



Mini Review

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# Assessment of Behavior and Attitude of Academic Community During Covid-19 Contingency

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## Abstract

The survey about the behavior and attitude of an academy community was carried out to know their preventive measures and response caused by SARS-CoV-2 infection. In the period between March 26 and May 31, 2020, data from "Survey on the Follow-up of the Community of the Medical Faculty" were collected using Lime Survey version 4.2.5 in the CIPPS Survey Service. The use of mouth and face mask in the respondents barely exceeded 70%. 10% of the respondents have chronic diseases such as hypertension and obesity. 95% reported constant hygienic measure of hand-wash with soap and water, while more than 94% have respected physical-space distance. 20% of the survey population showed respiratory symptoms, which fell to 5% in the last 9 weeks. The most frequently reported symptoms were headache, cough, odynophagia, rhinorrhea, asthenia, anosmia and symptoms associated with respiratory tract. Less than 1% required medical attention, using non-steroid anti-inflammatory drugs. The analysis of the academic community survey depicts the importance of community discipline and the interest in collective health. The dissemination of useful information to prevent infections such as the use of mouth and face masks, physical-space distance and direct medical orientation guidance should continue to be strengthened.

**Keywords:** Attitudes; University Community; COVID-19; Survey

## Introduction

Airway infections are the cause of more than 4 million deaths a year and approximately 40% of them are produced by viral infections Troeger [1]. Acute respiratory diseases produced by viruses have a great impact and importance for global public health. Severe acute respiratory syndrome (SARS) is a respiratory disease provoked by a coronavirus, named SARS-CoV-associated coronavirus. In 2003, the World Health Organization (WHO) [2] reported an accumulated 8,439 infected people by SARS-CoV with a toll of 812 deaths. The outbreak, which started in China spread to 30 countries and was successfully suppressed, thanks to timely detection measures and isolation of cases WHO [3]. From this moment on, the possible future transmissions of the virus were announced. Likewise, a call was made to collaborate in the preparation of research

protocols and case management, emphasizing the restructuring and strengthening of the health systems to cope in disease care. In December 2019, in Wuhan province of Hubei, China, the first case of pneumonia of unknown etiology was reported (JAMA 2020). On January 7, the pathogen was identified as a new coronavirus and by January 30, the WHO declared the Severe Acute Respiratory Syndrome 2 (SARS-Cov-2) a health emergency of global concern. Since then, the world has been fighting tooth and nail to come up with specific drug to attack the virus to no avail Echeverria et al. [4]. SARS-CoV-2 is a virus with a high contagion rate that has collapsed several health systems in the world. The alarming speed of the contagion, aided by facilities in global travel, took the virus to virtually all the continents of the world, in such a way that by June



26, 2020, a staggering number of confirmed cases have risen to 9,683,414 infected people worldwide, with a toll of 491,095 deaths. On the same date, in Mexico, 202,951 confirmed cases with a total of 25,060 deaths were reported [5].

Based on the virulence and the speed of spread, a vehement call was made to the health ministries of all the affected countries around the world to reinforce measures for the control of SARS-CoV-2, which, with no existing specific treatment, should be based on adoption of effective preventive measures to reduce the contagions and propagation of the virus. In the light of SARS-CoV-2 transmission mechanisms based on close contact and aerosols (Interim Guidance 2020), the actions of prevention are focused on disinfection and hygiene. In a study performed in 2018 with the objective of determining the survival time of SARS and MERS (Middle East Respiratory Syndrome), it was reported that SARS-CoV can survive up to 72 hours on stainless steel and plastic and 24 hours on surfaces such as copper. Some of the measures recommended by the WHO are: maintenance of person-to-person physical-space distance of at least 1 meter; frequent hand-wash with alcohol when the hand is visibly not dirty and with water and soap on the contrary; avoidance of eyes, nose and mouth touching; correct hygienic coughing and sneezing which entail covering the face with the internal face of the elbow or with disposable hygienic paper which should be disposed immediately after use; wearing mouth and face masks in case of respiratory symptoms and hand wash on removing or getting rid of it; routine cleaning and disinfection of all surroundings and other frequently touched surfaces. In addition to these measures aimed at the entire population, the protection of the health professionals in charge of the COVID-19 patients is required. In this case, airborne disinfections based on application of environmental aerosols and support treatment should be strictly undertaken Standard Precautions 2020. Not only have the health authorities been urged to implement the aforementioned measures, but also to cover the needed resources which the protocol to mitigate the spread of a pandemic demands, by actively searching for contacts with confirmatory tests. The purpose of containment measures is to suspend or impede the development of crowding activities and encourage social-distancing, closure of schools as well as non-essential businesses and commerce Mitigation [6]. In this health emergency, it is difficult to foresee which are the most effective measures and how to implement them in order to reduce the number of infected cases. For this, estimations with mathematical models has been formulated and applied in the observation of the behavior of the contagion or spread of the infection with social-distancing measures. A study performed in Singapore, one of the countries with less number of deaths and confirmed cases associated with SARS-CoV-2, showed a simulation of 100 infected cases in 80 days in different scenarios [5].

In the first scenario, there was no intervention and data on infected cases registered a total of 279,000 people which corresponds to 7.4% of the population. In the second scenario with the population in quarantine, the result of confirmed case was 15,000. In the third simulation with closure of schools and remote working, the number of contagion was 10,000 cases on day 80. In the fourth scenario, involving the combination of the aforementioned measures, the confirmed cases were 1,800 on day 80 Koo et al. [7]. Another study carried out with EnerPol platform in Swiss population including interventions such as closure of schools, activities, limitation of public transport and social distancing from February 22 to April 11, reported that 42% of the population were infected without government intervention compared to 1% of the population infected with timely intervention Reza et al. [8]. The objective of the present work was to evaluate the behavior and attitude of the students and staffs of the Faculty of Medicine (FacMed), Universidad Nacional Autónoma de México (UNAM) in the implementation of preventive measures, as well as adherence and response to them, in effort to decrease the fast spread of the disease caused by SARS-Cov-2.

## Methods

In the period between March 26 and May 31, 2020, data from "Survey on the Follow-up of the Community of FacMed" were collected using Limesurvey version 4.2.5 in the CIPPS Survey Service. All the personnel of Faculty of Medicine at Universidad Nacional Autónoma de México (UNAM), participated in the survey, including students, professors and academics. The information collected were: general data, age, gender, comorbidities, history of travel in the last 14 days, confinement-breaking activities, measures taken during confinement-breaking activities and on returning, appearance of respiratory symptoms, medications used and sought for medical attention. The analysis included all the members of the Community of FacMed and the people living with them. The invitations were sent on March 26, 2020 by social media, emails and faculty website. The data were stored in SQL Server Enterprise 2017 database and were downloaded for their statistical analysis using ODBC STATA 16 IC.

## Results

In Table 1, the number of people who responded the survey in the period between March 26, 2020 and May 31, 2020 are shown. In the Table 2, the demographic characteristics of the respondents can be observed. Figure 2 shows the age distribution of the members of FacMed community and the people who live in it. In the first week of confinement, 19.9% of the respondents had to leave their house and during the rest of the confinement, this exit from home came down. (Table 3) shows the percentage of the community that left home during the confinement. For the first

three recommendations of the WHO such as constant hand-wash with water and soap, quarantine keeping and the use of mouth mask, the answered of the respondents were complete obeisance to the recommendation. (Table 4) describes the rest of the sanitary measures that the community implemented to avoid the spread of COVID-19. Of the people who had to leave their houses, the answers given were mainly for work and for shopping for food and the transport means used were mainly buses. The rest of the reasons and the transport means used are shown in Table 5. Most

of the symptoms were reported in the first week of confinement, while the percentage of this situation reported in the following weeks were progressively lower than the first week. In Table 6, the percentage of the community that presented respiratory symptoms are shown. Cough and headache were the main symptoms reported in the survey. The rest of the symptoms observed are outlined in Table 7. Regarding the approaches adopted for symptom treatment, less than 5% of the study population required some kind of medical attention. The drugs used are listed in Table 8.

**Table 1:** Number of participants in in the survey per week.

Week		Participants
26-Mar	3-Apr	14699
4-Apr	10-Apr	11604
11-Apr	17-Apr	13485
18-Apr	24-Apr	11577
25-Apr	1-May	8374
2-May	8-May	8114
9-May	15-May	6334
16-May	22-May	8490
23-May	31-May	8732
Total		91409

**Table 2:** Demographic characteristics of the population that participated in the survey.

Characteristics	Men	Women	Total
Number	9345	11653	20998
(Percentage)	-44.50%	-55.50%	
Age (Average)	36.1	36.6	36.3
Asthma	3.40%	4.10%	3.80%
Diabetes	7.40%	6.40%	6.90%
Hypertension	11.30%	10.60%	10.90%
Obesity	13.80%	13.80%	13.80%
Smoking	7%	3.60%	5.10%

**Table 3:** Percentage that left their house during the confinement.

Week		Left the House
26-Mar	3-Apr	17.91%
4-Apr	10-Apr	5.26%
11-Apr	17-Apr	4.16%
18-Apr	24-Apr	6.07%
25-Apr	1-May	3.80%
2-May	8-May	4.51%
9-May	15-May	3.76%
16-May	22-May	3.01%
23-May	31-May	4.30%
Average		6.06%

**Table 4:** Health measures followed by respondents during the pandemics.

Health measures	Percentage
Hand wash with water and soap	96.1
Quarantine	94.4
Use of face masks	73.7
Change of shoes on returning to the house	66.9
Change of clothes on returning to the house	54.5
Use of masks or glasses	11
Change of clothes and shoes on returning to the house	10.7
Use of gloves	9.9
None of the measures	0.3

**Table 5:** Reasons for leaving the home by the respondents

	Percentage of those who left
Work	42.07%
Purchase of basic supplies	44.23%
Work in the hospital	27.37%
Work in a doctor's office	8.77%
Use of bus as transport means	59.50%*
Use of subway or underground as transport means	32.86%*
Use of private vehicle (Taxi or Uber)	29.97%*

**Note:** \*Those who used public transport

**Table 6:** Symptoms reported by the respondents during the pandemics.

Week		# patients with Symptoms	% patients with Symptoms
26-Mar	3-Apr	1162	19.2
4-Apr	10-Apr	561	5
11-Apr	17-Apr	642	4.7
18-Apr	24-Apr	616	4.5
25-Apr	1-May	409	4.2
2-Apr	8-Apr	462	5.2
9-Apr	15-Apr	301	4.3
16-May	22-May	369	4.1
23-May	31-May	277	5.9
Total		4303	4.9

**Table 7:** Symptoms reported respondent population during the pandemics.

Symptoms	No.	Percentage of Cases with Symptoms
Cough	1349	31.35
Headache	1566	36.39
Odynophagia	1235	28.71
Rhinorrhea	1215	28.24
Asthenia	841	19.54
Anosmia	201	6.58

**Table 8:** Treatment used by the respondents during the pandemics.

	No.	Percentage
Acetaminophen	897	0.98
Aspirin	351	0.38
Vitamins	290	0.32
Loratidine	238	0.26
Ibuprofen	185	0.2
Salbutamol	144	0.16

## Discussion

In this work, we analyze some of the measures, for instance hand washing and confinement, proposed by Mexican Health Sector, in a specific group of the population (the Faculty of Medicine) who in the face of the absence of approved therapeutic strategies by any drug regulatory agency in the world or a vaccine to prevent the disease, have as the only effective measure physical isolation and reduction of population mobility Zhong et al. [9]. It was observed that of a total of 20,998 people that responded the survey, the highest participation was women (55.5%). Of the entire population of respondents, 94.4% opted for confinement. Likewise, a high percent (96.1%) carried out constant hand-wash. These measures that are within the recommendations of the WHO are performed by most of our population. Recently, the use of mouth mask by sick or non-sick people has turned out to be the main measure to avoid the spread of the virus and being infected NIOSH [10]. In our study, only 73.7% took the precaution of using it. The situations reported on the reasons that made the people to break the confinement were replenishment of basic home supply (44.23%), work questions (42%) and health works (27.37%). In spite of the fact that the health authorities of many countries such as Mexico exempted companies with non-essential activities to work from home, a factor observed that impede strict fulfillment of the confinement is work. This fact goes hand in hand with the use of any kind of transport means to get to the work. We consider that for the containment of the disease, these two factors are crucial determinant. In countries like New Zealand, Singapore and Germany, the use of public transport was restricted at the beginning of confirmed cases Medrxiv [11]. In our study, of the activities that impede the people to keep the confinement, the most important was work. A total of 59.50% of these people used public transport. In Mexico, the beginning of changes in mobility in strategic points in public transport started in April Semovi (2020), a time when the accumulated average confirmed cases was 11,600 J Hopkins [5]. In this study, we observed that the fulfillment of the recommendations declared by the health authorities of each region or country does not guarantee the end of COVID-19 cases in spite of respecting confinement and keeping the hygienic measures. In our survey, 4.9% of the respondents had respiratory symptoms in the time of study. The most frequent symptoms were cough, headache and

odynophagia, which corresponds to the clinical picture of SARS-CoV-2 Matthew [12]. It is important to clarify that confirmatory test for SARS-CoV-2 was not performed in these cases. The drugs used to alleviate the symptoms are non-steroid anti-inflammatory drugs such as acetaminophen, acetylsalicylic acid and ibuprofen, vitamin supplements, loratidine and salbutamol. It should be noted that the measures of prevention and confinement are directed to all the population, nevertheless, the behavior of the disease indicates that there are group of people with chronic degenerative diseases susceptible to acquire the infection or to present a more severe picture Yang et al. [13].

In this survey, 10.9% of the people suffer arterial hypertension and 13% diabetes mellitus, both considered as a risk factor for SARS-CoV-2 infection. Although the percentage is not the majority in our study, it is important to know the situation and to emphasize the need for confinement to these people. At global level, tools have been designed to assess the behavior Wolf et al. [14,15] knowledge, changes in lifestyle, prevention measures and risks of COVID-19 disease [13-19]. There is little evidence on the results of the prevention and confinement measures in the population. A way in which such results can be reflected is in the number of contagions as observed in different countries. Although the outbreak originated in China, the government and the health ministry this country worked together to moderate the number of infections and deaths associated to SARS.CoV-2. From January 11 to June 26, confirmed cases and deaths registered were 85,000 and 4,648 respectively in this country WHO (2020). The measures they took were more drastic and included international and national border closure as well as entry and exit into and from Wuhan province, the epicenter of the outbreak; isolation of cases; closure of schools, airlines; and actions that are impossible to accomplish in other countries Kupferschmidt et al. [20]. Most of the Chinese residents have knowledge on COVID-19 and optimistic attitudes towards prevention and self-care Zhong [9].

In contrast, countries like Brazil with a daily average confirmed cases of 2,138 and which, despite having a better proportion of test of 14/100,000 inhabitants, have not had a good result in deflecting the number of contagions J Hopkins [21]. A limiting factor in the analysis of the situation is the few number of technical reports

made known to the general population and the adjustment of the measures taken depending on the number of confirmed cases. A similar case is the United State of America with daily average confirmed cases of 16,811 J Hopkins [5], and where the measures of confinement were adapted according to government and health guidelines. On the beginning of May, places such as beaches, gyms and restaurants were reopened by the government. Two weeks after, there was a rebound in the total of confirmed cases that reached about 1,000,000 J Hopkins [5]. Another important comparison with the same USA is based on survey with 630 adults between 23 and 88 years who were living with one or more chronic ailments. In this survey, 21.9% informed that the pandemics had little impact or effect on their daily life Wolf [13]. FacMed data revealed that among the respondents, more than 10% had chronic diseases such as hypertension and obesity. This figure is less than the national estimates, since it includes people under 25 years old, unlike the survey in USA; and as previously mentioned in our case, the measures taken by our population was hand-wash, confinement and use of mouth mask. In Mexico, the first two confirmed cases of infection by SARS-CoV-2 was registered on February 28, 2020 Health Ministry [22] and the first measure taken was the isolation of these first imported cases. It was not until mid-March that the health authorities called for confinement, closure of schools, theaters, movie theaters, bars, gyms and other non-essential activities. These measures were maintained until June 1 when partial return to the new-lifestyle-reality was declared. Two weeks after, a daily average confirmed case of 1,091 was registered J Hopkins [5].

## Conclusion

The emergency of SARS-CoV-2 [23] in different countries and its serious effect on health of the population led to physical-distance decision-making as one of the most effective strategies to avoid the transmission of the virus. To assess the scope of the measures implemented, it was necessary the use of any standard assessment tool and the most easy-to-perform adequate tool is a survey as the one analyzed in this work. The FacMed survey shows the discipline of her community and her interest for collective health [24-25]. The dissemination of useful information to prevent infections such as the use of a mouth and face mask, physical distancing and direct medical orientation phone lines and others should continue to be re-enforced.

## Declaration

### Competing Interests

The authors declare that there are no competing interests.

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