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Qualitative Comparison of Rural Healthcare in the United States of America, Ecuador, and Cuba

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Abstract

Nations around the world are struggling to determine the best way to manage healthcare, especially in rural areas due to difficulties in accessibility to quality healthcare. This study seeks to compare the accessibility of rural health care in the USA, Ecuador, and Cuba to discover common themes and solutions to problems which are almost universal in this division of healthcare. After reviewing and evaluating information on the subject, a small study was performed to inform the subject. For the purposes of this study, in the United States, questionnaires were distributed in a rural hospital in Jacksonville, Illinois. In Ecuador, formal and structured interviews were conducted over a three-week period with healthcare personnel including nurses and physicians as well as patients in a small, public, and rural clinic near Cuenca, Ecuador. In Cuba the functionality of the healthcare system and personal testimonies via questionnaires were examined in Pinar del Río. Interview questions were focused on geographical, economic, cultural, and overall accessibility to healthcare in these countries. Questions also encouraged elaboration on the changes to accessibility of healthcare in recent years. It has been found that all areas struggle with lack of access to equipment. The United States is alone in its exorbitant price of healthcare, whereas Cuba and Ecuador both provide public healthcare free of cost. Cuba, while supplying care for free, requires constant vigilance of its people, which does not seem to relay a feeling of suppression to the people. The efficacy of Ecuador's system is highly regulated by available government funding, but people generally have a positive opinion on the accessibility of healthcare, keeping in mind that for some populations, especially the indigenous, there exists more difficulties in receiving needed care. Noting this information, preventative care might make a great addition to systems of the US and Ecuador, and Cuba's system would be best served through economic growth.

Keywords: Accessibility, Rural, Healthcare

1. Introduction

Access to rural healthcare is a universal problem, but each country's policy differs in how it addresses these problems. In the rural United States, there is a lack of medical personnel, there are higher rates of chronic disease, and there are economic disparities[1]. Furthermore, nearly all healthcare providers are private, but there are programs, such as Medicare and Medicaid, which provide public health insurance to qualifying individuals. In Cuba access to healthcare is universal and state-funded, but the methods of prevention are quite intense, requiring the vigilance of each patient[2], and doctors are paid minimally (about $23 USD per month) to offset the price of universal healthcare[3]. In Ecuador, a small Latin-American country, there are problems such as a lack of specialized medical equipment at the first level of medical attention (family medicine) and difficulties in accessing transport and in obtaining referrals to the second level of attention (basic and general hospitals)[4]. Ecuador has both a public and private sector of healthcare. Currently, there is a lack of literature on the perceptions of accessibility to quality rural healthcare from medical personnel and users of the healthcare system. The objective of this investigation is to identify these perceptions in rural areas of Ecuador, Cuba, and the United States to allow for a comparative analysis between the three countries. This study also

considers recent changes in healthcare to better determine the source of successes and failures in rural healthcare. The literature that does exist was examined and then thematically informed by the small studies which are described in the "Methodology" section. The relevant results of these studies and the current literature were described and/or connected in the "Results" section before the conclusion offers pertinent examples of changes that might help to dispel the issues that were described.

1.1 Rural Healthcare in the United States

1.1.1 brief overview of the US healthcare system

The United States healthcare system is incredibly complex. For the purposes of this paper, it is important to understand that there is no instance where medical fees are paid by the US government except using government-provided insurance, known as Medicare or Medicaid. There are "public" and "private" facilities, meaning there are government-owned and non-government-owned healthcare facilities. Although public facilities might be cheaper in many instances than their private counterparts, the difference between these services is not the cost—it is who owns the facility. In fact, there are private institutions from which patients never receive a bill, including St. Jude Children's Research Hospital®, where "no family receives a bill for treatment, travel, housing or food"[5]. Many large public urban hospitals in the US are affiliated with medical colleges, and a patient can expect a typical bill from these institutions[6]. As far as a patient is concerned, there is currently little discernable difference between a public and private facility, so the distinction between the two will not be a focus of study in this instance.

1.1.2 overview of the disparities between US rural and urban healthcare

A scribe working in a central Illinois rural hospital who participated in this study was made aware of the disparities that exist between rural and urban healthcare when he noticed how often patients were being sent to the nearest city for the continuation of their medical care. To him, it seemed that many who received care from the rural hospital were required to make a trip to an urban hospital which was approximately 45 minutes away by car just to have a required test done due to "limitations in equipment/lack of specialized physicians" at the rural facility. Though it was able to administer immediate life-saving measures to buy the patient time for transfer, the hospital simply did not have the resources needed to provide continuous high-quality emergency care to its patients[7].

This scribe's story does not appear to be an anomaly in rural healthcare in the Unites States. According to Robin Warshaw of the AAMC, disparities in health affect rural US communities regardless of the particular state or area of the country. These disparities appear to be related to "economic, social, racial, ethnic, geographic, and health workforce factors"[8]. The scribe's story represents just a few of these problems, such as the economic, geographic, and, admittedly not directly, workforce factors.

As of 2018, there were 6,198 community hospitals in the United States. Of those, 1,821 were considered rural, or 29.4%[9]. As well, about 19.3% of the population lives in rural areas, so the ratio of rural vs. urban hospitals in the US is quite sufficient in terms of population. The problem, therefore, lies in the amount of land area which is considered rural (97%)[10]. In comparison to urban areas, rural areas have a higher percentage of people living in poverty. Furthermore, inhabitants must travel significantly longer distances to receive healthcare and have longer wait times for EMS arrival; additionally, the area lacks enough physicians (especially specialists) to meet the needs of the population[11]. Aging is proving to be riddled with problems in rural United States partly due to lack of access to healthcare related to the social and economic factors associated with living in a rural area. According to A. Clinton MacKinney, Dennis Dudley, and George Schoephoerster, older patients in rural America are often separated from clinicians by greater distance, geographical barriers, and limited transportation options[12]. Furthermore, a lack of access to mental health care could be leading to increased suicide rates among rural dwellers, a statistic further accentuated in the older population which is prone to increased social isolation[13]

1.2 Rural Healthcare in Cuba

1.2.1 brief overview of the Cuban healthcare system

Cuba's healthcare system is recognizable by its three tiers which include consultorios (primary care), policlínicos (specialized secondary care), and institutos (highly specialized tertiary care)[14] and by its relatively heavy-handed

approach characterized by required follow-ups, a minimum frequency of health evaluations (at home and in clinic), and classification of the population[15]. Access to healthcare, at least at the first or primary level, is quite good. This is due to Cuba's abundance of doctors, spurred on by the country's free medical education program (in spite of the low salaries as mentioned above). Cuba has assigned a consultorio staffed by a primary care physician (PCP), a nurse, and a medical assistant to every approximately 150 families regardless of location and level of urbanization. This first level of care focuses heavily on preventative care to eliminate the need for higher level health care.

1.2.2 brief overview of the Cuban accessibility to healthcare

While Cuba seems to have been able to provide primary care to every citizen, they still lack better employment of clinical and epidemiological methods. Small consultorios tend to lack equipment and medications necessary for many common ailments due to a lack of funding, but this appears to be a country-wide problem that does not discriminate by level of urbanization[16]. Problems of geography would theoretically still be prevalent, but these problems are only obvious when referral to a secondary level of healthcare becomes necessary. A unique problem that Cuba faces is the embargo placed on the country by the United States. The document states that a ship may not dock in a US port for at least 6 months after docking in Cuba[17]. Recently, the Trump Administration has been reinstating sanctions which were loosened or removed with previous presidential administrations. These sanctions include limits on money that can be sent to Cuba by relatives and the ability of US citizens to sue for the property which was taken from them during the Cuban Revolution[18].

To state that there is a lack of funding does not get to the root of the problem in Cuba. The country is able to maintain healthcare statistics that are comparable, and at times better than, very well-developed countries such as the US despite providing significantly less money to healthcare. They have minimized the cost of healthcare by focusing on prevention and primary care, but as the embargo placed on them by the US continues to tighten, the Cuban government is finding it very difficult to keep up with basic supplies. Cuba relies on trade to get these supplies[19]. On top of the embargo, Cuba's restrictions on free production and sales make it difficult for the country to support itself. To continue to provide the quality free healthcare (let alone other free services, such as education), Cuba might need to reform its economic model, and it is not abundantly clear how this might happen. More information about the difficulty of economic transition in Cuba can be found in the article by Domínguez[20].

1.3 Rural Healthcare in Ecuador

1.3.1 brief overview of the Ecuadorian healthcare system

The healthcare system of Ecuador is a mixed system with both a private and gratuitous public care. As of December 2017, about 85% of entities within the healthcare system belonged to the public sector, leaving 15% to private entities, such as those owned by NGOs. Ecuador, along with several other countries of Latin America, has been evolving its healthcare system, especially since the Citizen's Revolution (2007-2017) as Rafael Correa came to power. In this time, 13 more hospitals had been constructed and 18 more were underway. As well, the system gained 34,000 medical personnel.

1.3.2 brief overview of the disparities between rural and urban healthcare in Ecuador

Rural healthcare in Ecuador is more similar in nature to rural healthcare in the United States than to that in Cuba, so it has many of the same problems related to economic, social, geographic, and workforce barriers to access. While in urban areas the health care system has a well-developed private sector, rural areas do not have a private sector (as it is not considered profitable in these areas) and inhabitants must rely on the free public healthcare which lacks important medical equipment and healthcare personnel[21]. A lack of public transportation in rural areas combined with the country's diverse geography, including mountains, rivers, and forests, make it difficult for rural populations to access public health clinics.

Ecuador presents an interesting cultural barrier to quality healthcare considering its broad ethnic background, especially in rural areas where the indigenous and mestizo populations are prevalent. Patients in these populations tend to avoid medical care in a hospital or clinic unless it is an emergency due to the barriers in access and more comfort with traditional types of medicine, such as the use of medicinal plants. In the rural population of Babahoyo, Ecuador, a largely indigenous mid-sized city, 59.4% of people report using plants as an alternative for healthcare[22]

indicating a need for their incorporation into modern healthcare practices Some areas of Ecuador have been taking steps to improve the cultural situation in medicine by introducing new practices in which traditional medicine can be applied. In Riobamba, a city in Ecuador with a large indigenous population, the Alternative Andean Hospital is a healthcare clinic which blends tradition with modern healthcare practices allowing for the cultural accommodation of those who distrust western medicine[23]. The concern with frequent use of traditional medicine is that more serious complications might go unnoticed until they are at a level where they will be difficult to treat. Nevertheless, this prospective problem should be avoided if proper integration of systems occurs, therefore allowing diagnoses to be made.

Ecuador's healthcare system has also been evolving. According to Smith Stansfield of COHA, between 2007-2017 over $16 billion were invested into providing free health care. In the same period, 13 new hospitals were constructed with 18 more in progress. In the 40 years prior, no new public hospitals had been constructed in Ecuador. As well, 34,000 medical professionals were added to the healthcare system[24]. From 2006-2016 GDP spent on health rose from 1.1% to 2.4%[25]. These changes are a result of a resolve in 2007 by the government of the Citizen's Revolution under Rafael Correa in Ecuador to make universal and free of cost public healthcare a priority for the country and its advancement[26].

2. Methodology

2.1 Data Collection

The study performed was qualitative and descriptive. Published studies and secondary sources were further informed by the interviews or surveys that took place in Ecuador, the United States, and in Cuba with the hope of gaining further insight about already processed information. Interviews and surveys contained open-ended questions that aimed to evaluate attitudes about accessibility to healthcare among providers and patients.

In Ecuador, the health center El Valle, a type B level 1 institution, was selected for interviews. It is located about 10 km outside the city of Cuenca and serves a population of 18,600 inhabitants, a majority mestizo. Patients (two males and two females), two physicians, and two nurses were interviewed for the investigation. Patients were interviewed before their consultations, but all had been to the health center in El Valle, Azuay, Ecuador before. Two were interviewed in the morning, and two were interviewed in the afternoon. One patient was interviewed during a busy day at the clinic.

In the United States, questionnaires were administered online to health care professionals in various rural hospitals and clinics in central Illinois. No in-person interviews were conducted due to time limitations and the current social situation, but it is noted that the study would benefit from interviews.

In Cuba, questionnaires were also administered online to health care professionals and medical students in Pinar del Río, Cuba. Many of the participants were affiliated with the Medical Sciences University of Pinar del Río. Again, no in-person interviews were conducted.

The structure of the themes for the interviews and questionnaires were as follows:

1. Economic Accessibility
2. Geographic Accessibility
3. Cultural Accessibility
4. Quality of Care
5. Systemic Analysis
6. Community Participation
7. Changes and Continuations

For any interviews, recollection of the information was achieved using a digital recording device. Afterwards, the information from the interviews was sorted into the categories fulfilled through the questionnaires administered to the other two countries. Study rigor was ensured by controlling the structure and questions in the interviews and questionnaires. Any translation was checked for validity by fluent bilingual individuals whose native languages included English and Spanish. Due to the nature of the study, environment could not be controlled. The size of the study and complications caused by COVID-19 did not allow for equal samples between countries.

2.2 Data Analysis

Already published materials went through a content and thematic analysis. The interviews and surveys were then examined through content analysis, as the themes from prior research were build into the questions. Information gained through the interviews and surveys were then used to inform the already published content.

3. Results

3.1 United States

This investigation was realized through distribution of online questionnaires to rural medical professionals, especially medical scribes and physicians working in central Illinois. So far, two 24-year-old male medical scribes have responded. Responses come from a large town (about 19,000) that serves as a center of health for a large rural population, including 7 counties in West Central Illinois. The nearest large city is Springfield, Illinois. These questionnaires are starting points for this research, and the investigation should expand to include testimonies from doctors, nurses, patients, and leaders throughout the rural US.

3.1.1 economic accessibility

Though the respondents noted that they themselves are not heavily involved in the billing process, they did have some thoughts as to how patients cover the costs of healthcare. Most patients have some form of medical insurance which covers all the costs of healthcare other than a copayment, which is determined by the insurance company. The insurance company can either be a private company and/or a public agency, such as Medicare or Medicaid. Medicare, at times, needs to be supplemented with another form of private insurance because the coverage is not universal[27]. One respondent mentioned that some insurance companies will not cover imaging studies at smaller clinics, meaning that a patient might have to pay the full cost of these diagnostic means. Another respondent noted that traveling costs are also covered by the patient.

According to both respondents, there is also a perceived problem in financial stability of the rural institutions due to low patient volume. This leads to lack of medical supplies and reduced specialization, which, according to Cyr, et al., is a common problem in rural healthcare[28]. It may also lead to, as one respondent mentioned, “physicians and their respective healthcare teams being overworked” because of staff cutbacks.

3.1.2 geographic accessibility

In rural areas, it is perceived that distance and transportation availability certainly limits access to residents in these areas. Transportation seems to be of great importance. It was observed by one respondent that patients who live just one to two miles away from their office often cancel their appointments because they have “car trouble,” “no one can give them a ride,” or “the bus won’t take them.” According to the respondent, this problem is due to unreliable transportation on the side of the patient, and this issue is most often resolved by planning. For those that live several miles away, this problem is accentuated partly due to minimal public transportation. Access to public transportation is also limited in rural areas[29]. Therefore, it is worth mentioning that the perceptions in this study are limited, and the study would benefit from a wider range of participants.

3.1.3 cultural accessibility

From this limited sample, it appears that rural healthcare centers are not sensitive to people from other ethnic or cultural backgrounds, perhaps because the people who tend to work in these places themselves come from communities with very little diversity. In the medical consultation, a patient is always asked what they have done to treat their illness and what might have made it worse. Specific cultural considerations in questioning do not appear to be made often, rather the questions are all-encompassing. It also appears that very little consideration of culture goes into the prescription of treatment or medications. In other words, physicians in rural areas did not typically recommend

any treatment outside of the typical conventional medicine. According to Robin Warshaw with the AAMC, the diversity of rural America is increasing, and as the diversity increases, studies have shown that more diverse rural areas face health disparities far greater than those found in primarily white rural areas[30]. To combat the new difficulties that come with diversity, medical schools, such as the Oregon Health & Science University, have been working to promote diversity in their institution, which will hopefully prove to be an immersive tool to diversity training for future physicians[31].

3.1.4 quality of care

Among respondents, there appeared to be a consensus that the overall quality of care, at least in this rural Illinois healthcare center, in the United States is top-notch. Patients are perceived to have an "above average" level of trust in the care they received, a thorough exam and satisfactory diagnosis is nearly always achieved, and the hours of operation for these clinics is certainly sufficient. Despite that, caregivers in these facilities often lack up-to-date equipment. On top of a lack of specialized physicians at rural sites, one respondent said that MRI scans ordered in their clinic had to be re-done because the imaging was not clear enough. He went on to provide an example.

> "For example, we order EMG/NCV studies to be performed in order to determine if a patient has carpal or cubital tunnel syndrome. Say, in Springfield, this test could be done within a week at most. However, if a patient cannot drive to Springfield and must have it performed in [our town], the earliest they can get an appointment is in 2 months. Another example is if a difficult surgery needs to be performed, it might not be able to be performed at [our facility] because they don't have the necessary equipment to allow that specific surgery to take place. For example, we often have to have shoulder surgeries, such as rotator cuff repairs with distal clavicle rejections and subacromial decompressions, performed at [the hospital in Springfield] because the surgery is too difficult to be performed at [our facility]."

The example above is supported by another respondent's assertion that "many have to be taken to or transport themselves to other centers with specific specialties." A literature review by Cyr, et al. states that in several instances, including studies in Wisconsin[32], Washington state[33], and Nebraska[34], rural areas were provided with significantly fewer specialty-driven medical care facilities than those in urban areas[35]. Furthermore, a scribe in a non-emergency setting said that physicians often have no time for rest between patients, and walk-ins can become difficult or impossible unless it is a true emergency. It was the belief of the scribe that overworking physicians in this way can have a negative effect on the quality of healthcare received by the patient. In the rural emergency department, one scribe wrote, low patient numbers result in a reduced number of providers on staff. When this happens, temporary increases in emergency department patient volume can cause massive overload for the physicians working that shift.

Interestingly, both scribes also noted problems with patients not being capable of understanding the scope of their illness. One mentioned that this leads to the failure of medical plans which are laid out by doctors for each patient. The other scribe said that the physician he works with goes to great lengths to help the patient understand their "medical issue," going as far as drawing diagrams to explain his points.

3.1.5 system analysis

According to respondents, there were no problems in referral of care of a patient other than those problems, such as transportation, already outlined in previous sections.

3.1.6 changes and continuations

Those who responded felt they were too inexperienced to speak on the issue of long-term changes in rural healthcare in the United States. One stated that "[our hospital] has made strong efforts to get more specialists into their hospital in order to reduce distance patients must travel [for care]," indicating that the problem of transportation and distance has been recognized in the US as impeding access to healthcare for individuals in rural areas. While efforts have been made to correct this problem, it persists due to lack of funds in these privately owned rural facilities.

3.2 Ecuador

The results of the investigation vary according to the theme and the person speaking, especially between patients and doctors. Patients gave the impression of a good overall perception of the health care system, but physicians expressed many frustrations about the system. Furthermore, nurses had a perception which was comparable to that of the physicians. Physicians mostly emphasized problems with the lack of personnel, medications, and time for the medical consultation.

3.2.1 economic accessibility

The government has made healthcare accessible to low income rural citizens by creating public and, therefore, free clinics throughout Ecuador, including the subject clinic of this study. The gratuitous nature of this clinic was confirmed by each interviewee. Unfortunately, making healthcare free to the public comes at a great cost, which is not being sufficiently met by the government. Due to lack of allocation of funds, the clinic lacks doctors, nurses, open hours, medications, and safe/secure buildings. Interviewees noted that the system was improving during the presidency of Rafael Correa, but it has started to revert to less fortunate times as the government under the current president Lenín Moreno has significantly decreased the acceleration of increased funding for healthcare. This appears to be confirmed in the current literature[36]. One physician spoke about how Ecuador is combating the lack of physicians by requiring young doctors to spend some time practicing in rural areas under the public health system before they can practice in urban areas or under the private health system[37]. The problem continues because very few doctors continue to work in rural clinics. Therefore, the turnover rate of doctors is very high, and only the inexperienced doctors are working in these places.

3.2.2 geographic accessibility

According to a physician (and interviews of some of the patients) “mucha gente viene caminando” to the health center, meaning they must walk to receive healthcare. Combined with large distances to cover, it was hypothesized by the participants of the study that many people do not have access to the center because they do not have vehicles or sufficient public transportation. The health center covers almost 50 small, semi-isolated “barrios,” or neighborhoods, and a huge area.

3.2.3 cultural accessibility

The physicians of this center frequently ask the patients if they have used other types of medicines, such as medicinal plants, and they have accepted their use in the community. Two patients reported their physician asked them about their use of a midwife or acupuncture. In an attempt to be culturally sensitive, the physicians reported that they also ask about medicinal plant usage because many patients arrive to the center with fear that their plant methods had no effect. The clinic does not offer the use of traditional medicine to its users, so it is not mixing both types of medicines, rather it is acknowledging the existence of alternatives to western medicine. None of the participants reported using another type of medicine before coming to the center.

3.2.4 quality of care

Access to quality care is related to all the previously mentioned aspects, but this section goes more into depth. Physicians explained that the time allowed for the medical consultation (about 20 minutes) is too short to perform a full history of illness and physical exam, but the patients believed that it is enough, likely because they did not see how the situation could be better or they had determined their time to be more valuable elsewhere. Access to appointments for patients commonly becomes difficult when the center is busy due to lack of physicians and nurses. The health center also lacks many laboratory exams, so patients are often required to go to the city to have these tests done. In some cases, the center that patients must go to is private and costs money to utilize.

3.2.5 system analysis

In many situations, the physicians at the clinic need to refer a patient to the hospital. None of the interviewed patients reported problems with this situation, but the physicians noted that, at times, it is difficult to send a patient to the public hospital (Hospital de Especialidades José Carrasco Arteaga (IESS)) because it itself is at maximum occupancy due to a large population being served (not to mention the issue of transportation). Nevertheless, interviewed patients reported a positive experience.

3.2.6 changes and continuations

In general, the changes in healthcare by the current government under Lenín Moreno since the end of the government of Rafael Correa have not been received as positive. At the time of these interviews there were less funds available for guaranteeing quality access to healthcare in this health center than under the previous administration. Essentially, this government has reduced the funds for public health, resulting in a more inefficient system considering the population. Though the doctors in this study noticed the reduced funds (through reduced staff and supplies), patients had not noticed any difference in quality of care, except for occasional longer wait times, since the government under Lenín Moreno began.

3.3 Cuba

This investigation was performed by completion of questionnaires distributed to medical students and physicians in the province Pinar del Río, Cuba. Thus far, two questionnaires have been provided by two 24-year-old males, one a 6th year medical student, and the other a first-year physician.

3.3.1 economic accessibility

According to one interviewee, the medical student, the only cost a patient assumes in Cuba is medications for outpatient treatment, and these costs are further subsidized by the state. He offered as an example the cost of Azithromycin treatment, which is approximately 0.90 USD. Despite the relatively low cost of treatment, a patient has the option to opt into inpatient treatment if they are unable to pay for the cost of medication, as in, the patient may be admitted to the clinic to receive their medicine. These results agree with Morales Ojeda, et al. who says that the Cuban government has resolved to cover the costs of healthcare, and it appears they have covered everything for a Cuban citizen except for outpatient medication, which is heavily subsidized[38]. The medical doctor stated that healthcare in Cuba is completely free and fails to mention cost of outpatient medication. A Cuban patient has sufficient individual economic access to healthcare treatments.

The first interviewee further stated that clinics, especially rural clinics, have a very limited budget which makes it impossible to buy all the resources necessary to provide the highest quality of healthcare. Most of the budget goes toward the cost of food for the patients and maintenance of already acquired equipment and infrastructure. This appears to be in accordance with a worsening state of the national economy due to the US embargo along with a centralized economy[39]. The other interviewee did not note any problems in administering high quality healthcare to every patient he has treated in a small clinic in Pinar del Río.

3.3.2 geographic accessibility

Interviews revealed that it is a requirement that consultorios must be within 2 km of all its users. The first level of medical attention is well covered. The second level of attention, the policlínicos, is found within municipal capitals, which are larger towns throughout Cuba. Access to these also does not appear to be difficult according to our interviewees. There is trouble when the third level of attention is required because large hospitals, or institutos, are mainly located in La Habana or other large cities, which can be difficult to access when coming from a rural area. One interviewee, a medical student from Pinar del Río, believed that the greatest problem rural healthcare in Cuba faces is transportation to institutes of the third level of medical attention because public transportation is scarce, and not all

rural inhabitants have their own means of long-distance transportation. Both respondents stated that there is extremely limited ambulance service in Cuba due to economic problems.

3.3.3 cultural accessibility

All respondents supported the idea that the culture of Cuban citizens is taken into full account during the medical consultation. One noted that a few years ago a policy was implemented such that each patient should be prescribed natural medicine if possible. Each patient is also asked, as the medical doctor noted, whether they would like to take a conventional or traditional path towards healing, though most patients in Cuba use a combination of conventional and traditional medicine. It is further mentioned that when a patient decides they would like to be treated by a traditional healer, their treatment is almost always complemented by the opinion of a medical doctor. Traditional healers are almost just as accessible in Cuba as medical doctors, so most patients consult both a doctor and a healer. Cuba's reach towards natural medicine as an alternative appears to be a result of the poor financial situation and trade[40].

To those interviewed, it appeared there is very little more that could be done to make rural health centers more culturally accessible. One doctor mentioned that the only thing keeping these centers from being completely culturally accessible is the fault of individual doctors who are responsible for the rural health center. The medical student also noted that those who wish to receive conventional care may have difficulties doing so due to a lack of means of diagnosis, such as laboratory tests.

3.3.4 quality of care

The quality of care in Cuba is a matter of debate, even between medical doctors who live and work in very similar areas of the country. All respondents agreed that patients in rural health centers are treated well, and they also agreed that wait times are, at times, too long (though an amount of time was not specified). The disagreement comes in the perceived trust of patients. One doctor believed patients at rural healthcare clinics have complete trust in the care they are receiving, but a medical student mentioned that some would-be patients do not trust the small consultorios and instead opt towards attending a higher level institution, such as a policlínico, even though the local consultorio might be fully equipped to handle their illness. In fact, the doctor mentioned this problem in his responses as well, but he did not relate the phenomenon to a lack of trust.

The medical student went on to mention that the consultations in consultorios often do not have enough privacy, light, means to examine patients, or seating area. These clinics do have medications, but they are limited to "los indepensables," or the essentials. If the illness requires treatment beyond the capabilities provided by the limited medications in the rural clinic, the patient must be referred to a higher level of care. As far as the interviewees could determine, the rural healthcare centers lack some diagnostic equipment, but are able to provide most of the care for which they were created.

All interviewees agreed that the time allowed for a consultation can, at times, be too short for the complexity of the illness. One respondent said that the cooperation of the patient is important to ensure a full examination and accurate diagnosis. Another believed the time allowed is too short because it does not allow the physician the ability to fully examine each patient due to long lines and an unspecified bureaucratic process. He mentioned that because there is such universal coverage, people will go to the doctor for everything, no matter how small. Despite this, the hours of operation for these clinics are not limiting accessibility to patients by account of the respondents. They are open in the mornings Monday-Saturday, and some are open 24 hours per day. Furthermore, many consultations are carried out in people's homes outside of the hours of operation, ensuring that time does not limit healthcare attention received.

3.3.5 system analysis

When it comes to referring a patient to a higher level of care, all respondents agreed that the biggest problem is a lack of ambulances to transfer critically ill patients to higher level facility, such as a hospital or policlínico. If reference to a higher level was not often necessary, this would not be a problem, but rural clinics are often not equipped well enough to handle any complex illness. Therefore, physicians "casi siempre" (almost always) refer patients to a higher level.

Currently, there is also a fuel crisis which might be worsening the problem of transportation from one clinic to another. The crisis appears to be a result of restrictions put on Cuba by the United States[41].

3.3.6 changes and continuations

Cuba has been attempting to resolve the problems by expanding primary healthcare to cover slightly more complex problems, but this progress has been impeded by the budget problems previously mentioned. As well, small clinics are simply not equipped to handle very complicated procedures and do their best work in attempting to prevent the need for higher levels of attention from occurring.

Opinions are divided as to whether the system has been improving or becoming worse. One respondent said that the system has become more organized lately due to errors and experiences of the past. The other believed the system has been worsening due to more centralization of resources, worsening physical conditions of the clinics, and more required paperwork. Given this evaluation by the respondents, it is not clear how deeply affected the health system is and will continue to be due to the worsening economic situation of the state.

4. Conclusions

4.1 Possible Solutions

According to this study, in Ecuador, it appears that physicians and nurses usually have a more informed view of problems in healthcare than patients. That being said, a more open-dialogue format could be introduced in rural areas that allows for conversation about policy and problems between healthcare professionals and people of the community. Periodic meetings may be a way to accomplish this.

To solve problems related to economics, such as lack of equipment, physicians, and personal finance, a higher proportion of healthcare spending should be allocated directly to rural areas to bring in more physicians, clinics, and equipment and increase the affordability of clinic visits for patients. If by chance the urban centers are underfunded and overcrowded as well, this might take some of the strain off them by allowing higher-complexity healing to take place in rural centers. Based on Cuba's incredibly low cost of healthcare, it might be worthwhile to focus public healthcare on prevention by accentuation of primary care services. Furthermore, the US might look at expanding its initiative to bring physicians to rural areas. Although perhaps paying physicians more to work in rural areas might help to bring more interest, this will not solve any problems with economics, and it will likely put more burden on the community and patients being served. It seems the solution to this is truly a change in mindset: healthcare personnel and institutions must be willing to sacrifice making money in exchange for better access to rural healthcare.

To dispel problems of cultural accessibility, doctors in rural areas in all countries should be educated on the cultural background of the people they serve, and they should be taught to ask questions that are more specific to the particular rural area. During a medical consultation in Ecuador, this might mean asking about medicinal plant use, and in the United States this might mean asking about work habits and largely depends on the area. This might help to bring about cultural acceptance in these areas of the treatments that doctors prescribe. Some places in Ecuador have started to open clinics that incorporate both traditional and western methods of healing[42]. To encourage rural dwelling people to make use of their local healthcare facilities, more discussion between the community and healthcare providers might prove to be useful. There still exists the problem of distance, which could be solved by more expansive and inexpensive public transportation, such as periodic bussing to the nearest health centers. Overall, it appears that more discussions need to be happening in each rural community about their health so that solutions specific to the community can be made. Problems which appear to be more universal must be dealt with at the state/province and national level of each country. It might even be beneficial to suggest international collaboration on resolution of these issues.

Small sample sizes are a problem with this study, but they also allow for an in-depth analysis of each individual's response. By parsing through the data in this way, each respondent is given a voice, which is truly what this study is about: analyzing people's perceptions about access to rural healthcare in their countries.

4.2 Continuation of Research

Since this research is only scratching the surface of what could be a new approach to rural medicine, the continuation of this research is imperative to the continued advancement of rural healthcare at a global level. It is already known that rural health care experiences problems that are universal, and an exact solution is not clear, indicating that the

situation is incredibly complex. It appears that gaining personal testimony of healthcare personnel and patients around the world would be beneficial to the search for solutions to these problems that plague rural healthcare.

In future studies, full, in-person interviews should be conducted in each country. The study should be extended to include more rural areas of each country and to include more countries and regions of the world, as the current study fails to gather data outside of the Americas. It would also be beneficial to fully transcribe and code interviews to allow for a more in-depth analysis of what was said. All recordings for this paper were saved in hopes of continuation in this way.

Although respondents' answers seem to reflect what is written in the examined studies, those interviewed were typically of a similar age (early to mid-20s), it would be helpful if a more varying age range were represented in the study. A larger gender, ethnic/racial background, and profession variation is needed as well. This sample obviously lends itself to bias, and it does not represent the total population. It will also be helpful to expand the study to include people who are higher ranked, such as community leaders and WHO/government officials. Their perceptions will be key to highlighting where understanding must be reached between the public and healthcare officials.

Finally, the scale of this study must, and will, increase. It should include not just people from one area of each country. That view is limiting and does not demonstrate any type of consensus for a country. This study does not attempt to say that a single area of each country represents the whole; for this reason, it is supplemented with prior research which can be connected to what is mentioned, however loosely. As this study continues, the methods should continue to be thoroughly examined and modified to be most beneficial to society.

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6. References

American Hospital Association. "Fast Facts on U.S. Hospitals, 2020 | AHA," 2020. https://www.aha.org/statistics/fast-facts-us-hospitals.

Anderson, Ron J., Paul J. Boumbulian, and S. Sue Pickens. "The Role of U.S. Public Hospitals in Urban Health." *Academic Medicine* 79, no. 12 (December 2004): 1162–1168.

Black, Moira. "Rural and Urban Medicine in Ecuador," 2014. https://jdc.jefferson.edu/cgi/viewcontent.cgi?article=1033&context=ph.

Carmen. Single Interview-Nurse, October 29, 2019.

Caselli, Irene. "Ecuador Hospital Mixes Folk and Modern Medicine." BBC News, April 6, 2012. https://www.bbc.com/news/world-latin-america-18483584.

"Cubans Warned of Imminent Severe Fuel Crisis." *BBC News*, September 12, 2019, sec. Latin America & Caribbean. https://www.bbc.com/news/world-latin-america-49672343.

Cyr, Melissa E., Anna G. Etchin, Barbara J. Guthrie, and James C. Benneyan. "Access to Specialty Healthcare in Urban versus Rural US Populations: A Systematic Literature Review." *BMC Health Services Research*, no. 1 (2019). https://doi.org/10.1186/s12913-019-4815-5.

DeYoung, Karen. "Trump Administration Announces New Measures against Cuba." Washington Post, April 17, 2019. https://www.washingtonpost.com/world/national-security/trump-administration-announces-new-measures-against-cuba/2019/04/17/cfc2bc96-6132-11e9-9ff2-abc984dc9eec_story.html.

Diego. Single Interview-Patient, October 29, 2019.

Domínguez, Jorge I. "Cuba's Economic Transition: Successes, Deficiencies, and Challenges." In *Transforming Socialist Economies: Lessons for Cuba and Beyond*, edited by Shahid Javed Burki and Daniel P. Erikson, 10–34. London: Palgrave Macmillan UK, 2005. https://doi.org/10.1057/9780230522596_2.

Dresang, Lee T., Laurie Brebrick, Danielle Murray, Ann Shallue, and Lisa Sullivan-Vedder. "Family Medicine in Cuba: Community-Oriented Primary Care and Complementary and Alternative Medicine." *The Journal of*

the American Board of Family Practice 18, no. 4 (August 2005): 297–303. https://doi.org/10.3122/jabfm.18.4.297.
Families Never Receive a Bill from St. Jude. Accessed May 29, 2020. https://www.stjude.org/about-st-jude/why-support-st-jude/no-bills.html.
Feinsilver, Julie M. "Oil-for-Doctors: Cuban Medical Diplomacy Gets a Little Help From a Venezuelan Friend," 2008, 14.
Frist, Bill. "Rural Aging." Bipartisan Policy Center, July 20, 2018. https://bipartisanpolicy.org/report/rural-aging-health-and-community-policy-implications-for-reversing-social-isolation/.
Gallegos-Zurita, Maritza. "Las Plantas Medicinales: Principal Alternativa Para El Cuidado de La Salud, En La Poblacion Rural de Babahoyo, Ecuador/Medicinal Plants: Main Alternative for Health Care, in the Rural Town of Babahoyo, Ecuador." *Anales de La Facultad de Medicina*, no. 4 (2016): 327. https://doi.org/10.15381/anales.v77i4.12647.
Group: two doctors and a nurse. Group Interview, October 29, 2019.
Herman, Fausto. Single Interview-Patient, October 29, 2019.
Hierro, Galo Sánchez del, Roy Remmen, Veronique Verhoeven, Paul Van Royen, and Kristin Hendrickx. "Are Recent Graduates Enough Prepared to Perform Obstetric Skills in Their Rural and Compulsory Year? A Study from Ecuador." *BMJ Open* 4, no. 7 (July 1, 2014): e005759. https://doi.org/10.1136/bmjopen-2014-005759.
Hirchak, Katherine A., and Sean M. Murphy. "Assessing Differences in the Availability of Opioid Addiction Therapy Options: Rural Versus Urban and American Indian Reservation Versus Nonreservation." *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association* 33, no. 1 (2017): 102–9. https://doi.org/10.1111/jrh.12178.
Kegler, Scott R. "Trends in Suicide by Level of Urbanization — United States, 1999–2015." *MMWR. Morbidity and Mortality Weekly Report* 66 (2017). https://doi.org/10.15585/mmwr.mm6610a2.
Kovaleski, Serge F. "With Drugs Scarce, Cuba Tries Natural Cures." *Washington Post*, March 29, 1999. https://www.washingtonpost.com/archive/politics/1999/03/29/with-drugs-scarce-cuba-tries-natural-cures/7145f6e8-2bf7-4192-b582-647683c1d631/.
Look, Kevin A., Mercedes Kile, Katie Morgan, and Andrew Roberts. "Community Pharmacies as Access Points for Addiction Treatment." *Research in Social & Administrative Pharmacy : RSAP* 15, no. 4 (April 2019): 404–9. https://doi.org/10.1016/j.sapharm.2018.06.006.
MacKinney, A. Clinton, Dennis Dudley, and George Schoephoerster. "Aging Well in Rural America--the Role and Status of Healthcare." *Generations* 43, no. 2 (2019): 46–54.
"Manual del Modelo de Atención Integral de Salud - MAIS," 2012, 209.
Maria. Single Interview-Patient, October 29, 2019.
Marsh, Sarah. "Shortages Plague Cuba as U.S. Sanctions Sharpen Economic Woes." *Reuters*, May 27, 2019. https://www.reuters.com/article/us-cuba-economy-idUSKCN1SX1P1.
Mies, Roger. Scribe Questionnaire, n.d.
Monica. Single Interview-Patient, November 5, 2019.
Morales Ojeda, Roberto, Pedro Mas Bermejo, Pastor Castell-Florit Serrate, Carmen Arocha Mariño, Nelly C Valdivia Onega, Dalilis Druyet Castillo, and José A Menéndez Bravo. "Transformaciones En El Sistema de Salud En Cuba y Estrategias Actuales Para Su Consolidación y Sostenibilidad." *Revista Panamericana de Salud Pública*, 2018, 1–8. https://doi.org/10.26633/RPSP.2018.25.
Name not provided. Medical Doctor Questionnaire, May 23, 2020.
Nguyen, Anh T., Kate E. Trout, Li-Wu Chen, Lynda Madison, Katherine L. Watkins, and Shinobu Watanabe-Galloway. "Nebraska's Rural Behavioral Healthcare Workforce Distribution and Relationship between Supply and County Characteristics." *Rural and Remote Health* 16, no. 2 (June 2016): 3645.
Piñero Cándano, Jorge Ariel. Medical Student Questionnaire, May 18, 2020.
Primary Health Care Performance Initiative. "Cuba: Emphasis on Community-Based Primary Care in a Tiered System Improves Outcomes." PHCPI, October 17, 2018. https://improvingphc.org/cuba-emphasis-community-based-primary-care-tiered-system-improves-outcomes.
Roth, Nicholas. Scribe Questionnaire, n.d.
"Rural Public Transportation Systems | US Department of Transportation." Accessed June 9, 2020. https://www.transportation.gov/mission/health/Rural-Public-Transportation-Systems.
Silvia Martínez Calvo. "Achievements and Challenges in Primary Health Care in Cuba." *Revista Habanera de Ciencias Médicas*, no. 2 (2018): 157.

Smith, Stansfield. “Ecuador’s Accomplishments under the 10 Years of Rafael Correa’s Citizen’s Revolution.” COHA, April 17, 2017. http://www.coha.org/ecuadors-accomplishments-under-the-10-years-of-rafael-correas-citizens-revolution/.
US Census Bureau. “American Community Survey: 2011-2015.” The United States Census Bureau. Accessed May 3, 2020. https://www.census.gov/newsroom/press-releases/2016/cb16-210.html.
USA International Business Publications. *Cuba: Foreign Policy & Government Guide*. Int’l Business Publications, 2001.
Vassar, Lyndra. “One Med School’s Innovative Approach to Diversity.” American Medical Association, January 15, 2016. https://www.ama-assn.org/education/medical-school-diversity/one-med-schools-innovative-approach-diversity.
Warshaw, Robin. “Health Disparities Affect Millions in Rural U.S. Communities.” AAMC, October 31, 2017. https://www.aamc.org/news-insights/health-disparities-affect-millions-rural-us-communities.
Weisbrot, Mark, Jake Johnston, and Lara Merling. “Decade of Reform: Ecuador’s Macroeconomic Policies, Institutional Changes, and Results,” February 2017, 25.
Weisgrau, S. “Issues in Rural Health: Access, Hospitals, and Reform.” *Health Care Financing Review* 17, no. 1 (1995): 1–14.
“What Medicare Covers | Medicare.” Accessed June 9, 2020. https://www.medicare.gov/what-medicare-covers.

7. Endnotes

1 Weisgrau, “Issues in Rural Health: Access, Hospitals, and Reform.”
2 Primary Health Care Performance Initiative, “Cuba.”
3 Feinsilver, “Oil-for-Doctors: Cuban Medical Diplomacy Gets a Little Help From a Venezuelan Friend.”
4 Black, “Rural and Urban Medicine in Ecuador.”
5 *Families Never Receive a Bill from St. Jude*.
6 Anderson, Boumbulian, and Pickens, “The Role of U.S. Public Hospitals in Urban Health.”
7 Mies, Scribe Questionnaire.
8 Warshaw, “Health Disparities Affect Millions in Rural U.S. Communities.”
9 American Hospital Association, “Fast Facts on U.S. Hospitals, 2020 | AHA.”
10 US Census Bureau, “American Community Survey: 2011-2015.”
11 Warshaw, “Health Disparities Affect Millions in Rural U.S. Communities.”
12 MacKinney, Dudley, and Schoephoerster, “Aging Well in Rural America--the Role and Status of Healthcare.”
13 Cyr et al., “Access to Specialty Healthcare in Urban versus Rural US Populations: A Systematic Literature Review”; Frist, “Rural Aging”; Kegler, “Trends in Suicide by Level of Urbanization — United States, 1999–2015.”
14 Dresang et al., “Family Medicine in Cuba.”
15 Silvia Martínez Calvo, “Achievements and Challenges in Primary Health Care in Cuba.”
16 Silvia Martínez Calvo.
17 USA International Business Publications, *Cuba*.
18 DeYoung, “Trump Administration Announces New Measures against Cuba.”
19 Marsh, “Shortages Plague Cuba as U.S. Sanctions Sharpen Economic Woes.”
20 Domínguez, “Cuba’s Economic Transition.”
21 Black, “Rural and Urban Medicine in Ecuador.”
22 Gallegos-Zurita, “Las Plantas Medicinales: Principal Alternativa Para El Cuidado de La Salud, En La Poblacion Rural de Babahoyo, Ecuador/Medicinal Plants: Main Alternative for Health Care, in the Rural Town of Babahoyo, Ecuador.”
23 Caselli, “Ecuador Hospital Mixes Folk and Modern Medicine.”
24 Smith, “Ecuador’s Accomplishments under the 10 Years of Rafael Correa’s Citizen’s Revolution.”
25 Weisbrot, Johnston, and Merling, “Decade of Reform: Ecuador’s Macroeconomic Policies, Institutional Changes, and Results.”
26 “Manual del Modelo de Atención Integral de Salud - MAIS.”
27 “What Medicare Covers | Medicare.”
28 Cyr et al., “Access to Specialty Healthcare in Urban versus Rural US Populations: A Systematic Literature Review.”

29 “Rural Public Transportation Systems | US Department of Transportation.”

30 Warshaw, “Health Disparities Affect Millions in Rural U.S. Communities.”

31 Vassar, “One Med School’s Innovative Approach to Diversity.”

32 Look et al., “Community Pharmacies as Access Points for Addiction Treatment.”

33 Hirchak and Murphy, “Assessing Differences in the Availability of Opioid Addiction Therapy Options.”

34 Nguyen et al., “Nebraska’s Rural Behavioral Healthcare Workforce Distribution and Relationship between Supply and County Characteristics.”

35 Cyr et al., “Access to Specialty Healthcare in Urban versus Rural US Populations: A Systematic Literature Review.”

36 Smith, “Ecuador’s Accomplishments under the 10 Years of Rafael Correa’s Citizen’s Revolution.”

37 Hierro et al., “Are Recent Graduates Enough Prepared to Perform Obstetric Skills in Their Rural and Compulsory Year?”

38 Morales Ojeda et al., “Transformaciones En El Sistema de Salud En Cuba y Estrategias Actuales Para Su Consolidación y Sostenibilidad.”

39 Marsh, “Shortages Plague Cuba as U.S. Sanctions Sharpen Economic Woes.”

40 Kovaleski, “With Drugs Scarce, Cuba Tries Natural Cures.”

41 “Cubans Warned of Imminent Severe Fuel Crisis.”

42 Caselli, “Ecuador Hospital Mixes Folk and Modern Medicine.”