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Socioeconomic determinants of HIV testing and counselling: A comparative study in four African countries

Carla Makhlouf Obermeyer[1], **Melissa Neuman**[2], **Anita Hardon**[3], **Alice Desclaux**[4], **Rhoda Wanyenze**[5], **Odette Kyzerbo**[6], **Peter Cherutich**[7], and **Ireen Namakhoma**[8]

[1]Faculty of Health Sciences, American University of Beirut, Lebanon [2]Institute for Global Health, University College London, UK [3]University of Amsterdam, The Netherlands [4]Institut de Recherches sur le Développement, Dakar, Senegal [5]Makerere University School of Public Health, Kampala, Uganda [6]Programme d'Appui au Monde Associatif et Communautaire, Ouagadougou, Burkina Faso [7]National AIDS Control Program, Nairobi, Kenya [8]Reach Trust, Lilongwe, Malawi

Abstract

Objectives—Research indicates that individuals tested for HIV have higher socioeconomic status than those not tested, but less is known about how socioeconomic status is associated with modes of testing. We compared individuals tested through provider-initiated testing and counselling (PITC), those tested through voluntary counselling and testing (VCT), and those never tested.

Methods—Cross-sectional surveys were conducted at health facilities in Burkina Faso, Kenya, Malawi, and Uganda, as part of the MATCH (Multi-country African Testing and Counselling for HIV) study. 3,659 clients were asked about testing status, type of facility of most recent test, and socioeconomic status. Two outcome measures were analyzed: ever tested for HIV, and mode of testing. We compared VCT at standalone facilities and PITC, which includes Integrated facilities where testing is provided with medical care, and PMTCT (prevention of mother-to-child transmission) facilities. The determinants of ever testing and of using a particular mode of testing were analysed using modified Poisson regression and multinomial logistic analyses.

Results—Higher socioeconomic status was associated with the likelihood of testing at VCT rather than other facilities or not testing. There were no significant differences in socioeconomic characteristics between those tested through PITC (integrated and PMTCT facilities) and those not tested.

Conclusions—Provider-initiated modes of testing make testing accessible to individuals from lower socioeconomic groups to a greater extent than traditional VCT. Expanding testing through PMTCT reduces socioeconomic obstacles, especially for women. Continued efforts are needed to encourage testing and counselling among men and the less affluent.

Keywords

HIV; testing; sub-Saharan Africa; socioeconomic; access; VCT; PITC

Corresponding author: Carla Makhlouf Obermeyer, Faculty of Health Sciences, American University of Beirut, PO Box 11-0236, Beirut, Lebanon. cm39@aub.edu.lb.

INTRODUCTION

The rapid increase in the availability of testing and counselling services globally and in sub-Saharan Africa has taken place against the background of debates regarding how to encourage testing, particularly among groups at higher risk of infection (De Cock et al 2006, WHO 2010). Recognizing that late diagnosis of HIV resulted in part from the missed opportunities to test health facility users (McDonald et al 2006, Nakanjako et al 2007), major efforts were launched to scale-up provider-initiated testing and counselling (PITC) through the routine offer of HIV testing (CDC 2006, WHO 2007). Policies and programs were initiated in sub-Saharan Africa to expand HIV testing beyond traditional centres for voluntary counselling and testing (VCT), through facility-based and outreach efforts including campaigns and home-based testing (WHO 2010, Basset and Walensky 2010). The remarkable diversification of modes of testing raises important research and ethical questions regarding the extent to which different approaches encourage testing among different population groups (Hensen et al. 2012, Obermeyer et al. 2012).

There is growing evidence about obstacles to HIV testing: some result from factors related to health services, such as shortages of staff, resources and infrastructure; others from the difficulty of paying for tests or obtaining transportation; and yet others from insufficient awareness about HIV and concerns about stigma and discrimination (Obermeyer and Osborn 2007, Matovu and Makumbi 2007). In general however, the evidence about how socioeconomic factors influence testing comes from disparate studies using different measures, and does not distinguish among different components of socioeconomic status, which may operate in different ways: whereas education and wealth are associated with higher infection in some settings, educational attainment may increase uptake of testing through increased recognition of the importance of knowing one's HIV status and greater control over the decision to test (Jukes et al. 2008); whereas wealth may be associated with greater awareness of risks and with reduced financial barriers to testing (Mishra et al. 2007, Parkhurst 2010). Moreover, most studies simply measure whether individuals have been tested or not, and only a few studies have examined the impact of particular ways of providing testing (Helleringer et al. 2009, Menzies et al. 2009). To generalize about the extent to which different modes of testing increase uptake among those with different socioeconomic characteristics, it is necessary to go beyond studies conducted in individual sites, and to undertake systematic comparisons of testing in settings that vary by mode of testing, and among groups that vary by socioeconomic characteristics.

In this study, we compare four sub-Saharan African countries and examine how different approaches to the provision of testing vary in the extent to which they reach different socioeconomic groups. We use standardized measures of several dimensions of socioeconomic status and compare those tested through PITC, those tested through VCT, and those not tested. By comparing groups in the population who use health facilities, it is possible to gain insights into the factors that hinder or facilitate testing among facility users, and this complements analyses of the population at large that would be conducted through other means such as household surveys.

The objectives of the study were: to compare the socioeconomic status of health facility users who had tested and those who had not tested for HIV in four sub-Saharan African countries; to compare the socioeconomic status of those tested at different types of facilities —VCT, Integrated, and PMTCT—in those countries; and to draw the implications of the results for programs designed to expand access to HIV testing in low-resource settings.

METHODS

Study design and sample

The MATCH (Multi-country African Testing and Counselling for HIV) study was conducted in 2008–09 in Burkina Faso, Kenya, Malawi and Uganda, four countries with different HIV prevalence levels, policies and programs. As in many other settings, levels of testing and knowledge of HIV status remain low. Testing at health facilities has increased in the four countries as a result of efforts by governments, international donors and non-governmental organizations (NGOs), but the history of testing programs, the role of NGOs, and the specific guidelines for HIV testing differ (Burkina Faso 2010, Kenya 2010, Malawi 2010, Uganda, 2010).

A cross-sectional survey of clients was conducted at health facilities. To facilitate the logistics of the survey and ensure that the sample included both testers and non-testers, the research teams drew up a list of testing facilities in each country, designed to include different modes of testing (VCT and PITC) and facilities that were the major providers of HIV testing services. Another list was drawn, of facilities or services that did not provide HIV testing. About 20 facilities were selected for inclusion, with the goal of interviewing a total of about 900 clients per country, two-thirds testers and one-third non-testers. To achieve geographical variability, we included facilities located in the capital city and in one province in each country. Adult clients (aged 18 and over) who were present at the selected facilities on the appointed days were invited to participate; the fraction of clients to be approached was based on the expected numbers at the facility: all clients were invited at small facilities, whereas every n^{th} client was invited at larger/busier facilities. Testing status was ascertained at the start of the interview for all respondents, regardless of whether they were recruited at a testing or non-testing facility.

The study was well received, with high response rates in Malawi and Uganda (over 90%) and Burkina Faso (80%); the lower response rate in Kenya (about 50%) reflects the difficult political and security situation prevailing in 2008, which resulted in reluctance to participate and cancellation or interruption of interviews. The instrument included closed- and open-ended questions. All respondents were asked about socio-demographic information and whether or not they had ever tested for HIV; testers were asked about experience with HIV testing, pre- and post-test counselling, disclosure, stigma and follow-up care. The interview lasted approximately 30 minutes on average. Further details on the MATCH study have been reported in a previous publication (Obermeyer et al. 2012).

Measures used

Two outcome measures were used in this analysis: whether the respondent had ever tested for HIV (asked of all respondents), and the mode of testing of the respondent's most recent test (asked of testers). Both measures were self-reported. Modes of testing were grouped into three types: (1) stand-alone sites for VCT which usually provide testing at the initiative of the client; (2) hospitals and medical facilities where testing is provided along with medical services (referred to as Integrated testing); and (3) testing through PMTCT (prevention of mother-to-child transmission) programs, which include prenatal clinics and facilities offering care to pregnant women. Women who reported testing at integrated facilities because of pregnancy were coded as PMTCT testers, while 12 men who tested as a result of their wives' PMTCT were coded as having tested at integrated facilities. Stand-alone sites correspond to what is usually referred to as VCT, whereas Integrated and PMTCT correspond to provider-initiated testing (PITC).

Age, sex, education and wealth were the key covariates of interest. Age was self-reported, measured in years, and entered into the analysis as a categorical variable. We included

covariates based on both wealth and education in our analyses because they measure different dimensions of socioeconomic status and may have independent effects on testing behaviour. Education was specified as no schooling, incomplete or completed primary education, or at least some secondary education. Wealth was measured with an assets quartile method that is widely used in surveys in low- and middle-income countries, and has been shown to be a valid proxy for household wealth (Clements and Pritchett 2001, Rutstein and Johnson 2004, Filmer and Pritchett 2001). It was based on a principal components analysis of a respondent's household assets (television, electric or gas stove, telephone, land or animals) and amenities (tap water, flush toilet, and electricity). Indicators of household assets and amenities were converted into z-scores, and factor loadings for a single wealth factor were calculated. For each respondent, values of the indicator variables were multiplied by the factor loadings to obtain a wealth score. Respondents within each country were grouped into quartiles by wealth score.

Statistical methods

We analysed the determinants of ever testing for HIV and the determinants of using a particular mode of testing (integrated, VCT, PMTCT), compared with not testing. Because women's options and decisions regarding testing were assumed to be different from men's, regression analyses are reported separately for women and men. Testing was not rare among respondents ($p>10\%$), so odds ratios based on logistic regression analysis would not provide a reasonable estimate of the relative prevalence of testing. We used a modified Poisson regression analysis with robust standard errors to estimate the relative risk of testing, a technique that has previously been used in a variety of observational and experimental settings and on clustered data (Zou 2004, Yelland et al. 2011). Multinomial logistic analysis was used to estimate the relative prevalence of testing at a particular type of facility. All regression analyses were adjusted for country, using a fixed effect (fixed effect parameters and constants not shown), and for clustering of responses at the interview facility, using a generalized estimating equation (GEE). We report 95% confidence intervals for all parameters and exact p-values from Wald tests of significance for all tests where $p\geq0.001$. The results of these analyses estimate the cross-sectional association between testing behaviours, socioeconomic status (SES), and other covariates. All analyses were completed in Stata SE 10.1 (StataCorp 2009).

Ethics

The study was approved by the Ethics Review Committee of the World Health Organization and by an Institutional Review Board (IRB) in each of the four countries (Burkina Faso's Comité d'Ethique pour la Recherche en Santé of the Ministries of Health and Higher Education; Kenyatta's National Hospital's IRB in Kenya; the National Health Science Research Committee of the Ministry of Health and Population in Malawi; and the IRB of Makerere University and the National Council for Science and Technology in Uganda). The WHO Ethics Review Committee gave specific approval at the start of the study and through continuing reviews annually. Informed consent was obtained from all respondents who were invited to participate in the study. As approved by the IRBs, in Burkina Faso and Uganda, consent was in writing for virtually all respondents, except for a few illiterate respondents who provided a thumbprint. In Malawi and Kenya, oral consent was obtained for most respondents and noted by interviewers, consistent with local practices, and in the case of Malawi, with higher illiteracy. Where the documentation of consent was incomplete (24% of respondents in Kenya), special permission to use the data was obtained from the IRB.

RESULTS

A total of 3,659 respondents were interviewed at health facilities. All respondents reported their testing status, except for 18 who were excluded. We also excluded those testing before 2007 or missing a test date (367); respondents missing age, education, or wealth information (60); those with incomplete or unclear data on place of most recent test (33); those missing information on facility of interview (32); and those interviewed at facilities with fewer than six respondents (24), for a final total of 3,125 respondents. The distribution of respondents by testing status and mode of testing in each country (see supplemental table S1) shows that about 2/3 of respondents were testers, that stand-alone VCT testing was more common in Burkina Faso and Uganda, and Integrated testing more frequent in Kenya and Malawi. The study population included more women (57%) than men, and tended to be well-educated, with only 18% of women and 10% of men reporting no formal education.

Table 1 presents bivariate analyses of socioeconomic differences between non-testers and those tested through different modes of testing. Non-testers tended to have lower SES and educational attainment than testers. Among women, non-testers were more likely than testers to have no formal education, though this result was only marginally significant (31.7% of those with no formal education had not tested, compared with 25.9% of those with secondary education). Men with higher education were significantly more likely have tested (49.3% of men with no education had not tested, compared with 38.1% of those with secondary education) as were men in the highest assets group (46.2% and 33% respectively). Older women were more likely to have tested at integrated facilities, and younger women to have tested for PMTCT (39.4% of women 45 years and older tested in integrated facilities and 2.4% in VCT, compared with 20.2% and 27.7% in the 18–24 year old group). Women in the highest educational group were more likely to have tested in VCT sites (28.5% compared with 18.6% of women with no formal education). Men tested at integrated facilities also tended to be older than VCT testers (46.8% of men in the 45 years and older group tested in integrated facilities, compared with 20.2% in the younger group). Men in the lower socioeconomic categories were less likely to have tested at VCT facilities (18.7% of men in the lowest educational category and 14.4% of men in the lowest assets group, compared with 30.3% of men in the highest education category and 33.2% of those in the highest assets category).

Table 2 presents estimates of the relative prevalence of testing compared to not testing among women and men. The association between educational attainment and testing status found in unadjusted analyses was no longer statistically significant after adjustment for wealth, age, and country. The adjusted prevalence ratio (APR) comparing those with secondary education to those with no formal education was 1.29 for men (95% CI: 0.97, 1.73), and 1.16 (95% CI: 0.99, 1.37) for women.

Table 3 compares testers by mode of testing with non-testers as the reference category. The socioeconomic characteristics of non-testers and those tested at integrated facilities did not differ significantly among women or men, and among women, there were no notable differences between non-testers and PMTCT testers. But among both men and women, higher educational attainment was associated with a greater likelihood of testing at VCT facilities after adjustment for covariates. Men with secondary education were three times more likely to test at stand-alone VCT sites than those with no formal education (APR= 3.01, 95% CI: 1.55–5.83). After adjustment for age and wealth, women with secondary education were over three times more likely to test at stand-alone VCT sites than those with no formal education (APR: 3.45, 95% CI: 1.82–6.52). After adjustment for educational attainment and country wealth, was not significantly associated with testing at different types of facilities compared to not testing.

DISCUSSION

A major result of this analysis is that higher educational attainment is significantly associated with the likelihood of testing at VCT sites. Among both men and women, secondary education is associated with a 3-fold increase in prevalence of VCT testing. Both education and wealth are significant in bivariate models, but educational attainment is more consistently significant in bivariate analyses and remains independently significant after adjustment for wealth. These results are consistent with those of other studies conducted in sub-Saharan Africa where VCT was associated with knowledge of HIV and education (Tenkorang et al. 2010, Hutchinson et al. 2006, Venkatesh 2011), and with an analysis of survey data from 13 countries of sub-Saharan Africa, showing that prior to the availability of treatment, VCT testing was associated with secondary education (Cremin et al. 2012). Because in this study, we used the same measures of socioeconomic status across the four sites, the consistency of the results is compelling. Moreover, because the measure most strongly associated with mode of testing was educational attainment, independent of wealth, this suggests that knowledge and motivation play an important role, over and above resources, in influencing HIV testing behaviours.

Another important result of the study comes from comparing provider-initiated modes of testing to VCT in terms of their associations with socioeconomic status. Unlike VCT, there were no significant differences in the socioeconomic characteristics of those tested through PITC modes compared to those not tested: we found no significant socioeconomic differences between women tested through PMTCT and those not tested, nor between male and female respondents tested at integrated facilities and those not tested. This suggests, first, that programs offering HIV testing to pregnant women are generally successful in reducing socioeconomic obstacles to testing, and hence in improving equity of access to HIV tests. This result is consistent with global statistics (WHO 2010, 2011). Secondly, it suggests that PITC expands testing to disadvantaged health facility users to a greater extent than VCT. Other analyses of MATCH data show that this expansion does not appear to take place at the expense of the quality of the services provided or the protection of human rights (Obermeyer et al. 2012). These results support efforts at international and national levels to scale up HIV testing at health facilities (WHO 2007, 2010, 2011; CDC 2006).

A strength of this study is that it used the same protocol, sampling and instruments in the four countries, and developed measures of socioeconomic status based on both education and wealth to make comparisons across settings. The limitations of the study are related to sampling. The selection of facilities and respondents was systematic rather than random, and thus samples are not representative of all health facility users in a given country. Results such as the relative percentages of women and men, differences in ages or socioeconomic status, or differences among countries, should not be interpreted as estimates of population-level statistics. A related limitation is the recruitment of testers and non-testers at health facilities. This choice is justified by the fact that most health facility users have never tested, and hence it is important to examine obstacles to testing among facility users. The disadvantage of such a choice is that the results cannot be generalized to the population at large — this would require other study designs such as household surveys, and considerably greater resources. However, the inclusion of a comparison group of health facility users who never tested makes it possible to compare socioeconomic factors among both groups and assess whether these factors influence testing.

Because respondents' testing status was not known in advance and represented potentially sensitive information, it could not be used to screen respondents before they consented to participate. Testing status was therefore ascertained through self-report at the start of the interview. As self-reported data, testing status and socioeconomic characteristics may be

subject to recall errors or to social desirability bias, but we think these are probably low. Taking an HIV test is a known experience, easily remembered, and respondents appeared willing to provide this information, with only 18 respondents missing data (who were excluded from the analysis). Social desirability bias is also likely to be low, since interviewers were not connected to the health facilities and were trained to ask questions in a non-judgemental way. Thus, the potential for misclassification of testing status in negligible, and there is no reason to think that it would vary systematically in a way that confounds the results.

Comparisons with national surveys in the four countries show that age and marital status were similar among MATCH and Demographic and Health Survey respondents, but MATCH respondents are more urban, more educated, and have higher standards of living than respondents in national surveys, except for Malawi where their socioeconomic characteristics are similar (Institut National 2003, National Statistics 2005, Uganda Bureau 2007, Central Bureau 2004). The higher socioeconomic characteristics of MATCH respondents are consistent with the fact that health services users are generally better off than general populations. Consequently, our results likely underestimate socioeconomic differentials between testers and non-testers in the general population: had the study been conducted through a household survey, there would probably have been a stronger positive association between socioeconomic status and testing.

The results of this study underscore the importance of outreach. Users of health facilities with less favourable socioeconomic characteristics are less likely to take the initiative to test through VCT, and could be encouraged by providers, but other means should also be deployed outside of health facilities to increase uptake among those who do not use health facilities: mobile units, home-based approaches, and campaigns can encourage testing among disadvantaged groups, and also among men who use health facilities less frequently than women. In general, support for different approaches to testing is desirable, because individuals' needs vary by socioeconomic status and over time, and choice should be provided for both practical and ethical reasons (April 2010).

CONCLUSION

This analysis found that higher socioeconomic status was associated with the likelihood of HIV testing through VCT; that lower socioeconomic status was associated with the likelihood of testing at integrated facilities; and that PMTCT and integrated testers were similar to non-testers and had lower levels of educational attainment compared with VCT testers. These results have implications for the implementation of programs designed to ensure access to testing in low-resource settings (Bassett and Walensky 2010, Obermeyer et al. 2013). They suggest that provider-initiated modes of testing can increase uptake among socioeconomically disadvantaged strata to a greater extent than traditional VCT at stand-alone facilities. Secondly, the lack of socioeconomic differentials for PMTCT is consistent with the notion that expanding testing through PMTCT has reduced socioeconomic obstacles for women (WHO 2010, 2011). It is important to develop comparable ways to reach men and address the gender dimension of HIV testing, which has been recognized in global documents. Thirdly, given low levels of testing worldwide and the persistence of socioeconomic obstacles to the uptake of testing, continued efforts are needed to encourage testing among the less affluent through multiple means.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Age, education, wealth, and country by sex, testing status and mode of testing

	Women				Men		
	Non- tester (N=473) %	**Integrated (N=528) %**	**VCT (N=363) %**	**PMTCT (N=420) %**	**Non- tester (N=563) %**	**Integrated (N=460) %**	**VCT (N=318) %**
Age (years) *							
18–24	33.5	20.2	18.7	27.7	53.6	20.2	26.2
25–34	19.3	32.6	20.1	28.0	42.3	35.7	22.0
35–44	22.6	40.9	26.1	10.5	30.1	42.1	27.8
45+	39.4	39.4	18.9	2.4	35.1	46.8	18.1
Educational attainment *							
No formal education	31.7	27.7	18.6	22.0	49.3	32.1	18.7
Primary incomplete/complete	24.8	33.5	13.3	28.4	46.2	39.6	14.2
Secondary or more	25.9	26.4	28.5	19.2	38.1	31.5	30.3
Household assets index (quartiles) **							
Lowest	29.6	27.8	18.0	24.7	52.3	33.2	14.4
Second	25.5	31.1	19.5	23.9	44.5	38.4	17.1
Third	24.7	30.0	19.4	25.9	35.5	36.6	27.9
Highest	26.7	29.2	24.0	20.2	36.8	30.0	33.2
Country *							
Burkina Faso	30.0	15.1	33.8	21.1	46.2	17.8	36.1
Kenya	32.2	36.2	6.0	25.6	47.7	48.0	4.3
Malawi	18.8	46.6	2.4	32.2	39.2	48.8	11.9
Uganda	26.5	25.1	31.0	17.4	36.0	28.1	36.0

* Differences among women and men are significant, based on χ^2 test of difference ($p<0.001$)

** Differences among men are significant, based on χ^2 test of difference (men: $p<0.001$; women $p=0.28$)

Table 2

Mutually adjusted effects* of age, educational attainment, and wealth on testing compared with not testing, among men and women (adjusted prevalence ratios, confidence intervals (C.I.) and p-values)

	Adj. Prev. Ratios, Women	Adj. Prev. Ratios, Men
Age (years)		
18–24 - reference		
25–34	1.25 (1.1, 1.41)	1.29 (0.96, 1.74)
	p=0.001	p=0.091
35–44	1.2 (1.07, 1.35)	1.63 (1.15, 2.3)
	p=0.003	p=0.006
45+	0.94 (0.76, 1.16)	1.57 (1.08, 2.27)
	p=0.55	p=0.018
Educational Attainment		
No formal education - reference		
Primary complete	1.11 (1, 1.24)	1.09 (0.84, 1.4)
	p=0.061	p=0.53
Secondary or more	1.16 (0.99, 1.37)	1.29 (0.97, 1.73)
	p=0.073	p=0.083
Household assets index (quartiles)		
Poorest - reference		
Poorer	1.05 (0.95, 1.16)	1.03 (0.8, 1.33)
	p=0.35	p=0.81
Wealthier	1.03 (0.87, 1.22)	1.08 (0.81, 1.44)
	p=0.77	p=0.60
Wealthiest	1 (0.84, 1.19)	1.19 (0.91, 1.55)
	p=0.92	p=0.90
N	1784	1341

*Results also adjusted for country (fixed effect, not shown) and for clustering at the interview facility level using a GEE.

**Reference: no formal education

***Reference: lowest

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Table 3

Mutually adjusted effects of age, education and wealth on mode of recent test* Adjusted prevalence ratios (APR), confidence intervals, and p-values

	Adj. prev. ratios, Women	Adj. prev. ratios, Men
Integrated testing and medical		
Age		
18–24 - reference		
25–34	3.2 (2.22, 4.61)	2.24 (1.32, 3.82)
	p<0.001	p=0.003
35–44	3.15 (2.23, 4.45)	4.03 (2.2, 7.38)
	p<0.001	p<0.001
45+	1.67 (0.87, 3.19)	3.58 (1.68, 7.62)
	p=0.12	p=0.001
Educational Attainment		
No formal education - reference		
Primary complete	1.4 (0.88, 2.22)	1.07 (0.63, 1.83)
	p=0.16	p=0.80
Secondary or more	1.51 (0.77, 2.93)	1.21 (0.65, 2.26)
	p=0.23	p=0.55
Household assets		
Poorest – reference		
Poorer	1.43 (0.93, 2.2)	1.21 (0.7, 2.09)
	p=0.099	p=0.50
Wealthier	1.25 (0.64, 2.42)	1.19 (0.63, 2.23)
	p=0.52	p=0.60
Wealthiest	1.12 (0.58, 2.16)	1.27 (0.73, 2.22)
	p=0.73	p=0.40
Standalone VCT		
Age		
18–24 – reference		
25–34	2.36 (1.46, 3.8)	1.4 (0.68, 2.86)
	p<0.001	p=0.36

	Adj. prev. ratios, Women	Adj. prev. ratios, Men
35–44	3.61 (2.27, 5.74)	3 (1.4, 6.43)
	p<0.001	p=0.005
45+	1.45 (0.75, 2.82)	2.12 (0.96, 4.67)
	p=0.27	p=0.062
Educational Attainment		
No formal education – reference		
Primary complete	1.52 (0.89, 2.59)	1.2 (0.65, 2.22)
	p=0.12	p=0.55
Secondary or more	3.45 (1.82, 6.52)	3.01 (1.55, 5.83)
	p<0.001	p=0.001
Household assets		
Poorest - reference		
Poorer	0.92 (0.48, 1.76)	0.84 (0.37, 1.91)
	p=0.80	p=0.67
Wealthier	0.88 (0.31, 2.51)	1.2 (0.39, 3.73)
	p=0.81	p=0.75
Wealthiest	0.94 (0.31, 2.83)	1.89 (0.62, 5.73)
	p=0.92	p=0.26
PMTCT		
Age		
18–24 - reference		
25–34	1.84 (1.28, 2.64)	
	p=0.001	
35–44	0.52 (0.29, 0.94)	
	p=0.032	
45+	0.06 (0.02, 0.26)	
	p<0.001	
Educational Attainment		
No formal education - reference		
Primary complete	1.46 (0.93, 2.27)	
	p=0.099	

	Adj. prev. ratios, Women	Adj. prev. ratios, Men
Secondary or more	1.08 (0.58, 2)	
	p=0.813	
Household assets		
Poorest - reference		
Poorer	1.17 (0.77, 1.78)	
	p=0.45	
Wealthier	1.1 (0.56, 2.17)	
	p=0.78	
Wealthiest	0.83 (0.4, 1.74)	
	p=0.63	
N	1784	1341

*Reference: not tested. Results also adjusted for country (fixed effect, not shown) and for clustering at the interview facility level using a GEE.

**Reference: no formal education

***Reference: lowest