



## STUDY ON PERCEPTION OF GENERAL PUBLIC TOWARDS HEALTHCARE SERVICES BEFORE AND DURING COVID-19 PANDEMIC

|                                 |  |
|---------------------------------|--|
| <b>Mr. Isaac Rohit Thomas</b>   | Second Year MBBS AIMS Kochi.                               |
| <b>Mr. Gokul S Nair</b>         | Second Year MBBS AIMS Kochi.                               |
| <b>Mr. Rahul R Kattukaran</b>   | Second Year MBBS AIMS Kochi.                               |
| <b>Mr. Cherian S Tharakan</b>   | Second Year MBBS AIMS Kochi.                               |
| <b>Dr. Savithri Punnapurath</b> | Associate Professor Department Of Pharmacology AIMS Kochi. |
| <b>Dr. Princy Louis Palatty</b> | Professor And Head Department Of Pharmacology AIMS Kochi.  |

**ABSTRACT** **Background:** COVID-19 is a communicable disease caused by novel corona virus. The changes in the public view towards healthcare and healthcare services have to be understood during these uncertain times. This has medical consequences for the people served by the hospitals, and in turn has financial consequences for the hospitals. Our study focuses on finding the change in the view point of general public towards going to a hospital or for a doctor consultation. Our study was conducted with the help of a self-made questionnaire which was aimed primarily to find out the how the number of patient consultation varied before and during the pandemic. **Aim:** To study the fluctuation in the willingness of the patients, to visit doctors before and during covid-19 pandemic. **Methodology:** The data collected from 190 responses obtained from the questionnaire send to the general public were entered into Microsoft Excel and analyzed. **Result:** Although the pandemic has instilled a fear among the people, however the willingness of patients to go for doctor consultation to hospitals have only reduced marginally in the state of Kerala, India.

**KEYWORDS :** Covid-19, willingness, hospital visit, chronic illness

### INTRODUCTION

#### Background

Mankind has been struck with an unknown viral disease that has disrupted the normalcy and taken many lives leaving behind constant fear. COVID-19 is an infectious disease with non specific symptoms ranging from dry cough and throat ache to even resulting in severe complications like pneumonia and ARDS to name a few in some cases.

Most global health organizations had suspended their mass vaccination programs as it had a consequence of spreading the virus rampantly. The impact of this stoppage will only be seen 2-3 years later. The 3 decade long success in eradicating the polio virus would be in grave trouble with this pause [1].

In a retrospective study conducted among pregnant women across four hospitals in western India, it was found that there was a 43.2% reduction in the hospitalization when compared to the pre lockdown period and a 49.8% reduction compared with the calendar period the previous year. Emergency cases have also reduced by 66.4% [2]. It was also observed in the same study that the number of in-hospital mortality among pregnant women and late intrauterine fetal death and stillbirth had increased [2]. Immense media coverage along with stay-at-home orders and physical distancing might have created aversion among pregnant women. Many pregnant women with complications might have died at peripheral centers because they waited too long for a referral [2].

The primary aim of this study is to find out the change in attitude of the population towards visiting hospitals or clinics for healthcare needs and establishing a solid reason for that change.

This study will also give an insight into whether or not vaccinations of children have been affected amidst the ongoing pandemic and the reason behind it, whether the pandemic has affected pregnant women and finally chronic patients who are highly susceptible to the drastic effects of the disease. This study also aims at establishing a relation between the pandemic and the regular hospital and clinical checkups of the geriatric population.

### OBJECTIVES

#### Primary Objective:

To study the general perception of the public towards healthcare services pre and during COVID-19 pandemic.

#### Secondary Objectives:

To study the effects of the pandemic and the lockdown it entailed on specific target groups which include pregnant women, infants, geriatric patients and people with co-morbidities.

### METHODOLOGY

**Study Design:** Prospective study

**Study Setting:** Survey type

#### Study Conduct:

Ours is a prospective study which will be conducted among the general public using a validated indigenously prepared questionnaire consisting of two sections.

The first section consists of questions related to the individual's opinion and thoughts on hospital consultations pre and post COVID-19. The second section varies according to the last question of the first section and what the person has selected in that question. The population we are targeting here are pregnant women, parents of children less than 2 years of age, geriatric patients and people between the ages 20-40. The online questionnaire will be distributed via various social media platforms.

**Study Duration:** 2 months

**Study Tools:** Questionnaire

#### Sample Size:

Based on the proportion of fluctuation in the willingness of the patients, to visit doctors before and during covid-19 pandemic (75%) observed based on small pilot study conducted in 16 persons with 20% relative precision and 95% confidence the minimum sample sizes comes to 32 samples. In our study we will be including 150 samples.

**Selection Process:** All age demographic groups in society above the age of 10

**Inclusion Criteria:**

1. Persons over the age of 10
2. Obstetric patients
3. Geriatric patients

**Ethical Consideration:**

Ethical approval was obtained from Institutional Committee of Amrita Institute of Medical Sciences, Kochi, Kerala; No; ECASM-AIMS-2021-035, dated : 19-01-2021.

Prior to data collection informed consent was obtained from each study subject. Confidentiality and anonymity of each subject was maintained.

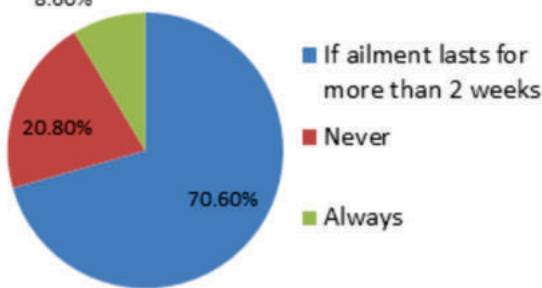
**RESULT**

**1. General Population**

**Hospital Visit Before Pandemic:**

**FIG 1.1**

**DISTRIBUTION OF PARTICIPANTS BASED ON THEIR WILLINGNESS TO VISIT HOSPITALS BEFORE THE PANDEMIC**

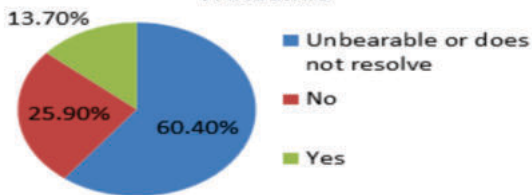


- Out of 198 respondents in our research 70.6% participants are willing to go to consult a doctor even for minor ailments before the pandemic had started.
- 20.8% never used to consult a doctor for minor ailments.
- 8.6% always consult a doctor for minor ailments

**Hospital Visit During Pandemic:**

**FIG 1.2**

**DISTRIBUTION OF PARTICIPANTS BASED ON THEIR WILLINGNESS TO VISIT HOSPITALS DURING THE PANDEMIC**



- Out of 198 respondents in our research 60.4% participants are willing to go to consult a doctor even for minor ailments during the current pandemic.
- 25.9% are not willing to consult a doctor for minor ailments.
- 13.7% always consult a doctor for minor ailments even in the pandemic.

**Reason:**

- Out of 198 respondents in our research 38.1% participants don't go to consult a doctor for minor ailments during the current pandemic.
- 32% have a fear of contacting the virus if they go for consultations.
- 26.9% always consult a doctor even in the pandemic.
- 2% could not consult doctor due to other reasons (travel ban, inconveniences).
- 1% stated that he is not afraid of the virus and is sure he won't get affected.

Out of 198 respondents in our research, 61.4% did not have any discomfort. 20.3% had minor discomfort. 16.8% had body pain. 9.1% had difficulty in vision. 8.6% had tooth ache. 3.6% had ringing in the

ear. 2% had chest pain

- Out of 198 respondents in our research 57.4% participants did not have the aforesaid discomforts.
- 27.9% would not go for doctor consultation.
- 14.7% was willing to go for consultation.

**Opinion On COVID-19:**

- From the data that has been collected it is evident that the participants only go for doctor consultations only if their ailments persist.
- The majority do not go for consultation if it's a minor problem or they have fear of contracting COVID-19.
- This shows that the number of patients willing to go for consultations during Covid-19 has significantly decreased.

**2. PARENTS WITH CHILDREN LESS THAN 2 YEARS OF AGE**

- Out of the 10 responses to our questionnaire, 90% has taken all the vaccines as per the National Immunization Schedule during the Covid-19 pandemic.
- 10% has missed their vaccinations during the Covid-19 pandemic.

**Reason For Missing Vaccination Is Due To Susceptibility To Covid-19:**

- The 10% population that missed their vaccines has agreed that the reason for missing the vaccines is due to the fear of contracting Covid-19.
- Out of the total responses, 10% of the population agreed that their children have missed vaccinations and that the reason for missing vaccines is because of the fear of contracting Covid-19 as children fall under the susceptible group.

**3. PREGNANT FEMALES**

**Taken The Tetanus Shots:**

- Out of the 5 responses to our questionnaire, 100% of the study population agreed that they have taken the tetanus shots for pregnant females during the Covid-19 pandemic.

**Missed Any OBG Appointments During The Covid-19 Pandemic:**

- Out of the 5 responses to our questionnaire, 60% of the study population agreed that they have missed at least one appointment with their doctors during the Covid-19 pandemic.

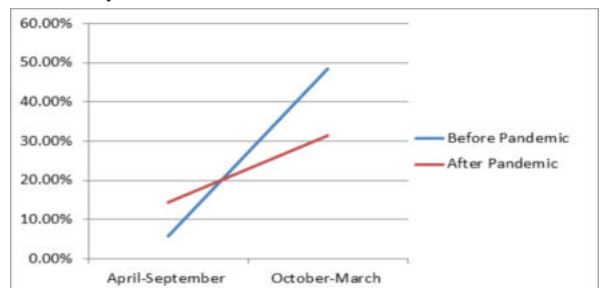
**Response To Acute Symptoms Like Dizziness, Pain, Cramps, Nausea Or Vomiting During The Pandemic:**

- Out of the 5 responses to our questionnaire, 80% of the study population agreed that they will consult their doctor only through phone when they experience any acute symptoms such as dizziness, pain, cramps, nausea or vomiting.
- Based on the above results, it is clear that there has been a decline in hospital visits by pregnant females and many of them have missed appointments with their doctors.
- It is also evident that majority of the study population consider consulting their doctor through phone instead of going to the hospital in an event of acute symptoms.

**4. PATIENTS BETWEEN THE AGES 20 AND 60**

This survey was filled by 132 participants out of which 87 were females and 44 were males. The age group is divided in 3 categories: 20-33, 34-46 and 47-60. We have received 116, 7 and 6 responses respectively for the mentioned groups.

From the data which we have obtained, we can see that 26% of the population who took part in this study suffers from illnesses which are chronic in nature, 6.2% had conditions which were acute while the rest were healthy.



**Fig 4.1** Graph Depicting The Change In Hospital Visits Among Chronically Ill Patients Before And During The Pandemic

- When asked about their last appointment with their health care provider in person, it was found that about 54.28% of respondents went before the pandemic while about 45.71% people went during the pandemic.
- 60.6% of the respondents have not missed their appointments with their respective health care providers in the past six months (July-December).
- 39.4% people have missed their appointments of which the major reason seems to be their fear of contracting disease followed by the lockdown restrictions instituted by the government during the start of the pandemic

## 5. GERIATRIC PATIENTS

Out of the 197 participants 13 of them were over the age of 60 years. Among these 13, 12 of them (92.3%) had pre-diagnosed illnesses.

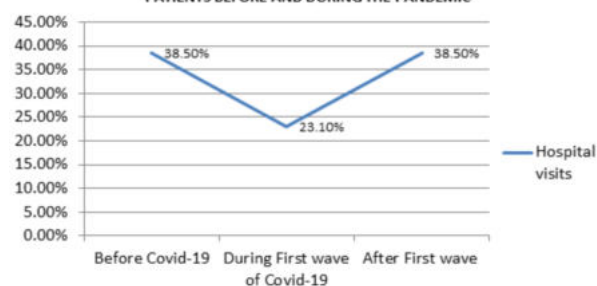
### Diseases Among Individuals:

Among the total responses on the disease that individuals were suffering, cholesterol was the most selected response with a high percentage of 53.8.

Out of the total number of responses, 76.9% of the study population suffered from chronic illnesses while the remaining 23.1% suffered from acute illnesses.

FIG 5.1

GRAPH DEPICTING VARIATION IN HOSPITAL VISITS AMONG GERIATRIC PATIENTS BEFORE AND DURING THE PANDEMIC



- A dip in the percentage of checkups during the first wave of Covid-19 shows how the pandemic has played a major role in this.
- The trend started going back to normal after the first wave.
- The data collected depicts the antagonistic variation in the readiness and recurrence of hospital visits for the geriatric patients.
- There is a decrease of 46.2% in the total visitation for the past 6 months as a consequence of the unexpected pandemic this trend can be attributed to the fear of general public to approach health services which is mainly triggered by Covid-19.

## DISCUSSION

From this study, we intended to initially find if there was a change in the number of patients who would consult their doctor before and during the pandemic. The result from the study showed that the majority of the participants would consult a doctor only if the ailment persists. This general opinion of the public had only a 10% variation after the pandemic had started, this is contrary to a study conducted in the US where the number of non-COVID admittance had come down by 50% [3]. This is reassuring since it shows that people have enough understanding of health and are willing to go to a doctor if they see something out of the ordinary or if an ailment persists. This helps in early diagnosis if a person suffers from a disease and early diagnosis helps in a better prognosis [4].

A majority of the participants are of the opinion that they would not consult a doctor if it is for a minor ailment in a short duration. Another major group of the participants has a fear of contracting the COVID-19 virus. The other set of participants would only consult a doctor if their ailments persist. From this, it is quite evident that people would like to avoid doctor consultation during this pandemic.

We can observe there is a marginal dip in the number of outpatient visits made by patients with the gradual spread of COVID-19 throughout India. The most possible reason for this decline could be because people were afraid of contracting the relatively new and unheard-of contagion rampaging and causing destruction throughout the world or even because of the national lockdown instituted by the government for about 2 months. In a similar study conducted by John D. Birkmeyer et al, we can see that non-COVID admission had

declined in all hospitals in the USA even to the extent of 50% [3]. We can also observe from our limited data, all those who had mentioned their illnesses seemed to have less-urgent conditions. These findings seem to be quite consistent with a study conducted in Canada during the SARS outbreak [5]. (vide fig.4.1)

In the study conducted by Birkmeyer et al, it was found that non-COVID mortality had only increased moderately. The low mortality rates could be due to the same degree of decline in admissions [3]. Another reason could be because the lower incidence of various diseases. Several studies have shown a reduction in pollution during the pandemic (mainly because of the stay-at-home order) and this has improved the quality of life and reduced the mortality rate tremendously [6,7].

Out of the usual hospital going population we can observe that 60.6% continued to go to their health care provider while about 39.4% canceled their appointments. People suffering from diseases with high activity or those whose diseases have progressed greatly were more likely to have canceled their appointments [8]. This is because less controlled diseases have a greater possibility for infection. This is a worrying sign as the progression of such diseases can lead to increased non-COVID mortality. People who were more concerned about the virus were the ones who were compliant to COVID-appropriate behavior although it would have decreased physical and environmental wellbeing [9]. (vide fig.4.2)

As per the data in Figure 5.2, 46.2% of the participants have missed their follow-ups during the pandemic. The main reason they stated was the terror of the prevailing dreaded disease and transportation difficulties. More than 90% of the participants had pre-diagnosed conditions for which they used to go for regular follow-ups. Among this 30% of them chose not to go to hospitals due to the current threat and the other 15% were unable to travel at that time.

It is also evident that there is a marked decrease in hospital visits by the geriatric population, especially during the first wave of the pandemic. However this decrease soon comes to a normal level following the end of the first wave.

According to this study, being one of the most restricted social categories, older patients have chosen to remain self-medicated rather than consulting a doctor. These findings are consistent with studies conducted in Cameroon by Marie Josiane and Victorine Nzana where they observed that 23% of patients gave one or more difficulties for avoiding follow-ups [10] Study done by Jorge H. Nuñez and Andrea Sallent also point to the conclusion that other than orthopedic emergencies all other hospital visits and follow-ups decreased during the pandemic in Spain [11] A dramatic reduction of 42% in the first-time appointments during the pandemic was observed in a cancer institute in southern Brazil according to Jacqueline J Nablén and Tiago Tormen's study. [12]

The study on challenges and concerns for older adults in India regarding the COVID-19 pandemic states that COVID made it difficult for older adults with chronic conditions requiring timely checkups to visit their doctor and considering the increasing period of lockdown this may adversely affect the mental and physical health of these older adults [13]. Moreover, it is noticeable that the isolation measures have reduced the availability of the primary caregivers and led to delayed/canceled outpatients' clinics, which increase the risk of acute decomposition of chronic diseases and the frailty process in short- and mid-terms, independently of the COVID-19 infection [14].

The collaboration between the remains of traditional care systems and formalized care is essential in providing adequate, sustainable care even to the elderly while keeping them away from constant contact from a larger community which are more mobile and poses risks of unknowingly infecting them with the Corona virus [15].

The investigators focused on the timely vaccination mandated for pregnant women as an indicator for access to healthcare, in covid times. Our study also aimed at assessing the variation in the immunization schedule of pregnant females, with a precise emphasis on Tetanus vaccine. From the data we collected, it is evident that all the subjects that come under this category of our study population have taken their vaccines regularly, specifically stating none of them missed their tetanus shots. It should be noted that this result does not outline a



clear picture of the whole population as the study population only comprise a minor fraction of the pregnant women population.

In reference to similar studies conducted in various countries [16, 17, 18], there is sufficient data to conclude that there is a significant decline in vaccinations received by the public population since the pandemic. It is also necessary to note that this trend is also visible in the case of Diphtheria, Pertussis, and Polio vaccines for children [19, 20] which were part of the eradication campaign.

It is evident that a significant portion of the study population comprising of pregnant women has missed at least one of their hospital appointments during the pandemic. (Vide fig.3.1)

Majority of the study population also agreed that they would prefer to consult a doctor through phone in cases of acute illnesses during the pandemic (Fig.3.2). Complications that may rise due to failure of proper antenatal care and checkups can have a huge impact on the population. Studies have successfully established proper results in favor of both these conclusions [18, 21].

Majority of the population which included children under 2 years of age have taken their vaccines under the National Immunization Schedule on time and have not missed any vaccines. But this is in contradiction to similar studies conducted in various parts of the country. Several studies which included huge populations have stated that there has been a significant decline in pediatric vaccinations since the pandemic [16, 18, 19, 20, 22 ]. (Vide fig. 2.1).

The conclusions that can be drawn from this study is, that despite the pandemic the local healthcare authorities have put in place safe and accessible healthcare provisions leading to utilization by the general public.

The limitations we faced in this study were:

- This study was conducted as an online survey; therefore it may not be an accurate representation of the community.
- As it is a questionnaire based study, the lack of details is an issue as the responses are fixed.
- Differences in understanding and interpretation of the questions can result in the data being subjective.
- Fixed responses can also result in unconscious responses.

Unlike other parts of the world, we could observe that there was only a marginal dip in access to healthcare. The institution of healthcare providers providing telemedicine and other safe methods of healthcare accessibility in the times of pandemic is a sure fire success in boosting the confidence of the patients so that they can visit their medical practitioners whenever necessary without the fear of contracting Covid-19. Mask mandates and physical distancing protocols can be enforced by the management in order to mitigate the spread of the virus. Alcohol based sanitizer dispensers can be installed in order to encourage the patient to sanitize their hands to prevent further spread of the virus.

## CONCLUSION

We can conclude though the pandemic has instilled a fear among the people, the willingness of patients to go for doctor consultations to hospitals have only reduced marginally in the state of Kerala, India.

Of all the appointments in the year 2020, a significant proportion of the total participants have cancelled or missed their appointments, especially in the geriatric population where approximately half of the population missed their appointments. Pregnant women have also reduced hospital consultation and prefer consulting the doctor via their phone.

From the study it is notable that majority of the parents with children below the age of 2 years have vaccinated their children despite the current pandemic.

Though this study gives an idea into various after effects caused by the pandemic for chronically ill patients, there seems to be a need for a long term study to determine the extent of disease progression and its effects on those patients avoiding hospitalizations and admissions.

## CONFLICTS OF INTEREST

There are no conflicts of interest.

## REFERENCES

1. Roberts L. Pandemic brings mass vaccinations to a halt. *Sciencemagvol* 368. 2020
2. Sut HK, Kucukkaya B. Anxiety, depression, and related factors in pregnant women during the COVID-19 pandemic in Turkey: A web-based cross-sectional study. *Perspectives in Psychiatric Care*. 2020.
3. Birkmeyer JD, Barnato A, Birkmeyer N, Bessler R, Skinner J. The impact of the COVID-19 Pandemic on Hospital Admissions in The United States: Study examines trends in US hospital admissions during the COVID-19 pandemic. *Health Affairs*. 2020 Nov 1;39(11):2010-7.
4. S C Hiom. Diagnosing cancer earlier: reviewing the evidence for improving cancer survival. *British journal of cancer*. 2015
5. Schull MJ, Stukel TA, Vermeulen MJ, Zwarenstein M, Alter DA, Manuel DG, Guttman A, Laupacis A, Schwartz B. Effect of widespread restrictions on the use of hospital services during an outbreak of severe acute respiratory syndrome. *Cmaj*. 2007 June 19;176(13):1827-32
6. Chen K, Wang M, Huang C, Kinney PL, Anastas PT. Air pollution reduction and mortality benefit during the COVID-19 outbreak in China. *The Lancet Planetary Health*. 2020 Jun 1;4(6):e210-2.
7. Srivastava S, Kumar A, Baudh K, Gautam AS, Kumar S. 21-Day lockdown in India dramatically reduced air pollution indices in Lucknow and New Delhi, India. *Bulletin of environmental contamination and toxicology*. 2020 Jul;105:9-17.
8. Michaud K, Wipfler K, Shaw Y, Simon TA, Cornish A, England BR, Ogdie A, Katz P. Experiences of patients with rheumatic diseases in the United States during early days of the COVID-19 pandemic. *ACR open rheumatology*. 2020 Jun;2(6):335-43.
9. Harper CA, Satchell LP, Fido D, Latzman RD. Functional fear predicts public health compliance in the COVID-19 pandemic. *International journal of mental health and addiction*. 2020 Apr 27:1-4.
10. NtsamaEssomba MJ, Nzana V, Noubiap JJ, Zingui-Ottou M, Ciaffi L, Sobngwi E, Ashuntantang G. The follow-up and well-being of geriatric outpatients during COVID-19 pandemic in Cameroon: insights from the Yaounde Central Hospital. *Gerontology and Geriatric Medicine*. 2020 Sep;6:2333721420959242.
11. Nuñez JH, Sallent A, Lakhani K, Guerra-Farfan E, Vidal N, Ekhtiari S, Minguell J. Impact of the COVID-19 pandemic on an emergency traumatology service: experience at a tertiary trauma centre in Spain. *Injury*. 2020 Jul 1;51(7):1414-8.
12. Nabhen JJ, Ostroski TK, Kozonoe MM, Orlandi D, Tormen T, Ioshii SO. Impact of the COVID-19 pandemic in patient admission to a high-complexity cancer center in Southern Brazil. *Revista da Associação Médica Brasileira*. 2020 Oct;66(10):1361-5.
13. Nagarkar A. Challenges and concerns for older adults in India regarding the COVID-19 pandemic. *Journal of gerontological social work*. 2020 May 18;63(4):259-61.
14. Sanchez-Rodriguez D, Annweiler C, Gillain S, Vellas B. Implementation of the integrated care of older people (ICOPE) app in primary care: new technologies in geriatric care during quarantine of COVID-19 and beyond(2020): 1-2.
15. Deku CS, Forkuor JB, Agyemang E. COVID 19 meets changing traditional care systems for the elderly and a budding social work practice. *Reflections for geriatric care in Ghana. Qualitative Social Work*. 2021 Mar;20(1-2):501-6.
16. Harris RC, Chen Y, Côte P, Ardillon A, Nievera MC, Ong-Lim A, Aiyamperumal S, Chong CP, Kandasamy KV, Mahenthiran K, Yu TW. Impact of COVID-19 on routine immunisation in South-East Asia and Western Pacific: disruptions and solutions. *The Lancet Regional Health-Western Pacific*. 2021 Apr 21:100140.
17. Lassi ZS, Naseem R, Salam RA, Siddiqui F, Das JK. The impact of the COVID-19 pandemic on immunization campaigns and programs: a systematic review. *International journal of environmental research and public health*. 2021 Jan;18(3):988.
18. Robertson T, Carter ED, Chou VB, Stegmuller AR, Jackson BD, Tam Y, Sawadogo-Lewis T, Walker N. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. *The Lancet Global Health*. 2020 Jul 1;8(7):e901-8.
19. Billon-Denis E, Tourmier JN. COVID-19 et vaccination: unedéréglulationglobale. *médecine/sciences*. 2020 Nov 1;36(11):1034-7.
20. Bramer CA, Kimmins LM, Swanson R, Kuo J, Vranesich P, Jacques-Carroll LA, Shen AK. Decline in child vaccination coverage during the COVID-19 pandemic—Michigan Care Improvement Registry, May 2016–May 2020. *American Journal of Transplantation*. 2020 Jul;20(7):1930.
21. Chisini LA, Castilhos ED, Costa FD, D'Avila OP. Impact of the COVID-19 pandemic on prenatal, diabetes and medical appointments in the Brazilian National Health System. *Revista Brasileira de Epidemiologia*. 2021 May 28;24:e210013.
22. Dinleyici EC, Borrow R, Safadi MA, van Damme P, Munoz FM. Vaccines and routine immunization strategies during the COVID-19 pandemic. *Human vaccines & immunotherapeutics*. 2020 Aug 28:1-8.