Abstract

Mexican Exposures is a collaborative study with researchers from ELEMENT, a team of U.S based researchers and Mexican public health officials engaged in a Mexican birth cohort study focused on chemical exposures in Mexico City. Mexican Exposures seeks to discover possible looping effects on the relations between ELEMENT participants and their environment, through a bio-ethnographic approach. ELEMENT’s objective is to study the effect of chemical exposures (such as lead, mercury, and fluoride) on fetal and child growth and neurological development. ELEMENT researchers are studying the impact of exposure by analyzing samples of blood, urine, hair, nails, breast milk, and teeth from 2,000 participants recruited from Instituto Mexicano del Seguro Social clinic services. The PI of Mexican Exposures, Elizabeth Roberts has completed two years of ethnographic fieldwork in working class neighborhoods of Mexico City, observing six different Mexican families who are participants in ELEMENT’s biological sampling. The laboratory team is engaged in qualitative coding analysis of Robert’s field materials including notes, transcripts, and photos in order to make connections between health and life conditions. The UROP students reorganize the samples found in a storage facility in the School of Public Health Building II. Overall, both Mexican Exposures and ELEMENT hope to develop understandings of health outcomes for future generations in Mexico.

Introduction/ Background

• Interdisciplinary research project combining biology and ethnography in a collaborative manner
• Collaboration with ELEMENT (The Early Life Exposures in Mexico to Environmental Toxicants) a team of U.S researchers and Mexican health officials
• Existence of a pattern of a looping effect between organisms and their environment detected in biological analysis
• Investigation of how environmental and social factors impact the health and daily lives of working class families in Mexico City neighborhoods: Barrio Norte and San Nicolas
• Biological samples collected in the form of nails, hair, serum, blood, and urine from 2,000 participants recruited from Instituto Mexicano del Seguro Social clinic services
• Goal: to pioneer a new field of holistic bio-ethnographic approach to health patterns found in specifically pregnant ELEMENT participants

Methods

• Elizabeth Roberts returned from Mexico with two years’ worth of field materials including notes (also those of her assistant, Vanessa Cravioto), photos, and transcripts made from first-hand observations
• Atlas.ti, SmugMug, DropBox, and Ancestry.com are computer programs used to perform qualitative analysis on field materials
• Camilo Sanz, post doc of MEXPOS, designates a file to each student in the lab for them to code themes, behaviors, and other observations within the field materials
• Rebecca Tutino, biorepository assistant, manages the thousands of biological samples held at temperatures of -30°C to -80°C in the SPHII freezer farm
• ELEMENT biological samples are handled in different ways: finding a sample’s location within a specific freezer, volume checks, reorganize samples in boxes for distribution, and create new spreadsheets containing the samples’ information

Results/ Conclusions

This research project is still in the lengthy stages of data analysis, so only patterns in the field material and biological samples can be observed. Below are several observations made to connect the biological and ethnographic research:

[1] Urine samples from both children and pregnant women contain a general yellow to orange color, indicating that the water consumed is below suggested levels.

[2] Cravioto watching the parents hand their children food to eat on the combi or parents buying unhealthy foods (like chicken nuggets and pizza) specifically for their children suggest ideas of transmission and parents passing on dietary habits to their children.

[3] Roberts noting the compact housing situation of those living in Barrio Norte, as extended family members living in apartments with a consistent flow of people helping around the house, raising children, and sleeping in the same bedrooms.

The data incited a couple questions for further research to understand the looping effect and causality of health patterns in participants.

• To what extent do parents have an influence over the choices children make with their dieting choices?
• How does rooming in close quarters with extended family and neighbors affect the dietary patterns of pregnant women (will more people helping cook and clean mean less work for healthy foods or more people means less food to go around)?