



## SARS 2-Covid-19 Social Impact, in a Remote Indigenous Village in the Alpine and Southeast of Mexico

José Luis Mosso Vázquez<sup>1\*</sup>, Dejanira Mosso Lara<sup>2</sup> and Jonathan Joshua del Real<sup>2</sup>

<sup>1</sup>School of Medicine, Universidad Panamericana, Mexico City, Mexico

<sup>2</sup>Instituto Nacional de Enfermedades Respiratorias INER, Mexico City, Mexico

\*Corresponding Author: José Luis Mosso Vázquez, School of Medicine, Universidad Panamericana, Mexico City, Mexico.

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### Abstract

**Goal:** Describe the impact of COVID-19 in “El Tepeyac, an indigenous community of Mè’Phàà people situated in the southeast region of Guerrero, México.

**Methods:** We obtained permission from local meet with the community to provide critical information regarding the COVID-19 pandemic. We made a survey to get population statistics in the last year, we donated oximeters, thermometers and fast covid-19 tests in order to enhance diagnostic capabilities of the community. We provided direct assistance to the community for 3 days, during which we utilized the assistance from a Mè’Phàà translator.

**Results:** Since the time that the SARS-CoV-2 virus was detected in February 2020 up until today May 12, 2021, there have been 0 deaths and 0 infected with SARS-CoV-2 in El Tepeyac. No citizens were infected the disease in the period lasting from February 2020 to May 13, 2021. The El Tepeyac village has 325 citizens as of December 31, 2020. Few of them use face cloth masks, none of which were classified as N95 masks. Little to no assistance was offered by local healthcare institutions for the prevention and treatment of COVID-19.

**Conclusion:** There are no reported infections or deaths from COVID-19 in El Tepeyac. It is suggested that the transmission of COVID-19 was prevented due to social distancing in addition to the distance between other communities. The community El Tepeyac is separated from other communities by more than 15 kilometers. The small size of these communities and relative isolation from areas of higher population density is also a possible reason for the minimal impact of COVID-19 on this community.

**Keywords:** Mè’Phàà; SARS-CoV-2; Covid-19; Indigenous

### Introduction

The population of Mexico as of December 2020 is 126,014,024.00. Indigenous peoples make up approximately 10.1% (<https://www.inegi.org.mx/temas/estructura/>). According to the Global Pandemic last updated at June 18, 2021 from Johns Hopkins University, there have been 177 483 286 cases, 3, 843,

421 deaths, and 2 519 672 5371,630 doses vaccines administered (<https://coronavirus.jhu.edu/map.html>). Of those deaths reported, 230 792 have been in Mexico. At the time of writing this, the countries with the highest number of deaths are the United States, followed by India, and then Brazil. Indigenous communities in Mexico have received relatively little support from the Mexican govern-

ment for the prevention of COVID-19; there is a disparity between the aid offered for indigenous communities and the aid offered to more urban regions in Mexico [1-4].

We have been providing pro-bono medical service and outpatient practice in indigenous Mè'Phàà, Mixtec and Nahuatl communities located in Southeast Mexico for approximately 20 years. After receiving doses of the COVID-19, members of our investigative team sought to visit some of these communities to provide aid. During these visits, we provided information to the population regarding proper nutrition, disease prevention, and updates regarding the ongoing pandemic. During the visit, we stayed for 2 days to provide information and donated approximately 50 oximeters and thermometers to help citizens monitor possible symptoms of infection.

### Methods

We received consent from the governor and the community for the gathering and use of census information for the year of 2020. To provide information to the community, a press conference was held on May 12, 2021, with the assistance of a physician from the National Institute of Respiratory Disease (INER). Oximeters and thermometers were donated to the elderly as well as to patients diagnosed with Type II diabetes, hypertension, and obesity. During the meeting, time was given for citizens to ask questions regarding the pandemic. To ensure good hygiene practices were maintained by the community, children were taught proper handwashing technique during the visit (See picture 1 and 2).



**Picture 1:** Overview SARS 2- Covid-19 conference. "El Tepeyac", the Me'Phaa indigenous community located in the mountains of Guerrero, Mexico. May 12, 2021.



**Picture 2:** Testing oxygen saturation and heart rate with oximeter and smart watch in a female Mè'Phàà indigenous.

### Results

It was found during the conference that not a single member of the El Tepeyac community were reported to be infected with SARS-CoV-2 between February 2020 and May 2021. Few prevention methods were reported, with only a few members of the community indicating the use of face coverings. The community did not undergo an official period of quarantine or lockdown. According to census data from 2020, the El Tepeyac village reported a population of 325 individuals consisting of 169 women and 157 men. Many of them are corn and bean farmers working within the village. 3 citizens work outside of the village as teachers. Due to the lack of internet availability in the area, children were not able to attend virtual classes. As a result, the children of El Tepeyac have not been able to attend school since the start of the COVID-19 pandemic.

### Discussion and Conclusion

It suggested by our observations that social distancing and the limiting of indoor gatherings are responsible for the prevention of COVID-19 transmission in El Tepeyac. This is aided by the fact that most of the villagers seldom travel to nearby towns or large cities. By comparison, there were 2 deaths reported in El Tejocote, a village 5 kilometers away from El Tepeyac. Both victims were elementary school teachers who commuted outside of their village to work. Regarding the transmission of the SARS-CoV-2 virus across

Mexico, it highly likely that it was originally introduced into smaller communities via travel. This includes individuals visiting from large cities as well as villagers who emigrated to USA and Canada but returned to the village for holidays held during April of 2020 [5]. In other words, travel between countries and cities brings significant risk to otherwise isolated communities. This was observed during the second wave of COVID-19 transmission in Mexico, which occurred following the celebration of Christmas and New Year's Eve. It is important to note that many indigenous communities do not celebrate either of these holidays. Because of this, there is not a substantial increase in traffic to these otherwise secluded locations, which further prevention the introduction of COVID-19 into these communities. This supports the idea that physical isolation and limited traffic to El Tepeyac contributed to the lack of cases observed in the village.

Aid given to the village consisted of 50 oximeters, 50 thermometers, bottles of 70% alcohol for sanitation, 500 face masks, winter clothes, food and 5 rapid COVID-19 tests. These donations, supported by the information on disease prevention provided during the conference, aim to prevent the future spread of COVID-19 to El Tepeyac. It is important to continue the efforts to raise awareness of disease prevention. Although El Tepeyac remains relatively unscathed by COVID-19, its well-being is not representative of other indigenous communities in Mexico that might not share the same isolation from outside travel.

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