

Mycobacterium tuberculosis infection in Chichiri Prison, Blantyre

Introduction

It is believed that about a third of the people living in developing countries is infected with *Mycobacterium tuberculosis*.¹ Important factors that facilitate the spread and development of active tuberculosis include poverty, overcrowding, poor healthcare facilities and co-infection with HIV. Since tuberculosis transmission is aerosol, overpopulated environments such as prisons, public transport, hospital wards and group residents have proven to be areas where there is a high risk of infection. We present the prevalence of *M. tuberculosis* infection among inmates in Chichiri Prison, Blantyre.

Method

After obtaining permission from the Commissioner of Prisons and the Southern Region Prison Authorities, an unselected population of 140 inmates comprising 114 males and 26 females participated in the study after due consultation. Two sputum specimens, including an early morning specimen and a spot specimen, were obtained from each participant. Specimens were examined by microscopy for acid-fast bacilli and culture on LJ medium.² Interviewer-based questionnaire was used to assess participants demography and the living conditions in Chichiri prison. Sample size was calculated using the sample size table with determined prevalence of 5% and a confidence interval of 90%.

Results

All 140 specimens were negative for *M. tuberculosis* on sputum-smear microscopy but 6 (4.3%) of them were positive on culture. All those in whom TB was diagnosed were treated. The age range of participants was from 16 to 59 years with an average of 29.3 years and a standard deviation of 9.4 years. Most of them (65%) were married, 21.5% single and others were either divorced or separated. Almost half (46.5%) fell within the 21-30 years age group. Although 43.6% of the study population had stayed in prison for less than 6 months at the time of this investigation, 50.8% of them admitted to having a cough for more than two-weeks' duration. This compares to a prevalence of chronic cough of just 4.2% among the 12.1% of inmates who had stayed in prison for more than 3 years. Ten males and two females reported that they had been treated for tuberculosis prior to their incarceration. Two of them still tested positive in the present study. On living conditions, 82.4% males and 89.0% females said prison food was bad while 90.3% males and 77% females thought accommodation was horrible.

Discussion

It is well established that the prevalence of *Mycobacterium tuberculosis* infection among prisoners is higher than for the rest of the population and that tuberculosis is the single biggest cause of deaths among prisoners³. Considering that prisons are part of the world in which we live, the level of *M. tuberculosis* infection among prison inmates and the fact that they are frequently released into the larger community should be of concern to both government and society. The prevalence (4.3%) of *M. tuberculosis* infection observed in this study

translates to 41 infected inmates out of a total of 955 in Chichiri Prison at the time of study. If one individual with active TB can infect up to 15 other individuals if untreated⁴ then the situation in Chichiri Prison becomes more worrying. The results of this survey is consistent with those of a similar study carried out by Nyangulu et al⁵ who found a 5% prevalence of pulmonary tuberculosis among 914 prison inmates in Zomba.

Unless TB-infected inmates are detected and promptly treated, the possibility of uninfected in-contact inmates being infected and transmitting the same to the larger society remains high. The conditions in Chichiri prison facilitate spread of infection and progression to disease. These include poor nutrition, poor accommodation, overcrowding, poor healthcare facilities and the stress of incarceration.

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