*Available online at http://www.journalcra.com*

*International Journal of Current Research*
*Vol. 6, Issue, 12, pp.10566-10571, December, 2014*

**INTERNATIONAL JOURNAL OF CURRENT RESEARCH**

**ISSN: 0975-833X**

**RESEARCH ARTICLE**

# COMPARATIVE ASSESSMENT OF KNOWLEDGE OF HIVAIDS AND RISK BEHAVIOUR AMONG SECONDARY SCHOOL STUDENTS WITH AND WITHOUT HEARING IMPAIRMENT IN IBADAN, NIGERIA

**[1]Oluwatosin Odungide Essien, [2]Michael Asuzu, C., [2]Olusimbo Ige and [3,*]Ademola L. Adelekan**

[1]Family Planning Clinic, Department of Obstetrics and Gynaecology, Faculty of Clinical Sciences University of Ibadan, Ibadan, Nigeria
[2]Department of Preventive Medicine and Primary Care, College of Medicine, University of Ibadan, Ibadan, Nigeria
[3]Department of Research and Reproductive Health, Public Health Promotion Alliance, Osogbo, Nigeria

**ARTICLE INFO**

***Article History:***
Received 14th September, 2014
Received in revised form
20th October, 2014
Accepted 25th November, 2014
Published online 27th December, 2014

***Key words:***

Hearing impaired students,
HIV/AIDS,
Knowledge,
Secondary School Students.

**ABSTRACT**

Various studies have shown that hearing impaired individuals lack access to HIV/AIDS information due to problems of communication. This study was therefore designed to assess knowledge of HIV/AIDS and risk behaviour among secondary school students with and without hearing impairment in Ibadan, Nigeria. This comparative cross-sectional study involved 520 students (260 students with and 260 students without hearing impairment). A self-administered questionnaire was used for data collection. Data were analysed using descriptive statistics, Chi-square and t-test. Mean ages of the students without hearing and with hearing impairment were 14.9 ±1.8 years and 16.9 ± 2.9 years respectively. Mean knowledge score of HIV/AIDS was higher among the students without hearing impairment (33.1 ± 4.3) compared with their peers with hearing impairment (30.1 ± 4.8). About 49.2% of the students with hearing impairment were sexually active compared with 25.8% of their peers without hearing impairment. More of the students with hearing impairment (57.8%) considered themselves to be at risk of contracting HIV infection. Students with hearing impairment compared with their non-hearing impaired peers were more sexually active and less access to HIV/AIDS information. Knowledge of HIV/AIDS among students with hearing impairment may be enhanced by HIV awareness programmes and printed materials.



## INTRODUCTION

Nigeria has the second largest number of people living with HIV worldwide (WHO *et al.,* 2011). In 2009, a total of 5 million young people aged 15–24 were living with HIV (UNICEF *et al.,* 2010). Nigeria's HIV epidemic is largely driven by heterosexual activities, with a national sentinel HIV prevalence of 4.1% in 2010, and 2.1% and 1.3% respectively in males and females aged 15–19 (Federal Republic of Nigeria, 2012). People with disabilities (PWD), a population of approximately 15% globally (WHO and World Bank, 2011), are now receiving better recognition in HIV response. Contrary to the wrong belief that PWD are less exposed to risk factors for HIV infection, youths and adults with disabilities have been documented to be at risk of HIV infection (Groce, 2004; WHO and World Bank, 2011). A systematic review of literature on HIV and disability indicates that youth with disabilities often lack adequate HIV and sexuality knowledge because these youths are seldom the target of interventions (Hanass-Hancock, 2009). Studies have also documented that young people with disabilities may not receive adequate sexuality and HIV prevention education from parents and teachers due to cultural prohibitions to discuss sex with young people, myths of asexuality and hyper-sexuality of PWD, as well as lack of skills and materials to communicate relevant information to them in accessible formats (Rohleder and Swartz, 2009; Wazakili *et al.,* 2009; Rohleder *et al.,* 2012). In Nigeria Arulogun *et al.,* 2012 investigated experience of violence among girls (mean age 17.5 ±3.4) with hearing impairments and findings indicated that among 87.4% of the 167 sample who had experienced at least one form of violence, 18.5% reported sexual violence mostly perpetrated by neighbours (50.0%) and teachers (37.5%). Similarly, Arulogun *et al*., 2013 reported that about 95.0% of the same sample of deaf girls reported ever had visited a health facility for SRH issues, out of whom 6.2% and 4.6% sought treatment for STIs and abortion respectively. In a comparative study among secondary school students with and without hearing impairment by Sangowawa *et al.* (2004) it was revealed that the hearing-impaired students

***Corresponding author: Ademola L. Adelekan,***
*Department of Research and Reproductive Health, Public Health Promotion Alliance, Osogbo, Nigeria.*

had a significantly poorer level of knowledge of HIV/AIDS compared with the non-hearing-impaired students. Asekun-Olarinmoye *et al.* (2011) in this study also reported that 27.6% of the respondents reported having ever had sex. A greater proportion of sexually exposed respondents (37.1%) had their first sexual experience between the ages 15 and 19 years. Many (48.4%) of the respondents' among the sexually active have multiple sexual partners while 12.1% have 4 or more sexual partners. While studies in Africa, including Nigeria, have documented social, cultural and economic factors associated with adoption of sexual abstinence by young people (Kabiru and Ezeh 2007; Ankomah *et al.,* 2011; Oladepo and Fayemi, 2011) little is known about the factors influencing sexual abstinence among young people with intellectual impairments. This study therefore aimed to document and to compare knowledge of HIV/AIDS and sexual behaviour among adolescents in secondary schools with and without hearing impairment.

## MATERIALS AND METHODS

### Study Area

The study area, Ibadan, is the capital of Oyo State and it is located in Southwestern Nigeria.

Ibadan North (IBN) and Ibadan North West (IBNW) Local Government Areas were specifically used for this study. Ibadan North Local Government Area has one of the highest numbers of secondary schools, both public and private secondary schools in Ibadan and the Local Government is heavily populated with total population of 316,612 (Male, 157,936 and Female, 158,676). Ibadan North West Local Government Area on the other hand has six government-owned Primary Health centers in the LGA with numerous private health facilities, including herbal homes. There are 36 co-educational public secondary schools (26 Junior and 10 Senior) in IBNW LGA.

### Study Design

The study was a comparative cross-sectional study which surveyed the knowledge of HIV/AIDS and risk behaviour among secondary school students with and without hearing impairment in Ibadan, Nigeria

### Study Population

The target population was in school young people aged 10-24 years in selected secondary schools and special schools within the study area.

Sample Size Calculation

$$n = \frac{(Za + Z\beta)^2 \times (p_{1(1-P1)} + P2(1-P2)}{(P1-P2)^2}$$

Where n= minimum sample size

Za = standard normal at 95% confidence interval= 1.96

Zβ = standard normal deviate corresponding to power of 1-β= 0.84

P1= percentage of young people who are aware of HIV/AIDS which is 87.1% (NPC and ICF Macro, 2009)

P2= Assuming a 10% difference for the percentage of knowledge among deaf young people= 77.1%

q1=0.129

q2=0.229

$$\text{Therefore } n = \frac{(1.96+0.84)^2 \times (0.871 \times 0.129 + (0.771 \times 0.229)}{(0.871 - 0.771)^2}$$

n = 226.51171

The minimum sample size calculated is 227. Assuming 10% non response rate,

n= 227x0.10= 22.7, 227+22.7= 249.7

Approximately 250

N= 250 for each group; ie 500 for both groups

260 hearing impaired students and 260 non-hearing impaired students were interviewed representing the number of young people that were interviewed during the study.

### Sampling Procedure

A 4 -stage sampling technique was used in selecting 500 respondents from the selected schools. The stages were as follow:

**Stage 1:** Two out of five LGAs in Ibadan metropolis were purposively selected and Ibadan North and Ibadan North West LGAs were chosen because the LGAs had schools with hearing and non hearing impaired students.

**Stage 2:** A total of four schools were selected from the two LGAs by simple cluster random sampling of balloting. Two of the schools had students with hearing impairment (Methodist Grammar School, Bodija and Andrew Foster Secondary School, Onireke) and the other two schools had the non hearing impaired students (Ikolaba High School, Ikolaba and Eleyele High School).

**Stage 3:** Purposive sampling was used in selecting students within the ages of 10-24 years in both the junior and senior classes.

**Stage 4:** A total of 520 students (260 each in both group) were selected from the register of the each class from JSS1-SS2 using computer generated random numbers.

### Data Collection

Data was collected over a period of two months. Data collection was done with the help of five trained research assistants who are vast in the use of sign language to enable them communicate effectively with the deaf students. Two of the research assistants are graduates from the Polytechnic Ibadan and three are NCE holders from the Federal College of Education Special Oyo. The research assistants were trained on the study and the administration of questionnaires. At the end

of the training the research assistants were asked questions on what they were taught and they all performed brilliantly. Data was collected using self-administered questionnaires and was used to collect information on the socio demographic data of the respondents, knowledge of HIV/AIDS, sources of information on HIV/AIDS, sexual behaviour, attitude towards voluntary counseling and testing, and self perceived risk of HIV/AIDS.

### Administration of Questionnaires

In each school, all the enlisted participants were assembled in the school hall for briefing (by the principal investigator) on the purpose and scope of the study after which they were given an opportunity to give their consents and proceed with the study or walk away. After the address, the teachers were excused from the hall to eliminate intimidation and create a relaxed atmosphere for the students. The questionnaires were then distributed. The principal investigator took the participants through the questions, making relevant explanations while encouraging the students to maintain confidentiality by not writing their names and working independently. The research assistants collected the questionnaires and checked for completeness and the participants were appreciated.

### Data Management and Analysis

The questionnaires were inspected daily to detect and correct errors and to ensure they were properly filled. Data was manually sorted out, coded before entry and cleaned following entry into the computer. Data was analysed with the Statistical Package for Social Sciences (SPSS). A 21-point knowledge scale was used to measure the respondents' knowledge. A correct knowledge attracted a score of 1 point while a wrong knowledge was zero. A score of ≤ 10 point was considered poor while score of 11-15 and 16-21 points were considered fair and good knowledge respectively. Descriptive statistics, Chi-Square and T-test were used. Frequencies were generated and cross tabulation of some variables.

### Ethical Consideration

Ethical approval was sought and obtained from the Oyo State Ethical Review Committee (copy attached), permission to conduct the study was obtained from the Ministry of Education and principals of selected secondary schools. Consent (informed) was given by each participant. The research procedure was designed to protect students' privacy by allowing anonymous and voluntary participation. Confidentiality for the students was guaranteed by ensuring that they did not write their names on the questionnaires and members of the staff of the schools were asked to excuse themselves at the time of the questionnaire administration.

## RESULTS

### Socio-Demographic Characteristics

The mean age for the non-hearing impaired students was 14.9 ± 1.8 years and 16.9 ± 2.9 years for the hearing impaired students ($p < 0.01$). Most of the students were aged 15-19 years in both groups. Males were the majority among the students without hearing impairment 180 (69.2%) and also among the hearing impaired 142 (54.6%). Christianity was the predominant religion for both category of students 158 (60.8%) versus 181 (69.6%). Yoruba were also the vast majority in both groups 227 (87.3%) of the students without hearing impairment and 159 (61.2%) of the students with hearing impairment (Table 4.1).

**Table 4.1. Socio-Demographic Characteristics of Respondents**

| Variables | Students without hearing impairment N = 260 (%) | Students with hearing impairment N = 260 (%) | $X^2$ | P-value |
|---|---|---|---|---|
| Age (years) | | | | |
| 10-14 years | 90 (34.6) | 46 (17.7) | 59.6 | 0.00 |
| 15-19 years | 168 (64.6) | 163 (62.7) | | |
| ≥ 20 years | 2 (8.0) | 51 (19.6) | | |
| Mean age | 14.9 ± 1.8 years | 16.9 ± 2.9 years | | |
| Sex | | | | |
| Female | 80 (30.8) | 118 (45.4) | 11.8 | 0.001 |
| Male | 180 (69.2) | 142 (54.6) | | |
| Religion | | | | |
| Christianity | 158 (60.8) | 181 (69.6) | 12.2 | 0.01 |
| Islam | 99 (38.1) | 69 (26.5) | | |
| Traditional | 2 (0.8) | 5 (1.9) | | |
| Others | 1 (0.4) | 5(1.9) | | |
| Ethnicity | | | | |
| Yoruba | 227 (87.3) | 159 (61.2) | 49.7 | 0.000 |
| Igbo | 17 (6.5) | 72 (27.7) | | |
| Hausa | 8 (3.1) | 14 (5.4) | | |
| *Others | 8 (3.1) | 15 (5.8) | | |
| Parents type of marriage | | | | |
| Monogamy | | | | |
| Polygamy | 146 (56.2) | 162 (62.3) | 30.4 | 0.000 |
| Single parent | 104 (40.0) | 59 (22.7) | | |
| | 10 (3.8) | 39 (15.0) | | |
| Who do you live with presently | | | | |
| Alone | 4 (1.5) | 8 (3.1) | | |
| With family | 247 (95.0) | 196 (75.4) | | |
| School teacher | 4 (1.5) | 29 (1.2) | | |
| Friends/peers | 1 (0.4) | 21 (8.1) | 50.9 | 0.000 |
| Homeless | 4 (1.5) | 6 (2.3) | | |

Others (Christianity): Grail Message, Eckankar, Harikrishnas
Others (Ethnicity): Edo, Efik, Ibibio, Tiv

### Knowledge of Respondents on HIV and AIDS

The overall mean knowledge score of respondents' was 12.1 ± 3.4 while the mean knowledge score of deaf and hearing students were 11.7 ± 3.6 and 12.4 ± 3.1 points respectively ($p<0.05$). The mean knowledge score of respondents' in junior and senior class were 11.8 ± 3.1 and 12.4 ± 3.6 points respectively ($p>0.05$). Only 94 (18.1%) of the respondents had a good knowledge of HIV/AIDS. Almost half 259 (49.8%) of the respondents had a fair knowledge of HIV/AIDS while 167 (32.1%) had a poor knowledge. More 48 (18.5%) respondents' in deaf school had a good knowledge of HIV/AIDS compared with their counterpart in hearing school 46 (17.7%) ($p>0.05$). Over 70.0% of the respondents' in both groups knew there was a difference between HIV and AIDS. More than half in both groups did not know anyone who was infected by HIV or died of AIDS. More than half of the students without hearing impairment believed early detection of the infection could prolong life (56.9%) while 71.5% of the students with hearing impairment believed HIV can be detected by a screening test (Table 4.2).

**Table 4.2. Knowledge of Respondents on HIV Related Issues**

| Variables | Students without hearing impairment N = 260 (%) | Students with hearing impairment N = 260 (%) | $X^2$ | P- Value |
|---|---|---|---|---|
| Any difference between HIV and AIDS | 211 (86.5) | 154 (70.3) | 18.054 | 0.000 |
| Can identify persons infected by HIV by looking at them | 79 (31.6) | 75 (30.0) | 18.668 | 0.000 |
| There is a cure for AIDS | 69 (27.8) | 85 (36.2) | 8.628 | 0.013 |
| Can early detection of the infection prolong life | 141 (56.9) | 105 (44.7) | 9.934 | 0.019 |
| Someone with HIV infection but has no symptoms pass the infection to someone else | 170 (68.5) | 134 (57.0) | 7.171 | 0.028 |
| HIV be detected by a screening test | 174 (70.2) | 168 (71.5) | 4.217 | 0.121 |

**Table 4.3. Respondents' Self Perceived Risk**

| Self Perceived Risk | Non hearing impaired students (correct) N = 260 (%) | Hearing impaired students (correct) N = 260 (%) | $X^2$ | P-value |
|---|---|---|---|---|
| HIV/ AIDS can be gotten by anybody | 196 (78.4) | 144(60.8) | 22.88 | 0.000 |
| You can't get HIV infection if you only have sex once or twice without a condom | 95 (38.0) | 90 (38.0) | 2.67 | 0.262 |
| A person can contract HIV/AIDS the first time he/she has sex with an individual | 191 (76.4) | 136 (57.4) | 19.97 | 0.000 |
| Do you consider yourself to be at risk of HIV | 111 (44.4) | 137 (57.8) | 8.97 | 0.011 |
| Only those who have more than one boyfriend / girlfriend get HIV | 82 (32.8) | 94 (39.7) | 12.78 | P= 0.002 |

**Table 4.4. Respondents Sexual Behaviour**

| Sexual experience | Students without hearing Impairment N = 260 (%) | Students with hearing impairment N = 260 (%) | $X^2$ | P-Value |
|---|---|---|---|---|
| Ever has sexual intercourse | 67 (25.8) | 128 (49.2)) | 30.5 | 0.000 |
| Anyone ever used any of the following ways to obtain sex from you | | | | |
| Threats | 24 (42.9) | 42 (48.3) | 0.4 | 0.526 |
| Money | 27 (40.3) | 50 (39.1) | 0.0 | 0.867 |
| Gifts | 23 (34.3) | 55 (43.0) | 1.4 | 0.242 |
| Drugs | 15 (22.4) | 38 (29.7) | 1.2 | 0.277 |
| Alcohol | 9 (13.4) | 35 (27.3 | 4.9 | 0.027 |

### Respondents' Self Perceived Risk

A higher proportion of the students in both categories felt HIV/AIDS can be contracted by anybody 196 (78.4%) non hearing impaired students versus 144 (60.8%) of the hearing impaired students p= 0.000. However, a significantly higher proportion of hearing impaired students considered themselves to be at risk of contracting HIV infection 57.8% versus 44.4%, p=0.011 (Table 4.3)

### Respondents Sexual Behaviour

Of the non hearing impaired students, 67 (25.8%) had ever had sexual intercourse compared to 128 (49.2%) of the hearing impaired students. More of the hearing impaired students reported being threatened/coerced into sex 42 (48.3%) versus 24 (42.9%) while 40.3% versus 39.1% received money in exchange of sex. Some of the sexual partners also gave gifts, drugs and alcoholic drinks in exchange for sex (Table 4.4).

## DISCUSSION

The mean age of the hearing impaired students was significantly higher than their non hearing impaired counterparts. This is similar to what was reported by other researchers in Nigeria (Sangowawa *et al.,* 2004). This is likely due to the fact that students with hearing impairment commence schooling at an older age than students without hearing impairment and may be a reflective of their decreased access to formal education. Majority of the respondents had a fair knowledge of HIV/AIDS. This is similar to a study conducted in Swaziland (Groce, 2004) and the report from 2008 NDHS (NPC and ICF Macro, 2009). Over 70.0% in both groups knew there was a difference between HIV and AIDS.

This contrasts with the findings from Kenya by Munyisia *et al*. (2004). The proportion of secondary school students without hearing impairment who were knowledgeable about the routes of transmission of HIV was quite high compared with their hearing impaired peers. This contrasts with the findings of Groce (2004). Less than 50.0% of the respondents in both categories felt VCT was meant for only prostitutes and promiscuous people. More than 50.0% in both groups felt that knowing one's HIV status was important (71.6% versus 59.5%). This is similar to the findings of Tenibiaje (2010). Many (76.4% versus 57.4%) felt one can contract HIV/AIDS the first time he/she has sexual intercourse with an individual, and less than 50% (44.4% versus 57.8%) did not perceive themselves at risk of being infected, this contrasts with the findings of Durojaiye (2009). Less than 50.0% in both groups had undergone sexual intercourse, this contrast with the findings of Tenibiaje (2009) who found 65.5% to have undergone sexual intercourse severally. The mean knowledge score was significantly higher among students who had never had sex compared with those who were sexually active for both student categories. Some of the respondents had ever had sex. This is similar to the findings by Asekun-Olarinmoye *et al.* (2011) and Albert, Prosper and Bavon (2011). More hearing impaired students had ever had sex compared with their counterpart. This is inline with the findings in Cameroon by Touko *et al.* (2010). More of the hearing impaired students reported being threatened/coerced into sex and received money in exchange of sex. This is similar to a study in Tanzania by Maswanya *et al.* (2000).

**Conclusion**

This study showed that the awareness of HIV was universal and most of the students were knowledgeable about HIV/AIDS. Risky sexual habits such as having sex in exchange for money or gifts were more often observed among the hearing impaired. More of the hearing impaired students were sexually active and considered themselves to be at risk of contracting HIV infection. Promotion of disability-sensitive and accessible VCT centers in schools is highly recommended and more age appropriate materials and posters with sign language, also HIV education films with sign language should be developed.

## REFERENCES


Albert Mudingayi, Prosper Lutala, and Bavon Mupenda. 2011. HIV knowledge and sexual risk behavior among street adolescents in rehabilitation centres in Kinshasa, DRC: gender differences. *The Pan African Medical Journal*, 10:23

Ankomah, A., Mamman-Daura, F., Omoregie, G. and Anyanti J. 2011. Reasons for delaying or engaging in early sexual initiation among adolescents in Nigeria. *Adolescent Health, Medicine and Therapeutics*, 2: 75–84.

Arulogun, O.S., Titiloye, MA., Afolabi, NB., Oyewole, OE. and Nwaorgu, OGB. 2013. Experience of girls with hearing impairment in accessing reproductive health care services in Ibadan, Nigeria. *African Journal of Reproductive Health,* 17: 85–93.

Arulogun, O.S., Titiloye, MA., Oyewole, EO., Nwaorgu, OGB. and Afolabi, NB. 2012. Experience of violence among deaf girls in Ibadan metropolis, Nigeria. *International Journal of Collaborative Research on Internal Medicine and Pubic Health* 4: 1488–1496

Asekun-Olarinmoye, E. O., Olajide, F. O. and Asekun-Olarinmoye, I. O. 2011. HIV/AIDS Preventive Measures among In-school Adolescents in a Sub-Urban Community in Southwestern Nigeria. *actaSATECH* 4(1): 81-96

Durojaiye, C.O. 2009. Knowledge, perception and behavior of Nigerian youths on HIV/AIDS. *The Internet Journal of Health*, vol 9 D01: 10.5580-85

Federal Republic of Nigeria. 2012. Global AIDS response progress report (GARPR) 2012: January 2011–December 2011 reporting period. Abuja: National Agency for the Control of AIDS.

Groce, NE. 2004. Adolescents and youth with disability: issues and challenges. *Asia Pacific Disability Rehabilitation Journal* 15: 13–32.

Hanass-Hancock, J. 2009. Disability and HIV/AIDS — a systematic review of literature on Africa. *Journal of the International AIDS Society* 12:34, doi: 10.1186/1758-2652-12-34

Kabiru, C. W. and Ezeh, A. 2007. Factors associated with sexual abstinence among adolescents in four sub-saharan African countries. *Africa Journal of Reproductive Health*, 11: 111-32.

Maswanya, E., Moji, K. and Aoyagi, K. 2000. Knowledge and attitude towards AIDS among female college students in Nagasaki, Japan. *Health Education Bulletin*, 12: 5–11.

Munyisia, E., Marum, L. H., Cheluget, B., Cherop, M. and Wandia, E. 2004. General and specific knowledge about HIV/AIDS among out of school youth in Kenya. *National AIDS/ STD control Programme*, Nairobi, Kenya.

NPC (National Population Commission, Nigeria), ICF Macro. 2009. Nigeria Demographic and Health Survey 2008. Abuja, Nigeria/Calvertion, Maryland, USA: *National Population Commission/ICF Macro*.

Oladepo Oladimeji and Fayemi Mojisola, M. 2011. Perceptions about sexual abstinence and knowledge of HIV/AIDS prevention among in-school adolescents in a western Nigerian city. *BMC Public Health,* 11:304

Rohleder, P., Swartz, L., Schneider, M. and Eide, AH. 2012. Challenges to providing HIV prevention education to youth with disabilities in South Africa. Disability and Rehabilitation 34: 619–624.

Rohleder, P. and Swartz, L. 2009. Providing sex education to persons with learning disabilities in the era of HIV/AIDS: tension between discourses of human rights and restriction. *Journal of Health Psychology,* 14: 601–610.

Sangowawa, AO., Owoaje, ET. and Faseru, B. 2004. HIV/AIDS Knowledge and information sources among deaf students in a half-way school in Ibadan, Nigeria. XV International AIDS Conference; 2004; Bangkok, Thailand. Medimond. *International Proceedings*, p. 195-200

Tenibiaje, DJ. Attitude of Youths Toward Voluntary Counselling and Testing HIV/AIDS. *Adv J Food Sci Technol.*, 2010;2:306-311

Touko, A., Mboua, CP., Tohmuntain, PM. and Perrot, AB. 2010. Sexual vulnerability and HIV seroprevalence among the deaf and hearing impaired in Cameroon. *Journal of the International AIDS Society* 13: 5, doi: 10.1186/1758-2652-13-5

UNICEF (United Nations Children's Fund), UNAIDS (Joint United Nations Programme on HIV/AIDS), WHO (World Health Organization), UNFPA (United Nations Population Fund), UNESCO (United Nations Educational, Scientific and Cultural Organization). 2010. Children and AIDS: Fifth stocktaking rport. New York: United Nations Children's Fund.

Wazakili, M., Mpofu, R. and Devlieger, P. 2009. Should issues of sexuality and HIV and AIDS be a rehabilitation concern? The voices of young South Africans with physical disabilities. Disability and Rehabilitation 31: 32–41.

WHO (World Health Organization), UNAIDS (Joint United Nations Programme on HIV/AIDS), UNICEF (United Nations Children's Fund). 2011. Global HIV/AIDS response: epidemic update and health sector progress towards Universal Access. Progress report 2011. Geneva: *World Health Organization.*

WHO (World Health Organization), World Bank. 2011. World report on disability. Geneva: *World Health Organization*

WHO (World Health Organization), World Bank. 2011. World report on disability. Geneva: *World Health Organization.*

*******