

Combined Impact of Infections and Nutritional Deficiencies on Maternal Health and Fetal Parameters in a Rural Community in Panama



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Project Overview

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Fellowship Duration:

First visit to Panama: July 18th to August 16th 2014

Second visit to Panama: December 2nd to 22nd 2014



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Fellowship Rationale

The original project on infections and nutritional deficiencies of pregnant and lactating women belonging to the indigenous Ngabe-Bugle community was done as part of my Master's thesis project, which ended in 2012. However, given the amount of obtained data and pending publications, we obtained new information proceeding from the review of vaginal smears, cytokine levels and new statistical analysis. Results regarding the incidence of sexually transmitted diseases and their interactions with other infections, micronutrient deficiencies and maternal inflammation was of particular interest, making us aware of:

- A greater risk for adverse pregnancy outcomes in this population, which has not been reported before;
- Weakness at the local laboratory level in the identification of endemic pathogens;
- Need for reviewing the local clinical protocols in the follow up of pregnancy in the indigenous population.

Objectives

- Present the new results to the community and to health authorities in charge of policy making.
- Lead a training session for laboratory technicians in the reading of Gram stained vaginal smears.
- Suggest, based on research findings, changes on the current protocol for the follow-up of pregnant and lactating women.



Background/Context

Indigenous Ngabe women live in conditions of extreme poverty. Men normally migrate seasonally to work in agriculture (coffee cultures) in other regions or to Costa Rica, leaving wives and children behind. Meanwhile mothers subsist from government aid, which is conditional on attending pregnancy follow up appointments at the health center and children's attendance at school. Our previous research had unveiled the problem of multiple neglected infections and micronutrient deficiencies in pregnant and lactating women that could be routinely diagnosed during clinical or laboratory follow up.

Activities

FIRST VISIT

- Re-establishment of connections with Ministry of Health personnel, getting authorization for field activities.
- Trip to the Ngabe-Bugle Comarca.
 - Interview with local health authorities and sharing of new results.
 - Informal presentation of the results to attending pregnant women in the largest Health Center of the area (Soloy).
- A questionnaire was designed for mothers in the community and other for health professionals.



As a result of these meetings, we identified a series of observations:

- Mothers have received health education and know, for example, that they should seek for medical consultation as soon as they suspect being pregnant, that the use of shoes might prevent them from getting sick and that adequate hygiene and clean water consumption prevents diarrheic episodes.
 - However most of them were not aware the origin of vaginal discharges, attributing it to the use of contaminated water for hygiene.
 - Despite knowledge of healthy habits, all referred to the difficulty of actually putting recommendations in place, due to lack of facilities at home (e.g. since it is expensive, wood is not used to boil water but exclusively for cooking their food)
- Local health practitioners (physicians, nurses, nutritionists, pharmacists) discussed their challenges for prevention and treatment of local diseases, particularly those of pregnant and lactating women. The main observations were:

- Lack of commitment towards the community is seen in many professionals working in the field.
- They need to be updated about the diagnosis and treatment of local diseases.
- There is a cultural gap that impairs good communication with patients

Local health practitioners suggested:

- Strengthening the links with other institutions in charge of water, sanitation, roads and education to work towards the same objectives.
- Initiating sexual/health education at the school level.
- Asking higher levels of health authorities for more training and updates in local pathologies

The results of these preliminary meetings in the field were transmitted together with our research findings in meetings with health authorities at the capital level (Ministry of Health and Program Chairs), where Dr. Kristine Koski and Dr. Marilyn Scott from McGill University were present.

As direct result of those meetings:

- The Director of Child and Adolescent Health of the Ministry of Health asked McGill University, represented by Dr. Koski and Dr. Scott, to help with the reproduction of the study in another indigenous area (Kuna Yala community)
- Agreements were made for the Ministry of Health to collect clinical data from children, adolescents, and pregnant and lactating women of the region and our laboratory will provide support in data analysis. I agreed to provide technical assistance.
- A list of suggestions to apply in clinical protocols for pregnant and lactating Ngabe women was left at the Department of Nutrition at the Ministry of Health

SECOND VISIT

In order to improve the detection of genital infectious diseases particularly among pregnant women, a workshop on vaginal examination, sampling and reading of vaginal smears was designed. We counted with the cooperation of Dr. Norma Constanza Tobasia Hege, bacteriologist, medical doctor and MSc in public health, who revised the content of the workshop and gave important feedback. One workshop on sample taking and direct microscopic examination of samples was done at the Health Center of Soloy (Ngabe-Bugle Comarca), another at the hospital that covers health services for the Ngäbe community (Gram



staining and reading of slides) and two more similar workshops took place at the capital level: one at the community of San Miguelito and the last one at Juan Diaz Health Center.

The workshops were addressed to clinicians and laboratory technicians and included:

- Clinical and ethical considerations for health personnel taking vaginal samples;
- Amsel criteria for diagnosis of bacterial vaginosis;
- Processing and reading of direct vaginal smear (normal saline solution and KOH preparation), and Gram stained samples, looking for infection due to diplococcal infection, *Trichomonas vaginalis*, fungal structures, bacterial morphotypes and Nugent score classification for diagnosis of bacterial vaginosis;
- The suggestion of a new form for reporting clinical and laboratory observations; and
- Result interpretation for clinicians.



The PowerPoint presentation of the workshop and the form for laboratory reporting were given to laboratory coordinators and trained staff for further replication. A detailed report was submitted to the Ministry of Health (these documents can be made available in Spanish upon request).

Challenges and Successes

Both trips were very productive and surpassed our expectations:

FIRST VISIT

In a short time period, many things were accomplished. The arrival of the McGill team in Panama coincided with the entrance of a new government, which required building some new relationships. We felt good receptivity of our findings and interest in making changes in order to improve the living conditions of the Ngabe community. They will depend now on financial availability and political will.

SECOND VISIT

The response to the workshops on diagnosis of genital infections was very positive. Health professionals expressed their concern on the current issues they have diagnosing genital infections and embraced the concepts learned during the training sessions. A commitment from the Laboratory Coordination of the Ministry of Health was established, in order to spread the information learned during the workshops and to include the genital examination and vaginal smear into the new National Guidelines for the follow-up of pregnant women.

Questions Raised

The ongoing collaboration between McGill University and Panamanian institutions had provided important epidemiological data in marginalized populations of the country, but by simple observation it is possible to see that the problem lies in lack of education, food, roads, ect. Social development is needed, and that depends very much on politics. In that regard is difficult for us as a foreign institution to intervene.

The fact of being Canadian gives us certain neutrality to observe and give our opinion on what we think could be done, but we are still far from providing real solutions to these communities.

With the cumulated knowledge of all past years working in this country, I think we are in the position to propose interventional studies that might help to provide concrete solutions to particular problems in the area of nutrition-parasite relationships.

Training/mentoring

Preliminary meetings played an important role in the preparation for the fieldtrip, but we all were aware that once in the field, rarely things work out as planned.

Our partners at the Ministry of Health were very welcoming and provided the space and the time of Ministry's officers so we could share our results. The presence in the field of my supervisors, Dr. Scott and Dr. Koski, was conclusive for achieving these meetings, and getting listened to at the higher levels of health government, as well as making new connections for future collaborations. Under their umbrella, I was able to communicate previous field experience and technical knowledge to the policy makers in Panama.



What did you learn?

It was a very enriching experience where I had to put in practice previous experience plus a high dosage of negotiation/diplomacy when relating with health authorities.

I learned to expect the unexpected, to be open to everyday experience, to always make room in the schedule for casual meetings with people interested in the work or other things. To value the contact with all kinds of people and to go out everyday with a positive perspective, even without knowing exactly what is going to happen.