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# Knowledge and Associated Factors about Isoniazid Preventive Therapy among People Living with HIV at Bahir Dar Town Public Health Facilities, Northwest Ethiopia, Institution Based Cross-sectional Study

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## Abstract

People living with HIV infection are a considerably greater risk than the general population of acquiring TB and has the greater risk for progression from latent infection to active TB disease. Increasing knowledge level of people living with HIV about Isoniazid preventive therapy is an important intervention for preventing active TB in people living with HIV. Preventing active TB among people living with HIV can prevent millions of people from being infected in the community and in health care services. Increasing knowledge level of people living with HIV about Isoniazid preventive therapy is one of the key interventions recommended by WHO to reduce the burden of TB on people living with HIV. The purpose of this study was to assess knowledge level and associated factors about Isoniazid preventive therapy among people living with HIV at Bahir Dar Town public health facilities. The institution based cross-sectional study was conducted from February to March 2014 in Bahir Dar town public health facilities. 383 people living with HIV from four ART started public health institutions were interviewed. A bivariate and multivariate logistic regression analysis was used to identify factors associated with knowledge level of people living with HIV about Isoniazid preventive therapy. The main finding of this study was 62.10% of participants had the insufficient level of knowledge about Isoniazid preventive therapy. The knowledge level of the study participants was determined by counselling given by health professionals (AOR=2.61, 95% CI: 1.61, 2.66), screened for Tuberculosis (AOR=1.75, 95% CI: 1.07, 2.87), completed primary and secondary education (AOR=1.95, 95% CI: 1.05, 3.63) and (AOR=2.72, 95% CI: 1.38, 5.39).

**Keywords:** Isoniazid preventive therapy; Infection; Health

## Introduction

People living with HIV infection are considerably at greater risk than the general population of acquiring TB and has the great risk for progression from latent TB infection to active TB disease [1].

Increasing uptake of Isoniazid preventive therapy (IPT) and knowledge level of people living with HIV (PLHIV) about IPT is an important intervention for preventing active TB among PLHIV. Preventing active TB among PLHIV can prevent millions of people from being infected in the community and in health care services. Increasing knowledge of PLHIV about IPT and uptake IPT is one of the key interventions recommended by WHO to reduce the burden of TB on PLHIV [2].

Among different practical barriers for the provision of IPT among PLHIV, low knowledge level of PLHIV about IPT, fear of side effect among PLHIV, fear of re-infection, and inconsistent supply of Isoniazid drug [3,4].

The reasons for the countries to not implement IPT was inadequate TB screening, the inconsistency of supply Isoniazid drug, and low knowledge level of PLHIV about IPT to receive and no discussion with the health professional about the benefit of IPT. Suggested intervention from those countries to encourage the implementation of IPT included advocacy for IPT at the national and international level and dissemination of evidence-based information regarding the benefits and feasibility of IPT for PLHIV [5].

The proportion of PLHIV who had some information about IPT was 29.8%. Individuals (PLHIV) who had received the explanation about IPT were 8 times more likely had sufficient knowledge about IPT as compared to those who did not receive [6,7].

Females PLHIV were more likely has sufficient Knowledge level than males and PLHIV who completed secondary and post-secondary education were three and four times more

likely than those non-formally educated has sufficient knowledge about IPT respectively. Information about the status of IPT provision and knowledge of PLHIV regarding IPT in Ethiopia is limited [8].

Besides to provision of IPT increasing knowledge level of PLHIV about IPT is an important activity in TB prevention among PLHIV. Different studies showed that to increase IPT adherence, knowledge level of PLHIV about IPT is the major determinant. It can prevent millions of people from being infected with HIV-related TB infections in the community and in health care services. Currently little is known about PLHIV level of knowledge and associated factors in Ethiopia. So, this study has great importance to fill this gap.

## Methods

### Study setting and participants

Institution based cross-sectional study was conducted at ART started public health facilities in Bahir Dar Town. Bahir Dar Town is located 565 km in Northwest direction from Addis Ababa, Ethiopia. All adult PLHIV who attending public health facilities was considered as the source population for the study and selected adult PLHIV on ART follow up in public health facilities was considered as the study population. Irrespective of their sex PLHIV who are eligible for IPT found in the ART started public health facilities and those who were visiting ART clinic during the study period were included in the study.

### Sample size and sampling technique

Single population proportion formula was used to determine the required sample size. To determine sample size, we use proportion 34.70% from study conducted in Addis Ababa [7]. Additionally, the following assumption was considered Confidence level 95% and margin of error 0.05. Total sample size was 383 with adjustment of 10% non-response rate. The proportional allocation was used to distribute sample size to individual health facilities. The study participant who came to health facilities during data collection period were interviewed consecutively until the required sample size attains.

### Data collection process

Interviewer-administered structured questionnaire was used to collect data. Data collectors were two nurses from health facilities other than the study sites to minimize social desirability bias. Data quality were ensured by giving training for data collectors on how to use the data collection questionnaire and how to approach study participants. Pretest was done on 5% of the PLHIV at another health facilities and necessary correction were made.

### Ethical clearance

Ethical clearance was ensured by Ethical Committee of Bahir Dar University College of Medicine and Health Science. Letter received from Bahir Dar University College of Medicine and

Health Science Ethical Committee to Bahir Dar Town Administration Health office to get permission to conduct the study in public health facilities. After explaining the purpose of the study to study participants, the written consent was obtained. Confidentiality was ensured by not recording the identification of study participants, questionnaires were kept locked, and data collectors kept the information strictly confidential.

### Data analysis

After data collection, the data entry was done using EPI info version 3.5.1 and data cleanup was performed to check for accuracy, consistencies, and values. The SPSS version 20 statistical package was used to analysis the collected data. For sociodemographic characteristics, the descriptive statistic was used. A total of six questions were asked to assess knowledge level of the study participants, and they are categorized as sufficient level of knowledge and insufficient level of knowledge. The significance of the association between dependent and independent variables was measured by using bivariate and multivariate logistic regression analysis. Variables with the p-value less than or equal to 0.2 in bivariate analysis were entered into multivariate analysis to identify the associated factors with outcome variables. Variables with the p-value less than or equal to 0.05 were considered as statistically significant.

### Operational definition

**Knowledge level:** It is the awareness of the study participants about IPT. Six questions were asked to categorize level of knowledge of the study participants. The study participants were categorized as had sufficient level of knowledge, if the study participants answered greater than or equal to three questions correctly. The study participants categorized as insufficient level of knowledge, if the study participants answered less than three questions correctly.

## Result

### Characteristics of study participants

From 383 study participants, 147(38.40%) were males. The study participants had the mean age of  $36.4 \pm 9.18$ SD years. The majority of the study participants was Orthodox religion followers and Amhara ethnical group, 343(89.60%) and 349(91.10%) respectively. One fourth of study participants was above grade twelve 90(23.50%) and non-formal education 91(23.80%). Among the study participants, 79(20.60%) were divorced, 100(26.10%) were unemployed and 99(25.80%) were housewife. More than one-third of respondents were with in age group of 25-34 years 138(36%) (**Table 1**).

### Knowledge level of study participants about IPT

The overall proportion of study participants those heard about IPT were 193 (50.40%) and proportion of study

participants that not heard about IPT were 190 (49.60%). One hundred sixty-eight (43.90%) of respondents knew, those without the sign and symptom of TB infection is eligible for IPT and 286 (74.70%) respondents knew IPT reduce the risk of TB infection.

**Table 1** Socio-demographic characteristics of PLHIV at ART clinics of public health facilities in Bahir Dar town, Northwest Ethiopia, February 2014.

Characteristics	Number of PLHIV (n=383)	Percent
<b>Age in year</b>		
15-24	25	6.5
25-34	145	37.9
35-44	135	35.2
45-54	57	14.2
55-75	21	5.5
<b>Ethnicity</b>		
Amhara	349	91.1
Agew	11	2.9
Others <sup>#</sup>	23	6
<b>Educational Status</b>		
No formal education	91	23.8
Primary (grades 1-6)	64	16.7
Secondary (grade 7-12)	138	36
Post-secondary (grade above 12)	90	23.5
<b>Marital status</b>		
Married	177	46.2
Divorced	79	20.6
Single	75	19.6
Widowed	52	13.6
<b>Religion</b>		
Orthodox	343	89.6
Muslim	28	7.3
Others <sup>##</sup>	12	3.1
<b>Occupation</b>		
Unemployed	100	26.1
Housewife	99	25.8
Government employed	92	24
Merchant	57	14.9
Farmer	20	5.2
Others <sup>###</sup>	15	3.9
<b>Sex</b>		

Female	236	61.6
Male	147	38.4
*Oromo, Tigre, Wolayta <sup>##</sup> Catholic, Protestant <sup>###</sup> Daily workers, Carpenters		

## Knowledge level and its associated factors about IPT among PLHIV

Among study participants, 238(62.10%) had insufficient level of knowledge and 145(37.90%) of them had sufficient level of knowledge. Educational status, TB screening and counseling given by health professionals had statistically significant association with knowledge level of study participants. The respondents who had received counseling about IPT from health professionals had three times more likely had sufficient level of knowledge than those who had no received counseling from health professionals (AOR=2.61, 95% CI: (1.61, 2.66)). The other important determinant variable for knowledge of IPT among PLHIV was TB screening, respondents who had TB screened were nearly twice more likely have sufficient level of knowledge than those who were not screened for TB (AOR=1.75, 95% CI (1.07, 2.87)). PLHIV those who completed primary and secondary education were two and three times more likely had sufficient level of knowledge about of IPT than those who were not formally educated AOR=1.95, 95% CI (1.05, 3.63) and AOR=2.72, 95% CI (1.38, 5.39) respectively (Table 2).

**Table 2** Factors associated with level knowledge about IPT of PLHIV in Bahir Dar town public health facilities, North West Ethiopia, February 2014, n=383.

Variables	Level of knowledge		Crude Odds Ratio (95%CI)	Adjusted Odds Ratio (95%CI)
	Sufficient (145)	Insufficient (238)		
<b>Educational Status</b>				
No formal education <sup>*</sup>	23	68	1	1
Primary (1-6)	18	46	1.15(0.56-2.38)	1.08(0.50-2.32)
Secondary (7-12)	59	79	2.21(1.24-3.95)	1.95(1.05-3.63)**
Post-secondary (12+)	45	45	2.95(1.58-5.54)	2.72(1.38-5.39)**
<b>TB screened</b>				
Yes	108	145	1.87(1.18-2.95)	1.75(1.07-2.87)**
No <sup>*</sup>	37	93	1	1
<b>Counseling received</b>				
Yes	88	80	3.05(1.99-4.68)	2.61(1.61-2.66)**
No <sup>*</sup>	57	158	1	1

\*\*P ≤ 0.05

## Discussion

This study was designed to assess the knowledge level of PLHIV about IPT and its associated factors among PLHIV in Bahir Dar town public health facilities. Increasing knowledge level of PLHIV about IPT is an important intervention for preventing active TB on PLHIV. Increasing knowledge level of PLHIV about IPT is one of the key interventions recommended by WHO to reduce the burden of TB on PLHIV [2].

Among the study participants those heard about IPT were 50.40%, this finding was better than the study conducted in Addis Ababa [7]. This difference might be, this study was conducted after six years. Health professionals in health facilities and neighbors/friends were identified as the most common source of information about IPT for PLHIV. The study participants which know eligibility of PLHIV for IPT were 43.90%, those PLHIV without the sign and symptom of TB infection is eligible for IPT and 74.70% of respondents knew IPT reduce the risk of TB infection among PLHIV.

Among the study participants, 62.10% had the insufficient level of knowledge about IPT. This might be due to low information and counseling access about IPT from health professionals.

Among the variables which associated with knowledge of level of PLHIV about IPT was receiving counseling from health professionals about IPT. The study participants who received counseling about IPT from health professional were three times more likely had sufficient level of knowledge than those who had not received counseling about IPT. This might be at the time of counseling; health professionals gave information that increases knowledge level of PLHIV about IPT.

Another associated variable was TB screening, those respondents who were screened for TB were two times more likely had sufficient level of knowledge about IPT than those who were not screened for TB. This might be TB screening is a gateway for Isoniazid preventive therapy.

The study participants who had completed primary and secondary education were two and three times more likely

had sufficient level knowledge about of IPT than those who were not formally educated. This might be through additional accessibility to printed media than the less educated counterparts in addition to another source of information.

## Conclusion

This study revealed that high number of PLHIV has the insufficient level of knowledge about IPT during the study period. Educational status of study participants, TB screening and counseling received from health professionals about IPT were significantly associated factors with knowledge level of study participants about IPT. It recommended strengthening TB screening and counseling about IPT at Public health facility.

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