

## The Possibility to Apply Community Health Workers in San Cristóbal De Las Casas under the Issues of Diabetes

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### Abstract:

The residents in San Cristóbal de las Casas in Mexico suffer from extreme diabetes problems due to the overselling and overusing of Coca-cola. Under this situation, it is vital for locals to achieve sustainable development by lessening residents from the issue of diabetes. Therefore, this paper would analyze why this situation above happened in San Cristóbal de las Casas. Existing research about San Cristóbal de las Casas mainly focuses on economic development but seldom pay attention to the influence of diabetes and how to help the indigenous people out from a health angle. Therefore, relevant materials would base on comparative study, prospect analysis and data source evaluation and apply research question that is how to solve the problem of diabetes from the perspective of health.

### 1. Introduction

Authorities have declared a diabetes emergency in Chiapas, the poorest state in Mexico. Diabetes-related illnesses are the second greatest cause of death in Chiapas, killing 3000 people annually. Studies have shown that under the influence of many factors, the overselling and overusing of Coca-Cola is one of the main reasons causing this situation. All Coca-Cola production here comes from the bottling plant in San Cristóbal de las Casas. Therefore, to better understand the above phenomenon and learn from it, This article would combine various cases for analysis and try to explain what caused this situation and why it happened. There is also a research question based on this topic, that is, how to solve the problem of diabetes from the perspective of health.

### 2. Current situation

The Mexican statistics office discovered in 2010 that the daily average Coca-Cola consumption in Mexico was over 2 liters and the average amount of soda consumed annually by people of the southern state is 821.25 liters (Díaz, 2020).<sup>[1]</sup> The Los Altos region, where indigenous people predominate and reside primarily in rural villages, has exceptionally high Coca-Cola consumption rates. Additionally, Coca-Cola has been given a significant place in the religious practices of the native Mayan people of Chiapas. All Coca-Cola productions here come from the bottling plant in San Cristóbal de las Casas. San Cristóbal de las Casas also lacks access to potable water. Some areas of San Cristóbal de las Casas, the regional center for Los Altos, only had access to running water a few times per week, forcing many people to purchase additional water from tanker trucks, many locals drink Coca-Cola, which can be easier to find than bottled water and is virtually as cheap. Coca-Cola is becoming the most widely available product in Los Altos (Díaz, 2020).<sup>[1]</sup> Coca-Cola only pays around 10 cents per 260 gallons for its water privileges. They pay this money to the federal government but don't pay the local government, while the San Cristóbal community's infrastructure is literally in disrepair (Watson & Treanor, 2016).<sup>[2]</sup> The Lack of waste water treatment in the city is one of its problems. As a result, untreated sewage spills

directly into nearby rivers so contagious infections were common in the waterways of San Cristóbal. The local government is too poor to build waste water treatment. Femas, the bottling plant in San Cristóbal de las Casas took action in 2019. They had talked with residents to build a water treatment plant that would provide clean drinking water to 500 families in the area. However, rather than easing tensions, the plan led to more protests by locals and forced the company to halt the construction of the facility (Tuckman, 2019).<sup>[3]</sup>

The popularity of Cola leads locals to diabetes. Diabetes can trigger a series of medical conditions ranging from blindness to malfunctioning kidneys and “elephant’s foot,” in which patients gradually lose feeling in the joints. This condition was responsible for 75,000 amputations in 2021 (Unreported World, 2021).<sup>[4]</sup> The nearest hospital is an hour away by car and dialysis is not covered by public health care for informal workers such as some peasants. Each dialysis session costs anywhere between 2,000 and 6,000 pesos in the local area (Wise, 2017).<sup>[5]</sup> The lack of medical help and high-cost treatment caused most patients tend to wait a long time before seeking medical help and find out that they suffer from diabetes late in the process. Diabetes can trigger a whole series of medical conditions and the worst part is that diabetes is a disease that can be kept under control but due to the lack of access to health care services, this population in the local area is very exposed.

### 3. Findings

Here comes the research question, how to solve the diabetes problem from the aspect of health? This article believes that Community Health Workers (“CHWs” hereafter) are one of the solutions to this. What are CHWs? CHWs are a part of Millennium Villages run by the United Nations. Community members who have received training to promote health and provide some health services but is not health care professional are referred to as community health workers. They provide various interventions such as nutrition, maternal and child health care, primary health care, malaria and diabetes. They support maternal and child health, as well as the prevention and treatment of both communicable and non-communicable disorders. Limited training, supplies and support to offer vital primary health care services to people are given by community health workers (World Health Organization, 2021).<sup>[6]</sup> In countries that lack enough health professionals but have a high demand for health care services, they are considered effective supplements. They are sometimes young women from the community with ten to twelve years of schooling in total that has no medical degree or nursing degree and with a little bit of training over a few months.

How could the CHWs be applied in San Cristóbal de las Casas and is it possible to apply it in the local place? The answer to this is it can. Here are some reasons and this article would take Brazil for example. Brazil had a similar situation to Mexico and Brazil had successfully applied many CHWs at home. Let’s compare the situation between Mexico and Brazil from some cases in public health and economic indicators first. According to the newest data, Mexico has 24.3 doctors per 10,000 inhabitants, compared to Brazil’s 23.1. And then the probability of dying from any of CVD, cancer, diabetes, CRD between age 30 and exact age 70 in Brazil is 15.5%, while in Mexico it is 15.6%. In Brazil and Mexico, domestic general government health expenditure as a percentage of total government expenditure is 10.5% and 10.3%, respectively. Brazil receives 0.17 dollars per person in net official development assistance for medical research and basic health care, whereas Mexico receives 0.07 dollars per person (World Health Organization, 2022).<sup>[7]</sup>

In Brazil, 265,000 CHWs are working across 43,000 Family Health Teams serving 209

million Brazilian (Pinto et al., 2021).<sup>[8]</sup> Each of these teams consists of six CHWs, at least one family doctor, one nurse, and one assistant nurse. Each team offers complete care for a variety of promotional, preventative, recuperative, and rehabilitative services offered by health care teams. Significant improvements in Brazil's health results have been attributed to the country's health program, which is funded by CHAs (Macinko, Guanais and Souza, 2006).<sup>[9]</sup> Only 2% of children are underweight, 99% of women receive four or more prenatal visits, 91% of the demand for family planning has been met, Brazil has one of the fastest declining under-five mortality rates in the world, and it achieved its MDG goal for child mortality in 2010, five years ahead of the targeted date. 90% of eligible women receive treatment to prevent mother-to-child transmission of HIV, the estimated percentage of cases of TB being detected is now 88%, improved drinking water coverage and improved sanitation coverage are 98% and 96% respectively, and 95% of AIDS patients in need of medication are receiving it (Perry and Zulliger, 2012). The social determinants of health that affected the residents under their care as well as the frequency of illnesses were also understood by them. They are also described as actively mobilizing communities for change, including teaching residents how to advocate for more and better services (Pinto et al., 2021).<sup>[8]</sup>

In addition, local workers with backpacks with the right kinds of medical supplies can transform, improve, and save lives in their community. Just like people in Brazil. CHWs can carry tools to fight diabetes in their backpack. And they will do a rapid diagnostic test for diabetes with a drop of blood from a local person, CHWs will have the basic oral medicines to fight diabetes if the subject has blood sugar overload. If the CHWs apply in San Cristóbal de las Casas, they can do many things. They will travel with diabetes-fighting equipment in their backpack. They will first do a fast diagnostic test for diabetes using just a drop of a local person's blood. The requirement that the test be performed at a hospital or clinic located many miles away is no longer necessary. Second, if the subject has a blood sugar overflow, the CHW will carry essential oral medications to treat diabetes. They will additionally have a phone so they will be able to call an ambulance or clinic to speak with the nurse or doctor on duty for guidance. Patients can visit a hospital or clinic for additional care after meeting their neighborhood CHWs.

#### **4. Conclusion**

Brazil has spent many years cultivating the CHWs in their county, and CHWs can be applied in San Cristóbal De Las Casas to help the locals out of their struggle with diabetes. As long as there is a continuous effort, the local workers with a backpack with proper medical supplies can transform, improve, and save lives in their community. Moreover, authorities should also notice whether there exist shortages from the perspective of recruitment, worker's role, initial and ongoing training, equipment and supplies, supervision, performance evaluation, incentives, community involvement, referral, professional advancement and documentation.

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