By Deliberate Ignorance and Cognitive Distortions COVID-19 Vaccine Refusal is Driven

Researchers used data from 1,200 US participants with differing preexisting vaccination biases (anti-vaccination, neutral, or pro-vaccination attitudes) to investigate the associations between information presentation and vaccination willingness.

Their study discovered the widespread prevalence of 'deliberate ignorance,' the wilful avoidance of information about vaccines' side effects, benefits, and their respective probabilities, especially in participants with anti-vaccination attitudes. The study also employed sophisticated computational modeling to analyze how these cognitive biases influenced decision-making processes across different participant groups.

Notably, participants identified as belonging to the 'no deliberate ignorance' cohort (intensive scrutiny of provided vaccine information) were more likely to display vaccination willingness irrespective of belonging to 'neutral' or 'pro-vaccination' cohorts. All cohorts were observed to display probability neglect towards vaccine side effect probabilities. This modeling revealed that cognitive distortions, such as nonlinear probability weighting and loss aversion, further exacerbated vaccine refusal, particularly among anti-vaccination participants.

Together, these findings highlight the need for clinicians and policymakers to reevaluate their pro-vaccination campaigns and tailor their outcome presentations after considering their audiences' preconceived biases towards the vaccination process.

Study
The present study investigates how persons with different preexisting notions/attitudes toward COVID-19 vaccines process information on vaccine evidence. It further seeks to identify and measure the extraneous factors (potentially non-vaccine-specific preconceptions such as cultural, societal, or religious) that may influence vaccination decisions in this spectrum of future vaccine receivers.

The study is based on the concept of 'deliberate ignorance,' the act of refusing to peruse vaccine evidence information. For analysis, the study defines three levels of deliberate ignorance – 1. Full (ignore all presented vaccine evidence), 2. Partial ('probability neglect' wherein individuals are more likely to ignore specific pieces of information such as the probabilities of side effects or benefits), and 3. No deliberate ignorance (complete and detailed inspection of provided vaccine evidence).

Data for the study was obtained from United States (US) adult citizens on the online platform Prolific. Based on the initial assessment scores, participants were classified as either 'anti-vaccination,' 'neutral,' or 'pro-vaccination.' The study was designed such that each cohort (classifier) would have ~400 participants (total n = 1,200). Each participant was required to undergo each of the study's four main stages.

The bulk of relevant data was derived from the Mouselab test, which involved presenting clinical information (benefits, side effects, and their respective probabilities) on eight globally approved anti-COVID-19 vaccines, followed by an interview to ascertain participant vaccination choice. The affect rating test evaluated how participants' objective feelings towards vaccines' benefits and side effects changed after perusing vaccine information. The post-experiment survey elucidated the changes in participants' vaccination views before and after the experiment. The data were then analyzed using computational modeling, which allowed researchers to quantify the extent of cognitive distortions, such as probability weighting and loss aversion, that influenced participants' vaccination decisions.

Results

The final sample cohort comprised 1,200 US citizens, of which 60% were women (mean age = 38.23 years). The final cohorts (during the post-experiment survey) included 365 anti-vaccination, 462 pro-vaccination, and 373 vaccination-neutral participants.

Study findings revealed that deliberate ignorance was unexpectedly high across all three cohorts. However, the duration of vaccine effect label information was found to be directly proportional to the probability of vaccine acceptance. In contrast, probability neglect—one of more instances of reading benefits and side effects of vaccines but not their respective probabilities—often resulted in vaccination aversion.

Information comparisons between groups revealed that anti-vaccination group participants deliberately ignored a majority (and, at times, even all) presented vaccine information. Computational modeling indicated that preexisting biases and cognitive distortions further influenced this aversion to knowledge acquisition and processing. Notably, the vaccination-neutral group, formerly the most populous cohort under study, was indistinguishable from pro-vaccination participants' willingness to learn and process vaccination information.

Conclusion

The present study highlights the roles of preexisting vaccine hesitancy in anti-COVID-19 vaccination outcomes. Conducted among 1,200 US citizens across a spectrum of vaccination willingness (anti-, neutral, and pro-vaccination), the study revealed that participants' willingness to vaccinate was directly linked to the amount of information about vaccine effects they had chosen to process. Unfortunately, this willingness to peruse provided information was associated with preexisting beliefs (anti-vaccination group participants are much more likely to ignore parts or all of the provided information deliberately).

Notably, all group participants were likely to read the side effects and benefits section of the provided vaccine information. However, all three groups displayed 'probability neglect,' wherein the probabilities of side effects and benefits occurring were ignored.

Together, these findings underscore the need to access participants' preexisting beliefs about vaccination prior to the campaigning effort. Clinicians and policymakers are further advised to tailor their vaccination campaigns to best suit the needs of specific target groups.

Source:

https://www.news-medical.net/news/20240917/Cognitive-distortions-and-deliberate-ignorance-lead-to-COVID-19-vaccine-refusal-study-says.aspx