

HIV/AIDS Related Knowledge and Sexual Behaviour among Disabled People in Dar es Salaam City, Tanzania

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Abstract

The Government of the United Republic of Tanzania has developed some programmes to control HIV and AIDS. However, disabled people have received little attention in the implementation of such programmes. Therefore, the study from which this paper is based was conducted in early 2010 among 180 disabled respondents in Dar es Salaam, with the specific objectives to: determine the level of awareness about HIV/AIDS knowledge, assess sexual practices that are risky for HIV/AIDS transmission, and determine the correlation between the level of knowledge of HIV/AIDS and sexual behaviour among the disabled. The analysis was done by using SPSS. The findings indicated that the majority of the disabled (78.9%) had heard about HIV/AIDS; only 12 to 39% of the respondents had correct comprehensive knowledge about HIV/AIDS; 39.4% had common misconceptions about HIV/AIDS transmission; the vast majority of those who were married (96.1%) had risky sexual behaviour in the sense that they had had sexual intercourse with people who were not their spouses after marriage; and there was positive correlation between the number of points scored on an index scale which was used to determine knowledge about HIV/AIDS and those scored on another index scale about sexual behaviour ($r = +0.0045$), although it was not significant ($p = 0.562$). Based on these findings, it is concluded that although knowledge about HIV/AIDS is substantial among the disabled, it is not applied to sexual behaviour change, mainly because of poverty which makes them to have sex for some payment. On the basis of this conclusion, it is recommended that inclusive HIV/AIDS programmes for the disabled should facilitate their access to financial services for income generating activities.

Keywords: Disabled people, HIV/AIDS related knowledge, sexual behaviour

1. Introduction

HIV/AIDS was diagnosed for the first time in Tanzania in 1983 when three AIDS cases were confirmed. The three cases were followed by so rapid spread of the pandemic that by 1986 all the regions of Tanzania Mainland had reported AIDS cases, and by 2003 there were about 1,820,000 People Living with HIV/AIDS (PLWHA) (TACAIDS *et al.*, 2005). According to the same source of information, HIV/AIDS prevalence in sexually active adults (15 to 49 years) was 7.0% in 2004. There is good news that the prevalence has been declining. For example, Tanzania HIV/AIDS and Malaria Survey 2007-08 (TACAIDS *et al.*, 2008) shows that the prevalence was 5.7 in 2008, and Tanzania HIV/AIDS and Malaria Survey 2011-12 (TACAIDS *et al.*, 2012) shows that the prevalence was 5.1% in 2012. The decline is partly attributed to efforts that have been devoted to prevention and treatment of HIV/AIDS, especially after 1999 when the then President of the United Republic of Tanzania declared the pandemic a national disaster to be fought against with concerted efforts. As part of the efforts, a National Policy on HIV/AIDS (URT, 2001), a National Multi-sectoral Strategic Framework (NMSF) on HIV/AIDS 2003-07 (URT, 2003a), and the second NMSF on HIV/AIDS 2008-12 (URT, 2012) were formulated to guide the war against the pandemic. Unhappily, Njombe, Iringa and Mbeya Regions still had high HIV/AIDS prevalence levels in 2012 (14.8%, 9.1% and 9.0%, respectively), unlike Manyara, Tanga and Lindi regions that had the lowest prevalence levels (1.5%, 2.4% and 2.9% respectively).

In planning and implementing interventions against HIV/AIDS, international factors are considered. These include the 2001 Declaration of Commitment on HIV/AIDS; the 2006 Political Declaration on HIV/AIDS; Goal Number 6 of the Millennium Development Goals to halt and begin to reverse, by 2015, the spread of HIV; and, among other things, populations vulnerable to HIV/AIDS infection. Such people include women and girls, young people, orphans and vulnerable children, migrants and people affected by humanitarian emergencies, prisoners, indigenous people, and people with disabilities in view of the National Policy on HIV/AIDS and of the NMSFs mentioned above. However, people with disabilities have hardly been reached. This is corroborated by the NMSF on HIV/AIDS 2008 – 12, which says that, although in the mid-2000s there were programmes geared toward the vulnerable groups, those programmes did not adequately address the specific needs of the disabled (URT, 2007b). Low attention to people with disabilities is also shown by the fact that, until 2012, it was only 71 countries which reported that their multisectoral AIDS strategies integrate efforts to address people with disabilities (UNAIDS, 2013). Low attention to the disabled people is also reported by Semkuya (2006) who has it that HIV/AIDS activities in Tanzania, specifically in Dar es Salaam, are increasingly being done by only few

disabled people who are included in these interventions. Semkuya (2006) adds that this group is generally perceived to be at lower risk of contracting HIV, and that HIV infection among disabled women has been increasing in recent years, mainly due to their physical inability against sexual attackers. He also comments as follows: "Some disabled women are forced to engage in unprotected sex by partners who consider them to be in lower risk groups of being infected. Women with mentally disorders are raped and are only realised to have been raped when they are pregnant and brought to antenatal clinics by their relatives."

The problem for this paper was that, although many campaigns have been conducted on HIV/AIDS mobilising people to change sexual behaviour to avoid HIV transmission and infection, people with disabilities have inadequately been included or participated in the campaigns, while they are sexually active and are sexually abused. For example, some mentally handicapped women are cheated by some men to engage in sexual activities with them, and there are many rape cases among the disabled, but rarely, if ever, are appropriate legal measures taken against the culprits. When some victims of such acts report the cases to the community and legal authorities they are ignored and ridiculed.

Several studies have been done on HIV/AIDS, and recent reports show that almost all people in Tanzania are aware of the causes, means of transmission and preventive measures against HIV/AIDS (TACAIDS *et al.*, 2008; 2013). However, little is known about the level of knowledge, sexual decision making, and risky sexual behaviour which influence HIV/AIDS infection among the disabled. Therefore, the research on which this paper is based was done with the objectives to: determine the level of awareness about correct HIV/AIDS knowledge, assess sexual practices that are risky for HIV transmission among the disabled, and determine the correlation between the level of knowledge on HIV/AIDS and sexual behaviour. The aim was to generate empirical information which might inform interventions to control HIV/AIDS with more focus on people with disabilities, among other people.

2. Disability, Knowledge of HIV/AIDS, and Sexual Behaviour

2.1 General Information on Disability

According to WHO, disability is physical, sensory, intellectual, or mental health impairment that has a significant and long lasting effect on an individual's daily life and activities. However, Tanzania National Disability Policy (2004) defines it as "the loss or limitations of opportunities to take part in normal life of the community on equal level with others due to physical, mental or social factors." Disabilities can be caused by accidents, illness or genetic disorders. Disability may affect mobility, ability to communicate or vision. However, disability does not mean complete inability to work (SHIA, 2001). The disabled people have been disadvantaged and discriminated throughout the history of mankind. This situation has in part been a result of existing negative attitude in the whole society. Initially, ignorance and superstitious beliefs were major reasons for their demise. However, with scientific and medical discoveries, many communities gained understanding on the causes of disability, which has led to more acceptance of people with disability (Mboya, 2005).

About 10% of the world's population is living with disabilities (Mont, 2007, cited by UNAIDS, 2012). However, HIV/AIDS data disaggregated by disability are scarce, and UNAIDS (2012) reports that a few studies on HIV/AIDS considering disability have been conducted. Therefore, the proportions of disabled people who have knowledge of various types about HIV/AIDS are not known; the information hardly exists. A few studies which have been done on the prevalence of HIV infection among hearing-impaired populations suggest prevalence equal to or higher than that of the rest of the community (UNAIDS, 2012). With this scarcity of information, results of this research were meant for generating information about HIV and AIDS among people with disabilities for comparing with similar existing information among the rest of the population.

2.2 Knowledge about HIV/AIDS

Knowledge about HIV/AIDS can be assessed with respect to at least mode of HIV transmission, knowledge about HIV/AIDS prevention, and misconception about means of HIV transmission. HIV is transmitted from one person to another mainly through heterosexual intercourse which accounts for above 90% of all infections (Barnett and Whiteside, 2006). HIV infection can also be transmitted from mother to child during pregnancy, during child birth and from breast feeding. Other modes of HIV transmission are through infected blood, blood products, donated organs or bone graft and tissues, common use of needles or other sharp objects (URT, 2001; TACAIDS *et al.*, 2005). With respect to AIDS prevention, most programmes focus prevention messages and efforts on three important aspects of behaviour change: delaying in sexual debut for young persons (abstinence), limiting the number of sexual partners or staying with one faithful partner, and condom use (TACAIDS *et al.*, 2005; 2008; 2013).

After the first AIDS cases were reported in Tanzania in 1983, awareness about HIV/AIDS increased so rapidly that by 2012, almost all Tanzanians had heard about HIV/AIDS (TACAIDS *et al.*, 2012). Generally, knowledge about HIV/AIDS in Tanzania is high; for example, according to TACAIDS *et al.* (2012), 69.4% of women and 77.0% of men in Tanzania know that a person's chance of getting HIV infection can be reduced by using

condoms; 83.8% of women and 87.1% of men know that the chance of becoming infected with HIV is reduced by limiting sexual intercourse to one uninfected partner who has no other partners; and 80.0% of women and 86.4% of men know that a healthy-looking person can have HIV.

Although the majority of Tanzanians have the above knowledge, a few people have comprehensive knowledge about HIV/AIDS, which is defined as (1) knowing that both condom use and limiting sex partners to one uninfected partner are HIV prevention methods, (2) being aware that a healthy-looking person can be infected with the AIDS virus, and (3) rejecting the two most common local misconceptions that the AIDS virus can be transmitted through mosquito bites and by supernatural means (TACAIDS *et al.*, 2012). TACAIDS *et al.* (2012) reports that 42% of women and 50% of men had comprehensive knowledge about HIV/AIDS transmission and prevention methods. The report also showed that the youngest (age 15 – 19 years) respondents and the oldest (age 40 – 49 years) respondents were the least likely to have comprehensive knowledge about AIDS.

2.3 HIV/AIDS and Disability

The disabled are among the poorest, least educated, and most stigmatized of all the world's citizens. A global study on HIV/AIDS and Disability (Groce, 2004) found that people with disabilities face all known vulnerability factors for HIV and AIDS (poverty, illiteracy, stigma and marginalization), and are at equal or increased risk of HIV infection compared to their non-disabled peers. Sub-groups such as women, adolescents and orphans were seen to be at even greater risk. To date, however, HIV and AIDS initiatives have rarely targeted individuals with disability or taken into account their unique circumstances and needs.

In Africa, an estimated 100 million people were living with disability in 2009, and an estimated 25 million people in the continent were living with HIV (UNAIDS, 2009). How many of them lived with both HIV and disabilities are not known. A handful of small scale studies have indicated that, like elsewhere, HIV prevalence among people with disabilities may be equal to if not greater than infection rates among the non-disabled population. For example, a study conducted in 2003 in Uganda found that over one-third of people with disabilities had a sexually transmitted infection (Mulindwa, 2003). However, a study conducted in Rwanda and Uganda in 2004 indicates that feelings of dependency and low self-esteem among young people with disabilities made them less likely to be able to negotiate safe sex (Yousafzi and Edward, 2004).

In Tanzania, an estimated 4 million people live with disability, almost half of them being children in 2008 (TACAIDS *et al.*, 2009). In poor countries like Tanzania, people with disability are given a low priority for scarce and precious resources for schooling and healthcare. As a result very few disabled people have access to basic services related to HIV/AIDS or even know whether they exist. The majority of people with disabilities are relegated to the fringes of society, where they live in poverty with little access to services and other support. This is shown by available empirical information from *Shirikisho la Vyama vya Walemavu, Tanzania* (SHIVYAWATA) (i.e. Disabled People's Organisation of Tanzania), which conducted an analysis of disability and poverty in 21 regions of Tanzania in 2002-03 and reported that people with disabilities are among the poorest of the poor, and that the causes of poverty are multidimensional (GTZ, 2005). The fact that people with disabilities are among the poorest is accentuated by UN (2011), which argues that the spread of HIV is often a consequence and a cause of poverty. Among the disabled this relationship is likely to be higher due to the disabled having fewer opportunities to work than the rest of community members. Poverty experienced by disabled people is likely to have implications for protection against STIs and HIV/AIDS (e.g. inability to afford condoms), risky behaviours (e.g. less stable relationships, sexual coercion, sex in exchange for money) and marginalization from mainstream activities. The condition of poverty is likely to have specific implications for people with disabilities (Elwan, 1999). A vicious cycle is created by reduced employment opportunities, social and cultural exclusion which lead to poverty, and the conditions of poverty influence risk of getting HIV infection. On the other hand, people infected with HIV develop a physical disability, visual impairment or mental illness (Elwan, 1999).

On access, a fundamental difference between people with disabilities and many other vulnerable groups is that disabled people can only claim their rights to access once their practical needs have been met. Additional obstacles such as acquiring mobility and communication aids have proven difficult to overcome for many individuals with disabilities in poorer communities. It has been noted in studies from both the developing and the developed worlds that access to health information and services are reduced by lack of mobility aids, lack of communication skills by staff (Ubido, 2002) and inaccessible buildings (Barnes *et al.*, 1999). Dissatisfaction about access to healthcare services by the disabled has been reported in the medical literature (Iezzoni *et al.*, 2002; Ubido *et al.*, 2002).

2.4 Linkage between Knowledge about HIV/AIDS and Sexual Behaviour

Conceptually, high formal education as well as high knowledge about HIV/AIDS is expected to enable people to avoid behaviour that is risky for HIV transmission, because such people can easily follow technical advice, and read and understand information on how to avoid HIV infection. Such information is provided through mass media including TV, radio, books, leaflets, and signboards. Depending on the nature of disability one has, the

disabled cannot see, hear or read information on HIV/AIDS. This limits their acquisition of knowledge about HIV/AIDS, unlike people without disabilities who can see, hear and read messages about HIV/AIDS so long as they are literate.

However, in some cases most people with high knowledge have been found to still have behaviour that is risky for HIV transmission. For example, Jeckoniah *et al.* (2009) found that 36.9% of University students had risky sexual behaviour based on an index of sexual behaviour which was based on six variables, namely ever had sex, number of sexual partners, condom use for the first time during sexual intercourse, condom use for the last time during sexual intercourse, general condom use, and incidences of STDs. If people with so much formal education like University students cannot use their education to avoid behaviour that is risky for HIV transmission, people with no or low formal and non-formal education like the disabled, most of whom have low education, are more likely to have sexual behaviour that is risky for HIV infection and transmission.

3 Sources of Data for this Paper

Data for this research were collected in the three municipalities of Dar es Salaam City namely, Ilala, Kinondoni and Tembeke. The city is the headquarters of Dar es Salaam Region and the commercial capital city of Tanzania, unlike Dodoma that is the administrative headquarter of Tanzania. Dar es Salaam Region is located between Latitudes 6° 36' and 7° 0' degrees South of the Equator and Longitudes 33° 33' and 39° 00' East of the Greenwich. The region is bounded by the Indian Ocean to the East with a coastal strip of 124 kilometres long, and by the Coast Region in the Northern, Southern and Western sides (URT, 2007a). According to the 2012 population and housing census, the region had 4,364,541 people in 2012 compared to 2,487,288 people in 2002, with a population growth rate of 5.6% per year for the decade 2002-2012 (NBS and OCGS, 2013). Dar es Salaam Region was chosen for this research because it has high population with multi-cultural groups including the disabled. It also was among three regions with the highest HIV/AIDS prevalence in Tanzania after Iringa (16%) and Mbeya (9%) in 2007-08 (TACAIDS *et al.*, 2008), but the 2011-12 Tanzania HIV/AIDS and Malaria Indicator Survey (TACAIDS *et al.*, 2012) showed that the prevalence had declined to 6.9% in 2012, making Dar es Salaam the 5th most affected region after Njombe (14.8%), Iringa (9.1%), Mbeya (9.0%), and Shinyanga (7.4%) Regions.

Permission to conduct the study was obtained from Sokoine University of Agriculture and endorsed by the Directors of the three municipalities where the data were collected. Ethical consideration was observed by all participants being told, before being interviewed, the purpose of the study, what participation involved, confidentiality in the research, risks of participation, and that they had the right to withdraw from participation and ask questions.

Data were collected once from individual disabled people aged 15 to 55 years, an individual being the sampling unit. The individuals were selected through simple stratified sampling, each of the three municipalities being a stratum, and choosing 60 respondents from each of them, 30 male and 30 female. The sample size was therefore 180 respondents and included people with physical disability, albinos, deaf and visually impaired people. Data were mainly collected using a structured questionnaire. The questionnaire included an index scale to gauge knowledge about HIV/AIDS and another index scale to gauge sexual behaviour.

The data collected were first coded, edited, and verified before being entered into the Statistical Package for Social Sciences (SPSS) software. They were then cleaned and analysed using SPSS whereby descriptive statistics including frequencies, averages, percentages, minimum and maximum values were computed. Inferential analysis was done to determine the relationship between knowledge about HIV/AIDS and sexual behaviour using Pearson's moment correlation.

4 Empirical Findings

4.1 Socio-Demographic Variables of Respondents

The socio-demographic variables studied were age, sex category, education, marital status, main occupation, religion, and type of disability. Regarding age, the ages of the respondents ranged from 15 to 55 years. Among the 180 respondents, 3.9% were between 15 and; 30.6% were between 25 and 35; 56.7% were between 36 and 49 and 8.9% were between 50 and 55 years old. The majority of the respondents (91.1%) in the sample were sexually active because they were 15 to 49 years old. The mean age for all the respondents was 37.8 years. In terms of sex categories, 51.7% of the respondents were male while the rest, 48.3%, were female. The proportions of male and female respondents were slightly different from those in the population (48.7% male and 51.3% female) because female disabled people were less willing to participate in the interview.

In terms of education, the study findings revealed that 74.4% of the respondents had attended primary education (1 - 7 years); 20.0% had attained secondary education (8 - 13 years) and 5.6% had post secondary education (14 - 16 years). The mean years of schooling among the respondents were 7.9 years. The findings imply that most of the respondents in the study area had formal primary education, which is important for their daily economic

activities as well as for acquiring and understanding HIV/AIDS information.

In terms of marital status, 60.6% of the respondents were single while the rest were married (28.3%). The rest were widowed (1.1%), divorced (6.7%), and separated (3.3%). According to Mboya (2005), marriage is viewed as out of question for the disabled people in communities; if they ever get married it is expected to be to people with similar disabilities. In some cases they are considered as asexual. However, the fact that non-disabled men make many disabled women pregnant contradicts this notion. These men do not, however, marry them but just use them and would not like to be seen with them. This implies that the majority of respondents had casual sexual relations, something which might lead to HIV/AIDS infection.

The respondents had the following main occupations: private employment (59%), employment in Non-Governmental organizations (7%), employment in Governmental departments (3%), crop production (1%), and other types of employment (30%). The low percentage of formal employment could be due to low level of education among the respondents; the majority had attained only primary education. Very few (1%) were engaged in crop production because of the nature of their disability whereby the majority were unable to engage in activities which required much energy. In terms of religion, the majority of the respondents were Moslems (51%), while Catholics were 31%; protestants were 17%, and others were 1.1%.

The types of disability the respondents had were recorded, and it was found that 42% had physical disability; 24% had albinism; 20% had sight impairment; and 14% had hearing impairment. The findings were comparable to those obtained in the 2002 National Population and Housing Census (URT, 2003b), which showed that the physically disabled were more numerous compared to those who had other types of disability.

4.2 Knowledge about HIV/AIDS

Knowledge about HIV/AIDS was determined in three different methods: testing general knowledge, testing comprehensive knowledge, and scaling the knowledge using an index scale. The three methods are described below, including discussions of the results obtained based on the methods. In order to test general knowledge, the respondents were asked whether: they had ever heard about HIV/AIDS; they had ever participated in any HIV/AIDS campaigns or seminars and factors which had hindered them from participating; they knew whether persons cannot get HIV by sharing food and by living with a HIV positive person; and HIV can be transmitted from mother to child by breastfeeding. It was found that the greatest proportional of the respondents (78.9% all, 79.6% male, and 78.2% female) had heard of HIV/AIDS. This finding shows that relatively few disabled people had heard about HIV/AIDS, unlike non-disabled people in Tanzania, almost all of whom have heard about HIV/AIDS as reported by TACAIDS *et al.* (2008; 2012). It was also found that 93.9% of the respondents had never participated in any HIV/AIDS campaigns due to unfavourable conditions for them to participate (90%) or being not invited (95.5%). However, all the deaf had never heard about HIV/AIDS, and all the blind had never seen any information about HIV/AIDS due to the nature of their disabilities. Another finding was that 15.6% of the respondents said that persons cannot get HIV by sharing food and by living with a HIV positive person, while the national figure for that aspect is 85.9% among women and 86.6% among men, which also implies that they had little knowledge of HIV/AIDS. Moreover, it was found that 17.0% of them agreed with the statement that HIV can be transmitted from mother to child by breastfeeding, which also implies that they had low knowledge about HIV/AIDS as the national figure of people who have that knowledge is 85.0% (women) and 78.5% (men).

With respect to comprehensive knowledge, according to TACAIDS *et al.* (2005; 2008; 2013), comprehensive knowledge of HIV/AIDS is defined as: “(1) knowing that both condom use and limiting sex partners to one uninfected partner are HIV prevention methods, (2) being aware that a healthy-looking person can be infected with the AIDS virus, and (3) rejecting the two most common local misconceptions—that the AIDS virus can be transmitted through mosquito bites and by supernatural means.” In this study, the respondents were asked these questions to examine their level of comprehensive knowledge about HIV/AIDS. Although the majority of the disabled had heard about HIV as seen above, the percentage of them with misconception about means of HIV transmission was high. The results indicated that the respondents scored low percentages on most of the indicators of comprehensive knowledge about HIV/AIDS. This was indicated by the following findings. Only 12.2% of the respondents agreed with the statement that HIV transmission can be prevented by using condoms properly every time when one has sex, while the national figures of people who have correct knowledge on this were 69.4% among women and 77.0% among men. Only 32.8% of the respondents agreed with the statement that HIV transmission can be reduced by having sex with one uninfected partner who has no other partners, while the national figures of people who have correct knowledge on this is 83.8% among women and 87.1% among men. Only 17.0% agreed with the statement that a healthy-looking person can have HIV, while the national proportions of people who have this knowledge are 80% among women and 78.9% among men. Only 15.6% of the respondents agreed with the statement that the AIDS virus cannot be transmitted through mosquito bites, while the national proportions of people who have this knowledge is 79.9% among women and 77.7% among men. Only 39.4% of the respondents agreed with the statement that a person cannot get HIV by

witchcraft or other supernatural means, while the national proportions of people who say so are 84.6% among women and 89.2% among men. This information is presented in Figure 1 to make it more discernible.

The proportions of the respondents with both general and comprehensive knowledge about HIV/AIDS were generally lower than those reported in TACAIDS *et al.*, 2012 and 2008. The low knowledge of the respondents was mainly attributed to low involvement of the respondents in HIV/AIDS control activities. For example, it was found that 93.9% of the respondents had not attended any HIV/AIDS campaigns. They said that they had not participated because of having not been invited and due to their unawareness of such campaigns. Sometime the environment is not conducive for the disabled to participate, such as venues located upstairs while there are no elevators. This implies that although many disabled people had heard about HIV/AIDS the information might be incorrect because the majority of them had never attended any training on HIV/AIDS. The situation was explained by one of the respondents as follows: “*Workshops have been organised and meetings called, but the disabled have been left out. Information on TV is not accessible to all because there is no sign language.*”

The knowledge that the respondents had about HIV/AIDS had been gained from various sources through various media which were user friendly in view of their types of disability. The quality of the information varied, and efforts were required to ensure that programmes considered the needs of those with impairments that led to difficulties in understanding the messages disseminated, particularly those with hearing and sight impairments. For young disabled participants, benefits of attending school meant HIV/AIDS information was more accessible. Marginalization of disabled people who are not easily reached by mainstream programmes, however, was a real concern for the many people with disabilities, and this has wider implications for HIV/AIDS control. The findings of this study indicated that the disabled got information through radio (79.4%), news papers (70%), television (48.9%) and seminars (3.9%). However, there were some media which were not effective to some groups of the disabled, such as the deaf and the blind.

The knowledge that the respondents had about HIV/AIDS was also gauged using an index scale which comprised most of the items used to test general and comprehensive knowledge. The items used for the index scale were the following ones: (1) Abstinence can reduce HIV transmission; (2) HIV transmission can be reduced by having sex with one uninfected partner who has no other partners; (3) HIV can be transmitted through sexual intercourse, sharing needles and syringe, kissing and blood transfusion; (4) HIV can be transmitted from mother to child; (5) HIV transmission can be prevented by using condoms properly every time when one has sex; (6) A Person cannot get HIV by mosquito bite; (7) Healthy looking persons can have HIV; (8) Persons cannot get HIV by sharing food and living with a HIV positive person and (9) A person cannot get HIV by witchcraft or other supernatural means. For each of the statements the minimum score was 1 while the maximum score was 5. Points scored by every respondent for every statement were added up to find the extents to which the respondents were knowledgeable about HIV/AIDS. The minimum possible total score for all the statements was 9 if one had chosen 1 for all the statements, and the maximum possible total score for all the statements was 45 if one had chosen 5 for all the statements. Higher scores reflected having higher knowledge about HIV/AIDS.

It was found that the minimum, maximum, and average points scored were 29, 45, and 38.2, respectively, over 45. The range of points representing lower knowledge was 9 to 27 while the range of points denoting higher knowledge was 28 to 45. Since the average score was within the 28 to 45 range, these findings mean that the disabled had substantial knowledge about HIV/AIDS, albeit their knowledge was lower than that of the rest of the population. The average points scored were 38.6 among male and 38.5 among female respondents. The points did not differ significantly ($t = 0.119$, $p = 0.905$), which means that male and female disabled people had almost the same level of awareness about HIV/AIDS.

4.3 Factors which Influence the Disabled to Be at Risk of Getting HIV/AIDS Infection

The respondents were asked whether poverty of the disabled, risky sexual behaviour, little knowledge about HIV/AIDS, and type of disability were factors predisposing people with disabilities to HIV infection risk. Their responses are presented in Figure 2, which shows that little knowledge about HIV/AIDS was mentioned by almost all the respondents (98.9%), followed by risky sexual behaviour (71.7%).

4.4 Sexual Behaviour of the Disabled

Like for knowledge about HIV/AIDS, sexual behaviour of the respondents was determined using 9 items, the following ones: (1) Doing sex as a source of income is normal, (2) Sexual intercourse is a necessary thing, (3) Peers have influence on one's sexuality, (4) The disabled have minimum risk of contracting HIV/AIDS, (5) Sex is a way of expressing love, (6) Condom use has bad side effects, (7) Doing sex as a way of spending money is normal, (8) Women lack sexual decision power and (9) Having many partners is prestigious. For each of the 9 items one would indicate 1, 2, 3, 4, or 5. Higher numbers reflected riskier sexual behaviour. The minimum score one would get was 9 if one chose 1 for all the statements, while the maximum score one would get was 45 if one chose 5 for each of the items. It was found that the minimum, maximum, and average points scored were 9, 44, and 36.8, respectively, over 45. The range of points representing less risky sexual behaviour was 9 to 27 while

the range of points denoting more risky sexual behaviour was 28 to 45. Since the average score was within the 28 to 45 range, these findings mean that, overall, the disabled interviewed had highly risky sexual behaviour. The points scored by male respondents were 36.0 while those scored by female respondents were 37.6. This means that female disabled respondents had riskier sexual behaviour than male disabled respondents. However, the points they scored on the index scale that was used to determine their behaviour did not differ significantly ($t = -1.467$, $p = 0.144$), which means they had more or less the same risky sexual behaviours.

Besides the above factors of sexual behaviour, the respondents were asked about other sexual behavioural aspects, which are reported in Table 1. On the basis of the findings in Table 1, it is obvious that the respondents had risky sexual behaviour, for example 60% of all of the respondents having multiple partners and only 10% of those who responded to the question of condom use during the last sexual intercourse having used condoms.

4.6 Relationship between Awareness about HIV/AIDS and Sexual Behaviour

The points scored on the two index scales used, one to determine awareness about HIV/AIDS and the other one to determine sexual behaviour, were correlated using Person's moment correlation to determine whether they were negatively or positively correlated. It was found that they were positively correlated ($r = +0.0045$), suggesting that the higher the knowledge about HIV/AIDS the worse was the sexual behaviour. Although the relationship was not significant ($p = 0.562$), it was not expected; one would expect knowledge about HIV/AIDS to be negatively correlated with risky sexual behaviour. The result that the positive correlation was not significant tells us that the two are not much related. However, some previous studies, as seen previously in this paper, have also shown risky sexual behaviour among people who are more educated than the disabled interviewed, for example University students as reported by Jeckoniah *et al.* (2009) who found that 36.9% of University students had risky sexual behaviour.

5 Conclusions and Recommendations

The findings showed that the majority of the disabled had heard about HIV/AIDS (78.9%) but that 39.4% of the respondents still had misconceptions about HIV/AIDS transmission, while only 6.1% of them had been involved in HIV/AIDS campaigns and almost all of them said that poor knowledge of HIV/AIDS among them was one of the main factors predisposing them to HIV infection. On the basis of these findings, it is concluded that the disabled have less knowledge about HIV/AIDS compared to the rest of the population, although their knowledge is substantial. Therefore, it is recommended that in HIV/AIDS programmes there should be educational programmes targeted specifically to people with various types of disability, and organisations having such programmes should reach more disabled people with updated information about HIV/AIDS. Moreover, policy frameworks should be more focused to guide and increase the access of the disabled to HIV/AIDS information and control services. Since the majority of the disabled practise risky sexual behaviour because of poverty, it is recommended that municipalities should support financially groups of disabled so they can do some income generating activities. Moreover, since the majority of the disabled practise risky sexual behaviour in spite of substantial knowledge they have on HIV/AIDS, it is recommended that NGOs and other development partners working on HIV/AIDS in Dar es Salaam like Pathfinder international, Family Health International, PASADA and other development partners should increase activities and funds to control HIV/AIDS. Civil Society Organizations (CSOs) should update their HIV and AIDS policies, as well as strengthen implementation and monitoring mechanisms to ensure the disabled are reached.

On the basis of the findings that there is positive correlation between HIV/AIDS knowledge and sexual behaviour, it is concluded that even people who have higher education and knowledge about HIV/AIDS may have behaviour that is risky for HIV infection and transmission. This implies that knowledge on HIV/AIDS is not only a factor which influences spread of HIV among the disabled; there are other factors such as socio-cultural factors, poverty, poor accessibility and nature of disability like deafness and blindness. In view of this conclusion, it is recommended that whatever the level of education, campaigns against HIV/AIDS should be done continuously not only among the disabled but also among other members of society until HIV and AIDS are no longer a threat to mankind.

On the basis of the findings of this research, which showed that there was little use of condoms among the disabled (only 10%) at last sex, it is concluded that the majority of the disabled practise unsafe sex due to several reasons such as uneasy access to shops to buy condoms (depending on type of disability), incorrect use of condoms (like the blind who can not see instructions), and inability to buy them due to low income. In accordance with this conclusion, it is recommended that promotion of the use of condoms among the disabled should be scaled-up, including distribution of condoms free of charge to them.

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Table 1. Sexual behavioural attributes of the respondents

Sexual behavioural attributes	n	Yes (%)	No (%)
Having ever had sexual intercourse	180	99.4	0.6
Having sexual intercourse with someone who was not a spouse after marriage	51	96.1	2.8
Having been married or lived with a man/women as if one was married	180	70.6	29.4
Men having more than one wife or more than one sexual partner	93	73.3	26.7
Having used condoms at the last sex with a partner who was not a spouse	93	10.0	90.0
Having had sex with more than one partner in the past 12 months	180	60.0	40.0

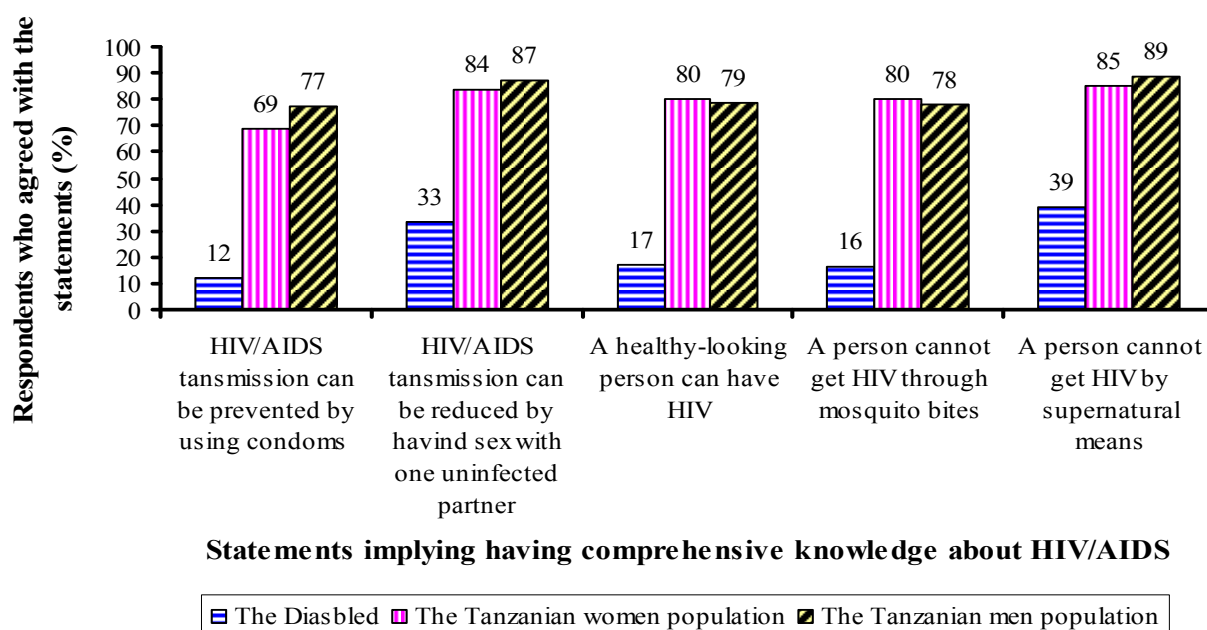


Figure 1. Comprehensive knowledge about HIV among the disabled vis-à-vis other people

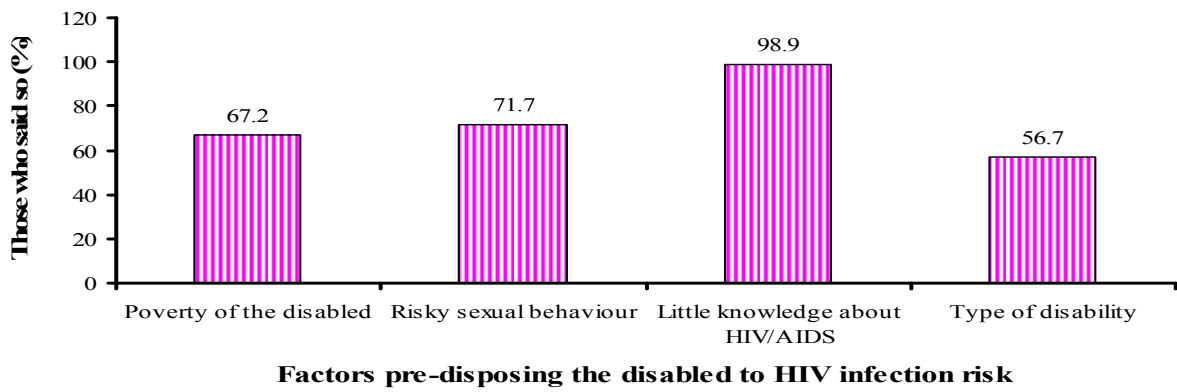


Figure 2. Factors pre-disposing the disabled to HIV infection risk