From caution to urgency: the evolution of HIV testing and counselling in Africa

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Objective To describe recent changes in policy on provider-initiated testing and counselling (PITC) for human immunodeficiency virus (HIV) infection in African countries and to investigate patients’ experiences of and views about PITC.

Methods A review of the published literature and of national HIV testing policies, strategic frameworks, plans and other relevant documents was carried out.

Findings Of the African countries reviewed, 42 (79.2%) had adopted a PITC policy. Of the 42, all recommended PITC for the prevention of mother-to-child HIV transmission, 66.7% recommended it for tuberculosis clinics and patients, and 45.2% for sexually transmitted infection clinics. Moreover, 43.6% adopted PITC in 2005 or 2006. The literature search identified 11 studies on patients’ experiences of and views about PITC in clinical settings in Africa. The clear majority regarded PITC as acceptable. However, women in antenatal clinics were not always aware that they had the right to decline an HIV test.

Conclusion Policy and practice on HIV testing and counselling in Africa has shifted from a cautious approach that emphasizes confidentiality to greater acceptance of the routine offer of HIV testing. The introduction of PITC in clinical settings has contributed to increased HIV testing in several of these settings. Most patients regard PITC as acceptable. However, other approaches are needed to reach people who do not consult health-care services.

Background

Since the first antibody tests for human immunodeficiency virus (HIV) infection became available, public health organizations and human rights activists have debated the best approach to HIV testing and counselling (HTC). At a time when there was no effective treatment and HIV-infected individuals faced widespread discrimination and stigmatization, many argued that HTC was inappropriate because it provided little benefit to the individual. Conversely, others believed that testing was the key to promoting a change in behaviour. These two concerns framed early debates about HTC.

Initially, there was general support for a cautious response to HTC and HIV infection, although this was considered “exceptional” compared with responses to other infectious diseases. For example, in 1987, the World Health Organization (WHO) emphasized caution in extending routine HIV testing beyond blood donors. At that time, standards for HTC, which were based on an international consensus reached by WHO and other stakeholders, emphasized voluntarism and gave rise to the adoption of voluntary counselling and testing. This approach consisted of three primary components: counselling before and after an HIV test, which included an individualized risk-reduction plan based on the test results; informed written consent; and confidentiality.

As evidence emerged that antiretroviral therapy (ART) could significantly reduce mother-to-child HIV transmission and “alter the clinical course” of HIV infection, the HTC debate changed. Clinicians and public health professionals now argued that an exceptional approach to HTC was no longer appropriate. The view was that HTC should be standard clinical practice in settings where patients present with symptoms of an HIV infection and where ART is available.

At first, however, ART was not universally available. In 2003, only 1% of individuals in need of ART had access to treatment and WHO declared a global health emergency. This declaration gave rise to a series of initiatives for expanding access to ART in developing countries, including the 2003 WHO 3-by-5 initiative and The World Bank’s Multi-Country HIV/AIDS Program. In the same year, increased funding for extending treatment became available through the United States President’s Emergency Plan for AIDS Relief and the Global Fund to Fight AIDS, Tuberculosis and Malaria. In addition, the political climate changed and increased access to prevention and treatment of HIV infection was endorsed. These developments profoundly influenced the debate on HTC at a time when fewer than 10% of those infected with HIV were aware of their status and most were diagnosed at the end stage of the disease, when immune suppression made ART less effective. Consequently, voluntary counselling and testing was no longer seen as sufficient for enabling people to become aware of their HIV status. In the era of ART, alternative approaches to HTC were required.

One development was the emergence of provider-initiated HIV testing and counselling (PITC). In 2003, only 52% of pregnant women in Botswana knew their HIV status. To increase the knowledge of HIV status, the government instituted a policy of “routine” PITC in various clinical settings in 2004. Similarly, Uganda implemented PITC in referral hospitals in 2005 and Zambia implemented it in tuberculosis...
clinics in 2004.15,16 In 2006, the United States Centers for Disease Control and Prevention recommended that PITC be offered to adults aged 13 to 64 years in all health-care settings, with consent being assumed unless the patient explicitly declined.1,17 As treatment was scaled up, routine HTC gained traction and several countries introduced PITC in clinical settings. Early results demonstrated an increase in HTC uptake.18–20 With the implementation of PITC expanding globally, WHO recognized the need for guidance. In 2007, WHO and the United Nations Programme on HIV/AIDS issued a document on PITC in health-care facilities. The final document was an extensive revision of an initial 2006 draft and took into account concerns about coercion, human rights and the definition of the word “routine”.17

The primary aim of this study was to review how policy in African countries has changed in response to the growing recognition that health-care providers should offer more HTC. The rationale for focusing on HTC policy in Africa was, first, that 68% of the estimated 34 million people with HIV infections worldwide at the end of 2010 resided in sub-Saharan Africa, a region with only 12% of the global population,21 and, second, that it was important to examine policy responses in settings where there was an urgent need to address low HTC coverage, for example, to prevent mother-to-child HIV transmission or to identify individuals with HIV infections who could benefit from ART. Additional aims were to investigate patients’ perceptions of PITC and their experience of the process of PITC, with particular reference to informed consent and counselling.

Methods

National policy documents, strategies, plans, frameworks, guidelines and reports on HIV testing or HIV prevention and treatment were identified by searching the WHO Library Information System, Google Scholar and the knowledge base repositories of organizations and institutions, including the International Labour Organization, the United States Agency for International Development (the AIDSTAR One project), the University of California in San Francisco (the HIVInSite knowledge base) and Harvard University. The Evidence to Action HIV and AIDS Data Hub was also searched. Where information was not readily available or further clarification was required, WHO country representatives were contacted. In addition, the review also considered documents that did not focus on HIV prevention alone but covered relevant broad issues, such as maternal and child health, human rights, tuberculosis and opportunistic infections.

Identified documents were grouped into three categories according to their overall objectives:

- guidelines, manuals, protocols, legislation and policy;
- national strategic plans, strategic frameworks and multisectoral frameworks;
- other literature, including published and unpublished reviews.

The date assumed for the adoption of a policy depended largely on the type of documents identified and the strength of the evidence available, with further confirmation being obtained from WHO country representatives. Since the date of publication of legislation, policy, guidelines, manuals and protocols (i.e. the first document category) explicitly indicated the date on which a policy was adopted, this date was used in preference to the dates of other documents. When these documents were not available, the publication date of a strategic plan (i.e. the second document category) was used. However, when the only documents identified belonged to the third category, the date on which a policy was adopted was determined by consultation with WHO country representatives.

To obtain information on patients’ experiences of and views about PITC, we searched the MEDLINE, EMBASE, International Bibliography of the Social Sciences, PsychINFO and Global Health databases for relevant documents published in 2000 or later using the following terms: provider-initiated, routine, diagnostic, opt-out, HIV, human immunodeficiency virus, AIDS, acquired immune deficiency syndrome, counselling, testing, screening, experience, personal experience, opinion, attitude, acceptability and informed consent. We considered publications from a range of disciplines, with a focus on quantitative and qualitative studies of PITC. Reports of studies were reviewed if the studies:

(i) involved the routine offer of HTC in an African country; and (ii) were conducted in a clinical setting after HTC had been offered to patients or involved patients who were recruited in a clinical setting and had experience of PITC in that clinical setting; or (iii) assessed the acceptability of PITC to patients or their experience with components of the PITC process, particularly the acquisition of informed consent; and (iv) were published in English. Data on the acceptability of PITC and on patients’ experiences of PITC were extracted separately.

Results

The policies, guidelines or strategic plans on PITC from 52 African countries were reviewed. Documents for one country could not be retrieved and Western Sahara was not included in the review. There was evidence that a policy had been adopted by 42 (79.2%) of 53 countries (Table 1), whereas 10 (18.9%) had not adopted a policy: Algeria, Angola, Chad, Egypt, Libya, Morocco, the Niger, Sao Tome and Principe and Tunisia (Fig. 1). Documents could not be retrieved for the Gambia. A large proportion of countries (n = 17; 43.6%) adopted a PITC policy between 2005 and 2006, whereas 10 (25.6%) adopted a policy between 2003 and 2004 and 10 (25.6%), including the Comoros, the Congo, the Democratic Republic of the Congo and South Africa, adopted a policy between 2007 and 2008. The Central African Republic and Equatorial Guinea were the last of the 42 countries to adopt PITC, in 2009 and 2010, respectively (Table 1).

Clinical settings and target populations

All 42 countries that adopted a PITC policy recommended that pregnant women should be covered either in antenatal clinics or in services provided for the prevention of mother-to-child HIV transmission. In addition, 73.8% of the 42 countries adopted a policy of universal PITC, which was defined as offering HTC to all patients or adults visiting a health-care facility. Documents for 66.7% of countries recommended PITC for either tuberculosis patients or clinics, 45.2% recommended it for patients with sexually transmitted infections, 14.3% for family planning clinics, 7.1% for most-at-risk populations and 7.1% for individuals attending out-patient departments (Table 1).
Patient’s perspectives and experience

The literature search identified over 2000 publications, of which 11 were considered eligible for inclusion in the review (Table 2 and Table 3, available at: http://www.who.int/bulletin/volumes/90/9/11-100818). The majority were observational studies; 8 investigated the acceptability of PITC to women or their experiences of it in antenatal clinics, whereas the remaining 3 involved tuberculosis patients, women attending immunization clinics with their infants and patients attending a medical emergency unit.

Overall, the large majority of individuals who received PITC found it acceptable (Table 2). For example, in Uganda 98.5% of women who were attending an antenatal clinic for the first time considered the routine offer of HTC during pregnancy “good” or “very good.” 24 In South Africa, 93% of women offered HTC while attending midwife obstetric units agreed that all pregnant women should be tested for HIV. 22 Among pregnant women who opted for HTC in a study from Zimbabwe, 89% stated that the routine offer of HTC was helpful and empowering and enabled women to make an informed decision about the prevention of mother-to-child HIV transmission and infant feeding. 24

In addition, experience of PITC was generally regarded as good (Table 3). For example, in Zimbabwe, 98% of pregnant women stated they were satisfied with the information they received on routine HTC. 24 In South Africa, 52% of pregnant women who had been tested for HIV felt they had made an informed choice and had a positive experience, whereas 28% felt that their choice had been “less clear” and 20% that their voluntariness had been compromised. 21

Discussion

This review of HTC policy in Africa illustrates the changing response to HTC that has taken place in the last decade. Before WHO issued guidance on PITC in 2007, approximately 50% of African countries had adopted PITC in health-care facilities. 3,33,34 Subsequently, the number of countries that included PITC in their HIV policies or strategies increased and, by the time of writing, 42 African countries had elected to recommend PITC in health-care facilities, with a large proportion adopting such a policy between 2005 and 2006. With evidence that ART can reduce mother-to-child HIV transmission, all these countries recommended PITC in antenatal clinics. In addition, more than half recommended universal coverage for all adults and coverage for tuberculosis clinics and patients.

Previous studies of the acceptability of PITC have used the uptake of testing as an indicator of acceptability. 3,34 Although they provided evidence of the feasibility of PITC, these studies did not reflect patients’ experiences of or views about PITC. Our review of the published literature suggests that PITC is generally acceptable to patients. Studies reported that more than 75% regarded PITC as acceptable, particularly in antenatal clinics. 22 However, findings from studies of pregnant women may not be generalizable to other population groups since these women may be more willing to undergo HIV testing because they believe it will benefit their children. 22 Patients in other clinical settings may find PITC less acceptable, perhaps because of their perceived risk of infection or fear. 22 In our review, evidence from four studies, the majority involving small groups of pregnant women, indicated that patients were not always aware they had the right to decline HTC in antenatal clinics, perhaps because of the power balance between patients and health-care providers. 22,25 However, studies in other regions suggest that women may find the routine offer of HTC acceptable because it “normalizes” the process of HTC. 26

Our review has several limitations. It was difficult to retrieve all the documents required to understand national PITC policy fully. Although we con-
We minimized this inaccuracy by asking two reviewers to determine independently the date of policy adoption using the available evidence. Our review of patients’ experiences of and views about PITC also has several limitations and the findings must be interpreted with caution. First, our review was subject to language bias and a publication bias. Second, the majority of studies included in our review are subject to their own limitations: the majority were nonrandomized studies and the difficulty of reporting and synthesizing evidence from nonrandomized studies is well documented. Moreover, studies were subject to acquiescence bias and, as the questions posed to patients were different in each study, it was difficult to compare their findings.

In general, the evidence suggests that the introduction of PITC in antenatal clinics has been associated with an increase in HIV testing rates. A 2010 WHO report on universal access stated that the testing rate in eastern and southern Africa rose from 48% in 2008 to 50% in 2009. Moreover, with the increased uptake of HTC and the better access to ART that followed from the introduction of PITC, mother-to-child HIV transmission has been virtually eliminated in some countries. In 2009, four of the 25 countries with the highest HIV disease burden achieved the target set by the United Nations General Assembly Special Session on HIV/AIDS of providing at least 80% of HIV-infected pregnant women with ART. In addition, one literature review found that the introduction of PITC in antenatal clinics contributed to the achievement of universal HTC in pregnant women. Moreover, the results of the seven African-based studies included in our review indicate that implementation of PITC led to an increase in the uptake of HTC by pregnant women that ranged from 9.9% in Malawi to 65.6% in Uganda, with more than 75% of women accepting PITC across all seven studies.

The implementation of PITC has also led to a high rate of HIV testing among individuals visiting tuberculosis clinics and sexually transmitted infection clinics. A cluster randomized trial conducted in tuberculosis clinics in South Africa in 2005 found that the introduction of opt-out PITC increased the uptake of HIV testing by 13.7%, from 6.5% when HIV testing was carried out on an opt-in basis to 20.2% with opt-out PITC. The 2011 WHO report on global tuberculosis control stated that HTC is now standard for tuberculosis patients in many countries, especially in Africa. In 2010, more than 75% of tuberculosis patients knew their HIV status in 68 countries and territories, including 22 countries in the WHO African Region. Further efforts are still needed globally, however, since only 34% of 6.2 million tuberculosis patients were aware of their HIV status in 2010.

Despite the availability of effective therapy and the increase in HIV testing, population-based surveys conducted between 2007 and 2009 in 10 sub-Saharan African countries indicated that the median proportion of people with an HIV infection who are aware of their status was under 40%. Moreover, although PITC can contribute to increased testing in clinical settings, the adoption of PITC alone will not achieve universal access to HTC. Other approaches that enable people not attending health-care services to access HIV testing should be developed in parallel to ensure that access to testing is equitable and that individuals with HIV infections are diagnosed before they become symptomatic. In 2011, the HIV Prevention Trials Network study 52 (HPTN052) confirmed that ART was effective for preventing the transmission of HIV in serodiscordant...
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from the document:

"There is a rationale, therefore, for considering and evaluating household or community-based testing in addition to expanding PITC. Data on these alternative approaches would help identify the most effective and appropriate way of implementing HIV testing in specific local contexts, while taking into account the resources available and social constraints."

"We would like to thank Chris Grundy for Fig. 1.

Competing interests: None declared."
Резюме

От предупреждения к необходимости: развитие консультирования и тестирования на ВИЧ в Африке

Задача Описать недавние изменения в стратегии тестирования и консультирования по инфекции вируса иммунодефицита человека (ВИЧ), проводимого по инициативе медицинских работников (ПИТС) в африканских странах, и исследовать опыт и отношение пациентов к ПИТС.

Методы Был проведен обзор опубликованной литературы и национальных стратегий тестирования на ВИЧ, основных схем оперативной деятельности, планов и других соответствующих документов.

Результаты Из рассмотренных африканских стран, в 42 (79.2%) странах была принята стратегия ПИТС. Из 42 стран, всеми рекомендована ПИТС для профилактики передачи ВИЧ от матери к ребенку, 66,7% рекомендовали стратегию для туберкулезных больных и пациентов, страдающих туберкулезом, и 42,5% - для больных, специализирующихся на инфекционных заболеваниях, передающихся половым путем. Кроме того, 43,6% приняли РИТС в 2005-2006 гг. Благодаря информационному поиску, было определено 11 исследований, посвященных опыту и отношении пациентов к РИТС в условиях клинической практики в Африке. Явное большинство считало РИТС приемлемой. Впрочем, женщины в клиниках дородового наблюдения не во всех случаях знали о своем праве на непрохождение теста на ВИЧ.

Вывод Стратегия и практика по консультированию и тестированию на ВИЧ в Африке изменились с продуманного подхода, акцептированного на конфиденциальности, к большему принятию предложений о тестировании на ВИЧ в целях профилактики. Внедрение РИТС в клиническую практику привело к увеличению числа тестов на ВИЧ в некоторых учреждениях. Большинство пациентов считает РИТС приемлемой. Однако необходимы выработаны другие подходы для людей, которые не пользуются услугами здравоохранения.

References

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<table>
<thead>
<tr>
<th>Publication (Author, year)</th>
<th>Country</th>
<th>Primary objective</th>
<th>Sample size</th>
<th>Population group</th>
<th>Acceptability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etiebet, 200422</td>
<td>South Africa</td>
<td>Knowledge, attitude and practices survey of women receiving prenatal or postnatal care</td>
<td>264</td>
<td>Women attending midwife obstetric units</td>
<td>(i) 93% agreed that all pregnant women should be tested for HIV; (ii) 98% agreed they would recommend attendance at a clinic that routinely offers HIV testing to a friend or sister</td>
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<tr>
<td>Nakanjako, 200723</td>
<td>Uganda</td>
<td>To determine whether patients would accept a routine offer of HIV testing in a medical emergency setting</td>
<td>233</td>
<td>Adult patients</td>
<td>(i) 99% expressed a need to integrate routine HTC into medical care at the emergency unit; (ii) 86% believed routine testing would help link HIV-positive patients to HIV care services</td>
</tr>
<tr>
<td>Chandisaarewa, 200724</td>
<td>Zimbabwe</td>
<td>To assess the impact of routine ANC testing for PMTCT</td>
<td>221</td>
<td>Follow-up survey with pregnant women</td>
<td>(i) 89.1% stated that offering routine testing was helpful as it empowers women to &quot;exercise their rights and responsibilities&quot; with regard to accessing relevant information and making informed choices about PMTCT; (ii) 10.9% stated that the offer of routine antenatal testing was not helpful</td>
</tr>
<tr>
<td>Corneli, 200825</td>
<td>Democratic Republic of the Congo</td>
<td>To identify an acceptable approach to HIV testing for tuberculosis patients based on the views of patients and healthcare workers</td>
<td>88</td>
<td>Tuberculosis patients</td>
<td>(i) 99% supported the incorporation of HIV testing into routine care for tuberculosis patients; (ii) 99% expressed the view that HIV testing should be offered at the start of tuberculosis treatment; (iii) 68% preferred HIV testing to be offered by a tuberculosis nurse (including 93% of tuberculosis patients who were tested in this way); (iv) 24% preferred referral to on-site HIV testing; (v) 8% preferred referral to a freestanding voluntary HTC site</td>
</tr>
<tr>
<td>Byamugisha, 200926</td>
<td>Uganda</td>
<td>To assess attitudes towards routine HIV testing among new ANC attendees</td>
<td>388</td>
<td>First-time ANC attendees</td>
<td>Question posed: &quot;Nowadays in this clinic all mothers are tested for HIV unless they say no, what do you think about this system?&quot; 98.5% responded &quot;good&quot; or &quot;very good (helps them know their HIV status and thus plan for their future and that of their baby)&quot;, 1.5% responded &quot;fair,&quot; &quot;bad&quot; or &quot;very bad&quot;</td>
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<tr>
<td>Rollins, 200927</td>
<td>South Africa</td>
<td>To determine the acceptability and feasibility of universal HIV testing of 6-week-old infants attending immunization clinics</td>
<td>646</td>
<td>Women with infants</td>
<td>(i) Question posed: &quot;How did you feel when offered the opportunity of HIV testing?&quot; (for infants). Response: 77.9% comfortable; 11% surprised; 4.5% frightened; 3.4% shocked; 1.5% anxious; 0.3% preferred not to answer; 0.2% other; (ii) 89.8% would recommend HTC to &quot;others&quot;</td>
</tr>
<tr>
<td>Angotti, 201028</td>
<td>Malawi</td>
<td>To determine local perceptions of routine HIV testing and the potential consequences</td>
<td>18 (12 from an ANC attendee sample)</td>
<td>Women who had been offered HTC in an ANC and accepted</td>
<td>Interviewees made &quot;favourable&quot; comments about the routine offer of HTC and generally accepted its implementation in an ANC</td>
</tr>
<tr>
<td>Larsson, 201129</td>
<td>Uganda</td>
<td>To explore women's experiences of, and views on, the opt-out testing policy and associated HIV testing in an ANC</td>
<td>18</td>
<td>Pregnant women attending an ANC</td>
<td>Some women viewed the opt-out testing policy as positive as it could benefit their child and themselves</td>
</tr>
</tbody>
</table>

ANC, antenatal clinic; HIV, human immunodeficiency virus; HTC, HIV testing and counselling; PMTCT, prevention of mother-to-child HIV transmission.
Table 3. Users’ experiences of provider-initiated HIV testing and counselling, Africa, 1999–2009

<table>
<thead>
<tr>
<th>Publication (Author, year)</th>
<th>Country</th>
<th>Primary objective</th>
<th>Sample size</th>
<th>Population group</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etiebet, 2004(^{12})</td>
<td>South Africa</td>
<td>Knowledge, attitude and practices survey of women receiving prenatal or postnatal care</td>
<td>264</td>
<td>Pregnant women</td>
<td>(i) 94% were satisfied with the counselling services offered to them; (ii) 0.34% felt pressured by nurses to accept testing (45% believed that women who accepted testing receive better care); (iii) 8% of women tested did not remember receiving post-test counselling</td>
</tr>
<tr>
<td>Chandairewa, 2007(^{7})</td>
<td>Zimbabwe</td>
<td>To assess the impact of routine ANC testing for PMTCT</td>
<td>2011</td>
<td>Exist survey with pregnant women</td>
<td>98% stated that the information provided by counsellors on routine testing had “adequately prepared” them for the result</td>
</tr>
<tr>
<td>Corneli, 2008(^{25})</td>
<td>Democratic Republic of the Congo</td>
<td>To identify an acceptable approach to HIV testing for tuberculosis patients based on the views of patients and health-care workers</td>
<td>88</td>
<td>Tuberculosis patients</td>
<td>(i) The majority (71%) felt confident they had the right to choose whether or not to be tested; (ii) 29% believed it would be difficult to decline a routine offer of testing from a nurse and some said this was because of the power relationship whereas others felt it was because health-care workers know what is best for them</td>
</tr>
<tr>
<td>Mugore, 2008(^{30})</td>
<td>Zimbabwe</td>
<td>To assess understanding of a routine offer of HTC among women attending ANC</td>
<td>146</td>
<td>Pregnant women</td>
<td>(i) 95% stated that the information they received during group education was sufficient to make a decision about whether or not to test for HIV; (ii) 94.1% knew their blood was being drawn for HTC; (iii) 77.8% of those who declined HTC said it would not deter them from seeking ANC at the health facility</td>
</tr>
<tr>
<td>Byamugisha, 2009(^{26})</td>
<td>Uganda</td>
<td>To assess attitudes towards routine HIV testing among new ANC attendees</td>
<td>388</td>
<td>First time ANC attendees</td>
<td>(i) 90.2% had a “good” or “very good” experience with or opinion of the health education talk, whereas 9.8% had a “fair”, “bad” or “very bad” experience; (ii) 86.3% had a “good” or “very good” experience with or opinion of pretest counselling, whereas 13.7% had a “fair”, “bad” or “very bad” experience; (iii) 95.1% had a “good” or “very good” experience with or opinion of post-test counselling, whereas 4.9% had a “fair”, “bad” or “very bad” experience</td>
</tr>
<tr>
<td>Groves, 2010(^{13})</td>
<td>South Africa</td>
<td>To evaluate women’s experiences with HTC</td>
<td>25</td>
<td>Women who had been tested for HIV during their most recent pregnancy</td>
<td>(i) 52% believed they had clearly consented to testing and had a positive experience of group and individual education sessions; (ii) 28% said their choice was “less clear” and were less positive about the education sessions; (iii) 20% felt their choice had been compromised (48% of these women expressed the view that they experienced less autonomy in deciding whether to be tested for HIV)</td>
</tr>
<tr>
<td>Angotti, 2010(^{29})</td>
<td>Malawi</td>
<td>To determine local perceptions of routine HIV testing and the potential consequences</td>
<td>18 (12 from an ANC attendee sample)</td>
<td>Women that had been offered HTC in an ANC and accepted the offer</td>
<td>(i) 22.2% stated that refusing the offer of a test was an option and believed that women could still receive services if they opted out of testing; (ii) the majority who underwent HIV testing stated they were not given the option of refusing in the ANC; (iii) HTC was considered a precondition for receiving care</td>
</tr>
<tr>
<td>Larsson, 2011(^{27})</td>
<td>Uganda</td>
<td>To explore women’s experiences of, and views on, the opt-out testing policy and associated HIV testing in an ANC</td>
<td>18</td>
<td>Pregnant women attending an ANC</td>
<td>(i) Pregnant women recruited from facilities that offered testing on site perceived HIV testing as compulsory, despite pretest group counselling; (ii) generally women thought they could not receive any other ANC service if they declined testing; (iii) women felt obliged to attempt to persuade their partners to attend the ANC for HIV testing and felt anxious about asking their male partners to attend the ANC for HIV testing and (iv) women felt obligated to attempt to persuade and others felt it was because health-care workers know what is best for them</td>
</tr>
<tr>
<td>Ujiji, 2011(^{12})</td>
<td>Kenya</td>
<td>To identify factors associated with consent to opt-out of HTC</td>
<td>900</td>
<td>Pregnant women</td>
<td>(i) 17% understood that HIV testing was optional, whereas 83% did not; (ii) when asked: “If you could choose to HIV test or not, would you decline?”, 80% responded “no” and 20% responded “yes”</td>
</tr>
</tbody>
</table>

ANC, antenatal clinic; HIV, human immunodeficiency virus; HTC, HIV testing and counselling; PMTCT, prevention of mother-to-child HIV transmission.