



Short Communication

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# Biomedical Development Vs Psychological Impact

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**To Cite This Article:** Patrícia Batista. *Biomedical Development Vs Psychological Impact. Am J Biomed Sci & Res. 2022 - 16(2). AJBSR. MS.ID.002208.* DOI: [10.34297/AJBSR.2022.16.002208](https://doi.org/10.34297/AJBSR.2022.16.002208)

**Received:** 📅 May 06, 2021; **Published:** 📅 May 05, 2022

**Keywords:** Vaccination; Psychological; Biomedical; COVID-19

## Introduction

Biomedical development has been evolving at breakneck speed. Nowadays, during the pandemic situation, the biomedical impact experienced by the development of the vaccine against COVID-19 was extremely enthusiastic. Knowing the impact of biomedical development on physical and mental health is essential to better understand its acceptance and decision making. At present, the COVID-19 vaccination theme being a fundamental issue, research is needed not only in terms of biomedical development but also in terms of its psychological impact, to understand their acceptance and the decision-making constraints.

## To The Editorial

Biomedical development has been evolving at breakneck speed. Nowadays, during the current pandemic situation, the biomedical impact experienced by the development of the vaccine against COVID-19 was extremely enthusiastic. Knowing the impact of biomedical development on physical and mental health is essential to better understand its acceptance and decision making. For example, at moment, the COVID-19 vaccination theme being an extremely important issue, research is needed not only in terms of biomedical development but also in terms of its psychological impact, to understand their acceptance and the decision-making constraints. Vaccination has become a routine preventive measure, an effective measure in reducing the rate and eradicating (or

almost eradicating) certain infectious diseases [1]. Vaccination is an instrument to provide direct immunity and to prevent disease among people and making it also possible to decrease dissemination an benefiting all communities [2]. However, vaccine hesitancy is an issue that worries governments and the World Health Organization (WHO). WHO considers vaccine hesitancy as a significant threat to global health, hence an increasingly strong investment in vaccination campaigns, and fostering research in this area [3]?

The public acceptance of a new vaccine, especially this new vaccine in the fight against COVID-19, developed in such a short period compared to the traditional vaccine development, has compromised its acceptance, due to fears in terms of safety and effectiveness [4]. Vaccine acceptance/hesitancy is conditioned by multiple dimensions and is specific in each context (temporal, spatial, psychological, methodological development.) [4]. Several factors condition the vaccination process, promote the spread of the virus, and affect public health. Thus, understanding this whole process can support public acceptance and result in health benefits for the population. The increase in health literacy in this area, knowledge of people's perceptions and mental health are some of the factors that condition decision making. Regarding mental health, the anxiety experienced during this time (pandemic situation) is triggered by several conditions, such as lock down, unemployment,

illness, the care for dependents, precarious work, teleworking, violence, as well as the vaccine acceptance. Consequently, these are some reasons that can condition decision-making and compromise the vaccination process. Although the present literature has reported the vaccine's efficacy and safety, people are concerned with the rate of its development at a speed never seen before, as well as the side effects that may arise [5,6].

These concerns may undermine the achievements of the scientific community and its attempts for government vaccination plans. Thus, the scientific community has an extremely important role in education, promotion, and its intervention within the population to increase the vaccine's acceptance. It is important to increase the health literacy of the population on this topic, reinforcing the proposal that vaccination (in general) decrease infectious diseases. Likewise, it is important to monitor citizens' perceptions regarding this topic and to be aware of their physical and mental well-being because these situations may influence decision-making. Anxiety, especially health related anxiety, is something commonly experienced by large part of the population, especially during a pandemic situation, as has been reported in other studies about other epidemics/pandemics. Previous studies showed that concerns with health and anxiety have a psychological impact in terms of the adoption of risky and/or preventive behaviours. High levels of anxiety not only compromise mental health but also physical and conscious decision-making. People with high levels of anxiety also tend to engage in a variety of other non-adaptive safety behaviours (excessive hand washing, social isolation, and panic). This type of behaviour taken to extremes may have negative consequences on the individual and their community. People with high health-related anxiety tend to confuse body sensations as dangerous, too.

These situations tend to increase anxiety and consequently influence people's behaviours and attitudes conditioning their decision-making. In the same way, low levels of anxiety may also compromise public health strategies and, in this specific case, vaccination hesitation [7]. Health-related anxiety is one of several psychological factors that influence how anyone responds to pandemic situations, like COVID-19 [8,9]. Psychological factors are known for playing a vital role in the success of public health strategies, used to control epidemics/pandemics, such as risk communication, vaccination, hygiene practices and social detachment. Anxiety identification and monitorization are strategies that can influence the success or failure of public health measures implemented by governments. Thus, diagnosis and surveillance can help to identify

the first signs of health problems and can be the foundation for health promotion. Government, policy decision-makers, health authorities, health professionals, researchers all have a key role in diagnosis collection and in designing intervention programs in this area.

## Conclusion

Due to this, biomedical development cannot be limited to technological development or to laboratory and biochemical tests, clinical trials are necessary to investigate the impact of this development on people's mental health, it is necessary to know their perception, their fears and how they can compromise the application of all the technology developed. Further research is needed to understand health anxiety, specifically how anxiety intervenes in behaviour in response to COVID-19.

## Conflict of Interest

No conflict of interest

## Acknowledgement

None

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