SPECIAL ARTICLE / *ARTIGO ESPECIAL*

Analysis of the service telessaúde-COVID in a municipality of Minas Gerais

Análise dos atendimentos realizados pelo telessaúde-COVID em um município de Minas Gerais

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ABSTRACT: *Objective:* to analyze the sociodemographic and clinical profile of patients treated by the remote care service "Telessaúde-COVID" and the factors associated with positive results for COVID-19. *Methods:* an exploratory and analytical study, carried out based on the analysis of patient records treated by a remote care service called "Telessaúde-COVID". Characteristics of the patients treated and variables related to the service's functioning were evaluated. A descriptive, inferential analysis was performed by logistic regression. *Results:* 1,854 new patients were evaluated and an estimate of 8,630 visits. Female patients were predominant (60.9%), aged between 20 and 59 years (75.9%). The most frequent signs and symptoms were: headache (41.8%), cough (33.3%) and runny nose (30.0%). Of the total number of patients, 66.4% were reported as suspected case of COVID-19 and 14.5% tested positive for COVID-19. The age of 60 years or more was more common among confirmed cases (26.6%). Most patients (80.4%) did not require face-to-face assistance. Confirmed cases of COVID-19 were associated with the age of the patients (OR 1,020; IC95% 1,007 – 1,032); home contact with a confirmed/suspected case (OR 1,902; IC95% 1,178 – 3,070); presence of nausea/vomiting (OR 2,403; IC95% 1,148 – 5,029) and changes in smell (OR 2,827; IC95% 1,294 – 6,176). *Conclusion:* "Telessaúde-COVID" was relevant in the management and notification of cases, avoiding the search for face-to-face consultations without clinical indication. Among the suspected cases, positivity for COVID-19 was associated with aging, history of home contact, gastrointestinal and olfactory symptoms.

Keywords: SARS-CoV-2 infections. Telemedicine. Health care quality, access, and evaluation. Public health surveillance.

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RESUMO: *Objetivos:* Analisar o perfil sociodemográfico e clínico dos pacientes atendidos pelo serviço de atendimento remoto "Telessaúde-COVID" e os fatores associados aos resultados positivos para COVID-19. *Métodos:* Estudo exploratório e analítico, realizado com base na análise dos registros de pacientes atendidos por um serviço de atendimento remoto intitulado "Telessaúde-COVID". Foram avaliadas características dos pacientes atendidos e variáveis relacionadas ao funcionamento do serviço. Realizou-se análise descritiva e inferencial, com utilização da regressão logística. *Resultados:* Foram avaliados 1.854 novos pacientes e estimados 8.630 atendimentos. Houve predomínio de pacientes do sexo feminino (60,9%) e da faixa etária de 20 a 59 anos (75,9%). Os sinais e sintomas mais frequentes foram: cefaleia (41,8%), tosse (33,3%) e coriza (30,0%). Do total de pacientes, 66,4% foram notificados como casos suspeitos de COVID-19 e 14,5% apresentaram resultado positivo para COVID-19. A idade igual ou superior a 60 anos foi mais frequente entre os casos confirmados (26,6%). A maioria dos pacientes (80,4%) não necessitou de atendimento presencial. Os resultados positivos para COVID-19 estiveram associados à idade dos pacientes (*Odds Ratio* — OR 1.020; intervalo de confiança — IC95% 1.007 – 1.032); contato domiciliar com caso positivo ou suspeito (OR 1.902; IC95% 1.178 – 3.070); presença de náuseas/vômitos (OR 2.403; IC95% 1.148 – 5.029) e alterações no olfato (OR 2.827; IC95% 1.294 – 6.176). *Conclusões:* O Telessaúde-COVID foi relevante na condução e notificação dos casos atendidos, evitando a procura por consultas presenciais sem indicação clínica. Entre os casos suspeitos, a positividade para COVID-19 associou-se a idosos, história de contato domiciliar, sintomas gastrointestinais e olfatórios.

Palavras-chave: Infecção pelo SARS-CoV-2. Telessaúde. Qualidade, acesso e avaliação da assistência à saúde. Vigilância em saúde pública.

INTRODUCTION

In December 2019, a new coronavirus highly infectious-contagious for humans was identified in China, SARS-CoV-2, responsible for the occurrence of the disease named COVID-19[1]. Since then, the incidence of COVID-19 has been increasing in many countries, including Brazil. The mortality rate ranged from 5.8% in Wuhan to 0.7% in China[2]. Most deaths occurred in people in advanced age ranges or with underlying diseases[1,2]. In Brazil, up to May 1 of 2021, there were 13,242,665 confirmed cases, 406,437 deaths and 2.8% lethality[3,4].

Studies on SARS-CoV-2 have shown progress in relation to its natural history. It is known that this is a transmissible pathogen and that prevention measures, including social distancing, vaccination, mass testing, surveillance and territorial care, in order to intercept the transmission chain, reduce the spread of the disease and bring better outcomes in health[5].

Care management strategies to fight COVID-19 also continue to evolve at all levels of health care. The pandemic caused several changes in the provision of health care, including the adoption of technological resources such as remote appointments, or telehealth programs[6–8]. The term telehealth refers to the use of information and communication technologies to offer health care at a distance, including several care modalities, like telemonitoring and teleconsultation[9].

The use of telehealth aims to reduce the circulation of people, the spread of the virus, the overload of health services and expenses with personal protective equipment[7,8]. Also worth highlighting the ability of telehealth services to expand access to healthcare, especially if we consider people who live in remote locations, in addition to helping to coordinate the care of people being monitored.

Thus, the COVID-19 pandemic allowed the increase in use of telehealth as a way to identify and monitor people with suspected or confirmed COVD-19, among other situations such as acute or chronic diseases. It is noteworthy that, prior to the pandemic, this technology was already used by other services, having been applied in other public health emergencies such as the Middle East Respiratory Syndrome (MERS) (2003), the H1N1 influenza (2009), the H7N9 influenza (2013) in China and the Ebola outbreak in Africa (2014). This reiterates a gradual trend of increase in this type of service by health professionals and users[10,11].

Studies confirm that telehealth services offer essential care to people, increase the potential to reach the most vulnerable groups, improve access, can improve health outcomes, promote qualified care and improve epidemiological health surveillance. Furthermore, this type of service and outpatient management are believed to be suitable for most people with COVID-19, considering that 80% are mild cases[7,8,12].

The monitoring of people with suspected or confirmed COVID-19 may initially take place by telephone as a strategy for identification, assessment of risk factors, severity of symptoms and evolution of the disease. When necessary, referrals to health services are made. It is, therefore, an excellent strategy in epidemic situations, with high potential to take care of people, families and communities[13,14].

Therefore, this article aims to analyze the sociodemographic and clinical profile of patients treated by the remote service "Telessaúde-COVID" and the factors associated with positive COVID-19 tests. Few studies have analyzed this type of health practice and evidence is lacking as to the outcomes of remote and home monitoring, especially for COVID-19[15].

METHODS

This is an exploratory, analytical study based on the analysis of secondary data obtained through the records of patients assisted by the remote care service called "Telessaúde-COVID", registered in the Health Care Network (HCN) of a medium-sized Brazilian municipality in the state of Minas Gerais. The municipality is located in the region named "Zona da Mata Mineira", with estimated population in 2019 of 78,846 inhabitants. From a managerial perspective, it is home to the surrounding health micro-regions, made up of ten municipalities. In addition, it houses a Federal University founded in 1922.

"Telessaúde-COVID" is a notification and telemonitoring service for patients with suspected respiratory symptoms of COVID-19. It was established in the city in April 2020 and provides assistance every day of the week, with a 12-hour shift. The service works at this

emergency moment as a Regulation Center, helping to direct the flow of patients within the municipality's HCN. It is composed of a multidisciplinary team of medicine and nursing interns and health professionals from the areas of medicine, nursing, veterinary medicine, physical education, and psychology. The service's communication with the local health network takes place online and in real time.

The population assisted by "Telessaúde-COVID" is made up of people living in the city who have respiratory symptoms. Contact with the service is made by phone, spontaneously. Users are registered in the Epidemiological Surveillance Information System and monitored by the multidisciplinary team via telemonitoring. As an initial protocol, every suspected or confirmed case of COVID-19 should be monitored for 14 days from the onset of symptoms. Asymptomatic cases remain under telemonitoring for 72 hours, being discharged from the service after this period. The frequency of telephone contact varies, with a minimum interval of 24 hours for people over 60 years of age or a maximum of 48 hours for those with risk factors for complications, considering other situations.

This study included data from patients assisted by Telessaúde-COVID from April 22 to August 31 of 2020, totaling 1,854 patients. A descriptive analysis of the total number of visits (n=1,854) and an analysis of factors associated with reverse transcriptase reaction followed by positive polymerase chain reaction (RT-PCR) for COVID-19 was performed among patients who underwent the test during care (n=722).

The following variables were evaluated: date of assistance, date of notification, date of telemonitoring; characteristics of patients such as gender, age, presence of risk factor for complications, history of household contact with a suspected or confirmed case of COVID-19, diagnosis of flu syndrome, reported signs and symptoms (headache, cough, runny nose, sore throat, fever, myalgia, dyspnea and/or respiratory discomfort, diarrhea, prostration, sneezing, nasal obstruction, nausea and/or vomiting, changes in taste, chest pain, changes in smell, fatigue, chills, dizziness, abdominal pain, drowsiness, saturation of oxygen <95% and others), comorbidities (systemic arterial hypertension, chronic lung disease, diabetes mellitus, psychiatric disorders, obesity, cardiovascular disease, immunosuppression/neoplasia, neurological disease, smoking habit, pregnancy, chronic kidney disease, coagulopathy and chronic liver disease); and characteristics of the service such as a case notified by the service, days between first assistance and notification, indication of a diagnostic test, performance of a diagnostic test, days between notification and performance of the test, type of test performed, result of the diagnostic test, diagnostic test interpretation and required referrals.

Data were entered into a Microsoft Excel spreadsheet and analyzed using Stata version 14.0 (Stata Corp, College Station, TX, USA) and IBM® Statistical Package for Social Sciences version 23.0 for Windows (SPSS®, Chicago, IL, USA). The descriptive analysis consisted of obtaining absolute and relative frequencies. To test the normality of distribution of quantitative variables, the Shapiro-Wilk test was applied. A comparative analysis of the characteristics of cases with positive and negative RT-PCR results for COVID-19 was carried out

using the Pearson's chi-square test. Bonferroni correction was used in cases with more than two categories. Variables that presented $p<0.20$ in the univariate analysis were included in the logistic regression analysis, using the Backward Stepwise Wald method. The final model had a log likelihood of 576309, with a Nagelkerke R^2 of 0.071. The goodness of fit was verified by the Hosmer and Lemeshow $X2$ 11855 test, $p = 0.158$. The final model included variables with a statistical significance level at $\alpha < 5\%$.

This study is part of a larger project entitled "The Covid-19 pandemic in the state of Minas Gerais: an investigation in the scope of health care, education, management and research", approved by the Research Ethics Committee of the institution, under the Certificate of Presentation for Ethical Appraisal (CAAE) 31128920.5.0000.5153, opinion nº 4,019,269. It is, therefore, in line with the research ethics recommendations of the Declaration of Helsinki and the Regulated Guidelines and Norms for Research Involving Human Beings contained in Resolution No. 466, of December 12, 2012, by the National Health Council.

RESULTS

A total of 1,854 new patients were evaluated, with an estimated 8,630 total consultations during the period, considering the initial consultations and remote monitoring of suspected or confirmed cases. The distribution of consultations carried out according to the epidemiological weeks is shown in Figure 1, which discriminates the consultations, the notifications and the estimated total of consultations, which comprise both the consultations and monitoring in the period.

As shown in Table 1, as to the profile of individuals assisted by Telessaúde-COVID, female patients (60.9%) aged between 20 and 59 years (75.9%) were predominant. The presence of at least one risk factor for complications was observed in 29.9% of the individuals. History of
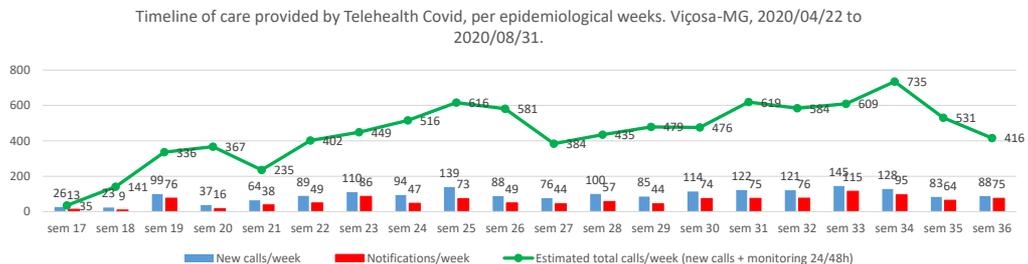
Source: data from Telessaúde-COVID; Department of Medicine and Nursing, Universidade Federal de Viçosa; Municipal Health Department of Viçosa-MG.

Figure 1. Timeline of care provided by Telessaúde-COVID, per epidemiological weeks. Viçosa, Minas Gerais, Brazil. 2020.

close or home contact with a confirmed or suspected case was detected in, respectively, 20.8% and 17.6% of patients. Flu syndrome diagnosis was made in 29.1% of the visits. The most frequent signs and symptoms were: headache (41.8%), cough (33.3%), runny nose (30.0%),

Table 1. Sociodemographic and clinical profile of the cases treated by Telessaúde-COVID. Viçosa, Minas Gerais. Brazil. 2020 (n=1854).

	n	%
Sex (n = 1,854)		
Female	1,130	60.9
Age (n = 1,835)		
< 10	164	8.9
10 – 19	117	6.4
20 – 59	1,392	75.9
≥ 60	162	8.8
Presence of any risk factor for complications (n=1,758)	525	29.9
Close contact with confirmed or suspected case (n=1,847)	384	20.8
Home contact with confirmed or suspected case (n=1,821)	320	17.6
Signs and symptoms (n = 1,854) *		
Headache	775	41.8
Cough	618	33.3
Sore throat	529	28.5
Fever	469	25.3
Myalgia	421	22.7
Dyspnea and/or respiratory distress	282	15.2
Diarrhea	259	14.0
Nausea and/or vomiting	120	6.5
Alteration of smell (hyposmia or anosmia)	72	3.9
Comorbidities (n = 1,854) **		
Systemic arterial hypertension	197	10.6
Chronic Lung Disease	149	8.1
Diabetes *mellitus*	68	3.7

*Others: asymptomatic (n = 376); runny nose (n=557); prostration (n = 230); sneezing (n=135); nasal obstruction (n = 126); changes in taste (n = 109); chest pain (n = 90); fatigue (n=67); chills (n=64); dizziness (n=45); abdominal pain (n=41); drowsiness (n = 6).
**Other conditions: psychiatric (n = 64); obesity (n=43); cardiovascular (n=39); immunosuppression/neoplasia (n = 31); neurological (n=29); smoking habit (n = 19); pregnancy (n = 11); chronic kidney disease (n = 9); coagulopathy (n = 8); chronic liver disease (n = 6).

sore throat (28.5%), fever (25.3%) and myalgia (22.7%). It should be noted that changes in taste or smell occurred in 5.9 and 3.9% of cases, respectively. Asymptomatic patients were 20.3% of the sample. The most common comorbidities were systemic arterial hypertension (10.6%), chronic lung disease (8.1%) and diabetes mellitus (3.7%).

The median period between the onset of symptoms and the call for the health service was 3 days (1 – 5 days). As shown in Table 2, of the total number of visits, 66.4% were notified as suspected cases of COVID-19. Among the notifications, 93.3% occurred on the day of the first visit. A confirmatory test was indicated for 62.8% of the individuals assisted and, of these, 76.4% had performed it. RT-PCR was the most frequently performed exam (83.4%), followed by the rapid immunological test (11.0%). Information about the test result was obtained in 99.7% of the cases, and 14.5% of the individuals tested positive for COVID-19. Regarding referrals, 80.4% of the individuals were monitored by the service, and those who had an indication for face-to-face evaluation were referred for outpatient evaluation (11.9%) or to the hospital (3.1%).

Variables related to sex, age, history of contact and signs and symptoms were compared for confirmed cases or ruled out by RT-PCR (n=722). There were no differences related to sex. However, as shown in Table 3, positive RT-PCR tests for COVID-19 were more frequent among individuals aged ≥60 years compared to those aged ≤19 years (26.6 versus 8.8%, p = 0.003); and between 20 and 59 years (26.6 versus 13.4%; p = 0.005). In addition, 20.0% of patients with a positive test had had household contact with a suspected or confirmed case, while 12.4% did not maintain any contact (p = 0.016). Among the signs and symptoms presented by the patients, there was a significant difference between the complaint of nausea / vomiting and smell alterations, more frequent in patients with COVID-19. Sore throat, in turn, was more present among patients whose RT-PCR result was negative for COVID-19 (90 versus 84.3%; p = 0.045). The variables described in Table 3 had a p-value <0.20 in the chi-square test and were included in the logistic regression model.

With the analysis of the logistic regression model, confirmed cases of COVID-19 were found to be associated with the age of the patients (Odds Ratio — OR 1,020; confidence interval – 95%CI 1,007 - 1,032); household contact with a positive or suspected case (OR 1,902; 95%CI 1,178 – 3,070); presence of nausea / vomiting (OR 2,403; 95%CI 1,148 – 5,029) and changes in smell (OR 2,827; 95%CI 1,294 – 6,176), as shown in Table 4.

DISCUSSION

SOCIODEMOGRAPHIC AND CLINICAL PROFILE OF PATIENTS ASSISTED BY THE SERVICE

The Telessaúde-COVID remote care service evaluated 1,854 new patients, in 8,630 estimated calls. In addition, 1,224 notifications were made, making up 31% of those computed in the municipality during the period evaluated. The importance of tracking and monitoring

Table 2. Data on care provided by Telessaúde-COVID. Viçosa, Minas Gerais, Brazil, 2020. (n = 1854).

	n	%
Case assisted and notified by Telessaúde-Covid (n = 1.854)		
Yes	1,231	66.4
Days between first service and notification (n = 1,200)		
On the same day	1,120	93.3
One to two days	55	4.6
Three to ten days	25	2.2
Indication for diagnostic test (n = 1,854)		
Yes	1,146	62.8
Diagnostic test (n = 1,146)		
Yes	875	76.4
No, although indicated	271	23.6
Diagnostic test performed (n = 861)		
RT-PCR	718	83.4
Serological test	41	4.8
Fast immunological test	95	11.0
PCR and serological/fast immunological test	7	0.8
Diagnostic test result (n = 875)		
Positive	127	14.5
Negative	741	84.7
Inconclusive or no record of result	7	0.8
Diagnostic test interpretation (n = 868)		
Positive PCR	101	5.4
Negative PCR	621	33.5
Other positive tests	26	1.4
Other negative tests	120	6.5
Referrals (n = 1,851)		
Telemonitoring	1,488	80.4
Outpatient evaluation	306	16.5
Hospital	57	3.1

RT-PCR: reverse transcriptase followed by polymerase chain reaction.

Table 3. Comparison of characteristics of patients with positive and negative RT-PCR test results. Viçosa, Minas Gerais, Brazil. 2020. (n = 722).

Variables	Positive RT-PCR n (%)	Negative RT-PCR n (%)	p*
Age (years)			0.005
≤ 19a	8 (8.8)	83 (91.2)	
20 – 59b	76 (13.4)	491 (86.6)	
≥ 60c	17 (26.6)	47 (73.4)	
Home contact with positive or suspected case			0.016
Yes	32 (20.0)	128 (80.0)	
No	68 (12.4)	479 (87.6)	
Sore throat			0.045
Yes	21 (10.0)	190 (90.0)	
No	80 (15.7)	431 (84.3)	
Nausea/vomiting			0.045
Yes	11 (23.9)	35 (76.1)	
No	90 (13.3)	586 (86.7)	
Changes in smell (hypo/anosmia)			0.019
Yes	10 (27.0)	27 (73.0)	
No	91 (13.3)	594 (86.7)	
Changes in taste (dys/ageusia)			0.140
Yes	11 (20.8)	42 (79.2)	
No	90 (13.5)	579 (86.5)	

*p-value by χ^2 test. p<0.05 statistically significant. c > a (p = 0.003); c > b (p = 0.005); a = b.

Table 4. Final logistic regression model for evaluating the characteristics of patients with positive RT-PCR for COVID-19. Viçosa, Minas Gerais, Brazil. 2020 (n = 722).

	B	Wald	OR (95%CI)	p*
Age (years)	0.019	9.536	1,020 (1,007 – 1,032)	0.002
Home contact with positive or suspected case	0.643	6.924	1,902 (1,178 – 3,070)	0.009
Nausea/vomiting	0.877	5.414	2,403 (1,148 – 5,029)	0.020
Changes in smell (hypo/anosmia)	1.039	6.793	2,827 (1,294 – 6,176)	0.009

OR: odds ratio; CI: confidence interval. * p < 0.05 statistically significant.

the contacts of suspected and confirmed cases for epidemiological control of the disease is highlighted, and They were also monitored by the service[16].

The median period between the onset of symptoms and the appointment call was three days (1 – 5 days), with a predominance of females (60.9%) and patients aged between 20 and 59 years (75.9%). A study carried out in São Paulo also showed a predominance of females (59%) in young age (mean 34.7 ± 10.5 years). In that study, patients sought the telemedicine service, on average, 4.67 ± 4.82 days after the onset of symptoms. We can infer that an early search by patients for the service could be associated with the wide dissemination of advertising made by the municipality about the telehealth service, with the aim of early managing positive or symptomatic cases and, thus, avoiding hospital overload[17]. The most common signs and symptoms in the present study were headache (41.8%), cough (33.3%) and runny nose (30.0%). The aforementioned study carried out in São Paulo showed cough in 74.4% of patients, followed by runny nose (65.6%). Sore throat and sneezing were less common, occurring in 38.6% and 20.6% of cases, respectively[17]. As observed in the present investigation, fever was not among the most common symptoms, occurring in only 25.3% of cases. This evidence is supported by the review of diagnostic criteria carried out in August 2020, in which fever was no longer considered an obligatory symptom[16].

20.3% of the individuals in this study were asymptomatic and continued on telemonitoring. The literature reports that the number of asymptomatic individuals is inconclusive, and their classification is diversified. Asymptomatic infection has been proven in several studies and it is believed to be greater in younger age ranges[18-20]. A review showed that 40 to 45% of infections are asymptomatic, with potential for viral transmission over a long period. It is confirmed that, due to the silent spread of the virus, tracking asymptomatic people and implementing intelligent strategies through epidemiological surveillance is essential[21].

The population provided with the service had systemic arterial hypertension, chronic lung disease and diabetes mellitus as the most common comorbidities. Among cases confirmed by RT-PCR, 17.3% were associated with arterial hypertension, 7.1% with diabetes mellitus, and no patient reported chronic lung disease. The literature shows that comorbidities in adults of any age increase the likelihood of serious complications from COVID-19[22,23].

The service provided by Telessaúde-COVID follows the protocol and assistance flow elaborated by the service itself, in line with the local health network and based on current scientific knowledge[24]. We noticed that 90% of notifications were made on the first day of care. For 62.8% of service users, diagnostic tests were indicated, with RT-PCR being the mostly performed (83.4%). In addition, test results were obtained by the service almost in all cases. These findings corroborate the relevance of Telessaúde-COVID and its articulation with the health care network.

Most patients (80.4%) did not need face-to-face care and continued to be monitored by the service, 11.9% were referred for outpatient evaluation and 3.1% to the hospital. This places Telessaúde-COVID as a central strategy for the control of outbreaks, enabling the reception

of patients, the development of a therapeutic plan, the identification of warning signs and the referral of patients to the most suitable care when needed.

Important to note that the service identifies and prescribes according to clinical evolution, always based on scientific evidence. This is configured as a strategy to keep individuals asymptomatic or with mild to moderate symptoms at home, referring cases to outpatient evaluation as required and severe clinical pictures to hospitals. The reduction of the burden on health services and the improvement of assistance to users are, therefore, evident[9].

As noted, 80.4% of the patients assisted by the service did not require face-to-face consultation, being followed up only by Telessaúde-COVID, which shows its resolving capacity. In fact, this is what is expected from primary health care services, the level of care in which Telessaúde-COVID is inserted[7]. In this way, referral is optimized by avoiding inadequate face-to-face assessment and allowing low-risk patients to be properly guided. Thus, Telessaúde-COVID can be considered an efficient strategy for the initial assessment and follow-up of acute patients[17].

Virtual care strategies are being widely accepted by people and represent a powerful and crucial tool to provide safe and immediate health care[25], being evidenced in this study as capable of meeting the demands of people with suspected or confirmed COVID-19.

FACTORS ASSOCIATED WITH POSITIVE COVID-19 TEST

Laboratory diagnosis of the SARS-CoV-2 virus is performed with real-time RT-PCR techniques, serological or antigen testing, validated by reference institutions[16].

Positive COVID-19 tests occurred in 14.5% of the population assisted by the service. Although patients who sought the service had the most common signs and symptoms of headache, cough and runny nose, these were not associated with positive COVID-19 test. On the other hand, positive COVID-19 tests were associated with patients' age (OR 1,020; 95%CI 1,007 – 1,032); household contact with confirmed or suspected case (OR 1,902; 95%CI 1,178 – 3,070); presence of nausea / vomiting (OR 2,403; 95%CI 1,148 – 5,029) and changes in smell (OR 2,827; 95%CI 1,294 – 6,176).

Age equal to or greater than 60 years was more frequent among confirmed cases (26.6%), despite the greater number of tests performed for the age groups below 60 years. We did not find differences as to sex. Literature reports a higher frequency of positive tests for females and older age groups[26].

In this study, 20.0% of patients with positive test had a history of household contact with a suspected or confirmed case, which is similar to the history of contact in 24.7% reported by other researchers[26]. A cohort of contacts of patients with confirmed cases showed a different percentage, with more than 50.0% of contacts testing positive, and most infected individuals not developing respiratory symptoms or fever[27].

We also observed changes in smell in 10% of patients who tested positive for COVID-19, with sensitivity and specificity of 27 and 86.7%, respectively. Other studies detected symptoms with an early onset (median three days) in 61.2% of patients, with olfactory dysfunction being described in the literature in 33.9 – 68% of patients with COVID-19, which reinforces the need for special attention in its investigation[28,29].

The literature reports that studies on telehealth services have been more expressive in developed countries. Scientific evidence about the feasibility and application of this type of service and their potential to transform health care in locations with limited resources and in developing countries is still scarce[30].

We understand that one of the limitations of this study is the fact that only individuals suspected of having the disease were tested; however, we emphasize that the service has its own protocol, available online and in open access[24], in line with the local health network and based on current scientific knowledge.

Given the above, Telessaúde-COVID was proven relevant and efficient in the care, monitoring and adequate guidance of patients in the city's healthcare network. With the uncertain permanence of the COVID-19 pandemic, it is recommended that this type of service be offered to the population, as it offers the possibility of expanding access and qualifying care, both in terms of individualized monitoring and to proper guidance of users within the health care network. Finally, we emphasize the articulating power presented by Telessaúde-COVID when promoting the integration of primary care with other levels of care, putting into effect the principle of integrality in fighting the pandemic within the scope of the Unified Health System.

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