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Screening for malnutrition and vaccination status among the children of migrant Nicaraguan workers in Grecia, Costa Rica

Introduction

Nicaraguans form a large immigrant community in Costa Rica, consisting of approximately 315,000 individuals out of the country's total population of 3 million.[1] Immigrants often come seeking higher wages and a higher standard of living as compared to their country of origin. The Nicaraguan community in Costa Rica is fairly young, with 65% between the ages of 15 and 44. Overall they have a very low level of education, with 51% not having completed primary schooling. Most of the immigrants work in lower paying jobs: in construction, as domestic servants, and particularly in agriculture. Many of them are documented, legal immigrants, but in 1998, 65,000 were undocumented.

Costa Rican law provides that all inhabitants are entitled to health care (Law No. 5395.) Nevertheless, there are many factors that prevent Nicaraguan immigrants from obtaining proper health care. This is a migratory population, and many Nicaraguan agricultural workers travel around Costa Rica during the year to find work when and where it is available. The Cooperativa Victoria, the largest coffee and sugar cane producer in Grecia, estimates that 42% of its coffee workers and 55% of its sugar cane workers leave Grecia after the harvest. This poses a significant challenge to continuity of care, particularly for chronic illnesses that require careful, long-term follow-up.

In addition, there are other economic barriers to care. Some workers, particularly between harvest seasons, do not have health insurance. While the law mandates that children under the age of 7 and pregnant women can obtain preventive care regardless of immigration status or documentation, all others cannot receive preventive care. Even for those immigrants with health insurance, they often cannot afford to miss work for a routine medical visit, or they cannot afford the transportation costs associated with such a visit.

Finally, cultural attitudes in both the Nicaraguan and Costa Rican communities prevent access to care. Nicaraguans are often afraid to visit the doctor, fearing that they will be deported. Many Costa Ricans resent the presence of Nicaraguan immigrants, viewing them as individuals who consume social services resources without contributing in the form of taxes. This racism manifests itself both overtly, with CCSS employees unjustly denying care to Nicaraguan immigrants, and in more subtle ways.

These barriers to care would be expected to have a major impact on the health of Nicaraguans of all ages and genders, though little is known about the prevalence of disease or the actual quality of medical care received. In the present study, we looked at two indices of pediatric health: nutritional status and vaccination status. Nutrition is a basic component of children's health, and malnutrition increases a child's risk for other illnesses. Poverty is a risk factor for malnutrition, both because families often cannot afford nutritious food, and because poor sanitary conditions lead to an increased rate of parasitic and diarrheal illness. Vaccination is one of the cheapest and most effective health interventions in modern medicine. It is important for the individual children who are vaccinated and also protects the entire community by preventing the propagation of epidemics ("herd immunity.")

[1] Rosero and Cols, National survery on reproductive health and migration, 1999-2000 (ESRM 1999)

The objectives of the present study are: (1) Document the prevalence of malnutrition among the Nicaraguan pediatric population; (2) Identify children who have not received complete vaccination; (3) Refer malnourished children to the Grecia clinic for medical care; and (4) Provide vaccines to children who are lacking them.

Materials and Methods

A team consisting of 3-4 North American medical students, a Costa Rican Physician a nutritionist and some other members from IHCAI Foundation, and an ATAP affiliated with the CCSS in Grecia, traveled by car to the residences Slums of Nicaraguan agricultural workers. All of the children screened lived in housing provided by the "*Cooperativa Victoria*" for its employees. After obtaining consent from the parents, we took demographic information (name, gender, date of birth, years living in Costa Rica) and anthropomorphic measurements (height, weight, and head circumference.) Vaccination status was obtained either by written record ("carnet") or by history from the mother when written documentation was not available. Each child received a brief physical exam, conducted by a student and later reviewed by the doctor.

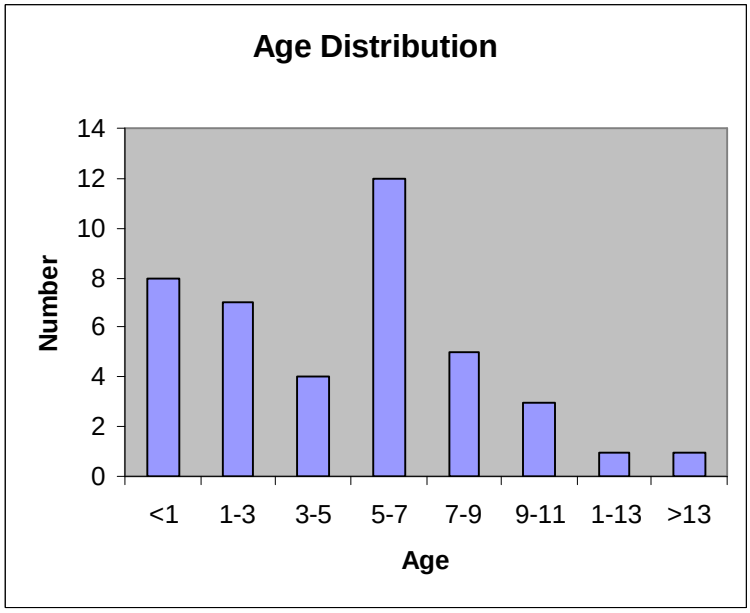
The weight and height of each child was evaluated on site by plotting on the growth curves provided by CCSS. Children who were underweight by weight-for-age or weight-for-height were referred to the clinic. In addition, referrals were made for any children with other suspicious physical findings or a concerning history of recent illness.

The ATAP provided vaccines on site for children who were not up to date. All children at the site were given mebendazole for antiparasitic prophylaxis, regardless of their individual nutrition status.

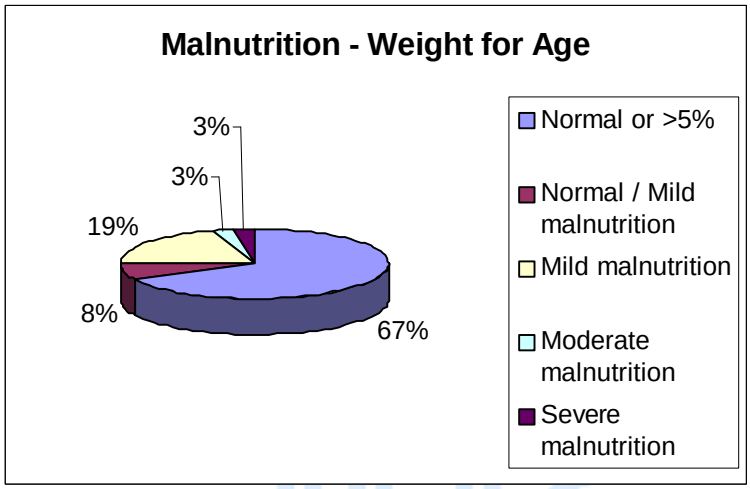
Results

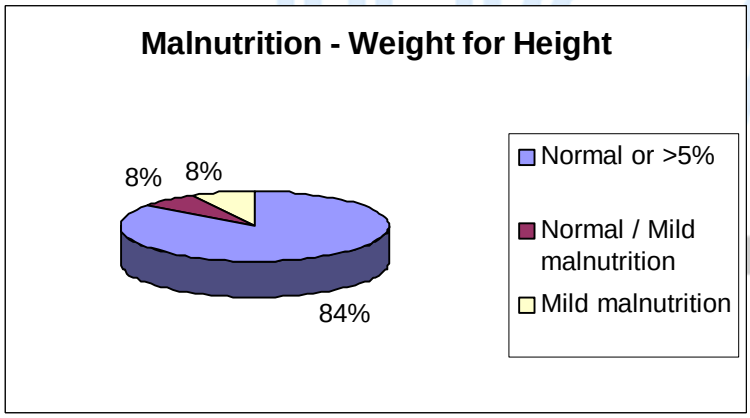
Forty one children between the ages of 2 months and 13 years were screened on 3 mornings (Feb 20, Feb 28, and March 6, 2002). 14 children (37%) were referred to the clinic: 8 (57%) were referred for malnutrition, and 6 (43%) were referred for other reasons (such as history of frequent asthma attacks, history of recurrent diarrheal illness, heart murmurs, suspicion of anemia.)

The age distribution of the children is shown below. 31 (76%) of the children were aged 7 or younger. 49% were male.

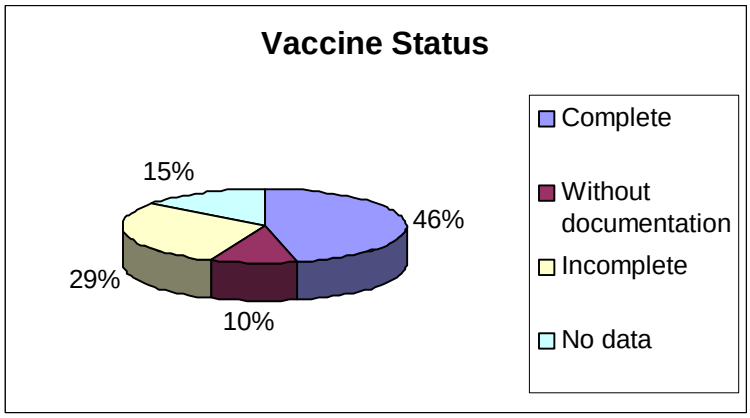


Malnutrition was evaluated both for weight-for-age, and weight-for-height, which is more specific but less sensitive than the former. By weight-for-age, 36% of children were underweight, mostly mildly. By weight-for-height, 16% of children were mildly malnourished.





Results of the vaccination status are shown below. Twenty Nine percent of children had incomplete vaccination histories. Another 10% did not have documentation but according to the mother had received all correct vaccines.



Conclusion:

In the screening of 41 children, between 16% and 33% were clinically malnourished (depending on the criteria used.) 29% had incomplete vaccinations. The prevalence of childhood malnutrition is striking, given the relative prosperity of the city of Grecia. It is due to the combination of poverty and the obstacles to care described in the Introduction. Vaccination is a basic component of pediatric healthcare, and the fact that so many children's vaccines are not up to date demonstrate that these children are receiving substandard medical care.

Ways to expand this project beyond the simple screening include:

making sure that children who are referred to the clinic actually receive medical care

developing an nutrition education program for the Nicaraguan community, taking into account their nutritional requirements and limited financial resources

pressuing the Cooperativa Victoria to improve wages and living conditions for its agricultural workers