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International Teaching Aid
Competition 2023

Reconnoitering Innovative Ideas in Postnormal Times

iTAC

2023

iTAC 2023
INTERNATIONAL TEACHING AID COMPETITION
E-PROCEEDINGS

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PREFACE

iTAC or International Teaching Aid Competition 2023 was a venue for academicians, researchers, industries, junior and young inventors to showcase their innovative ideas not only in the teaching and learning sphere but also in other numerous disciplines of study. This competition was organised by the Special Interest Group, Public Interest Centre of Excellence (SIG PICE) UiTM Kedah Branch, Malaysia. Its main aim was to promote the production of innovative ideas among academicians, students and also the public at large.

In accordance with the theme "Reconnoitering Innovative Ideas in Post-normal Times", the development of novel ideas from the perspectives of interdisciplinary innovations is more compelling today, especially in the post-covid 19 times. Post-pandemic initiatives are the most relevant in the current world to adapt to new ways of doing things and all these surely require networking and collaboration. Rising to the occasion, iTAC 2023 has managed to attract more than 267 participations for all categories. The staggering number of submissions has proven the relevance of this competition to the academic world and beyond in urging the culture of innovating ideas.

iTAC 2023 committee would like to thank all creative participants for showcasing their innovative ideas with us. As expected in any competition, there will be those who win and those who lose. Congratulations to all the award recipients (Diamond, Gold, Silver and Bronze) for their winning entries. Those who did not make the cut this year can always improve and join us again later.

It is hoped that iTAC 2023 has been a worthy platform for all participating innovators who have shown ingenious efforts in their products and ideas. This compilation of extended abstracts published as iTAC 2023 E-Proceedings contains insights into what current researchers, both experienced and novice, find important and relevant in the post-normal times.

Best regards,

iTAC 2023 Committee
Special Interest Group, Public Interest Centre of Excellence (SIG PICE)
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COV-19 BV MODEL

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ABSTRACT

The Malaysian public's acceptance of the COVID-19 vaccine booster is decreasing compared to the first and second doses. Some people believe that two doses of the vaccine are enough. This model was built to estimate the acceptance of taking the COVID-19 booster vaccine based on the health belief model (HBM) and demographic factors using the logistic regression model. There is no longer a model built to measure the acceptance of the COVID-19 vaccine booster, especially among Malaysians. From this model, each new user will know what the status of receiving the vaccine booster is (whether it is necessary to accept the booster vaccine or not) based on HBM and the demographic factors of the user. This model can be marketed to users aged 18 and above, especially Malaysians, regardless of race, age, or health status.

Keywords: logistic model, Malaysian, public acceptance, vaccine booster

INTRODUCTION

Prior to the emergence of variants or decreased antibody levels established by vaccines, the COVID-19 infection was still spreading across many countries. A significant extra intervention is still advised as a supplemental vaccine dosage. The percentage of people receiving booster doses in December 2021 increased slightly after Malaysian Health Minister Khairy Jamaluddin decided that people aged 60 and above, regardless of the type of vaccine previously received, should receive the booster dose injection during that time. If the specified group of people does not receive a booster dose injection by February 2022, their vaccination status will be changed to insufficient (Ramayah, 2022). The affected person is ineligible for the facility offered to recipients of a full dose of the COVID-19 vaccine. However, there are still many Malaysians who have not taken boosters as recommended by the government. There are various reasons and causal factors for them to make decisions such as health factors and the effects after the 2nd dose vaccine.

OBJECTIVES

There are three objectives for this innovation. First, to find out what factors influence Malaysians' acceptance to take the COVID-19 booster vaccine based on the health belief model (HBM) and demographic factors. To build a model of factors that influence Malaysians' acceptance to take the COVID-19 booster vaccine using a logistic regression model. To estimate the decision to take the COVID-19 booster vaccine by a new user.

DESCRIPTION OF THE PRODUCTS

263 Malaysian respondents aged 18 and above were randomly selected for this study using an online survey. Descriptive statistics and a logistic regression model were used. This model can give information about a decision to accept (yes or no) the COVID-19 booster vaccine based on five significant components of HBM and education level.

The health belief model was invented by social psychologists at the US Public Health Service in the 1950s as one of the earliest theories of health behaviour. The HBM comprises several main constructs: perceived susceptibility, severity, benefits, barriers, and cues to action. Perceived susceptibility refers to beliefs regarding vulnerability to infection, while perceived severity refers to beliefs regarding the negative effects of contracting the infection. Perceived benefits are defined as an individual's beliefs about being vaccinated, and perceived barriers are described as the belief that being vaccinated is restricted due to psychosocial, physical, or financial factors. Cues to action include information, people, and events that guide an individual to be vaccinated (Rosenstock, 1974).

The equation of the COV-19 BV model is shown below:

$$\ln\left(\frac{p}{1-p}\right) = -14.407 + 0.083X_1 + 0.033X_2 + 0.047X_3 - 0.027X_4 + 0.033X_5 + 0.886X_6$$

where

- X₁: Perceived Susceptibility
- X₂: Perceived Severity
- X₃: Perceived Benefit
- X₄: Perceived Barrier
- X₅: Cues to Action
- X₆: Diploma/ Foundation

USEFULNESS

COV-19 BV Model is an innovation to estimate the decision to take covid-19 booster vaccine for a new user. This innovation is also able to raise awareness among Malaysians about the need to receive COVID-19 booster immunization for adults. This can assist the government in determining the barriers that prevent some Malaysians from receiving booster vaccinations and working to meet their need to receive vaccinations. Also encouraging more people to consider taking the COVID-19 vaccine to achieve herd immunity in this country.

NOVELTY

This model is very comprehensive because it is built based on the demographic characteristics of Malaysians regardless of gender, race, or religion. This demographic factor is often overlooked as an indicator of health when building models by other researchers. In addition, this model also uses the health belief model (HBM) to measure social psychological behavior. This HBM was established to describe and predict health-related behavior, especially in the use of health services. This model is also built based on the characteristics and situations that are appropriate in Malaysia. With the help of this model, every Malaysian can decide to take the covid-19 booster vaccine.

This model is very easy to use, and users can find out the level of the Health Belief Model which includes 5 factors. This model is built specifically for the use of Malaysians aged 18 and above. Users can use this model whenever needed and users can improve health care coordination.

COMMERCIALIZATION POTENTIALS

This model can benefit and can be commercialized to more than 20 million adult users in Malaysia. Using this model as a screening for the suitability of accepting covid-19 booster vaccines in any health center such as hospitals and clinics in addition to individual use. Individual users can evaluate their own decisions without being influenced by people around them and external factors.

This model has been tested and received feedback from 30 users who have not yet taken the covid-19 vaccine booster injection. The results of the study are presented in the chart below.

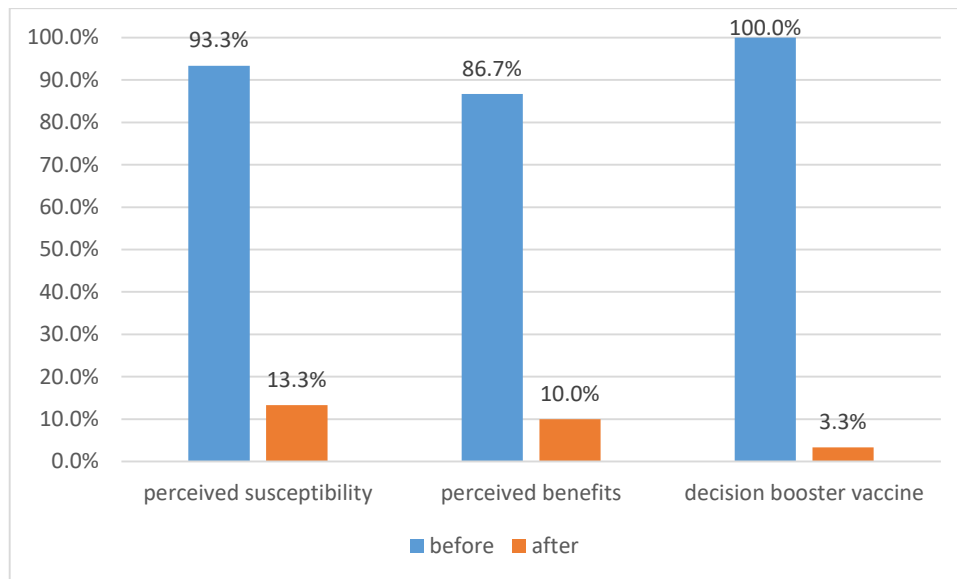


Figure 1. Comparison of Use COV-19 BV Model

According to Figure 1, 93.33% of users are concerned about the possibility of infection after receiving the Covid-19 booster vaccination (perceived susceptibility). Consumer concern can be lowered by 13.33% after using this strategy. The implementation of this model can reduce ambiguity and enhance confidence in the perceived advantages and/or barriers that lead to Covid-19 booster vaccination uptake (perceived benefits) from 86.7% to 10%. All 30 participants were not given booster shots. After this model is shown to them, they may select whether to take boosters or not.

CONCLUSION

Malaysians did not respond favourably to receiving the booster covid-19 vaccination as compared to the first and second doses. The booster has been rejected for a variety of reasons. With the development of this model, users may forecast whether or not to take a booster after answering a series of questions (based on the HBM model) as well as user demographic characteristics. This is extremely beneficial to consumers since it allows them to make judgments without being affected by environmental or health variables.

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