

## Psychological Profiling Associated To Vaccine Resistance And Hesitancy For Covid-19

Shabnam<sup>1</sup>, Iram Faheem<sup>2</sup> & Aqeel Khan<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Humanities and Social Sciences, National Institute of Technology (NIT)  
Kurukshetra (Haryana)

<sup>2</sup>Princess Nourah Bint Abdul Rahman University, Riyadh KSA

<sup>3</sup> Faculty of Social Sciences & Humanities, Universiti Teknologi Malaysia (UTM), Skudai 81310, Johor, Malaysia.  
Corresponding author Email: shabnam.yy@nitkr.ac.in

### Abstract

Throughout the COVID-19 pandemic, a need for and great acceptance of vaccination for COVID-19 has been shown among people in different nations, while anxieties about safety of vaccine might delay the campaign of vaccine acceptance. To increase vaccination exposure, vaccination plans or programs must be considered to eliminate barricades regarding price and accessibility of vaccination, and information from authority are imperative to ease people concerns about safety of vaccine. Along with all these reasons personality traits, decision making, and risk perception are also described as factors influencing vaccination hesitancy and resistance. Though previous researches have recognized factors related to different perceptions of immunization, inadequate attention has been paid to the personality role, risk perception and decision making in individual toward vaccination. This study aimed to review the effect of personality as measured by the Big Five personality traits, perception of risk and decision making toward vaccination.

**Key words:** Vaccine hesitancy & resistance for COVID-19, personality, risk perception and decision making

### Introduction

Severe acute respiratory syndrome coronavirus 2 disease which is termed as SARS-CoV-2, the virus that roots COVID-19 was first spotted in Wuhan, China, in December, 2019. It extended globally in 1 month of the onset. World Health Organization (WHO) declared it as a pandemic throughout the world on 11 March, 2020. The virus had spread to 220 countries in the world and diseased over 17,53,06,598 people as confirmed cases of infection, and caused in over 37,92,777 deaths worldwide (As of June 13th, 2021) (WHO, 2021). As per WHO (2021) as on 12<sup>th</sup> June 2021, in India, there are 29359155 confirmed cases of COVID-19 out of which 1080690 are the active cases and total deaths are 367081. Though, the requirement for associate official vaccination has become unarguable to shield people from this

infection and protect the economy from in progress disruptions and harm. The first human clinical trial of a COVID-19 vaccination was started on 3<sup>rd</sup> March, 2020 in US and many other human trials began soon after. The first human clinical trial of a COVID-19 vaccine in India launched in July 2020. Many trials are still in progress. India has started vaccination on January 17, 2021, with COVISHIELD vaccine from Oxford/AstraZeneca manufactured in India. The efficiency of this vaccine is described to be 63.09% against indicative COVID-19 virus. Vaccinations (second phase), which started on March 1, 2021 with Covaxin, which is indigenously developed by Hyderabad-based pharmaceutical firm Bharat Biotech permissible for all people above the age of 60 and between the age of 45 and 59 with the shot against the coronavirus disease. From April 1st, 2021,

People above the age of 45 years got the COVID-19 vaccine. From May 1, 2021, all eligible citizens above the age of 18 years can get the COVID-19 vaccine. Accessibility of the vaccine, is not the only problem there also has to be adequate inclination among the population to get immunized and jabbed otherwise, a consent on mandatory vaccination. This problem is not only linked with COVID-19 vaccine, rather it has already been associated with the vaccine for other diseases across the world (Kata 2012; Larson et al., 2014).

Vaccination has been the most significant developments in the times gone by humankind, that has protected survival and endures to be the assurance of the wellbeing of people in the world (WHO, 2019a). However, in spite of the confirmed high efficacy, there are persons who do not accept or reject or delay immunization, although facilities are accessible. This occurrence is termed as “vaccine hesitancy” (McKee & Bohannon, 2016; MacDonald, 2015). Understanding and recognizing COVID-19 vaccine hesitancy contained by varied peoples may be helpful for future messaging to public health. Vaccine acceptance (passive acceptance to active demand), and its resistance and hesitance (uncertainty or rejection for vaccination) to COVID-19 vaccination is, hence, a possibly significant stride to confirm the rapid and mandatory uptake of subsequent vaccine. According to Holder (2021), 14% of the Indian population has received at least one dose and 3.4% of the Indian population has received both the doses. Since other nations also encounter a same problem, the World Health Organization declared vaccine hesitancy amid the top ten fears to worldwide health in 2019 (WHO, 2019b). Considering the causes why people have refusal or postponement of vaccination is vital in order to change effective plans or policies to rise vaccination. There are a number of causal factors responsible for vaccine hesitancy and resistance. Several studies on vaccine hesitance and resistance

highlights on the explicit outer factors for their resistance to a specific vaccine or to the programmes for vaccination (Schmid et. al., 2017; Siddiqui, Salmon, & Omer, 2013; Marti et. al., 2017). Along with the other factors personality traits, decision making, and risk perception are also described as factors influencing vaccination hesitancy and resistance.

Personality characterizes the set of patterns of behaviours within persons and impacts how people answer back to exterior situations or stimuli and interrelate with further society. It has been extensively known as the model for big five, factors which shields broader personality dimensions and help to study the special effects of personality characteristics or traits on behaviours which are related to health. The personality characteristics and traits can be ordered in terms of five areas: extroversion (energetic, sociable and outgoing), agreeableness (altruistic, sympathetic and trustworthy), conscientiousness (thoughtful, dutiful and self-disciplined), emotional stability (relaxed, calm, and even-tempered), and openness to experience (curious, open to new ideas and creative,) (John & Srivastava, 1999). Lee, Duck & Sibley (2017) examined correlated personality traits to specific attitudes toward the safety of vaccinations. They found that individuals low on conscientiousness and agreeableness but high on openness to experience expressed low assurance about vaccine safety and higher vaccine hesitancy (Kalimeri et al., 2019). Lin & Wang (2020) also found that people high on personality traits like emotional stability agreeableness, and conscientiousness are more likely to think vaccination as useful. But much literature is not available related to personality and vaccination hesitancy and resistance. It leftovers uncertain whether personality characteristics or traits play role in specific attitudes toward vaccination. The present study will investigate all the five personality traits for example, openness to experience, extraversion, emotional

stability, conscientiousness, and agreeableness in relation to vaccine hesitancy and resistance as not enough evidence was found about their possible relationship. The present study will investigate the effects of personality traits especially focusing on perception of risk about vaccination.

Perceptions of risk comprise of emotional elements like worry, anxiety and fear (Karlsson et al., 2021). In the framework of vaccines, risk perception can be explained as the hesitations to vaccines' efficacy and distress of after maths of the vaccines (Lehmann et. al., 2014). Risk perception shows an essential role in the purposes to get vaccinated (Caserotti et al., 2020). Individuals are not ready for immunization for Covid-19 because of its argumentative effects; in spite of having high benefit-to-risk ratio of these immunization (Echoru, Ajambo, & Bukenya, 2020.).

Vaccination decision is often based on apparent benefits, efficacy, and perceived danger of immunization after effects versus infection (Guo et al., 2020). Some researchers have acknowledged safety issues and risk perception about COVID-19 immunization among all sets of people, containing college students (Qiao, Tam & Li, 2020), healthcare workers (Grech, Gauci, & Withdrawn, 2020) and the general public (Wang et al. 2020). People perceive risk about the side effects of vaccination show disapproval or vaccination hesitancy (Wilson, Arvai & Arkes, 2008; Karafillakis & Larson, 2017; Lucia, Kelekar, & Afonso, 2020) which can affect decision making process on health related issues (Sporton and Francis, 2001) particularly decisions like vaccination, and associated occurrences, like susceptibility to risky decisions (Hanoch et al., 2006; Fagley & Miller, 1997; Kühberger, 1998; Damnjanović and Gvozdenović, 2016). Despite compulsions on vaccination, hesitancy is there and it appears to be a gap in literature that will be able to clarify why such attempts are

fading and address behavioural approaches used by vaccine hesitant people in order to escape needed immunization. Not much is identified about confidence of decision about not jabbing, and reasons that may influence people to review their decision. Focusing on this, the present study is to explore cognition underlying vaccine hesitant people decision making. This study may exclusively add to the current literature by giving valuable understandings into this matter. Understanding of these issues may also help for the development of managerial strategies intended to increase immunization rates. The core reasons for the vaccination hesitancy and resistance and its associated behaviours are not yet well understood. It would be worth to explore, why people show hesitancy and disapproval to vaccination. This information is also limited to elucidate why people come to their own epistemological points.

## Conclusion

Vaccination hesitancy for COVID-19 might restrict the accomplishment of presently going vaccination efficacy (Chan, Jamieson, & Albarracin, 2020). According to current approximations, herd immunity aids are attainable if vaccination is 65%–70% of the people (Randolph & Barreiro, 2020). The heavy segment of the people, those who are reluctant to take vaccination, joined with many people inept to take vaccine for COVID-19 (for remedial grounds), proposes that herd immunity might be impossible. Few earlier vaccination plans successfully eliminated definite fatal infections; though, the accomplishment was merely conceivable cheers to the amalgamation of obligatory protective immunization plans or programs with synchronized learning exertions (Omer et al., 2009). Surveys and researches have observed at the details for that people are unwilling to get vaccinated, and there is again abundant need to initiate on this point of view. Exploration on resistance or hesitancy for vaccination undertakes that it

is vigorous to comprehend the causes overduespecificapproaches to adapt the jab programs consequently (Paterson, Chantler, & Larson, 2018). So, an exploration into precise vaccination for COVID-19 inclination and hesitancy might be vital to apprise forthcoming governmental and informative activities well. So, forthcoming researches must emphasis on hesitancy to grow vaccinated for COVID-19. The information of these causes might support us to project well resolutions to rise jabreporting in different nation's most pretentious due to the problem of vaccination hesitancy. Now when the vaccines are being moved out, more Indian researches are needed to benefit and comprehend the aspects related to vaccination approval and acceptance in the wide-ranging public and in specific to assist better update how greatest to upkeep bigger vaccination. Evaluating blockades to vaccine approval capability may possibly deliver valued visions into features pouring perceived differences. There was few indication representing that among the general public, knowledge was linked with vaccination acceptance. Information, or dearth of it, is frequently observed as a strategic barricade to alteration of behaviour that is replicated in many approaches and plans that emphasis only on giving education. Whereas awareness is certainly vital, it is generally inadequate as an individual approach, so, other evidence-based, flexible barricades necessarily considered. New indications applicable to growing vaccine approval for COVID-19 will arise that means, procurement and expending to-date confirmation is important.

## References

Caserotti, M., Girardi, P., Rubaltelli, E., Tasso, A., Lotto, L., & Gavaruzzi, T. (2021). Associations of COVID-19 risk perception with vaccine hesitancy over time for Italian residents. *Social Science and Medicine*, 272, 113688. doi:[10.1016/j.socscimed.2021.113688](https://doi.org/10.1016/j.socscimed.2021.113688)

Chan, M.-P.S., Jamieson, K.H. & Albarracin, D. (2020). Prospective associations of regional social media messages with attitudes and actual vaccination: A big data and survey study of the influenza vaccine in the United States. *Vaccine*, 38, 6236–6247.

Damnjanović, K., & Gvozdenović, V. (2016). Influence of the probability level on the framing effect. *Psihologijske Teme*, 25, 405–429. Available online at: <https://hrcak.srce.hr/169520>

Echoru, I., Ajambo, P.D., & Bukeny, E.M. (2020). Acceptance and risk perception of COVID-19 vaccine in Uganda: a Cross Sectional study in Western Uganda, *Research Square*, 1–11. doi:[10.21203/rs.3.rs-78780/v1](https://doi.org/10.21203/rs.3.rs-78780/v1)

Fagley, N. S., & Miller, P. M. (1997). Framing effects and Arenas of choice: your money or your life? *71*, 355–373. <https://doi.org/10.1006/obhd.1997.2725>

Grech, V., Gauci, C., & Withdrawn, A.S. (2020). Vaccine hesitancy among Maltese Healthcare workers toward influenza and novel COVID-19 vaccination. *Early Human Development*, 1, 105213 doi:[10.1016/j.earlhumdev.2020.105213](https://doi.org/10.1016/j.earlhumdev.2020.105213)

Guo, N., Wang, J., Nicholas, S., Maitland, E., & Zhu, D. (2020). Behavioural Differences in the Preference for Hepatitis B Virus Vaccination: A Discrete Choice Experiment. *Vaccines*, 8, (3) 527. Retrieved from: <https://www.mdpi.com/2076-393X/8/3/527>

Hanoch, Y., Johnson, J. G., & Wilke, A. (2006). Domain specificity in experimental measures and participant recruitment: an application to risk-taking behaviour. *Psychological Science*, 17, 300–304. <https://doi.org/10.1111/j.1467-9280.2006.01702.x>

Holder, J. (2021, 11 June). Tracking Coronavirus Vaccinations Around the World. *The New York Times*. Retrieved from

<https://www.nytimes.com/interactive/2021/world/covid-vaccinations-tracker.html> on 11 June 2021.

John, O.P., & Srivastava, S. (1999). The big five trait taxonomy: history, measurement, and theoretical perspectives. In: John, O.P., Robins, R.W., Pervin, L.A., (ed.). *Handbook of personality: theory and research*. 2nd ed. (pp. 102–138). New York: Guilford Press

Kalimeri, K., Beiró, M. G., Urbinati, A., Bonanomi, A., Rosina, A., & Cattuto, C. (2019). Human Values and Attitudes towards Vaccination in Social Media. *Companion Proceedings of The 2019 World Wide Web Conference on - WWW '19*, 248–254. doi:10.1145/3308560.3316489

Karafillakis, E., & Larson, H. J. (2017). The benefit of the doubt or doubts over benefits? A systematic literature review of perceived risks of vaccines in European populations, *Vaccine*, 35, (37), 4840–4850. <https://doi.org/10.1016/j.vaccine.2017.07.061>

Karlsson, L.C., Soveri, A., Lewandowsky, S., Karlsson, L., Karlsson, H., Nolvi, S., Karukivi, M., Lindfelt, M., Antfolk, J. (2021). Fearing the disease or the vaccine: the case of COVID-19. *Personality Individual Differences*, 172, 110590. <https://doi.org/10.1016/j.paid.2020.110590>

Kata A. (2012). Anti-vaccine activists, Web 2.0, and the postmodern paradigm – An overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine*, 30, 3778–3789.

Kühberger, A. (1998). The influence of framing on risky decisions: a meta-analysis. *Organizational Behaviour and*

*Human Decision Processes*, 75, 23–55. doi:10.1006/obhd.1998.2781

Larson H.J., Caitlin J., Eckersberger E., Smith D., & Paterson P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012. *Vaccine*, 32, 150–2159.

Lee, C.H.J, Duck, I.M., & Sibley, C.G. (2017). Personality and demographic correlates of new Zealanders' confidence in the safety of childhood vaccinations. *Vaccine*, 35(45), 6089–6095. doi:10.1016/j.vaccine.2017.09.061

Lehmann, B.A., Ruiter, R.A.C., Chapman, G., & Kok, G. (2014). The intention to get vaccinated against influenza and actual vaccination uptake of Dutch healthcare personnel. *Vaccine*, 32(51) 6986–6991. doi: 10.1016/j.vaccine.2014.10.034

Lin, F.Y., & Wang, C.H. (2020). Personality and individual attitudes toward vaccination: a nationally representative survey in the United States. *BMC Public Health*, 20, 1759 <https://doi.org/10.1186/s12889-020-09840-w>

Lucia, V..C., Kelekar A., & Afonso N.M. (2020). COVID-19 vaccine hesitancy among medical students. *Journal of Public Health*. doi: 10.1093/pubmed/fdaa230

MacDonald, N. E. (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, 33(34), 4161–4164. doi:10.1016/j.vaccine.2015.04.036

Marti, M., de Cola, M., MacDonald, N. E., Dumolard, L. & Duclos, P. (2017). Assessments of global drivers of vaccine hesitancy in 2014—looking beyond safety concerns. *PLoS One*, 12(3), e0172310 <https://doi.org/10.1371/journal.pone.0172310>

- McKee, C., & Bohannon, K. (2016). Exploring the Reasons Behind Parental Refusal of Vaccines. *The Journal of Pediatric Pharmacology and Therapeutics*, 21(2), 104–109. doi: 10.5863/1551-6776-21.2.104
- Omer, S.B., Salmon, D.A., Orenstein, W.A., Dehart, M.P., & Halsey, N. (2009). Vaccine refusal, mandatory immunization, and the risks of vaccine-preventable diseases. *New England Journal of Medicine*, 360, 1981–1988.
- Paterson, P., Chantler, T., & Larson, H.J. (2018). Reasons for non-vaccination: Parental vaccine hesitancy and the childhood influenza vaccination school pilot programme in England. *Vaccine*, 36, 5397–5401.
- Qiao, S., Tam, C.C., & Li, X. (2020). Risk exposures, risk perceptions, negative attitudes toward general vaccination, and COVID-19 vaccine acceptance among college students in South Carolina. *medRxiv* (Preprint) doi: [10.1101/2020.11.26.20239483](https://doi.org/10.1101/2020.11.26.20239483)
- Randolph, H.E. & Barreiro, L.B. (2020). Herd Immunity: Understanding COVID-19. *Immunity*, 52, 737–741.
- Schmid, P., Rauber, D., Betsch, C., Lidolt, G. & Denker, M. L. (2017). Barriers of influenza vaccination intention and behavior—a systematic review of influenza vaccine hesitancy, 2005–2016. *PloS One*, 12, e0170550. doi: [10.1371/journal.pone.0170550](https://doi.org/10.1371/journal.pone.0170550)
- Siddiqui, M., Salmon, D. A., & Omer, S. B. (2013). Epidemiology of vaccine hesitancy in the United States. *Human vaccines & immunotherapeutics*, 9(12), 2643–2648. <https://doi.org/10.4161/hv.27243>
- Sporton R.K. & Francis S.A. (2001). Choosing not to immunize: are parents making informed decisions? *Family Practice*, 18(2), 181–8. doi: 10.1093/fampra/18.2.181. PMID: 11264269.
- Wang, J., Jing, R., Lai, X., Zhang, H., Lyu, Y., Knoll, M. D., & Fang, H. (2020). Acceptance of COVID-19 Vaccination during the COVID-19 Pandemic in China. *Vaccines*, 8(3), 482. <https://doi.org/10.3390/vaccines8030482>
- Wilson, R. S., Arvai, J. L., & Arkes, H. R. (2008). My loss is your loss. sometimes: loss aversion and the effect of motivational biases. *Risk Analysis*, 28, 929–938. Doi: [10.1111/j.1539-6924.2008.01065.x](https://doi.org/10.1111/j.1539-6924.2008.01065.x)
- World Health Organization (2019a, December 5). *Immunization*. <https://www.who.int/news-room/facts-in-pictures/detail/immunization>
- World Health Organization (2019b). *Ten threats to global health in 2019*. <https://www.who.int/emergencies/ten-threats-to-global-health-in-2019>
- World Health Organization (WHO) (2021). Retrieved from <https://www.who.int/news-room/facts-in-pictures/detail/immunization> on 15 June 2021.