

# Key Considerations in Integrated HIV-TB Services in the Prevention of Mother-to-Child Transmission: A focus on a Tertiary Health Facility in Lagos, Nigeria

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**Abstract:** The need to prevent vertical transmission of HIV to a new born and the imperativeness of instituting a functional integrated HIV and Tuberculosis (TB) services across health facilities will be a landmark public health intervention that will improve the quality of life of millions. This survey is a descriptive study in which respondents (HIV positive pregnant women enrolled for the prevention of mother to child transmission service) were purposively selected based on consent to participate across multiple points at the Lagos State University Teaching Hospital. The 27 respondents participated in the study. About 50% of the respondents were between 18-30 years old with majority having secondary school education or more. The respondents are mostly married and generally knowledgeable about the mode of transmission of HIV/AIDS, TB and antiretrovirals. The major considerations cited by the respondents include; care beyond hospital settings by community health workers (home care and visitation), counseling, health education and promotion, TB screening while “increased stigma & discrimination” and “fear of meeting known persons” were identified as possible disadvantages. The survey revealed and highlighted the key considerations in implementing HIV-TB integrated services into the PMTCT services. Improved training for health workers for effective management of the increased work burden is recommended.

**Keywords:** Integrated Services, HIV, Tuberculosis (TB), PMTCT

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## 1. Introduction

The HIV epidemic has been a public health issue of global scale since its first case was recorded. Currently, about 37.9 million people are living with HIV (PLWH) globally with Africa contributing about 70% of the global burden while only 62% of the PLWH were receiving

treatment in 2018 [1]. In 2018, there were about 14-23 million newer infections globally with Africa accounting for about 800,000-1.5 million of these infections. The prevalence of HIV among adults (15-49 years) in Africa is 3.9 which is about 4.9 times the global prevalence among

the same age group with 0.8 [2].

Tuberculosis (TB) ranks as the 8<sup>th</sup> leading cause in Low and Middle Income Countries (LMICs) among adults 15-59 years old [3] despite being a curable disease, in most instances, with drug combinations that have been available since 1950s-1980s. Drug-susceptible TB can be cured in 6 months with first-line drugs while treatment of multidrug-resistant TB requires second-line drugs that are more costly, with severe side effects and a drug regimen of up to 2 years. [4]

HIV has been documented as a risk factor for TB with over 10% of the annual TB cases occurring among HIV positive individual. Africa contributes about 80% of the global HIV-TB epidemic where almost 35% of the TB cases are among people that are HIV positive [5]. Effective management, prevention and treatment, of HIV will serve as an effective tool in TB control [6] and thus the need for integrated services.

To generate increased insights to this integrated service especially in the Low- and Medium-Income Countries like Nigeria, this survey aimed at documenting opinions and perceptions of HIV positive women, as a case study, which will serve as considerations for researchers and policy-makers as they look to institute HIV-TB-PMTCT integrated services under one roof.

## 2. Method

This was a descriptive survey implemented at the Lagos State-owned tertiary facility among HIV positive pregnant women enrolled for the prevention of mother to child transmission of HIV service. The respondents who gave their consent were purposively selected consecutively until 50% of the total enrollee in the facility at the time of the survey was reached. In total, 27 positive pregnant women participated in this survey. The semi-structured questionnaire used for data collection was written in English; however, the data collectors were trained to collect the data in English, pidgin and Yoruba Languages being the three prevalent languages in the survey settings. Data collected was analyzed using SPSS v21 software and were presented in frequency and percentages. The number of facilities and respondents interviewed for this survey may serve as limitations to the generality of the findings of this survey. Ethical clearance was sought and obtained from the Ethics Committee of the Texila American University Georgetown, Guyana, South America.

## 3. Result

### 3.1. Socio-demographic Characteristics of Respondents

Half of the respondents were 18-30 years old with majority (78%) having secondary school education. While 40% of the respondents were single, 82% were Christians.

**Table 1.** Socio-demographics of respondents.

Characteristics	Frequency (n=27)	Percentage (%)
Age of Adult (years)		
18 – 30 years	14	(51.9)
31 – 40 years	10	(37.0)
41 years and above	3	(11.1)
Education		
Primary	1	(3.7)
Secondary	21	(77.8)
Graduate	5	(18.5)
Marital Status		
Single	11	(40.7)
Married	15	(55.6)
Divorced	1	(3.7)
Widow		
Religion		
Christianity	22	(81.5)
Islam	5	(18.5)

### 3.2. Knowledge of Respondents About Mode of Transmission of HIV

The respondents have a good knowledge of the mode of transmission of HIV/AIDS. Majority of them were aware of “transfusing of infected blood” and “sharing of infected sharps” as modes of transmissions of HIV. Unprotected sexual intercourse with a HIV infected person was only reported by about 60% of the respondents.

**Table 2.** Knowledge of mode of transmission of HIV.

Mode of spreading HIV	Frequency (n=27)	Percentage (%)
Unprotected Sexual Intercourse	16	(59.3)
Blood Transfusion	25	(92.6)
Unsterile Instrument	23	(85.2)
MTCT	19	(70.4)

### 3.3. Respondents Awareness on the Importance of Antiretroviral

Table 3 below revealed the importance of antiretroviral therapy according to the respondents and most respondents admitted that “it prevents death from HIV/AIDS complications” although a few (35%) still believes antiretroviral will cure HIV eventually.

**Table 3.** Importance of antiretroviral to respondents.

Variable	Frequency (n=27)	Percentage (%)
Drug to prevent transmission to baby	13	(50.0)
Drug to cure HIV	9	(34.6)
Drug to prevent death from HIV/AIDS	22	(84.6)
Works effectively with optimal adherence	17	(65.4)

### 3.4. Expected Care and Supports of Respondents About Health Workers

As revealed in table 4 the majority (85%) of the respondents revealed that they will “like to be visited by healthcare workers” (as shown in table 4) but only 48% actually reported being visited by health workers. The expectation of the respondents was majorly on consistent health education (87.5%) and support on the antiretroviral therapy (68.8%).

**Table 4.** Expectations of the respondents on the healthcare workers.

Variable	Frequency (n=27)	Percentage (%)
Would like to be visited by Health Care Workers		
Yes	23	(85.2)
No	4	(14.8)
Ever Visited by Health Care Workers		
Yes	13	(48.2)
No	14	(51.8)
Expected support from Healthcare Worker		
Health Education	14	(87.5)
Support for antiretroviral treatment	11	(68.8)
TB directly observed therapy (DOT) supervision	6	(37.5)

### 3.5. Knowledge of Respondents About PMTCT

Table 5 below shows the fact that HIV “can be transmitted to a newborn through breastfeeding” is known by most (79%) of the respondents while about a third (32%) doesn’t know whether Mother-to-Child Transmission is preventable.

**Table 5.** The knowledge of PMTCT services.

Variable	Yes (%)	No (%)	Don't know (%)
Mothers to Child transmission of HIV/AIDS possible	14 (73.7)	1 (5.3)	4 (21.0)
HIV can be transmitted through Breastfeeding	15 (78.9)	3 (15.8)	1 (5.3)
Baby born of HIV positive mother are to be tested for HIV	13 (68.4)	4 (20.1)	2 (10.5)
MTCT is preventable	12 (63.2)	1 (5.3)	6 (31.6)

### 3.6. Respondents Opinions About TB

According to table 6 below, all the respondents reported that the same health worker serves as their DOT and antiretroviral treatment supporter with majority revealing that they have been taught on infant feeding options (96%) and importance of using condoms to avoid re-infection (85%).

**Table 6.** Respondents reports on TB.

Variables	Yes	No
	n(%)	n(%)
Does your DOT supporter also support you for antiretroviral (ARV) treatment?	27 (100.0)	
Did a health worker talk to you about the importance of using condoms during pregnancy to avoid re-infection?	23 (85.2)	4 (14.8)
Did a health worker talk to you about infant feeding options?	26 (96.3)	1 (3.7)
Did you start your TB treatment here?	13 (52.0)	12 (48.0)

### 3.7. Views of Respondents on the Advantages of Having the HIV-TB-PMTCT in One Setting

As highlighted in table 7 below, most of the respondents reported “save cost of transportation” as the main advantage of having the HIV-TB-PMTCT services in the same setting with about a quarter (25%) viewing “health status known only to doctors and nurses” as an advantage.

**Table 7.** Advantages of HIV-TB-PMTCT in one setting.

Advantages of having services at same clinic	Frequency (n=27)	Percentage (%)
Save Cost of Transportation	23	(85.2)
Treatment Punctuality	13	(48.1)
Remove worries and depression	2	(7.4)
Patients' Health status is known only to Doctors and Nurses in same clinic	7	(25.9)
It saves time	11	(40.7)

### 3.8. Views of Respondents on the Disadvantages of Having the HIV-TB-PMTCT in One Setting

With respect to table 8, over 70% of the respondents viewed “long queue” which results in time wasting and “increased discrimination and stigma” as the major disadvantages of the HIV-TB-PMTCT in one setting.

**Table 8.** Disadvantages of HIV-TB-PMTCT in one setting.

Disadvantages of having services at same clinic	Frequency (n=27)	Percentage (%)
Fear of meeting people you know	12	(44.4)
Increased discrimination and Stigma	20	(74.1)
Too much people in the queue/time wasting	21	(77.8)

### 3.9. Perceptions of Respondents About Health Workers Support

Most (63%) of the respondents (as revealed in table 8) perceived that the health workers are very attentive when attending to them and about half (51%) reported receiving

adequate advice on proper usage of ARV/TB drug. However, about a quarter (25%) of the respondents reported that they do not feel the health workers are reliable and some (15%) reported to be being addressed roughly by the health workers.

**Table 9.** Perceptions about health workers supports.

Variables	Frequency (n=27)	Percentage (%)
Very attentive	17	(63.0)
Advise on ARV / TB drugs usage	14	(51.9)
Address patients roughly	4	(14.8)
Some of them are not reliable	7	(25.9)

## 4. Discussion

The respondents of this survey showed a good knowledge about the modes of transmission of HIV mostly through blood transfusion, infected sharps and MTCT although this varied from Platten and Ahmed et al reports which despite revealing their respondents had high knowledge of the modes of transmission, transmission through unprotected sex and infected sharps were mostly reported. [7, 8] This difference may emanate from profile of respondents since most of our respondents had secondary school education while participants of the study of Platten and Ahmed et. al are medical or pharmacy students in tertiary institutions.

The knowledge of the importance of antiretroviral therapy by our respondents is fair since only its ability to prevent death from HIV/AIDS complications was well reported. Similar survey in the same facility among PLHIV reported good knowledge about the importance of ART among their respondents [9]. This difference could be because the respondents in our survey are HIV positive pregnant in PMTCT programs whereas in the referenced study [9], respondents were HIV positive individuals of both sexes. Other surveys [10, 11, 12] respondents also showed good knowledge of ART. These findings show that for HIV-TB-PMTCT integrated services to be effective, increasing the knowledge of clients about services being received should be a priority.

The opinions of respondents about TB services received are generally positive which may be due to the high health education reported by respondents of this survey. Kigozi et al. also reported similar positive attitudes among respondents towards TB treatment received and while Grace W. et al participants perceived TB as a contagious disease they had a wrong notion of the cause and mode of transmission of TB despite already being on treatment [13, 14]. Buregyeya et al, and Wandwalo et al, also reported similar findings [15, 16]. This disparity in knowledge - positive awareness about TB, wrong knowledge of TB mode of transmission and cause, which can affect treatment outcome should be targeted through sustained patient education and awareness creation in the community especially as implementers institute HIV-TB-PMTCT integrated services.

A few of the respondents had some negative perception about the health workers while majority had positive perception about the health workers attitude. Majority of our

respondents described the health workers as “very attentive” and “provided advice on ARV/TB drugs usage” whereas a Viet Names survey revealed that no information was provided on Highly Active Antiretroviral Therapy (HAART) among its respondents (HIV positive pregnant women) [17]. Our findings also contradict that of a Kenyan study whose respondents revealed that counseling lasted less than 5 minutes and they could not recall its content [18] Conflicting information from health workers, internet and other media were also reported in a Jamaican study. [19]

Majority of our respondents cited “too much people in the queue” and “increased stigma and discrimination” as disadvantages. Laura F described stigma and discrimination as the most important barrier as it can emanate from friends, families, societies, health care settings and sadly, from partners [20]. Stinson, Mephram, Nassali and Teeraratkul et al also reported varying degrees of societal stigma being faced by women attending PMTCT services. [21, 22, 23, 24]

## 5. Conclusion

This survey was able to highlight some considerations for policy makers and implementers as they view to institute HIV-TB-PMTCT integrated services. Improving knowledge of HIV positive clients through emphasis on HIV modes of transmission and importance of antiretroviral therapy; training and retraining of health workers on health education messages dissemination and improved attitudes towards clients while also increasing the numbers of health workers at facilities and improving their remuneration, all of which will be highly beneficial.

## 6. Recommendation

1. For effective incorporation of PMTCT into the HIV-TB services, number of health workers should be increased at these facilities
2. Enabling environment to cater for the increased number of patients attending these facilities should be instituted
3. Regular training and retraining of health workers on the global updates of PMTCT and TB management strategies and improvement of health workers attitudes towards clients

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