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The historic success of vaccination and the global challenge posed by inaccurate knowledge in social networks

Currently, there is a worldwide phenomenon, the resurgence of diseases which were eradicated or controlled by successful vaccination programs. This phenomenon can be attributed to several factors and one, in particular, has stood out and severely impacted society, namely the misinformation via the internet, especially through social networks [1].

Perhaps the most striking example is the emergence of measles, a disease with possible complications (especially for children), contagious, virtually eradicated in the world but that recently returned with all its intensity, with 140,000 deaths in 2018 (https://www.who.int/news-room/fact-sheets/detail/measles). Is there any rational explanation for a major disease for which an effective and cheap vaccine has long been known to be neglected by parents and the general population?

The explanation lies in the remarkable success of vaccines, with historical victories over several diseases that have decimated us [2]. For example, the terrible smallpox, a disease that, when not mortal, disfigured patients, but was once eradicated by vaccination; or polio, which caused panic among parents since a feverish child could be dead the next day, or quadriplegic forever. Scary, is it not? Apparently, it is not for a growing up generation being educated and informed via social networks.

Being the history of vaccines marked by success, scientific communication today is proving to be a major failure, coupled with the failure of formal education, given the impact of so-called fake news. The unfortunate article in the prestigious Lancet journal linking the measles vaccine to the growth of autism (later denied) [3] did not find current breeding ground at the time of publication. We also had examples in the past with misleading AIDS information [4]. In contrast, today, anti-vaccine movements have been relatively successful.

Maybe this reliance on social networks as a source of information is transient, and the next adult generation will not follow this same pattern of ignorance. However, when the last international assessment PISA to assess whether students could distinguish between false and true news, only 10 % of students succeeded in my country, Brazil, merely 2 % (https://www.oecd.org/pisa/data/2018database/). Therefore, most students are and will be easy prey for counterfeit-based movements such as anti-vaccine.

The time spent on social networks on a daily basis is increasing, and rapidly, adults from 55 to 64 years of age use social networks one hour and 13 min a day, and as age decrease this time increases, reaching two and a half hours in the millennium generation or generation Y (born from the 1980s [5]). In South America, the number of hours reaches an astonishing three hours and 29 min daily in the average population. The number of users of these social networks rose from 1.85 billion people in 2014 to 3.48 billion in 2019 and only grows exponentially (https://www.digitalinformationworld.com/2019/01/how-much-time-do-people-spend-social-media-infographic.html#). Therefore, it is unnecessary to emphasize the positive and negative potential of such a powerful technology, which is part of the daily life of such a numerous public, especially about health field [6].

It will be necessary to outline how the information related to the health field has been disseminated in these social networks and what is the level of absorption of the fake news, especially among young people [7]. After all, the problem is not the means of spreading information, the social networks, the question is how this has been done, how people verify the credibility of the information, and how they assimilate distorted or false news [8]. It will be necessary to better understand this phenomenon because it is the nefarious influence of Fake News that needs to be fought, not the existence of this communication channel of social networks, which can be valuable, even educationally. The issue of vaccines and the resurgence of diseases like measles may have been the stage of a dangerous escalation, which needs to be fought effectively.

Attention should be paid to these increasing numbers, as the COVID-19 pandemic phenomenon and the dissemination of information through it, show that the vaccine issue should not be an isolated concern in relation to the capacity of influence of Fake News in the field of health, which was recently named as an “infodemic” [9]. This new type of education, which goes beyond the formal and has a powerful reach, has guided the belief in obscure treatments and remedies without scientific proof, disbelief in established forms of disease prevention and in science itself, xenophobic and conspiracy theories regarding the origin of the virus, among other reveries, often influencing even health professionals [10]. This mechanism of education outside formality is being used even by populist governments that long for their theses of scientific denialism to be disseminated in their countries, often influencing the behavior of the population, something perceived in the current pandemic [11,12].

It will be necessary to unite several organized sectors of society to face this new tragedy in world health [13]. Academia, serious governments, media, NGOs, medical societies, and all those concerned with this issue will have to articulate to inform a population addicted to social networks and smartphones, who do not read newspapers or magazines, nor television news, or any other traditional media.

Another field that will need to be articulated, investigated and responded to will be the field of education, because in addition to the criticism of social networks for their dissemination of false news and their distorted use [14], we will need to recognize their
capacity to disseminate information [15]. Education, sociology, psychology and communication sciences, among other areas, must come together to find ways so that, contrary to what has been happening, social networks become allies of formal education [16], and become networks for the promotion of quality informal education that promotes the cultural emancipation of an immense and growing population avid for information. Thus, perhaps in the future we can talk about how these social networks have helped in the prevention and eradication of health problems, educating the population to a quality of life that we could not even imagine, through the reach of this resource.

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