

Dietary Differences Between a Coastal and Mountain Town in Northern Peru

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When walking through both the towns of Huanchaco in the *La Libertad* province in north west Peru and Julcan located in northern Peru, it wasn't difficult to see what types of foods were

being sold and consumed. Whether it be the chicken, French fries, and rice found in Julcan (photo 3) or the *picarones*(fried donuts) found in Huanchaco. However, after my month-long research I found both of these towns have widely different views on what food should be consumed versus sold, and how to consume each product. Although my initial research question was assessing the dietary differences between the two towns but upon conducting my research, I noticed that I had to question more than if their daily nutritional requirements are at a sufficient level. I examined further to see how certain foods are harvested and how certain livestock was utilized by visiting farmers, ranchers, and pastoralists. I wanted to identify the practices of acquiring food and how the certain foods are processed, how the foods are distributed, and why certain foods are picked over others. I further chose to examine food insecurity and how that plays a role into what dietary choices are made.

An average Peruvian diet consists of some form of meat-based protein, some form of carbohydrate i.e. white rice, potatoes, or other root vegetable, a main vegetable, and some form of fruit either eaten as is or in juice form. Though this is a typical meal, there is a lot of diversity of food choices, more so in the urban areas. In Huanchaco and neighboring cities, one could find food of almost every culture on one block. Whether you want to indulge in a French crepe or go for some more traditional *ceviche*(seafood platter)(photo 1), it's all offered. Yet with all these diverse types of food being offered, there seems to be an overall trend of low nutritional intake with a majority being empty calories. Though the locals are eating an appropriate amount of food and feeling full, the diets are lacking certain nutrients needed with many diets consisting of primarily carbohydrates and lacking in proteins and micronutrients.

Field Site:

My research took place in two towns, Huanchaco and Julcan. Huanchaco is a coastal town in north west Peru consisting of around forty thousand to fifty thousand residents. Huanchaco has a strongly interwoven culinary history tied strongly to the old fishing practices. Located at one of the world's richest fisheries, this town has an ever-apparent connection to the ocean. It appears that many of the local fisherman are trapped in a previous era, using the same methods of fishing from the boat to the net that their ancestors used for the past three thousand years. The *caballito de totora* (photo 2), translated to "little reed horses" are boats created by lashing together two bundles of reed that the fisherman gather from reed beds a mere ten-minute walk from the pier. These boats are built to be roughly ten plus feet long and around three feet in width, the boats are straddled like a horse which is where the name is derived. The town has no formal grocery store but is packed to the brim with local markets, *bodegas*(mini markets), and local restaurants. Visiting the market, one can find an assortment of meats, produce, and other foods readily available to purchase. Found in a plot along the side street, many stalls of varying sizes line near door to door with a small walkway able to fit one person in each row. Purchasing food in Huanchaco was far easier than in Julcan. Julcan, the capital of a lower income province of Peru situated sixteen thousand feet in the Andes. Only receiving one hundred tourists a year, this town thrives on subsistence farming. One central plaza shaped like a star acts as the hub for the town, with many food vendors, businesses, and pop up markets situated right in front of the municipality buildings. The locals are of varying ages, demographics, and religions but all interact with one another as if those boundaries did not exist. Much of the population are farmers with a majority growing potatoes or other root vegetables such as *Oca*, *Yuca*, and *Maca* as I was told that is the easiest to grow at elevation. Unlike Huanchaco, there is no neighboring city to go to a super market. Those in Julcan must wait until the weekends to go to the local market where

one can purchase diverse types of goods ranging from chicken to watermelon. The town itself is rather conservative, with males expecting to wear pants and women expected to either wear pants or a long skirt. It is far less common to find ex pats and other non-Peruvians in Julcan, with our group being the only lighter skinned people I saw for the week.

Methods:

My methods consisted of twenty-four-hour diet recalls, unobtrusive observations, mapping, informal interview questions, and mapping. In total, I conducted four diet recalls, two of which were with local Peruvians in Huanchaco and Julcan and the same student in both towns. For these recalls, I would sit down with the informant for anywhere from thirty minutes to an hour to discuss what food was consumed, how much was consumed, at what frequency the food was consumed, and how the food was prepared. These took place in a multitude of locations including a pool, kitchen, and bedroom. My aim with these recalls was to get a nutrition baseline along with dietary percentages that I would then compare to the USDA My Plate software to see if the informant's nutritional intake was holistic, and a well-rounded diet. To complete this I would input all the raw data into the My Plate app to get the necessary diet information. Many of these recalls were informal and not planned, this is so I am able to get an accurate portrayal of what their diet and avoid skewing the data by knowing my informants weren't eating differently in preparation for the recall. These lists would then be inputted into the Livestrong My Plate app along with height, age, weight, and exercise. From there I was able to gather statistics of how much of each food group (sugars, carbohydrates, proteins, fats, and sodium) each informant was consuming along with daily percentages and calorie intake and loss. This allowed me to understand food perception and diets on a quantitative scale. Along with diet recalls, I did unobtrusive observations at the markets and in the kitchens to see what was being cooked and

how. For this method, I would either go to a public space or private with permission and sit and observe my surroundings. I would spend roughly thirty minutes to an hour at each of these locations and take in my surroundings using my five senses. Depending on the location, I would adjust what I was looking for through these observations. If I was in a market, I was looking to observe what food was purchased and how the locals inspected the food before purchase. I wanted to know more on what was looked for in meat or produce, essentially what made a fruit or vegetable a “good pick”. Through these observations, I was able to get the information I was looking for without interrupting people in their day to day life. Informal interviews were a crucial part of my research. It was imperative for me to understand how food culture is viewed and how food is distributed amongst the family. For this method, I asked kitchen staff in both towns about how food is distributed and who holds the primary duties of food preparation and serving. Finally, I used mapping for the town of Huanchaco. I created a map to show the assortments of restaurants and bodegas that one can find near the center of the town. The map shows the *bodegas* markets located in Huanchaco and shows the density of the different sources of food throughout the town with the restaurants located towards the pier and the markets all loosely bundled together further into town. Through mapping, I was able to determine what food was around and where certain foods could be purchased.

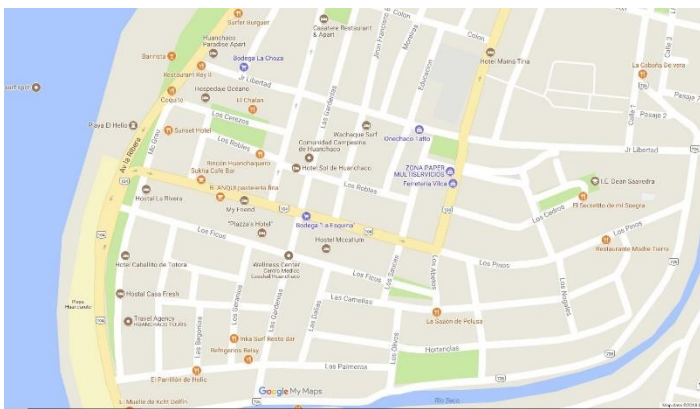
Results:

My results showed that there are diet inadequacies between both towns and these inadequacies are rather similar with carbohydrates making up nearly sixty percent of both my informant’s diets. Many empty calories are also consumed with rice being the primary form in Huanchaco and potatoes in Julcan. The people of Julcan skin all their potatoes even though the

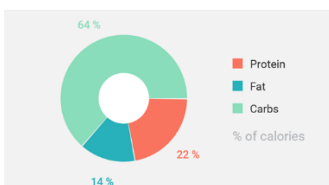
skin is the only nutritious part of the potato, this shows the lack of education about nutrition in this mountain town. As other research has stated, “Intakes of most other micronutrients [...] were low, likely resulting in high levels of inadequacy. The inadequate intake of some micronutrients is common in many developing countries, but the extremely low intake of dietary fat found in the central Andes is not”. This research coincides well with my own conclusions, in my research (figure 2) I also discovered that many of my informants were consuming empty calories low in micronutrients. In Huanchaco, the results were very similar even though they have a wider food choice and have higher incomes. Many of the foods being offered at markets were some form of produce being purchased in small quantities versus the larger bulk purchases of rice and other grains. In Julcan, there was abundant food insecurity with especially amongst those of lower socio-economic status like that of farmers. As stated by Potochnik, “Research on nonimmigrant children identifies a host of risk factors for food insecurity, including standard socioeconomic and demographic characteristics [...] Among these risk factors, familial economic resources appear to be the most important predictor of food insecurity” (Potochnik, Stephanie, Arteaga 2018)². Food insecurity can have many negative health implications, most severely malnutrition. Many of the subsistence farmers are growing potatoes or other root vegetables that are then sold to purchase other forms of carbohydrates in the form of grains and other rice. My data led me to believe that there is an overall lack of dietary knowledge between both locations and that both consume a large amount of carbohydrates even when other types of food are available.



(Map 1 showing the locations of *bodegas*, restaurants, and markets in Huanchaco)



(map 1 cont.)

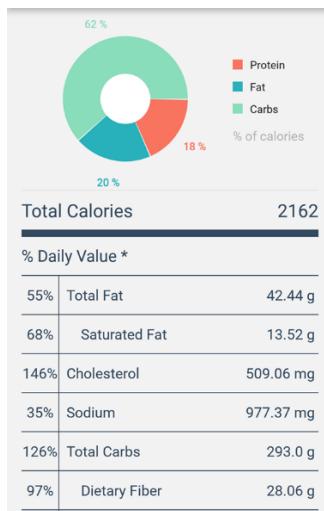


(Pie chart showing information gathered from my informant in Julcan)

Total Calories		930
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% Daily Value *		
20%	Total Fat	15.14 g
21%	Saturated Fat	4.23 g
42%	Cholesterol	144.5 mg
41%	Sodium	1137.75 mg
65%	Total Carbs	151.31 g
60%	Dietary Fiber	17.37 g
100%	Sugars	46.08 g
30%	Protein	52.28 g

(Figure 2 showing the percentages of dietary intake from my local

informant in Julcan)



(Huanchaco informant pie chart and table)

Conclusion:

In conclusion, through my research I learned what the dietary changes need to be implemented and how the view on food culture needs to change so those living in both Huanchaco and Julcan can receive a more balanced, nutritious diet. Though both areas have an abundance of fresh, nutrient dense foods growing in their backyards many fail to capitalize on that due to an inadequacy on diet nutrition or limited resources to sell their crops. A large demographic of farmers has no opportunity to expand their sales due to geographical location

limiting them. Carbohydrates and sugars are the most prevalent cause for inadequate diets along with eating empty calories. There is some push to have better knowledge on dietary needs as tv ads are now adding “health cues” to their advertising. These cues are meant to show that to offset poor diet, one needs good exercise. As stated by Busse and Bernabe-Ortiz, “Peru has recently passed regulation that will limit the advertising strategies of the food industry in most media, including television, as overweight and obesity are becoming a problem in the country [...] Peru is one such country. In 2011, the Peruvian food industry agreed to use health cues that is, small images portraying a walking person or a healthy dish and to place them on food and beverage advertisements that appear on” (Busse, Bernabe-Ortiz 2018)³. As we can see, there are already changes in place to push a smarter diet agenda by promoting healthy exercise and diet consumption. Better public knowledge of what constitutes a better diet will greatly help those in Peru feel healthier and better fed along with better food portioning. I also see more government input being an asset to Peruvian dietary needs, much like we have in the United States. If given the opportunity, I would like to research the why of food choices more. With only a three weeks total in Huanchaco and one week in Julcan I feel as though my understanding on why certain foods are picked over others (i.e. why the Julcan farmers sell the quinoa as opposed to eating it) is lacking. I could visibly see what was being eaten and chosen for food preparation, but I never got around to learning why certain foods and ingredients are picked. I think discovering more of the why would help me gain a better understanding on where the locals falter with their diets.

Photos



(Photo 1 showing the local Huanchaco food *ceviche*)



(Photo 2 showing the *caballito de totora* the reed boats used for fishing)



(Photo 3 showing a local Julcanero dish consisting of fried chicken, rice, and French fries)

Bibliography

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Photos

