Abstract of Master's Dissertation

No.1

Course	International Health Development (MPH)	Name	Yoshiko Takahashi
Thesis Title	Determinants of health-seeking behavior for preventing mother-to-child transmission of Trypanosoma cruzi; a retrospective study in cross-border region of Argentina, Bolivia, and Paraguay		

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Background: Chagas disease, neglected tropical diseases (NTDs) caused by Trypanosoma cruzi (*T. cruzi*), is one of the significant public health issues in Latin America and the Caribbean region (LAC). Mother-to-child transmission (MTCT) of *T. cruzi* continues to contribute to disease burden in LAC. The Gran Chaco is the quadrilateral cross-border region that spreads across Argentina, Bolivia, Brazil, and Paraguay. Generally, the region suffers lower *T. cruzi* screening coverage despite its high prevalence. Elimination of MTCT of HIV, syphilis, hepatitis B and Chagas (*EMTCT plus*) has been implemented in the region through the project of Fundación Mundo Sano since June 2018. No earlier studies assessed the bottlenecks of *T. cruzi* screening in this region. This study aims to explore the barriers and promoters for improving the current *T. cruzi* screening interventions as part of *EMTCT plus* in Gran Chaco.

Objectives: Overall objective is to assess the determinants of *T. cruzi* test-seeking behaviour among mothers in the Gran Chao (excl. Brazil). Specific objectives include: (i) to estimate MTCT rate of *T. cruzi*; (ii) to describe the coverage of *T. cruzi* screening; (iii) to identify the characteristics of *T. cruzi* seropositive mothers; and (iv) to identify barriers to and promoters for utilization of *T. cruzi* screening services.

Methods: This study employs a mixed method with explanatory design. Quantitative data were extracted from antenatal care registry databases at 11 health facilities in three countries (Argentina, Bolivia, and Paraguay), as secondary data. The databases have been created and managed by Fundación Mundo Sano. Qualitative data were collected by conducing key informant interviews with three key participants. Quantitative data were analyzed by conducting both bivariate and multivariate analyses, while qualitative data were analyzed by conducting thematic analyses. The results of quantitative and qualitative data analyses were comprehensibly interpreted.

Results: Quantitative data were collected from a total of 806 mothers. All the 806 mothers (100%) took *T. cruzi* screening test during their pregnancies. Of 806, 56 (6.9%) were seropositive on *T. cruzi*. Of 56 infants born to 56 seropositive mothers, nine took *T. cruzi* screening (16.1%).

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Of the nine infants, four (44.4%) were seropositive on *T. cruzi*. All the four seropositive infants completed necessary treatments. Country-specific seroprevalence in the Gran Chao varied from 4.3% (27 cases) in Argentina and 5.3% (3 cases) in Paraguay to 25.2% (26 cases) in Bolivia. Suspension of the project due to the COVID-19 pandemic prevented 47 infants from taking *T. cruzi* screening in a timely manner (i.e., 8-12 months of age). The results of multivariate analysis produced a significant positive odds ratio between mothers' seropositivity and living in Bolivia (aOR = 7.57, 95%; 95%CI 4.26- 13.47; P<0.05). This implied: (i) greater likelihood of vectoral transmissions in Bolivia due to higher bug infestation rate; and (ii) Bolivian health system having poorly supported *T. cruzi* screening services.

The results of semi-structured interviews with three key informants (i.e., mother, health worker, and project coordinator) identified five types barriers: (i) lack of knowledge on Chagas disease; (ii) barriers to accessing antenatal care and subsequent *T. cruzi* screening services; (iii) Chagas disease as an everyday affair; (iv) lack of community leaders' interests in Chagas disease; (v) health service operation impacted by COVID19 pandemic. There were two promoters for taking *T. cruzi* screening: (i) satisfaction with quality of health services; and (ii) pre-empting for transmission of infants. This study also identified community involvement as a key element for maintaining the program's sustainability.

Conclusion: This study shows the barriers and challenges related to *T. cruzi* testing and treatment in Gran Chaco. The prevalence of *T. cruzi* transmission in this area is high compared to the global estimates of *T. cruzi* transmission among pregnant women. Thus, further effort is needed to achieve the *EMTCT plus* framework objectives. The principal challenges are to increase community participation, and to strengthen the health system. To maintain the program's sustainability, developing a comprehensive system including community involvement should be a key to accelerate the implementation of the *EMTCT plus* framework. These findings might suggest several actions to improve the further intervention. However, further investigation is needed to evaluate the current program in each country to make a recommend for the stakeholders to reform the system at the policy level. (695 words)

* The abstract, containing the objective, method, result, and conclusion should not exceed 300-500words and printed double sided on A4 paper)