

Determinants of using Voluntary Counselling and Testing for HIV/AIDS in Kenya

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The benefits of Voluntary Counselling and Testing (VCT) for HIV are well established with evidence of reducing risky behaviours and rates of HIV sero-conversion among VCT recipients. Knowledge of one's positive HIV status can help to access treatment and care and also reduce stigma associated with HIV/AIDS. However, despite the benefits of VCT, the percentage of people using VCT services in sub Saharan Africa (SSA) is low. Only 15% of women from the Kenya Demographic and Health Survey (KDHS) of 2003 had used the services despite the substantial increase in VCT services in Kenya. This paper analyses the determinants of using VCT for HIV for Women in Kenya using data from the Kenya Demographic and Health Survey of 2003. Results from the analysis reveal positive association between using VCT services and the level of education, wealth status and urban residence. The implications for findings are different innovative approaches to improve HIV treatment access including community outreach interventions, dealing with stigma associated with VCT by inclusion of men and, targeting couples to deal with gender related power differences in decision making in order to improve the use of VCT services and enhance development in the long run.

INTRODUCTION

The HIV/AIDS pandemic is a global crisis with consequences that will be felt for decades to come. (Gillespie and 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 et al., 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, 2008a).

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, 2008a).

The predominant mode of HIV transmission is through heterosexual contact, followed in magnitude by perinatal transmission, in which the mother passes the virus to the child during pregnancy, delivery or breastfeeding (UHSBS, 2004). Many HIV testing programs in Africa, including Kenya aim to reduce risk taking behaviour by providing individuals with information about their own HIV status through VCT services (Paula et al., 2008). VCT is the process by which an individual undergoes confidential counselling to enable the individual to make an informed choice about learning his or her HIV status and to take appropriate action (UNFPA and IPPF, 2004).

VCT has been shown to be an effective strategy to facilitate behaviour 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 and IPPF, 2004). 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 behaviour thereafter to avoid transmitting the virus to others or getting infected and can also prevent Mother to Child Transmission (MTCT) of HIV (UHSBS, 2004).

Kenya has had a phenomenal expansion of VCT sites from only three in 2000 to over 865 sites in 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 (KDHS, 2003). 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.

DATA AND METHODS

Data from the cross-sectional, population based Kenya Demographic and Health Survey of 2003 are used. The data includes 8195 women, aged 15-49 that were interviewed during the survey of which 3273 gave consent for blood to be taken for HIV testing.

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 model used in the analysis is a probit model for the dependent variable that indicates an individual's having used VCT services. The analysis has focused 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 (Damien, 2006b). 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.

SUMMARY STATISTICS

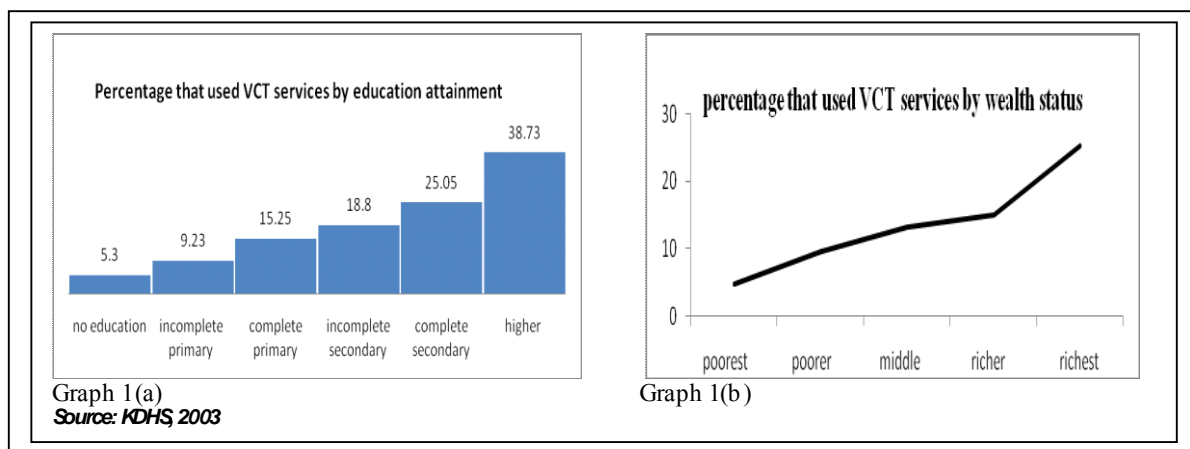
Table 1: Summary statistics of some of the important socio-demographic characteristics

| Variable | N | Mean | SD | Min | Max |
|-------------------|------|--------|-------|-----|-----|
| HIV positive | 3271 | 0.084 | 0.28 | 0 | 1 |
| current age | 8195 | 28.067 | 9.31 | 15 | 49 |
| education (years) | 8190 | 7.102 | 4.30 | 0 | 26 |
| head age | 8195 | 41.952 | 13.05 | 15 | 98 |
| Urban | 8195 | 0.336 | 0.47 | 0 | 1 |
| Use VCT | 8050 | 0.154 | 0.36 | 0 | 1 |
| place HIV test | 8049 | 0.640 | 0.48 | 0 | 1 |
| want2b tested | 6805 | 0.886 | 1.34 | 0 | 8 |
| Polygynous | 5729 | 0.075 | 0.26 | 0 | 1 |
| never married | 8195 | 0.301 | 0.46 | 0 | 1 |
| currently married | 8195 | 0.595 | 0.49 | 0 | 1 |
| formerly married | 8195 | 0.104 | 0.31 | 0 | 1 |

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 10% were formerly married.

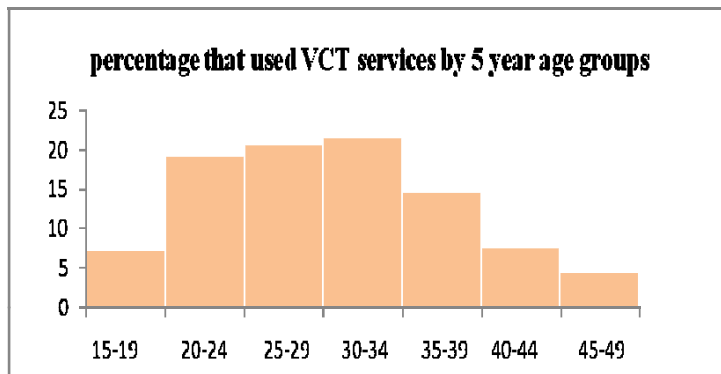
Graphs 1 and 2 indicate the association between VCT services and education attainment, wealth status and 5 year age groups respectively. From graph 1(a), VCT services have a monotonically positive association with education attainment. This is similar to findings from Damien (2006a) where education achievement predicts behaviour 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.

Graph 1: VCT services, education attainment and wealth status



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 2: VCT services and 5 year age groups



RESULTS AND DISCUSSION

The analysis basically involves two regressions with use of VCT services as the dependent variable and socio-demographic factors as the explanatory variables. The difference between the two regressions is the inclusion of the HIV sero-positivity dummy in the first regression and its exclusion in the second where the HIV sero-positive dummy is assumed endogenous to use of VCT services.

Results-VCT services and socio demographic factors including HIV serostatus

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 Maman et al findings (2001) in which women described HIV testing as a means to confirm their positive HIV status. 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 have a 1.5% higher probability of using VCT than the less educated at 1% level of significance. Women from male headed households have a significant lower probability of 3.5% of using VCT services at the 5% level. 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 4.8% and 9.6% higher probability of using VCT services than the poorest respectively. This reflects easier access to health services for the better-off than the poorest, similar to finding by Damien (2006a). The Roman Catholic and Protestant have a significantly higher probability of 11% and 8% respectively of using VCT services than the Moslem. This is probably due to greater limitations of Muslim women in decision making including use of 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. All the regions are significant at 5% level of significance except for Central region. Regarding marital status, both the currently married and formerly married have a significantly higher probability of using VCT services than the never married of 10.5% and 17% respectively at the 1% level of significance. The married and formerly married have higher risk of infection and this probably motivates them to use VCT services more than the never married.

Table 1: VCT and Socio-demographic factors, including status

| Used VCT | dF/dx | S E | P> z | [95% C.I.] | |
|--|-----------------|--------|-----------|---------------------|---------|
| Positive HIV status | 0.0162 | 0.0209 | 0.4220 | -0.0249 | 0.0572 |
| Current age | 0.0062 | 0.0052 | 0.2360 | -0.0040 | 0.0164 |
| Current age squared | -0.0001 | 0.0001 | 0.1550 | -0.0003 | 0.0000 |
| Education (years) | 0.0148 | 0.0018 | 0.000*** | 0.0113 | 0.0183 |
| Male head | -0.0349 | 0.0148 | 0.015** | -0.0639 | -0.0059 |
| Household head age | 0.0005 | 0.0005 | 0.3480 | -0.0005 | 0.0015 |
| Urban residence | 0.0261 | 0.0210 | 0.2000 | -0.0150 | 0.0672 |
| Poorer | 0.0484 | 0.0299 | 0.082* | -0.0102 | 0.1070 |
| Middle | 0.0830 | 0.0317 | 0.004*** | 0.0209 | 0.1452 |
| Richer | 0.0708 | 0.0308 | 0.012** | 0.0105 | 0.1312 |
| Richest | 0.0958 | 0.0354 | 0.003*** | 0.0265 | 0.1651 |
| Roman Catholic | 0.1101 | 0.0380 | 0.0010*** | 0.0357 | 0.1845 |
| Protestant/other Christians | 0.0817 | 0.0239 | 0.002*** | 0.0349 | 0.1284 |
| No religion | 0.0025 | 0.0720 | 0.9720 | -0.1385 | 0.1435 |
| Central | -0.0225 | 0.0210 | 0.3070 | -0.0636 | 0.0186 |
| Coast | -0.0425 | 0.0186 | 0.042** | -0.0789 | -0.0060 |
| Eastern | -0.0470 | 0.0202 | 0.041** | -0.0865 | -0.0075 |
| Nyanza | -0.0682 | 0.0166 | 0.001*** | -0.1007 | -0.0356 |
| Rift valley | -0.0564 | 0.0182 | 0.007*** | -0.0921 | -0.0208 |
| Western | -0.0799 | 0.0159 | 0.000*** | -0.1111 | -0.0488 |
| Currently married | 0.1047 | 0.0167 | 0.000*** | 0.0720 | 0.1375 |
| Formerly married | 0.1714 | 0.0386 | 0.000*** | 0.0957 | 0.2471 |
| LR chi2(22) = 339.140 | | | | N = 3216 | |
| Log likelihood= -1190.90 | Pseudo R2=0.125 | | | 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 they had no HIV positive people and Polygynously married and mob marriages were dropped due to collinearity. Probit regression reporting marginal effects | | | | | |

Results-VCT services and socio demographic factors

The second analysis involves use of VCT and socio-demographic characteristics. HIV status is excluded assuming potential endogeneity of HIV status as a regressor for use of VCT as an independent variable. Results from the analysis aren't so different from the first analysis that included HIV status except for a few variables. Age is significantly associated with use of VCT services at the 1% level; initially positively associated up to a maximum age after which the association is negative. Education is still positively associated with using VCT with the probability increasing by 1.3% with increase in years of education at 1 % level of significance. Women from male headed households have a significantly lower probability of 3.6% of using VCT services than those from female headed households, at 1% level. This could be due to gender related power differences in decision making where women depend on men's approval to decide testing hence limiting their use of VCT. Urban women have a significantly greater probability of 4.2% of using VCT services than rural women. This is similar to findings in Damien (2006a) and Johnson and Way (2006), emphasising the fact that VCT services tend to be more available in urban areas. Results for wealth status, marital status, region and religion dummies are similar to the first regression except that protestant/other Christian is not significant even at the 10% level of significance.

Table 2: VCT and Socio-demographic factors excluding HIV status

| Used VCT | dF/dx | S E | P> z |
|-----------------------------|----------|---------------------------|----------|
| Current age | 0.000*** | 0.000*** | 0.000*** |
| Current age squared | 0.000*** | 0.000*** | 0.000*** |
| Education (years) | 0.000*** | 0.000*** | 0.000*** |
| Male head | 0.000*** | 0.000*** | 0.000*** |
| Household head age | 0.055* | 0.055* | 0.055* |
| Urban residence | 0.001*** | 0.001*** | 0.001*** |
| Poorer | 0.098* | 0.098* | 0.098* |
| Middle | 0.001*** | 0.001*** | 0.001*** |
| Richer | 0.002*** | 0.002*** | 0.002*** |
| Richest | 0.001*** | 0.001*** | 0.001*** |
| Roman Catholic | 0.062* | 0.062* | 0.062* |
| Protestant/other Christians | 0.147 | 0.147 | 0.147 |
| No religion | 0.956 | 0.956 | 0.956 |
| Other religion | 0.659 | 0.659 | 0.659 |
| Central | 0.562 | 0.562 | 0.562 |
| Coast | 0.000*** | 0.000*** | 0.000*** |
| Eastern | 0.001*** | 0.001*** | 0.001*** |
| Nyanza | 0.000*** | 0.000*** | 0.000*** |
| Rift valley | 0.058* | 0.058* | 0.058* |
| Western | 0.000*** | 0.000*** | 0.000*** |
| North Eastern | 0.000*** | 0.000*** | 0.000*** |
| Currently married | 0.000*** | 0.000*** | 0.000*** |
| Formerly married | 0.000*** | 0.000*** | 0.000*** |
| LR chi2(22) = 852.92 | N = 8035 | Log likelihood = -3021.19 | |
| Pseudo R2 = 0.1237 | | Prob > chi2 = 0.000 | |

*** Significant at 1%, ** Significant at 5%, * significant at 10%

CONCLUSIONS AND IMPLICATIONS

The analysis reveals that the use of VCT services is low for women in Kenya despite the rapid scale up of VCT sites in Kenya. 84% of women interviewed indicated their desire to get HIV tested and yet only 15% had actually been tested using VCT services. The discrepancy between the two might 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. Women from male headed households were less likely to use VCT services. This could be an indication of gender related power differences in decision making where women depend on partners to decide using VCT services. This emphasises the urgent need to incorporate women's sexual partners in VCT through targeting couples to enable effective prevention of HIV infection. Integration of VCT into other services like family planning and prevention and treatment of sexually transmitted infections and PMTCT 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. Infected women can also be encouraged to use VCT services if there's hope for them to survive through availability of treatment. Accessing and scaling up antiretrovirals is therefore very important in enhancing use of VCT services. The level of education, wealth status and urban

residence are positively associated with VCT. Ways of targeting increased use of VCT by the poor, uneducated and rural residence is therefore important since HIV affects all. Access to VCT services remains poor in rural areas but alternatives like mobile VCT services can be explored. Community outreach interventions can also be used in reaching rural poor in addition to helping fighting stigma. The improvement in the use and access of VCT services therefore implies different innovative approaches that will reach most especially the disadvantaged population like women and the poor who are more vulnerable to HIV infection.

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