Gmail **Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>**

[IJPHS] Editor Decision

1 message

Lina Handayani <ijphs@iaescore.com> Tue, Jan 24, 2023 at 5:40 PM
Reply-To: "Dr. Lina Handayani" <ijphs@iaescore.com>
To: "Dr. Sulistyawati Sulistyawati" <sulistyawatisuyanto@gmail.com>
Cc: Aulia Putri Nugraheni <aulia1800029240@webmail.uad.ac.id>

The following message is being delivered on behalf of International Journal of Public Health Science (IJPHS).

Dear Prof/Dr/Mr/Mrs: Dr. Sulistyawati Sulistyawati,

We have reached a decision regarding your submission entitled "COVID-19 Vaccine Acceptance in Notoprajan, Ngampilan, Yogyakarta" to International Journal of Public Health Science (IJPHS), a peer-reviewed and an OPEN ACCESS journal that makes significant contributions to major areas of public health science.

Our decision is to revisions
The goal of your revised paper is to describe novel technical results.
A high quality paper MUST has:
(1) a clear statement of the problem the paper is addressing --> explain in "Introduction" section
(2) the proposed solution(s)/method(s)/approach(es)/framework(s)/ ....
(3) results achieved. It describes clearly what has been done before on the problem, and what is new.

In preparing your revised paper, you should pay attention to:
1. Please ensure that: all references have been cited in your text; Each citation should be written in the order of appearance in the text; The references must be presented in numbering and CITATION ORDER is SEQUENTIAL [1], [2], [3], [4], ...
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(Please use “Search” menu under "JOURNAL CONTENT" menu in right side of the site)

2 An Introduction should contain the following three (3) parts:
- Background: Authors have to make clear what the context is. Ideally, authors should give an idea of the state-of-the art of the field the report is about.
- The Problem: If there was no problem, there would be no reason for writing a manuscript, and definitely no reason for reading it. So, please tell readers why they should proceed reading. Experience shows that for this part a few lines are often sufficient.
- The Proposed Solution: Now and only now! - authors may outline the contribution of the manuscript. Here authors have to make sure readers point out what are the novel aspects of authors work. Authors should place the paper in proper context by citing relevant papers. At least, 5 references (recently journal articles) are used in this section.

3. Results and discussion section: The presentation of results should be simple and straightforward in style. This section report the most important findings, including results of statistical analyses as appropriate. You should present the comparison between performance of your approach and other researches. Results given in figures should not be repeated in tables. It is very important to prove that your manuscript has a significant value and not trivial.

Please submit your revised paper within 6 weeks.

I look forward for hearing from you

Thank you

Best Regards,
Dr. Lina Handayani
Universitas Ahmad Dahlan
ijphs@iaescore.com

The following template should be used for responses to reviewers:

I would like to thank the reviewers for their insightful feedback. All comments from Reviewer 1 are highlighted in yellow, those from Reviewer 2 are highlighted in red, and those from Reviewer 3 are highlighted in green.

Reviewer 1

Comment 1: There are some references that are not required.
Response: We thoroughly updated our references; 5 references were eliminated, and two were replaced by more recent publications.

Comment 2: The presentation of Figures 2 and 3 should be improved.
Response: The necessary adjustments have been made.

Comment 3: Equation (2) seems to be incorrect.
Response: Equation (2) is correct. This can be proven as follows:...
In order to clarify equation 9 in the manuscript, the following remarks have been added... etc.

All changes for reviewer 1 are highlighted in yellow in the main text.

Reviewer 2

Comment 1:
Response:

Comment 2:
Response:

Comment 3:
Response:

All changes for reviewer 2 are highlighted in red in the main text.

Etc.

Such a document clarifies everything and will aid the reviewers in evaluating the work fast.
When providing your amended primary document files, you must also upload your corrections statement. Before your manuscript, the declaration of revisions should appear.

Reviewer B:

Does the paper contain an original contribution to the field?:
Yes

Is the paper technically sound?:
Yes

Does the title of the paper accurately reflect the major focus contribution of this paper?:
Yes

Please suggest change of the title as appropriate within 10 words:
COVID-19 Vaccine Acceptance in Notoprajan, Yogyakarta, Indonesia

Is the abstract a clear description of the
paper?

:
No

Please suggest change of the abstract
:
Because only one sociodemographic factor has a significant relationship with vaccine acceptance, it is better if the other factors studied, even though they are not significant, should also be mentioned in the abstract so that in general terms all the variables studied can be described.

Is the paper well written (clear, concise, and well organized)?:
Yes

Are the equations, figures and tables in this journal style, clear, relevant, and are the captions adequate?:
Yes

Please score the paper on a scale of 0 - 10 as per the directions below:

9-10 Excellent - Outstanding
7-8 Good
5-6 Average
3-4 Poor
0-2 Very Poor
:
7

Comments to the Authors (how to improve this paper)::
1. there are some numbers that start the sentence (need to be revised)
2. In this study, only sex was significantly related to vaccination acceptance. It would be very interesting , if the author analyze the sociodemographic relationship with vaccine coverage that may be divided into 2 (dose I/II and booster dose II/IV) because coverage III/IV vaccination tends to be due to public awareness/vaccine acceptance and not an obligation like in doses I and II at the start of the pandemic

---
Ref. from Journal article must be completed with vol., issue, pages, DOI
- Update references in recent 10 years
- Cite references in IEEE Style, not APA Style
- Write biographies of authors after ref. section
- Complete the ORCID ID for each author in Biographies section.
-Make sure that each paragraph at least contained three sentences.
- Each reference must be completed with DOI and can be traced online.
- Similarity should be no more than 20 percent.

- State the research funding and its contract number, if any in the acknowledgment section
---

I would like to thank the reviewers for their insightful feedback. All comments from Reviewer 1 are highlighted in yellow, those from Reviewer 2 are highlighted in red, and those from Reviewer 3 are highlighted in green.

Reviewer comment	**Author comment**
Reviewer 1 Comment 1: There are some references that are not required.	Response: We thoroughly updated our references; 1 was eliminated, and 4 were website, but it was the official website, and the information is needed to strengthen our data and statements that still need to be written in the article. .
Comment 2: The presentation of Figures 2 and 3 should be improved.	Response: Our article have figure 1 and 2, both are has been improved
Comment 3: Equation (2) seems to be incorrect.	Response: Irrelevant, we don't have equation on this article
All changes for reviewer 1 are highlighted in yellow in the main text.	
All changes for reviewer 2 are highlighted in red in the main text.	
Etc. Such a document clarifies everything and will aid the reviewers in evaluating the work fast. When providing your amended primary document files, you must also upload your corrections statement. Before your manuscript, the declaration of revisions should appear. --- Reviewer B:	
Does the paper contain an original contribution to the field?: Yes	Thankyou
Is the paper technically sound?: Yes	Thankyou

Does the title of the paper accurately reflect the major focus contribution of this paper?: Yes	Thankyou
Please suggest change of the title as appropriate within 10 words: COVID-19 Vaccine Acceptance in Notoprajan, Yogyakarta, Indonesia	The title has been modified according reviewer 2 suggestion
Is the abstract a clear description of the paper? : No	In the abstract has been mentioned the all variable observed.
Please suggest change of the abstract : Because only one sociodemographic factor has a significant relationship with vaccine acceptance, it is better if the other factors studied, even though they are not significant, should also be mentioned in the abstract so that in general terms all the variables studied can be described.	
Is the paper well written (clear, concise, and well organized)?: Yes	Thankyou
Are the equations, figures and tables in this journal style, clear, relevant, and are the captions adequate?: Yes	Thankyou
Please score the paper on a scale of 0 - 10 as per the directions below: 9-10 Excellent - Outstanding 7-8 Good 5-6 Average 3-4 Poor 0-2 Very Poor : 7	Thankyou 7 out of 10 is not too bad
Comments to the Authors (how to improve this paper):: 1. there are some numbers that start the sentence (need to be revised)	1. All number in the beginning of the sentences has been corrected

2. In this study, only sex was significantly related to vaccination acceptance. It would be very interesting , if the author analyze the sociodemographic relationship with vaccine coverage that may be divided into 2 (dose I/II and booster dose II/IV) because coverage III/IV vaccination tends to be due to public awareness/vaccine acceptance and not an obligation like in doses I and II at the start of the pandemic ------- Ref. from Journal article must be completed with vol., issue, pages, DOI - Update references in recent 10 years - Cite references in IEEE Style, not APA Style - Write biographies of authors after ref. section - Complete the ORCID ID for each author in Biographies section. -Make sure that each paragraph at least contained three sentences. - Each reference must be completed with DOI and can be traced online. - Similarity should be no more than 20 percent. - State the research funding and its contract number, if any in the acknowledgment section	2. Dear reviewer, Indeed the analysis you mentioned is interesting but unfortunately, the data is not ready with us. We will consider to collect that data on another research. Although only knowledge that significant associated in this study, it has been highlight that the importance of knowledge to speed up the vaccination coverage.

Gmail **Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>**

[IJPHS] Editor Decision

1 message

Lina Handayani <ijphs@iaescore.com> Thu, Feb 16, 2023 at 7:01 PM
Reply-To: "Dr. Lina Handayani" <ijphs@iaescore.com>
To: "Dr. Sulistyawati Sulistyawati" <sulistyawatisuyanto@gmail.com>
Cc: Aulia Putri Nugraheni <aulia1800029240@webmail.uad.ac.id>

The following message is being delivered on behalf of International Journal of Public Health Science (IJPHS).

Dear Prof/Dr/Mr/Mrs: Dr. Sulistyawati Sulistyawati,

please mind another reviewer's advice

Reviewer B:

Does the paper contain an original contribution to the field?:
Yes

Is the paper technically sound?:
Yes

Does the title of the paper accurately reflect the major focus contribution of this paper?:
Yes

Please suggest change of the title as appropriate within 10 words:
COVID-19 Vaccine Acceptance in Notoprajan, Yogyakarta, Indonesia

Is the abstract a clear description of the paper?

:
No

Please suggest change of the abstract
:
Because only one sociodemographic factor has a significant relationship with vaccine acceptance, it is better if the other factors studied, even though they are not significant, should also be mentioned in the abstract so that in general terms all the variables studied can be described.

Is the paper well written (clear, concise, and well organized)?:
Yes

Are the equations, figures and tables in this journal style, clear, relevant, and are the captions adequate?:
Yes

Please score the paper on a scale of 0 - 10 as per the directions below:

9-10 Excellent - Outstanding
7-8 Good
5-6 Average
3-4 Poor
0-2 Very Poor
:
7

Comments to the Authors (how to improve this paper)::

1. there are some numbers that start the sentence (need to be revised)
2. In this study, only sex was significantly related to vaccination acceptance. It would be very interesting , if the author analyze the sociodemographic relationship with vaccine coverage that may be divided into 2 (dose I/II and booster dose II/IV) because coverage III/IV vaccination tends to be due to public awareness/vaccine acceptance and not an obligation like in doses I and II at the start of the pandemic

---

Reviewer C:

Does the paper contain an original contribution to the field?:
No

Is the paper technically sound?:
No

Does the title of the paper accurately reflect the major focus contribution of this paper?:
No

Please suggest change of the title as appropriate within 10 words:
Factors associated with vaccine acceptance.."

Is the abstract a clear description of the paper?

:
Yes

Please suggest change of the abstract
:
The results were very limited and there was no conclusions nor implication of the research.

Is the paper well written (clear, concise, and well organized)?:
Yes

Are the equations, figures and tables in this journal style, clear, relevant, and are the captions adequate?:
Yes

Please score the paper on a scale of 0 - 10 as per the directions below:

9-10 Excellent - Outstanding
7-8 Good
5-6 Average
3-4 Poor
0-2 Very Poor
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4

Comments to the Authors (how to improve this paper)::
Dear author,

This paper has potential to be published. However, the coherence of the manuscript was unclear and could be seen from the title and abstract only.

Dear Editor, below is our response to the reviewer C comment.

Reviewer comment	**Author comment**
Reviewer C: Does the paper contain an original contribution to the field?: No	To reviewer C, thank you for the comments and input that have been given. Response: At first, we made the title as short as possible so that it would be easy to attract readers' attention. However, because it is required that the title shows the contribution made, we added phrase “a lesson learned from the pandemic” , the meaning of this title is that acceptance of the Covid-19 vaccine needs to be studied to become a lesson in the COVID-19 pandemic
Is the paper technically sound?: No	The results of our research use data from primary sources which are then discussed using reliable sources. Thus, we hope that this paper will be technically sound. If not, then please guide us so that our paper is better
Does the title of the paper accurately reflect the major focus contribution of this paper?: No	We have revised the title, to figure out our expected contribution
Please suggest change of the title as appropriate within 10 words: Factors associated with vaccine acceptance.."	We have revised accordingly
Is the abstract a clear description of the paper? : Yes	Thank you
Please suggest change of the abstract : The results were very limited and there was no conclusions nor implication of the research.	We made revision to the abstract by adding research gaps and implications at the end of the abstract.
Is the paper well written (clear, concise, and well organized)?: Yes	Thank you
Are the equations, figures and tables in this journal style, clear, relevant, and are the captions adequate?: Yes	Thank you

Please score the paper on a scale of 0 - 10 as per the directions below: 9-10 Excellent - Outstanding 7-8 Good 5-6 Average 3-4 Poor 0-2 Very Poor : 4	We hope by this revision, we will get a better score
Comments to the Authors (how to improve this paper):: Dear author, This paper has potential to be published. However, the coherence of the manuscript was unclear and could be seen from the title and abstract only.	We have revised some parts of the paragraph by adding a new sentence to increase coherency.

Gmail **Sulistyawati Suyanto <sulistyawatisuyanto@gmail.com>**

[IJPHS] Editor Decision

1 message

Lina Handayani <ijphs@iaescore.com> Sat, Feb 18, 2023 at 9:54 AM
Reply-To: "Dr. Lina Handayani" <ijphs@iaescore.com>
To: "Dr. Sulistyawati Sulistyawati" <sulistyawatisuyanto@gmail.com>
Cc: Aulia Putri Nugraheni <aulia1800029240@webmail.uad.ac.id>

The following message is being delivered on behalf of International Journal of Public Health Science (IJPHS).

Dear Prof/Dr/Mr/Mrs: Dr. Sulistyawati Sulistyawati,

write the decimal in English; mind each table

International Journal of Public Health Science (IJPHS)
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COVID-19 Vaccine Acceptance in Notoprajan, Yogyakarta, Indonesia: a lesson learned from the pandemic

Aulia Putri Nugraheni[1] and Sulistyawati Sulistyawati[1*]
[1]Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

Article Info

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Received month dd, yyyy
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ABSTRACT

COVID-19 vaccination began in Indonesia in January 2021, with a minimum target coverage of 70% of the total population. The government has delivered four doses of COVID-19 vaccine to date, but doses three and four have yet to meet the target. However, public acceptance of the COVID-19 vaccination has varied due to the speed of the introduction and implementation of this vaccination. Meanwhile, basic information about the factor's influencing acceptance is not yet widely known. The purpose of this study is to determine the relationship between sociodemographics and COVID-19 vaccine acceptance in Notoprajan, Yogyakarta, Indonesia. A cross-sectional study was used for this analytic survey. The population is 4,726 people, and the sample size is 355 people. People between the ages of 17 and 55 were eligible, as were those who had lived in Notoprajan, Ngampilan District, Yogyakarta for at least three months. The data was analyzed using descriptive and bivariate analysis with a 95% confidence level (α= 0.05) using the chi-square statistical test. Among the six observed variables, namely age, gender, education, occupation, religion and knowledge level; only sex has a significant relationship with COVID-19 vaccine acceptance. This research indicates that to increase COVID-19 vaccination, related parties need to directly target women. This is because from this study men received 1.47 times the COVID-19 vaccination compared to women.

Corresponding Author:

Sulistyawati
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1. INTRODUCTION

The COVID-19 pandemic started in Wuhan, Hobei China in 2019, and quickly spread to the rest of the world, where it was declared a pandemic [1],[2], [3]. This has a significant impact on all human life; not only is the number of cases increasing, but so is the high mortality rate and social stigma [4],[5],[6]. To overcome this, emergency measures that are not only physical but also intervene with the body's immune system are required. The first COVID-19 vaccine used was SinoVac that approved for emergency use in life-threatening situations to achieve herd immunity in June 2021[7]. Vaccination is a strategy to provide active immunity to individuals against a certain disease, in this case, COVID-19 [8].

The COVID-19 vaccine was first introduced in Indonesia in January 2021. Since then, mass vaccinations have been carried out throughout Indonesia in several phases, according to the priority scale of target stages (Figure 1). This phase's sequence takes into account the need (urgency) and vaccine availability [9]. The ultimate goal of this mass vaccination is to achieve a minimum coverage of 70% of all targets in Indonesia for COVID-19 vaccination [10], [11].

Figure 1. The COVID-19 vaccination priority target in Indonesia

The Indonesian government uses several vaccine variants for COVID-19 vaccination, including the CoronaVac vaccine (Sinovac), Bio Farma's COVID-19 vaccine, AstraZeneca vaccine, Sinopharm vaccine, Moderna vaccine, Comirnaty vaccine (Pfizer and BioNTech), and Sputnik-V vaccine, Janssen COVID-19 vaccine and Convidecia vaccine [12]. There are specific vaccines for specific groups, but there are also used for general population. Each vaccine also has potential Adverse Events Following Immunization (AEFI) depend on the body's response. Until recently (January 2023), four doses of the COVID-19 vaccine have been administered: one primary dose and three booster doses. National vaccination results for doses 1 and 2 have exceeded the target (more than 70%) with a target number of more than 234 million. However, vaccine dose 3 did not achieve the coverage yet, and dose 4 is still at stage 1 or a health worker [13].

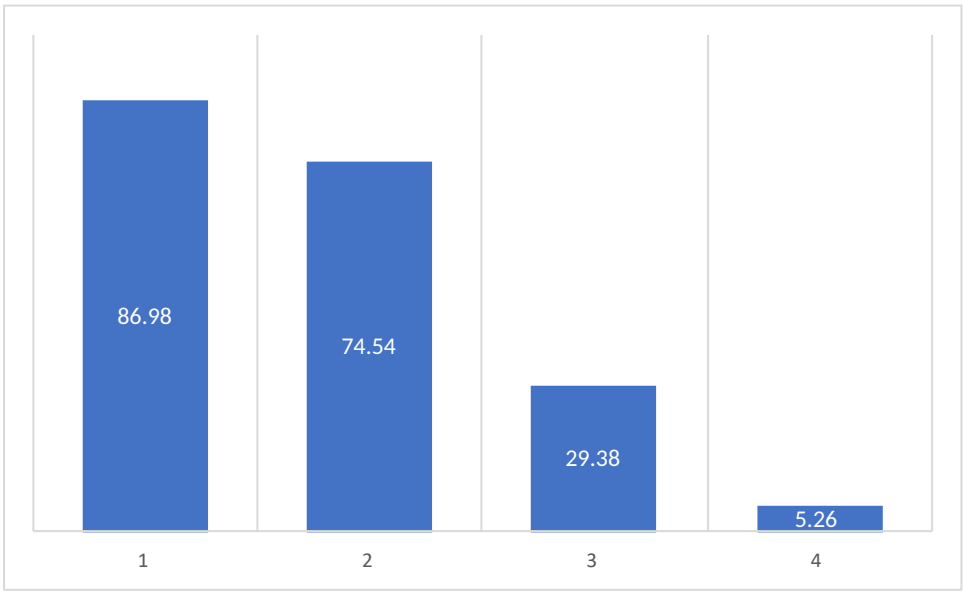

Figure 2. COVID-19 vaccination coverage in Indonesia (Dose 1- 4) until January 14, 2023

Public acceptance of the COVID-19 vaccination has varied due to the speed of the introduction and implementation of this vaccination. Meanwhile, basic information about the factor's influencing acceptance is not yet widely known. Individual intrinsic and extrinsic factors, such as environmental opinions and individual beliefs, influence acceptance of the COVID-19 vaccine [14]–[16]. Previous research in Northern Peru has found a link between the COVID-19 vaccine acceptance and age, family income, level of knowledge, having another chronic disease, and a more trustworthy vaccine [17]. Meanwhile, vaccination has always been a challenge in Muslim-majority countries, such as the halalness of this vaccine [18]. This study looks at what factors influence vaccine acceptance in terms of sociodemographics and religious reasons by looking at the coverage of vaccination doses 3 and 4, which are still far from this target. This research was carried out in Notoprajan Village-Yogyakarta, which has an urban setting.

2. METHOD

2.1. Study design anda participants

This research was analytic survey using a cross-sectional study conducted in Notoprajan Village, Ngampilan Sub-District, Yogyakarta that conducted on July 2022. The population for this study was 4,726. In total 355 respondents participated in this study that calculated using cross-sectional sampling procedure. We recruited people aged 17-55 years who have lived for at least 3 months in the Notoprajan Village, Ngampilan District, Yogyakarta City to participated on our survey who selected using accidental sampling.

2.2. Data collection and instrument

We used questionaire consisted of three sections: 1) information about characteristic respondent, 2) knowledge about COVID-19 vaccine, 3) COVID-19 vaccine acceptance to collect information from the participant. This questionnaire was pre tested before used with Cronbach's Alpha 0,75 and 0,77 for knowledge and vaccine acceptance, respectively. Researcher visited the respondent door to door to seek respondent that fulfil the criteria until the number of samples were completed using electronic form.

2.3. Data analysis

Data were generated and cleaned in a Microsoft Excel spreadsheet before proceeding with descriptive and chi-square analysis. For sociodemographic and knowledge distribution, descriptive analysis was performed first. Before proceeding with the relationship analysis, the data were classified as follows: for knowledge questions, a score of 1 was assigned if the respondent answered correctly, and a score of 0 was assigned if the respondent answered incorrectly. Then, for knowledge categorization, a score of ≥ 9 median was considered sufficient, and a score of < 9 median was considered insufficient. Vaccine acceptance was measured using 5 likert scale that have range score 5 to 1 (Strongly agree to Strongly disagree) for favourable and the vice versa for unfavourable. Acceptance of the COVID-19 vaccine is classified to be positive if the score is ≥ 36 median and negative if the score is < 36 median when receiving a scoring vaccine. The chi square test was used to examine the relationship between sociodemographic factors and COVID-19 vaccine acceptance using the crude odds ratio (COR) with a 95% confidence interval (95% CI).

2.4. Ethical approval

The study was approved by the Ethical Review Board of Ahmad Dahlan University, Yogyakarta, Indonesia (ethical approval code: 012111091).

3. RESULTS AND DISCUSSION

3.1. Result

3.1.1 Characteristics of Respondents

Table 1 displays the characteristics of the 355 respondents who took part in this study. More than half of those polled were between the ages of 17 and 25. More than half of the respondent (63.3%) are female. The majority of our respondents are junior high and high school graduates, accounting for nearly 80% of all respondents. In terms of employment, nearly half of our respondents are high school or college students. The vast majority of our respondents are Muslims who have been immunized against COVID-19. More than half of our respondents have received vaccine doses 1 and 2, with the majority receiving the vaccine at the puskesmas. More than 60% of our respondents say their favorite source of information is social media.

Table 1 . Respondent Characteristics (n=355)

Characteristics	Frequency	Percentage (%)
Age (years old)		
17-25	184	51.8
26-35	24	6.8
36-45	61	17.2
46-55	86	24.2
Gender		
Male	141	39.7
Female	214	60.3
Education		
No/never attended school	1	0.3
Graduated from primary school	9	2.5
Graduated from junior high school	143	40.3
Graduated from senior high school	160	45.1

Graduated from university (diploma or higher)	42	11.8
Occupation		
Not employed	18	5.1
Housewife	27	7.6
Student	166	46.8
Teacher	14	3.9
Civil cervant/ government employees	4	1.1
Private employees	55	15.5
Entrepreneur	51	14.4
Daily worker	20	5.6
Religion		
Moslem	349	98.3
Christian	2	0.6
Catholic	4	1.1
COVID-19 Vaccination Status		
Yes, received	354	99.7
Not received yet	1	0.3
Dose Receive of COVID-19 Vaccine		
Dose 1	12	3.4
Doses 1 and 2	224	63.1
Doses 1, 2, and 3	118	33.2
Not received yet	1	0.3
COVID-19 Vaccination Locations		
Public health center	193	50.1
Doctor/Midwife/Hospital	85	22.1
Office/workplace	22	5.7
Educational Institution	74	19.2
Other locations	11	2.8
COVID-19 Vaccine Information Platform Preference		
Social media (Whatsapp, Facebook, Instagram, Twitter)	237	66.8
Telecommunication (SMS, telephone)	6	1.7
Online platforms (Zoom, Skye)	1	0.3
Print and electronic media (TV, newspaper)	52	14.6
Face to face communication	58	16.3
Not interested to seek information	1	0.3

3.1.2. Sociodemographic, knowledge level and COVID-19 vaccine acceptance

Table 2 shows the respondent's distribution frequency based on the category used. The majority of respondents (75.8%) were adults. The majority of them are female. More than half (56.9%) of respondents had a higher education. Only 40.6% said they were employed. The majority of them are Muslims. More than half (55.2%) of those polled believe they know enough about the COVID-19 vaccine. More than half of those polled said they would accept the COVID-19 vaccine.

Table 2 . Distribution of sociodemographic, knowledge and COVID-19 vaccine acceptance (n=355)

Variable	Frequency	Percentage (%)
Age		
Adult (17-45)	269	75.8
Older (>45)	86	24.2
Gender		
Male	141	39.7
Female	214	60.3
Education		
Lower (No school, primary and junior high school)	153	43.1
Higher (senior high school or higher)	202	56.9
Occupation		

Not working	211	59.4
Working	144	40.6
Religion		
Moslem	349	98.3
Non-Moslem	6	1.7
Knowledge about COVID-19		
Not sufficient	159	44.8
Sufficient	196	55.2
Acceptance of COVID-19 Vaccine		
Negative	162	45.6
Positive	193	54.4
Total	**355**	**100**

Table 3 shows the participants' knowledge of the COVID-19 vaccine delivery. More than 90% of respondents reported correctly about the substance and functions of the COVID-19 vaccine. Most of the respondent (70%) answered false when asked if vaccination could prevent 100% of COVID-19 infections. The majority (69.9%) of respondents said true that vaccines are typically administered via injections and drops in the mouth. More than 90% of respondents reported tru that they received the COVID-19 vaccination and followed health protocols. More than 90% of respondents said true that someone infected with COVID-19 could be vaccinated three months after infection and that vaccines function to form herd immunity. A large number of respondent (93%) reported true that people who could be vaccinated had blood pressures of 180/110 mmHg. The majority of respondents agreed that administering two doses of the COVID-19 vaccine would be optimal. As many as 40% of respondents answered true that if the time span between receiving two vaccine doses exceeds six months, they are classified as dropouts and must start over. The benefit of the COVID-19 vaccine, according to 98% of respondents, is to provide protection and reduce the impact of infection.

Table 3 . Respondents' Responses to the COVID-19 Vaccine Knowledge Statements

COVID-19 Vaccine Knowledge	Respondents Answer			
	True		False	
	n	%	n	%
Vaccines contain pieces of viral DNA that function to respond to viruses if they attack so that the body can develop antibodies	346	97.5	9	2.5
Vaccine delivery is 100% efficient to prevent contracting COVID-19	104	29.3	251	70.7
The course of vaccines delivery in general can be through injections or mouth drops	248	69.9	107	30.1
By implementing vaccination, it can stop the transmission of the COVID-19 virus while still complying with health protocols	344	96.9	11	3.1
The time for getting the COVID-19 vaccine to those who have been exposed with the virus is given 3 months since infection	324	91.3	31	8.7
Vaccination can generate *herd immunity* in the society	334	94.1	21	5.9
The requirement for receiving the COVID-19 vaccine is that blood pressure must be below 180/110 mmHg	330	93.0	25	7.0
COVID-19 vaccine will be optimal when someone get at least twice	316	89.0	39	11.0
If the 2nd dose of vaccination is later than 6 months after the 1st dose, the vaccine starts the 1st dose *(drop out).*	158	44.5	197	55.5
The COVID-19 vaccine is useful for providing protection and reducing the impact if you contract COVID-19	348	98.0	7	2.0

Table 4 demonstrates the responses provided by respondents to their perceptions of the COVID-19 vaccine's acceptance. The majority of respondents agreed that they received the COVID-19 vaccination to protect themselves. Almost half of those polled disagreed with the statement that they were forced to get a

COVID-19 vaccination. The vast majority of respondents said they did not refuse vaccines for religious reasons. The COVID-19 vaccine is safe, effective, and halal, according to 60.3% of respondents. When asked if they were afraid of follow-up events after immunization, 30.7% said they were, while 34.6% said they were not. Less than half of respondent (44.2%) polled disagreed with the statement that they wanted to be vaccinated due to work requirements. Because they knew the benefits, 58.9% of respondents said they wanted to be vaccinated. The statement that they did not believe in the COVID-19 vaccine was rejected by 56.9% of respondents.

Table 4 . Respondent Response to Question Related to COVID-19 Vaccine Acceptance

Acceptance to COVID-19 Vaccines	Respondents Answer									
	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
I am willing to be vaccinated for self-protection	161	45.4	169	47.6	15	4.2	9	2.5	1	0.3
I had to get vaccinated	14	3.9	29	8.2	32	9.0	175	49.3	105	29.6
I refuse vaccines because of religious beliefs	2	0.6	9	2.5	15	4.2	185	52.1	144	40.6
I believe in the safety and effectiveness of vaccinations	94	26.5	214	60.3	42	11.8	5	1.4	0	0
I believe in the halalness of the COVID-19 vaccine	78	22.0	216	60.8	51	14.4	9	2.5	1	0.3
I am afraid of the side effects of the vaccine (fever, pain)	22	6.2	109	30.7	82	23.1	123	34.6	19	5.4
I need vaccines because of work requirements	21	5.9	108	30.4	39	11.0	157	44.2	30	8.5
I need vaccines because I know the benefits of vaccines	109	30.7	209	58.9	27	7.6	8	2.3	2	0.6
I don't believe in the COVID-19 vaccine	4	1.1	10	2.8	22	6.2	202	56.9	117	33.0

3.1.3 Bivariate Analysis

Table 5 shows among the independent variables, only sex that have significant association with COVID-19 vaccine acceptance. Being male have a 1.471 times chance of having a positive acceptance of the COVID-19 vaccine compared to women (PR= 1.471; CI=1.222 - 1.771; p-value = <0.001).

Table 5 . Chi Square Test among six variables to COVID-19 vaccine acceptance

Variable	COVID-19 vaccine acceptance				Total	*P-values*	PR (95%)
	Positive		Negative				
	n	%	n	%			
Age							
Adult	142	52.8	127	47.2	269	0.352	0.890 (0.723-1.096)
Older	51	59.3	35	40.7	86		
Gender							
Male	95	67.4	46	32.6	141	0.001	1.471 (1.222-1.771)
Female	98	45.8	116	54.2	214		
Education							
Lower	114	56.4	88	43.6	202	0.428	1.093 (0.899 -1.329)
Higher	79	51.6	74	48.4	153		
Occupation							
Working	86	59.7	58	40.3	144	0.118	1.178 (0.975 -1.423)
Not working	107	50.7	104	49.3	211		
Religion							
Moslem	189	54.2	160	45.8	349	0.692	0.812 (0.458-1.442)

Non-Moslem	4	66.7	2	33.3	6		
Knowledge level							
Sufficient	105	53.6	91	46.4	196	0.821	0.968 (0.800 -1.172)
Not sufficient	88	55.3	71	44.7	159		

3.2. Discussion

The rapid spread of COVID-19 in Indonesia and around the world is concerning, prompting health officials to seek solutions to prevent high vitality. As a result, WHO launched the COVID-19 vaccination program in early 2021, which was quickly adopted by all countries around the world. On January 13, 2021, the COVID-19 vaccination was introduced for the first time in Indonesia, and it was then mass-implemented throughout the country, changing priority targets. People's acceptance of the COVID-19 vaccine varies; some refuse emphatically, some accept by force, and some accept voluntarily out of necessity. The Indonesian government has set a vaccination target of 70% of the total target for COVID-19. Meanwhile, the current results for vaccine dose 1 are greater than 85% and greater than 70% for dose 2. However, for dose 3, it is still less than 30% [19]. The cause of the inadequate coverage in dose 3 vaccination should be investigated. On the other hand, the basic information about the factor's influencing acceptance is not yet widely known. Accordingly, the purpose of this study was to see if there was a link between sociodemographics and knowledge of receiving the COVID-19 vaccine.

We discovered that sex is a factor that influences acceptance of the COVID-19 vaccine through a survey. Men are more likely than women to receive the COVID-19 vaccination. This study's findings are consistent with previous research, which found that men are more likely than women to get vaccinated with COVID-19 vaccine. In other words, women tend to postpone or refuse the COVID-19 vaccine [20]–[22]. One of the reasons women refuse or postpone getting the COVID-19 vaccination is that the COVID-19 vaccine is too new and from introduction to the implementation has a short period [21]. Woman considers as uncertainty about the COVID-19 vaccine's safety and effectiveness, such as post-vaccination follow-up events, perceptions of the vaccine's benefits, including confidence in obtaining immunity, and responses from the environment and families about the COVID-19 vaccine [23].

In this study, we also observed the religious perceptions of acceptance of the COVID-19 vaccine. Given that Indonesia has a Muslim majority, the issue of halal and its relationship to this belief arose during the introduction of the COVID-19 vaccine. According to the findings, more than 90% of our respondents are Muslims, and more than 60% believe the COVID-19 vaccine is halal. There were many issues circulating about this issue in Indonesia at the start of the introduction, so several groups refused to receive the COVID-19 vaccine. To address this, the Indonesian government issued a legal fatwa regarding the Halalness of the COVID-19 vaccine through the Indonesian Religious Leader in order to increase public confidence in the COVID-19 vaccine and encourage the vaccination program that is currently in place [24],[25]. On the other hand, religion has nothing to do with vaccines acceptance because at the beginning of this pandemic, the government imposed mandatory vaccinations so that everyone without exception must want to be vaccinated against COVID-19.

Another fascinating finding from this study is the respondents' reactions to their fear of the COVID-19 vaccination in relation to Adverse Events Following Immunisation (AEFI). The percentages of those who agreed and disagreed that they were afraid of AEFIs were nearly equal, and no clear majority was found. The public is still unsure about receiving the COVID-19 vaccine due to the presence of AEFI. During the introduction of the COVID-19 vaccination, there was a lot of misinformation about AEFI. People are hesitant to receive the COVID-19 vaccination due to misinformation such as COVID-19 vaccine having a microchip, being dangerous, being the cause of death, and so on [26],[27]. The study's findings revealed that the AEFI incidence of the COVID-19 vaccine at doses 1 and 2 was comparable to the trial results and in the community [28]. Other studies, on the other hand, found that because they had AEFI at dose 1, people were hesitant to receive dose 2 [9],[29][17], [30].

This study may be limited by self-reported data bias, as the data collected is based on respondent information that is difficult to verify. The researcher attempted to control this response by reviewing each response collected after the data collection was completed. In addition to collecting valid data, we used a pre-tested questionnaire that was evaluated for consistency. Despite its limitations, this research contributes to the development of lessons and, of course, policies to increase vaccine coverage for the next dose.

4. CONCLUSION

COVID-19 is a disease that is highly contagious and widespread. Getting a COVID-19 vaccination is one way for preventing the severity of COVID-19. However, not all vaccine doses have reached the required coverage level. According to this study gender is a factor that influences a person's vaccine acceptance. As a result, it is

suggested that relevant health authorities develop a risk communication and gender-based approach especially targeting women. The results of this study indicate that with the program currently running, men have better acceptance of the COVID-19 vaccine than women (1.47 times higher). Thus, the acceptance that needs to be increased is for women.

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COVID-19 vaccine acceptance in Notoprajan, Yogyakarta, Indonesia: a lesson learned from the pandemic

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ABSTRACT

COVID-19 vaccination began in Indonesia in January 2021, with a minimum target coverage of 70% of the population. The government has delivered four doses of the COVID-19 vaccine, but doses three and four have yet to meet the target. Public acceptance of the COVID-19 vaccination has varied due to the speed of the introduction and implementation of this vaccination. Meanwhile, basic information about the factor's influencing acceptance has yet to be widely known. This study aimed to determine the relationship between sociodemographics and COVID-19 vaccine acceptance in Notoprajan, Yogyakarta, Indonesia. A cross-sectional study was used for this analytic survey. The population is 4,726 people, and the sample size is 355 people. People between the ages of 17 and 55 were eligible, as were those who had lived in Notoprajan, Ngampilan District, Yogyakarta, for at least three months. The data were analyzed using descriptive and bivariate analysis with a 95% confidence level (α=0.05) using the Chi-square statistical test. Among the six observed variables, namely age, gender, education, occupation, religion, and knowledge level, only sex significantly correlates with COVID-19 vaccine acceptance. This research indicates that to increase COVID-19 vaccination, related parties need to target women directly. This is because men received 1.47 times the COVID-19 vaccination from this study compared to women.

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1. INTRODUCTION

Vaccination is a strategy to provide active immunity to individuals against a certain disease, such as COVID-19. The COVID-19 pandemic started in Wuhan, Hubei, China, in 2019 and quickly spread to the rest of the world, where it was declared a pandemic [1]–[3]. This has a significant impact on all human life; not only is the number of cases increasing but so is the high mortality rate and social stigma [4]–[6]. To overcome this, emergency measures that are physical and intervene with the body's immune system are required. The first COVID-19 vaccine used was SinoVac, that approved for emergency use in life-threatening situations to achieve herd immunity in June 2021 [7], [8].

The COVID-19 vaccine was first introduced in Indonesia in January 2021. Since then, mass vaccinations have been carried out throughout Indonesia in several phases, according to the priority scale of target stages as shown in Figure 1. This phase's sequence considers the need (urgency) and vaccine availability [9]. The ultimate goal of this mass vaccination is to achieve a minimum coverage of 70% of all targets in Indonesia for COVID-19 vaccination [10].

Figure 1. The COVID-19 vaccination priority target in Indonesia

The Indonesian government uses several vaccine variants for COVID-19 vaccination, including the CoronaVac vaccine (Sinovac), Bio Farma's COVID-19 vaccine, AstraZeneca vaccine, Sinopharm vaccine, Moderna vaccine, Comirnaty vaccine (Pfizer and BioNTech), and Sputnik-V vaccine, Janssen COVID-19 vaccine and Convidecia vaccine [11]. There are specific vaccines for specific groups, but there are also used for the general population. Each vaccine also has potential Adverse Events Following Immunization (AEFI) depending on the body's response. Until recently (January 2023), four doses of the COVID-19 vaccine have been administered: one primary dose and three booster doses. National vaccination results for doses 1 and 2 have exceeded the target (more than 70%) with a target of more than 234 million. However, vaccine dose 3 did not achieve coverage yet, and dose 4 is still at stage 1 or a health worker [12]. Figure 2 shows COVID-19 vaccination coverage in Indonesia (Dose 1- 4) until January 14, 2023.

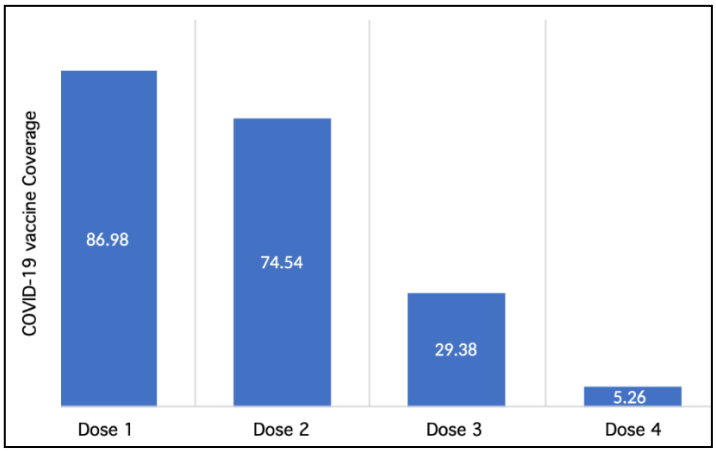

Figure 2. COVID-19 vaccination coverage in Indonesia (Dose 1- 4) until January 14, 2023

Public acceptance of the COVID-19 vaccination has varied due to the speed of the introduction and implementation of this vaccination. Meanwhile, basic information about the factor's influencing acceptance is not yet widely known. Individual intrinsic and extrinsic factors, such as environmental opinions and personal beliefs, influence acceptance of the COVID-19 vaccine [13]–[15]. Previous research in Northern Peru has found a link between COVID-19 vaccine acceptance and age, family income, level of knowledge, having another chronic disease, and a more trustworthy vaccine [16]. Meanwhile, vaccination has always been a challenge in Muslim-majority countries, such as the halalness of this vaccine [17]. This study looks at what factors influence vaccine acceptance in terms of sociodemographics and religious reasons by looking at the coverage of vaccination doses 3 and 4, which are still far from this target. This research was conducted in Notoprajan Village-Yogyakarta, which has an urban setting.

2. METHOD

2.1. Study design, participants, and ethical approval

This research was an analytic survey using a cross-sectional study conducted in Notoprajan Village, Ngampilan Sub-District, Yogyakarta, that was conducted on July 2022. The study was approved by the Ethical Review Board of Universitas Ahmad Dahlan, Yogyakarta, Indonesia (ethical approval code: 012111091).

The population for this study was 4,726. We recruited people aged 17-55 who have lived for at least three months in the Notoprajan Village, Ngampilan District, Yogyakarta City, to participate in our survey, which was selected using accidental sampling. In total, 355 respondents participated in this study, that calculated using the Raosoft sample calculator by considering the 5% margin of error and 95% confidence level.

2.2. Data collection and instrument

We used a questionnaire consisting of three sections: i) information about characteristic respondents, ii) knowledge about the COVID-19 vaccine, iii) COVID-19 vaccine acceptance to collect information from the participant. This questionnaire was pre-tested before being used with Cronbach's Alpha 0.75 and 0.77 for knowledge and vaccine acceptance, respectively. The researcher visited the respondent door to door to seek respondents who fulfilled the criteria until the number of samples was completed using an electronic form.

2.3. Data analysis

Data were generated and cleaned in a Microsoft Excel spreadsheet before conducting descriptive and Chi-square analyses. For sociodemographic and knowledge distribution, descriptive analysis was performed first. The Chi-square test examined the relationship between sociodemographic factors and COVID-19 vaccine acceptance using the crude odds ratio (COR) with a 95% confidence interval (95% CI). Before proceeding with the relationship analysis, the data were classified as follows: for knowledge questions, a score of 1 was assigned if the respondent answered correctly, and a score of 0 was assigned if the respondent answered incorrectly. Then, for knowledge categorization, a score of ≥9 medians were considered sufficient, and a score of <9 was considered insufficient. Vaccine acceptance was measured using a 5 Likert scale with a range score of 5 to 1 (Strongly agree to Strongly disagree) for favorable and vice versa for unfavorable. Acceptance of the COVID-19 vaccine is classified as positive if the score is ≥36 median and negative if the score is <36 median when receiving a scoring vaccine.

3. RESULTS AND DISCUSSION

3.1. Result

3.1.1. Characteristics of respondents

Table 1 displays the characteristics of the 355 respondents who participated in this study. More than half of those polled were between 17 and 25. More than half of the respondents (63.3%) are female. Most of our respondents are junior high and high school graduates, accounting for nearly 80% of all respondents. Regarding employment, almost half of all our respondents are high school or college students. Most of our respondents are Muslims who have been immunized against COVID-19. More than half of our respondents have received vaccine doses 1 and 2, with the majority receiving the vaccine at the puskesmas. More than 60% of our respondents say their favorite source of information is social media.

3.1.2. Sociodemographic, knowledge level, and COVID-19 vaccine acceptance

Table 2 shows the respondent's distribution frequency based on the category used. The majority of respondents (75.8%) were adults. The majority of them are female. More than half (56.9%) of respondents had higher education. Only 40.6% said they were employed. The majority of them are Muslims. More than half (55.2%) of those polled believe they know enough about the COVID-19 vaccine. More than half of those surveyed said they would accept the COVID-19 vaccine.

Table 3 revealss the respondents' knowledge of the COVID-19 vaccine delivery. More than 90% of respondents reported correctly about the substance and functions of the COVID-19 vaccine. Most respondents (70%) answered false when asked if vaccination could prevent 100% of COVID-19 infections. The majority (69.9%) of respondents said honestly that vaccines are typically administered via injections and drops in the mouth. More than 90% of respondents reported tru that they received the COVID-19 vaccination and followed health protocols. More than 90% of respondents said honestly that someone infected with COVID-19 could be vaccinated three months after infection and that vaccines function to form herd immunity. A large number of the respondent (93%) reported true that people who could be vaccinated had blood pressures of 180/110 mmHg. Most respondents agreed that administering two doses of the COVID-19 vaccine would be optimal. As many as 40% of respondents answered honestly that if the period between receiving two vaccine doses exceeds six months, they are classified as dropouts and must start over. The benefit of the COVID-19 vaccine, according to 98% of respondents, is to provide protection and reduce the impact of infection.

Table 1. Respondent characteristics (n=355)

Characteristics	Frequency	Percentage (%)
Age (years old)		
17-25	184	51.8
26-35	24	6.8
36-45	61	17.2
46-55	86	24.2
Gender		
Male	141	39.7
Female	214	60.3
Education		
No/never attended school	1	0.3
Graduated from primary school	9	2.5
Graduated from junior high school	143	40.3
Graduated from senior high school	160	45.1
Graduated from university (diploma or higher)	42	11.8
Occupation		
Not employed	18	5.1
Housewife	27	7.6
Student	166	46.8
Teacher	14	3.9
Civil servants/government employees	4	1.1
Private employees	55	15.5
Entrepreneur	51	14.4
Daily worker	20	5.6
Religion		
Moslem	349	98.3
Christian	2	0.6
Catholic	4	1.1
COVID-19 vaccination status		
Yes, received	354	99.7
Not received yet	1	0.3
Dose Receive of COVID-19 vaccine		
Dose 1	12	3.4
Doses 1 and 2	224	63.1
Doses 1, 2, and 3	118	33.2
Not received yet	1	0.3
COVID-19 vaccination locations		
Public health center	193	50.1
Doctor/Midwife/Hospital	85	22.1
Office/Workplace	22	5.7
Educational Institution	74	19.2
Other locations	11	2.8
COVID-19 vaccine information platform preference		
Social media (Whatsapp, Facebook, Instagram, Twitter)	237	66.8
Telecommunication (SMS, telephone)	6	1.7
Online platforms (Zoom, Skye)	1	0.3
Print and electronic media (TV, newspaper)	52	14.6
Face-to-face communication	58	16.3
Not interested in seeking information	1	0.3

Table 2. Distribution of sociodemographic knowledge and COVID-19 vaccine acceptance (n=355)

Variable	Frequency	Percentage (%)
Age		
Adult (17-45)	269	75.8
Older (>45)	86	24.2
Gender		
Male	141	39.7
Female	214	60.3
Education		
Lower (No school, primary and junior high school)	153	43.1
Higher (senior high school or higher)	202	56.9
Occupation		
Not working	211	59.4
Working	144	40.6
Religion		
Moslem	349	98.3
Non-Moslem	6	1.7
Knowledge about COVID-19		
Not sufficient	159	44.8
Sufficient	196	55.2
Acceptance of the COVID-19 vaccine		
Negative	162	45.6
Positive	193	54.4
Total	355	100

Table 3. Respondents' responses to the COVID-19 vaccine knowledge statements

COVID-19 vaccine knowledge	Respondents answer True		False	
	n	%	n	%
Vaccines contain pieces of viral deoxyribo nucleic acid (DNA) that function to respond to viruses if they attack so that the body can develop antibodies	346	97.5	9	2.5
Vaccine delivery is 100% efficient in preventing contracting COVID-19	104	29.3	251	70.7
The course of vaccines delivery, in general, can be through injections or mouth drops	248	69.9	107	30.1
By implementing vaccination, it can stop the transmission of the COVID-19 virus while still complying with health protocols	344	96.9	11	3.1
The time for getting the COVID-19 vaccine to those who have been exposed to the virus is given threemonths after the infection	324	91.3	31	8.7
Vaccination can generate *herd immunity* in the society	334	94.1	21	5.9
The requirement for receiving the COVID-19 vaccine is that blood pressure must be below 180/110 mmHg	330	93.0	25	7.0
COVID-19 vaccine will be optimal when someone gets it at least twice	316	89.0	39	11.0
If the 2nd dose of vaccination is later than six months after the 1st dose, the vaccine starts the 1st dose *(drop out)*.	158	44.5	197	55.5
The COVID-19 vaccine is useful for providing protection and reducing the impact of you contracting COVID-19	348	98.0	7	2.0

Table 4 demonstrates the responses provided by respondents to their perceptions of the COVID-19 vaccine's acceptance. Most respondents agreed that they received the COVID-19 vaccination to protect themselves. Almost half of those polled disagreed with the statement that they were forced to get a COVID-19 vaccination. Most respondents said they did not refuse vaccines for religious reasons. The COVID-19 vaccine is safe, effective, and halal, according to 60.3% of respondents. When asked if they were afraid of follow-up events after immunization, 30.7% said they were, while 34.6% said they were not. Less than half of the respondents (44.2%) polled disagreed with the statement that they wanted to be vaccinated due to work requirements. Because they knew the benefits, 58.9% of respondents wanted vaccinated. The statement that they did not believe in the COVID-19 vaccine was rejected by 56.9% of respondents.

3.1.3. Bivariate analysis

We assessed the relationship between the acceptance of the COVID-19 vaccine versus the sociodemographic respondent (age, gender, education, occupation, religion and knowledge level. Among the independent variables, the only sex significantly associated with COVID-19 vaccine acceptance. Being male has a 1.471 times chance of having a positive acceptance of the COVID-19 vaccine compared to women (PR=1.471; CI=1.222-1.771; p-value=<0.001). While the other variables were no relationship with vaccine acceptance. The detail information is presented in Table 5.

Table 4. Respondent’s response to question-related to COVID-19 vaccine acceptance

Acceptance of COVID-19 vaccines	Respondents answer Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
I am willing to be vaccinated for self-protection	161	45.4	169	47.6	15	4.2	9	2.5	1	0.3
I had to get vaccinated	14	3.9	29	8.2	32	9.0	175	49.3	105	29.6
I refuse vaccines because of my religious beliefs	2	0.6	9	2.5	15	4.2	185	52.1	144	40.6
I believe in the safety and effectiveness of vaccinations	94	26.5	214	60.3	42	11.8	5	1.4	0	0
I believe in the halalness of the COVID-19 vaccine	78	22.0	216	60.8	51	14.4	9	2.5	1	0.3
I am afraid of the side effects of the vaccine (fever, pain)	22	6.2	109	30.7	82	23.1	123	34.6	19	5.4
I need vaccines because of work requirements	21	5.9	108	30.4	39	11.0	157	44.2	30	8.5
I need vaccines because I know the benefits of vaccines	109	30.7	209	58.9	27	7.6	8	2.3	2	0.6
I don't believe in the COVID-19 vaccine	4	1.1	10	2.8	22	6.2	202	56.9	117	33.0

Table 5. Chi-square test among six variables of COVID-19 vaccine acceptance

Variable	COVID-19 vaccine acceptance				Total	p-values	PR (95%)
	Positive		Negative				
	n	%	n	%			
Age							
Adult	142	52.8	127	47.2	269	0.352	0.890 (0.723-1.096)
Older	51	59.3	35	40.7	86		
Gender							
Male	95	67.4	46	32.6	141	0.001	1.471 (1.222-1.771)
Female	98	45.8	116	54.2	214		
Education							
Lower	114	56.4	88	43.6	202	0.428	1.093 (0.899 -1.329)
Higher	79	51.6	74	48.4	153		
Occupation							
Working	86	59.7	58	40.3	144	0.118	1.178 (0.975 -1.423)
Not working	107	50.7	104	49.3	211		
Religion							
Moslem	189	54.2	160	45.8	349	0.692	0.812 (0.458-1.442)
Non-Moslem	4	66.7	2	33.3	6		
Knowledge level							
Sufficient	105	53.6	91	46.4	196	0.821	0.968 (0.800 -1.172)
Not Sufficient	88	55.3	71	44.7	159		

3.2. Discussion

The rapid spread of COVID-19 in Indonesia and worldwide is concerning, prompting health officials to seek solutions to prevent high vitality. As a result, WHO launched the COVID-19 vaccination program in early 2021, which was quickly adopted by all countries worldwide. On January 13, 2021, the COVID-19 vaccination was introduced in Indonesia, and it was then mass-implemented throughout the country, changing priority targets. People's acceptance of the COVID-19 vaccine varies; some refuse emphatically, some accept by force, and some accept voluntarily out of necessity. The Indonesian government has set a vaccination target of 70% of the total target for COVID-19. Meanwhile, the current results for vaccine dose 1 are greater than 85% and greater than 70% for dose 2. However, for dose 3, it is still less than 30% [18]. The cause of the inadequate coverage in dose 3 vaccination should be investigated. On the other hand, the basic information about the factor's influencing acceptance has yet to be widely known. Accordingly, this study aimed to see if there was a link between sociodemographics and knowledge of receiving the COVID-19 vaccine.

We discovered that sex is a factor that influences acceptance of the COVID-19 vaccine through a survey. Men are more likely than women to receive the COVID-19 vaccination. This study's findings are consistent with previous research, which found that men are more likely than women to get vaccinated with the COVID-19 vaccine. In other words, women tend to postpone or refuse the COVID-19 vaccine [19]–[21]. One of the reasons women deny or delay getting the COVID-19 vaccination is that the COVID-19 vaccine is too new and, from introduction to implementation, has a short period [20]. The woman considers uncertainty about the COVID-19 vaccine's safety and effectiveness, such as post-vaccination follow-up events, perceptions of the vaccine's benefits, including confidence in obtaining immunity, and responses from the environment and families about the COVID-19 vaccine [22].

In this study, we also observed the religious perceptions of acceptance of the COVID-19 vaccine. According to the findings, more than 90% of our respondents are Muslims, and more than 60% believe the COVID-19 vaccine is halal. Given that Indonesia has a Muslim majority, the issue of halal and its relationship to this belief arose during the introduction of the COVID-19 vaccine. Many issues were circulating about this issue in Indonesia at the start of the introduction, so several groups refused to receive the COVID-19 vaccine. To address this, the Indonesian government issued a legal fatwa regarding the Halalness of the COVID-19 vaccine through the Indonesian Religious Leader to increase public confidence in the COVID-19 vaccine and encourage the vaccination program currently in place [23], [24]. On the other hand, religion has nothing to do with vaccine acceptance because, at the beginning of this pandemic, the government imposed mandatory vaccinations so that everyone without exception must want to be vaccinated against COVID-19.

Another fascinating finding from this study is the respondents' reactions to their fear of the COVID-19 vaccination about adverse events following immunisation (AEFI). The percentages of those who agreed and disagreed that they were afraid of AEFIs were nearly equal, and no clear majority was found. The public still needs to learn about receiving the COVID-19 vaccine due to the presence of AEFI. During the introduction of the COVID-19 vaccination, there was a lot of misinformation about AEFI. People are hesitant to receive the COVID-19 vaccination due to misinformation such as the COVID-19 vaccine having a microchip, being dangerous, being the cause of death, and so on [25], [26]. The study's findings revealed that

the AEFI incidence of the COVID-19 vaccine at doses 1 and 2 was comparable to the trial results and in the community [27]. Other studies, on the other hand, found that because they had AEFI at dose 1, people were hesitant to receive dose 2 [9], [16], [28], [29].

This study may be limited by self-reported data bias, as the data collected is based on respondent information that is difficult to verify. The researcher attempted to control this response by reviewing each response collected after completing the data collection. In addition to collecting valid data, we used a pre-tested questionnaire that was evaluated for consistency. Despite its limitations, this research contributes to developing lessons and policies to increase vaccine coverage for the next dose.

4. CONCLUSION

COVID-19 is a disease that is highly contagious and widespread. Getting a COVID-19 vaccination is one way to prevent the severity of COVID-19. However, not all vaccine doses have reached the required coverage level. According to this study, gender is a factor that influences a person's vaccine acceptance. As a result, it is suggested that relevant health authorities develop a risk communication and gender-based approach especially targeting women. The results of this study indicate that with the program currently running, men have a better acceptance of the COVID-19 vaccine than women (1.47 times higher). Thus, the acceptance that needs to be increased is for women. Based on the findings of this study, we recommend that local governments target women in increasing demand for the COVID-19 vaccine

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