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POINT OF VIEW

Pediatrics beyond the walls of a hospital

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Abstract

Xingu + Catu is a non-governmental organization (NGO) that promotes expeditions to the Xingu National Park region with the aim of providing health care for the indigenous population. The NGOs third expedition took place between June and July 2023, in partnership with the Department of Pediatrics of the University of São Paulo Medical School and with the participation of two resident doctors in the third year of the general pediatrics course during their elective rotation. This expedition provided 225 consultations, 75 of which were in the pediatric age group (ages between 0 and 14 years of age). The focus of the pediatric care was on weight-height development, neuropsychomotor development, assessment of global health, in addition to evaluating specific demands and complaints. The experience of providing care in a remote region, with little access to the healthcare system, which is generally not included in the traditional training of a pediatrician, is enriching. It allows the resident to be exposed to different healthcare realities and different cultures, expanding your worldview and your positioning as a doctor and human being.

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INTRODUCTION

THE XINGU INDIGENOUS PARK AND INDIGENOUS HEALTHCARE IN BRAZIL

The Xingu Indigenous Park (XIP) was created by Decree No. 50,455, in 1961, as a way to protect indigenous peoples from the advance of land sales in the region.[1] It comprises an area of approximately 3,000,000 hectares and it is located in the northeast region of the State of Mato Grosso, divided into three parts: one further north (Lower Xingu), another in the central region and another to the south (Upper Xingu).

According to Decree No. 51,084, dated 7/31/1961 of the Presidency of the Republic, the XIP had as one of its objectives to guarantee indigenous peoples medical, social and educational assistance, essential to ensure their physical survival and the preservation of their cultural attributes.[2]

THE NGO "XINGU+CATU"

"Xingu plus Catu" is a non-profit, non-governmental organization (NGO), founded in 2022 by doctors and managers with experience in providing voluntary healthcare services to indigenous communities located in difficult-to-access areas. Today, it has a multidisciplinary team of volunteers, including professionals from the areas of healthcare, engineering and administration.

The NGO maps the main health problems of the different villages in the XIP, to later offer medical care, using technological resources developed in the health field that are being tested so that the community can have access to specialized healthcare without the need to travel to Big centers. To assist the population and maintain longitudinal follow-up of patients, the project maintains close contact with the Special Secretariat for Indigenous Health (SESAI) and the Special Indigenous Health District (DSEI).

THIRD NGO EXPEDITION

The third expedition was carried out from June 28 to July 5, 2023, encompassing the villages of Khikatxi, Yarumã, Beira Rio, Ngosoko and Ngotxiré, all located in the Wawi health hub. The team had the collaboration of 31 volunteers divided into doctors, nurses, medical students, logistical support staff, photographers, information technologists and biomedical scientists. The participating medical specialties were internal medicine, pediatrics, dermatology, gynecology and obstetrics, echocardiography, radiology and surgery. (I Figure 1).

The action also had technological support from the Hilab company, which carried out laboratory tests (Figure 2), and the Tuindacare company, which offered professionals the use of a device to perform telepropedeutics). All consultations were recorded in the NGO's own electronic medical records, prepared by the "IASIS Health" company.

In addition to volunteers from the "Xingu+Catu" NGO, healthcare professionals from DSEI participated together in the action. The team was made up of 28 professionals, including the DSEI coordination, pharmacist, nurses, doctors, nursing technicians, nutritionist, dentists, logistical support, indigenous healthcare agents (AIS) and indigenous sanitation agents (AISAN). The participation of local staff was essential. They deeply understand the reality and demands of the region. They acted as a communication link between the NGO, volunteers and indigenous people. This resulted in better healthcare and project success.



Figure 1. Team movement. Carrying out assistance in a village neighboring the team's base. Photo by Ivan Canabrava.

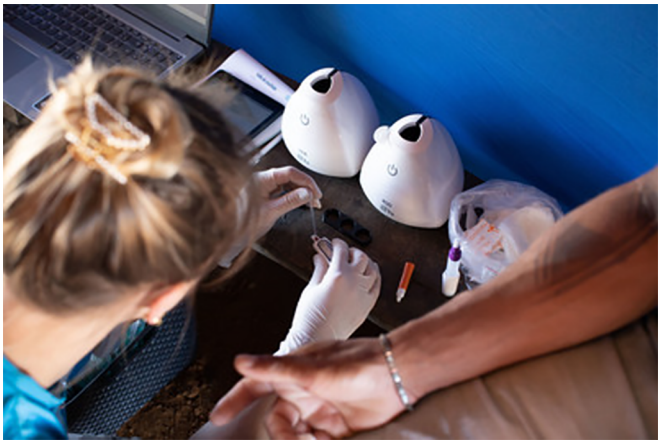


Figure 2. Collection of laboratory tests. Carried out in partnership with Hilab. Photo by Ivan Canabrava.

THE MODEL OF THE PEDIATRIC RESIDENCE PROGRAM IN BRAZIL

With the improvement of living conditions, the profile of pediatric patients has changed. There was a transition from low complexity care to medium and high complexity. The demand for pediatric specialties, intensive medical care and the use of technology has increased.[3] As a result, Medical Residency Programs (MRP) in pediatrics, in general, they are mainly focused

on the tertiary level hospital environment, which are located in large urban centers that have a diverse arsenal of human, pharmacological and technological resources.

Medical education is still very focused on the biomedical model, with its bases in the Renaissance, where the focus of clinical practice is based on the biological basis of diseases and the "mechanical" functioning of the human body. This model generates simplification of health-disease processes to the biological dimension, from the patient to their illness and from care to the appropriate therapeutic measures for the pathology in question. As a consequence, the training of healthcare professionals is based on biomedical disciplines and the logic of hospital care. This logic constructed and reproduced in the residency program often does not consider the challenges encountered "beyond the hospital walls".[4]

THE IMPACTS OF VOLUNTEER WORK

Volunteer work enables doctors to experience work environments and have contact with populations with diverse social conditions and cultural beliefs, having a great impact on their training. The more diverse the learning scenarios and interdisciplinarity rates, the greater the possibility of establishing integrality in health practices.[6,7]

Volunteering positively impacts the mental health of medical students and residents. It can be a favorable intervention for depression, personal life satisfaction and well-being. Some studies in the area demonstrates these benefits.[8] It also proves to be a powerful tool for improving teamwork and personal development, as it trains skills such as professionalism, empathy and communication skills. Furthermore, it makes the doctor more qualified and competent, enabling the application of technical knowledge in clinical practice associated with an increased sense of social responsibility.[8]

PEDIATRIC CARE IN THE THIRD EXPEDITION

The pediatrics team for the third expedition was made up of two pediatric emergency physicians, a pediatric rheumatologist from the Instituto da Criança, two third-year medical residents from the pediatrics program from the Medical School of the University of São Paulo and two medical students. (Figure 3)

The total number of patients treated in the third expedition was 225 and, among these, 75 children and adolescents aged 0 to 14 years. Before clinical care, the patients were screened for a weight-height assessment, with measurements of weight, height, head circumference and abdominal circumference. (Figure 4) After measurements, each child was classified according to their percentile based on the WHO curve for BMI and height for age. Children under 2 years of age were also classified according to their head circumference, while those over 5 years old had their waist circumference was classified according to the percentile of the Guidance Manual for Nutritional Assessment of Children and Adolescents of the Brazilian Society of Pediatrics (SBP)[5].

After screening and measurements of weight and height parameters, the children were referred to medical



Figure 3. Pediatrics team. From left to right: Fernando Tinen (medical student), Pedro Cafaro (medical student), Regina Rodrigues (emergency practitioner), Isis Ribeiro (nutritionist), Adriana Pasmanik (emergency practitioner), Adriana Maluf (rheumatologist), Anna Clara Rabha (Tuindacare representative), Nicole Ribeiro (resident physician) and Mariana Natel (resident physician). Photo by Ivan Canabrava.



Figure 4. Service structure. Photo by Ivan Canabrava.

care accompanied by a guardian and, sometimes, a translator. Despite being in a place with limited resources, there was availability of portable equipment and qualified professionals to perform biochemical tests, ultrasound and echocardiography. (Figure 5) If necessary, oral, inhaled and even parenteral medications could be administered. If hospitalization was indicated, the child would be sent to urban centers at Canarana, Querência, Goiânia or Brasília. Furthermore, with the use of telemedicine, it was possible to carry out consultations with specialists in São Paulo and, after the expedition, two of them were brought to São Paulo to better investigate their condition.



Figure 5. Ultrasound. Maria Teresa Natel (radiologist) performing an ultrasound examination. Photo by Ivan Canabrava.

We had a variety of cases treated, with the most diverse diagnoses. There was a predominance of gastrointestinal complaints such as abdominal pain, diarrhea and constipation, of which many received empirical treatment for parasitosis. Dermatological complaints were also very common, with a high prevalence of cutaneous xerosis due to sun exposure, a dry environment and low accessibility to body moisturizers.

Other very common complaints were respiratory and upper airway complaints, such as acute otitis media, pneumonia, sleep disorders and sinusitis. Diagnoses of pneumonia were based on clinical presentation, given the absence of x-rays at the scene. Despite the availability of ultrasound, the demand for this exam was high. We prioritized a child with mild respiratory distress and no improvement with amoxicillin. The examination showed a focus of consolidation. In the remaining cases, clinical evaluation was sufficient to corroborate the diagnostic hypothesis.

Several children were also brought by their parents complaining of apathy and had anemia or reduced ferritin on laboratory examination.

During the consultations, we also observed a large number of children with teeth in poor condition and referred them for follow-up with the local dentistry team. We held a brushing workshop on the riverbank for all children, distributing kits with toothbrushes and toothpaste.

CONCLUSION

The experience made it possible to create a flow of screening, measurement of anthropometric measurements, clinical care and post-consultation guidance, together with a multidisciplinary healthcare team, teaching hygiene and health habit notions that we rarely practice in our MRP. To develop the diagnostic hypotheses, broad clinical reasoning was necessary and contextualized in a lifestyle very different from the reality of patients living in São Paulo.

Another point improved was the ability to generate hypotheses for the production of scientific literature, which is quite scarce in this population. Clinical observation of anthropometric measurements associated with the survey of previously published data showed that the average height of indigenous people in the XIP is lower than that of the general population, making us question the applicability of the WHO scales of weight, height and BMI for age in this population. With this perception, it would be interesting to deepen scientific knowledge in order to propose specific curves for the indigenous population of the region.

It would be relevant to carry out parasitology exams of the feces. This would help to assess the epidemiology of parasites in villages. It would guide preventive public healthcare measures, such as water treatment and basic sanitation, in addition to therapeutic measures. It is important to pay attention to the storage conditions of the samples, due to the possibility of laboratory errors secondary to local climatic conditions. It is also worth remembering that there are specific regulations for the production of scientific work involving indigenous populations, so that prior authorization from the National Research Ethics Council (CONEP) is essential for data collection and subsequent literary production. Such standardization is important to preserve the culture and individuality of these people.

Considering the failures of MRP in pediatrics in not offering their residents different scenarios beyond the hospital environment and all the positive impacts that volunteer work can add to the doctor's personal and professional life, the experience of care in the Xingu Indigenous Park was of great enrichment for our training as pediatricians. Including this type of out-of-hospital experience in the MRP would have a huge impact on both the local community and residents.

Despite the success in obtaining specialized tertiary care for two patients, transportation to São Paulo was necessary, resulting in high economic expenses and longer travel times, which could have been saved if there had been a better distribution of human and technological resources across Brazilian territory. Therefore, it would be interesting for there to be an exchange of professionals, including residents, to regions with scarcer supply of these resources, in order to meet local demand and generate a positive impact on medical training.

The objective of this study was to report the experience. We discussed the difficulties faced and their teachings. We show the importance of this experience in the training of pediatricians, both professionally and personally. Providing quality healthcare in a place with few technological resources required us to focus on the main care tool: clinical assessment.

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