



## Decrease in search for hospitals and health services and the interruption of therapeutics and treatments during the pandemic

Gabriela Marinho Garcia de Barros<sup>1</sup>, Gabriella de Souza Louver<sup>1</sup>, Giulia Valentin Barros<sup>1</sup>, Layla Cristina Barros Teixeira<sup>1</sup>, Larissa Alves Christensem Pereira<sup>1</sup>, Melissa Mautoni Marcondes Machado<sup>1</sup>, Natália de Barros Marinho<sup>1</sup>, Leonardo Sokolnik de Oliveira<sup>1\*</sup>

<sup>1</sup>Curso de Medicina da Universidade Santo Amaro (UNISA), São Paulo, SP, Brasil.

### ABSTRACT

#### OBJECTIVE

The objective of this study was to evaluate the impact of the COVID-19 pandemic over the search for healthcare services according to four criteria (cancellation of medical consultations, suspension of treatments, postponement of surgeries and non-performance of routine tests), comparing the results between genders and age groups.

#### METHODS

A survey was conducted through an internet questionnaire in October 2020.

#### RESULTS

602 responses were obtained, and the results were that women had less visits to health services compared to men and individuals belonging to the elderly age group canceled more medical visits, interrupted more therapies, and postponed more surgeries than other age groups.

#### CONCLUSIONS

Considering the overview of all age groups, the pandemic caused a decrease of about 28% in the demand for medical consultations and this decrease is more significant among the elderly and women. These results emphasize the need for specific campaigns for these people in periods of social isolation due to pandemics.

#### DESCRIPTORS

Social isolation, Coronavirus.

#### Corresponding author:

Leonardo Sokolnik de Oliveira. Universidade Santo Amaro (UNISA). Rua Prof. Enéas de Siqueira Neto, 340 - Santo Amaro, São Paulo, SP, Brazil  
E-mail: [lsokolnik@prof.unisa.br](mailto:lsokolnik@prof.unisa.br)  
ORCID ID: <https://orcid.org/0000-0002-5397-404X>

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## INTRODUCTION

The pandemic of the new coronavirus (SARS-CoV-2) has caused one of the greatest health challenges worldwide, and its consequences have severely affected health rates in Brazil. The first news was reported in the last few weeks of 2019 in China, where a new type of coronavirus (SARS-CoV-2), responsible for causing a severe acute respiratory syndrome, was reported. Also in January 2020, the presence of the virus was identified in other Asian countries, the European continent and in North America, and in the last week of the same month, more than 110,000 cases had already been confirmed by the world. Taking into account the significant number of deaths, the World Health Organization (WHO) consequently declared an Emergency in Public Health of International Importance (ES-PH) and, in regard to the Brazilian context, the first case was soon detected. In Brazil, the wave of infection began as early as February 2020 and, by February 2021, about 10,081,76 cases and 244,765 deaths by COVID-19 in Brazilian territory have been found<sup>1</sup>. Several measures to contain the pandemic were taken, including social isolation and the suspension of non-urgent hospital services, thus preventing healthy people from unnecessarily exposing themselves to possible contamination and allowing chronic patients, individuals part of the risk group, to avoid the development of even more severe conditions<sup>2</sup>.

According to the National Health Agency (ANS), more than 53 million people are affected by chronic diseases in Brazil. Chronic patients are people affected by long-term diseases and slow progression, and they rarely have a cure. These comorbidities may be asymptomatic or symptomatic and require continuous treatment to ensure a better quality of life for the patient. In addition, chronic diseases are subdivided into two segments: transmissible chronic diseases and non-communicable chronic diseases (NCDs). Most chronic diseases require treatment, among the main ones are cancer, diabetes, asthma, AIDS, hypertension, Alzheimer's, chronic obstructive pulmonary disease (COPD), stroke, Parkinson's, among others<sup>3</sup>.

Data from the National Health Survey (PNS) for 2014 revealed that about 57.4 million Brazilians have at least one chronic disease, a number that was stabilized when compared to the current scenario (2020), with only cardiovascular disease rates reduced by about 15% based on the Epidemiological Bulletin of the Health Surveillance Secretariat, a sphere of the Ministry of Health, promulgated in September 2019. Thus, considering that 45% of the Brazilian population presents some chronic pathology, the continuous view of Primary Health Care (PHC) towards these individuals is extremely important, since the maintenance of treatments and examination routines is essential to ensure a satisfactory quality of life. It is at this point, therefore, that the barriers of the COVID-19 pandemic are introduced and, consequently, by the phenomenon of social isolation, places the availability of healthcare for the population in question<sup>4</sup>.

Much more than being part of the risk group due to the greater susceptibility to the development of severe conditions once contaminated by the new coronavirus, especially in the case of patients with asthma, COPD (chronic obstructive pulmonary disease), hypertension and diabetes, there is a dilemma about preventive care, because the search for medical aid was instituted as an exposure factor. In this sense, it was not long before the Ministry of Health, in March 2020, through pronouncements, considered that the search for hospital care by these individuals should be done only in case of worsening of the disease or for clinical treatments that control the disease and, in addition, as an alternative, implement teleconsulting, or also called telemedicine, as an effective method in the context of the pandemic. As a result of this adaptation, Primary Health Care has been experiencing challenges and constant in-

novations in the technological scope so that such health monitoring complies with its problem-control<sup>4</sup>.

Regarding the rise of telemedicine in the context of the pandemic, Information and Communication Technologies (ICT) were a tool for the care and clinical management of patients and the entire population enrolled and under the health responsibility of each Basic Health Unit (UBS). There are many advantages that technologies provide to us, and the speed and its interactive nature are essential for their insertion in health. On the other hand, social isolation impairs the detailed capture of symptoms and, moreover, evidence weaknesses and inequalities inherent to Brazilian society, because telemedicine presupposes universal access to communication networks (internet), electricity services and electronics (means by which the individual will have access to health services). Finally, we must not forget, therefore, that health education has an essential role for the management not only of chronic patients, but of the population in general, since it ensures that, in chaotic pandemic scenarios such as the current one, people know how to deal with their health determinants and know the guidelines and standards of adequate hygiene and social isolation<sup>5</sup>.

Thus, our objective was to analyze the frequency of individuals who stopped going to health services considering volunteer's attendance to medical consultations when required, surgeries if required, checkups exams and if they gave continuity to therapies during the pandemic in a sample of 602 people, evaluating the association between the pandemic, social isolation and the reduction of healthcare in the Brazilian population for different age ranges. Furthermore, we verified the impact of the pandemic on the health condition of the Brazilian population through a self-evaluated score.

## METHODS

The data was collected through a self-applicable questionnaire via Google forms. The questionnaire was about the decrease in search to health services and the interruption of therapies during the COVID-19 pandemic, including nine questions informing if the volunteer has any chronic disease(s), if they had to go to the doctor during social isolation, if they stopped going to the doctor due to the fear of COVID-19, if they suspended treatments or therapies during the pandemic, and if they attended health checkups during the pandemic, if they postponed any surgical procedures during the pandemic, and how much they rated their health status for the last months in a scale from 0 to 10.

The study was conducted in October and November 2020, after being accepted by the ethics committee of University Santo Amaro under the number 4.350.441. The data were analyzed by the statistical software analysis program (SPSS). We used the Pearson Chi-square test to compare categorical variables and the results were considered statistically significant at 0.05 level.

## RESULTS

### Volunteers

We received answers from 602 people and 30% (180/602) of the subjects were male and 70% (422/602) were female. Most volunteers were from the state of São Paulo 66.5% (400/602), Mato Grosso do Sul 24% (144/602) and Rio Grande do Sul 2.3% (58/602). Most participants are not carriers of chronic diseases 68% (410/602). The subjects were analysed according to three age groups: 18-38 years old (269), 39-59 years old (253) and 60 or more years old (80).

### Decrease in search for medical appointments during the pandemic

Female volunteers had a greater decrease in searching for medical appointments 28.7% (121/422) than male ones 17.1% (31/180) due to COVID-19 fear. The P value for the Chi-squared test is 0.002.

Older subjects (60+) had a higher amount of cancelled medical consultations 39.0% (31/80) due to COVID-19 fear than other groups: 18-38 years old 25.0% (67/269) and 39-59 years old 22.5% (57/253) (Figure 1). The P value for the Chi-squared test was  $p = 0.01$ .

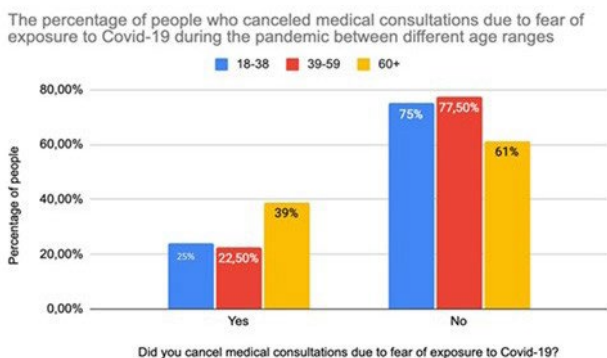


Figure 1. The oldest age group canceled more medical consultations due to fear of exposure to COVID-19 during the pandemic compared to the others, followed by the younger age group, and lastly the medium age group.

### Suspension of therapies/treatments

Although older subjects (60+) suspended treatments more frequently 14.0% (11/80), than the 18-38 years old group 9.45% (25/269) and the 39-59 years old group 13.4% (34/253) there was no statistical significance for the Chi-squared test which was  $p = 0.2$  (Figure 2).

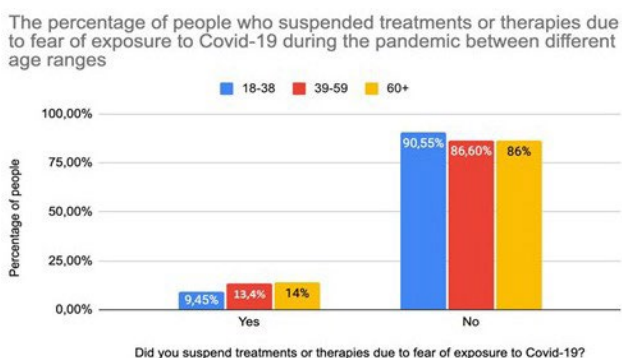


Figure 2. The oldest age group suspended more treatments or therapies due to fear of exposure to COVID-19 during the pandemic compared to the others, followed by the medium age group, and lastly the younger age group.

### Postponing of surgeries

Older subjects (60+) postponed surgeries more frequently than other groups. 16.25% (13/80) of older subjects answered they had suspended surgeries due to COVID-19 fear, this answer was 8.7% (23/269) in the 18-38 years old group and 9.49% (24/253) in the 39-59 years old group (Figure 3), however, the P value for the Chi-squared test was  $p = 0.16$  (not significant).

The percentage of people who postponed surgeries due to fear of exposure to Covid-19 during the pandemic between different age ranges

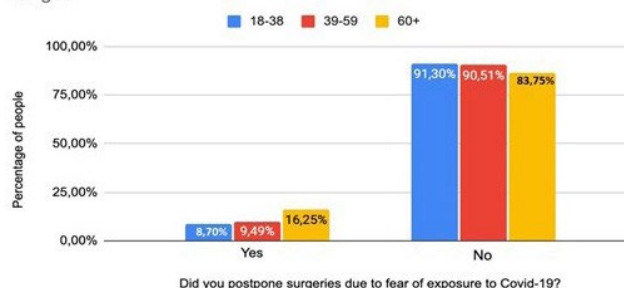


Figure 3. The oldest age group postponed more surgeries due to fear of exposure to COVID-19 during the pandemic compared to the others, followed by the medium age group, and lastly the younger age group.

### Visits to health checkups

Older subjects (60+) attended health checkups during the pandemic more frequently than other groups. About 47.5% (38/80) of older subjects answered they had not attended health checkups due to COVID-19 fear, this answer was 62.2% (167/269) in the 18-38 years old groups and 66.8% (169/253) in the 39-59 years old group. The P value for the Chi-square test was  $p = 0.008$ .

### Auto-declared health status during the pandemic

The mean overall auto-declared health status in a scale from 0 to 10 was 8.1 (CI95% 7.97-8.19) with a standard deviation of 1.39. All the subgroups declared a good health status during the pandemic (score of 5 or above), without statistical significance between them.

### Chronic Diseases

The most common chronic diseases of the volunteers in the research were hypertension, high cholesterol, asthma, diabetes, autoimmune disease, cancer, hypothyroidism, heart valve diseases, depression, fibromyalgia, arthritis, arthrosis, chronic liver disease and renal failure, respectively. It is important to say that 32% (192/602) of volunteers have chronic diseases.

The percentage of people who postponed health checkups due to fear of exposure to Covid-19 during the pandemic between different age ranges

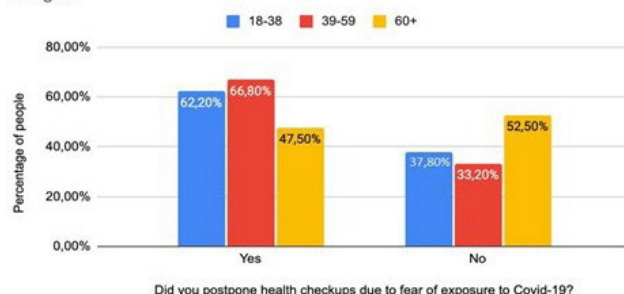


Figure 4. The oldest age group postponed significantly less health checkups due to fear of exposure to COVID-19 during the pandemic compared to the others.

Comparison of self-evaluated health condition in a scale from 0 to 10 during the pandemic between different age ranges

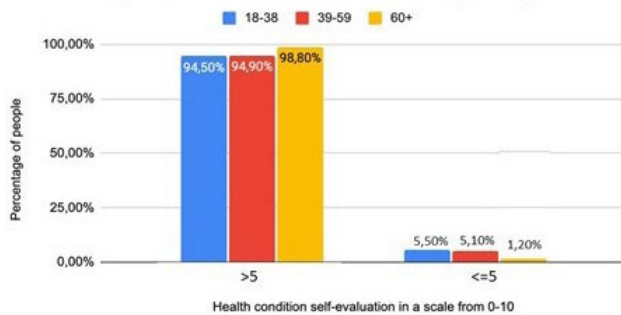


Figure 5. The oldest age group self-evaluated a higher health condition during the pandemic compared to the others, followed by the medium age range, and lastly the younger age range, but not statistically significant.

## DISCUSSION

During the pandemic and social isolation, surgeries were postponed, treatments were interrupted, medical appointments were cancelled, and routine tests were postponed, all with a key role in monitoring our body functions. Our study detected that about 28% of volunteers cancelled medical consultations due to COVID-19 fear.

Our study detected that woman and individuals with the age of 60+ years old cancelled more medical consultations due to COVID-19 fear than men and younger adults. This emphasizes the need for support these populations during extended social isolation due to pandemics in the future.

It is interesting that even if men have greater mortality by COVID-19 than women<sup>6</sup>, our results show that women had cancelled more medical appointments. This could lead soon for an increase in the numbers or severity of diseases like breast cancer, osteoporosis, uterine cancer, and others.

In the article “Delayed cancer diagnoses and high mortality in children during the COVID-19 pandemic” whose main sample were children with different cancers, the author states that the COVID-19 pandemic contributed to delays in care and precise diagnoses of patients, highlighting that it caused diagnosis delay due to users fear of attending health services, leading to fatal consequences<sup>7</sup>. With constant monitoring, independent of age, pathologies can be identified at the beginning and thus treated with a better prognosis. Moreover, some surgeries require a specific timing for effectiveness, such as cataract surgery, very common in elderly.

In the article by Petrova et al. it is possible to notice similarities in the report of decreased hospital services by chronic patients, especially cancer patients. The authors highlight how the pandemic affected cancer treatments and research in Spain. For instance, the European Society of Medical Oncology published recommendations do prevent COVID-19 in cancer patients like reducing visits to hospitals and health centers, postponing non-essential visits, and implementing telemedicine services<sup>8</sup>.

It is crucial to be alert towards the elderly and chronically ill population because prolonged stay at home causes them to move less, impairing blood circulation and mental health, and can consequently cause the worsening of diseases such as diabetes, hypertension, and Alzheimer’s.

Although there was no statistical significance between the three subgroups studied, we found a high prevalence of suspension of therapies in the 60+ years old group (14%), which is very worrisome.

Furthermore, the COVID-19 pandemic affected the interaction of the elderly in the social sphere, which can cause psychological problems such as depression and anxiety. Because

they are at-risk groups, they lost hope of reviewing their families in person, motivation, and confidence in a long-life expectancy, causing daily stress and panic attacks. Many patients use the doctor’s office, the “Unidade Básica de Saúde (UBS)” and community health agents as a mean of social interaction, often without even presenting a medical complaint. This socialization that the elderly sought before the risk of exposure to coronavirus, is now a gap in their biopsychosocial health.

The social and technological exclusion that the elderly suffer emphasizes the neglect of health organs in integral care and distances them from being virtually in contact with people that support them, explaining the feeling of loneliness during social isolation. Few elderly people can use technological tools for entertainment and communication due to unfamiliarity, and, for many Brazilians of all ages, a lack of access to the Internet.

Therefore, because the research did not reach all social classes of the Brazilian population, for example this sample did not include the elderly belonging to the less favored and most exposed social classes, due to lack of access to the Internet. Thus, the highest value in the state of health (Figure 5) for the age group over 60 years is justified, even with the largest fall in the going to health services (Figure 1, 2, and 3).

Other reasons for the elderly’s self-evaluated health status to be so high, even with the greatest decline of visits to the health services, may be: the erroneous understanding that the health condition only includes the biological and excludes psychological health, a greater social activity with the family due to joint isolation, accessibility to an online consultation (telemedicine), containing the highest rate of all age groups for attending health checkups during the pandemic and the greater stability of their chronic disease with older age.

This study demonstrates that when, for a prolonged time, a disease such as coronavirus (or other future pandemics) is the focus of scientists, health organizations the population itself, must keep in mind that other diseases may be masked behind the pandemic. At the same time, this research demystifies the idea that the fear of the coronavirus limits the care of other medical conditions and decreases healthcare for the general population.

At last, the study has some limitations like the majority of our participants are from the state of São Paulo and Mato Grosso do Sul, predominance of responses from the lower age group and females, internet-based questionnaire, and, finally, this research was conducted in October and November 2020, 7 months after the onset of the pandemic when the number of cases and deaths were declining in São Paulo and Mato Grosso do Sul, after the first wave of the pandemic in Brazil.

Finally, as this study brings light to some specific populations like the 60+ age group and female group and suggests the negative effects on social isolated elderly and women postponing healthcare, it instigates a curiosity about the results of a new study with a sample with more chronic patients and/or focused on psychic diseases resulting from isolation. Future studies with these specific populations should be done.

## CONCLUSION

In general, there was an important reduction in the searching for medical assistance or suspension of therapies of the volunteers during the pandemic in all age groups, but for the 60+ and women it was more pronounced.

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