

The Use of Health Belief Model to Assess Predictors for COVID-19 Vaccination in Riley County, Kansas



Yibo Liu and Nancy Muturi

Kansas State University, Manhattan, KS 66506

INTRODUCTION

In the United States, there were around 37 million COVID-19 total cases by August 2021 with a steady increase since March 2020 when it was declared an epidemic (CDC, 2021). Riley County has had about 7000 COVID-19 positive cases and a two-week cumulative percent positive of about 5.15 percent (Riley County Health Department, 2021). The pandemic has serious socioeconomic impacts at organizational and personal levels causing job losses, financial difficulties among other social and psychological damages (Parker, Minkin & Bennett, 2020). COVID-19 vaccine is an efficient way to prevent it. However, the vaccine-hesitance and the resultant declining global vaccination rates are critical problems facing the world's population (Omer et al., 2009). To understand Riley County people's perception of the COVID-19 vaccine, and barriers to vaccine acceptance, we conducted a study based on the Health Belief Model (HBM).

HYPOTHESES AND METHOD

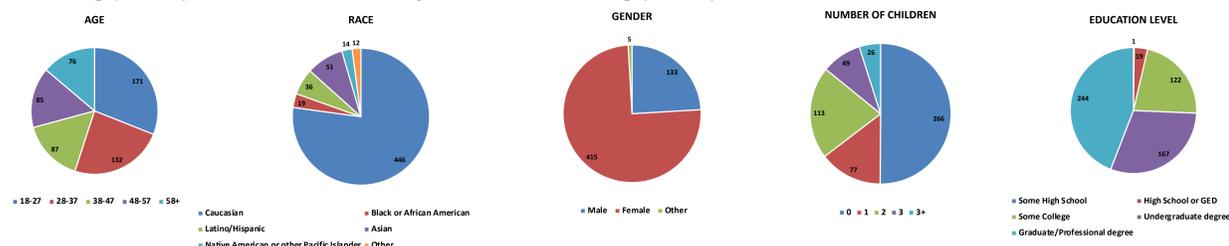
Four hypotheses based on Health Belief Model :

- H1: COVID-19 vaccine intention will be positively related to the perceived threat of COVID-19. (Supported)
- H2: COVID-19 vaccine intention will be negatively related to perceived barriers. (Supported)
- H3: COVID-19 vaccine intention will be positively related to the perceived benefits of the COVID-19 vaccine. (Supported)
- RQ1: Is there a relationship between the flu vaccination and COVID-19 vaccine intention?
- RQ2: Is there a difference among different age groups to consider the COVID-19 severity and susceptibility?

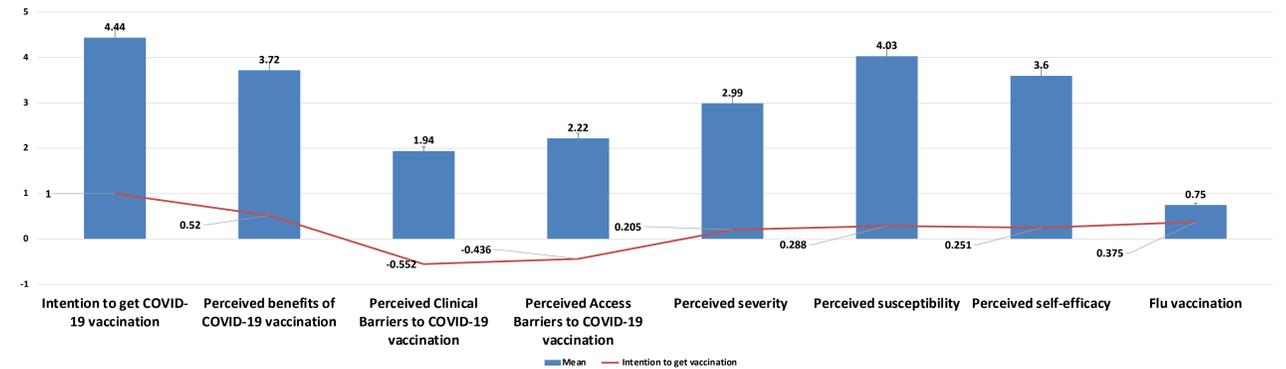
This study employed a cross-sectional online survey (n=572) that was administered to Riley County's residents.

RESULTS

Results indicate that all aspects of the HBM are significantly correlated with intention to vaccinate except cues to action. Interestingly, this study finds that participants between 18-27 reported lower levels of virus severity than participants who are over 57. And participants who are between 18-27 reported lower levels of virus susceptibility than all other age groups. Furthermore, there is a significant relationship between flu vaccination and COVID-19 vaccine intention. These findings illustrated the flu vaccination can be used as an indication of COVID-19 vaccination. Additionally, it shows the need for public health professionals and healthcare practitioners to foster interpersonal relationships with young people to enhance vaccine adoption by change their perceptions of susceptibility to and severity of vaccine-preventable diseases. It is also essential to focus on rising perceptions of self-efficacy while decreasing perceptions of barriers to vaccination.



BIVARIATE CORRELATIONS AND DESCRIPTIVE FOR KEY STUDY VARIABLES



FUTURE PLAN

We plan to design and initiate a health campaign for the Riley County to boost the COVID-19 vaccination rate. The campaign will focus on increasing the perceived benefits of COVID-19 vaccination, perceived seriousness of the COVID-19, and perceived self-efficacy of the COVID-19 vaccination on Riley County residents. At the same time, this campaign will focus on decreasing the perceived access barrier and perceived clinical barriers to the COVID-19 vaccination. In addition to other communication strategies, fliers with COVID-19 education and health information to encourage people to wear masks, promote personal hygiene, and a healthy lifestyle will be distributed. The goal is to enhance knowledge, promote self-protective behaviors, and most importantly, enhance positive vaccine perceptions and adoption to increase to the herd immunity requirement in Riley County.

REFERENCES

Centers for Disease Control and Prevention. (2021, August 26). CDC COVID Data Tracker. Centers for Disease Control and Prevention. <https://covid.cdc.gov/covid-data-tracker/#vaccination-trends>

Riley County Health Department. (2021, August 26). Corona Virus Response-Riley County, KS. Riley County Health Department. <https://coronavirus-response-rcitgis.hub.arcgis.com/>

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. *The New England journal of medicine*, 360(19), 1981–1988. <https://doi.org/10.1056/NEJMs0806477>

Parker, K., Minkin, R., & Bennett, J. (2020, September 24). Economic Fallout From COVID-19 Continues To Hit Lower-Income Americans the Hardest. Pew Research Center. <https://www.pewsocialtrends.org/2020/09/24/economic-fallout-from-covid-19-continues-to-hit-lower-income-americans-the-hardest/>

ACKNOWLEDGEMENTS



We would like to thank Midwestern Public Health Training Center for funding. The research was supported by the Riley County Health Department. This study was approved by the Committee on Research Involving Human Subjects/Institutional Review Board (IRB) of KSU

Contacts: Yibo Liu (yibo8023@ksu.edu) and Nancy Muturi (nmuturi@ksu.edu)