

## **EXPLORATION OF ATTITUDES INDIVIDUALS HOLD TOWARDS HIV TESTING AND TREATMENT BY USE OF ARTs IN KISII COUNTY**

\*<sup>1</sup>Ishmael Nyabuti, <sup>2</sup>DR. Callen B Nyamwange, <sup>3</sup>Prof. Anakalo Shitandi

<sup>1,2,3</sup>Kisii University, Kenya

\*Corresponding Author

### **ABSTRACT**

Unlike most counties in Kenya, HIV Prevalence rate in Kisii County is increasing rather than stabilizing or declining. This present study therefore, investigated the correlation between demographic factors and willingness to test and start treatment for HIV; To address the research problem, the study adopted a descriptive survey design that employed a research instrument: a questionnaire, an interview and a focus group discussion schedules were used to collect data. The study was conducted in Kisii central sub-county of Kisii County between June and August 2016. To achieve the objective of the study, triangulation of data sources was employed by recruiting 366 participants from the population using simple stratified sampling strategies, 20 commercial sex workers and 2 medical professionals using purposive sampling techniques. Reliability was determined utilizing the test-re-test method in a pilot study while validity of the data collection instrument was established by two experts – members of the education department, Kisii University. Both qualitative and inferential statistics were employed in analysing data by the help of the statistical package for social sciences version 20.0. In addition, qualitative data was thematically analysed by the help of the QSR NVivo computer programme. The study found that females were more likely than males to hold favourable attitudes towards HIV testing and treatment; majority of the participants preferred employing professional counsellors and peer mentors for better life In conclusion the study provides evidence to suggest attitudes form relationships that are complex, intertwined and viciously which are difficult to understand and hard to break. Arising from the findings and conclusion reached, the study recommends:(a) the adoption of integrative rather than single approaches in combating HIV;

**Keywords:** Hiv/ AIDS, Attitudes, gender, education, Health , psychology

## **BACKGROUND**

Health psychology, sociology and social psychology boast of several theories that can be used to explain the relationship between knowledge, attitudes, skills, and social and environmental influences on one hand and behaviour on the other. For example, to explain how an individual succeeds in changing behaviour, the health belief model theorises posit that the individual must first believe that not only is behaviour change possible but that it is beneficial also. In addition, the individual must believe that the advantages of making change far counterbalance any implied disadvantages (Rosenstock, Strecher, & Becker, 1988).

This model is important for researchers to explain the relationship between an individual's attitudes towards behaviours of interest, and their subsequent willingness or ability to effect change in their quest to improve or protect their health. If an individual believes that the benefits of making change outweigh those of maintaining the status quo, then he can justify attempting the change. The contrary also holds true especially if by so doing it means substituting their likeable behaviours for less enjoyable ones.

Per sociologists, there are two sources of influences for behaviour change: internal and external influences. In this context, internal influences include knowledge and attitudes; and external influences include social and environmental factors (Luszczynska & Schwarzer, 2005). For example, social cognitive theories posit that the likelihood of an adolescent adopting drug abusing behaviours is influenced by social factors such as the parents' views on drug abuse, peers drug taking habits; availability and economic resources to purchase drugs as well as environmental factors. Therefore, to identify personal and social correlates of drug abuse habits as well as physical activity behaviours, researchers utilise the principles of behaviour change theories.

Research evidence shows that behaviour change is influenced by both the physical and social environments. The physical environment focuses on the costs and benefits for making the change while the social environment deals with the view of significant others on current behaviour in relation to the behaviour one wants to adopt. A commonly discussed theme by studies that focus on how people attempt to effect behaviour changes is how the social environment impacts on behaviours which people practice and value; particularly, the views of 'significant others'.

Self-efficacy is among the key determinants of behaviour change and to promote the development of self-efficacy, researchers recommend the use of motivational education techniques, thus supporting sustained behaviour change (Bakracevic & Licardo, 2010). Support for behaviour change theories was obtained by examining randomised, controlled psychological interventions among overweight or obese adults. The study recommended the use of cognitive

therapies combined with components such as healthy eating habits and exercise as a strategy for weight management focussing on behaviour change (Bandura, 2004)

Obtaining an accurate knowledge of the disease and having a good perception of the personal risks are crucial for making behavioural choices that not only assist in reducing the chances of contracting HIV but also in transmitting it. This is why Kenya's HIV educational strategy emphasises on information dissemination: infection, transmission pathways, and prevention. Perceived risks and benefits can determine the likelihood of one's willingness to test for HIV, accept the test outcomes and start treatment. However, a clear understanding of HIV is a predictor of an individual's willingness to seek life-saving care and treatment, and in addition, it provides them with a rare chance of seeking counselling to reduce disease prevalence (Berlinger, Jennings, & Wolf, 2013).

A study comparing the respondents' HIV and AIDS knowledge and attitudes towards testing among adults in Kano and Tennessee, revealed that majority (59%) did not know the organism causing HIV. Also, despite respondents' generally high knowledge on the mode of HIV transmission; significant predictors of the HIV knowledge remained the female gender and formal education (Chauhan, Bhardwaj, Parashar and Kanga, 2013). This goes a long way to explain why some interventions such as voluntary counselling and testing (VCT) and Prevention of mother to child transmission (PMTCT) have not been successful. However, if such interventions were to succeed, urgent considerations need to be put in developing appropriate culturally innovative response that empowers women to make decisions about testing for HIV as well as addressing stigma and discriminatory attitudes towards persons infected with HIV.

The 2012 Kenya AIDS Indicator Survey found that women (79.8%) more than men (62.5%) were likely to have ever tested for HIV despite the proportion of adults and adolescents showing a general upward trend; from 34.3% in 2007 to 71.3% in 2012 (NASCO, 2014). Furthermore, one in every five of those that had ever tested had done so in the past 3 months, and over 50% within 12 months prior to the survey. Also, only 34.5% of the people who had visited a health facility during the same period had been offered an HIV test and showed a high (91.5%) acceptance rate. Finally, the study found over 80% (83.2% of women and 81.3% of men) of participants who had never tested for HIV accepting home-based testing and counselling services

To deal with the HIV transmission risk, two components are necessary: Knowledge and testing (Paxton, Villarreal, & Hall, 2013). Besides, HIV testing is an extremely important behavioural intervention when targeting specific populations that include HIV discordant couples (Matovu, 2010), children (Kellerman & Essajee, 2010) or patients with STIs (Kamb et al., 1998). What is

more, HIV testing and counselling (HTC) is a critical requirement for those infected to seek health care services and treatment.

If used well, ARTs have a tremendous impact. For instance, Cohen et al., (2011) reported a transmission reduction of up to 96% among HIV discordant couples using ARTs. Moreover, to control the generalized epidemics, it has been suggested to employ universal HIV testing and immediate antiretroviral treatment as a strategy (Audet et al., 2012); since it is expected to result in a major impact on the tuberculosis linked to the HIV pandemic (Harries et al., 2010).

Despite HTC playing a crucial role in HIV programming, coverage in the SSA region remains low. For instance, statistics for the SSA region measuring testing coverage in population-based surveys for the period 2007 – 2008 were very wide. For women and men respectively, coverage ranged from 3.2% and 4.9% in Liberia to 56.7% and 43.0% in South Africa (WHO – UNAIDS – UNICEF, 2009). This indicates that there are various barriers to HTC depending on the settings and stage of the epidemic that include lack of access to free testing and low risk perception (Nakanjako et al., 2006), stigma, discrimination and negative perception of testing services (Kalichman, Cain, & Simbayi, 2010), concerns about confidentiality and shortage of counsellors, plus delays in returning test results (Matovu, 2007), and, cost of transportation (Wanyenze et al., 2006).

Most recently, Kenya has focussed on HTC has a major feature of the HIV response arguing that HIV testing is the gateway to seeking treatment. Towards that end, the country has adopted various strategies whose roots can be traced to HTC. Such strategies include the integration of HTC in antenatal care, STIs, sexual and reproductive health services, home-based testing and counselling, provider initiated testing and counselling (PITC), and outreach testing and counselling (OTC) [NACC, 2014]. The impact of these interventions has dramatically increased HIV activities. For example, in the year 2000, there were just three VCT sites; compared with over 4,000 sites ten years later. At the same time, whereas 860,000 people were being tested for HIV annually in 2008; five years later, the number had increased to 6.4 million people (NACC, 2014). It therefore follows that both the number of testing sites and people being tested for HIV had increased greatly.

Although, annual testing rates have nearly doubled since 2008; still significant gender differences exist. In 2014 for example, more women (53%) than men (45%) had tested for HIV (KNBS, 2015). Therefore, to improve the testing rates among Kenyans and men in particular, community-based testing programmes need to be implemented as they have proved successful (UNAIDS, 2012). As a result of implementing HTC, there has been a substantial increase in

coverage among both the general population and pregnant women. For example, among pregnant women, testing for HIV increased from 68% in 2009 to 92% in 2013 (NACC, 2014).

Another factor that affects the HIV testing coverage is the attitudes individuals hold towards testing. In an exploratory study to determine whether attitudinal differences exist between HIV testers and non-testers, Solorio, Forehand, & Simoni (2013) employed qualitative interviews to assess the beliefs and attitudes of 54 Latino immigrants in Seattle, Washington. The study found the respondents to be at risk for HIV and delayed diagnosis as over one-third of them had never tested for HIV and that most of the non-testers were more likely to be MSM.

Additionally, the study found women had less knowledge about HIV risks and therefore considered their sexual behaviours free of any risk, thus, deflecting the HIV-related stigma. Also, it was more likely to self-identify testers as gays. Both the MSM and gays believed that fear of test results turning positive was the main barrier impeding HIV testing. Moreover, both groups entertained the belief that family members held negative attitudes towards HIV testing and that it was highly likely for confidentiality to be compromised if a Latino staff served at the HIV testing sites.

To protect themselves from open ridicule, some population groups sometimes prefer testing for HIV using methods that guarantee confidentiality. For example, studies have found preference for rapid HIV home testing method by majority of the gay men and they cite discretion, convenience, accessibility, rapid provision of results, increased privacy, confidentiality and anonymity as a justification for their choice (Bilardi et al., 2013; Greacen, 2013).

Whichever method individuals resort to; it seems clear that the uppermost consideration is whether the results of the test can be kept confidential. For instance, a study examining PITC for HIV in poor clinical settings, found 98% of the women having heard of HIV and AIDS compared with 60% assessed as having good knowledge on risk factors associated with HIV transmission. Despite the good knowledge, 48% of them were unaware of the PMTCT, and 97% considered themselves as being risk free to contracting HIV, thereby resulting in only 57% having tested for HIV. Although, most women (85%) were willing to test for HIV, their uppermost concern was about confidentiality and the fear of how their husbands, parents and the community would react (Hensen et al., 2012).

While accurate knowledge of the disease increases the chances of testing for HIV; yet, there are other factors that prevent individuals from doing so and they depend on the type of population group one is looking at. For example, studies on HIV testing rates and outcomes have found confidentiality, disclosure and consent issues (Hyden, Allegrante, & Cohall, 2014; Peralta, Deeds, Hipszer, & Ghalib, 2007) to be among the most frequently encountered barriers in HIV

testing. Similarly, a study conducted by Ekanem and Gbadegesin, (2004) that examined the acceptability of voluntary counselling against HIV testing found a majority (89.9%) of the Nigerian women attending antenatal clinic having good knowledge of transmission pathways, but poor knowledge on PMTCT as well as the relationship between breast milk and HIV transmission by nearly half of the respondents.

Willingness to test for HIV depends on several factors, such as knowledge of the disease, attitudes towards testing for HIV, stigma and discrimination, self-efficacy, perceptions of personal risks, accessibility to testing and treatment centres, confidentiality and drugs availability. However, what is not known is whether demographic factors such as gender, age, marital status, level of both education and income, and, residential location can predict willingness to test for HIV. It is against this backdrop that the present study sought to explore the correlation between demographic factors and willingness to both test for HIV and start treatment using ARTs for people living in Kisii County

## **METHODOLOGY**

The present study utilised a mixture of both qualitative and quantitative paradigms to study the research problem. This is because whereas some variables under investigation were amenable to manipulation, others were not. For instance, it will be highly unethical to randomly assign participants into two groups – subject one to highly vulnerable HIV conditions while protecting the other. To overcome such a limitation, the study utilised a descriptive survey design in investigating the research questions. Among the many reasons why this present study adopted a descriptive survey design, the compelling ones were: their capability for being highly representative (i.e., capable of representing a large population); presenting a more cost effective and convenient way of collecting data, in a comparatively short time from a large population of participants; and finally, they encourage truthfulness due to respondents providing answers anonymously. This encourages respondents to discuss sensitive personal data without feeling the risk of being identified (Mathews, & Kostelis, 2011). In addition, they normally yield good statistical significance.

This present study was conducted in Kisii County which lies to the South Western part of Kenya. Kisii County is located between 0 30' and 1 0' South latitudes and 34 38' and 35 0' East longitudes. It borders Nyamira County to the North and East, Narok County to the South and Homabay and Migori Counties to the west. Administratively, the county is divided into 9 sub-counties, 24 divisions, 75 locations and 190 sub locations. It occupies an area of approximately 1,332.7 km<sup>2</sup> of which about 1,260 km<sup>2</sup> (95%) is arable land and has a hilly topography characterized by several ridges and valleys.



The 2009 Population and Housing Census put the population of Kisii County at approximately 1,152,282 persons today of whom, 550,464 are males and 601,818 females (KNBS, 2010).. The sub-county has a population of 55,988 persons aged over 18 years. Table 1 displays the distribution of the population per location and gender.

**Table 1: Population distribution: Location, Male & Female**

Location	Male	Female	Total
Mwamosioi	24,994(50.3%)	24,721(49.7%)	49,715
Township	3,455(55.1%)	2,818(44.9%)	6,273
Total	28,449 (50.8%)	27,539(49.2%)	55,988

Source: KNBS (2010)

Table 1 show that 50.8% of the target population were males compared with 49.2% females. This implies that the target population differed slightly from the population structure of the County. More males aged over 18 years implies that CSWs have a window of opportunity to trade sex.

To determine the size of the sample, the present study employed a formula proposed by Frankfort-Nachmias and Leon-Guerrero (2010). The formula is given as follows: -

$$\text{Sample size} = [(z\text{-score})^2 \times p(1-p)] \div (\text{margin of error})^2$$

Where

Z-score refers to the number of standard deviations a data point is away from the mean. **Alternatively, it may refer to the number of standard deviations a raw score is below or above the population mean.**

P The estimate of what the proportion is likely to be.

The study employed a two-stage sampling technique to select respondents. The first stage entailed stratifying the study area into roughly five equal zones: namely; Jogoo, Mwembe, Nyanchwa, Daraja and the Central Business district. In this context, stratification simply means dividing the population into non-overlapping sub-categories [stratas] (Suprino & Borer, 2012; Andale, 2015). Using the snow balling strategy, and starting from the identified places, the study

recruited participants until the required number was met. This strategy involved identifying and successfully recruiting the first person and the rest were identified and recruited by the person already surveyed. The strategy is also important in ensuring some amount of privacy demanded by participants. However, the only challenge encountered in the implementation of this strategy was to correctly identify the first respondent. From that point on, other subsequent recruits were identified by those previously recruited. From each stratum, the study recruited and administered questionnaires to 57 participants. Purposive sampling was also used to identify a group with a specific characteristic that others do not have. In this case PLWHA were purposively sampled, the commercial sex workers, an officer in charge HIV programme and a clinical officer who treats PLWHA.

**Table 2: Sample distribution**

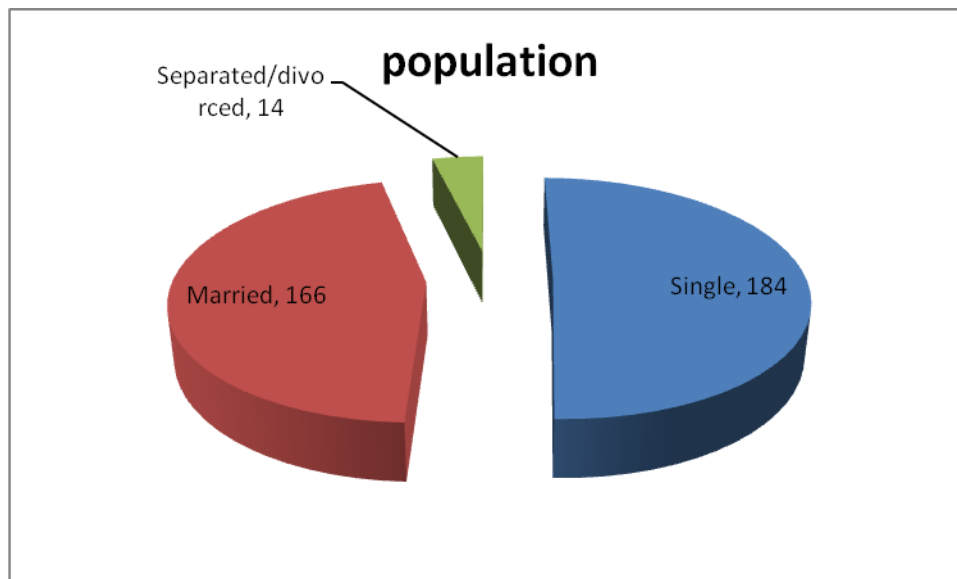
<b>Location</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Jogoo	28	29	57
Mwembe	28	29	57
Nyanchwa	28	29	57
Daraja Mbili	28	29	57
CBD	28	29	57
FGD	-	20	20
PLWHA	38	39	77
Clinical Officer	1	-	1
In charge HIV Programme	-	1	1
<b>Total</b>	<b>179</b>	<b>204</b>	<b>384</b>

Data collection instruments [DCIs] (i.e. anything that becomes a means of collecting information for a study) are tools for eliciting necessary information on variables under investigation (Bell & Waters, 2014). It is in this context that Bloomberg and Volpe (2008) assert that researchers choose specific data collection methods depending on the research questions, to gather the required information most appropriately and meaningfully. In the present instance, the study employed specially designed research tools that included a questionnaire the Focus Group Discussion (FGD) schedule and the interview schedule for Key informants to aid in collecting primary data.



## FINDINGS

The study participants consisted of two main groups and a very small third in relation to their marital status. The singles (never married) was the largest group, comprising of 184 (50.3%) participants, while the second largest group was that of the married (currently in a marital relationship). The group consisted of 166 (45.4%) participants. Lastly, those once married but currently not in a marital relationship formed the third group. These had either separated or divorced and were 14 (3.8%) participants. Two participants (0.6%) did not indicate their marital status. This categorisation is useful considering that HIV has been mis-characterised as a singles problem leading to marital unfaithfulness; and thus, causing a resurgence of the disease incidence.



Although, the study inquired into the educational attainment (level) of the participants; it is not always true that higher educational attainment automatically translates into better knowledge on all subjects. However, it is true that as one advances in education, he or she is likely to have more and better knowledge about a specific subject such as the HIV epidemic. Therefore the study cannot purport to have measured the participants' knowledge on the HIV and AIDS merely by inquiring into their educational attainment. This present study assumed that the participants had adequate and accurate knowledge on the HIV pandemic and that they were acutely aware of the transmission pathways, and the risks involved in engaging in unsafe sexual behaviours.

The knowledge one holds about certain behaviours as well as the attitudes he or she has towards the behaviour influences them to behave in particular ways. Therefore, by being aware of the level of knowledge and attitudes held by the general population; it provides an understanding of what may motivate individuals to agree to abandon behaviours that are risky and adopt safe ones.

To investigate the participants' attitude towards HIV testing and treatment; the study asked participants to indicate their willingness to test for HIV and start treatment. The number of responses for each variable investigated varied per the participants' demographic characteristics. Table 12 summarises the number of participants that responded to the two issues based on the demographic characteristics.

**Table 3: Willingness to Test and Treatment HIV**

Variable	Willingness to			
	Test		Treat	
Age	353	6.4	349	5.4
Gender	354	6.7	350	5.6
Marital	353	6.4	349	5.4
Status	352	6.2	348	5.1
Education	307	3.9	307	3.9
Level	348	5.1	344	4.0
Income				
Level				
Residential				
Location				

Table 3 shows that responses varied between 307 and 354 for willingness to test for HIV while they varied between 307 and 350 for willingness to start treatment. Results of the present study show that the best predictor of willingness to test and start treatment for HIV was gender while the worst predictor of willingness to test and start treatment for HIV was level of income.

Further, table 3 provides a detailed description of the participants' responses measured based on their age, gender, location of residence, marital status, level of education, and income.

**Table 3: Demographic Characteristics versus Test & Treatment Willingness**

Variables	Demographic characteristics	Responses No.	Testing Attitudes	Treatment
			N (%)	N (%)
Age	Below 24	172	166 (96.5)	163 (94.8)
	Between 24 & 49	176	171 (97.2)	171 (97.2)
	Over 49	16	16 (100)	15 (93.8)
Gender	Male	154	150 (97.4)	146 (94.8)
	Female	211	204 (96.7)	204 (96.7)
Reside	Urban	182	178 (97.8)	175 (96.2)
	Rural	177	170 (96.0)	169 (95.5)
Marital Status	Single	184	178 (96.7)	172 (93.5)
	Married	166	161 (97.0)	163 (98.2)
	Widow/ Divorced	14	14 (100)	14 (100)
Education Level	Primary	21	20 (95.2)	21 (100)
	Secondary	130	129 (99.2)	125 (96.2)
	Post-Secondary	212	198 (93.4)	199 (93.9)
Income	Below Kshs. 24,000	206	198 (96.1)	199 (96.6)
	Kshs. 24,000 – 99,000	97	95 (97.9)	95 (97.9)
	Over Kshs. 99,000	14	14 (100)	13 (92.9)

The trend regarding attitudes towards treatment per the study data is not clear. Whereas 94.8% of the under 24s held a favourable attitude towards HIV treatment, 97.2% of those aged between 24 and 49 held favourable attitude towards HIV treatment. But, only 93.8% of those aged over 49 years held favourable attitude towards HIV treatment. Again, the limitation for clear cut determination of the trend is probably the bias in the number of over 49s. The sample consisted of too few over 49s to make meaningful statistical determination of the trend.

Considering that some of these factors influence vulnerability and resistance to seeking treatment and care, the present study sought to investigate participants' attitudes towards testing for HIV and treatment. The study found that attitudes towards HIV testing by gender were approximately balanced, with a less than one percentage point in favour of men. Of the males, 97.4% showed favourable attitudes towards HIV testing compared with 96.7% females. Thus, there were no gender attitudinal differences related to HIV testing and treatment. Also, considering the gender question, the study found that more females (96.7%) than males (94.8%) held favourable

attitudes towards HIV treatment. This implies that more women tend to accept treatment compared with men; because men tend to have a questioning attitude.

The other issue that the study inquired into was whether being married mediates against risky behaviours. The study observed that although majority (96.7%) of the singles held favourable attitudes towards HIV testing, fewer (93.5%) indicated a willingness to start treatment if they tested positive for HIV. Likewise, majority (97%) of the married held favourable attitudes towards testing, but an even higher number (98.2%) indicated their willingness to start treatment if they tested positive for HIV. Lastly, all (100%) widows and divorcees held favourable attitude towards both testing and willingness to start treatment. Although majority of the un-married would prefer knowing about their HIV status, less were willing to face the prospect of starting treatment probably due to stigma, fear of discrimination and desertion by peers, especially if results of the test and treatment would be public knowledge.

Another issue that the study explored was whether the level of formal education improves the attitudes people hold towards HIV testing and treatment. Arising out of analysis, the study observed that 95.2% of those educated to primary level of education held favourable attitudes towards HIV testing while all (100%) participants held favourable attitude towards HIV treatment. For those educated to secondary school level, virtually all of them (99.2%) held favourable attitudes towards HIV testing compared with 96.2% with favourable attitudes towards HIV treatment. Finally, 93.4% of the post-secondary graduates held favourable attitude towards HIV testing and roughly a similar number (93.9%), held favourable attitudes towards HIV treatment.

Such a conviction is grounded on good quality education being ranked among the most successive and cost-effective approaches for combating the scourge. In sum, educational attainment correlates positively with knowledge and awareness of HIV and AIDS. In other words, the more-educated one is (level), the greater the odds for advancing knowledge and awareness of the HIV pandemic. Furthermore, this may not be all as there are chances that such knowledge can be the basis for changing behaviour.

One other factor that the study suspected could mediate participants' attitude was income level. The study found that majority (96.1%) of the participants earning less than Kshs. 24,000 per month, held favourable attitudes towards HIV testing while a slightly higher proportion (96.6%) held favourable attitude towards treatment. For those earning incomes of between Kshs. 24,001 and 99,000, virtually all of them (97.9%) held favourable attitude towards both HIV testing and treatment. Finally, for those earning over Kshs. 99,000; all of them held favourable attitudes

towards HIV testing. However, it is only 92.9% of them that held favourable attitudes towards HIV treatment.

The last factor that the study investigated was the location of participant's residence. The location of residence is important in motivating one to test for HIV and to start treatment if found HIV-positive. Arising from the analysis of data, the study noted that 97.8% of the urban dwellers held favourable attitudes towards HIV testing while a slightly lower proportion (96.2%) held favourable attitudes towards HIV treatment. For rural dwellers, a majority (96.0%) held favourable attitude towards HIV testing; but only 95.5% of them held favourable attitude towards HIV treatment.

In a nutshell, the study found that gender and education were the best predictors of both willingness to test and to start treatment for HIV; but, the study found income level to be the worst predictor of willingness to test and to start treatment for HIV. Although attitudes towards HIV testing become increasingly favourable with increasing age, income and location of residence; attitudes towards treatment are not as favourable.

## REFERENCES

- Audet, C. M., et al., (2012). Poor quality health services and lack of programme support leads to low uptake of HIV testing in rural Mozambique. *African Journal of AIDS Research*, 11(4), 327-335.
- Avey, J. B., Luthana, F., & Jensen, S. M. (2009). Psychological Capital. A positive resource for combating employee stress and turnover. *Human resource Management*, 48(5), 677-693
- Bandura, A. (2004). Health promotion by social cognitive means. *Health education & behaviour*, 31(2), 143-164.
- Bandura, A. (2000). Cultivate self-efficacy for personal and organizational effectiveness. In E. Locke (Ed.), *Handbook of principles of organizational behaviour* (pp. 120–136). Oxford, United Kingdom: Blackwell.
- Berlinger, N., Jennings, B., & Wolf, S. M., (2013). *The Hastings Centre guidelines for decision on life-sustaining treatment and care near the end of life: Revised and expanded second edition*. New York Oxford University Press.

- Bilardi, J. E., et al., (2013). Gay and bi-sexual men's views on rapid self-testing for HIV. *AIDS and Behaviour*, 17(6), 2093-9.
- Cohen, M. S., et al., (2011). Prevention of HIV-1 infection with early antiretroviral therapy. *Northern England Journal of Medicine*, 365(6): 493–505.
- Frankfort-Nachmias, C., & Leon-Guerrero, A. (2010). *Social statistics for a diverse society*. Sage Publications
- Harries, A. D., et al., (2010). The HIV-associated tuberculosis epidemic—when will we act? *Lancet* 375(9729), 1906–19.
- Hyden, C., Allegrante, J. P., & Cohall, A. T. (2014). HIV testing sites' communication about adolescent confidentiality: potential barriers and facilitators to testing. *Health Promotion Practice*, 15(2):173–180
- Kalichman, S. C., Cain, D., & Simbayi, L. C. (2010). Behavioural changes associated with testing HIV-positive among sexually transmitted infection clinic patients in Cape Town, South Africa. *American journal of public health*, 100(4), 714-719
- Kambarami, M. (2006). Femininity, sexuality and culture: Patriarchy and female subordination in Zimbabwe. South Africa: ARSRC.
- Kellerman, S., & Essajee, S. (2010). HIV Testing for Children in Resource-Limited Settings: What Are We Waiting For? *PLoS Medical*, 7(7), e1000285.
- Kerlinger, F. N. (1986). *Foundations of Behavioural Research*. New Delhi: Surject publications
- KNBS (2010). *Kenya - Demographic and Health Survey 2008-2009*. (KEN\_2008\_DHS\_v01\_M). Kenya National Bureau of Statistics (KNBS)
- KNBS (2015). *Kenya Demographic and Health Survey, 2014*. Nairobi: KNBS
- Matovu, J. K. (2010). Preventing HIV transmission in married and cohabiting HIV-discordant couples in sub-Saharan Africa through combination prevention. *Current HIV Reports* 8(6), 430–40.

- Matovu, J. K. (2007). Expanding access to voluntary HIV counselling and testing in Sub-Saharan Africa: Alternative approaches for improving uptake, 2001-2007. *Tropical Medicine and International Health*, 12(11), 1315-1322.
- NACC. (2014). *Kenya AIDS Response Progress Report: Progress towards Zero*. Nairobi, Kenya:NACC.
- Pettifor, A. E., Rees, H. V., Kleinschmidt, I., Steffenson, A. E., MacPhail, C., Hlongwa-Madikizela, L., & Padian, N. S. (2005). Young people's sexual health in South Africa:
- Solorio, R., Forehand, M., & Simoni, J. (2013). Attitudes towards and Beliefs about HIV Testing among Latino Immigrant MSM: A Comparison of Testers and Non-testers. *AIDS Research and Treatment*, 5(6), 35-37.
- UNAIDS, (2016). Prevention Gap report. Geneva, Switzerland: Joint United Nations Programme on HIV & AIDS. Geneva, Switzerland: Joint United Nations Programme on HIV & AIDS
- UNAIDS. (2013). Progress report on the global plan: Towards the elimination of new HIV infection among children by 2015 and keeping their mothers alive. Geneva, Switzerland: Joint United Nations Programme on HIV & AIDS.
- Wanyenze, R., et al., (2006). HIV counselling and testing practices at an urban hospital in Kampala, Uganda. *AIDS Behaviour*, 10, 361–367.
- WHO – UNAIDS – UNICEF (2009). *Towards Universal Access: Scaling up Priority HIV AND AIDS Interventions in the Health Sector – Progress Report*. Geneva, Switzerland: WHO.
- Yawson, A. E., et al., (2014). Sex differences in perceived risk and testing experience of HIV in an urban fishing setting in Ghana. *International Journal for Equity in Health*, 13, 109
- Young, S. D., & Bendavid, E. (2010). The relationship between HIV testing, stigma and health services usage. *AIDS Care*, 22, 373-380.