

Impact of Education and Income on Pulmonary Tuberculosis (PTB) Among Adult Tea Garden Workers of Assam

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Background: Pulmonary tuberculosis (PTB) is a major public health problem among socio-economically poor tea garden workers of Indian Assam province. Information regarding impact of socio-economic indicators on PTB among them is very scant. Hence, the study was designed with the research question: what was the impact of education and income on PTB among them?

Methods: A community based cross sectional study was conducted in eight randomly selected tea gardens of Assam in the age group > 15 years. Patients with sputum specimens positive for acid-fast bacilli by microscopy and/or radiographic abnormalities consistent with PTB were considered as a case of PTB. Odds ratios were estimated by performing multiple logistic regression analysis to assess the independent effect of education and income on PTB.

Results: The survey covered a total of 2264 adult workers (male-1033; Female-1231). More than 73% were illiterate and only 14.7% had more than 5 years of education. Out of total, 37 individuals (16/1,000) were considered as having PTB. Crude odds ratio suggest that, illiterate tea garden workers were 3.1 times more likely to suffer from PTB as compared to highest educated group (more than 5 years of education). Similarly, those who had 1–5 years of education were 3 times more likely to suffer from PTB compared to highest educated group. The influence of education remained stronger even after adjustment for other factors like age, sex and income. In the adjusted analysis illiterate (OR=3.3) were found to be most vulnerable group for PTB. However, no much variation in odds ratios across the income quintiles have been observed indicating poor association between income and PTB in the study.

Conclusion: Tea garden workers with lower education were more vulnerable to PTB. However, income was not associated with PTB, which could be due to less variation between highest and lowest income groups.

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One Member of Beijing Genotype Associated with Multi-Drug Resistance and Increased Transmissibility in Rural Chinese PopulationsY. Hu^{1,*}, X. Ma², E.A. Graviss², W.B. Wang¹, W.L. Jiang¹, B. Xu¹¹ Fudan University, Shanghai, China² Baylor College of Medicine, Houston, TX, USA

Emergence of drug-resistant tuberculosis (TB) has become a threatening concern for global health, and occurs predominantly in resource-limited countries. Drug resistance among rural population with culture-confirmed tuberculosis provides an accurate indicator of transmitted

2005 in two DOTS covered rural counties of eastern China, Deqing and Guanyun. 351 Mycobacterium tuberculosis (MTB) isolates were collected for drug susceptibility testing and molecular characterization by MIRU, spoligotyping, IS6110 RFLP, and sequencing for drug resistance-related genes. 223 isolates (63.5%) were resistant to at least one of 1st anti-TB drugs, including 53 (15.1%) multi-drug resistant (MDR) isolates. Spoligotyping identified 243 isolates (69.2%) with Beijing family genotype. A major subgroup of the Beijing family, Shandong cluster (MIRU genotype 223325173533) accounted for 15.6% of Beijing family isolates. Cluster analysis with MIRU plus IS6110 RFLP genotyping defined 80 (22.8%) isolates in 31 clusters. MDR-TB isolates were more likely to be clustered compared with pan-susceptible isolates (47.2% vs. 14.1%; odds ratio [OR], 4.72; 95% confidence interval [CI], 2.08–10.72), and overrepresented in the Beijing family compared with non-Beijing family isolates (18.5% vs. 7.4%; OR, 3.02; 95% CI, 1.35–6.73). Compared with other Beijing family isolates, Shandong cluster isolates showed higher possibility to acquire multi-drug resistance (44.7% vs. 15.1%; OR, 6.18; 95% CI, 2.68–14.23), katG and rpoB mutations (36.8% vs. 8.8%; OR, 5.08; 95% CI, 2.41–13.94), and clustering (60.5% vs. 21.0%; OR, 6.14; 95% CI, 2.82–13.37). The overrepresentation and association with MDR-TB of Beijing genotype and its Shandong cluster in rural China suggested their contribution to the transmitted drug resistance and their potential importance in the emergent drug-resistant TB epidemic in China.

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An Epidemiological Study of Tuberculosis among Health Care Workers in TaiwanY.M. Chang¹, S.C. Chang², M.L. Liu¹, Y.J. Hu¹, C.H. Chiu¹, S.Y. Yang¹, Y.N. Chao^{1,*}¹ Centers for Disease Control, Taiwan, Taipei, Taiwan² National Taiwan University Hospital, Taipei, Taiwan

Background: The health care workers (HCW) are full of hazards for tuberculosis exposure and infection when they care for patients. In Taiwan, an area with moderate incidence of tuberculosis, HCW are at increased risk for tuberculosis. The study examined data for evaluation of epidemiological characteristics of tuberculosis between HCW in Taiwan.

Methods: From the computerized registry of Taiwan-CDC, confirmed tuberculosis patients who were HCW from January 1, 2002 to December 31, 2006 were enrolled. The χ^2 test and χ^2 test for trend in proportion were used.

Results: A total of 564 subjects (109 males and 455 females) were enrolled, with the annual incidence increasing from 63 in 2002 to 149 in 2006, with 73% of the individuals less than 40 years of age. By geographic distribution, there was the largest number of cases in Taipei City. Of the 564 subjects, 204 were open tuberculosis cases. The average accomplished rates of chest radiography, and sputum smear and culture were 90.4%, 88.1% and 71.1%, respectively. The majority of these individuals were nurses or physicians.