

# Childhood Vaccination Hesitancy, Reasons and Implications - A Literature Review

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**Abstract:** *Vaccines have proven to be both lifesaving and cost-effective measure. Vaccination is considered to be the most effective and efficient way to prevent communicable diseases. Nevertheless, vaccine hesitancy remains a huge obstacle that has been present since the development of the first vaccine over three centuries ago. Vaccine hesitancy is considered a complex multifactorial issue with unfortunate consequences. Researchers have been able to understand some factors leading to this problem. However, further studies are needed to discover more factors that can influence vaccine decision-making to reach the roots of the problem to fix it.*

**Keywords:** Vaccine, hesitancy, attitude, adherence, barriers

## 1. Introduction

A vaccine as biological preparation which enhances immunity to a specific disease. [1]According to World Health Organization (WHO), global vaccination coverage remains at 85%, with no noticeable changes during the past decade.[2]

The history of vaccines and immunization begins with the story of Edward Jenner, an English doctor who was able to perform the world's first vaccination in 1796 successfully. His proclamation "that the cow-pox protects the human constitution from the infection of smallpox" established the bases for modern vaccinology. [3]

Since then, the era of vaccination started to evolve. As per the Centers for Disease Control and Prevention (CDC), vaccines can protect children from 16 potentially harmful infectious diseases that can be very serious, and possibly deadly. [4]

The benefit of childhood vaccination can be expressed through numbers, The United States routine childhood immunization schedule is predicted to lower the disease burden by approximately 20 million cases. In addition, it has proved to be an excellent, cost-effective tool; it saves around \$13.5 billion concerning direct disease-related costs and about \$69 billion in societal related costs. [5]

Despite the enormous benefit that childhood vaccine programs provide, anti-vaccine groups still exist to date. Unfortunately, these organized anti-vaccination movements have contributed to the decrease in vaccination compliance. One of the most famous arguments these groups suggested was the wrong assumption that there's a causal association between MMR vaccine and autism. In spite of a recent huge meta-analysis of more than 1.2 million children confirming that vaccines don't cause Autism Spectrum Disorder, these groups, unfortunately, are still going. [6]

In an attempt to increase vaccine coverage, governments implemented some policy interventions, for example, immunization being mandatory for school entry, which proved to be a successful measure contributing to the low incidence of vaccine-preventable diseases. Never the less, vaccine hesitancy remains a huge issue yet to be addressed properly. [7]

## 2. Literature Survey

Vaccines history started late in the 18th century with the smallpox vaccine discovery. A century later, vaccines could be created in laboratory settings. In the 20th century, the evolution of vaccination reached another level with the possibility to invent vaccines based solely on immunologic markers. With the beginning of the 21<sup>st</sup> century, the era of vaccination continues to expand as molecular genetics pointing for a promising future for vaccinology. [8]Despite the huge benefit of vaccines, vaccine hesitancy and myths against them remain the biggest obstacle to increase vaccine coverage globally. Studies have found that the majority barriers are focused on concerns related to vaccine safety. Vaccine-hesitant parents believe that vaccines are ineffective and harmful and the diseases they are supposed to prevent are rare and mild. [9]

## 3. Problem Definition

The WHO defines vaccine hesitancy as: "Vaccine hesitancy refers to delay in acceptance or refusal of vaccines despite availability of vaccination services. Vaccine hesitancy is complex and context specific varying across time, place and vaccines. It includes factors such as complacency, convenience and confidence." [10]

## 4. Method / Approach

It is worth mentioning that there is a growing concern regarding anti-vaccine groups worldwide. anti-vaccine groups tend to misuse the power of social media to promote falsified claims that feed the parents irrational

fear towards vaccines, which in turn leads to vaccine hesitancy and refusal. Furthermore, under-vaccination increases the chances of emergent of vaccine-preventable diseases which can lead to a fatal outcome.[11]

To put it in perspective, a famous example of the effect of vaccine hesitancy is the big measles outbreak that swept through the Disneyland park, USA, California, resulting in over 50 infected people. Multiple children who initially spread the measles were unvaccinated due to their parents being vaccine-hesitant. [12]

Furthermore, in 2008, WHO announced the number of the estimated mortality among children younger than 5 years of age, caused by diseases that are essentially vaccine-preventable. It is unfortunate that over 1.5 million children have died because of preventable causes. [13]

## 5. Result / Discussion

As mentioned by Dube et al., media coverage with falsified stories targeting vaccine seem to correlate with higher incidence of vaccine hesitancy. [14] In addition, it has been proved that the lack of knowledge about vaccines will have negative attitudes towards immunizations. [15] Therefore, proper education and counseling would be an essential component to reduce hesitancy.

On the other hand, healthcare providers must also have confidence in vaccine safety and value. Studies found that the physician's recommendation is one of the most successful measures to advocate for childhood vaccines. [16] There is no specific approach to follow; however, a physician must be clever and try to identify the barriers that make each particular family hesitant to vaccinate their children and try to approach them as a whole. More importantly, healthcare providers should also lead by example, through fulfilling with immunization recommendations themselves. [17]. In addition, It is important to organize campaigns that aim to correct the misconception about vaccines hoping to educate people and eradicate such myths, using social media to expose such misunderstanding and try to replace it with the correct information maybe a potent tool to use too.

## 6. Conclusion

Despite the tremendous benefit that childhood vaccines provide, vaccine hesitancy remains a huge obstacle. Vaccine hesitancy is considered a complex multifactorial issue that needs to be addressed and dealt with accordingly. Our hope is that more studies in the future will be able to identify socio-cultural factors that can influence vaccine decision-making to be able to formulate promising solutions to this problem.

## 7. Future Scope

To overcome the obstacle of vaccine hesitancy, it will be crucial to focus efforts on understanding how parents make decisions when it comes to childhood vaccines, how

they develop their attitudes and from where they obtain their beliefs and information. [18]

It is well known that healthcare providers play a crucial role in counseling vaccine-hesitant parents. However, few data exist regarding the most effective communication approach to follow, but it remains clear that vaccine hesitancy requires a multidisciplinary team approach. It is felt that more studies needed in the future to investigate the best way to approach such hesitant parents, as up to date, vaccines remain the most important tool to prevent the emergent of vaccine-preventable diseases.

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