

Vaccination Hesitancy and Mental Health Crisis: Paradoxical Case of COVID-19

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Abstract

The purpose of this paper is to qualitatively examine the perceived notion around COVID-19 vaccination and conceptually theorize and establish a relationship between vaccination hesitancy and mental health during the pandemic. Thematic analysis is conducted amongst 115 employees from public sector organizations of India to put forward three themes to define the equation between the said variables. The paper provides future directions of research where the derived themes could be empirically tested in a longitudinal study over a period of time during and after the pandemic.

Keywords: Vaccine hesitancy • Mental health • Corona pandemic • Future of workplaces • COVID fear

Introduction

Immunization is considered to be one of the greatest scientific achievements of the mankind [1]. Immunization has always helped mankind to battle mortality rates and morbidity of fatal diseases. Mass immunization has been used an important tool for disaster management by Governments and policy makers during a crisis. Vaccine hesitancy refers to delay or refusal of accepting the vaccine despite of its availability [2]. Vaccine hesitancy is a multidimensional phenomenon which is affected by various cultural, behavioral, emotional, societal and individual factors. There are certain major situational factors that determine vaccine hesitancy such as the ease of access, the trust around the efficacy of a vaccine, the threat posed by a particular disease, and the cost associated with vaccination [3]. A very powerful force behind the anti-vaccination movements has been the emergence of anti-vaccine conspiracy theories [4]. The anti-vaccination movement has gained so much coverage and limelight in the media that it has started appearing as a threat to humanity [5]. World Health Organization went ahead and listed anti-vaccination movements as one of the top threats to global health in 2019 [6].

History of vaccination

The earliest trace of vaccination can be found in the Indian history. It was in the 7th Century, when an Indian Buddhist drank snake venom in order to become immune to its poisonous effect. This process might have induced toxoid like immunity inside the body. In the 10th Century, there is also a trace of inoculation and variolation in the history of China. Around 16th century, variolation was also used as a preventive measure in some parts of India. The insertion of dried pus from smallpox pustules into the skin of the patient was a form of variolation practiced by the Brahmin caste of Hindus in India. These stories surely evoke a lot of curiosity amongst the readers, but the verified and documented literature concerning vaccination can be found around 18th Century. This was an example of Chinese variolation. In 1742, a Chinese medical text named 'The Golden Mirror of Medicine' was published that mentioned four variants of inoculation against the smallpox virus. In the mid-18th century, a Scottish physician Francis Home conducted experimental studies involving human subjects to study vaccination in detail. He actively inoculated his subjects against measles and published some great insights concerning vaccination in that era. Despite the presence

of a lot of successful attempts in the literature regarding variolation and vaccination, the first scientific attempt was made by Edward Jenner. Jenner tried to control the spread of a fatal infectious disease named cowpox. In 1796, Jenner experimented with the fluid from a cowpox blister. He scratched it into the skin of an eight-year-old boy. Jenner inoculated the boy again at an interval of 48 days. The boy developed no disease and the vaccine was a success. The anti-vaccination is not a new phenomenon and has occurred during most outbreaks and health emergencies in the past [7]. The population segment involved in the anti-vaccination movement can be categorized into three types as per the Hagood and Mintzer Herlihy's model; namely vaccine rejecters, vaccine resistant and vaccine hesitant. Vaccine rejecters are basically believers of vaccination conspiracy beliefs and may have a politicized opinion on the same. Vaccine resistant people are anxious and resist vaccine due to the doubts regarding the efficacy of the vaccine. Vaccine resistant people are open towards new information regarding the COVID-19 pandemic and vaccination. They may consider vaccination as an option if educated properly on the matter. Vaccine hesitant people are not strongly in support or denial of the immunization programme. They may be hesitant due to fear or minor concerns regarding the process [8]. They can be targeted easily by local bodies to increase the herd immunity. This is a major reason that the paper focuses on the vaccine hesitant population segment. This segment is proportionately huge and may be comparatively easier to educate, convince and contribute towards mass immunization. The reasons behind the mistrust and vaccine conspiracy beliefs are discussed in detail in the thematic analysis.

Literature Review

Open-ended questions were asked to the respondents and they were allowed to write down their experience. The responses were categorized under the following five heads, namely, the perceived threat from the virus, the perceived effectiveness of the vaccine, the likeliness to get vaccinated, probable reasons for the anti-vaccination behavior and the anxiety, fear and other negative emotions surrounding the pandemic. The responses were coded and transcripts were generated to gather insights. The details of the conducted thematic analysis are explained in the following section.

Thematic analysis

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For qualitative analysis 'Thematic Analysis' was chosen as the most suitable technique. This was due to the fact that thematic analysis is the most common method used in deriving themes and patterns from the data to gather relevant insights. A systematic approach was adopted for the analysis. The themes flow from external situation and control towards the actual root cause, and guide through suggestive measures and coping mechanisms. A hierarchical flow of the themes is displayed through the analysis. suggested step by step approach to conduct thematic analysis. This research has adopted a similar way of analysis. The transcripts were read and reread to generate initial insights. These insights were further noted down. A mind map linking these insights towards a logical explanation of the data set was created. Based on these insights, sub-themes were derived. The transcripts were reread and understood to narrow down these sub-themes to three major themes. An inductive analysis was conducted in order to identify and accommodate the themes. The themes were then refined in context to the participant's responses. The relevant and essential parts of the analysis were written and documented. The three themes that emerged out from the analysis are explained in detail in the following section.

Analysis

Theme 1 Mistrust on vaccines due to the vaccine conspiracy belief and disturbed mental health quotient

The nature of the contagious corona virus requires wide-scale adoption of preventive behaviors, vaccination being at the top of the list. A major set back towards the implementation of the vaccination drive against the pandemic has been the vaccination conspiracy theories. Conspiracy theories are an attempt to understand major impactful events in the light of mistrust and malintentions. Popular conspiracy theories explain that the NASA moon landings were faked and Princess Diana was murdered by elements of the royal establishment. One of the powerful vaccination conspiracy belief was the link between childhood vaccination and autism [4]. There have been many other vaccination conspiracy beliefs that have shaped up the anti-vaccination movement. The core of these movements is the belief that large pharmaceutical groups and governments are concealing facts in order to fulfill their greedy motives [9]. The major reason behind this widespread mistrust is the unavailability of clear statistics and transparent communication in terms of efficacy of vaccines. This vaccination conspiracy belief clearly doubts the scientific evidence concerning the safety of vaccines, and impacts the vaccination intentions [10]. The conspiracy beliefs are contagious and spread at an alarming rate. Social and traditional media has been greatly contributing towards solidifying the beliefs on the vaccination conspiracy theories [11]. Conspiracy beliefs prevent individuals from taking any action towards preventive behaviors. The mistrust against the vaccination movement also has the involvement of another crucial factor. The downgrading mental health quotient due to the fear and anxiety surrounding a disease, and the perceived efficacy of vaccination, leads to vaccine hesitancy. There are also a lot of unrelated conspiracy beliefs that endorse the anti-vaccination movement [12]. There is a strong link between the mental health quotient of an individual and their vaccination intentions or vaccine hesitancy. The sensitivity concerning the mental health quotient of individuals, due to the unpredictability of the situation around, cannot be overlooked. There are other important factors that affect vaccine hesitancy like perceived control and spread of misinformation. The next section discusses about the role of higher perceived control and positive mental health quotient in detail.

Theme 2 Lower perceived control and compromised mental health quotient

History of vaccination has observed refusal to get vaccinated and anti-vaccination movements in so many countries around the world, for so many different diseases [13]. The control of the COVID-19 pandemic over human lives, is hindering the uptake of the preventive vaccine. Higher the control of the pandemic over human lives, lower is the perceived control of an individual towards their life and health in particular. This battle of losing control over one's own physical and mental health promotes pessimism

and counterproductive behaviors. Lack of perceived control leads towards negative emotions, which further results into a compromised state of mental health. This compromised mental state along with increased fear, anxiety, misinformation and emotional manipulation promotes vaccine hesitancy [14]. Herd immunity is a prominent tool against the spread of this fatal virus. But the perceived politicization and the perceived efficacy of the vaccine reduce the perceived control, hence, promoting the anti-vaccination theories. The most important aspect of perceived control or the mental health quotient is the role of emotion [15]. The sudden dramatic events surrounding the pandemic such as loss of a loved one fear of catching or transmitting the virus, and loss of a source of livelihood has heightened the collective public sentiments. The dampened emotional response to the crisis has reduced the perceived severity and the risk associated with the pandemic. Such responses interfere with the proactive behavior towards adopting preventive health care measures. These heightened sentiments act as roadblock towards attaining a positive mental health quotient, and thus, promote counterproductive behaviors such as the anti-vaccination movement. Such counterproductive behaviors may increase the probability of people falling prey to misinformation and its transmission. Paying attention to the emotional aspects such as building trust, and motivating the individuals to educate themselves regarding vaccination, can work wonders for the current situation. The harm caused to the vaccination intention due to the spread of misinformation is explained clearly in the following section.

Theme 3 Incomplete or misinformation around vaccination that induces pain and fear, hampering the mental health quotient

Public health experts have acknowledged building herd immunity as an important tool against the coronavirus. An estimated 67% of the proportion of the current population will have to be a part of the herd immunity to win against the virus [16]. Building immunity amongst the population by natural ways will cost an estimated of 30 million deaths worldwide. The only way through this pandemic is building herd immunity through rapid mass immunization [17]. Currently the rate of vaccination is lower than the desired rate. A major reason behind the anti-vaccination mind-set is the misinformation regarding the pandemic as well as vaccination. There have been some notable protests and movements against the social distancing policies and the intervention of rapid mass immunization worldwide [18]. Most of the population segment that is reluctant to get vaccinated either belongs to the lower level of income and education category, or to the category of people who involve in fewer protective or hygiene behaviors [19,20]. In the past two decades, social media has emerged as an important tool towards spread of health related information [21]. The spread of information online has increased the health literacy and self-efficacy quotient amongst the population [22]. But it is also a major cause of concern towards the increasing social and health risk. The role of health misinformation on social media platforms has been significant during the COVID crisis and the results can be observed in the form of widespread anti-vaccination belief. The vaccination myth and the alternative treatments that are freely available on the social media platforms are adding to the chaos. Social bots are being used by organizations to promote their health products contradicting substantial health evidence [23]. The unverified information being circulated by the online communities, the politicized health debates on the news and media platforms, and the wrong context of the widely circulated health information are some of the major barriers against the proposed coping strategy of mass immunization [14]. A very important factor contributing towards the anti-vaccination belief is the degrading mental health quotient. The prolonged duration of the pandemic; the rising economic, social and health disparities; the rising mortality and morbidity, have been the crucial factors behind the degrading mental health quotient [24]. There are no two ways about the anticipated mental health crisis post the pandemic [25]. The current state of fear, panic and a degrading mental health quotient is heavily contributing towards the widespread vaccine hesitancy [26,27].

Discussion and Conclusion

In this research, we have highlighted various roadblocks in the way of

mass immunization. There is a dearth of literature addressing issues like the politicization of vaccination, the efficacy of vaccine, herd immunity, the vaccine conspiracy beliefs, vaccine hesitancy and the most important one being the correlation between vaccine hesitancy and mental health. The paper fills the knowledge gap and addresses the critical issues. On the basis of the literature review and the insights obtained from the sample of respondents, three major themes have been identified. These themes try to address the issue of vaccine hesitancy in short term and its impact on mental health in the long term. The paper identifies vaccine conspiracy beliefs as the major contributor towards vaccine hesitancy. This research emphasizes on the role of vaccine education in order to deal with vaccine conspiracy beliefs and misinformation around. As a suggestive measure, the study suggests urgent need of mass immunization to develop herd immunity against the constantly evolving COVID-19 virus. The study also suggests local or community level interventions to reach the masses. The local communities could begin educating people about vaccination to promote rapid mass immunization.

Limitations and Future Directions of Research

This study is an attempt towards theoretically comprehending the reasons behind vaccine hesitancy and the degrading mental health quotient. There are two major limitations concerning the study. The first limitation is not just a shortcoming but leads the way towards further research on the topic. The study is not empirically tested and hence provides a base for further research on the subject. Variables like vaccine hesitancy and mental health could be empirically tested in varied settings to agree or disagree with the derived themes. The second limitation is that the study is based on the sample from a non-clinical population. This also could be utilized as a future direction of research and a similar study could be adopted and established amongst clinical population. This study contributes towards the crucial crisis management literature and thus, is the need of the hour.

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