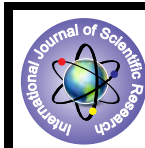


Acceptability of Provider Initiated HIV Testing And Counseling Among Tuberculosis Patients Attending Treatment In Public Health Facility of Dessie City Administrative Zone, South Wollo, North East Ethiopia. 2014



Public Health

KEYWORDS : HIV testing & Counseling, Tuberculosis

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ABSTRACT

Introduction: HIV is a risk factor for the development of tuberculosis and a challenge as well on the control and treatment of tuberculosis. To decrease this burden and to be benefited from the available treatment options, patients should be initiated and tested for HIV.

Objective: To assess acceptability of provider initiated HIV testing and counseling and associated factors among adult tuberculosis patients who attend TB treatment in public health facility of Dessie town administrative zone, North East Ethiopia.

Methods: Institution based cross sectional study with analytic component. Cluster sampling technique to select 428 sample TB patients. 13 health centers were selected with simple random sampling. Data collected with structured questionnaire.

Results: 369(92.5%) patients had accepted PITC. Reasons for not accepting PITC were waiting until TB treatment completion (56.7%) and unable cope with positive result (46.7%).

Conclusion: Since there is high acceptability of PITC among TB patient and this finding suggest that existing PITC service should be strengthened by tackling acceptance barriers at individual/community and health service factors through continuous IEC in home to home visiting as well as at health institution setup.

Introduction

Statement of the problem

Globally in 2013, there were 34 million people living with HIV, of which one third are infected with latent TB (1). Sub-Saharan Africa remains the most heavily affected region of the world, accounting for 67% of all PLWHA and for 72% of global AIDS deaths in 2007 (2). TB is the most common presenting illness among people living with HIV, including those who are taking antiretroviral treatment (1). There were an estimated 1.1 million HIV positive new TB cases globally in 2011 (3, 4,) and 79% of these people live in sub-Saharan Africa (1). TB is the leading cause of death among people living with HIV (5).

HIV infection is the leading potent risk factor for TB through promoting the progress of both latent and recent infection of mycobacterium tuberculosis (MTB) into active disease (6, 7). In the absence of HIV infection, only about 10% of people infected with passive TB fall ill with TB disease during their lifetime. However, people who are co-infected with HIV and TB, about 50% will develop active TB disease at some stage (1, 8). Increased TB disease in people living with HIV/AIDS (PLWHA) amplifies the risk of TB transmission to the general community (6, 8).

Worldwide, 20% of people living with HIV know their status, and only one in four people estimated to be living with HIV and TB are detected and treated for both diseases(5). In sub-Saharan Africa, only 10-12% of people living with HIV know their status (9).

Besides the existing VCT program to combat HIV transmission, PITC was introduced in 2007 by WHO/UNAIDS. Any patient who comes to health institution should undergo HIV counseling and testing (9). Subsequently, Ethiopian FMOH recommends HIV counseling and testing as a routine care to all patients who come to the health facility with particularly attention to high risk groups like TB patient to decrease burden of HIV on treatment outcome (10). Currently even if PITC is provided as routine care for tuberculosis patients in clinical setting, only few tuberculosis patients know their status.

Justification and significances of the study

HIV infection is one of the most important challenges on the control and treatment of TB patients. HIV infected people are at higher risk of developing TB despite the level of CD4 count. TB is also one of the most opportunistic infection and the leading cause of death in people living with HIV.

PITC is one of the main intervention areas to fight against high burden of HIV, which help for identification of people at earlier stages of HIV disease and increased uptake of ART and other life-saving treatments.

Despite the above fact, only few tuberculosis patients know their sero status which put TB and HIV treatment and control in difficulty. Unless patients know their status, they cannot benefit from the available treatment options including ART.

In the study area (Dessie town administrative zone), there is high number of TB patients while the acceptability of PITC has not yet assessed so far.

Therefore, this study was proposed to assess the acceptability of PITC and associated factors among TB patients which will assist policy- makers and implementers to design and practice appropriate interventions that decrease the burden of HIV on TB patient by enhancing utilization of services , improving treatment outcome, preventing other infections and decrease life loss of AIDS cases secondary to tuberculosis.

General objective

To assess acceptability of provider initiated HIV testing and counseling and associated factors among adult tuberculosis patients who attend TB treatment in public health facility of Dessie city administrative zone, North East Ethiopia.

Specific objectives

1. To determine the proportion of PITC acceptability among TB patients.
2. To identify factors associated with acceptability of PITC among TB patients.

Methods

Study design and period

Institutional based cross-sectional study design triangulated with qualitative component was implemented from February to August, 2014 among adult tuberculosis patients.

Study area

The study was carried out in Dessie Town. Dessie Town is one of the oldest town which is found in South East of Amhara Region 523 km from Bahir Dar and 401Km from the capital city Addis Ababa and by itself the capital city of South Wollo zone.

According to 2013-2014 budget year the total enumerated number of the population in the town is 195,661 (male =94,285, female =101,376). The town is divided in to 10 urban and 5 rural kebeles. Adolescents and young people constitute 66,724 (18 %) of the population). Based on health profile of Dessie City Administrative health office, the town has 8 health centre with 6 health posts, one district and one zonal referral Government hospitals and 3 private Junior General hospitals and 3 Specialized junior clinics, 5 private medium clinics, 2 NGO medium clinics, 15 private junior clinics, (For profit and Non profit), pharmacies and drug stores which deliver routine preventive and curative health services to the community.

Source population

All adult TB patients who utilize at Dessie public health facility for TB treatment considered as source population.

Study population:

All adult TB patients who were under treatment in Dessie public health facility during data collection period.

Inclusion criteria

All adult TB patients who were under treatment during data collection period in Dessie public health facility.

Exclusion criteria

Seriously ill patients who cannot respond.

Sample size determination

The required sample size was determined using single population proportion formula by taking proportion acceptability of PITC 50% and 95% level of confidence and 5% marginal error.

Single population formula $n = [z (\alpha/2)^2 * p (1-P)] / d^2$

$n = 385$

By adding 10% non response rate, the required final sample size equals to 428

Sampling procedure

After establishing separate sampling frame for each health facility at TB clinics, then proportional to their size, sample patients were taken using systematic random sampling method. First, K value was identified for each health facility ($K_i = N_i/n_i$) and then random start were determined using lottery method. After that representative sample patients were selected in every k interval.

For qualitative component purposive sampling was used to select key informants (health care providers and patients).

Key: HC: Health center

Fig. 1: Total number of TB patients attending treatment in public health facility in Dessie city administrative zone with respective sample patients taken, 2014.

Variables of the study

Dependent Variable

Acceptability of (PITC) provider initiated HIV testing and counseling (yes or no)

Independent variables

Socio-demographic and economic characteristics: Residence, Ethnicity, sex, Age, Religion, Marital status, Educational status, Occupation, Family size and Monthly income

Patient knowledge of HIV

knowing the relationship of TB-HIV infection

Patient knowledge on importance of PITC

Self perceived risk of HIV infection

Operational definitions:

Acceptability: It is the patient decision to accept provider initiated HIV counseling and had undergone HIV testing.

Comprehensive knowledge of HIV:

If patient fully answer the five HIV knowledge questions, considered as knowledgeable. Otherwise the patient is considered as not knowledgeable of HIV, even if, she/he misses of one question.

Knowing both condom use and limiting sex partners to one uninfected partner are HIV-prevention methods;

Being aware that a healthy-looking person can have HIV; and

Rejecting the two most common local misconceptions that HIV/AIDS can be transmitted through mosquito bites and by sharing food (21)

Knowledge on benefit of PITC: Based on mean score value, those who score mean and above the mean considered as knowledgeable and those scored below the mean score considered as not knowledgeable.

Risk perception for HIV/AIDS: It is an individual assigning oneself being at risk or not for the risk of acquiring HIV infection in the past exposure.

Data collection procedure

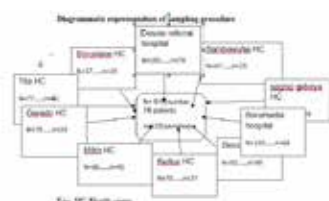
Data collection was carried out by using structured questionnaire via exit interview while the patient comes for their treatment at TB clinics. The questionnaire was prepared first in English and translated into Amharic (local language) and re-translated back to English to check its consistency.

The data were collected by ten (10) experienced diploma nurses who are not workers of clinic, one in each facility for two months duration and supervised by two MSC holders on daily base.

To ensure the quality of the data, two days training was given for data collectors and supervisors on the objective of the study, the questionnaire and extent of explanations, and the way of keeping the privacy and confidentiality.

Pre-test of questionnaire was also done in non sampled health facility in 30 TB patients who were under TB treatment, in order to check the clarity and consistence of the questionnaire.

Besides the above, at the field inspection for completeness of questions was carried out by assigned supervisors. For qualitative part, in-depth interview was carried out with key informants separately in private room by trained MSC holder data collectors.



Data processing and analysis

Data was entered to SPSS version 16.0. cleaned and checked for its completeness and out layers. To explain the study population in relation to relevant variables, descriptive statistics were computed like frequency distribution table; graph and summery measures were computed.

To identify significant associated variables for acceptability of PITC, first each independent variable with outcome variable checked using bivariate logistic regressions. And those variable p value ≤ 0.3 were selected and imported for further analysis using multiple logistic regressions.

In multiple logistic regressions, these variables' p value ≤ 0.05 were considered as statistically significant and presented using adjusted odds ratio, 95% confidence interval and P- value

Ethical consideration

Ethical clearance was obtained from Research Ethical Review Board of Wollo University, college of medicine and health sciences. Before enrolling any of the eligible study participants, the objective, the benefits and the potential discomforts like time spent for interview (30 minute) was described and discussed with each participant. The discussion between the data collector and the respondent were made in private room and confidentiality was secured. Only those who were willing to take part in the study and gave a written consent freely were interviewed.

Results

Socio-demographic characteristics of TB patients

A total of 399 TB patients completed the interview, which yields a response rate of 93.2 %. Among interviewed participants 384(96.2%) and 271(67.9%) identified themselves as Amhara ethnic group and urban resident respectively.

The mean age of the respondents was 35 years with 11.7 SD and male accounts 232(58.1%) participant. Regarding religious status, 271(67.9%) Orthodox Christian followed by Muslim 119 (29.8%).

About 254(63.7%) participants were married, 77(19.3%) were single and 68(17%) were divorced. Concerning educational status, 226(56.6%) of the study participants had not a formal education and 89(22.3%) of the study participants had primary education (grade 1-8). From the total respondents about 129(32.3%) were farmers, 110(27.6%) were house wives and 57(14.3%) were unemployed.

Regarding family size, 233(58.4%) study participants were from family size of four or less persons and similarly 241(60.4%) of the study participants were reported that their family monthly incomes were less than or equal 28.5\$ per month.

Table 1: Socio demographic characteristics sampled TB patients who attend their treatment at Dessie public health facility, May 2014 n=399

Variables	Frequency	%
Residence		
Urban	271	67.9
Rural	128	32.1
Ethnic group		
Amhara	384	96.2
Others*	15	3.8
Sex		
Male	232	58.1
Female	167	41.9
Age		
19-33	225	56.4
34-48	110	27.6
49-63	54	13.5
64-78	10	2.5

Divorced/widowed	68	17.0
Educational status		
Not formal education	226	56.6
Primary school	89	22.2
Secondary and above	84	21.1
Occupational status		
Farmer	129	32.3
House wife	110	27.6
Unemployed	57	14.3
Merchant	43	10.8
Government employee	37	9.3
Others***	23	5.8
Monthly income in Birr		
$\leq 28.5\$$	241	60.4
$>28.5\$$	158	39.6
Family size		
≤ 4	233	58.4
>4	166	41.6

Knowledge about TB/HIV/AIDS

About 397(99.5%) believed that TB is a curable disease and 376(94.2%) participants mentioned polluted air as a source of TB infection.

About 380(95.2%) of the study participants believed that a person lives with TB patients is at risk of acquiring tuberculosis and 321(80.5%) participants were agreed that the case of TB have been increase after the era of HIV/AIDS. Likewise 353(88.5%) participants knew the relationship of TB-HIV confection.

All study subjects reported that they heard of HIV/AIDS and 396 (99.2%) participants believed that HIV/AIDS is definitely not a curable disease. Similarly, 396(99.2%) of the study participants believed that a health looking person may have a virus. Almost all study participants knew the common means of HIV transmission. However, still there is a misconception on transmission of HIV/AIDS like mosquito bite and wearing cloth.

Regarding HIV prevention methods, being faithful to sexual partner, abstaining from sexual intercourse and consistence use of condom were mentioned as means of HIV prevention methods by 397(99.5%), 397(99.5%), 387(97%) of the respondents respectively. In general, about 337(84.5%) participants had a comprehensive knowledge about HIV/AIDS prevention and transmission methods.

Response on self perceived risk of acquiring HIV infection revealed that about 352(88.2%) participants identified themselves as being at risk of acquiring HIV infection in the past exposure. Reasons for being at risk of getting HIV includes, use of sharp materials in mass 282(80%), having sexual contact with out condom 233(66%) and having multiple sexual partner 96 (26%). On the other hand reasons for not being at risk includes, not use of sharp materials in mass 43(90%), use of condom 25(53%) and trusting sexual partner's 23 (47%).

Table 2: Knowledge Related to TB/HIV/AIDS among tuberculosis patients at Dessie public health facility, May 2014. (n=399)

TB/HIV/AIDS related questions	Frequency	%
Source of TB #		
From TB patient	396	99.2
Polluted air	376	94.2
Cold weather	93	23.3
Contaminated Water	79	19.8
Others *	8	2.0
Risk of acquiring TB#		
Living with TB patient	380	95.2
Poor people	328	82.2
PLHIV	306	76.7
TB increased after the era of HIV/AIDS		
Increase	321	80.5
No difference	78	19.5
Do you know the relationship of TB-HIV infection		
Yes	353	88.5
No	46	11.5
Route of HIV transmission#		
Sexual contact	399	100
Sharing of sharp materials with PLHIV	399	100

Sharing of sharp materials with PLHIV	399	100
Blood contact	399	100
Transfusion of blood	397	99.5
Mother to child	395	99
Mosquito bite	56	14
Wearing cloths	28	7
Others **	3	0.8
Methods of HIV prevention#		
Limiting sex to one uninfected partner	397	99.5
Abstain from sexual intercourse	395	99
Use of condom every time during sex	387	97
Comprehensive knowledge of HIV		
Knowledgeable	337	84.5
Not knowledgeable	62	15.5
Self perceived risk of HIV infection		
Risk	352	88.2
Not risk	47	11.8

-multiple responses, others* - Sexual intercourse, evil spirit, others ** -shaking hand, sharing meal

Knowledge on benefit of PITC

About 392(98.4%) participants also agreed on the importance of PITC service for TB patients. Regarding specific importance about 343(86.4%) participants responded that PITC will increase access to ART, 320(80.2 %) participants responded that PITC makes easy to undergo HIV test and 314(78.6%) respond that it will increase the number of tested individuals 314(78.6%). About 391(98%) participants agree that PITC help in combating TB and HIV/AIDS and 355(88.9) agreed that anyone should check his/her HIV sero status.

Regarding the source of information, health workers were cited as the primary source of this information followed by hearing from friends. About 396(99.2%) participants agreed on the point that any one should check his/her HIV sero status.

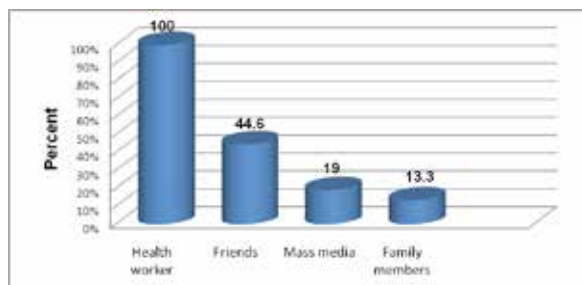
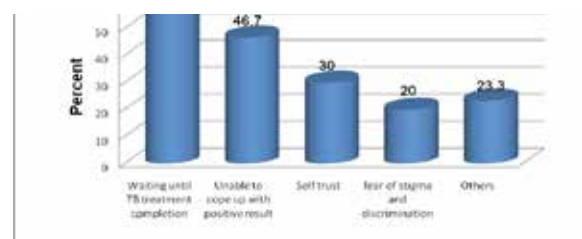


Figure 2 Source of information about PITC, among TB patients in Dessie Public health facility, may 2014.

HIV Testing and Acceptability of PITC

During TB treatment follow up, about 369(92.5%) participants had accepted and undergone HIV test following the initiation of health care providers. Of which 277(75%) had been tested for the first time and the remaining 25% participants had been tested and had known their HIV status in the past.

On the other hand, about 30(7.5%) patients hadn't accepted the initiation of test for different reasons (barriers for accepting PITC) as shown below.



Others –fear of partner reaction, lack of trust on confidentiality

Figure 3: Reason for not accepting PITC among TB patients in Dessie Public health facility, May 2014.

Factors Associated with Acceptability of PITC

Among the variables imported to multiple logistic regression, educational status of respondents, having comprehensive knowledge about HIV/AIDS, self perceived risk of HIV, knowing the relationship of TB-HIV and benefit of PITC were statistically significant with PITC acceptability among TB patients.

Patients who had formal education were 3.51 times more likely to accept PITC following their TB treatment supervisor initiation as compared to patients who had not formal education [AOR:3.51,95%CI: (1.13-10.91)].

Similarly, patients who had comprehensive knowledge about HIV/AIDS were 3.22 times more likely to accept PITC than patients who had not comprehensive knowledge [AOR: 3.22, 95%CI: (1.3-7.97)].

Knowing the relation of TB and HIV/AIDS were 3.89 times more likely to accept PITC than those who do not know [AOR: 3.89, 95%CI: (1.54-9.83)].

Likewise patients who had knowledge about PITC were 7.56 times more likely to accept PITC than not knowledgeable [AOR: 7.56, 95%CI: (1.42-40.35)].

Patients who have self perceived risk of HIV were 2.93 times more likely to accept PITC than non self perceived risk of HIV [AOR: 2.93, 95%CI: (1.12-7.66)].

Table 3: Bivariate and multiple logistic regression analysis on factors associated with acceptability of PITC among TB patients in Dessie Public health facility, May 2014. n=399

Variables	Accepter	Not accepter	OR (95%CI)	AOR (95% CI)	p-value
Educational status					
Formal education	169	4	5.49(1.88-16.05)	3.51(1.13-10.91)	0.03
Not formal education	200	26	1.0	1.0	
Knowing the relation of TB and HIV/AIDS					
Yes 333/20			4.63(2.01-10.64)	3.89(1.54-9.83)	0.04
No 36	10	1.0	1.0	1.0	
Comprehensive knowledge on HIV/AIDS					
Knowledgeable 320	17	4.99(2.84-10.92)	3.22(1.3-7.97)		0.011
Not knowledgeable 49	13	1.0	1.0		
Self perceive risk of contracting HIV					
Risk 331	21	3.73(1.6-8.73)			0.028
Not risk 38	9	1.0	1.0		
Knowledge on benefit of PITC					
Knowledgeable 364	27	8.09(1.83-35.67)	7.56(1.14-40.35)		0.017
Not knowledgeable 5	3	1.0	1.0		

Qualitative results:

Why people do not accept PITC?

The in-depth interview shows that barriers for accepting HIV test following the initiation of health care provider were not only individual/community factors but also contributed by health service related factor.

The concept of individual factors at the community level for barrier to undergone HIV test were related to low self perceived risk, unable to cope up with positive result in relation to fear of stigmatization by the community.

TB patient, 37 year old

"I wasn't accepting the initiation of HIV test, you know why? Am faithful with my marriage and trust my wife. If this is so, testing for HIV hasn't an importance".

MDR TB patient case, 33years old

"I believe from what I see was most HIV patients had developed TB, Currently am on TB treatment and worry about my HIV status. My doctor told me to have HIV test but I refused. You know why? If the result is positive, I will die soon because I have no strength to cope up with. So I am waiting till completing TB treatment".

At health institution setup there are barriers for accepting HIV test. Those concepts were related to privacy and confidentiality while testing, shortage of test kit which lead health care providers to be selective on counseling and work overload.

Counselor nurse at TB clinic, age 31 years old.

"The work environment is not conducive because too many patients and shortage of staff make us overloaded. Therefore we fail to give adequate counsel for all TB patients rather we focused on those TB patients complained with continuous headache, diarrheal disease and other suggested sign of HIV/AIDS

TB patient 25 years old

"There are too many people with 4m*4m room in which the privacy and confidentiality were unsecured"

DISCUSSION

The increasing global burden of TB is linked to HIV infection especially in developing countries. To decrease this dual burden and to benefit from the available care and treatment options, patients should first be tested for HIV.

In this study, after the initiation of TB patients to undergo HIV test, 353 (95.7%) had accept initiation and undergone HIV test. This finding was in line with studies done in Kenya, Cameroon, and Congo (13, 14, 15). However, it is higher than studies done in south and east Ethiopia (16, 17). This finding suggested that there is a good progress in HIV testing among TB patients as compared to the previous.

The possible explanation for high acceptance of PITC may be due to time difference of the studies conducted. Because the studies conducted prior to 2014 but nowadays the government give emphasis on the danger of TB-HIV/AIDS confection and testing HIV is a key factor for fighting HIV as well as getting life-saving treatment as early as possible.

The most commonly cited perceived barriers for accepting PITC in this study was waiting until TB treatment completion, unable to cope with positive result and self trust (low self perceived risk). This result complemented with the qualitative finding that states if a person is not frequently diseased and being faithful to his/her marriage, testing for HIV is considered as useless. This finding was comparable to other studies done in Uganda and Ethiopia (18, 19).

Besides individual/patient factors, the qualitative findings show that health service factors were mentioned as main barriers for HIV testing. These includes privacy while testing, shortage of test kit,

Education status was positively associated with acceptance of provider initiated HIV testing and counseling. This finding was comparable to other studies done in Sudan and Ethiopia (11, 20). This association may be due to educated patients as compared to those who are not educated patients, would have a better information access and can easily understand the im-

portance of HIV testing, co-morbidity of TB-HIV and know the available treatment options.

Another important predictor factor for acceptability of PITC was being aware of the relationship of between TB and HIV/AIDS. This finding suggest that improving community awareness regarding the importance of HIV testing is crucial for better TB treatment outcome and can enhance acceptability of PITC.

Having a comprehensive knowledge about HIV/AIDS was significantly associated with acceptance of PITC. This finding was in line study done East Wollega (18). This suggests that community sensitization regarding HIV/AIDS in any setup can enhance acceptability of PITC.

Patients who had self perceived risk of contracting HIV were more likely to accept PITC as compared to not self perceived risk patients which complimented to qualitative finding mentioned as low self-perceived risk one of the reason for not accepting PITC. This result is in agreement with study done in Arbaminch hospital among TB patients which showed self perceived risk patients were five times more likely to be willing in accepting the initiation than non self perceived risk patients (16, 18). The possible explanation for this may be due to those patients who considered themselves at risk of getting HIV in the past are more interested to know one self in order to benefit from the available treatment options related to HIV including provision of ART as compared to not self perceived risk individuals.

Knowledge about the benefit of provider initiated HIV testing had also positive association with acceptance. This finding was in line with other studies done in the past (5, 20). This finding suggests that raising community awareness regarding the importance of PITC has great impact on acceptability HIV test.

Limitation of this study

Acceptability history was based on self-report and which may have been affected by social desirability bias or recall bias

CONCLUSION

In this study, there is high acceptability of PITC among TB patients. This was a good progress for the control, prevention and treatment of TB and HIV.

Despite high knowledge of TB/HIV, still there is a misconception about TB/HIV means of transmission.

Comprehensive knowledge of HIV, educational status, PITC knowledge, self perceived risk and knowing TB -HIV relationship were significantly associated with acceptance of PITC among TB patients.

Waiting until TB treatment completion, unable cope up with positive result, privacy and self trust were the most common cited reasons for not accepting PITC among TB patients.

RECOMMENDATION

Based on the finding of this study the following recommendations are forwarded;

To health bureau

Should strengthen the existing PITC to all patients rather than focusing on the suggested cases by avoiding shortage of test kit at TB clinic.

The health care environment should be conducive, have adequate rooms as well as required number of staffs to decrease work overload and missing opportunity.

To health professionals

Health care providers should give continuous comprehensive education to the community in home to home visit as well as at health institution setup regarding the benefit of PITC service for any individual and tackling barriers of accepting PITC.

To community

Local administrator with religious leaders better to be part of the solution by avoiding misconception of TB-HIV/AIDS, stigmatization attitude as well as promoting the importance of HIV test at grass root level.

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