

October 2019 Community Meetings

General Findings for all Communities:

Introduction & Thanks. Where We Are Today

Thanks: to all of you here today.

Reminder of who we are and what we have been doing:

- Undergraduate prize-winning team for the LA Region Presents New Global Learning Initiative:
- Intro 4 students by name;
- Supported by 3 faculty members (Rico and Peter here today; Tim to return in mid-November more anon))
- And by GRA doctoral student Alfonso Rojas

The project comprised a household health needs assessment (health issues and illnesses) among rural communities; the extent to which such needs are being met public and private health providers; and also included new areas of data collection about mental health, stress and emotional anxiety; community organization and participation; and about the ways in which the dwelling environment and physical dwelling conditions affect health and wellbeing, including taking measurements of air and water quality in the home.

From the outset the University was privileged to have the opportunity to work with the FCP and with the Fondo Mónica Gendreau (flag especially Paty and Alejandro here); and as we moved into the fieldwork to collaborate closely with faculty and students at the BUAP.

Students and Alfonso here for 10 weeks over the summer (late May into early August) along with the three faculty mentors who came at different junctures, and working with students from the BUAP conducted almost 250 household surveys interviews across four communities; a number of meetings with health workers, community leaders, etc.; several focus groups and five detailed dwelling and lot case studies. Many of you had first-hand experience of one or more of those meetings, and we are enormously grateful to you for the time and patience that you gave us to answer our questions.

We worked in three rural pueblos: (SAN FRANCISCO XOCHITEOPAN.; Colonia Agrarista Emiliano Zapata); Santa Ana Coatepec [a mixed rural and semi-urban community]; and an urban colonia

popular in Atlixco [Colonia Flores Magón]. We chose the latter so as to be able to compare rural health conditions and levels of treatment with those of an urban neighborhood, where we anticipated that levels of bienestar and access to health care would be better. Once again we would like to thank our collaborators at the FCP and Paty and Alejandro in particular for introducing us to you all' and to members of the cabildo and the *ayuntamiento* of Altixco for helping us with introductions to Colonia Flores Magón.

So, what did we find out? In this introductory overview we will draw attention to some of the major findings (and differences) that we have begun to identify as we develop the analysis and our Final Report which will be completed in December.

After presenting the overview we will, if we may, spend some time describing three or four of the particular issues that we identified here in this community, with the hope that we might open up an ongoing conversation with you all about how such challenges might best be addressed going forward...

First, though, the four-community overview:

On Health Conditions, Access to Health Care and Your Principal Concerns

As we always anticipated the principal illness and health challenges across all communities were:

- Chronic Illnesses
 - Diabetes
 - All communities stated that diabetes was one of the top 3 health issues in the community.
 - It was also one of the top three chronic illnesses in households
 - Greater than 20% of respondents in all communities stated that they had 1 household member with diabetes.
 - In Flores Magón, the percentage was 39%. Very large uptick. (Potentially due to access to healthcare services and therefore ease of diagnosis. Just a potential reason; also, maybe the fact that somewhat better off; less physical work/exercise associated with the *campo*)
 - Hypertension
 - In all communities, hypertension was one of the top three chronic illnesses.
 - Linked to diabetes and stress.

- Emphasizes a need for access to healthcare services, including regular blood glucose checks and improved access to medicines

- With the exception of Flores Magón (in the city) and Santa Ana (closer to Atlixco and better communicated), the rural communities have real difficulties getting to places of treatment, both because of lack of frequent transport, the cost, and time lost. Outside of visits to local Casa Salud, on average it takes members of rural pueblos * minutes/hours each way get to clinic or hospital treatment (Maybe flag/highlight any outliers -- Agrarista e.g. with walking to start...)
 - In the Xochi, a large percentage walked to appointments followed by using a car, either borrowed or personal.
 - In Agrarista, the largest percentage used car, either borrowed or personal, followed by walking. The time, distance, and lack of public transportation was large barrier to care.
 - In all community's access, including access to medical appointments and medicines, was a problem in accessing healthcare services. Likely related to the perceptions around medicines present in the clinic, distance traveled to see a provider, and the costs associated with privatized healthcare that many people utilize.
 - Across the communities, many people stated that it was very difficult to receive healthcare services. However, in Colonia Agrarista and San Francisco Xochiteopan, the perceived difficulty in receiving healthcare services was much higher. In Colonia Agrarista 42% stated it was very difficult and only 20% said this in Santa Ana.

- Associated with those challenges of getting to treatment a major complaint about health care from public institutions was less the quality of treatment but the access to medicines.
 - The top three perceived challenges/issues to accessing healthcare in all the communities were diabetes, access to healthcare services, and access to medicines. The mirroring of issues, emphasizes a need for across the board systems and policies that address access issues and increase preventative health measures, including education.

- Indeed, we were surprised to find many of you go to a private doctor (approximately 50% in all communities), despite many having access to *Secretaria de Salud* clinics and hospitals. As it was explained to us, you choose to do because it is: a) more convenient (local or less time waiting); b) preference of seeing a doctor whom you know and trust;

and c) because the costs of medicine is always going to be the same - whether private or public treatment. There is little point in going to a public institution, therefore.

Nutrition

- *Nutrition* Levels are also closely associated with health and wellbeing. Meat, fruit and vegetables were more regularly consumed in the slightly better off communities of Flores Magón and Santa Ana Coatepec, whereas in San Francisco Xochiteopan and Agrarista meat consumption (chicken usually) was infrequent, and fruit and vegetables while more likely to be consumed at least once a week, it was less frequent than in the other two urban and semi-urban communities. A focus group in San Francisco Xochiteopan underscored the basic diet of beans and tortillas throughout the year, but also the rainy season the opportunity of gathering *alaches* and *queletes* from the campo. Those with their greenhouses were able to complement their diets more regularly with *hortilizas*.
- But what about sugary drinks and snacks which are well known to be associated with overweight and obesity levels and poor health? Findings here were quite dramatic:
 - In all four communities sugary drinks are consumed, but it is especially high in the Santa Ana and Flores Magón (over 30% daily or 4-5 times a week), but was considerably lower in Agrarista (23%) and in San Francisco Xochiteopan (only 14% did so), probably because they could not readily afford such refrescos. Respondents were widely aware of its being unhealthful, but drank regardless, sometimes -- even where they were diabetic
- Unhealthy snacks were rarely consumed especially in the poorer communities, largely because of their cost and associated poor health causes

These findings do not necessarily lend themselves easily to things that you should be doing locally, and starting with Dr. Mercer's return in November and once we have our final report, we will be discussing these findings in detail with our colleagues at the BUAP, and with the *Secretaria de Salud Puebla*, who are very interested in learning hearing our findings. Hopefully that may be a first step to improvement of institutional health care and access. We also believe that it is important to share these findings such that you all know that there is solidarity in the issues found. We would also like to hear if you have any comments or other things that you would like to bring up.

On Mental Health Care, Anxiety and Stress

In the USA and elsewhere it is widely recognized that mental health and stress are intimately connected to poor health and lower levels of wellbeing. However, while such connections are also widely acknowledged by doctors in Mexico, there are very few studies that measure stress and mental health conditions upon health outcomes in rural villages or in poor communities such as *colonias populares*.

Our findings are especially important therefore:

- Perhaps because of the 2017 earthquake and the toll that it took, many households expressed ongoing sadness about the aftermath, and for *% it continued to create moderate to high anxiety levels.
- We used several measures to gather data about two indices of Stress and Depression, scoring low to high on a four point scale (0[non] to 3 [high], combining these two measures we found average scores of 7-8 in three communities (of a 16 point scale) indicating a moderate level of stress across the community, and given that this is an average, a minority of households experience severe stress. Specific scores for anxiety (0-6) and depression (0-6) were recorded through our survey and were generally low (1.5-2.0), but again, a minority of households clearly are subject to quite severe levels of anxiety and depression (these will be broken out in later analysis as frequencies above specific “problem” level). Among the rural communities Xochiteopan scored highest on all scores (overall stress, anxiety and depression: 7.754/16; 1.81/6; and 1.63/6 respectively); while Flores Magón overall showed the highest levels [8/16; 2.2/6 and 1.63]. Bottom line? Overall not especially troubling, but also clearly indicative that there are moderate to high levels of stress, anxiety and depression in all communities.

The implications are important, since it suggests that next steps may be to: a) recognize that such stress and depression is quite widespread and to identify the common triggers of such conditions; and b) to consider ways in which the community itself might organize to help alleviate such triggers.

On Community Problems and Community Organization

We asked a battery of questions about how respondents viewed an array of societal behavioral problems in their community: domestic violence, alcoholism, drugs; smoking (tobacco); insecurity etc.

Here we cannot report on all of those dimensions, except to report one or two findings. Moreover, these are sensitive areas of enquiry, and asking about perceptions of community wide problems such as domestic violence; alcoholism, drugs are sensitive, we did not expect to find much evidence.

- However, we were surprised at some of the levels of reporting that we found: often around 50% of households identifying one or more of these dimensions as being “a real problem within the community”. In some communities reporting was high: Flores Magón reported high (87% of households), and alcoholism (90%) or more saying that levels were a problem.

- Some also reported on domestic violence as a problem, although this was probably the most sensitive issue discussed. In Xochiteopan it was just above 50% of respondents reporting.
- (Maybe flag/highlight any other sig data and or outliers)

Only in Flores Magón was insecurity a major perceived problem, along with other sidebar issues such as the contamination (air quality from Popo) and the pollution from the stream quebrada running along one side of the colonia.

When asked about their perceptions of the community to pull together and respond to a variety of situations, community shared common values, pride in their community, etc., positive scores of “agree” or “strongly agree” were invariably high (80% or higher). That said Xochiteopan consistently scored a little lower and expressed the lowest level of optimism about the future (in 15 years time). Agrarista residents were super optimistic, however, (84% predicted “better”).

Household Nutrition, Dwelling Air and Water Quality

As mentioned earlier, we used handheld instruments to measure air quality (particulate matter in the air and CO2 levels); and chlorine presence in drinking water. Exterior air quality is often affected by emissions from the volcano and all communities have a heightened awareness, although this does not appear to extend to interior air quality within the dwelling, which is often not “good” and may range from the unhealthy for those sensitive to air quality (asthma etc.) to “moderate”; “unhealthy”, “very unhealthy”, and even “hazardous” – especially in the *cocina* where *leña* and *carbon* are in widespread (and preferred) use. Wherever possible (and permitted to enter rooms) we took readings in the *cocina*, living space, patio and bedrooms. Findings were interesting:

Air quality was poor across the board on the small particulate measure - around 60% of dwellings had at least one room/area in the dwelling with poor air quality and was highest in Santa Ana (71%); and in Colonia Agrarista which registered 60% poor or unhealthy, and an additional 7.14% as “hazardous”. Much of this poor air quality relates to smoke from cooking with wood. In these same two pueblos (and especially in San Fco. Xochiteopan) we found that plastic bottles and cups were often used as a starter accelerant (observation and focus group).

- Levels were a little better in Flores Magón, where gas (propane) was widely used alternative, albeit often alongside wood and carbon, but even here the poor and unhealthy levels were close to 60% and the poor CO2 levels were higher than elsewhere (70% of cases).

- CO2 levels were often unhealthy (although rarely above “Moderate”). On average around 41% of dwellings recorded “poor” CO2 levels, with a further 7% in the “unhealthy Level. Poor CO2 levels are largely a result of poor ventilation (inadequate venting [bath/shower rooms] or closed windows in bedrooms or sala areas.
- Surprisingly perhaps, some of the poorest air quality conditions were found in Santa Ana
- That said, most respondents seem to be unaware of the poor air quality, with over 70% reporting that they were very satisfied with the air quality in their home! Most were also satisfied with air quality in their community (over 60%, except in Flores Magón where only 30% were very satisfied

Fertilizer storage. Agricultural communities use fertilizers, herbicides and *fosforo de aluminio* insecticides to store their maize. Safe storage of these *costales* and chemicals is important since they, too, can be hazardous to health (as they are in application in the fields). As part of the dwelling survey we asked about storage and awareness of the importance of safe storage:

- In the three agricultural pueblos where we asked the question the majority of households recognized the potential hazard (58% in San Francisco Xochiteopan. And 71% in Santa Ana), but while there was a much lower appreciation of the risk in Agrarista (44%), over 60% in Agrarista and Santa Ana stored them in a dedicated space, compared with San Francisco Xochiteopan where only 48% did so.
- In Agrarista we found more cases of storage in bedrooms, *sala* etc., but it was also not uncommon elsewhere (case study Marcelino’s sleeping area). This also contributes to very unhealthy and even hazardous air quality (*ibid*).

Water Quality and Drinking Water

- All communities had piped water supply, ostensibly chlorinated. Private wells were also a feature of Santa Ana. In the two pueblos other water sources were also important (rainwater; storage tanks for drinking and for animals whether rain fed or piped supply). We sought to measure chlorine levels, but the accuracy is difficult to ascertain since water from the tap to a tank, may lose its chlorine level if it stands there for a significant time. That said we found levels of chlorine in all *llave* samples, but they were very low (average 0.03 Agrarista and San Francisco Xochiteopan) and rose to 0.12 and 0.15 Santa Ana and Flores Magón respectively.
- Most people were satisfied with the color, taste and smell of their piped supply. In both SA and Flores Magón did people responded negatively to the phrase that they were satisfied with the taste of the water and in Santa Ana they cited that it tasted strongly of chlorine. In both these communities used water from other sources – in Santa Ana from a well in their yard and bottled water, and bottled water in Flores Magón. That said, the large majority felt that the tap water quality could and should be improved.
- In the two pueblos bottled water was rare (cost); but it was widely used in Flores Magón and also Santa Ana

Dwelling and Lot Conditions

We gathered detailed information about building materials, number and use of rooms etc., and these varied across the communities. Poorer materials (often lamina de carton) etc., were more likely in the San Francisco Xochiteopan. And Colonia Agrarista, although the latter were also quite frequently used for storage and animal compounds in all communities. Here we do not provide detailed data but instead point to certain areas where the physical nature of the dwelling and the lot environment may present conditions that are inimical to good health:

- In San Francisco Xochiteopan. Almost 1/3 (28%) reported having at least one room without natural light – significantly lower than in the other communities (in Agrarista it was half that – at 14%).
- As expected in agricultural communities most households had farm animals of one sort or another (most commonly goats, chickens, turkeys etc.), and while we did not record in our survey of the proximity of animals to members of the households, we did explore this in our intensive case studies. In one case, animals (chickens largely) freely ranged into the single room dwelling, which also had a dirt floor, presenting serious potential health dangers. But in other cases that we observed, there was thoughtful separation of space between farm animals and people.
- Most frequent problems cited for kitchens were humidity and rain entering; smoke and then pests.

Santa Ana Coatepec Findings

For the **health** section, the two most interesting findings were within the use of combis and then with dogs.

- Combi use was the highest within this community and looked to us like best practice.
 - Is it actually a good system? What makes the use so high?
- We also wanted to report back regarding the dog focus group. The primary themes to have come out of this is that:
 - Dogs are considered to be a health issue due to how many there are (more than the population of the community), how there's some lack of resources for adequate feces clean-up, and how they're often aggressive.
 - Some suggestions to better the situation were more public health talks about proper care of dogs (vaccines, etc.) or money fines for those that don't participate in proper care.

Air quality overall was not that good, poor even as CO2 levels were the second highest within the communities.

- Most had reported that they primarily used gas to cook with instead of wood.
- Gas is better to use as its wood emits a lot of smoke that is bad for health.
- Any thoughts as to why the air within this community wasn't that good?

Chlorine levels, regarding water quality, were reported to be high as well on average it was at 1 ppm with 58% of the community believe that the water needs to improve.

- While it may be high, the chlorine levels still aren't optimal.
- To better get rid of the taste and smell of chlorine, boil your water or refrigerate it for some hours. Doing both methods (boil, then refrigerate) should better the effect.
- It isn't recommended to store water for long periods of time so it should be replaced and not add new water to old water.

Alcoholism was a major note within the community to where we had a focus group over it. 86% of the community perceived alcoholism here to be a problem.

- Youth were identified as the large population that drinks more than other groups.
- It is largely a security problem as well.
- A solution that was identified is to try and change the culture around drinking and alcoholism starting with the parents of the heavier drinking youth.

Xochiteopan Findings

Air Quality overall was poor. 98% of respondents used leña and carbon as their cooking fuel. As you all know, many women spend many hours at a time tending to the fire and cooking the meal, which in turn increases risk of lung disease

- It is also interesting to note that in Xochiteopan, one of the highest reported chronic illnesses among respondents was asthma. Asthma can be exacerbated by poor air quality.
- Since women are often the ones cooking, they are more at risk for these diseases because of the cooking practices
- Some mentioned that young children and also present when the wood and carbon are burning, which increases the risk of developing or worsening respiratory problems.
- Some people also mentioned that they use plastic as an accelerator. When plastic is burned it releases toxic chemical fumes that are bad for your health and the health of your family. The damage it does to one's lungs and bodies is not worth the risk.
- Poor ventilation was also witnessed through cooking in closed off spaces without air flow. The lack of ventilation causes particles and gases from cooking to remain present in the air for hours. Proper ventilation, like opening windows, doors, and removing tarps and metal siding can greatly improve air quality

Storage of Fertilizers is an issue that can impact health due to their combustibility and chemical nature.

- Fertilizers are chemicals that can be hazardous to health when they are not stored properly.
- In Xochiteopan,
 - 48% of respondents did not store fertilizers in a separate space
 - 28% of respondents stored them in a dwelling room or kitchen
- It is important to store these chemicals properly and away from heat as some are combustible.
- For improved storage, they should be placed in a separate room, away from living or cooking areas. They should also be stored in a dry and even area.

Mental Health was found to be an important issue in this community. Stress, anxiety, and depression were seen here in the highest rates among community members.

- Stress, Anxiety, and depression were the highest within the rural communities.
- Earthquake may still be impacting the community.

- How can the community better support each other?
- What steps can each person make to reduce the stress of a neighbor or friend?
- Community groups- talk about stress, caring for elderly family member, grief, having child with disability

Colonia Agrarista Findings

Healthcare access was burdensome in the community, especially because it was the only community without a patient provider in the community.

- Time spent getting to health appointment
 - Time spent getting to the clinic was much longer in this area
 - Time is related to lack of access to transportation and distance from Atlixco.
 - Problems tied to finding: Costs related to travel, lack of access to car= higher burden, lack of utilization of healthcare facilities in the community
- Private vs Public utilization
 - 50% of people utilize private practitioners as primary care providers
 - shows that there is dissatisfaction with the services available in the community -> ties into major problems in the community (access issues and lack of medicines available)
 - Lack of satisfaction with health services
 - People are not highly satisfied with healthcare services.
 - People talked about lack of medicines, removal of prospera, lack of confidence in the provider in the clinic
 - Community discussion: Opinions on why this is? What can be done to help mediate this problem?

Water Quality was seen to be large problem in the community, especially during rainy season.

- During the rainy season (June-October), the water arrives dirty due to rainwater infiltration and from the barranca. Many do not consume it during this entire season; instead they drink rainwater collected in their cisterns or other storage containers.
- Rainwater is not receiving any treatment, cisterns and containers may be dirty
- Rainwater should be boiled and filtered. Boiling kills off pathogens and filtration removes chemicals, dust, larger particles, etc. Cisterns and storage containers should be properly disinfected

Lack of Adequate Nutrition was also a commonly found in the community.

- Majority rarely consumes any type of meat, max is 1-2 times/wk.
- Fruits & vegetables should be in the discussion- encourage consumption and possibly growing own (invernaderos)

Air Quality was found to be poor and the PM2.5 was the highest of all of the communities.

- Mean PM2.5 was unhealthy; highest of all communities
- Do estufas ahorradoras work well?
- Issue: there was a higher number of kitchens that were more closed off than in Xochiteopan, for example (purely observation from my part, no real data). Some kitchens here were “real” rooms with adobe walls rather than tarps or metal sheets; walls were stained black from the smoke from leña.

Mental Health was said to not be that high of a problem - matches with the data with stress, depression, and anxiety

- Could be one of the more positive notes about the community
- Still shouldn't erase the fact that the stress levels are moderate within the community (avg. score: 7.754)

Community Cohesion was the largest of all of the communities.

- Should be stressed that the community has a lot of resilience, pride, and hardworking people who can be action leaders.

Flores Magón Findings

Diabetes was found to be a large issue among households in the community

- Finding: 40% of respondents have a household member with diabetes
- Discussion: High number of respondents had family members with diabetes. Leads to complications and is connected to other health problems
- Community Discussion: Is it hard to get a diagnosis? Do they know the early symptoms? What are their perceptions about insulin?

Hospital utilization is very high in this community.

- Finding: 35% of people utilize the hospital as a primary care provider
- Discussion: Much more people in this community use the hospital as compared to other communities.
- Community Discussion: Why do people here use it more? Better services? Closer to the community? Confidence in provider? Do they go see one provider regularly or is it random?
- Satisfaction with healthcare services in the community- wording of the question?
- Finding: 70% of people are dissatisfied with the services in the community? Is this because they are dissatisfied with the services IN Flores Magón or the services in Atlixco?

Air and Water Quality findings

- **Air Quality**
 - 30% satisfied with outdoor air quality
 - 98% use natural gas as fuel which is good, but 26% still use carbon, 19% use leña (but most, if not all, who said they use wood, use gas as primary)
 - Community expressed dissatisfaction with smells from barranca
- **Water Quality**
 - Mean = 0.15 ppm
 - 76% purchase bottled water to drink and cook

Substance abuse was seen to be a large issue in the community according to respondents

- Drug abuse and alcoholism largest problems
 - Drug abuse: 87% identified it as a problem:
 - Alcoholism: 90% identified it as a problem
 - Community discussion: Opinions on why this is? What can be done to help mediate this problem?

Mental health on all scales match perceptions of how mental health identified as a serious problem

- Finding: Stress on average was scored at 8 points meaning that the community faced moderate levels of stress, but also scored the highest out of the communities we surveyed. Levels for anxiety (avg. score 2.2) and depression (avg. score) 1.63 weren't alarming, but they were higher than the rural communities.
- Community discussion: Why do they (58%) think it's such a problem here? Are there any access to places that may help?