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COVID-19 vaccination: public preference and intention in Vietnam

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Parole chiave: COVID-19, preferenza vaccinale, intenzione, barriere, motivazioni, esitazione, Vietnam

Abstract

Backgrounds. *Understanding public opinion in relation to vaccination is critical, as there are several COVID-19 vaccines approved for use in Vietnam. This study aimed to assess public COVID-19 vaccine preferences and intention in Can Tho, Vietnam.*
Methods. *An analytical cross-sectional study was performed between September 20 and October 20, 2021. in people aged 18 and over living in Can Tho, Vietnam, A questionnaire captured demographic information, vaccination intention, preference for vaccine selection, and barriers and motivations related to COVID-19 vaccination. Predictors for vaccination willingness among unvaccinated people were determined using multivariable logistic regression.*
Results. *Out of the proposed vaccines that have been approved by the Vietnam Ministry of Health, AstraZeneca (31.4%), Pfizer (23.5%), and Moderna (14.7%) were the most preferred by participants. Out of 1,470 respondents, 35.8% have received at least one vaccine dose, and of these, 76.9% intended to continue to receive vaccinations. Among the unvaccinated, 74.8% reported that they would be willing to complete the*

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vaccination. Most participants stated that they would receive a COVID-19 vaccine if provided with adequate information on effectiveness and safety (92.7%). The possibility of side effects after vaccination (75.4%) was the most important barrier to vaccination. Education, health status, and prior flu-vaccination were associated with the intention to receive a COVID-19 vaccination among those who had not previously received one. ***Conclusions.*** *Many unvaccinated adults were willing to receive a COVID-19 vaccination, with AstraZeneca being the preferred choice. These findings could help in the planning of vaccination campaigns to increase vaccination uptake in Vietnam.*

Introduction

The pandemic of COVID-19, the infectious disease caused by the SARS-CoV-2, appeared in December 2019 (1) and spread exponentially on a global scale (2, 3). As of October 18, 2021, the pandemic has caused more than 240 million infections globally, nearly 5 million deaths (4), and economic instability in various countries (5). While antiviral drugs have been developed for the treatment of the virus, their effectiveness is still under assessment (6). As such, vaccination is one of the most promising approaches to reducing the risk of the disease spreading, while also minimizing the seriousness of its symptoms and associated complications (7, 8). Vaccination is especially important in the light of the SARS-CoV-2 Delta variant that features a more rapid infection rate and a higher level of infection than the original form of the virus (9-11). Previous studies have shown that the Delta variant infectious duration is shorter in vaccinated than in unvaccinated people, alongside with reduced severity and fatality in those infected (12-15).

To date (October 18, 2021), the World Health Organization (WHO) has approved 7 COVID-19 vaccines with varying mechanisms and effectivenesses, namely those produced by Moderna, Janssen (Johnson & Johnson), Pfizer/BioNTech, Oxford AstraZeneca, AstraZeneca Serum Institute of India, Sinopharm/BBIP, and Sinovac (16). As of October 18, 2021, 47.5% of people globally have received at least one dose of a COVID-19 vaccine, representing 6.65 billion doses globally at a rate of approximately 20.44 million doses every day (17). Nevertheless, in low-income countries, only 2.7% of the population has been vaccinated as of October 18, 2021 (17). To this end, numerous studies worldwide have explored public awareness, attitudes, and intentions to be vaccinated. A review of COVID-19 vaccination acceptance across 33 countries reported that acceptance rates varied significantly with country, and the highest COVID-19 vaccination rates were found in Ecuador (97.0%), Malaysia (94.3%), Indonesia (93.3%), and China (91.3%), while the lowest rates were observed in Kuwait (23.6%), Jordan (28.4%), and Italy (53.7%) (18).

In Vietnam, as of October 18, 2021, a total of 853,842 COVID-19 cases, with 20,950 deaths, have been reported, meaning that Vietnam was ranked 34 out of 223 countries and territories worldwide, and ranked 10 out of 49 countries in Asia, representing a high national mortality rate (19). However, although vaccination has been considered by the Vietnamese government as an effective public health measure (20) and vaccines were readily available free-of-charge to the whole Vietnamese population, the vaccination rate is still low. As of October 18, 2021, only around 65 million doses of COVID-19 vaccines, including the vaccines of AstraZeneca, Sputnik V, Sinopharm,

Pfizer/BioNTech, Moderna, and Janssen, have been administered across a population of around 98 million people (19). This situation is especially critical in Can Tho, one of the 5 largest cities in Vietnam, and the most developed city in the Mekong Delta area. Nevertheless, Can Tho province has one of the 10 lowest vaccination rates among the 63 provinces in Vietnam (21). This is likely due to various factors that impact public opinion of vaccination, such as lack of understanding, lack of confidence in the effectiveness and safety of vaccines, and confusion around vaccine choices due to similarities between vaccines. No previous study has investigated this issue in Can Tho.

Therefore, this cross-sectional study was conducted to explore public opinion around COVID-19 vaccination in Can Tho. A questionnaire was used to systematically investigate socio-demographic characteristics, favored vaccines, and barriers and motivations to vaccination, as well as factors affecting these opinions.

Materials and methods

Study setting

A descriptive cross-sectional study was conducted between September 20 and October 20, 2021. The inclusion criteria were "living in Can Tho" and "age 18 and over". Questionnaires returned incomplete or late were excluded from the analysis. The survey samples were collected according to the convenient sampling method. Participants were recruited in the community testing campaign in Can Tho, a campaign aimed at rapidly identifying the infected patients for timely care and treatment, as well as limiting the source of infection in the community and protecting others. Printed copies of the questionnaire were conveniently distributed to the public during the waiting period, before the community sampling process began. For instance, during the community testing campaign, the people in the queue, waiting for their turns for the COVID-19 sampling, were given the printed questionnaire and were asked to complete it immediately.

Survey instruments

The questionnaire was designed based on previous studies (22-24). To certify the correctness and validity of the questionnaire's content, three independent experts on the public health and pharmacy areas, who are working in the Can Tho University of Medicine and Pharmacy, were selected to validate the instruments. Moreover, a pilot study was conducted on 30 participants prior to the main research. The verification confirmed that all questions were clear, valid, correct, and easy to understand. The validated questionnaire consisted of 3 parts; (i) Socio-demographic characteristics; (ii) Intention to receive a COVID-19 vaccination and preference for vaccine selection; and (iii) Barriers and motivations to COVID-19 vaccination. All variables used in this questionnaire belonged to the categorical variables.

Socio-demographic characteristics

The questionnaire included questions on age, gender (woman, man), religion, occupation, and highest level of education attained (lower high school, high school, college/vocational school, university, and postgraduate education). Participants were also asked to rate their own health status using a 5-point Likert scale from 1 (very poor) to 5 (very good), as well as their level of COVID-19 fear, from 1 (very unafraid) to 5 (very afraid). COVID-19 fear was then reclassified as a binary variable, with a Likert-score of 1 to 3 as "low", and 4 to 5 as "high". Additionally, previous history of flu-vaccination (yes, no) and COVID-19 vaccination ("Have you received the COVID-19 vaccine?"; "vaccinated", "unvaccinated") were also requested.

Table 1 - Socio-demographic characteristics of respondents (n=1,470)

Variable		Total	Unvaccinated against COVID-19	Vaccinated against COVID-19	P-value
Age group, years	18 – 29	395 (26.9)	254 (17.3)	139 (9.5)	$\chi^2(2)=0.442$ p=0.802
	30 – 39	302 (20.5)	189 (12.9)	110 (7.5)	
	40+	613 (41.7)	396 (26.9)	209 (14.2)	
Gender	Woman	691 (47)	450 (30.6)	235 (16)	$\chi^2(1)=0.715$ p=0.398
	Man	706 (48)	444 (30.2)	255 (17.3)	
Religion	None	895 (60.9)	553 (37.6)	333 (22.7)	$\chi^2(2)=2.973$ p=0.226
	Catholicism	54 (3.7)	40 (2.7)	14 (1)	
	Buddhism	137 (9.3)	86 (5.9)	50 (3.4)	
Occupation	Unemployed/Retired/ Housewife	358 (24.4)	237 (16.1)	117 (8)	$\chi^2(2)=3.898$ p=0.142
	Student	154 (10.5)	88 (6)	64 (4.4)	
	Working	774 (52.7)	485 (33)	282 (19.2)	
Education	Lower high school	380 (25.9)	267 (18.2)	109 (7.4)	$\chi^2(4)=63.217$ **p < 0.001**
	High school	429 (29.2)	300 (20.4)	126 (8.6)	
	College/Vocational school	170 (11.6)	115 (7.8)	52 (3.5)	
	University	368 (25)	184 (12.5)	182 (12.4)	
	Postgraduate	63 (4.3)	25 (1.7)	38 (2.6)	
Health status	Very poor/Poor/Fair	258 (17.6)	181 (12.3)	76 (5.2)	$\chi^2(2)=7.535$ **p=0.023**
	Good	735 (50)	467 (31.8)	264 (18)	
	Very good	444 (30.2)	260 (17.7)	173 (11.8)	
COVID-19 fear	Low	765 (52)	452 (30.7)	305 (20.7)	$\chi^2(1)=12.116$ **p < 0.001**
	High	637 (43.3)	433 (29.5)	197 (13.4)	
Prior flu-vaccination	No	1167 (79.4)	778 (52.9)	377 (25.6)	$\chi^2(1)=31.136$ **p < 0.001**
	Yes	217 (14.8)	101 (6.9)	112 (7.6)	

The values are expressed in terms of amount (n), followed by corresponding percentages (%). Total numbers of observations per category do not equal 1,470 because of missing responses; percentages are based on valid responses.

Vaccine intention and preference

Intention to receive a vaccination was assessed by asking "Would you be willing to receive a COVID-19 vaccination if you haven't been vaccinated (or would you be willing to continue receiving subsequent doses of a COVID-19 vaccination if you have already began)?" Participants gave an answer using one of the options of "definitely not", "probably not", "not sure", "probably yes", or "definitely yes". This variable was then dichotomized into unwilling ("definitely not", "probably not", and "not sure") and willing ("probably yes"

and "definitely yes").

To investigate the public preference regarding vaccine selection, participants were asked "If given a choice, which COVID-19 vaccine would you prefer to receive?" Participants answered from the list of vaccines currently approved by the Vietnam Ministry of Health, namely AstraZeneca, Sputnik V, Sinopharm, Pfizer/BioNTech, Moderna, and Janssen.

Barriers and motivations regarding COVID-19 vaccination

To investigate the public barriers and motivations to undergo vaccination, 17 barrier factors (given in Table 2) and 7 motivational factors (given in Table 3) were assessed. Each item had the response options of "yes" and "no".

Data were analyzed using SPSS version 20.0. Categorical variables were presented

Table 2 - Barriers to COVID-19 vaccination among the public in Can Tho, Vietnam (total, n=1,470; unvaccinated, n=930; vaccinated, n=540)

Barrier	Total	Unvaccinated against COVID-19	Vaccinated against COVID-19
I am worried about possible side effects after the vaccine injection	1,108 (75.4)	713 (76.7)	395 (76.3)
I heard some reports of deaths after receiving the COVID-19 vaccine	800 (54.4)	500 (53.8)	300 (57.9)
I am concerned about the safety and effectiveness of the vaccine	757 (51.5)	488 (52.5)	269 (51.9)
I am worried because I have many underlying chronic diseases	696 (47.3)	453 (48.7)	243 (46.9)
I worry about the vaccine affordability	654 (44.5)	425 (45.7)	229 (44.2)
I believe the danger of COVID-19 is being exaggerated	535 (36.4)	330 (35.5)	205 (39.6)
I am susceptible to allergens such as weather, dust, and chemicals	439 (29.9)	267 (28.7)	172 (33.2)
I am worried that I might get sick from the vaccination	478 (32.5)	306 (32.9)	172 (33.2)
I am worried because I am pregnant/breastfeeding	393 (26.7)	224 (24.1)	169 (32.6)
I am afraid of being injected	419 (28.5)	254 (27.3)	165 (31.9)
I have a history of bleeding disorders	339 (23.1)	193 (20.8)	146 (28.2)
I live alone and do not affect anyone, so I do not need vaccination	307 (20.9)	166 (17.8)	141 (27.2)
I have a history of anaphylaxis	328 (22.3)	191 (20.5)	137 (26.4)
I think COVID-19 should develop naturally in the community	273 (18.6)	150 (16.1)	123 (23.7)
I do not participate in the campaigns against COVID-19, so I do not need vaccination	284 (19.3)	164 (17.6)	120 (23.2)
I strictly follow the 5K (*in Vietnamese*) rules (wearing facemask, disinfection, distancing, no gathering, and health declaration), so I do not need vaccination	271 (18.4)	154 (16.6)	117 (22.6)
I am healthy, so I do not need vaccination	263 (17.9)	154 (16.6)	109 (21)

The values are expressed in terms of amount (n), followed by corresponding percentages (%).

Table 3 - Motivations for COVID-19 vaccination among the public in Can Tho, Vietnam (total, n=1,470; unvaccinated, n=930; vaccinated, n=540)

Motivation	Total	Unvaccinated against COVID-19	Vaccinated against COVID-19
I will get vaccinated against COVID-19…			
if adequate information on effectiveness and safety is provided	1,362 (92.7)	866 (93.1)	496 (95.8)
if the vaccines are given to many people in the community	1,200 (81.6)	766 (82.4)	434 (83.8)
if the vaccines are freely available	1,205 (82)	772 (83)	433 (83.6)
if being encouraged by family, friends, colleagues, or acquaintances	1,003 (68.2)	623 (67)	380 (73.4)
even if I have to pay for it	877 (59.7)	518 (55.7)	359 (69.3)
if I receive incentive payment	802 (54.6)	501 (53.9)	301 (58.1)
if I am required to do so	765 (52)	483 (51.9)	282 (54.4)

The values are expressed in terms of amount (n), followed by corresponding percentages (%).

using frequencies and percentages. The Chi-squared test was used to investigate associations between categorical variables. Predictors for vaccination willingness among unvaccinated participants were investigated using multivariable logistic regression. Any variable demonstrating a significant ($p < 0.05$) association with vaccination willingness using the Chi-squared test was included in the multivariable logistic regression model. Statistical significance was reported at a threshold of $p < 0.05$.

Results

Socio-demographic characteristics

Out of the 1,470 study participants, 35.8% had previously received at least one dose of a COVID-19 vaccine (see Table 1 for a breakdown of the sample characteristics). The sample was approximately gender-balanced, and participants ranged in age from 18 to 82 years, with a mean of 39.9 (± a standard deviation of 15.2) years. Most participants were employees (52.7%), not religious (60.9%), and had never been vaccinated against influenza (79.4%). Chi-squared test results indicated that education, health status, COVID-19 fear, and prior flu vaccination were significantly associated with COVID-19 vaccination status. Age, gender, religion, and occupation did not show any significant associations with COVID-19 vaccination.

The values are expressed in terms of amount (n), followed by corresponding percentages (%). Total numbers of observations per category do not equal 1,470 because of missing responses; percentages are based on valid responses.

Vaccination intention and preferences

Of the vaccines that have been approved by the Vietnam Ministry of Health at the time of study, AstraZeneca (31.4%), Pfizer (23.5%), and Moderna (14.7%) were the most preferred by participants (Figure 1). This order of preference was independent from whether the participant had received a previous COVID-19 vaccination or not. In addition, over 20% of the participants did not mind which vaccine they received/would receive. Figure 2 shows that nearly three-

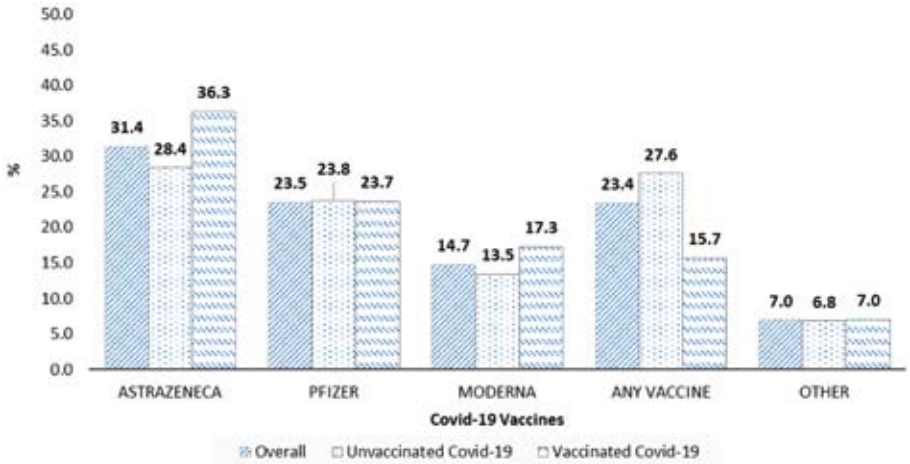

Figure 1 - Vaccine preference among vaccinated and unvaccinated participants in Can Tho, Vietnam (total, n=1,470; unvaccinated, n=930; vaccinated, n=540).

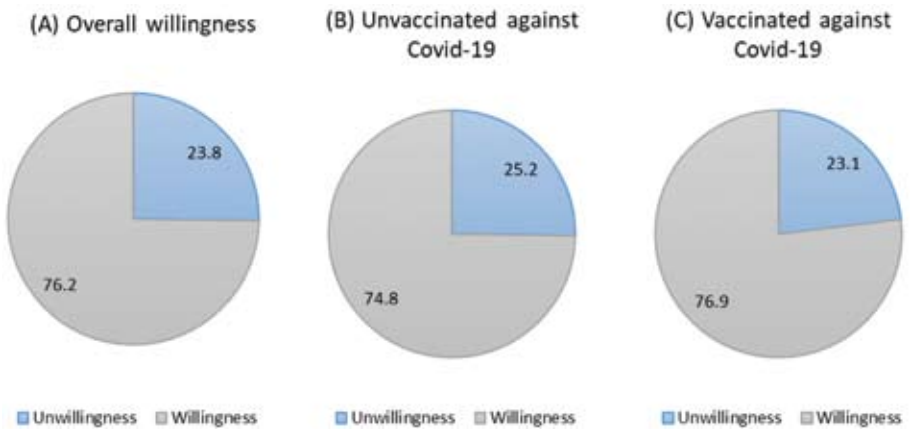

Figure 2 - Public willingness to receive a COVID-19 vaccination in Can Tho, Vietnam. (A) Total, n=1,470; (B) unvaccinated, n=930; (C) vaccinated, n=540

quarters of the participants said they would be willing to receive a COVID-19 vaccine. This willingness was similar between those who had not previously received one (74.8%) and those who had received at least one COVID-19 vaccination (76.9%).

Barriers and motivations to COVID-19 vaccination

To investigate the barriers to vaccination, 17 statements were proposed (Table 2). The greatest number of participants stated that (a) possible side effects after vaccination (75.4%), (b) previous reports of deaths after COVID-19 vaccination (54.4%), (c) concerns about the safety and effectiveness of the vaccine (51.5%), and (d) their own underlying chronic diseases (47.3%) were the main barriers to vaccination. These trends were similar among both vaccinated and unvaccinated individuals.

The most common motivations to vaccinate (Table 3) reported were: (a) the provision of adequate information on effecriveness and safety (92.7%), (b)

the vaccines being given to many people in the community (81.6%), and (c) the vaccines being made freely available (82%). Again, these motivations followed similar trends among vaccinated and unvaccinated participants.

Factors affecting vaccination intention

Factors related to willingness to vaccinate among the unvaccinated population are presented in Table 4. The results of the multiple logistic regression analysis indicated that socio-demographic factors such as education, health status, and previous flu-vaccination were significantly and positively associated with public willingness to receive a COVID-19 vaccine. Unvaccinated participants with their highest level of education being lower high school, high school, or college/vocational school were 3.61 (95% CI: (1.32-9.86), 2.94 (95% CI: (1.09-7.90), and 5.81 (1.93-17.49) times more likely to accept vaccination, respectively. Similarly, unvaccinated participants reporting very poor/poor/fair or good health status were found to be 1.93 (95% CI: 1.14-3.28) and 2.22 (95% CI: 1.49-3.30) times more likely to accept vaccination compared to those reporting very good health status. Finally, unvaccinated participants, who did not have a history of receiving a seasonal influenza vaccine, were 2.59 times more likely to accept a COVID-19 vaccination than those who did (95% CI: 1.60-4.20).

Discussion

Vaccines are effective in preventing the spread of infectious diseases such as COVID-19. It is therefore crucial to raise the vaccination rate everywhere, to strive to attain herd immunity. As such, many countries globally are implementing policies in an effort to achieve the highest vaccination rates, but these policies differ with societal setting (25). An important approach is to assess and maximize the willingness of the public to become vaccinated, as mass vaccination campaigns, particularly those involving novel vaccines, are often a matter of public concern. This study was the first to use a survey in a large experimental sample to investigate intention and preferences about receiving COVID-19 vaccines among the public in Can Tho, Vietnam. These are critical for the development of policy aiming to successfully implement a COVID-19 vaccination program in Can Tho, the largest city in the Mekong Delta, which currently possesses a low vaccination rate.

In Vietnam, alongside effective COVID-19 testing and prevention measures, the government has purchased a supply of safe and effective vaccines, as well as contributed to the acceleration of research to develop Vietnamese COVID-19 vaccines to meet domestic demand. Nevertheless, our study showed that the current vaccination rate in Can Tho was low, at only 35.8%. However, these findings show it is feasible to significantly increase the vaccination rate as 74.8% of the sample reported that they were willing to receive a vaccination.

Due to the rapid spread of the pandemic, the process for the development and approval of COVID-19 vaccines has been made much more streamlined and efficient than that of previous vaccines and pharmaceutical agents (i.e., 1-2 years compared to a normal pipeline of 10-15 years) (26). As such, although all COVID-19 vaccines have undergone all the necessary clinical trial phases, concerns have been raised by the press and the public regarding the safety and effect. iveness of these vaccines. For reasons that may be related to this, people may be reverting to their gut instinct when determining their own vaccine intention and preference, and may opt for one vaccine over another solely due to their perceptions about the vaccine manufacturers. Our findings were that vaccines manufactured in the developed

Table 4 - Factors affecting public vaccination intention among unvaccinated people (n=930), in Can Tho, Vietnam

Variable		Unvaccinated people n (%)	Intention		Chi-squared	Multiple logistic regression	
			Unwilling n (%)	Willing n (%)	P-value	OR (95% CI)	P-value
Age group, years	18 – 29	254 (30.3)	54 (21.3)	199 (78.7)	**0.029**	1.321 (0.839-2.081)	0.229
	30 – 39	189 (22.5)	55 (29.4)	132 (70.6)		0.706 (0.454-1.099)	0.123
	40+	396 (47.2)	78 (19.7)	317 (80.3)		Reference	
Gender	Woman	450 (50.3)	104 (23.3)	342 (76.7)	0.917	-	
	Man	444 (49.7)	102 (23)	341 (77)			
Religion	None	553 (81.4)	121 (22)	429 (78)	0.127	-	
	Catholicism	40 (5.9)	6 (15.4)	33 (84.6)			
	Buddhism	86 (12.7)	26 (30.2)	60 (69.8)			
Occupation	Unemployed/Retired/ Housewife	237 (29.3)	45 (19)	192 (81)	0.230	-	
	Student	88 (10.9)	16 (18.4)	71 (81.6)			
	Working	485 (59.9)	115 (23.9)	366 (76.1)			
Education	Lower high school	267 (30)	52 (19.6)	213 (80.4)	**< 0.001**	3.608 (1.321-9.856)	**0.012**
	High school	300 (33.7)	75 (25.2)	223 (74.8)		2.936 (1.092-7.896)	**0.033**
	College/Vocational school	115 (12.9)	17 (14.8)	98 (85.2)		5.806 (1.928-17.485)	**0.002**
	University	184 (20.7)	47 (25.7)	136 (74.3)		2.588 (0.944-7.099)	0.065
	Postgraduate	25 (2.8)	14 (56)	11 (44)		Reference	
Health status	Very poor/Poor/Fair	181 (19.9)	34 (18.9)	146 (81.1)	**< 0.001**	1.929 (1.136-3.277)	**0.015**
	Good	467 (51.4)	83 (17.9)	380 (82.1)		2.219 (1.493-3.297)	**< 0.001**
	Very good	260 (28.6)	88 (33.8)	172 (66.2)		Reference	
COVID-19 fear	Low	452 (51.1)	105 (23.3)	345 (76.7)	0.491	-	
	High	433 (48.9)	92 (21.4)	338 (78.6)			
Prior flu-vaccination	No	778 (88.5)	159 (20.6)	614 (79.4)	**< 0.001**	2.589 (1.596-4.199)	**< 0.001**
	Yes	101 (11.5)	42 (41.6)	59 (58.4)		Reference	

countries (i.e., the USA and the European countries), including AstraZeneca (31.4%), Pfizer (23.5%), and Moderna (14.7%) were more often chosen vaccines by participants, both unvaccinated and vaccinated. This result is in agreement with previous findings (27) indicating a greater public intention to receive a vaccination that has been produced in Japan, the USA, or Europe. In our sample of participants from Can Tho, the preferred vaccine was that produced by AstraZeneca (United Kingdom). This may in part be due to the reputation of the manufacturer, as well as the amount of time that the vaccine has been available for, as AstraZeneca was the first COVID-19 vaccine licensed for use in Vietnam.

MacDonald et al. (28) reported confidence, complacency, and convenience to be factors influencing vaccine hesitancy. The present study's findings also highlighted anxiety around side effects and a lack of confidence in vaccine safety and effectiveness to be the main barriers hindering vaccination among Can Tho residents, also consistent with the findings of Magadmi et al. (29). The lack of public confidence in the vaccines may be due to their rapid development, as previously discussed, and as reported by Seale et al. (30). It is therefore necessary to operate a policy of transparency and provide the public with all the information they need to determine that the approved vaccines are all safe and effective. The vast majority of participants in the present study (over 92%) stated that they would receive a COVID-19 vaccine if information on effectiveness and safety were provided.

To enhance the vaccination rate in the population, all the barriers to COVID-19 vaccination, that participants admitted, need to be urgently addressed by the local and national governments in the future public health strategies. The present study found that 74.8% of unvaccinated participants would be willing to receive a vaccine once it was made available to them. This number roughly reflects the likely proportion of the population who are already willing to receive a COVID-19 vaccination in Vietnam once it is made available. Unvaccinated participants reporting a lower perception of their own health status were more likely to report that they would accept a COVID-19 vaccine, consistent with the findings of Alqudeimat et al. (31). Counter-intuitively, our study showed that people who had previously received a seasonal flu vaccination were less likely to be willing to receive a COVID-19 vaccination than those who had not received a flu vaccine. Not only this is surprising, but also it contradicts previous reports (29, 31, 32). This might suggest that people misinterpret the common flu vaccination as providing some protection against COVID-19 and that they might not understand the need to accept another "flu-like" vaccine.

In conclusion, the findings of this study can be used to produce solution-oriented guidance on how to increase vaccination uptake in the community, consequently contributing to an improvement in public health and working to end the COVID-19 pandemic. Public education and communication strategies are needed to address misinformation and inaccuracies surrounding the public perception of COVID-19 vaccines. To increase public trust in COVID-19 vaccination, it is necessary to provide transparent and convincing evidence about the effectiveness and safety of vaccines before they are made available.

Limitations

The current study has some limitations. First, causal inferences may be difficult to make due to the cross-sectional design of this study. Second, responses based on self-assessment, such as health status and COVID-19 fear are often subject to participants' biases, and questions related to the recall of receiving a previous flu vaccination be subject to recall errors. Third, despite the large sample size attained in

this study, this large number of participants was recruited using convenience sampling methods, and - as such - the sample may not be truly representative of Vietnam as a whole, or of other community settings. Future research should aim to use a cross-sectional sampling strategy to obtain representative samples of populations.

Conclusions

This study was the first one to investigate the public intentions and preferences for COVID-19 vaccination in Can Tho, Vietnam. More than 75% of the participants were willing to receive a COVID-19 vaccine, with AstraZeneca being the preferred vaccine by most of them. The majority of respondents stated that concerns around vaccine effectiveness and side effects were their greatest barrier to vaccination, and addressing these concerns would provide the greatest motivation to be vaccinated. Among unvaccinated participants, education, health status, and not having had a prior flu vaccine were positive predictors of a willingness to receive a COVID-19 vaccine. These findings are crucial to help policy-makers in the planning of vaccination campaigns to raise public awareness, thereby maximizing vaccination acceptance, and consequently the vaccination rate in Can Tho in particular, and Vietnam in general.

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Riassunto

Vaccinazione anti-covid-19: preferenze espresse dal pubblico e disponibilità ad essere vaccinati

Premessa. Comprendere l'opinione pubblica in relazione alla vaccinazione anti COVID-19 è fondamentale in quanto esistono diversi vaccini COVID-19 approvati per l'uso in Vietnam. Il presente studio ha mirato a identificare le preferenze vaccinali e l'intenzione di vaccinarsi della popolazione di Can Tho, una grande città vietnamita nel delta del Mekong.

Metodi. Un'indagine analitica trasversale è stata condotta, tra il 20 settembre ed il 20 ottobre 2021, in persone di età pari o superiore ai 18 anni che vivevano a Can Tho; con un questionario si sono raccolte informazioni demografiche, intenzione di vaccinarsi, preferenze di vaccino e barriere e motivazioni relative alla vaccinazione verso il COVID-19. I predittori della disponibilità alla vaccinazione tra le persone non vaccinate sono stati identificati utilizzando la regressione logistica multivariata.

Risultati. Tra i vaccini disponibili, tutti approvati dal Ministero della Sanità del Vietnam, AstraZeneca (31,4%), Pfizer (23,5%) e Moderna (14,7%) sono stati i preferiti dai partecipanti. Su 1.470 intervistati, il 35,8% ha ricevuto almeno una dose di vaccino e, di questi, il 76,9% intendeva continuare a ricevere le vaccinazioni. Tra i non vaccinati, il 74,8% ha dichiarato di essere disposto a sottoporsi ad un ciclo vaccinale completo. La maggior parte dei partecipanti ha dichiarato che avrebbe ricevuto un vaccino contro il COVID-19 subordinatamente alla ricezione di informazioni adeguate su efficacia e sicurezza (92,7%). La possibilità di effetti collaterali dopo la vaccinazione per il 75,4% rappresentava l'ostacolo più importante alla vaccinazione. L'istruzione, lo stato di salute e la precedente vaccinazione antinfluenzale erano associati all'intenzione di ricevere una vaccinazione COVID-19 da parte di coloro che non ne avevano ricevuto una in precedenza.

Conclusioni. Molti adulti non vaccinati erano disposti a ricevere una vaccinazione COVID-19, con AstraZeneca come scelta preferita. Questi risultati potrebbero aiutare

nella pianificazione di campagne di vaccinazione per aumentare la compliance alla vaccinazione in Vietnam.

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