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Impact of the COVID-19 pandemic over the perception of the population about vaccines

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ABSTRACT

OBJECTIVE

Evaluate how the COVID-19 pandemic affected the opinion of the population about vaccines and if there was a decrease in the vaccine coverage during the pandemic.

METHODS

A self-applied questionnaire was used with the internet with questions about the impact of the pandemic about the perception and adherence of the population to the vaccine campaigns and about the probability to vaccinate to COVID-19 once there is an approved and available vaccine and the majority believe the vaccines should be mandatory.

RESULTS

We reached 475 answers to the questionnaire that showed an increase of the importance that the population gives to vaccines in general after the pandemic, a decrease of the vaccine coverage during the pandemic and high probability that the population get vaccinated against COVID-19 once there is an available vaccine and most of the population consider that the vaccine should be mandatory, however a decreased vaccination coverage was detected during the pandemic.

CONCLUSIONS

The results show a tendency of appreciation of the vaccines and a tendency of the population to get vaccinated as soon as there is an approved one, especially those that had or are having an education in the healthcare area, showing how the education in health contribute to the adherence of the population to the vaccines, however the decrease in vaccine coverage is worrying. Also, it is possible to conclude that the population intend to vaccinate against COVID-19 as soon there is an approved vaccine in the country.

DESCRIPTORS

Vaccine, Coronavirus.

RESUMO

OBJETIVO

Avaliar como a pandemia de COVID-19 afetou a opinião das pessoas sobre as vacinas e se houve uma queda da cobertura vacinal durante o período da pandemia.

MÉTODOS

Foi utilizado um questionário auto-aplicável por meio digital contendo perguntas sobre o impacto da pandemia sobre a percepção e adesão da população às campanhas de vacinação em geral e sobre a probabilidade de vacinar-se para COVID-19 caso haja uma vacina aprovada e disponível.

RESULTADOS

Foram obtidas 475 respostas que mostraram um aumento da importância que a população dá para as campanhas de vacinação após a pandemia, uma diminuição da cobertura vacinal durante a pandemia e uma alta probabilidade da população vacinar-se para COVID-19 após uma vacina ser aprovada no país, sendo que a maioria considera que a vacina para COVID-19 deveria ser obrigatória. Apesar destes achados, foi identificada uma queda na cobertura vacinal em geral durante a pandemia.

CONCLUSÃO

Os resultados mostram uma tendência de valorização das vacinas e uma tendência da população em buscar a vacina para COVID assim que houver uma disponível, principalmente aqueles que tiveram ou estão tendo uma formação específica em saúde, mostrando como a educação em saúde contribui para a adesão da população às vacinas, entretanto a queda na cobertura vacinal é preocupante. Também conclui-se que a população pretende vacinar-se para COVID-19 tão logo exista uma vacina aprovada para uso no país.

DESCRIPTORS

Vacinas, Coronavírus.

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INTRODUÇÃO

In 1973 the Brazilian Ministry of Health created the National Program of Immunization, which developed goals for immunization that reached success in the control of morbidity and mortality of several diseases, like smallpox, measles and polio, unfortunately the decrease in vaccine coverage and the influx of people from countries with lower vaccine coverage lead to an increase of some diseases like measles recently in Brazil¹.

The development of vaccines to Hepatitis B virus, varicella, meningitis, pneumonia and others also contributed to control and mitigate the harm these diseases cause do society bringing more safety to the public health.

The World Health Organization (WHO) states that vaccines, every year, avoid between 2 to 3 million deaths and that between 2000 and 2010, the vaccines decreased deaths by measles about 74% in the world². The vaccines are considered as one the most cost-effective interventions to control and prevention of infectious diseases³.

Despite all the evidence of the benefit of vaccines there is a growing anti-vaccine movement which states that vaccines may be harmful to human health. They claim that some elements of the vaccines are dangerous like the mercury found in thimerosal and some adjuvants however it was already refuted by other research^{4,5}.

The World Health Organization consider the “vaccine hesitancy” one of the top ten threats in global health, leading to an increase in the incidence of diseases like measles⁶.

In December 2019, one big challenge to the world public health arises in China and started a pandemic of a disease that affect primarily the respiratory tract and that is caused by a novel coronavirus called SARS-CoV-2 responsible for the COVID-19 disease⁷.

The COVID-19 rapidly spread to the world and reached high numbers of cases and deaths worldwide due to the easily transmissible virus and the lack of treatments and vaccine. More than 63 million cases and 1,4 million deaths were registered according to the Johns Hopkins Coronavirus Resource Center⁸. Therefore, many security measures to the prevention of disease were taken in Brazil, like quarantine, social distancing, hygiene precautions and the use of alcohol and face masks by the population, once there was no vaccine or treatment to this disease.

Many pharmaceutical companies started to develop vaccines to the novel coronavirus with different immunization strategies, some of them well know but some of them with RNA

technologies delivered by lipids membranes or virus vector.

The discussion about the safety and efficacy of these vaccines gained space in the media, especially because Brazil has been chosen by many companies to participate in the phase 3 clinical trials.

According to this scenario, this study is important because a better knowledge about the perception of the population about the vaccines makes possible to create campaigns to specific publics and to know the impact of the COVID-19 pandemic in the vaccine coverage.

The objective of this study was to evaluate the impact of the novel coronavirus pandemic in the opinion of the population about the vaccines and in the vaccine coverage as well as the opinion of the population regarding the COVID-19 vaccine.

METHODS

The data were collected by a self-applied questionnaire distributed by the internet by convenience. Besides demographical data, volunteers gave information about the importance they give to the vaccination campaigns before and after the pandemic in an scale from 0 to 10, if there was absence of any vaccination during the pandemic to him/her or his/her children, the probability of getting vaccinated to COVID-19 as soon as there is an approved vaccine, if the volunteer was from risk group, healthcare worker or healthcare student, if the volunteer agree that the vaccines must be mandatory and if the vaccines were not mandatory, what was the probability that the volunteer would attend the official calendar. The study was performed between 21st October until November 20th, 2020.

Data were analyzed by the Statistical Package Social Science software (SPSS, version 25). The importance the volunteers gave to vaccination campaigns before and after the pandemic was compared with the two-tail paired Student T test and the other results were compared with the Pearson chi-square test. The statistical significance was set at 0.05. The study was approved by the Ethics Committee of the Santo Amaro University under the 4.350.602 protocol and informed consent was obtained for each volunteer.

RESULTS

Study volunteers

We recruited 475 volunteers, the median age was 28 years

(18 - 79), 71,6% (340/475) were female and 28,4% (135/475) were male. Healthcare professionals corresponded to 37,5% (178/475), healthcare students corresponded to 29,3% (139/475) and others corresponded do 33,3% (158/475). Most volunteers were from São Paulo state in Brazil (94,6%). Regarding to risk group for severe COVID-19, 25,7% (122/475) were from risk group and 74,3% were not.

Perception of the importance of vaccines campaigns before and after the COVID-19 pandemic

It was observed an increase in the importance the volunteers give to the vaccines campaigns after de COVID-19 pandemic. Before the pandemic the importance score was 9,15 and after the pandemic it increased to 9,64 (p<0,001). This increase was observed both in the volunteers of the risk group and non-risk group, although it was more pronounced in the non-risk group (Figure 1).

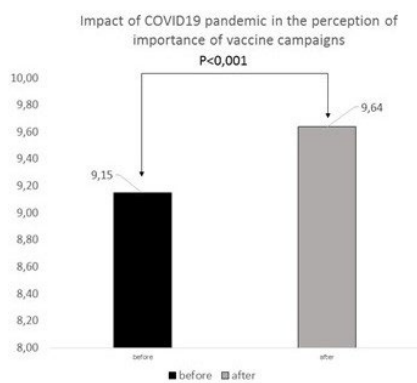


Figure 1. After the COVID-19 pandemic was observed an increase in the perception of importance of vaccine campaigns.

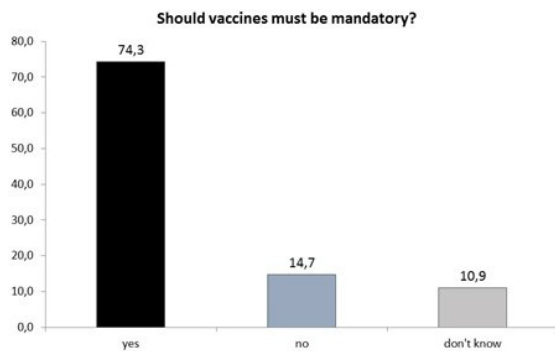


Figure 2. Most people agree with mandatory vaccines in general.

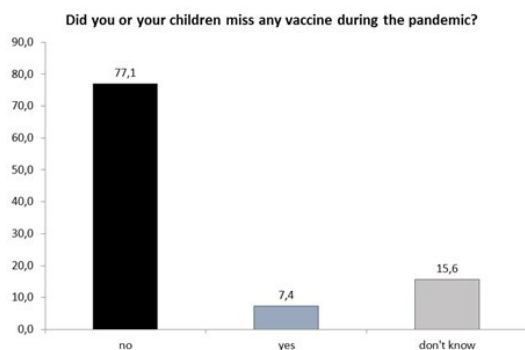


Figure 3. There was a decrease in vaccination coverage during the pandemic.

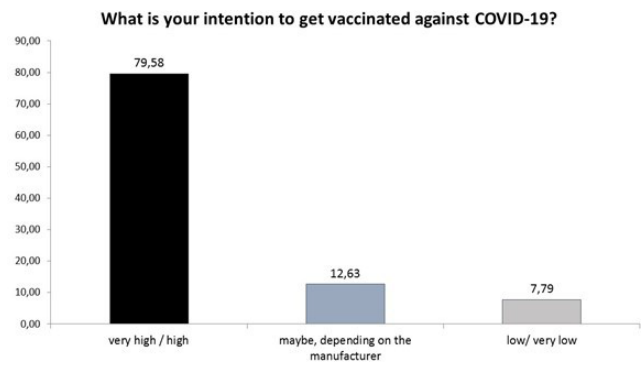


Figure 4. Most volunteers have high or very high intention do get vaccinated against COVID-19 as soon as there is a vaccine approved in Brazil.

Should vaccines be mandatory?

Most of the volunteers believe that vaccines should be mandatory, 74,3% (CI95% 70,14-78,19) (353/475), 14,7% (CI95% 11,67-18,25) (70/475) do not agree with mandatory vaccination and 10,9% (CI95% 8,29-14,11) (52/475) does not know (Figure 2).

The impact of the pandemic over vaccine coverage in general

When asked if the volunteer or his/her children did not take some vaccine during the pandemic, 7,4% (CI95% 5,2-10,1) (35/475) of the volunteers answered yes, 77,1% (CI95% 73-80,76) answered no and 15,6% (CI95% 12,43-19,16) answered that he/she doesn't know if should have taken any vaccine during this period. (Figure 3).

The intention to be vaccinated against COVID-19

When asked about the probability that the volunteer would search for the COVID-19 vaccine as soon as there is a vaccine approved in Brazil, 79,6% answered very high or high (CI95% 75,67-83,12), 12,63% answered maybe, depending on the manufacturer (CI95% 9,78-15,96) and 7,79% answered low or very low (CI95% 5,54-10,58) (Figure 4).

DISCUSSION

According to our results the perception of the importance people gives to vaccines after the COVID-19 pandemic increased. It is easily explained as this disease was responsible for more than 2.3 million deaths worldwide and about 231.000 death in Brazil⁸.

Recently some countries are facing a tremendous challenge to vaccinate their population, and the lack of vaccines are not the only challenge. A recent survey conducted in December 17-20, 2020 with 13.500 adults worldwide published by the Ipsos in partnership with the World Economic Forum have shown that South Africa, Russia, and France have very low percentage of intention to get vaccinated against COVID-19: 53%, 43% and 40%, respectively. According to this survey Brazil have high intention: 78%, very similar to our result. The worries about side effects are the most frequent reason people answered that they will not get vaccinated⁹.

In our study, high percentage of volunteers answered that the vaccines should be mandatory, the high number of healthcare professionals and students in our cohort (66,7%) may explain in part this result and demonstrates how the education in health influences the behavior of the population, emphasizing the importance of this education to the general population to achieve a significant vaccination coverage. There is statisti-

cal difference between healthcare students and professionals about mandatory vaccination when compared to no healthcare students or professionals ($p=0,01$) with this group with more frequent answers against mandatory vaccination.

In our study 7,4% answered that he/she or their children did not get one or more vaccines during the pandemic and another 15,6% did not know if he/she should have taken any vaccine. This result demonstrates a probable decrease in vaccination coverage during the pandemic and the risk for the increase in some preventable diseases like influenza in 2021. Also, the lack of knowledge about the vaccines people should take show the need for more frequent information to the population with government campaigns in Brazil. It is probable that in general population the percentage of those who do not know if they should get vaccinated is even higher, because our sample has a bias of many healthcare professionals and students.

The intention to get vaccinated against COVID-19 is high in our study and in accordance with other survey⁹ and there is no statistical difference between risk group and non-risk group ($p=0,35$), data not shown.

In a study published in October 2020 with 806 nurses in Hong Kong only 40% intended to accept COVID-19 vaccination and the main reason for not accepting is the believe that the vaccine is unnecessary¹⁰.

On the other hand, in a study with 934 university students in Italy, 86% reported the intention to get vaccinated and there was no difference if the students were from healthcare area or not¹¹.

In a recent study with more than 2.400 caregivers in 6 countries, there was an 16% increase in the intention to vaccinate their children against influenza virus when compared to the pre-COVID-19 period and 28,6% of those who did not take their child to get influenza vaccines last year answered they intent to do it now¹².

This study has some limitations. The first one is the limited number of volunteers and the potentially biased sample due to high percentage of healthcare workers and students. Also, as the survey was conducted by internet, it is possible that those with limited access to internet services were not reached by our survey, however our results are useful to understand the importance of education in vaccine acceptance and shows the dangerous decrease in vaccine coverage during the pandemic.

Our results show the increases in the perception of the importance of vaccines after the COVID-19 pandemic, although we detected a decrease in vaccine coverage. We also detected a high intention to get vaccinated to COVID-19 as soon as there is an approved vaccine in Brazil.

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