

# **Determinants of Using Voluntary Counseling and Testing for HIV/AIDS in Kenya**

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*The benefits of Voluntary Counseling and Testing (VCT) for HIV are well established with evidence of reducing risky behavior. Knowledge of positive HIV status can ensure early treatment and care for HIV/AIDS. However, despite the benefits, use of VCT by Women in Kenya is pretty low. Barriers to women's use of VCT particularly due to limited gender roles, poor rural access and inadequate infrastructure and training of health personnel need to be addressed. Also, stigma associated with HIV/AIDS testing and disclosure is still a challenge. Associating VCT with a broader range of health services, community outreach interventions and establishing strong post testing services may be useful in reducing stigma.*

## **INTRODUCTION**

The HIV/AIDS pandemic is a global crisis with consequences that will be felt for decades to come (Gillespie & Kadiyala, 2005). The economic impact of HIV/AIDS on households is so significant because most individuals living with HIV/AIDS in highly affected countries are parents and workers providing for their households (Zabaa, Whitesideb, & Boermac, 2004). Unknown 27 years ago, HIV has already caused an estimated 25 million deaths worldwide and has generated profound demographic changes in the most heavily affected countries (UNAIDS, 2008).

While the percentage of People Living With HIV/AIDS (PLWHA) has stabilized since 2000, the overall number of PLWHA has steadily increased as new infections occur each year. In 2007, there were 2.7 million new HIV infections including 420,000 children and 2 million HIV-related deaths. Sub-Saharan Africa remains the region most heavily affected by HIV; accounting for 67% of all PLWHA and for 75% of AIDS deaths in 2007. Women account for half of all PLWHA worldwide, and nearly 60% of HIV infections in SSA (UNAIDS, 2008).

The predominant mode of HIV transmission is through heterosexual contact, followed in magnitude by prenatal transmission, in which the mother passes the virus to the child during pregnancy, delivery or breastfeeding (MOH-Kampala & ORC-Macro, 2006). Many HIV testing programs in Africa, including Kenya aim to reduce risk taking behavior by providing individuals with information about their own HIV status through VCT services (de Paula, Shapira, & Todd, 2008; de Paula, Shapira, & Todd, 2010 ). VCT is the process by which an individual undergoes confidential counseling to cope with stress and make informed choices about learning his or her HIV status and to take appropriate action (UNFPA & IPPF, 2004).

VCT has been shown to be an effective strategy to facilitate behavior change for HIV prevention. It offers an entry point for early care and support for those infected with HIV and Prevention of Mother To

Child Transmission (PMTCT). VCT also plays a critical role in reducing stigma and discrimination for PLWHA (UNAIDS, 2008b; UNFPA & IPPF, 2004). VCT also prevents HIV transmission through information, education guidance, continuing support and psychological benefits that help individuals to cope better and lead positive lives (Coovadia, 2000). Over the past 20 years, VCT programs have helped millions of people learn their HIV status. VCT services are important in HIV infection prevention because knowledge of an individual's own HIV status can motivate him or her to practice safer sexual behavior thereafter to avoid transmitting the virus to others or becoming infected and can also prevent Mother to Child Transmission (MTCT) of HIV (MOH-Kampala & ORC-Macro, 2006).

Kenya has had a phenomenal expansion of VCT sites from only three in 2000 to over 865 sites in 2007 (Kimani, Wachihi, Muthama, Gakii, Ngare, Cherutich, Margaret, Bwayo, Kariri, & Jaoko, 2007). Despite the rapid scale up, the use of VCT services remains low with about 15% of women and 14% of men having used the services (CBS, MOH, & ORC-Macro, 2004). More than 80% of PLWHA in low and middle income countries do not know that they are infected (UNAIDS, 2008b). What could be the probable reasons to individual's reluctance to use VCT services despite the potential benefits? This paper analyses the determinants of using VCT services for females in Kenya using data from the Kenya Demographic and Health Survey of 2003.

## **METHODOLOGY**

### **Sample Design and Size**

#### *Kenya*

A representative probability sample of 9 865 households was selected for the Kenya Demographic and Health Survey (KDHS) sample. The survey utilised a two-stage sample design. The first stage involved selecting sample points ("Clusters") from a national master sample maintained by Kenya's Central Bureau of Statistics (CBS). The second stage involved the systematic sampling of a household list of CBS updated in 2003. All women aged 15-49 years who were either usual residents of the households in the sample or visitors present in the household on the night before the survey were eligible to be interviewed in the survey.

Ninety six percent of eligible households responded to the KDHS and ninety four percent of all eligible women had a completed interview. A 50% sub-sample of households was selected in which all eligible women in the selected households were asked to give their informed consent to be anonymously tested for HIV/AIDS. The survey data comprises of 8 195 women aged 15-49 who were interviewed and 3 273 who gave consent for blood to be taken for HIV testing (CBS, et al., 2004).

### **Study Analysis**

This study examines how different socio-demographic factors possibly affect the use of VCT services. The study also investigates the association of HIV sero-positivity with VCT. The socio-demographic factors included in the analysis are urban residence, marital status, more than one marriage or union, polygynous union, years of education and age in single years, religion, wealth status and region of residence dummies. More than one marriage and polygynous union are excluded in the final model because of potential correlation with marital status. The analysis focuses on women since they are believed to be at a higher risk of infection as evidenced by women HIV incidence which is twice that of men in Africa; probably due to biological and social circumstances associated with transmission of HIV and, since they play a central role in the effort of PMTCT ( de Walque, 2006a). Women who had ever undertaken an HIV test before the survey are assumed to have used VCT services. Table 1 indicates the summary statistics of some of the important socio-demographic characteristics used in the analysis.

To analyze in more detail the statistical predictors of use of services I undertake econometric analysis. The dependent variable in the analysis here indicates an individual's having used VCT services. As such I make use of a 'probit' model, see equation (1).

$$y_i = \Phi(\alpha + x_i\beta) + u_i \quad (1)$$

Where  $\Phi$ , is the standard normal cumulative density function (CDF),  $x$  and  $\beta$  denote the full set of explanatory variables and regression coefficients respectively (socio-demographic variables described above) and,  $y = 1$  if VCT services were used and  $y = 0$  otherwise.

Individuals with indeterminate HIV test results were excluded from the analysis. Regression coefficients and standard errors are maximum likelihood estimates accounting for clustering.

## RESULTS

### Descriptive Statistics

**TABLE 1**  
**SAMPLE CHARACTERISTICS**

Variable	Mean	SD	N
HIV positive	0.084	0.28	3271
Current age	28.067	9.31	8195
Education (years)	7.102	4.30	8190
Head age	41.952	13.05	8195
Urban	0.336	0.47	8195
Use VCT	0.154	0.36	8050
place HIV test	0.640	0.48	8049
Want to be tested	0.886	1.34	6805
Polygynous	0.075	0.26	5729
never married	0.301	0.46	8195
currently married	0.595	0.49	8195
Widowed	0.04	0.20	8195
Divorced/separated	0.06	0.24	8195

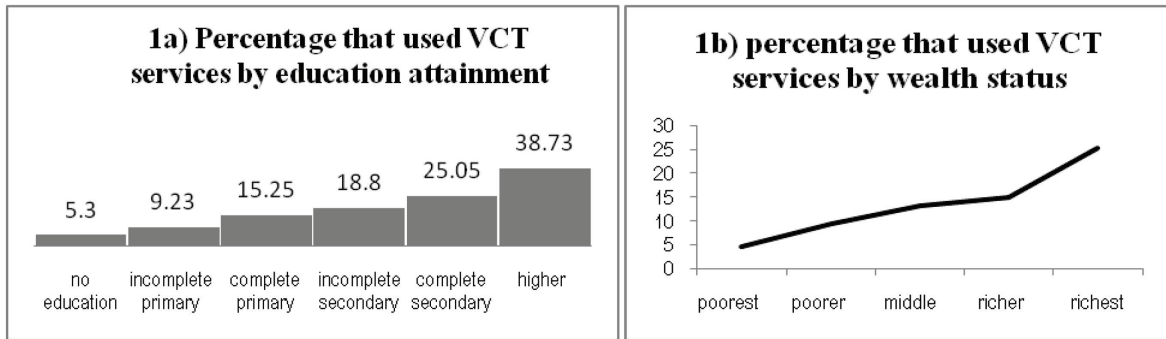
**From Table 1:**

\*8.4% of the women tested were HIV positive  
 \*Average age of respondents is 28 years  
 \*Average age of household head is 42 years  
 \*34% of women are urban residents  
 \*Only 15% of women have ever used VCT services by taking an HIV test  
 \*Yet about 64% know of a place where the test can be undertaken  
 \*For those that asked whether they wanted to be tested (n=6508), 87% wanted to be tested for HIV  
 \* 30% of the women had never married, 60% were currently married and 6% were divorced/separated and 4% were widowed.

Graphs 1 and 2 indicate the association between VCT services and education attainment, wealth status and 5 year age groups respectively. From graph 1(a), VCT services have a monotonically positive association with education attainment. This is similar to findings from de Walque (2006b) where education achievement predicts behavior like HIV testing through using VCT services. For graph 1(b), the association between using VCT and wealth status is generally positive though not strictly linear.

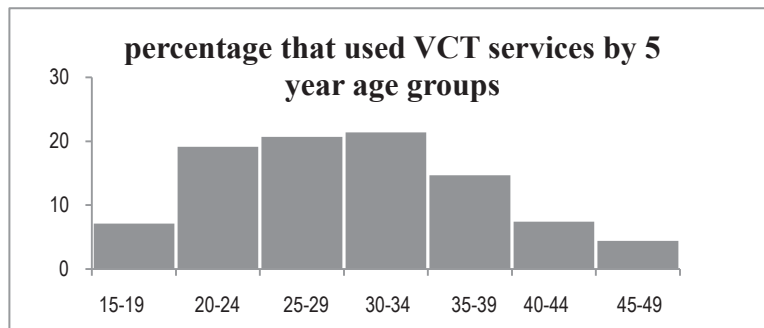
The association between use of VCT and 5 year age groups is non-linear as indicated in graph 2. The use of VCT initially increases with age to an optimum age group of 30-34 after which it declines. This is probably due to the fact that women between the ages of 20-34 are the most reproductively active and inevitably use VCT health care services possibly in a bid to prevent MTCT.

**GRAPH 1**  
**VCT SERVICES, EDUCATION ATTAINMENT AND WEALTH STATUS**



Source of Data: KDHS 2003

**GRAPH 2**  
**VCT SERVICES AND 5 YEAR AGE GROUPS**



**Probit Regression Results**

The probit estimates indicating marginal coefficients and robust standard errors are presented in Table 2.

*Positive HIV Status*

The association between use of VCT services and HIV sero-positivity is positive though not significant. This indicates that women who are HIV positive have a higher probability of using VCT services. This is similar to the findings by Maman, Mbwambo, Hogan, Kilonzo and Sweat (2001) where women described HIV testing as a means to confirm their positive HIV status.

*Current Age and Level of Education*

Age is initially positively associated with use of VCT services to a maximum age of 34 after which the association is negative, though not significant. The more educated are more likely to use VCT services than the less educated though insignificant. Education squared confirms the fact that education in years is linearly associated with use of VCT. Therefore women with more years in education are more likely to use VCT services.

*Male Headed Households and Wealth Index*

Women from male headed households have a significant lower probability of 3.5% of using VCT services. All wealth categories, i.e. the poorer, middle, richer and richest are significant (at least 10% level of significance) and have a greater probability of using VCT services than the base group, the poorest. The probability increases with wealth on average with the poorer and richest having a 5.6% and 10.3% higher probability of using VCT services than the poorest respectively. This may be a reflection of easier access to health services for the better-off than the poorest, similar to finding by de Walque (2006b).

**TABLE 2**  
**SIGNIFICANT VARIABLES FROM THE PROBIT ESTIMATES OF THE PROBABILITY OF USING VCT SERVICES**

Used VCT	df/dx Coef	S E	P> z
Education (years) squared	0.0008	0.0003	0.005***
Male head	-0.0354	0.0158	0.021**
Poorer	0.0564	0.0296	0.038**
Middle	0.0945	0.0304	0.000***
Richer	0.0830	0.0332	0.005***
Richest	0.1031	0.0353	0.001***
Roman Catholic	0.1306	0.0402	0.000***
Protestant/other Christians	0.0956	0.0241	0.000***
Coast	-0.0359	0.0186	0.079*
Nyanza	-0.0622	0.0195	0.008***
Rift valley	-0.0518	0.0197	0.020**
Western	-0.0755	0.0163	0.000***
Currently married	0.1092	0.0181	0.000***
Widowed	0.1925	0.0602	0.000***
Separated	0.1806	0.0431	0.000***
Wald chi2(24) = 291.75      N = 3216      Prob > chi2 = 0.000			
*** Significant at 1%, ** Significant at 5% and *significant at 10%			
Note: Other religion and North Eastern region dummies were dropped since none had observations for HIV positive people and; Polygynously married and mob marriages were dropped due to collinearity. Probit regression reporting marginal effects			

*Religion and Region of Residence*

Roman Catholics and Protestants have a significantly higher probability of 13% and 9.6% respectively of using VCT services than Moslems. This is possibly due to greater gender limitations of Muslim women in decision making which may include decisions to use VCT compared to other religions.

Regarding the region of residence, women from Nairobi (the capital), the base region, have a greater probability of using VCT services than women from all the other regions i.e. Central, Coast, Eastern, Nyanza, Rift valley and Western. Western region has the lowest probability of using VCT services at 8% lower than Nairobi; and Central next best to Nairobi with 2% lower than Nairobi.

Urban women have a significantly greater probability of 2.7% of using VCT services than rural women. This is similar to findings in de Walque (2006b) and Johnson and Way (2006), emphasizing the fact that VCT services tend to be more available in urban areas.

### *Current Marital Status*

Regarding marital status, the currently married, widowed and divorced have a significantly higher probability of using VCT services than the never married of about 11%, 19% and 18% respectively at the 1% level of significance.

## **DISCUSSION**

The analysis reveals that the use of VCT services is pretty low for women in Kenya despite the rapid scale up of VCT sites in Kenya. Of women interviewed, 87% indicated their desire to be tested for HIV and yet only 15% had ever been tested using VCT services. The discrepancy between the two may be an indication of VCT services not being currently available or being geographically inaccessible because of limited health infrastructure. It might also be an indication of financial barriers to care given that health services in some cases are not entirely free with the introduction of user fees (Nuwaha, Kabatesi, Muganwa, & Whalen, 2002). Similar research has also indicated costs to prevent youths who want an HIV test from having one. Such youth are probably price sensitive to such services given that most of them most likely pay for such services on their own (Horizons-Program, 2001). Differences in gender roles have also been shown to limit women's decisions to use VCT (Maman.S, et al., 2001).

The more educated in terms of years of education are more likely to use VCT services; probably because such women may have more understanding of the benefits of such services and are more likely to respond to health promotion messages (de Walque, 2006b; Hargreaves & Glynn, 2002).

Women from male headed households are less likely to use VCT services. This could be due to women's limitations due to gender related power differences for couples in decision making. Women may depend on men's approval to decide on testing hence limiting their use of VCT (Hageman, Dube, Mugurungi, Gavin, Hader, & St. Louis, 2010; PSI, 2004). Similar research in Kenya indicated fear of partners' reaction as the most mentioned barrier to testing by women (Maman.S, et al., 2001). Uptake of VCT by women is lower despite having higher infection rates and hence higher vulnerability. This calls for engendering health services like VCT. Also, there is urgency to the need of incorporating women's sexual partners in VCT through targeting couples especially through community outreach (Hageman, et al., 2010; Otworld, Ndindi, Ajema, & Wanyungu, 2007; Painter, 2001).

Integration of VCT into other health services that focus on prevention of mother to child transmission, reproductive issues like sexually transmitted infections and family planning may be another avenue that can lead to higher use of VCT services since this disguise encourages privacy and may address social stigma associated with HIV/AIDS (Painter, 2001). Additionally, infected women may be encouraged to use VCT services if there is hope for them to survive through availability of treatment (Coovadia, 2000). Accessing and scaling antiretroviral drugs is therefore crucial in enhancing use of VCT services.

As expected, urban residence and being richer are positively associated with use of VCT services. Access to VCT services is a challenge in rural areas given limitation in facilities, few trained personnel and limited funds. Rural health infrastructure needs to be improved to accommodate more VCT sites (Coovadia, 2000). Mobile VCT has been suggested as an alternative to deal with poor access in rural areas. The poorest are less likely to use VCT. Strategies like removal of user fees for the poorest may encourage use of VCT and lead to better usage for the poorest. Also, women from the capital Nairobi are more likely to use VCT services. This is expected given better access and trained personnel in Nairobi compared to all the other regions.

Muslim women are less likely to use VCT services probably due to the restrictive role of such women and hence limiting their decisions to use such services.

The married, widowed and divorced women are more likely to use VCT services than the never married. This may probably be due to perceived personal risk in their current or past relationships. A study by Maman et al., (2001) indicated that women described HIV testing as a means to confirm their positive HIV status or to check reproductive health problems especially fertility problems.

The negative outcome of disclosure may also limit use of VCT services. Stronger post test support for coping and HIV risk management is particularly important for HIV positive women in couples'



relationships, given their social vulnerability, particularly to being abandoned by partners and reducing their access to sources of material and moral support (Painter, 2001).

## CONCLUSION

The use of VCT by women in Kenya is reasonably low despite the enormous benefits. Barriers to use of VCT services by women due to limited gender roles and fear of partner's reaction need to be addressed. Couple counseling and engendering services may be helpful in this regard. Stronger post testing services also need to be set forth to reduce women's vulnerability in case of disclosure. Access to VCT services especially in rural areas is still a challenge and more investment in training of health personnel and infrastructure is important. Stigma associated with HIV/AIDS testing is still a challenge and associating VCT with a broader range of health services and community outreach interventions may be useful in reducing such stigma and improving access to VCT. The improvement in the use and access of VCT services for women therefore demands different innovative approaches that will deal with the different social complexities associated with women.

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