



# Patients' Satisfaction with Services Preventing Vertical Transmission of HIV in Addis Ababa, Ethiopia

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## Abstract

**Background:** In Ethiopia, only 50% of pregnant women use the available services to prevent vertical transmission of HIV. It is unknown why 50% of pregnant women fail to use these services risking deterioration of their own health and increasing the chance that their babies will be infected with HIV.

**Objectives:** The study aimed to identify whether pregnant women's satisfaction/dissatisfaction with the following aspects influenced their utilization of these services: health facilities' infrastructure, accessibility and affordability of services, and interactions with nurses/midwives.

**Methods:** Three trained research assistants conducted individual structured interviews with 384 women (out of a population of 796 women) who used prevention of vertical transmission of HIV services in Addis Ababa from May to November 2013.

**Results:** Most women were satisfied with the health facilities' infrastructure, accessibility and affordability and with their interactions with nurses/midwives. However, the waiting times at the facilities were long and medicines were sometimes unavailable. Some nurses/midwives used unfamiliar words and ignored patients' questions. No major source of patients' dissatisfaction with the services was identified.

**Recommendations:** These services might be utilized by more pregnant women if they were free of charge, waiting times at clinics and pharmacies could be reduced, medicines were always available, and nurses/midwives avoided using unfamiliar words and answered all patients' questions.

**Conclusion:** No definite source of dissatisfaction with the service was identified that could have prevented women from using the service. However, if the identified shortcomings are addressed, the service could be improved and more pregnant women might use it in future.

**Keywords:** Accessibility of health services; Affordability of health services; Health services in Ethiopia; HIV/AIDS; Patient satisfaction with health services; Prevention of vertical transmission of HIV services

## Introduction

Ethiopia offers services to prevent vertical (mother-to-child) transmission of HIV. These services aim to maximize the health of the pregnant women (by increasing the CD4 count, decreasing the viral load and preventing opportunistic diseases) and decreasing the risk that the babies of HIV-positive women will become HIV-positive, according to the World Health Organization [1]. However, the Joint United Nations Program on HIV/AIDS [2] reported that only 50% of pregnant women in Ethiopia used services to prevent vertical transmission of HIV.

This implies that an estimated 50% of pregnant women in Ethiopia failed to use these services, increasing the risk that their babies could become HIV-positive and the risk that the pregnant women's health could deteriorate during and after pregnancy.

Good quality services for preventing vertical transmission of HIV can improve patient satisfaction, encourage more patients to use these services and improve subsequent health outcomes. Patient satisfaction implies patients' attitudes towards the quality of treatment received from health care providers/services [3]. Satisfied patients are likely to be less stressed, more trusting and more cooperative, resulting in improved compliance with treatment and greater tolerance of frightening procedures. More trusting and more cooperative patients could help to improve treatment outcomes, implying a reduced rate of vertical transmission of HIV in the current study [4].

The number of Ethiopian facilities providing prevention of vertical transmission of HIV services increased from 32 in 2004 to 1352 in

2010 and to 1445 by the end of June 2011. A study conducted in Addis Ababa, reported that 91.5% of the pregnant women were satisfied with the services [5]. Notwithstanding this high level of reported patient satisfaction, and the increased number of facilities providing prevention of vertical transmission of HIV services, only 24% of HIV-positive pregnant women received ARVs to reduce the risk of vertical transmission of HIV during 2011. This indicates that 76% of pregnant HIV-positive women in Ethiopia might have missed opportunities to reduce the risk HIV transmission to their infants [6]. As patients' satisfaction with prevention of vertical transmission of HIV services might affect HIV-positive women's utilization of these services, investigations about this aspect are required so that recommendations can be made to improve these services.

It was unknown why many pregnant women in Ethiopia did not use services preventing vertical transmission of HIV. Women's dissatisfaction with these services might have influenced their

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utilization. Consequently, this study attempted to determine whether women, who had used these services, were satisfied with the services provided.

### Problem statement

Although services are available in Addis Ababa to prevent vertical transmission of HIV, only 50% of pregnant women used these services. It was unknown whether patients' dissatisfaction with these services, influenced 50% of pregnant women not to use these services. Thus, the research question was whether pregnant women were satisfied with services preventing vertical transmission of HIV in Addis Ababa.

The underlying assumption was that if service-related aspects, with which women were dissatisfied, could be identified and addressed, then more women might use these services in future to their own and to their infants' advantage.

### Objectives of the study

The domains used to assess the patients' satisfaction with services for preventing vertical transmission of HIV in Addis Ababa, included patients' evaluations of the infrastructure, accessibility and affordability of the services, and patients' interactions with nurses/midwives. Thus, the objectives guiding the study were whether or not patients were satisfied with the following service-related aspects:

- Health facilities' infrastructure
- Accessibility of services
- Affordability of services
- Interactions with nurses/midwives.

### Methods

A retrospective, cross-sectional, quantitative, descriptive cohort design was adopted. The site population comprised 61 hospitals and health centers in Addis Ababa that provided prevention of vertical transmission of HIV services during 2012. Proportionate random site sampling was done, with the population of 61 sites stratified according to private hospitals (n=15), public hospitals (n=10) and public health centers (n=36). The randomly selected sample (n=12) comprised three private hospitals, two public hospitals, and seven public health centers.

A total of 796 mother-infant pairs used prevention of vertical transmission of HIV services at the participating 12 health facilities during 2013, and they comprised the population for the current study. These mother-infant pairs could participate in the study if the mothers signed consent forms for themselves and on behalf of their babies. These patients' anti-retroviral treatment (ART) numbers were used to select 384 respondents for the current study randomly, by using a table of random numbers, proportionately to the total number of women using the services at a specific participating facility. In case any selected woman could not be interviewed, another one was randomly selected from the same facility.

In order to pretest the instrument 19 more respondents were randomly selected. No problems were encountered during pretesting and these 19 completed instruments were discarded during the data analysis of the actual study. Three research assistants were trained to conduct structured interviews with the selected 384 women from May to November 2013.

The structured interview schedule's items focused on patients' satisfaction with the health facilities' infrastructure, accessibility

and affordability, and on the patients' interactions with the nurses/midwives.

### Data analysis

A Likert scale was used to assess the patients' levels of agreement (ranging from strongly agree to strongly disagree) with specific statements on the questionnaire. Sometimes the 'strongly agree' and 'agree' answers were combined, and also those for 'strongly disagree' and 'disagree'. The mean scores were calculated to identify components with which patients were satisfied or dissatisfied, providing a single mean score based on all response categories. This facilitated comparison of satisfaction levels for specific aspects [4]. The scale used 1 as the lowest mean score for the level of satisfaction and 5 as the highest mean score.

The Statistical Package for the Social Science (SPSS) version 20.0 was used for data analysis. Each variable was analyzed at a 95% confidence interval level before correlations were calculated. A statistician assisted with the data analysis and interpretations. Each component with a high mean score of satisfaction was analyzed in relation to the women's most recent CD4 count and WHO stage using ANOVA, chi-square tests and Cramer's V, where appropriate to do so.

### Results

The results are presented according to the four objectives attempting to identify patients' satisfaction with the facilities' infrastructure, accessibility, affordability and the patients' interactions with the nurses/midwives. The findings relevant to the above-mentioned four aspects will be compared to results reported by other relevant Ethiopian studies, so that the current study's findings could be contextualized against those reported by other researchers. Although 384 interviews were conducted, all respondents did not reply to every question, and some clinical information (such as CD4 counts or WHO stage of illness) was missing from some respondents' records. Thus, not every finding refers to 384 responses, and the total number of responses is indicated where relevant.

#### Satisfaction with the health facilities' infrastructure

Eight Likert scale type questions addressed women's evaluations of the infrastructure. Of the women, 92.5% (n=355) evaluated the cleanliness and the attractiveness of the health facility as being satisfactory, 2.3% (n=9) were uncertain about these aspects, and 5.2% (n=20) were dissatisfied. Most respondents (89.3%; n=343) considered the waiting room to be comfortable but 1.6% (n=10) were uncertain and 8.1% (n=31) disagreed.

The high mean score of 4.29 was obtained for the health facilities' cleanliness and attractiveness. The respondents were satisfied with the health facility's infrastructure (with an overall mean score of 3.67 out of 5) with the exception of its wheelchair accessibility, obtaining the lowest mean score of 3.11 (out of 5.0) (Table 1).

#### Patients' satisfaction levels (with health facilities' infrastructure) correlated with their CD4 Counts: These correlations showed that the

- patients who strongly agreed that the health facility was clean and attractive, had a mean CD4 count of 318 cells/mm<sup>3</sup>
- satisfied patients' mean CD4 count was 364 cells/mm<sup>3</sup>
- dissatisfied patients' mean CD4 count was 505 cells/mm<sup>3</sup>
- strongly dissatisfied patients' mean CD4 count was 473 cells/mm<sup>3</sup>

The dissatisfied patients had higher most recent mean CD4 counts,

Expectations about the infrastructure		Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total	Mean score
Facility was clean and attractive	%	43.8	48.7	2.3	3.1	2.1	100	4.29
	f	168	187	9	12	8	384	
Comfortable waiting room	%	17.4	71.9	2.6	6.8	1.3	100	3.97
	f	67	276	10	26	5	384	
Adequate seats in waiting room	%	15.1	66.1	4.4	13	1.3	100	3.81
	f	58	254	17	50	5	384	
Clean functional toilets	%	8.9	50.3	10.4	26.6	3.9	100	3.34
	f	34	193	40	102	15	384	
Safety of the health facility	%	23.7	62.2	4.4	9.6	0	100	4.00
	f	91	239	17	37	0	384	
Wheelchair friendliness	%	7.6	36.7	16.4	37.5	1.8	100	3.11
	f	29	141	63	144	7	384	
Visible directions for patients	%	11.7	55.5	7.8	23.2	1.8	100	3.52
	f	45	213	30	89	7	384	
Name and contact details of manager	%	4.7	54.9	9.9	26	4.4	100	3.29
	F	18	211	38	100	17	384	
<b>Overall mean score</b>								<b>3.67</b>

Table 1: Satisfaction with the health facilities' infrastructure (n=384).

Satisfaction Level	WHO Stage 1	WHO Stage 2	WHO Stage 3	WHO Stage 4	Total
Very satisfied	16	112	40	0	168
Satisfied	55	79	50	3	187
Dissatisfied	9	2	1	0	12
Very dissatisfied	3	4	3	0	10
Total	83	197	94	3	377

Table 2: Patients' satisfaction levels correlated with their WHO stage of illness (n=377).

Satisfaction Level	WHO Stage 1	WHO Stage 2	WHO Stage 3	WHO Stage 4	Total
Very satisfied	32	29	13	0	74
Satisfied	51	153	75	4	283
Dissatisfied	1	12	7	0	20
Very dissatisfied	0	0	0	0	0
Total	84	194	95	4	377

Table 3: Patients' reported accessibility of referral hospitals correlated with their WHO stage of illness (n=377).

statistically significant using ANOVA ( $P < 0.01$ ) but not when using the post hoc Bonferroni test ( $P = 0.076$ ; 95%CI=-317.8). However, the dissatisfied patients had slightly higher CD4 counts than the satisfied patients. No reason could be deduced from the available findings to explain why more dissatisfied patients had higher CD4 counts than satisfied patients.

**Patients' satisfaction levels correlated with their World Health Organization (WHO) stage of illness:** These correlations are shown in Table 2, which indicates that out of 377 patients, 355 (94.2%) were satisfied with the services while only 22 (5.8%) were dissatisfied. The correlations shown in Table 2 were statistically significant using the Chi-square test ( $P < 0.01$ ), but Cramer's V only showed a weak association ( $V = 0.235$ ). Another Ethiopian study, conducted at six hospitals and six health centers, reported scores of about patients' satisfaction with health facilities' cleanliness ranging from 76.50% to 90.57% [7].

### Accessibility of health facilities

The accessibility of health facilities was assessed by asking five questions. Most women (89.1%; n=342) could reach a health facility within 30 minutes but had to wait an average of 80.87 minutes before being attended to, and then another 22.28 minutes to receive their prescribed medicines from the pharmacy. Although most patients, participating in the current study, could travel to and from the health facility within one hour, they had to spend an average of 103.15 minutes

waiting at the health facility for their consultations and medicines. As many as 34.4% (n=132) of the current study's respondents indicated prescribed medicines were sometimes unavailable, necessitating repeat visits to the health facility and repeated waiting times at the pharmacy. Another study conducted in Addis Ababa, reported that 89.8% of their responding pregnant women, who used services to prevent vertical transmission of HIV, were satisfied with the counseling received. The average waiting time at these facilities was 39.8 minutes [5]. A study conducted at the Jimma Referral Hospital, in Ethiopia, reported similar findings [8].

The unavailability of prescribed medicines could cause treatment interruptions, impacting negatively on women's immunological (CD4 counts and viral loads) and clinical (WHO stage of illness and opportunistic illnesses) outcomes as well as on the HIV status of their babies. The unavailability of anti-retroviral drugs could jeopardize the outcomes of the entire programme to prevent the vertical transmission of HIV in Addis Ababa.

Most of the current study's respondents (93.0%; n=357) could reach a referral hospital when they needed to do so, but 1.6% (n=6) were uncertain and 5.5% (n=21) could not do so. The high mean score of 4.07 indicated that patients could reach a referral hospital. Patients who were strongly satisfied with the accessibility of a referral hospital had higher most recent CD4 counts than other patients, statistically significant at 0.05 P value by ANOVA ( $P = 0.001$ ).

As only 20 (6.3%) of the respondents were dissatisfied with their access to referral hospitals, no meaningful trends could be discerned (Table 3).

### Affordability of PMTCT services

Although 61.2% (n=235) of the current study's respondents indicated that they could afford to pay the fees for the prevention of vertical transmission of HIV services, 26.6% (n=102) could not do so. Of the respondents, 85.7% (n=329) agreed, 1.8% (n=7) were uncertain and 12.5% (n=48) disagreed that they received treatment at the health facilities even if they could not pay the required fees. Moreover, 87.3% (n=335) agreed, 2.6% (n=10) were unsure and 10.2% (n=39) disagreed that the care and treatment provided at the health facilities were worth the money charged for these services. A study, conducted at Felege Hiwot Hospital in Ethiopia, reported similar findings as to patients' satisfaction levels with the affordability of HIV/AIDS clinical care as the mean satisfaction score was 3.2 out of 5 points [9].

In the current study, almost all respondents (96.9%; n=372) indicated that their treatment was of an acceptable quality, 2.3% (n=9) strongly disagreed.

The average most recent CD4 count of those patients who were very satisfied with the quality of the treatment received was 380 cells/mm<sup>3</sup>, among satisfied patients it was 335 cells/mm<sup>3</sup>, among dissatisfied patients 422 cells/mm<sup>3</sup> and among very dissatisfied patients it was 669 cells/mm<sup>3</sup>. Those very dissatisfied patients had higher CD4 counts than others and this was statistically significant at 0.05 P value using ANOVA (P=0.002). The post hoc Bonferroni test showed a significant CD4 count difference between the groups of satisfied patients and very dissatisfied patients (P=0.036; 95%CI=12, 655).

### Respondents' interactions with nurses/midwives

Some of the current study's respondents (51.6%; n=198) agreed that there were too few nurses/midwives at the clinics. Most respondents (91.1%; n=350) agreed that they felt comfortable talking to the nurses/midwives and 85.4% (n=382) agreed that the nurses/midwives treated patients respectfully. Of the current study's respondents, 68.8% (n=264) reported that the nurses/midwives explained the patients' problems to them and 96.9% (n=372) said they were not afraid to ask questions. Almost all (96.4%; n=370) of the current study's respondents were pleased with the way in which nurses/midwives had treated them although 32.6% (n=125) said nurses/midwives sometimes used words not understood by patients and 39.6% (n=152) indicated that nurses/midwives sometimes ignored their questions.

The overall mean score for patients' interactions with nurses/midwives was 3.62. There was no statistically significant difference in terms of most recent CD4 count among satisfied and dissatisfied patients at 0.05 P value using ANOVA (P=0.655).

An Ethiopian study reported that 92.2% of their respondents were satisfied with counselling received [5]. In the northwestern part of Ethiopia, the patients' average satisfaction score was 4.4 out of 5 points indicating that patients were satisfied with health service providers' interactions with patients [9].

### Conclusions

The findings of the current study indicated that the pregnant women who had used prevention of vertical transmission of HIV services in Addis Ababa, were mostly satisfied with the

- services' infrastructure, but not with the wheelchair accessibility of the facilities

- accessibility of the facilities as most respondents could reach a clinic within 30 minutes and a referral hospital if required to do so; but waiting times at facilities and the shortage of medicines were unacceptable

- affordability of the services; those who could not pay for services mostly received treatment

- patients' interactions with the nurses/midwives although they considered the number of nurses/midwives to be inadequate and some nurses/midwives to use words that the patients did not understand while some patients' questions were ignored.

The current study's respondents did not identify any specific shortcomings that might have prevented 50% of Ethiopia's pregnant women to use services preventing vertical transmission of HIV.

### Recommendations

Services for preventing vertical transmission of HIV in Addis Ababa could be enhanced by:

- making the facilities wheelchair accessible
- reducing patients' waiting times at the clinics and pharmacies
- ensuring that the facilities always have supplies of anti-retroviral drugs
- rendering free services
- increasing the number of nurses/midwives providing these facilities
- ensuring that nurses/midwives use terms understood by patients and never ignore patients' questions.

Future research should endeavor to include respondents who did not use prevention of vertical transmission of HIV services and those who had discontinued using these services. These two groups of women's views might differ from those of women who actually used these services.

Future studies should conduct qualitative interviews with women using prevention of vertical transmission of HIV services, and those who did not use these services and those who discontinued using them. In this way, in-depth information might be obtained about the three groups of women's experiences of and/or perceptions about prevention of vertical transmission of HIV services in Addis Ababa. Future researchers should also address the service providers' concerns.

### Limitations

Only patients who used prevention of vertical transmission of HIV services in Addis Ababa participated in the current study. It is possible that patients who never used these services and/or who discontinued using these services had other perceptions.

Merely quantitative data were obtained through conducting structured interviews. The possibility that trained interviewers might have influenced women's responses was addressed by ensuring that the same questions (identical words) were asked in the same sequence from every woman. The use of semi-structured interviews might have provided qualitative data enabling triangulation of data. Independent questionnaires were not used as the researchers knew that many women in Ethiopia might be unable to read and write.

No service provider was interviewed; thus, only patients' perceptions are portrayed in this report.

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