Vaccine hesitancy and the challenges of dealing with the COVID-19 pandemic among older adults in Brazil

Dystopian tales that portray a huge economic, political and social crisis initiated by a rapidly spreading virus are common in literature and movies. It is not hard to associate these stories with previously documented experiences of pandemics in world history, or with prospective actions against new outbreaks. A notable common element among such narratives, despite their particularities, is the evident inequality with which different population groups are affected, in relation to the availability of and access to disease prevention and treatment measures.

For the scientific community, what happened in 2020 was not entirely unexpected, although it shook the world to its foundations. While the new reality caused by the COVID-19 pandemic and the deepening of inequalities had an enormous impact, it was not entirely surprising.

Representing 53% of deaths due to COVID-19 in Brazil in 2020, older adults (≥60 years) have emerged as one of the most vulnerable groups during the pandemic. A higher prevalence of chronic diseases and greater immune weakness against COVID-19 substantially increases the risk of death for this group, in comparison with other age groups[1]. In thinking of ways to reduce mortality and increase the visibility of the specific care needs of older adults, vaccination against COVID-19 for this age group has been provided and prioritized in several countries. It has therefore been understood globally as a fundamental strategy for promoting and protecting the health of older adults.

Brazil has one of the most complete and geographically comprehensive national immunization programs in the world. Over its four decades of existence, the National Immunization Program (or PNI), has accumulated successful experiences in campaigns of national scope and international recognition, but in recent years confidence in the system and vaccine coverage for some diseases has declined[2]. Without a campaign to inform the population, the arrival of new vaccines, especially those for COVID-19, may contribute to an increase in resistance to and refusal of vaccination among the population. Such resistance is conceptualized as "vaccination hesitancy", which means the refusal or delay in accepting vaccines, despite their availability in health systems. It is affected by the variables of *confidence, complacency* and *convenience*, and appears frequently in the history of vaccination[3].

Confidence involves issues such as vaccine efficacy and safety, as well as the reliability and competence of healthcare professionals, the healthcare system and legislators who decide when and which vaccines are needed. Complacency, meanwhile, occurs when the perceived risks of diseases preventable by vaccination are

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low, and vaccination is not considered important. Finally, convenience affects the decision to vaccinate due to variations in the practicality and ease of obtaining the vaccine, and involves issues such as the opening hours of vaccination stations, availability of doses and human resources[3].

Hesitant individuals form a heterogeneous group with varying degrees of indecision about specific vaccines or vaccination in general. They may accept all vaccines, but remain concerned about them; some refuse or delay some vaccines, but accept others; while other individuals are likely to refuse all vaccines[4].

Although it is understood that vaccines are excellent tools for the prevention of infectious diseases, especially when dealing with a pandemic, there are also a number of undefined issues, both in terms of the behavior of the virus and its globally spreading variants, and in relation to efficiency and safety data for certain age groups. In terms of the potential for immunization, vaccines work in several different ways, providing benefits to the individual and the community. Vaccination is, therefore, a disease control strategy designed and implemented to reach the population. An easily understood individual benefit is the prevention of infection in the person who is vaccinated. If the vaccine does not prevent infection, it can reduce the reproduction of the virus, triggering a milder form of illness and potentially reducing the individual's ability to transmit the disease.

The hitherto unprecedented creation of vaccines in under a year, as is the case with those designed to tackle COVID-19, the ignorance of a large part of the population about the technical and scientific procedures and protocols involved in the production of immunizers, and the deepening of feelings of fear and insecurity caused by the pandemic, have led to the emergence and strengthening of doubts and challenges regarding the vaccine. Take efficiency data as an example. The effectiveness of one of the vaccines approved in Brazil, CoronaVac, produced by the Butantan Institute, was announced as around 50% in different national media outlets. The standard interpretation of the general population, therefore, is that for every 100 vaccinees, only 50 are protected. However, the efficacy data is related to reducing the incidence of the disease, that is: with an efficacy of 50%, vaccination will reduce the incidence of the disease by 50%, compared to the incidence in the absence of the vaccine. In other words, the vaccine's effectiveness describes how many of every 100 unvaccinated people who became ill would not have gotten sick had they been vaccinated. Thus, the misappropriation of epidemiological terms, as well as the dissemination of false or inaccurate information on social networks, can generate a great deal of noise in communication, and compromise the understanding of vaccination.

The establishment of priority groups for vaccination is an important strategy, based on epidemiological indicators and classification by vulnerability. Even at a time when doses are unavailable for the entire population and there are disputes over who will be prioritized, concern about vaccination hesitancy must be taken into account to ensure that a lack of correct information does not impact the right of access to the vaccine. This situation is aggravated by the lack of an incentivizing and clearly coordinated strategy on the part of the federal government, which could assist the population with reliable information and the systematic clarification of the vaccine's importance and safety through a national advertising campaign.

Thus, the continuous assessment of hesitancy can, together with the monitoring of vaccination coverage, assist both in coping with the COVID-19 pandemic and in preventing new epidemics. In this sense, the next phases of vaccination will require federal, state and municipal governments to work in concert so that the population is vaccinated.

We note that, in addition to a strictly health-related agenda, the subject of the vaccine has become permeated by the geopolitical and economic interests of different nations, industries and interest groups. In this context, it is important that the protection of older adults is guaranteed by humanized and quality health care at all levels: primary, secondary and tertiary[5]. In the public system, as in supplementary or

private healthcare, it is necessary that these citizens have fully guaranteed access to care, and that effective adherence to vaccination and other strategies of care and assistance for their health must be ensured when dealing with the pandemic, and beyond.

Ester Paiva Souto[1]

Juliana Kabad[2]

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[1] Psicóloga, Doutora em Epidemiologia e pesquisadora colaboradora da Fundação Oswaldo Cruz. Rio de Janeiro, RJ, Brasil.

[2] Socióloga, Doutora em Saúde Pública e pesquisadora colaboradora da Fundação Oswaldo Cruz. Rio de Janeiro, RJ, Brasil.