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Characteristics of clients seeking voluntary counseling and testing (VCT) services in Nairobi, Kenya

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ABSTRACT
Objective: To determine the characteristics of clients seeking VCT services in Nairobi, Kenya.
Methodology and results: Convenient sample of 418 client data forms were analyzed. Rapid HIV test kits were used to determine serostatus of 99.8% of the clients, with 10.8% (N = 418) found positive. Female clients were 65.9% (n = 44) of those positive. Most clients (84.2%, N = 418) were age group 15 - 34 years. Modal seropositive age groups were 20 – 24 and 30 – 34 years (20%, N = 408). Skilled (22.2%, N = 408) and professional (28.9%) workers had higher seropositivity. A higher proportion of clients with more than secondary school level of education were seropositive (42.2%, N = 402) as were those in monogamous (36.4%, N = 406) followed by the non-married (27.3%, N = 406) relationships. There was a weak but significant association between education and serostatus (p = 0.04). Unmarried clients were more likely to be seronegative compared to those married, however the association was not statistically significant (p = 0.06). Male clients were more likely to use condoms inconsistently with both steady (X^2 = 2.35, OR = 0.63, 95%CI = 0.34 – 0.88, p = 0.22) and unsteady (X^2 = 4.07, OR = 0.51, 95%CI = 0.26 – 0.98, p = 0.16) partners than female clients; however the associations were not significant.
Conclusion and application of findings: HIV/AIDS remains the greatest challenge to development in Kenya and VCT is a key intervention measure within the comprehensive care programme. While significant progress has been made in developing monitoring and evaluation systems in health care in Kenya, the challenges persist regarding collection of data that is required for planning. Using VCT data from a site in Nairobi, this study shows the relevance of data collection and analysis, demonstrating that knowledge of the characteristics of VCT clients is critical in bridging the gap between availability of VCT services and its uptake. Ultimate victory against HIV/AIDS will depend on Kenyans knowing their serostatus and utilizing the comprehensive care programmes available.

Key words: HIV/AIDS, VCT, Kenya

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INTRODUCTION

The magnitude and impact of HIV/AIDS in Kenya continues to be a major public health problem and development challenge associated with severely negative socio-economic impact. The realization that Kenya was losing about 500 of its people daily to HIV/AIDS in 1999 led the Government to declare the disease a national disaster. In Kenya, more than 1.3 million people have died due to AIDS related complications and ailments since 1984, leaving behind close to 2.4 million orphans by the end of 2006 (NACC, 2007). In 2006 there were about 55,000 new adult infections (NACC, 2007).

Successful, multi-sectoral response to HIV/AIDS pandemic was mounted, in accordance with provisions and objectives of the sessional Paper No. 4 of 1997 on HIV/AIDS in Kenya (Ministry of Health, 1997). It was in that context that the National AIDS Control Council (NACC) developed the Kenya National HIV/AIDS strategic plan (KNASP) 2000 – 2005 followed by the current 2006 – 2010 plan. The goal of KNASP 2006 – 2010 is to reduce the spread of HIV, improve the quality of life of those infected and affected and mitigate the socio-economic impact of the epidemic in Kenya. One of the priority areas is the prevention of new infections, under which KNASP 2005/06- 2009/10 focuses on scaling up voluntary counseling and testing (VCT) services in the country as a key HIV infection prevention strategy. The quality of services provided through VCT, including testing, counseling and referral of those testing positive are constantly being strengthened. Interventions include direct capacity building, such as training and provision of test kits, and the establishment of a national VCT quality assurance framework (NACC, 2000). To standardize the delivery of this service and to assure its high quality and confidentiality, VCT guidelines were developed in 2001 that outlined operational procedures for VCT services, HIV test-related counseling, HIV testing, record keeping, data management, monitoring and evaluation (NASCOP/NACC, 2001).

Registered VCT centers were required to follow the Ministry of Health system for collection and analysis of VCT data (NASCOP/NACC, 2001). Data was collected from VCT clients and recorded on standard pre-coded questionnaires referred to as client data forms, which had twenty (20) questions. Monthly VCT report forms submitted to district AIDS and STDs officers (DASCO), reported utilization and HIV seroprevalence disaggregated by age and gender. However, a huge volume of data collected over the years using the client data forms remained unanalyzed, leading to insufficient statistics in the national office for planning purposes (Otwombe *et al*., 2007). Analysis of all available VCT data could potentially enhance the understanding of characteristics of VCT clients, and possibly shed some light on the reasons behind the fact that 83% or approximately 1.2 million HIV-infected Kenyans do not know they are infected (Kenya AIDS Indicatory Survey Report, 2008). The information generated through this study could influence policy on VCT data management as well as help to improve service delivery by VCT providers.

This paper highlights the socio-demographic profiles and seroprevalence of VCT clients as well as factors influencing their VCT service attendance. It also highlights the sexual behavior and condom use of VCT clients.

METHODS AND MATERIALS

Study location: The data was collected between April and December 2002 at AMUAA VCT center in Nairobi, Kenya. The site was located in Woodley Estate in Dagoretti constituency within Nairobi City. AMUAA VCT was an integrated VCT site registered No. 101 – 24 by the National AIDS and STDs control program (NASCOP), Ministry of Health, Kenya. The center had certified VCT counselors authorized to collect data using standard client data form for data collection and analysis. The site and counselors were quality controlled using external quality assessment scheme (EQAS) by NASCOP.

The data was collected from clients who gave informed consent and at least eighteen years old. Youth aged 15 – 17 years were tested as "mature minors' (NASCOP, 2001), in circumstances where there was no

way of getting parental consent e.g. teenage mothers and fathers, yet the benefits of VCT services outweighed the risks. Identities of the clients were concealed using their mothers' maiden names. They received pre-test counseling to ensure an understanding of the meaning of the test. Both clients with positive and negative results were counseled for preventive measures, as well as more thorough counseling related to HIV infection for positive clients.

Data collection: An interview-based questionnaire was administered by Government certified VCT counselors, to every client who presented at the VCT site, in conformity with the VCT guidelines. Serostatus was determined using HIV rapid testing kits supplied free of charge by NASCOP. Parallel testing was done using Uni-Gold® and Determine® kits, following the manufacturers' guidelines (WHO/CDC, 2005; Dessie *et al*., 2008). Concordant results were recorded as such. In the event of discordant results, a third rapid test was done using Bioline® as a tie-breaker, following manufacturers' instructions (www.nacp.gov.pk, 2005; Jin *et al*., 2007). Every 10th client tested was sampled for quality control and assurance purposes. Whole blood was blotted in 3 – 5 spots on filter paper (Schleicher and Schuell #903) and dried for validation at the Kenya Medical Research Institute (KEMRI) reference laboratory (NACC/NASCOP, 2004) using ELISA protocols. Convenient sampling was done on structured, pre-coded VCT client data forms. The sample size of 418 was achieved from available client data forms at the VCT site for the period under consideration.

Data management and analysis: Data were processed using SPSS version 10.0. This involved generating frequencies and cross tabulations among the variables that addressed socio-demographic, serostatus, VCT, sexual behavior and condom use. Odd ratios were calculated and statistical significance of associations determined with p-value set at 0.05.

RESULTS

Seroprevalence: Out of the 418 clients presenting at the VCT, 99.8% were tested. There were no discordant results during parallel testing using the Uni-Gold® and Determine® kits. Seropositive clients made up 10.8% (N = 418), with females (65.9%, n = 44) being almost twice as many as the males (34.1%, n = 44) who tested positive.

About 60% (N = 400) of respondents had previously not been tested compared to 38% who had and knew their serostatus (Table 1). Two percent (2%, N = 400) did not know the results of their previous HIV tests. Among those who tested negative (n = 355), 39% had previously tested negative and 0.3% positive. Majority of those who tested positive (70.5%, n = 44) did not report having undergone HIV tests. Among the seropositive, 18.2% reported previous HIV negative results and 6.8% positive results. There was no significant association between not having been previously tested and the observed serostatus (X^2 = 2.29, 0R = 0.59, 95%CI = 0.30 – 0.86, p = 0.22).

Socio-demographic profiles of clients: Out of 418 clients, 42.8% and 56.9% were male and female respectively (Table 2). Age-group 15 – 34 years made 84.2% of the clients, however the modal age group was 20 – 24 years (36.5%, N = 418). Disaggregated by serostatus, 65.9% (N = 408) female clients were seropositive compared to 34.1% males. Males were 1.5 times more likely to be seronegative compared with females, however the association was not significant (X^2 = 1.68, OR = 1.54, 95%CI = 1.24 – 2.96, p = 0.25). Modal seropositive age groups were 20 – 24 and 30 – 34 years (20%, N = 408). Skilled (22.2%, N = 408) and professional (28.9%) workers had higher seropositivity.

Higher proportion of clients with more than secondary level of education were seropositive (42.2%, N = 402). More clients in monogamous (36.4%, N = 406) relationships were seropositive followed by those in relationships but unmarried (27.3%, N = 406). There was a weak but significant association between education and serostatus (X^2 = 18.93, OR = 0.21, 95%CI = 0.12 – 0.43, p = 0.04). Unmarried clients, regardless of relationships were 3.4 times more likely to be seronegative compared to those married, however the association was not statistically significant (X^2 = 15.65, OR = 3.47, 95%CI = 1.87 – 6.43, p = 0.06).

Table 1: Comparison between previous and current HIV test results of clients in a Voluntary Counseling and Testing center in Nairobi, Kenya (*Data are %).

Previously HIV tested	Negative (n = 355)	Positive (n = 44)	Total (N = 400)
NO	58.6*	70.5	9.8
YES, NEGATIVE	39.2	18.2	37.0
YES, POSITIVE	0.3	6.8	1.0
YES, DID NOT KNOW RESULTS	2.0	4.5	2.3

Source of information about VCT services: Majority of the clients received information about VCT from posters and sign posts (28.2%, N= 412) in almost equal proportions by gender (Table 3). Health care workers or facilities were the next popular sources of VCT information among the female (15.9%, n = 233), while television was a major source among the males (14%, n = 179). Posters and sign posts were the most common sources of information among all the age groups. Among the 15 – 19 years age group, relatives or friends and other VCT clients were important sources of information (22%, n = 41).

Reasons for seeking VCT: Planning for the future was the most common (74%, N = 415) reason for seeking VCT services followed by plans to get married (5.3%) regardless of age, gender or eventual serostatus (Table 3). The second most common reason for seeking VCT was planning marriage among those below 39 years. Clients seeking VCT because of being unwell or due to risk behavior were mostly above 40 years of age. Among those who tested positive (n = 45), the common reasons for seeking VCT were planning for the future (51.1%), felt unwell (15.6%) and partner ill or dead (13.3%).

VCT services offered: Majority of clients (99.3%, n = 403) received full VCT services (Table 3). Among 416 clients tested, 72.4% were counseled as individuals. Group counseling was popular among the age groups, 15 – 24 years (82.3%, n = 62). Thirteen percent (13%, N = 416) of those tested were counseled as couples.

Post VCT referrals: Almost equal proportions of male and female clients were not referred (Table 4). Only 3.6% (n = 362) of those seronegative were referred compared to 7% (n = 43) of those seropositive. Among the seropositive clients, 55.8 %(n = 43) were referred for ongoing counseling.

Sexual behavior and condom use: Table 5 summarizes the findings on clients' sexual behaviors and condom use. Out of the 418 clients interviewed, 73.4% reported sexual orientation in the previous 12 months as heterosexual. The rest of the clients were either non-committal or refused to answer the question. About 55% (N = 411) of the clients reported not to have used condoms during the last sexual activity while 1.9% reported having used but it broke. Some 23.1% (N = 411) had never had sex at all. There were no gender differences in use of condom in the last sexual activity. Most of the unmarried (40.2%, n = 184) never used condoms in their last sexual activity. Condom use was generally higher among the unmarried (42.5%, n = 80) and those in steady, not living together (43.8%, n = 80) relationships. However use of condoms dwindled as the relationships became steadier, tending toward marriage. More seropositive clients reported not using condom in the last sexual activity (77.3%, n = 44) compared to the seronegative (52.6%, n = 359). Among the seronegative, 20.9% (n = 359) reported condom use in the last sexual activity. Majority of those who did not use condoms in last sexual activity were aged between 15 – 29 years (53.9%, n = 226). Modal use of condoms in the last sexual activity was among the 20 -24 years age group (48.8%, n = 82).

Clients were asked about their use of condoms with steady and non-steady partners in the previous twelve months. Majority never used condoms with either steady (41%, N = 410) or non-steady (43.3%, N = 319) partners. There was almost equal proportion of non-condom use with steady partners disaggregated by gender (43.8%, n = 178 male; 40.1% female, n = 232). Among the seropositive clients, 67.4% (n = 43) never used condoms with steady partners compared to 39.4% (n = 358) among the seronegative.

Among clients who had sex with non-steady partners in the previous 12 months, 43.3% (N = 319) never used condoms whereas 13.8% (N = 319) reported using them always. Majority of clients who did not use (58. 7%, n = 138) or sometimes (64.3%, n = 42) used condoms with non-steady partners were females. Among those who reported using condoms always in the previous 12

months, 56.8% (n = 44) were males. Majority of the seropositive clients were those who either did not use condoms (53.1%, n = 32) or did so occasionally (18.8%, n = 32). About 9% (n = 32) of the seropositive reported using condoms consistently while 18.8% (n = 32) had not been sexually active in the previous 12 months. Disaggregated by age, majority of those who never used condoms in the previous 12 month were aged 20 – 34 years (69.7%, n = 139). The age group 20 – 24 years was modal among those who sometimes used condoms (52.4%, n = 42) while 25 -29 year age group made 43.2% (n = 44) among those who used them consistently.

Male clients were more likely to use condoms inconsistently with both steady (X^2 = 2.35, OR = 0.63, 95%CI = 0.34 – 0.88, p = 0.22) and unsteady (X^2 = 4.07, OR = 0.51, 95%CI = 0.26 – 0.98, p = 0.16) than female clients, but the associations were not significant.

Table 2: Socio-demographic profiles (by HIV status) of clients in a Voluntary Counseling and Testing center in Nairobi, Kenya (*Data are %).

Variables	HIV RESULT, Uni-Gold®		Total
	Negative	Positive	
Age	n =362	n = 45	N = 408
15 - 19	10.2*	11.1	10.3
20 - 24	37.8	20.0	35.8
25 - 29	25.4	17.8	24.8
30 - 34	12.4	20.0	13.2
35 - 39	5.8	17.8	7.1
40 - 44	4.1	8.9	4.7
45 - 49	0.8	2.2	1.0
50 - 54	1.9	0.0	1.7
over 55	1.4	2.2	1.5
Sex	n = 363	n = 44	N = 408
Male	44.4	34.1	43.7
Female	55.6	65.9	56.6
Occupation	n = 362	n = 45	N = 408
None	1.4	11.1	2.5
Unskilled	8.3	17.8	9.3
Skilled	14.4	22.2	15.2
Professional	39.2	28.9	38.2
Student	36.7	20	34.8
Education	n = 363	n = 45	N = 409
None	0.0	2.2	0.2
Some primary	8.0	26.7	10.0
Some secondary	19.6	28.9	20.5
Some Post secondary	72.5	42.2	69.2
Marital status	n = 359	n = 44	N = 403
Never married	47.1	27.3	45.9
Steady, not leaving together	26.5	20.5	25.7
Steady, leaving together	5.8	4.5	5.7
Married, monogamous	15.3	36.4	17.6
Married, polygamous	0.6	0.0	0.5
Widowed	0.8	2.3	1.0
Separated/divorced	3.9	9.1	4.5

Table 3: VCT related issues disaggregated by sex, serostatus and age of clients in a Voluntary Counseling and Testing center in Nairobi, Kenya (*Data are %).

	Sex			Serostatus			Age									
Variables	**M**	**F**	**Total**	**-ve**	**+ve**	**Total**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 - 44**	**45 - 49**	**50 - 54**	**> 55**	**Total**
VCT services	**n= 179**	**n = 238**	**N = 417**	**n = 363**	**n = 45**	**N = 409**	**n = 42**	**n = 152**	**n = 103**	**n = 54**	**n = 29**	**n = 19**	**n = 4**	**n = 7**	**n = 7**	**N = 417**
Counseling only	0.6*	0.8	**0.7**	0.8	0.0	0.7	0.0	0.7	0.0	0.0	3.4	5.4	0.0	0.0	0.0	**0.7**
Full VCT	99.4	99.2	**99.3**	99.2	100	99.3	100	100	100	100	96.6	94.7	100	100	100	**99.3**
Counseled as	**n= 179**	**n= 237**	**N = 416**	**n = 362**	**n = 45**	**N = 408**	**n = 42**	**n = 152**	**n = 102**	**n = 54**	**n = 29**	**n = 19**	**n = 4**	**n = 7**	**n = 7**	**N = 416**
Individuals	70.9	73.4	**72.4**	71.8	80.0	**72.5**	61.9	71.1	77.5	70.4	86.2	68.4	75.0	57.1	71.4	**72.4**
Couples	15.1	11.0	**12.7**	12.4	17.8	**13.0**	0.0	5.9	14.7	29.6	10.3	31.6	25.0	28.6	14.3	**12.7**
Group	14.0	15.6	**14.9**	15.7	2.2	**14.5**	38.1	23.0	7.8	0.0	3.4	0.0	0.0	1.6	1.6	**14.9**
Post test referral	**n= 176**	**n = 231**	**N = 407**	**n = 362**	**n = 43**	**N = 405**	**n = 42**	**n = 146**	**n = 101**	**n = 53**	**n = 29**	**n = 18**	**n = 4**	**n = 7**	**n = 7**	**N = 407**
Not referred	89.8	85.3	**87.2**	96.4	7.0	**86.9**	88.1	92.5	89.1	79.2	65.5	83.3	75.0	100	85.7	**87.0**
Clinician onsite	0.0	0.9	**0.5**	0.0	4.7	**0.5**	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	**0.5**
STI services	0.6	0.9	**0.7**	0.6	2.3	**0.7**	0.0	0.7	0.0	1.9	0.0	5.6	0.0	0.0	0.0	**0.7**
TB services	0.0	0.4	**0.2**	0.0	2.3	**0.2**	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	**0.2**
PMTCT services	0.0	0.4	**0.2**	0.0	2.3	**0.2**	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.2**
Post test clubs	1.1	1.3	**1.2**	0.3	9.3	**1.2**	2.4	0.7	1.0	0.0	3.4	0.0	0.0	0.0	14.3	**1.2**
Ongoing counseling	7.4	8.7	**8.1**	2.5	55.8	**8.1**	9.5	5.5	6.9	11.3	20.7	5.6	25.0	0.0	0.0	**8.1**
PLWHIV	1.1	1.7	**1.5**	0.0	6.3	**1.7**	0.0	0.7	1.0	5.7	3.4	5.6	0.0	0.0	0.0	**0.2**
Others	0.0	0.4	**0.2**	0.3	0.0	**0.2**	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.2**
Reason for VCT	**n= 179**	**n= 236**	**N = 415**	**n = 361**	**n = 45**	**N = 406**	**n = 41**	**n = 151**	**n = 103**	**n = 54**	**n = 29**	**n = 19**	**n = 4**	**n = 7**	**n = 7**	**N = 415**
Planning marriage	6.7	4.2	**5.3**	5.8	0.0	**5.4**	0.0	6.6	7.8	3.7	6.9	0.0	0.0	0.0	0.0	**5.3**
Planning pregnancy	0.6	1.7	**1.2**	0.8	4.4	**1.2**	0.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	**1.2**
Planning future	74.3	73.7	**74.0**	77.0	51.1	**74.0**	87.8	80.1	71.8	66.7	51.7	63.2	75.0	85.7	1.3	**74.0**
Client's risk behavior	5.0	3.0	**3.9**	3.6	4.4	**3.7**	0.0	2.0	4.9	3.7	6.9	10.5	25.0	0.0	14.3	**3.9**
Partner's risk behavior	1.7	5.5	**3.9**	4.2	2.2	**3.9**	2.4	2.0	3.9	7.4	10.3	5.3	0.0	0.0	0.0	**3.9**
Felt unwell	5.0	5.1	**5.1**	3.9	15.6	**5.2**	4.9	2.0	3.9	11.1	6.9	15.8	0.0	0.0	14.3	**5.1**
Had blood transfusion	0.0	0.8	**0.5**	0.6	0.0	**0.5**	0.0	0.7	0.0	0.0	0.0	0.0	0.0	14.3	0.0	**0.5**
Pregnant	0.0	0.0	**0.5**	0.0	2.2	**0.2**	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.2**
Referred by other client	0.6	0.4	**0.5**	0.6	0.0	**0.5**	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.5**
HIV + child	0.2	0.0	**0.6**	0.0	2.2	**0.2**	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	**0.2**
Partner ill or dead	1.1	2.5	**1.9**	0.6	13.3	**2.0**	0.0	0.7	1.9	3.7	10.3	0.0	0.0	0.0	0.0	**1.9**
New partner	0.6	0.0	**0.2**	0.3	0.0	**0.2**	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	**0.2**
After window period	1.7	1.3	**1.4**	1.4	0.0	**1.2**	0.0	0.7	2.9	0.0	3.4	0.0	0.0	0.0	14.3	**1.4**
Others	2.2	1.3	**1.7**	1.4	4.4	**1.7**	4.9	2.0	1.0	0.0	0.0	5.3	0.0	0.0	0.0	**1.7**

Key:
Sex: M = male, F = female
Serostatus: +ve = positive, -ve = negative.

Table 4: Sources of information on VCT by sex and age of clients in HIV Voluntary Counseling and Testing center in Nairobi, Kenya (*Data are %).

Variables	Sex			Age group									
Source of VCT information	Male (n = 179)	Female (n = 233)	Total (N = 412)	15 – 19 (n = 41)	20 – 24 (n = 151)	25 – 29 (n = 102)	30 – 34 (n = 53)	35 – 39 (n = 28)	40 – 44 (n = 19)	45 – 49 (n = 4)	50 – 54 (n = 7)	> 55 (n = 7)	Total (N = 412)
Television	14*	9.0	11.2	2.4	8.6	14.7	13.2	17.9	5.3	0.0	14.3	28.6	10.9
Radio	7.8	4.3	5.8	0.0	4.6	4.9	11.3	14.3	10.5	25.0	0.0	0.0	6.1
Newspaper	3.9	3.9	3.9	4.9	2.6	6.9	1.9	3.6	5.3	0.0	0.0	0.0	3.9
Poster/sign post	26.8	29.2	28.2	12.2	25.2	40.2	28.3	32.1	10.5	25.0	57.1	14.3	28.2
Pamphlets	2.2	2.1	2.2	0.0	2.6	1.0	0.0	0.0	10.5	0.0	0.0	28.6	2.2
Relative/friend	9.5	10.7	10.2	22.0	9.9	8.8	9.4	3.6	5.3	0.0	2.4	2.4	10.2
Sex partner/spouse	0.6	0.9	0.7	2.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Another VCT client	10.1	8.6	9.2	22.0	6.6	9.8	3.8	10.7	10.5	25.0	0.0	14.3	9.2
Church	1.1	1.7	1.5	0.0	0.7	2.0	5.7	0.0	0.0	0.0	0.0	0.0	1.5
Community meeting	10.1	9.9	10.0	7.3	21.2	2.9	1.9	3.6	5.3	0.0	0.0	0.0	10.0
Health facility/worker	11.2	15.9	13.8	24.4	9.3	7.8	24.5	14.3	36.8	0.0	14.3	0.0	13.8
Peer educators	1.7	2.6	2.2	2.4	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2
Others	1.1	1.3	1.2	0.0	2.0	1.0	0.0	0.0	0.0	25.0	0.0	0.0	1.2

Table 5: Sexual behavior and condom use clients among clients visiting HIV Voluntary Counseling and Testing center in Nairobi, Kenya (*Data are %).

	Sex			Serostatus			Age									
Variables	**Male**	**Female**	**Total**	**Negative**	**Positive**	**Total**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 - 44**	**45 - 49**	**50 - 54**	**> 55**	**Total**
Condom use with steady partner, > 12 month	**n = 178**	**n = 232**	**N = 410**	**n = 358**	**n = 43**	**N = 402**	**n = 42**	**n = 232**	**n = 101**	**n = 53**	**n = 29**	**n = 19**	**n = 4**	**n = 7**	**n = 7**	**N = 410**
Never	43.8*	40.1	41.7	39.4	67.4	42.3	26.2	24.3	42.6	66.0	62.1	84.2	75.0	85.7	42.9	**41.7**
Sometimes	17.4	24.6	21.5	22.3	14.0	21.6	9.5	45.5	26.7	17.0	17.2	10.5	0.0	14.3	0.0	**21.5**
Always	15.7	10.8	12.9	13.4	4.7	12.4	4.8	16.2	16.8	11.3	6.9	5.3	0.0	0.0	1.9	**12.9**
Not sexually active in last 12 months	22.5	23.3	22.9	23.7	14.0	22.6	57.1	32.4	12.9	5.7	10.3	0.0	25.0	0.0	28.6	**22.9**
Not answered	0.6	1.3	1.0	1.1	0.0	1.0	2.4	0.0	1.0	0.0	3.4	0.0	0.0	0.0	14.3	**1.0**
Condom use, non-steady partner, > 12 months	**n = 135**	**n = 184**	**N = 319**	**n = 285**	**n = 32**	**N = 317**	**n = 35**	**n = 115**	**n = 73**	**n = 45**	**n = 26**	**n = 13**	**n = 4**	**n = 5**	**n = 4**	**N = 320**
Never	42.2	44.0	43.3	42.6	53.1	43.5	22.9	28.7	43.8	71.1	53.8	76.9	75.0	100	50.0	43.3
Sometimes	11.1	14.7	13.2	12.6	18.8	13.2	2.8	19.1	12.3	8.9	19.2	7.7	0.0	0.0	0.0	13.1
Always	18.5	10.3	13.8	14.4	9.4	13.9	8.6	11.3	26.0	8.9	11.5	15.3	0.0	0.0	0.0	13.8
Not sexually active in last 12 months	25.9	29.3	27.9	28.4	18.8	27.4	62.9	40.0	16.4	8.9	11.5	0.0	25.0	0.0	25.0	27.8
Not answered	2.2	1.6	1.9	2.1	0.0	1.8	2.9	0.9	1.4	2.2	3.8	0.0	0.0	0.0	25.0	1.9
Condom use last sex	**n = 177**	**n = 234**	**N = 411**	**n = 359**	**n = 44**	**N = 404**	**n = 41**	**n = 148**	**n = 102**	**n = 54**	**n = 29**	**n = 19**	**n = 4**	**n = 7**	**n = 7**	**N = 411**
No	53.1	56.4	55.0	52.6	77.3	55.2	26.8	41.9	58.8	79.6	65.5	94.7	75.0	100	42.9	55.0
Yes	22.6	17.9	20.0	20.9	9.1	19.8	12.2	27.0	22.5	13.	17.2	5.3	0.0	0.0	14.3	20.0
Yes, but condom broke	2.8	1.3	1.9	2.2	0.0	2.0	0.0	2.7	2.9	0.0	3.4	0.0	0.0	0.0	0.0	1.9
Not sexually active in last 12 months	15.3	12.0	13.4	14.2	6.8	13.4	24.4	11.5	15.7	7.4	13.8	0.0	25.0	0.0	42.9	13.4
Never had sex	6.2	12.4	9.7	10.0	6.8	9.7	36.6	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7

DISCUSSION

Out of 418 clients tested, 10.8% tested positive, with the female to male ratio being almost 2 to 1, which is consistent with findings reported by KIAS (2008). VCT services captured the high risk age group of 20 – 34 years (KDHS, 2003), with more females (56.5%, N = 408) seeking the services than males (43.7%). There were more professionals, skilled workers and students (88.2%, N = 408) served than the unskilled workers. The latter group tends to be more occupationally exposed or pre-disposed to high risk behavior, yet were least reached. Factors impeding VCT access by this group of workers should be explored and addressed. Location of the VCT sites relative to the working places of the unskilled workers as well as business hours of VCT sites should be looked into to enable convenient access to services.

Education levels seemed to influence use of VCT services as attendance increased with higher education levels. Based on this observation, it is important that impediments to VCT utilization by the less educated be explored. Clients in unmarried and steady, not living together relationships sought VCT services more than those is more steady relationships in general, yet the highest prevalence of seropositivity was among those in married, monogamous relationships. Couple counseling should therefore be promoted more aggressively as to curb this source of new infections. Planning for the future was given as the main reason (74%, N = 415) for seeking VCT services, followed by planning to get married (5.3%). VCT messages should thus be fashioned to capture these aspects as positive reasons for seeking VCT services.

Given that 99.8% (N = 418) of clients who visited VCT centre were tested, the capacity of VCT centers to provide full VCT services should be strengthened. However, pre-test counseling should be fashioned and oriented to meet clients' needs. Group counseling should be considered for youth who opt for it as a strategy to increase uptake among the 15 – 24 year age group.

Dissemination of VCT information should tap into the various media available, depending on their suitability. Posters and sign posts should be used extensively to deliver clear messages on VCT as well as to direct potential clients to the VCT sites. Gender specific VCT information should take advantage of gender biases identified in the study. For example, male clients preferred televised VCT messages whereas female preferred verbalized messages through people they trust e.g. health workers. It was noted that some clients who had previously tested negative were found to be positive (18.2%, n = 44), in the subsequent tests. Although this was a small proportion, the role of VCT in behavior change should be evaluated and strengthened. It is however possible that some previously seronegative clients were tested during the window period, when detection may not be possible due to HIV antibodies below detectable levels using the rapid kits.

Most clients who tested negative were not referred (96.4%, n = 362). Referrals should however be encouraged for all clients but especially those classified as high risk as a strategy to prevent new infections. There was generally inconsistent use of condoms regardless of sex, age and serostatus, which raises a flag on the effectiveness of implementation of the national condom policy and strategy (NASCOP, 2001) as at the time of this study. According to our findings, the objective to increase demand for and use of condoms had clearly not been met at the time of this study. It is however possible that condom use has increased due to increase mobilization since this data was collected.

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