Lack of information- Ignorance about the ways and means of HIV transmission leads to vulnerability of people to get HIV infection. In many societies women are expected to be ignorant about sex and passive in sexual interactions. The prevailing culture restricts women’s ability to ask for information about sex out of fear that they will
be thought to be sexually active (Caravano, 1992). Due to prevailing ignorance and lack of general sensitivity, women suffer in health silently, particularly when it is related to sexuality reproduction.

h) Adverse impact of social discrimination-
Discrimination in access to social and economy rights creates an increased vulnerability to HIV infection and produces a negative effective upon the lives of the victims. Fear of social boycott and threats drive the infected people away from the health and social services programmes, which are created to restrict HIV transmission. Expulsion from the main stream of society and victimization on the ground of the disease may lead to an increase in the risk of HIV infection. “Discrimination has driven patients underground. This causes immense problems and delay, in their detection and treatment leading to more risk in further infection” (The states man: 2004).

Methodology:

Objectives:
1. To study the socio-demographic profile of the adolescent respondents;
2. To assess knowledge pertaining to HIV/AIDS among adolescent girls,

Situational analysis of Ganjam District of Odisha State:

Ganjam district tops the list of most HIV victims in the state of Odisha with 12,017 people: 35.9 per cent of the total cases. Cuttack is second with 13.2 per cent victims, followed by Koraput with 5.1 per cent, Sambalpur with 5.1 and Khurda at number four with 4.7 per cent of all HIV-infected people living in 30 districts, District AIDS Prevention and Control Unit (DAPCU, 2013). According to official reports, 3,427 AIDS patients were identified in Ganjam till November 2012. While Aska has highest number of AIDS patients of 456, Chikiti has the lowest 40. Similarly, 60 cases were identified in Chhatrapur, 63 in Ganjam, 204 in Khallikote, 120 in Beguniapada, 341 in Palsara, 318 in Purushottampur, 161 in Kavisuryanagar, 139 in Hinjilicut, 349 in rangeilunda, 53 in Kukudakhandi, 88 in Digaphandi, 124 in Sanakhemundi, 152 in Bhanjanagar, 206 in Belaguntha, 177 in Buguda, 44 in Jagannathprasad, 68 in Dharakote, 120 in Dorada and 173 in Sheragada (Odisha Post, 2013).

Over 1,400 people have lost their lives due to AIDS in Ganjam district in the last 14 years as per the latest figures released by Odisha State AIDS Control Society (OSACS), the State-level nodal agency for fighting the dreaded disease. By the end of October, 2014, 12,307 persons in the district were identified as HIV positive while 1,404 persons succumbed to AIDS between 2000 and 2014. Besides, HIV tests were conducted on 5-59,425 persons during the period (DAPCU, 2013) and as per the reports of ‘ARUNA’, 2013 (a social service non-governmental voluntary organization) working for prevention of AIDS, majority of PLWHAS (People Living with HIV/ AIDS) are from rural Ganjam. Large scale migration, ignorance, low female literacy, inadequate prevention activities, stigma and discrimination are the reasons behind the spread of AIDS.

Research Design:

The formidable problem that follows the task of defining the research problem is the preparation of the design of the research work, popularly known as the “Research Design”. A research design is the arrangement of conditions for collection and analysis of data is manner that aims to combine relevance to the research purpose with economy in procedure. For this study the researcher has adopted exploratory study and the design adopted to carry out this research is the descriptive design. By using this design, the researcher attempts to describe female adolescents’ knowledge and understanding HIV/AIDS are described as reported by the respondents in a clear cut manner. Inter-state labour migration is an important future of the Indian economy, for which 90% labours of Ganjam district alone migrate to other states. Knowledge regarding HIV/AIDS where including respondent’s basic knowledge which contains the causes of HIV/AIDS.

Universe of the study: The proposed investigation was carried out in the state of Odisha situated in the eastern part of India. However, this low-prevalent state Odisha has been witnessing an alarming situation due to the unsafe sex practice of migrated labourers who unmindful of the fact that sexual route is the major cause of HIV/AIDS, prefer to sexual escapades in the slum areas of Surat known for its red light areas rendering few minutes pleasure. Particularly, the unemployed youths of Ganjam, the home district of Odisha, migrate in lakhs of (6 lakh as per rough estimation) to Surat (Gujarat) and Mumbai. The maximum migration is
reported from Hinjilicut, Purushottampur, Bhanjanagar, Aska, Digapahandi, and Beguniapada blocks of Ganjam district. 13218 HIV patients spotted in Odisha in four years. In terms of the number of AIDS patients, Odisha presently ranks 14th in the country. Taking the district-wise prevalence of the disease into consideration, Ganjam has the highest share of 35.3 per cent of the total number of patients followed by Cuttack (13.3). Jul 29, 2015.

**Sampling procedure:** There is a total number 22 blocks in Ganjam district among them 12 blocks have reported HIV/AIDS cases. Aska reported the most prevalence of HIV/AIDS. The researcher decided to study 2 blocks under the age group 13-17 years are available. They are Aska and Bhanjanagar. As per the latest reports, out of the 14 districts of the country most affected with the AIDS/HIV the Ganjam district is being placed eighth and has been graded ‘A’ status as more than one percent people of the total population are infected with HIV. Bhanjanagar is the neighbor block of Aska, it is also reported one of the prevalence block of Ganjam district is having 152 positive cases and hot spots are available. While the main Anti Retroviral Treatment (ART) centre is functioning at MKCG Medical College and Hospital here are four link centers at Aska, Bhanjanagar, Khallikote and Polasara. “The move will help in the regular check-up and treatment of these children at the ART centers” the (Distract Collector, Ganjam, 2015).

The researcher used various tools such as interview schedule, non-participant observation. The study was conducted in Ganjam districts of Odisha state i.e. Ganjam was selected for the study. Which was conservative, backward and more prevalence of HIV/AIDS district of the state has special significance in this study. There are total 22 blocks among them 12 blocks are reported HIV/AIDS cases and among these again 2 blocks are more prevalence of HIV/AIDS in the district. They are Aska and Bhanjanagar.

**Analysis of Data:**

All relevant collected data were tested and processed through the Statistical Package for Social Sciences (SPSS). Simple tables were made so as to make comparison between variables possible. Statistical tests such as t-test was applied so as to test the research hypothesis and thereby arrived at better conclusion. The analyzed data was presented in a scientific manner that gives better easy understanding to all concerned with this research.

**Knowledge regarding causes of HIV/AIDS**

HIV-1 and HIV-2 both cause HIV infection and AIDS. Most AIDS cases in India are due to HIV-1. Human Immuno deficiency virus enters the human body and gradually damages the immune system that fights infection and diseases. The immune system becomes less and less capable to protect against illness and with the result even minor infections can lead to serious life threatening conditions. Typically, HIV lives in an infected person’s body for months.
or years before any signs and symptoms of illness (AIDS) appear. Poverty is often cited as a cause of child prostitution lack of information is the way and means of HIV transmission leads to vulnerability of people to get HIV infection. Biological factors another aspect to get HIV infection. Biologically women are twice more likely to become infected with HIV through unprotected heterosexual intercourse with men. Apart from this social stigma and discrimination lack of awareness, psychological harassment leads to HIV infection.

Table No - 1: Knowledge regarding causes of HIV/AIDS

<table>
<thead>
<tr>
<th>S. No</th>
<th>Activities spreading HIV/AIDS</th>
<th>Frequency N=400</th>
<th>Percentage (%)</th>
<th>‘t’ Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>✓ Having Sex with an Infected Person with Condom</td>
<td>193</td>
<td>48.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Penetrative Sex with Multiple Partners</td>
<td>35</td>
<td>9.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Oral Sex with an Infected Person</td>
<td>30</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Sharing an Unsterilized Needle</td>
<td>87</td>
<td>22.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Baby in the womb of infected mother and breast feeding to her baby</td>
<td>87</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Anal sex without Condom</td>
<td>21</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✔ Right answer</td>
<td>207</td>
<td>52.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✔ Wrong answer</td>
<td>193</td>
<td>48.0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bacteria/parasites/virus spreading HIV/AIDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Gods Anger</td>
<td>5</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Bacteria</td>
<td>35</td>
<td>8.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Parasites</td>
<td>12</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Virus (right answer)</td>
<td>318</td>
<td>79.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Wrong</td>
<td>52</td>
<td>13.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ No idea</td>
<td>30</td>
<td>7.5</td>
<td></td>
</tr>
</tbody>
</table>

Note: * 0.01 level of significant

It is observed from the above table that little less than half of the respondents (48.3%) reported that they perceived penetrative sex with multiple partners as risk behaviour leading to HIV, while 21.8% of them perceived sharing an unsterilized needle to be the risk behaviour for contracting HIV infection. Nearly 10% girls have wrong knowledge about the causes. Whereas more than 90% of adolescents having right knowledge about the causes of HIV/AIDS.

It is inferred from the above table that a considerable majority of the respondents (79.5%) reported virus to be cause of HIV infection which is correct answer where as others reported it wrongly as bacteria (8.8%) again few of them reported HIV/AIDS spread because of god’s anger or parasites and 7.5 percent of them did not have any knowledge about it.

Conclusions:
Adolescents are an important part of the population, yet they are not properly addressed. Adolescents should not be isolated and sheltered from issues such as sexuality and reproductive health since they are at an age when they may begin experimenting and could be misguided and confused in their choices. The life of adolescents are at risk because society does not provide them with the information, skills, services and support they need to postpone sex until they physically and socially mature and able to make well-informed decisions about their sexual behavior. External factors have a tremendous impact on how adolescents think and behave. These include: social environment, family, peer pressure, educational opportunities, career opportunities, social status, recreational activities and so on.

- A significant proportion of the rural adolescent girls do not have correct knowledge about HIV/AIDS. This can
leads adolescent girls to increase myths, practice risky sexual behaviour that can result with HIV/AIDS infection ultimately causing burden to their life and society.

- Sex is considered to be a taboo in the traditional rural society. The talk on sex in front of the elders is considered to be unethical and those who are engaged in such kind of discussion are seen as loose in their character and have corrupt morality. A large proportion of the girls during the research work suggested that open discussion on human sexuality could become a great help to them in understanding STIs, RTIs, HIV/AIDS, etc. and prepare to prevent from these dreaded diseases.

- Most of the efforts, whether by the government or by voluntary organizations, are made to increase the level of awareness and knowledge. However, the issue of sexuality and reproductive health requires going beyond that. Most appropriate interventions at the educational institutes and community level should be designed keeping in view the socio-cultural context.

**Implantation:**

According to the health and family welfare minister Atanu Sabyasachi Nayak, “the State Government has taken a number of steps for the welfare of the AIDS and HIV patients but due to the fear of being ostracized and halted by the society the patient are unwilling to avail these programmes,” (OSB, July 27.2017).

**Reference:**

9. Health Action, January and March 2011
23. Report from a study undertaken by the population council with support of the United Nations Development Program (UNDP) and in collaboration with the National AIDS Control Organization (NACO) (2011).
30. By Express News Service | Published: 01st December 2016 01:22 AM |
31. Last Updated: 01st December 2016 06:50 AM |
32. WWW.TEEMRESOLUTIONS.ORG
34. Odisha Sun time Bareau (OSB) (2015) Gnjam Top
36. WWW.HIV Positive care .com
37. WWW.HIV Naturally.com