University and municipal government partnership: a multidisciplinary management model to face COVID-19 pandemic

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Abstract

The pandemic outbreak that began in late 2019, COVID-19, generated health problems at various levels, deaths, and socioeconomic difficulties. To minimize the consequences of the pandemic, a partnership was developed between the city hall and the federal university of Lavras. A questionnaire was applied and after interpreting the results, it was identified that, despite the negative economic consequences, the population of Lavrense corroborates the adjustments implemented by the current management.

Keywords: COVID-19; Lavras; partnership; city hall; university.

1. Introduction

At the end of 2019, a new kind of coronavirus, designated SARS-CoV-2, was identified as the cause of an acute respiratory disease outbreak in China, called COVID-19 (Kaur and Gupta, 2020; Güner et al., 2020). COVID-19 outbroken in Wuhan and Hubei then spread to all provinces in China and started spreading to other countries (Yang et al., 2020). COVID-19 has been shown to cause high mortality and a major congestion in the healthcare systems (Ribeiro et al., 2018). The Chinese government, using both civilian and military assets, has set up 13 field hospitals, sent over 8,000 medical staff, from all China to Wuhan, and spent over 5.4 billion yuan (about $800 million) to address the outbreak.

In March 2020, the World Health Organization (WHO) recognized COVID-19 as a pandemic and emphasized the gravity of the situation and urged all countries to take action in detecting infection and preventing spread (Güner et al., 2020). Although recognized for its importance, the insufficient scientific knowledge about the new coronavirus has generated uncertainties on the management of the best strategies to control the disease across the world. The SARS-CoV-2 pandemic is straining healthcare resources around the world. Without viable pharmaceutical treatments, interventions have focused on intensive testing and behavior measures (Kissler et al., 2020)..

COVID-19 has emerged as one of this century's major global health challenges (Werneck and Carvalho, 2020). In mid-April, there had been more than 2 million cases and 120 thousand deaths from Covid-19 around the world. In Brazil, present date, there have been about 2,707,877 confirmed cases and 93,563 confirmed deaths, from Covid-19. In Lavras-MG, there were 206 confirmed cases and 19 deaths by COVID-19 since the first report of the disease in March, 30.

Nowadays, it is of paramount importance to find creative ways to continue engaging citizens and local communities to face-off COVID-19. In this point of view, universities and colleges are supporting local communities during the pandemic, within a wider framework of cities' response strategies to COVID-19 (Sinclair et al., 2020).

The Universidade Federal de Lavras (UFLA) in 2008, developed a strategic environmental planning to solve current problems and to prevent future ones, with the goal of turning UFLA into a benchmark for a green campus. In other words, to become UFLA one of the most sustainable and environmentally friendly universities in Brazil, and also creating the bases for its academy community to be among the best ones in the World (Scolforo et al., 2018) . In this way, the Endemic

Coordination (EC) was created to solve the problems related to endemic diseases into the university space and also in the external community. The EC most important engagement is the partnership with the municipal government to solve common health problems.

In March, 18 the mayor of the municipality of Lavras created the Comitê Intersetorial de Prevenção e Enfrentamento à Covid-10 (Cipec) that is a committee, composed by EC members from UFLA, and members of local health system to face-off COVID-19 pandemic. The present study aimed to evaluate the community perception about the multidisciplinary management model to face-off COVID-19 through a partnership between UFLA and Lavras city hall.

2. Method

This study was conducted in Lavras, a municipality in the state of Minas Gerais, southeastern of Brazil (21°14′43"S 44°59′59"W), located 184 km from Belo Horizonte state capital. It has a density population of 103,773 inhabitants and the city area is 564.744 km² (IBGE, 2019).

The local health care system is composed of 22 units of primary health care; 7 units of secondary health care, and two units of tertiary health care.

This research sought to evaluate the perception of the population of Lavras about the social distance measures adopted by the municipality, through the application of a questionnaire and the quantification and description of the data obtained, through statistical tests. The total number of respondents was recorded in 8,874 individuals.

2.1 Data source

The information about the efforts taken to face-off COVID-19 was obtained from published municipal ordinances. A form containing 20 multiple choice questions about preventive measures was implemented by Lavras municipal government and it was presented on the Google Forms platform. The population participation was engaged using mixed social media, where the form was disclosed, and citizens participation was claimed. The media tools used to promote the form was: Official websites, Facebook, Instagram, UFLAS's project page "Minute of Health", Major live news on Facebook platforms and also on UFLA's University Radio schedule.

2.2 Results analysis

The SPSS program, version 17, was used to perform statistical tests. Data were analyzed using Pearson's Cross Tabulation, Pearson's Correlation, Kruskal-Wallis Test and Frequency Distribution.

3. Results and discussion

With the general objective of controlling COVID-19, delaying the transmission of the virus and preventing associated diseases and deaths, the Comitê Intersetorial de Prevenção e Enfrentamento à Covid-19 (CIPEC) promoted an academic and technical discussion to support the Mayor's decisions. Informative notes were created and disseminated through municipal decrees published on digital platforms.

The actions taken to face-off COVID-19 can be distributed in 13 topics: 1: the use of radio, social media, folders, and live presentations on social media to mobilize all sectors of the communities to ensure that each piece of government and society takes responsibility and participation in responses and prevention of cases through hand hygiene, respiratory care, individual physical distance, use of masks and guidance on the use of 70% alcohol. 2: Rapid diagnosis and isolation of positive cases to prevent transmission from the community, providing appropriate care, screening, quarantine, and all approaches to family members and contacts, providing support and rapid testing for possible new diagnoses. 3: Suppress transmission in the community through prevention and infection control measures appropriate to the context, physical distance measures at the population level and appropriate for each economic sector. 4: Travel bus restrictions from areas with high effective reproduction numbers (Rt). 5: Improvement of clinical care for people affected by COVID-19, ensuring continuity of essential health and social services and protecting frontline workers and vulnerable populations. 6: Suspension of school activities. 7: Development of online telemedicine platforms. 8: Training of health professionals at COVID-19. 9: Acquisition of Personal Protective Equipment (PPE). 10: Cleaning and disinfecting public spaces. 11: Reduction in the public transport service. 12: Increase in the number of clinical and intensive care beds. 12: Increase in the number of fans. 13: Mass drive-through flu vaccination for the elderly and high-risk groups. 14: Periodic meetings with leaders from different sectors of the economy. 15: Construction of an emergency medical center. 16: Health education on COVID-19 using strategies of social mobilization, training, mass and interpersonal communication, social media, radio campaigns and intervention with mixed methods.

The forms analysis showed that respondents were distributed into four countries: Brazil, United States, Italy and Germany. Brazil was represented by eight states: Pará, Ceará, Pernambuco, São Paulo, Rio de Janeiro, Paraná, Mato Grosso and Minas Gerais. Considering that the purpose of the forms was to understand the aspects related to the social distance measures implemented in the municipality of Lavras, the analyzes were directed to 8,874 questionnaires answered by residents. It was found that there was representation from all regions of the municipality. A total of 139 neighborhoods were included in this survey. The highest frequency of response was in the residents of the central region of the municipality, corresponding to 19% of the total questionnaires. The representativeness of the remaining 138 neighborhoods ranged from 0.1 to 4%. This data, associated with the high number of respondents, is particularly important because it demonstrates that the results obtained are representative of the population. As for the profile of the interviewees, 31.64% were men, 68.15% women and 0.21% declared other options.

The predominant age group was 25 to 39 years old age, with 42.2% of the answers, followed by the 40 to 59 years old range, with 35.7% of the answers.

Regarding the most used means of transport, it was found that 77.8% use their own vehicle as means of transport, while 11.6% use public transport.

When asked whether they are respecting the measures of social distance, 7,452 (84.1%) of the participants in this survey answered yes. Only 170 people (1.9%) answered that they are not following the measures adopted by the municipality. The group from 14 to 17 years of age was the one that reported the least adherence to the rules of social distance, among all the age groups surveyed, with a total of 73.2% of the interviewees declared to be following the municipal guidelines.

The elderly and the women have been corresponding to groups with the greater adherence to social distancing. Adherence among the elderly was 93.5% and among the women was 87.1%. Among women, 96.4% considered the social distance an important measure, though the percentage among men was slightly lower (89.1%). About 56.8% of people got out home to search for essential services and only 4.8% of them sought health care.

After analyzing the answers relating to getting out home and its reasons, it was found that only 9.5% of respondents did not leave home in the last week; 69% left home until four times in the last week and 17.2% of respondents lifted home more than seven times in the last week. The main reason for getting out home was the searching for services considered essentials, such as supermarkets, bakeries and pharmacies, accounting for 52% of responses. Medical consultations and other health-related reasons accounted for only 4.8% of responses. A total of 24.4% of the people justified their leaving on labor grounds. Together, beauty salons, people transporting, commercial activities and bank services, reported less than 3% of the justifications. When analyzing the reasons that led people to get out home, there is a clear acceptance of the social distance measures recommended by the local administration, since the search for essential services was the most frequent cause of leaving home.

A worrying point is the fact that only a small percentage (4.8%) of people have left home to seek health services. This data is particularly striking and requires a more detailed analysis to verify whether the low demand is due to the absence of disease, restrictions imposed by distance measures or health abandonment. From a more comprehensive point of view, one should also consider the prospect of low demand for medical services that may result from a more thoughtful decision by the population about the real need for care, especially in urgent and emergency services. The expansion of assistance to emergency hospital units ended up stimulating users' demand for emergency care units for varied demands that do not necessarily constitute urgent care. However, in this pandemic period, fear and the risk of going to hospitals or basic health units may have contributed to a lower demand for health units.

A total of 57.4% of the participants reported that the social distance measures compromised the family income. However, despite this economic commitment impacted on these families, 93.82% believe that the measures applied are important. When analyzing all age groups, more than 92% of respondents reported that distance is an important preventive measure. When correlating the compromise of family income with adherence to social distance, it was possible to verify that 81.8% of the people who reported income loss are following the mayor's recommendations. In addition, 74% agree with the measures employed.

Likewise, it was evidenced that 86.9% of the families whose family income was not compromised, also follow and agree with the recommendations of social distance. During the pandemic period, in order to reduce the burden on the health system, it is important to make efforts to publicize requests for remote medical care, in order to provide the necessary care to the individual who accompanies the social distance. The amount of social distance needed to contain the SARS-CoV-2 epidemic remains unclear (Kissler et al., 2020; WHO, 2020) . However, in the present study, we observed acceptance in relation to the social distance measures applied by the mayor of Lavras.

It is known that governments will not be able to minimize COVID-19 deaths and the economic impact of viral spread (Anderson et al., 2020). When assessing the impact of social distance measures on the labor situation of the population of Lavras, it was found that, before the start of the pandemic, 12.5% of respondents were unemployed and 1.7% were

dismissed. In total, 49% of respondents were working normally when they answered the survey or with adjustments such as reduced working hours or remote work. A total of 22% of individuals lost their jobs due to the pandemic. It is important to note that the absence from work activities is foreseen for hypertensive, diabetic, cardiac patients, patients with chronic kidney or respiratory diseases, immunocompromised and elderly.

According to the data analyzed, it was found that the lowest adherence to social distance occurred in the group of people who work normally. This situation was expected, as completing a workday outside the home means that people are not able to follow all the recommended measures depending on the work itself. A total of 32.33% of people who are in their normal work routine do not follow the recommended measures.

The second group with the greatest difficulty in meeting social distance is the group of people who work with reduced hours. A total of 25.3% of workers in this group are not following preventive measures related to distance.

Interestingly and demonstrating coherence between the different respondents, it was found that when asked about visiting someone in the last seven days, 25.4% of respondents said yes. In addition, 25.2% of the interviewees said yes, that they had been visited by someone in the last seven days prior to the survey.

When asked about travel in the last seven days, 94% of respondents reported not having made any trips. The 6% who reported having traveled, went to neighboring municipalities.

When assessing responses regarding delivery services, most respondents responded that they have been making food purchases through home delivery services. In this sense, as a measure to reduce the negative impacts generated by the economic crisis, which is indisputably associated with the closure of bars and restaurants, it is recommended that these establishments intensify and strengthen delivery services.

When analyzing responses inherent to individual care and prevention measures, it was found that hand washing and the use of soap and water was the most frequent, reported by 94.3% of respondents. The following actions were mentioned: avoiding hugging, kissing or shaking hands (92.4%); use alcohol gel (90%); wearing masks (78%); avoid touching the eyes and mouth (68%); take off your shoes before entering the house (60.8%).

87.5% of the population fully or partially agree with the pandemic measures adopted by the Lavras City Hall. Although the analysis of the data made it possible to verify that there was a compromise in income for most of the interviewees' families, measures of social distance are recognized as important in the context of pandemic control.

As for acceptance and agreement with the measures used in the municipality of Lavras, it was found that 76.4% of the population fully agreed with the measures employed and 11.1% partially agreed with such measures. With regard to those who disagree (partially or totally) with the measures to confront Covid-19, a qualitative analysis of the data was carried out using the indicators "trade" and "business", with the objective of knowing public opinion about municipal measures for local commerce. 557 matches were found for the indicators and the analyzes performed, corresponding to 6.27% of the respondents. Thus, when the topic was trade, about 80% of the responses were negative in relation to the return of trade, including several reports that the actions of the city hall were coherent and correct. Still in relation to the agreement with the measures of distance and commerce, 76.39% of the 557 respondents questioned the lack of supervision of the commerce itself, of the people that circulate in the streets, of the queues that generate agglomerations and the non-use of masks by the citizens in public transport.

4 Conclusion

The analysis of the results of this research allows us to infer that there is an excellent acceptance of the social distance measures implemented in the municipality of Lavras. Health re-education, during public health emergencies, plays an important role in accepting measures and consequently in disease prevention. The heterogeneity of the sample, the high number of participants and the geographical dimension of the study population, allows us to conclude that the results presented here are representative. Many countries are also adopting measures called "social distance" or "physical distance", closing schools and workplaces and limiting the size of meetings. The goal of these strategies is to slow the spread of infection and reduce the intensity of the epidemic, "flatten the curve", thereby reducing the risk of overloading health systems and saving time to develop treatments and vaccines.

It was found that the population of Lavras, represented by the respondents of this research, recognizes and approves measures of social distance and also of individual prevention that must be followed in order to reduce the number of cases of the disease. There is significant adherence to the distance model used, as there is confidence in it. Although the majority of respondents acknowledge that their families have suffered financially from such measures, they consider that the measures should be even more restrictive and stricter in control and inspection.

The results of the present study demonstrate that Lavras has an informed population and is attentive to the measures recognized as technically correct for coping with Covid-19. The population's perception is that social distance is an important measure and has the approval of the vast majority of respondents.

In this way, we believe that the understanding and active participation of the community is fundamental for the success in the control of any disease. In short, health education is the key to tackling the pandemic today.

As future perspectives, a robust and technical analysis of the social determinants and health costs in the municipality of Lavras is proposed to evaluate a remote-controlled model, in an integrated manner.

The results of the present study demonstrate that Lavras has an enlightened population and are aware of the measures recognized as technically correct for the confrontation with Covid-19. The population's perception is that social distance is an important measure and has the approval of the vast majority of respondents.

In this way, we considered that the understanding and active participation of the community is essential to get success in the control of any disease. In summary, health education is a precious key to solve several social problems.

As future perspectives, a robust and technical analysis of social determinants is proposed, and health costs in the municipality of Lavras to assess a distance model controlled, in an integrated manner.

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