# INFECTIOUS DISEASES OLD AND NEW — IMPLICATIONS FOR GLOBAL HEALTH

## Community Members' Perceptions of Tuberculosis (TB) Stigmatization in Rural Maharashtra, India

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**Background:** India has the world's highest burden of TB, reflecting the resurgence of TB due to HIV/TB comorbidity. Stigmatizing attitudes among the general public are a barrier to public health measures to control the spread of TB. This study describes rural Maharashtra adults' perceived TB-related stigmatization in their communities.

**Methods:** A cross-sectional descriptive survey design was used. The World Health Organization 11-item "TB Knowledge, Attitudes and Practices Survey" was translated from Spanish to English to Marathi and administered face-to-face in rural communities with active TB cases. Content validity and cultural appropriateness for Maharashtra were established by a panel of nursing faculty. In addition to demographic variables, 11 items measured perceived TB stigmatization using a 5-point Likert-type scale, e.g. "Some people feel uncomfortable to be close to those that have tuberculosis" or "Some people prefer that those who suffer from tuberculosis should not live in the community."

**Findings:** The survey was completed by 402 rural adults ages 18-70 (M=34.8±11.82); 69.9% were females; 53.3% had primary education or less. The stigmatization scale had high reliability ($\alpha$ = .934). The mean stigmatization score was 3.02±1.056. There was a trend for women to have higher scores ($p$ = .056). Scores did not relate to marital status or occupation (whether employed, student or homemaker). Age had a curvilinear relationship: 28% of those in the middle category, ages 31-49, had high scores, versus 38% of others. Multiple regression examining the effects of gender, marital status, age and occupation explained less than 2% of the variation in perceived stigmatization.

**Interpretation:** Rural adults report that stigmatization of TB exists in their communities. Older and younger adults perceive higher stigmatization than those ages 31-49, who may have grown up viewing TB as relatively rare and treatable, before the resurgence of TB that accompanied the rising HIV incidence in India. Because stigmatization poses a barrier to community members' willingness to be tested and treated for this communicable disease, public health nurses and other providers need to address community TB stigmatization. Knowledge of the specific stigmatizing attitudes held in communities can inform development of effective interventions.

**Abstract #:** *2.001_INF*

## Current Nutritional Status does not Modify the Malaria-Anemia Relationship in Young Children: A Cross-Sectional Study in Five Sub-Saharan African Countries

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**Background:** Anemia is a multifactorial and prevalent condition, particularly in children under age 5 in sub-Saharan Africa. Public health policy aimed at addressing anemia requires evidence on its modifiable risk factors. Malaria infection and nutritional status and their potential interaction have been suggested as risk factors by previous literature, but these studies have largely lacked the power to detect effect modification and compare different country contexts.

**Methods:** This population-based cross-sectional study used Demographic and Health Survey data from Burkina Faso, Cameroon, Côte d'Ivoire, Mozambique, and Rwanda to assess associations and interactions between malaria, nutritional status (as indicated by height-for-age and weight-for-height), and hemoglobin or clinical anemia as outcomes. Within-country multiple linear regression on hemoglobin, logistic regression on anemia and multi-level regression allowing for geographic clustering were conducted. Multilevel linear regression was used to combine country data (N=21003), maximising the study's power to detect effect modification.

**Findings:** Malaria was a statistically and clinically significant predictor of hemoglobin and anemia. Results were broadly consistent in all countries, although variation was observed in effect sizes for malaria which may be attributable to variations in anemia prevalence. Malaria infection predicted a mean change in hemoglobin of -0.826 g/dl (95% confidence interval: -1.18, -0.467) across all considered countries. Height-for-age and weight-for-height were statistically significant predictors of hemoglobin and anemia but had clinically unimportant effect sizes. The combined-country analysis did not detect effect modification by malaria infection of nutrition's effect on hemoglobin.

**Interpretation:** This study provides support for malaria as an important predictor of anemia in young sub-Saharan African children, across varying transmission, sociodemographic, and health systems contexts. It provides little evidence for any effect of nutritional status or effect modification which would be significant clinically or for public health. Although they do not prove causality, these results underscore the continuing importance of malaria as a predictor of anemia and the critical role of evidence and context in global public health.

**Abstract #:** *2.002_INF*

## Investigating the Role of Stigma on Fertility Desire among HIV-positive Women in Bangkok, Thailand: A Qualitative Study

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**Background:** The Thai Ministry of Public Health is committed to reaching the United Nations' goal of zero new HIV infections, zero

AIDS-related deaths, and zero discrimination towards people living with HIV by 2030. While significant progress has been made towards the first two targets, internalized stigma and discrimination by healthcare providers and the general community remain concerns for women living with HIV (WLHIV), particularly in the context of their desire to have and raise children.

**Methods:** We conducted interviews with WLHIV ($n = 10$) who expressed a desire to have a child or delivered an infant within two years of the study date, and key informants ($n = 4$) involved in their medical care and social support. We asked women about their HIV diagnosis, thoughts about pregnancy and children, desires to have children, and perceived stigma; all were conducted by the same single interviewer in Thai. Key Informants were asked about their perceptions of stigma towards WLHIV and current policies or recommended actions to reduce discrimination towards this population. Two interviewers each conducted two interviews in Thai (2) and English (2). Interview transcripts were translated into English, if necessary, and then coded and analyzed with Framework Analysis.

**Findings:** Most women did not express feelings of discrimination from their respective healthcare providers or within the healthcare setting, but internalized stigma and discrimination from community and family members were persistently reported concerns. Stigma from these sources deterred women from disclosing their fertility intentions outside of very few close contacts and raised concerns about how to respond when questioned about why they were not breastfeeding. Key informants confirmed similar sources of discrimination including more internalized and community-based stigma rather than from healthcare providers. They emphasized the importance of increasing education and awareness for communities about HIV to reduce stigma.

**Interpretation:** While the WLHIV reported that their healthcare providers had generally been supportive of their having children, internalized stigma and the perceived risk of or actual discrimination by community members negatively impacted fertility desire and peri-partum experiences among this population. These complex issues should be addressed at the community-level in order to reach the goal of zero discrimination against people living with HIV in Thailand.

**Abstract #:** *2.003_INF*

### Lights, Camera, Action!: Utilizing Standardized Patient Actors To Improve Quality Of Care For HIV-Infected Adolescents In Kenya

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**Background:** HIV-infected adolescents have worse retention in HIV care compared to children or adults. One likely reason is poor quality of care by health care workers, who lack adequate training. We report on a pilot study of a clinician training intervention using standardized patient (SP) encounters to improve communication and empathy skills, with the goal to improve retention in care of HIV-infected adolescents in Kenya.

**Methods:** Health care workers (HCWs) employed in HIV testing and care at a tertiary hospital in Nairobi, Kenya were recruited. Seven trained professional actors role-played HIV infected adolescents according to case scripts developed based on views from HIV-affected adolescents, and the WHO-Ministry of Health 'youth friendly services' guidelines. Cases covered key issues including cognitive delay, disclosure of HIV status, gender based violence, substance abuse, contraception, sexual identity and depression. Each HCW took part in seven video-taped SP encounters, followed by individual feedback from actors and group debriefing sessions.. Participants completed satisfaction surveys on actor realism and relevance. Actors completed checklists of HCWs' communication, empathy, and ease to reveal sensitive issues. Responses to 5-item Likert scales (5=highest, 1=lowest) were summarized.

**Findings:** Ten HCW participants ages 25-55 completed the training. Eight reported no prior training in adolescent care. HCWs' satisfaction with the training overall, and with specific components was high (100% very or somewhat satisfied, mean score 4.6 out of 5). HCWs rated satisfaction with actor feedback, group debriefing, and relevance of cases high (mean 4.9). SPs rated HCW performance higher (4.4-4.7) for cases depicting cognitive delay, contraception need, prevention with positives, and sexual identity. Mean scores were somewhat lower (3.7-3.8) for cases depicting fertility desire, gender based violence, and disclosure difficulties. HCWs were ranked highly by SPs in skills of clear communication and empathy (4.7 and 4.1 respectively), and were rated slightly lower in non-verbal communication and openness to sharing of sensitive information (3.9 and 3.7 respectively).

**Interpretation:** Implementation of a SP encounter pilot training utilizing real world cases and multiple forms of feedback was acceptable and relevant for participants to improve quality of care with HIV-infected adolescents. Results will be used to inform a randomized trial in 24 facilities in Kenya.

**Abstract #:** *2.005_INF*

### Prevalence and Factors Associated with Hypocholesterolemia among Adults with Bacteriologically Confirmed Pulmonary TB in Kampala

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**Background:** Hypocholesterolemia has been associated with altered immune function, possible delayed conversion at two months and increased risk of mortality. However, lipid profiles are not done routinely for Tuberculosis patients and there is paucity of data regarding the prevalence of hypocholesterolemia and its associated factors among adult bacteriologically confirmed Pulmonary Tuberculosis patients.

**Methods:** This was a cross sectional study that consecutively enrolled 323 participants at diagnosis,2,5, 6 and 8 months of TB treatment, between February and April 2016. Physical examination and an interviewer administered structured questionnaire were used for data collection. Lipid profiles were determined from fasting blood samples from participants. Descriptive statistics were used