

# Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome Knowledge Among Residents of Informal Settlement in Port Elizabeth, South Africa

Thanduxolo Elford Fana<sup>1,2</sup>

<sup>1</sup>School of Public Health, Centre for Health Policy, University of Witwatersrand, Johannesburg, South Africa

<sup>2</sup>School of Government and Public Administration, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa

## Email address:

thando.fana@wits.ac.za, unamthanduxolo@gmail.com

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**Abstract:** Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome is the most formidable challenge to public health. Prevention and control of its spread is partly depends on peoples knowledge and behaviour change from risky to safe sexual practices. This aim of this cross sectional descriptive and quantitative study was to assess Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome knowledge among residents of informal settlement. Accordingly, this study was conducted among residents of informal settlement in ward 40 who have stayed for more than five years in the area and were 18 years and above on their last birthday. The study sample consisted of 100 participants, 47 male and 53 females. The results showed that high Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome knowledge levels among the respondents. Overall, the results also revealed that adults (85%) and female (82%) respondents were more knowledgeable about Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome than youth (57%) and male (74%) respondents. It is also of interest to note that, despite the high overall knowledge levels, some of the respondents still had poor knowledge, misconceptions and erroneous beliefs about Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome. Only 47% of male respondents knew that there was no cure for HIV and AID Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome compared to 84% of females, while also only 55% of males knew that there was no expensive vaccine for prevention against HIV infection compared to 74% of females. The results further revealed that despite 94% of males knowing that traditional practitioners cannot prevent HIV spread compared to 87% of females, it is interesting to note that only 66% of males knew that western and traditional medicine cannot be combined to treat HIV infected people compared to 91% of females. The knowledge gaps among males and youth, and misconceptions about transmission and prevention and treatment shows that the participants were vulnerable to Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome infection. There is a need for intensification of health education interventions in the Nelson Mandela Municipality in order to close the knowledge gap and address the existing misconceptions and erroneous beliefs in the community.

**Keywords:** Knowledge, HIV and AIDS, Urban Areas, Rural Area, Formal and Informal Settlement

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## 1. Introduction

Acquired immune deficiency syndrome (AIDS) caused by the human immunodeficiency virus (HIV) was identified for the first time in 1981 among homosexuals in the United State of America (USA [1]. HIV weakens the immune system of the infected people and thereby making them vulnerable to

other diseases. It is impossible to remove HIV virus from the body once a persons has been infected [2].

As AIDS progresses in the infected people, their bodies surrender to infection and they get sick of opportunistic infection which would not poses a threat to HIV negative people [3]. Shortly after the discovery of HIV, in many countries around the globe HIV and AIDS has continued to

grow and become a pandemic [4].

Globally more than 70 million people are infected with the HIV; of which 35 million people have died of HIV and AIDS worldwide, since the beginning of the epidemic. In 2017, the Joint United Nations Program on HIV and AIDS (UNAIDS) estimated that the number of people living with HIV was 36, 9 million, new infections were about 1, 8 million and there were 940 000 aids related deaths globally. It is estimated that from the global estimate Sub-Saharan Africa had 19, 6 people living with HIV, 800 000 new infections and 380 000 AIDS related deaths. South Africa (SA) is one of the countries in the Sub-Saharan Africa and has the biggest HIV epidemic in the world, with 7.2 million people living with HIV. There were 270,000 new HIV infections and 110,000 AIDS-related death in SA. The HIV prevalence among the general population in SA is at 18.9 percent. SA also accounts for a third of all new infections in the Southern Africa [5]. It is also stated that the HIV prevalence among 15-49 year old people in SA is 20,6 percent and that HIV prevalence among females between the ages of 15-49 was 26,3 percent compared to 14,8 percent of males within the same age group. The three province with the highest HIV prevalence rate among 15-49 year old was KwaZulu-Natal (KZN) 27% followed Free State (FS) 25.5% and then Eastern Cape (EC) with 25.2% [6]. Inadequate socio-economic resources and unstable housing were linked to risky health behaviours [7] and people living in such environments are said to be more likely to be infected with HIV [8] than those living in stable housing environments [9].

Developing countries are undergoing major demographic shifts from rural to urban, and in South Africa urbanisation is associated with poor living conditions as well as informal settlement especially among African population. Informal settlements are also characterised by lack of basic services, limited access to piped water and electricity, informal housing structures mainly made of wood, tins, plastics and other materials and general lack of infrastructure such as road schools healthcare centres and adequate sanitation [10]. Informal settlements have high HIV incidence rates and thereby result in higher prevalence than urban formal and rural areas (11). HIV incidence in urban informal settlements was estimated to be around 7% compared to 1.8% urban formal settlement in South Africa [7]. The high prevalence of HIV in the EC makes it compelling to undertake a study to assess knowledge levels of HIV and AIDS among community members of ward 40 informal settlement in the Nelson Mandela Municipality (NMM).

Improving our understanding of the HIV epidemic is crucial for the development of the interventions that can assist in curbing its spread. Despite the decline in progression of HIV to AIDS and the death rate due to the Antiretroviral (ARV) drugs, the rate of new infection is still a cause for concern in SA. It is a known fact that there is no cure for HIV and AIDS and therefore prevention is the best available option that we have for combating the disease and curbing its spread [2]. The above situation also highlights the significance of raising awareness of risk that are

associated with sexual behaviour and HIV and AIDS present. Studies that were previously conducted, have highlighted that expanding HIV and AIDS related knowledge is a vital aspect of HIV prevention, emphasizing its influence on the possibility of engaging in preventative behaviours [12]. It is also worth mentioning that a problematic relationship exist between knowledge of a disease and behaviour [13], especially when considering the fact that youth can show high levels of HIV and AIDS knowledge but some still engage in risky sexual behaviours [14]. Research also shows that cognitive, behavioural and social factors influence an individual's vulnerability to diseases. There is a gap in research, which shows the relationship between knowledge and behaviour. Few studies explain why some people in our communities are still behaving in ways that make them vulnerable to HIV infection despite having attended health education programmes. Turning knowledge into practical protective actions is mediated by factors such as gender, social class, race, and other social factors [15].

There is also lack of research studies that shows the link between knowledge of HIV and people in communities embarking in health preventative behaviours in SA. This study seeks to establish knowledge of HIV and AIDS among ward 40 community members, in the NMM in the EC in SA. This study argues that if community members have misconceptions and low knowledge of HIV and AIDS cause, diagnosis, transmission, prevention, treatment and management, the spread of HIV and AIDS cannot be curbed. If community members do not understand government policies and interventions on HIV and AIDS, they are less likely to support the decentralised healthcare initiatives or projects in their communities. If knowledge is low, communities are less likely to take advantage of the healthcare initiatives and make use of the primary healthcare facilities that are available in their communities to seek help for HIV and AIDS infections and thereby curb the spread of the diseases. Low knowledge of a disease is associated with a negative attitude towards the disease [16] and late health seeking behaviour [17]. Research on HIV and AIDS in SA shows that there is a gap between knowledge and behaviour in terms of HIV and AIDS prevention, as some people continue to engage in risk behaviours and HIV and AIDS prevalence is still high. This shows that knowledge of the negative consequences of contracting a disease does not always lead to a modification behaviour or practice in some individuals or communities [18]. Knowledge alone is requisite but not enough to reduce individual or group vulnerability to HIV infection. HIV risk is associated with distorted knowledge or perceptions of reality in HIV and AIDS prevention. The major factor for HIV transmission is engaging in high risk sexual behaviours [12]. It appear as if some people do not fear HIV infection [19]. Other researchers are of the view that some people will still have sex without condoms due to a strong negative attitude towards condoms [20] even knowing full well that the chances of being infected with

HIV will be high [19].

Lack of prevention and treatment information, limited access to healthcare services [21], and societal norms that predispose community's especially young women and girls to violence, early marriages are some of the factors that predispose them to high-risk sexual practices [22]. AIDS-related stigma could prevent individuals from taking an HIV test. The availability of HIV prevention programmes and antiretroviral drugs, have assisted in decreasing the rate of HIV progressing and deaths as a results of AIDS [6]. In unequal society, knowledge about disease is also unequally distributed. Communities that live in better economic conditions and those that are closer to centres that produce and disseminate information are more likely to receive information faster and thereby make the necessary changes faster than those who live far away and poor economic conditions. Low levels of knowledge about HIV and AIDS lead to risk behaviours [23]. Communities with low levels of knowledge about HIV tend to be more vulnerable to HIV infection [24]. Some individuals in those communities do not use condoms consistently, some abuse drugs and inject themselves with drugs in groups using shared needles, and some have multiple concurrent sexual partners. Some community members in South Africa do not have the knowledge of how HIV can result in AIDS if not treated. Other people refuse to test for HIV so that they know their HIV status [25]. It is also argued that folk beliefs can influence communities' health-seeking behaviours and practices, and those health beliefs can influence the way community members react to disease control programmes in SA [26]. Low levels of education among some community members in SA might present literacy and numeracy challenges that could make some communities more vulnerable to HIV infection [27]. In addition, low levels of knowledge compounded with high levels of unemployment and poverty can expose some community members to HIV infection [28]. In order to mitigate the spread of HIV and AIDS it is essential that a study be conducted to assesses knowledge levels of HIV and AIDS among community members of ward 40 informal settlement in the Nelson Mandela Municipality (NMM), so that targeted interventions can be planned and implemented.

## 2. Materials

### 2.1. Study Design and Settings

This was a cross-sectional, descriptive quantitative study that was conducted among community members in the informal settlement of ward 40 in Port Elizabeth (PE) in the Nelson Mandela Municipality, in the Eastern Cape Province of South Africa in order to establish their knowledge of HIV and AIDS. Eastern Cape Province is one of the nine provinces of South Africa and mostly rural and impoverished. Port Elizabeth is one of the towns that were combined with Uitenhage and Despatch to form the Nelson Mandela Municipality in the Eastern Cape after the new

dispensation. Port Elizabeth in the Nelson Mandela Municipality, Eastern Cape Province is one of the largest cities in South Africa and considered to be the economic hub of the Eastern Cape with East London. With people moving from the rural areas to Port Elizabeth in search for work, there has been a steady growth in informal settlements. Ward 40 in Port Elizabeth in the Nelson Mandela Municipality include areas such as Van Staden, Seaview, St Albans, Greenbushes, Colleen Glen, De Stades, Lakeside, Kuyga, Kragga-Kamma, Rocklands and Blue Horizon which are mainly composed of farms, informal settlements and formal houses in few areas. Informal settlements a characterised by lack of basic services, limited access to piped water and electricity, informal housing structures (build with wood, tin or zinc, plastics and miscellaneous materials), and general absence of infrastructure including adequate sanitation [7]. The decision to undertake a study to assess the knowledge of HIV and AIDS among residents of ward 40 informal settlements was based on the abovementioned factors and the high prevalence of HIV that was reported in both economic hubs of the Eastern Cape, which are Nelson Mandela (28.3%) and Buffalo City Municipalities (34.1%) [29].

### 2.2. The Study Population and Sampling

The study population was community members living in informal settlement in ward 40 in Port Elizabeth, in the Nelson Mandela Bay Municipality who were 18 years and above on their last birthday. A combination of purposive, random and convenience sampling was used to select the participants. It was purposive when participants who were at least 18 years old and above and living in informal settlements were included in the study. Random when every tenth house in the beneficiary list from informal settlements for RDP houses was included in the survey. Accidental when anyone who met the inclusion criteria was available in the selected household and gave consent, was requested to fill in the questionnaire for this study. There were 47 male and 53 female. Before conducting fieldwork, the researcher approached and requested the ward councillor and ward committee members to inform the residents in the informal settlements about this study. The sampling procedure involved the random inclusion of participants who volunteered and were willing to participate in the study. A map of ward 40 indicating the number of informal residential units was used to select households to participate in the study. The researcher started at any house in the area and then selected every tenth house from the list. The researcher asked any adult person (18 years and older) at each household who was available at that time at the selected house to respond to the questions in the questionnaire.

### 2.3. Inclusion and Exclusion Criteria

The study included community members who have stayed

in ward 40, informal settlements for five years and more, and those who were 18 years and above on their last birthday and gave consent for participation. All those who have stayed for a period that was less than five years in the study area, and below 18 years of age, on their last birthday and had severe health problems with cognitive impairments were excluded from this study.

#### 2.4. Data Collection Instruments and Data Collection

A structured closed ended questionnaire, which was developed by the researcher was used to collect data. The questionnaire was written in English, and had two sections. The first part of the questionnaire dealt with the demographic characteristics of the participants. The second part of the questionnaire was related to HIV and AIDS knowledge. The reliability of the questionnaire was established through a pilot study, which preceded this study. Ten people participated in the pilot study and its results were not included in the findings of the main study. The validity was established through qualitative inter-rater assessment of its usefulness in getting the required information from participants. Adjustments were made to the time it would take to complete the questionnaire. The questionnaire was used to assess participants knowledge of HIV and AIDS and it consisted of items that required the participants to tick a response that best represented their knowledge of HIV and AIDS. The rating was as follows: 'True' was worth 1 point, 'Uncertain' 2 points, and 'False' 3 points. For each individual item, responses that were coded as correct yielded 1 point, incorrect answers, uncertain responses and missing data got no points. Each participant yielded a score of which the range was 0-20. Knowledge scores were classified as low below 70% and high from 70% upwards. Higher scores indicated higher levels of knowledge about HIV and AIDS.

#### 2.5. Data Analysis

Data was checked for completion, cleaned and entered into Microsoft Excel 2013, spreadsheet. Data was exported from Excel spreadsheet to Statistica 10 software due to its flexibility and excellent capacity for labelling variables. This was done in order to make interpretation of data easier. The results of the participant's demographics and baseline outcomes were presented using descriptive summary measures such as percentages. Frequency tables were used to show participants' responses.

#### 2.6. Ethical Considerations

Ethical clearance for this study was obtained from the Nelson Mandela University Faculty of Arts subcommittee for Research Technology and Innovations Higher Degrees Ethics Committee (H/12/ART/PGS-0025) before conducting this study. Once the application for ethical clearance was approved, consent forms were given to the selected participants, who were made aware of their right to participate or not to participate in the study. The researcher told the participants that their participation was on a voluntary basis and that they were not going to be paid for participating in the study or penalised for withdrawing their participation. Participants were informed that the information they provided in the study would be treated as confidential and that participants would be regarded as anonymous.

### 3. Results

Table 1. Socio-demographic characteristics of the respondents.

Variables	Frequency	Percentage
Gender		
Males	47	47%
Females	53	53%
Race		
African	57	57%
Coloured	40	40%
White	3	3%
Age		
18-30	41	41%
31- 40	26	26%
41-50	18	18%
51 up	15	15%
Educational status		
Primary education	24	24%
High school education	66	66%
Tertiary education	10	10%
Employment status		
Employed	62	62%
Unemployed	38	38%

Table 1 shows the socio-demographic characteristics of the respondents. The results in Table 1 reveals that the majority of the respondents were females (53%), Africans (57%), had completed matric (66%) and employed (62%). The results also reveal that the most of the respondents in this study were between the ages of 18-30 (41%) and that those between ages of 51-60 were the least represented. The fact that the majority of the respondents in this informal settlement were African is a reflection of what is generally common in South Africa.

Table 2. Statements relating to transmission of HIV and AIDS.

	Male (N=47)		Female (N=53)	
	Frequency	Percentage	Frequency	Percentage
HIV positive people can pass HIV virus even if they do not have symptoms	38	81	46	87
Only poor people get infected with HIV and AIDS	24	51	36	68
HIV virus is spread through having unprotected sex with an infected person	47	100	53	100
HIV and AIDS can also be transmitted through hugging and kissing	32	68	43	81
HIV virus can be transmitted through mosquito bites	25	53	31	58
	166	71	209	79

Table 2 illustrates the proportion of respondents who gave correct answers regarding HIV and AIDS transmission. The overall knowledge about transmission of HIV and AIDS was high among the respondents 75% (n = 375). Female respondents also had higher scores (79%) than male respondents (71%) on knowledge about transmission of HIV and AIDS. It is of interest to note that despite high knowledge scores of females compared to males, all research

respondents knew that HIV virus is spread, through having an unprotected sex with an infected person. It is also important to note that knowledge on certain HIV and AIDS transmission aspects was poor. 49% of male and 32% of female respondents believed that only poor people get HIV and AIDS, and 47% of male and 42% of female respondents believed that HIV virus was transmissible through mosquito bites.

**Table 3.** Statements relating to prevention of HIV and AIDS.

	Male (N=47)		Female (N=53)	
	Frequency	Percentage	Frequency	Percentage
Abstaining from sex reduce chances of getting infected with HIV virus	45	96	52	98
An expensive vaccine is used to prevent infection from HIV virus	26	55	39	74
Practicing safe sex reduces chances of getting or spreading HIV and AIDS	41	87	41	77
HIV can be prevented by not sharing needles, razors or syringes	32	68	43	81
HIV spread can be prevented by seeking help from traditional healer	44	94	46	87
	188	80	221	83

Table 3 illustrates the proportion of respondents who gave correct answers regarding HIV and AIDS prevention. The overall knowledge about prevention of HIV and AIDS was high among the respondents 82% (n = 409). Female respondents also had higher scores (83%) than male respondents (80%) on knowledge about prevention of HIV and AIDS. It is of interest to note that despite high overall knowledge scores on HIV and AIDS prevention among the

respondents, it is a concern that knowledge on certain HIV and AIDS prevention aspects was poor. 45% of male and 26% of female respondents believed that an expensive vaccine was available to prevent infection HIV, and 32% of male and 19% of female respondents did not know that sharing of needles, razors and syringes increases risk of spreading HIV virus.

**Table 4.** Statements relating to diagnosis, treatment and management of HIV and AIDS.

	Male (N=47)		Female (N=53)	
	Frequency	Percentage	Frequency	Percentage
HIV virus infection is diagnosed through blood test	33	70	47	89
People who are infected with HIV and AIDS can be easily identified	19	40	29	55
Having TB is a sign and symptom of HIV and AIDS	16	34	35	66
HIV and AIDS makes the body so weak that it cannot fight disease	46	98	48	91
Antiretroviral drugs are used to manage HIV and AIDS	37	79	49	92
Antiretroviral drugs reduces or suppresses the viral load	36	77	48	91
Antiretroviral drugs boost the CD4 count of HIV infected people.	43	91	41	77
Antiretroviral drugs are freely available in government hospitals	47	100	49	92
Western and traditional medicine can be used to treat HIV infected people	31	66	48	91
HIV and AIDS has no cure	22	47	37	92
	330	70	431	84

Table 4 shows the proportion of participants who gave correct answers regarding diagnosis, treatment and management of HIV and AIDS. The overall knowledge about diagnosis, treatment and management of HIV and AIDS was high among the respondents 77% (n = 381). Female respondents also had higher scores (84%) than male respondents (70%) on knowledge about diagnosis, treatment and management of HIV and AIDS. Despite outstanding answers provided to some of the knowledge questions on diagnosis, treatment and management of HIV and AIDS among the research respondents it is a concern that knowledge on other items on diagnosis, treatment and management of

HIV and AIDS was poor. For instance, 60% of male and 45% of female respondents believed that people who are infected with HIV and AIDS can be easily identified, and 66% of male and 34% of female respondents believed that TB was a sign and symptom of HIV virus. It is also a concern that 34% of the males respondents compared to 9% of females did not know that western and traditional medicine cannot used or combined to treat HIV, and that 53% of males compared to only 8% of females did not know that HIV and AIDS have no cure. Lastly, the overall results show that female respondents showed higher HIV and AIDS knowledge scores (82%) when compared to male (74%) respondents in this study.

**Table 5.** HIV and AIDS knowledge distribution according to age of the participants.

Age	Correct responses	Total number of participants	Percentage
18 – 40 years	38	67	57
41- 60 years	28	33	85

Table 5 shows that that the number of participants in the older group, the 41 to 60 age group, showed high scores (85%) on knowledge of HIV and AIDS than the participants in the younger age group, 18 to 40 (57%).

#### 4. Discussion

HIV and AIDS has emerged to be the most formidable challenge not only to public health, human rights and developmental agenda and aspiration in South Africa but also to the global community. South Africa as a member state to the World Health Organisation has to work towards achieving the Sustainable Development Goals (SDG) of ending the HIV and AIDS by 2030. If the above-mentioned goals are to be met community members must possess appropriate knowledge with regard to the causes of HIV/AIDS, transmission, prevention, diagnosis, treatment its management as knowledge is regarded as one critical factors for behaviour change [30]. This study was conducted to establish knowledge regarding HIV and AIDS among community members in ward 40 informal settlements in Port Elizabeth, in the Nelson Mandela Municipality in the Eastern Cape Province of South Africa. It was found that the overall HIV and AIDS knowledge among community members was high. This study also found that females and older respondents showed higher knowledge of HIV and AIDS compared to male and young respondents. This study also found that all the research respondents were aware that HIV and AIDS is spread through having unprotected sex with an infected person, and that abstinence, practising safe sex were HIV and AIDS prevention methods. These findings were consistent to the previous study, which showed that respondents knew that abstinence, practising safe sex (were HIV and AIDS prevention strategies [13, 15]). This study also found that the majority of respondents were aware of HIV and AIDS treatment and management as they indicated that ARV's were freely available at healthcare facilities and that they assisted in suppressing the viral load and increase CD 4 count of the infected people. These findings were similar to those of earlier studies [13, 15].

It is also of significance to note that despite high overall knowledge about HIV and AIDS, some of the respondents in this study had distorted information, erroneous beliefs and misconceptions about HIV and AIDS transmission, prevention, diagnosis, treatment and management. Some of the respondents believed that HIV and AIDS had a cure and that an expensive vaccine was available to prevent HIV infection. These findings are similar to those of a study where respondents confused the availability of ARV's with the availability of cure for HIV and AIDS [32]. The availability of antiretroviral drugs might be the cause for confusion for the availability of the (non-existing) cure for HIV and AIDS. The perceptions of availability of cure might also be influenced by the fact that people who are infected with HIV and AIDS are no longer dying as quickly as they used to, when ARV 's still not made to be freely available in South African public healthcare system. The delayed

progression of HIV to AIDS because of ARV's makes people live longer productive lives, and possibly hence the erroneous belief of availability of cure. This need to be addressed as it might lead to complacency and risk behaviour among some of the respondents. This study illustrates that some of the respondents believed that HIV and AIDS was a disease of the poor, also spread through hugging and kissing, and that those who were infected were easily identifiable as confirmed in earlier studies [1, 13]. Some of the participants had distorted information on the association of TB and HIV [23]. Such beliefs increase vulnerability to HIV infection, and fuel discrimination and stigmatising attitudes towards People Living with HIV and AIDS. This study found that some of the respondents believed that traditional health practitioners could prevent HIV and AIDS infection and that combined use of western and traditional medicine can successful treat HIV and AIDS as confirmed in the previous study [13]. These risk responses could be attributed to cultural or religious beliefs that exist in our society [26]. These misconceptions are a cause for concern as they influence health seeking behaviour, early diagnosis, and treatment adherence and contribute to failure of efforts to curb the spread of the disease. These findings highlight the existence and use of the dual healthcare system in South Africa (African traditional and western medicine). It also highlight need to foster collaboration with traditional healthcare practitioners as they are playing a part in the South African healthcare system.

Another important finding from this study was the disparity in knowledge between males (74%) and females (82%). The results showed that the female respondents were more aware and knowledgeable than the male respondents in this study. These results were in contrast to previous studies, which found that males were more knowledgeable than females, and cited social norms that forced women to be home bound, while men were interact acting with the outside world as a reason for the difference in knowledge levels [33, 34]. The finding of this study also show what is commonly observed in Sub-Saharan Africa, in that women tend to seek health care services more often than men do and hence they tend to be more knowledgeable and aware about disease [35]. Furthermore, women are said to be more likely to be more knowledgeable about HIV and AIDS than men especially in South Africa, because in public healthcare facilities, women that pregnant are required to take an HIV test as an intervention of promoting maternal healthcare and preventing the unborn baby from contracting HIV. The women also receive provider-initiated counselling and testing (PICT), client-initiated counselling and testing or voluntary counselling and testing (VCT), and reproductive health information on contraception [35]. HIV-positive mothers are asked to take antiretroviral drugs to prevent the transmission of HIV from the mother to the child and they are put on the prevention of mother to-child transmission programme (PMTCT) (36). Research studies indicate that men are reluctant to seek medical help or accompany their sick or pregnant wives or partners to (prenatal) clinics [20]. This

highlight missed opportunities for education of men on health related issues such as maternal health and HIV and AIDS, TB and other diseases. Despite being highly knowledgeable about HIV and AIDS, research have shown that in most cases women are not in a position to successfully negotiate for safe sex practices with their partners. This is attributed to unfavourable power relations that exist which makes females vulnerable to risk of HIV infection [37] and societal norms that predispose girls and women to violence, early marriages [38] and practices of educating male over females and treat females as male subject in African cultures [39].

Lastly, this study found differences between knowledge of HIV and AIDS among the adults (85%) and youth (57%). The results showed that adults were more knowledgeable compared to youth about HIV and AIDS and this is in line with the previous studies that have revealed that youth generally show health risk behaviours and practices [19]. This study's results are also in contrast to the findings of a study that was conducted to assess HIV/AIDS knowledge and stigmatisation in the workplace where it was found that youth were more knowledgeable than adults [30]. It is expected that youth will generally show high knowledge of HIV and AIDS compared to adults. This is so because education is more accessible today to youth, compared to how it was twenty-four years ago in South Africa. Information is more accessible on internet and there are many other sources of information, which they have access to compare to the situation in the apartheid era. The curriculum have also being changed to include subjects such as life sciences or orientation, which addresses some of these diseases, and hence an expectation that youth should be more knowledgeable than adult participants should.

Overall, it was expected that most respondents would be able to provide correct answer about HIV and AIDS, since medical interventions and health education programs were conducted in both urban and rural areas, using grants that were received by South Africa from World Health Organisation and PEPFAR to fight HIV and AIDS and TB. In order for the South African government to reach the Sustainable Development Goals of ensuring healthy lives, promotion of well-being at all ages, and ending AIDS as a public health threat by 2030, there should be 'zero new HIV infections', 'zero discrimination' and 'zero AIDS-related deaths' [31]. The observed gap in HIV and AIDS knowledge among members of this community especially youth and males highlight a huge health risk, which was highlighted in a previous study (13' 19). The findings could prompt the Eastern Cape Provincial Department of Health to scale up outreach and health promotion and education campaigns on the prevention, transmission, diagnosis and treatment of HIV and AIDS in the Eastern Cape.

## 5. Limitations of the Study

This study was descriptive study in nature and therefore there were limitations on making inferences about the meaning of the results. The study was conducted among

community members in a limited area, namely, Ward 40 informal settlements in Port Elizabeth in the Nelson Mandela Bay Municipality. This limits the generalisation of findings to the larger national and international contexts. The study was conducted using a structured questionnaire that was developed by the researcher and therefore limited in its scope to aspects that might have been only of interest to the researcher. It should be noted that data collection coincided with the September school holidays, so it could be that some of the participants had come to the area for the holidays and therefore were exposed to disease control programmes that were run in their areas, and hence more knowledge about HIV and AIDS.

## 6. Recommendation

Based on the findings of this study it is recommended that more HIV and AIDS education campaigns and interventions in the Nelson Mandela Municipality in the Eastern Cape Province of SA should be targeted at the youth and male. Since research evidence shows that men tend to dominate women in the negotiation for safer sex, it is therefore recommended that more HIV and AIDS education intervention and programs be targeted at men in order to increase their knowledge and possibly change their risky sexual behaviours that lead to the spread of the disease in the Eastern Cape Province. This is so, because in HIV risk-reduction research, it is assumed that if men are educated, there could be a reduction in gender-based violence (GBV), forced sex and the violation of women's rights in HIV and AIDS prevention. Communities in the Eastern Cape need to be equipped with appropriate knowledge regarding causes, transmission, prevention, diagnosis, treatment and management of HIV and AIDS. This involves the intensification and extension of the coverage of outreach and health promotion programmes to every corner where people socialise such as schools, churches and workplaces. Behaviour change programmes for members of the community can also be scaled-up. These intervention strategies could include involvement of people affected by HIV and AIDS and those living with HIV and AIDS. They can be involved in the facilitation of health education and communication programmes in the area, in order to afford community members the opportunity of interacting and getting first-hand information from the lived experiences of the affected and infected community members. This could possibly create cues for taking preventive action and the adoption of positive health behaviours to curb the spread of HIV and AIDS. The health educators and promoters could work with community leaders, traditional health practitioners, Community Health Workers and Ward Based Outreach Teams in the dissemination of knowledge about causes, diagnosis, transmission, prevention, treatment and management of HIV and AIDS in the Nelson Mandela Municipality and the Eastern Cape Province of South Africa at large.

## 7. Conclusions

The study assessed knowledge of HIV and AIDS among community members in ward 40, informal settlements within the Nelson Mandela Municipality in the Eastern Cape of South Africa. The study also intended to establish if there were gender and age differences in relation to knowledge of HIV and AIDS among the community members in ward 40 informal settlements within the Nelson Mandela Municipality in the Eastern Cape Province of South Africa. This study found that the majority of respondents had high levels of knowledge of HIV and AIDS. It also found disparities in knowledge as, females and older participants showed higher knowledge of HIV and AIDS than male and youth. In terms of HIV and AIDS infection risk, males and youth in the study sample can still be considered as vulnerable groups. The incorrect responses or answers they provided during data collection showed susceptibility to HIV and AIDS infection. Participants showed some gaps in HIV and AIDS knowledge and that could make them vulnerable to HIV infection. Culturally sensitive HIV and AIDS educational programmes need to be developed and delivered in order to address erroneous beliefs and misconceptions that still exists among some of the respondents with regard to causes, transmission, prevention, treatment and management of HIV and AIDS. Such educational programs and interventions need to focus mainly on youth and males. Low levels of knowledge could hinder the delivery of health care services in the area and community members might sabotage educational intervention programmes that seek to reduce incidence of HIV and AIDS in the area. Further studies could focus on ways of accelerating health education interventions in the Nelson Mandela Municipality and the Eastern Cape Province of South Africa in order to address the gap in knowledge, so that the Sustainable Development Goals 3.3 of eliminating or ending HIV and AIDS as a public health threat by 2030 become an achievable reality.

## Acknowledgements

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## Conflict of Interest

The author hereby declares that there are no competing interest.

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