

Prevalence and associated risk factors of Latent Tuberculosis Infection (LTBI) in East Wollega Zonal prison, Western Oromia, Ethiopia

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Background: Tuberculosis (TB) remains a major global public health issue and WHO has also set the ambitious target of a 90% reduction in the incidence of new TB cases by 2035. However, LTBI is a major obstacle to eliminate TB because of different risk factors. Hence, in order to reduce the number of new TB cases, WHO adapted from End TB strategy that states screening and treating of LTBI; particularly, in prison environment. This is because that globally, prisons represent a major institutional amplifier for TB. The aim of the present study was to investigate the prevalence and associated risk factors of LTBI in East Wollega Zonal prison, Nekemte town, Western Oromia, Ethiopia.

Methods: A cross-sectional study design and systematic sampling technique was used to select a sample of 352 from a total of 2620 prisoners aged ≥ 18 years for one month (May-June 2019) in East Wollega prison, Western Oromia, Ethiopia. The selected inmates were interviewed using a structured pre-tested questionnaire; blood samples were collected from the study participants and screened for LTBI using interferon-gamma release assay (IGRA). The Data were analyzed using SPSS version 25 and logistic regression was used to model the likelihood of LTBI occurrence and to identify risk factors associated with LTBI.

Results: Overall prevalence of LTBI among prisoners was 51.17 % (95% CI: 46.45-57%) and with high prevalence in men, rather than women (53.0% vs. 43.5%, respectively), although no significant difference was highlighted. Using multiple logistic regressions, a prisoner's age (age ≥ 45 years; AOR=2.48[1.04-5.9]), khat chewers (AOR=2.27[1.27-4.19]), staying > 12 month in current incarceration (AOR=1.81[1.04-3.18]) and overcrowding (> 100 individuals per cell; AOR=1.91[1.002-3.65]) were found to be statistically significant ($P < 0.05$) predictors of LTBI.

Conclusions: The high prevalence of LTBI among the prisoners requires immediate steps be taken to identify and treat LTBI and counsel those found to be positive in this setting. Routine screening of prisoners for both TB and LTBI up on entry was highly recommended intervention to halt TB transmission in prisons. Similarly, reduction of overcrowding per cells, educating not to chew khat in overcrowded, unhygienic, and unventilated area and intensive monitoring of those stayed longer in prison may help reduce the TB transmission in this setting and in the community at large.