

Consortium on Law and Values in Health, Environment & the Life Sciences
Award Report for the 2017-18 Academic Year

“Drivers of vaccine acceptance among future healthcare professionals in Uganda”

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Project Summary

Personal choices have immense consequences for population health. However, public health programs frequently lack information on the complex reasoning that underlies individual decision-making. In low-resource contexts, there is a paucity of information on the key considerations individuals weigh in decision-making about vaccination.

The World Health Organization (WHO) has identified vaccine hesitancy- a delay in acceptance or refusal of safe vaccines- as one of the top ten threats to global health in 2019. Previous studies have found that misinformation, complacency, convenience and confidence in health systems influence decision-making on vaccination.

Since medical professionals are often seen as the most trusted source for vaccination decision-making, it is critically important to understand vaccination decision-making among future medical professionals. An international review of vaccination hesitancy among practicing health care providers found that providers’ willingness to be vaccinated themselves was strongly associated with their vaccination recommendations to patients.

The study utilized an interdisciplinary approach by applying the discrete choice experimental design from applied economics to an epidemiologic question. The discrete choice experiment presented study participants with a series of hypothetical scenarios regarding a vaccination against a new and deadly disease, which resembled Ebola. Participants were asked to decide whether or not to accept a vaccine in each scenario, and then asked how much they wanted the vaccine in that scenario on a scale of 1-10. We evaluated the major factors associated with decisions on new vaccines, so each scenario varied by disease risk, disease severity, the advice of friends and family members, the advice of public figures, prosocial motives, and fear of side effects. This methodology has been used extensively in applied economics, and more recently in the realm of public health.

We have three aims to examine these issues:

- 1. Quantify the difference in willingness to be vaccinated between future medical professionals and university students who are not enrolled in medical fields.*
- 2. Identify the characteristics which drive decisions to accept a vaccine for both future medical professionals and future professionals.*
- 3. Identify the characteristics associated with the most heterogeneity in vaccination decisions for both future medical professionals and future professionals.*

Results

This study received IRB approval from the University of Minnesota in May 2018, from Makerere University's School of Medicine in August 2018, and from the Uganda National Council on Science and Technology in late November 2018.

This study took place at Makerere University in Kampala, Uganda. The study enrolled 1,615 participants, including 15 participants for pretesting, 800 from Makerere University's College of Health Sciences and 800 from outside of the College of Health Sciences. Pretesting occurred in November and December 2018, and the final survey was administered at five sites at Makerere University in February and March 2019. The study was administered by trained staff on tablets. Because the data was collected digitally, it was automatically stored securely in an online digital platform.

The results from this study are being analyzed for my dissertation, which examines vaccination decision making in different populations. The analysis will take place in the fall of 2019 and a publication is planned in the spring of 2020, following the dissertation defense. This will be one of the first publications to explore vaccination decision-making in a low and middle income country using a discrete choice experiment methodology.

Because we examined scenarios that centered around a new vaccine against an epidemic disease, this study is timely in the context of Ebola outbreaks in Uganda. The ongoing Ebola outbreak in neighboring Democratic Republic of the Congo has resulted in suspected and confirmed Ebola cases in Uganda and Uganda has experience five other Ebola outbreaks since 2000. While an effective vaccine exists against Ebola, evidence suggests that substantial vaccine hesitancy may exist against this new vaccine, even in the context of an ongoing epidemic. Thus, we hope that this study will provide clarity on the contexts where Ebola vaccination will be most accepted by professional in Uganda, as well as the key motivators for these vaccination decisions.

The Fellowship from the Consortium of Law and Values in Health, Environment and Life Sciences was critical to implementing the study. Without this funding, it would have not been possible to effectively undertake this study. The funding directly supported the hiring of study staff, a critical element in survey administration and one that was only identified as a critical need after pilot testing in November 2018 indicated that data quality would be markedly improved by interviewer administration of the survey. Additionally, the Consortium funding supported the standard IRB-recommended study incentives for participants.

Future project plans

This project will constitute one of the three aims in my dissertation. The defense date is expected to be in the spring semester 2020.

This project enabled me to gain skills in both primary data collection as well as a novel analysis strategy. I have built upon the experience provided by this study to successfully apply for the J. B. Hawley Student Research award at the Division of Epidemiology and Community Health in the School of Public Health, which supports student research projects. To undertake this study, I have relied heavily on my learnings from the Consortium-funded research in Uganda to design

and implement this upcoming study at the 2019 Minnesota State Fair, which examines decision-making on seasonal influenza vaccine among Minnesota State residents. This discrete choice experiment will examine factors that influence influenza vaccination decisions, and scenarios will vary by influenza vaccine promotion message, the source of information, a series of policies incentives, and an array of options on how to access the vaccine.

Following my dissertation defense, I hope to build upon the primary data collection skills developed in Uganda to design and implement studies that provide policy-relevant information on critical elements of public health interventions, such as vaccination.