The Diabetes & Anemia Project
Muttil, Wayanad, Kerala, India
University of Chicago
Won Huh & Aparna Nutakki, United States, University of Chicago

Section I: Project Goals & Execution

Project Goals:

Our project aimed to conduct diabetes and anemia screenings for the tribes of Wayanad, Kerala in order to determine the prevalence of the two diseases among the tribal population. We intended to provide preliminary data for the Swami Vivekananda Medical Mission to develop prevention and treatment centers for diabetes and anemia at the hospital. No other funds contributed to our project.

Project Details:

On our first day in Muttil, we met with Dr. Sagdeo, the hospital director and our mentor for the project, who introduced us to the hospital staff and gave us a tour of the facilities. Our equipment had been purchased previous to our arrival such that we were able to begin work immediately.

While we had conducted Skype conferences with Dr. Sagdeo in developing our proposal, perhaps the most significant departure from our expectations for this project was that the remoteness of our location was exaggerated from what we had anticipated. Thus while we had accounted that language and cultural barriers would affect our work, they proved to be more influential than predicted in shaping our interaction with the hospital community. Despite displaying an effort to get to know the hospital staff and to pick up words in Malayalam, the local language, a distance was placed by the staff between themselves and us on our first day that remained perceptible throughout our four-week stay. Accordingly, we encountered some resistance from the two nurses assigned by Dr. Sagdeo to assist us in our project; however, though they were initially hesitant to allow us to independently carry out our project, we were gradually able to transition from passively copying the data at a side table while the nurses interacted with the patients, to both administering the tests and collecting the data ourselves.

In addition to the conversational difficulties imposed by a language barrier, we realized as our project progressed that our overall communication with the hospital leading up to and during our weeks in Wayanad was disappointingly lacking. We were unprepared for the scarcity of food options beyond the hotel in which we were lodged, and were only informed upon arriving that the hotel restaurant was expected to serve as our primary source of meals for four weeks. Furthermore, day-to-day communications varied such that there were mornings in which, without notice, our transportation to the hospital did not arrive, and upon calling Dr. Sagdeo, we were told that we would not be coming into work that day. Still, despite the minor obstacles and events that strayed from our original proposal, we believe our project altogether was a success—we were able to meet our goal of 500 patients at the end of four weeks, who came to us from a total of seventeen tribes.

We generally conducted screenings at the hospital from 9am-2pm six days a week, and spent alternating afternoons from 3pm-7pm traveling out in ambulances with a team of doctors and nurses to provide medical attention for those tribes without means of accessing the hospital.

In order to determine the prevalence of diabetes and anemia among the tribal population, we measured resting blood sugar (Rbs) and hemoglobin (Hb) levels; a sterilized needle was used to obtain a blood sample from the patient's fingertip, and a drop of blood was transferred onto a test strip inserted into a glucometer or hemoglobinometer. We tested blood sugar levels for patients ages 40 and above, and hemoglobin levels for ages 20 and under; individuals between ages 20-40 were tested for both glucose and hemoglobin levels. For each patient, we recorded his/her name, sex, age, tribe, test(s) administered (Rbs, Hb, or Hb + Rbs), and test result(s). At each tribal colony to which we traveled, we set up mobile stations with our equipment and administered the same procedures as carried out in the hospital.

Our findings showed that, of the 280 patients we screened for diabetes, only 9.6% could be diagnosed as diabetic (5.4% of the total 500 patient sample). The low percentage of diabetic patients in the total screened population surprised us, as we had anticipated a higher prevalence of diabetes in a rural area such as Wayanad. Our results can perhaps be attributed to the tribes' agricultural lifestyle, as we observed both women and men working in paddy fields as well as tea, coffee, banana, and rubber plantations.

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In regard to anemia, we discovered a need to distinguish between two types of anemia present within the tribes—sickle-cell anemia, which is a genetic disorder, and anemia caused by iron deficiency. Of the 261 patients screened, 56.2% were diagnosed as anemic, accounting for 42.4% of the total 500 sample population. We discovered that the proportion of anemic patients was divided fairly evenly between both sexes, and that iron deficiency was the major cause of anemia among both females and males, accounting for 90.7% and 91.4% of the anemia, respectively.

Using the results from our data analysis, we focused the outcomes and future goals of our project on treating diabetic patients and combating anemia caused by iron deficiency. Diabetic patients were immediately referred to a doctor for consultation and prescribed the appropriate medication; in addition, they were encouraged to join ongoing health education programs at the hospital aimed at educating the tribal population on the importance of a healthy diet. The hospital had already established a ward for treating sickle-cell anemia, to which patients that we diagnosed with this disease were referred.

In the short-term, we can confidently assert that the Davis Projects for Peace allowed us to help 500 patients. In the long-term, we hope that the Swami Vivekananda Medical Mission will continue to build on our initiative and sustain diagnoses and treatments of individuals with diabetes or anemia; the data that we were able to collect and analyze will help the hospital monitor the spread of the two diseases among the Wayanad tribal population, and expand upon and modify its health awareness program to address the needs of the tribal community.

Section II: On Peace

Davis Projects for Peace provided us with a truly once-in-a-lifetime opportunity to reach out in a meaningful way to some of the underserved populations that we've been interested in for a long time. Because it was our first time designing and implementing a large project from start to finish, we encountered situations that our original proposal neglected to consider; however, problem-solving to overcome these obstacles only contributed to an incredible learning experience overall. The difficulties that we encountered regarding communication with the hospital in fact further elucidated the necessity of collaboration and conversation for improving the quality of life of a group in need. Despite the relatively short duration and small impact of our project, we hope that the progress that we made in our four weeks at the Swami Vivekananda Medical Mission has planted the seed for a lasting conversation regarding the needs of the tribal population, and what the hospital and the Wayanad community at-large can provide.

Personal Statements:

Implementing our project made it clear to me that, if peace is most simply defined as the cessation of violence, then in order to achieve it, we need not only to combat direct violence, but also the violence embedded in the structure and culture of a community, a violence I saw exemplified in the disparity in healthcare available to the tribal population relative to the more developed regions of Wayanad. I am grateful to have been able to engage with this cause and witness how medicine can be employed as a tool to establish a cooperation and understanding between groups for the spread of peace.

-Won Huh

Peace is the harmony that exists when all people have equal access to the basic necessities of life, such as healthcare. Peace can only be spread when we recognize that such essentials should be the standard and not a privilege. This project allowed us to bring healthcare to the tribal populations of Wayanad, Kerala; a chance to bring the underserved populations closer to having the same access to healthcare that we enjoy, and may take for granted.

-Aparna Nutakki

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finger-pricking a patient to measure her blood glucose level.

a doctor writing prescriptions for young patients at a tribal colony during one of our mobile unit outings.

nurses handing out medicine to patients from the back of the ambulance, using the vehicle as a makeshift pharmacy.