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Factors influencing acceptance of COVID-19 vaccination among Malaysian adults

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INTRODUCTION

The COVID-19 pandemic is the greatest global health crisis of this century. Six months into the pandemic, many countries are experiencing a second or third wave infections.[1] With no proven effective treatment to date, the trend of therapy has rapidly shifted towards vaccines and achieving the stipulated herd immunity. Eventual success in overcoming the COVID-19 pandemic is very dependent on community participation and vaccine coverage. Hence, this study aims to identify the possible factors influencing the Malaysian public acceptance of the COVID-19 vaccine.

METHODOLOGY

A cross-sectional study utilizing the REDCap (Research Electronic Data Capture), a secure web-based questionnaire was disseminated to Malaysian adults aged ≥ 18 years old via social media. An interim analysis was conducted using all responses submitted by mid-July 2020. Based on the Health Belief Model, we collected and analysed key factors influencing COVID-19 vaccine acceptance which includes socio-demographics, perception on disease severity and susceptibility, barriers and cues to action. The questionnaire used in this study was adopted from several published literature.[2-4] Questions related to the perception and acceptability of general public towards COVID-19 vaccine was modified from the work by Holly, S. et al., in the context of influenza vaccine. Four questions from the World Health Organization Vaccine Hesitancy Survey was incorporated to identify respondents who probably oppose vaccination in general. Any respondents with at least one answer suggestive of vaccine hesitancy was categorized as "probable anti-vaxxer" in subsequent analysis. The questionnaire was translated into Malay and Mandarin. After forward and backward translation, pilot testing of questionnaire in all languages were conducted. It was to ensure all questionnaire items are clear, understandable and culturally acceptable.

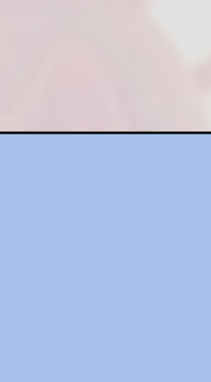
RESULTS

A total of 2528 respondents were included in this interim analysis. Table 1 summarizes socio-demographic and cues to action of the study cohort.

Table 1: Socio-demographic and Cues to Action

Characteristics		Results, n (%)
Age in years, mean (SD)		38.9±11
Gender	Male	735 (29.1)
	Female	1793 (70.9)
Ethnicity	Malay	1252 (49.5)
	Chinese	937 (37.1)
	Indian	178 (7.0)
	Others	161 (6.4)
Occupation	Healthcare workers	645 (25.5)
	Non-healthcare workers	1883 (74.5)
Monthly household income	< RM5000	1055 (41.7)
	≥ RM5000	1473 (58.3)
Living with elderly/children/pregnant lady		1585 (62.7)
Probable anti-vaxxers		178 (10.6)

ACCEPTANCE OF COVID-19 VACCINE



YES	93.2%
NO / UNSURE	6.8%

TOP 3 REASONS FOR VACCINE REFUSAL

#1	Vaccine Safety	79.8%
#2	Vaccine Effectiveness	60.7%
#3	Vaccine Side effects	59.5%

INDEPENDENT FACTORS PREDICTING COVID-19 VACCINE ACCEPTANCE

Perceived severity of "COVID-19" situation		aOR: 3.58 (95% CI: 2.38, 5.38)
Perceived COVID-19 as threat to health		aOR: 1.63 (95% CI: 1.18, 2.26)
Perceived susceptibility of getting infected		aOR: 1.14 (95% CI: 1.18, 2.26)
Probable anti-vaxxers		aOR: 0.09 (95% CI: 0.06, 0.14)

DISCUSSION

Our study shows a high acceptance level of COVID-19 vaccine amongst the public, compared to other countries such as United States (U.S.)[5], China[6] and Saudi Arabia[7], in which the willingness to receive COVID-19 vaccine amongst general public ranging between 65% and 73%. An Indonesian study demonstrated the COVID-19 vaccine acceptability could be as high as 93.3% for a 95% effective COVID-19 vaccine; but decreased to 67% if its effectiveness is only 50%.[8] In fact, unsure of COVID-19 vaccine effectiveness is the second top reason of vaccine refusal in our study. Unfortunately, our study did not explore the acceptance of COVID-19 vaccine with different effectiveness level. Although some studies suggested COVID-19 vaccine acceptance can be predicted by sociodemographic characteristics,[5,7] our study showed otherwise. A systematic review of 10 surveys which studied acceptance of influenza vaccine concluded no significant association between demographic variables and vaccine uptake behaviour.[9] Similar as published literature, [5-8] our study reported perceived susceptibility and severity of COVID-19 infection as significant predictors for the uptake of COVID-19 vaccine. On the other hand, the association between vaccine hesitancy and COVID-19 vaccine refusal was clearly demonstrated in this study. To conclude, our study found 93% of our samples across the Malaysia would accept COVID-19 vaccine, with a strong links to perceived susceptibility and severity. This level of acceptance should be sufficient to achieve herd immunity, based on some published estimates.[10] Further study is warranted to explore the relative importance of vaccination attributes associated with individuals' decision preference.

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