

## Coronavirus Pandemic

### “I prefer to get coronavirus than to stop working”: the street vendor’s perspective

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#### Abstract

During phase 2 of the COVID-19 pandemic in a Mexican City, informal street vendors (cases) and formal employees (controls) were interviewed. A total of 82.6% of street vendors preferred to expose themselves to the coronavirus than to stop working, compared with 18.4% of formal employees (adjusted OR = 19.4, 95%CI: 4.6-81.7,  $p < 0.001$ ). Street vendors had 7 times less fear of dying from coronavirus (adjusted OR = 0.14, 95% CI: 0.03-0.5,  $p = 0.005$ ) and showed a 16-times greater lack of real concern for the increase in cases in their community than the formal employees (adjusted OR = 0.06, 95% CI: 0.01-0.3,  $p = 0.002$ ). Street vendors were the group with the poorest adherence to household and work area containment measures that continued to be in contact with others. The corresponding authorities must plan specific strategies that allow street vendors to survive economically, while at the same time, protecting community health.

**Key words:** COVID-19; coronavirus; viral spread; informal workers.

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#### Introduction

COVID-19, the respiratory disease caused by a new coronavirus (SARS-CoV-2), is a pandemic that is a worldwide emergency, affecting human health and the global economy. Socioeconomic disadvantages raise particular concerns for marginalized communities during the COVID-19 pandemic [1]. Increasing measures of physical distancing needed to contain the virus have resulted in reduced income-generating activities for formal and informal workers. Attitudes toward the COVID-19 pandemic in persons whose work is occasional, poorly paid, or unstable, such as street vendors, are often different from those of individuals with formal jobs [2]. Street vending is not a

new occupation, but it has expanded tremendously in public spaces of cities of all sizes, especially in developing countries, given that it is an activity that proliferates following economic crises [3]. A study conducted in Bogotá, Colombia, identified the presence of street vendors in 27% of the city’s intersections, signifying that they form part of the urban ecosystem, with broad spatial dissemination [4]. Knowing the perspective and attitudes of informal street vendors in the face of the pandemic, compared with those of persons with formal jobs, can be useful for planning pandemic containment strategies in different socioeconomic groups. The “StayHome” or “Don’tGoOut” media campaigns may not be useful for

the group of persons that do not receive a fixed salary and that live in poverty.

**Methodology**

During phase 2 of the COVID-19 pandemic in Mexico, a case-control study was conducted in the cities of Colima and Villa de Álvarez, located in the State of Colima in Western Mexico, within the time frame of March 30 to April 2, 2020. The present study was approved by the Research Ethics Committee of the University of Colima, Faculty of Medicine, Colima, Mexico (Registry Number: 2020-01-05), and was carried out according to the principles of the World Medical Association Declaration of Helsinki and the General Guidelines for Health Research. The anonymity of the participants was guaranteed. A total of 115 street vendors (cases) and 136 formal workers (controls) were randomly interviewed. The controls were individuals with fixed salaries, the majority of whom worked for government agencies or large companies. During the study period, schools and different public institutions were closed and physical distancing of 1.5 meters between persons, among other measures, was in effect. Descriptive statistics were carried out, calculating means, standard deviation, and percentages. For the inferential statistics, normal data distribution was first determined using the Kolmogorov-Smirnov test, and the Student’s t test was employed to compare the mean values. The qualitative data were compared using the  $\chi^2$  test. The association analyses were estimated by odds ratios (ORs) and 95% confidence intervals (CIs), using crude binary logistic regressions, or adjusted by sex, age group (39 years of age or younger vs 40 years of age or older), educational level (high school degree or lower academic level vs incomplete college degree or higher academic level), socioeconomic level (high and upper-middle level, middle level, or lower-middle and low level), and the presence of comorbidities (diabetes, high blood pressure, obesity, asthma or bronchial disease, liver

disease, or cancer). All statistical analyses were performed with SPSS version 20 software (IBM Corp., Armonk, NY, USA).

**Results**

The general characteristics of the individuals interviewed are shown in Table 1. A total of 82.6% of the street vendors interviewed preferred being exposed to coronavirus to not working, compared with only 18.4% of the formal employees (adjusted OR = 19.4, 95%CI: 4.6-81.7,  $p < 0.001$ ), and 68.7% of the street vendors stated they would prefer to become infected with coronavirus than not to work, compared with only 14.0% of the formal employees (adjusted OR=12.2, 95%CI: 3.0-49.9,  $p < 0.001$ ) (see table 2). Street vendors had 7 times less fear of dying from coronavirus (adjusted OR = 0.14, 95% CI: 0.03-0.5,  $p = 0.005$ ) and showed a 16-times greater lack of real concern for the increase in cases in their community than the formal employees (adjusted OR = 0.06, 95% CI: 0.01-0.3,  $p = 0.002$ ) (table 2). Importantly, 94% of the informal street vendors stated their livelihood was based on earnings from one day to the next, with no possibility of savings.

When asked about their adherence to isolation measures at home and with family members, 45.2% of the informal street vendors and 9.5% of the formal employees did not adhere to them at all or only a little ( $p = 0.008$ ) (table 2). Regarding the workspace, 9.6% of street vendors and 77.8% of formal employees had access to a sink, 33.9% of street vendors and 76.2% of formal employees used hand sanitizer, 6.1% of street vendors and 23.8% of formal employees wore gloves, 30.4% of street vendors and 46.8% of formal employees wore a face mask, and 7.0% of street vendors and 60.3% of formal employees disinfected surfaces (all the analyses had a  $p < 0.001$ , see Table 2). In one complete workday, the street vendors came into contact with  $9.5 \pm 11.3$  persons, at a distance of less than one meter, for 2 to 5 minutes, compared with the formal employees, who came into contact with  $2.3 \pm 5.8$  persons, at the

**Table 1.** General characteristics of the individuals interviewed.

Characteristic	Formal employee	Street vendor	p
Age (years)	40.1 + 14.3	45.0+14.7	0.008
Females	63.2%	49.6%	0.020
Healthcare coverage	88.2%	4.3%	0.007
Comorbidity*	36.0%	55.7%	0.004
Incomplete college degree or higher academic level	89.7%	13.0%	< 0.001
Socioeconomic level**			
High and upper-middle level	90.4%,	17.4%	< 0.001
Middle level	8.8%	20.9%	
Lower-middle and low level	0.7%	61.7%	

\*Diabetes, high blood pressure, obesity, asthma or bronchial disease, liver disease, or cancer. \*\*According to the 2018 Mexican Association of Market Intelligence and Opinion Agencies (AMAI, the Spanish acronym).

same distance and for the same time intervals ( $p < 0.001$ ).

**Discussion**

Our results showed that street vendors were the group that adhered the least to the protective measures against coronavirus spread, both at home and at their work areas. They also came into contact with more persons at a distance of less than 1 meter, indicating they had a higher risk for becoming infected and infecting others. That was amplified by the fact that street vendors are constantly moving through city streets, facilitating rapid viral spread, and unable to identify contacts, thus preventing containment measures from being established.

The adjusted OR analysis showed that street vendors had 19-times more probability of preferring to get the coronavirus than to stop working and had 7 times less fear of dying from coronavirus, compared with the stable employees. That could be due to the fact

that more than 90% of the street vendors made a living with what they earned on a daily basis. Therefore, losing work was directly related to a lack of food, making it difficult for them to adhere to indications from the government and health sector [2].

In addition, street vendors have a higher number of comorbidities associated with severe COVID-19 illness [5], compared with formal employees. Likewise, street vendors have no social protections or pre-established medical healthcare [2].

In large cities, such as Mexico City, the social structure is notably polarized. The popular sectors with reduced purchasing power make up 60% of the metropolitan population. In such cities, consumer habits are divided by sectors. High-income sectors do not necessarily spend their money close to where they live, whereas low-income sectors buy the bulk of their products close to home [6]. Therefore, street vendors tend to have a non-uniform distribution in large cities, with said informal microbusiness accumulating in

**Table 2.** Comparison of attitudes toward the COVID-19 pandemic between street vendors and formal employees.

Attitude	Yes	No	cOR	95% CI	P	AOR	95% CI	P
<b>Prefers being exposed to coronavirus to not working</b>								
Formal	18.4%	81.6%	Reference					
Street vendor	82.6%	17.4%	21.09	11.02-40.34	< 0.001	19.46	4.63-81.77	< 0.001
<b>Prefers becoming infected with coronavirus to not working</b>								
Formal	14.0%	86.0%	Reference					
Street vendor	68.7%	31.3%	13.51	7.23-25.24	< 0.001	12.28	3.01-49.96	< 0.001
<b>Has access to a sink in the workspace</b>								
Formal	77.8%	22.2%	Reference					
Street vendor	9.6%	90.4%	0.03	0.14-0.06	< 0.001	0.12	0.02-0.55	0.006
<b>Uses a hand sanitizer in the workspace</b>								
Formal	76.2%	23.8%	Reference					
Street vendor	33.9%	66.1%	0.16	0.09-0.28	< 0.001	0.18	0.03-1.01	0.052
<b>Disinfects surfaces in the workspace</b>								
Formal	60.3%	39.7%	Reference					
Street vendor	7.0%	93.0%	0.05	0.02-0.11	< 0.001	0.10	0.02-0.46	0.003
<b>Wears gloves in the workspace</b>								
Formal	23.8%	76.2%	Reference					
Street vendor	6.1%	93.9%	0.21	0.08-0.49	<0.001	0.07	0.01-0.48	0.007
<b>Wears a face mask in the workspace</b>								
Formal	46.8%	53.2%	Reference					
Street vendor	30.4%	69.6%	0.49	0.29-0.84	0.010	0.14	0.02-0.76	0.023
	<b>A lot</b>	<b>Not at all/a little</b>		cOR	95% CI	P	AOR	95% CI
<b>Fears dying from the disease*</b>								
Formal	49.3%	37.5%	Reference					
Street vendor	18.3%	65.2%	0.21	0.11-0.39	< 0.001	0.14	0.03-0.55	0.005
<b>Concerned that cases will increase in his/her community*</b>								
Formal	79.4%	2.9%	Reference					
Street vendor	41.7%	32.2%	0.05	0.02-0.14	< 0.001	0.06	0.01-0.31	0.002
<b>Adheres to isolation measures at home*</b>								
Formal	69.1%	9.5%	Reference					
Street vendor	16.5%	45.2%	0.12	0.06-0.25	< 0.001	0.14	0.03-0.59	0.008

Logistic regressions were performed to examine the influence of being a street vendor on various attitudes toward COVID-19, using formally employed workers as a reference group. Abbreviations: cOR, crude odds ratio; AOR, adjusted odds ratio by sex, age group, educational level, socioeconomic level, and presence of comorbidities (diabetes, high blood pressure, obesity, asthma or bronchial disease, liver disease, or cancer). \*The percentages in each group do not add up to 100% because a proportion of the participants chose a middle option (regular) not shown in the table. \*The OR analysis only compared the participants that answered, “A lot” (as predictor) vs “Not at all/a little”.

popular zones. However, in small or medium-sized cities, street vending distribution can be more or less homogeneous. Whatever the size of the city, street vendors could play a relevant role in the containment or spread of an infectious disease for one or several population sectors, depending on the dynamics of the city. The foregoing is relevant when considering that street vendors have a 16-times greater lack of "real concern" about the increase in cases in their community, compared with formal employees.

Widely recommended strategies, such as "StayHome", are not an option for street vendors because they will lose their livelihood [2]. That group of individuals is an important potential source of COVID-19 spread and severe disease presentation. The corresponding authorities must plan specific containment strategies, along with health education measures, that allow that group of persons to survive during periods of social isolation. Such strategies will benefit not only the street vendors and their families, but the general city population, as well.

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