KNOWLEDGE, PERCEPTION, AND ACCEPTANCE OF THE SECOND COVID-19 BOOSTER VACCINE IN BALI PROVINCE IN 2022

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Abstract. COVID-19 pandemic has evolved into a significant global threat, prompting its designation by World Healthy Organization as a global emergency requiring utmost attention. In combating this threat, a critical strategy revolves around preventive measures, particularly mass vaccination, which stands as the leading solution to mitigate the rapid spread of the causal virus. Therefore, this study aimed to determine knowledge, perception, and acceptance of the second booster COVID-19 vaccine among people living in Bali Province. This was a survey study with a cross-sectional design, which was carried out in 513 participants selected by the simple random sampling method. The instrument used was a questionnaire that had been tested for its validity and reliability. The results showed that the majority of the respondents had good knowledge (62%) and perception (54.40%). Furthermore, most of them had no doubts about the second booster COVID-19 vaccine (80.30%), advised others to get vaccinated (82.10%), and received vaccine (93%). Based on these results, the majority of the people in Bali Province had good knowledge, perception, and acceptance.

Keywords: knowledge, perception, acceptance, second booster COVID-19 vaccine

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INTRODUCTION

Coronavirus disease 2019 (COVID-19) pandemic has become a formidable threat across various countries in the world, there are more than 118,000 cases in 114 countries, and 4,291 people have lost their lives (WHO, 2020). Furthermore, communities around the world are tirelessly combating the exponential rate of transmission of the disease (Fachriansyah and Hermawan, 2020), with WHO and world governments collaboratively formulating and implementing various strategies to reduce the number of affected individuals (WHO, n.d.; Liang, 2020; Indonesian Ministry of Health, 2020). At present, a definitive curative therapy for the disease has not been identified (Abullais *et al*, 2022; Niknam *et al*, 2022), and the primary focus of existing medical interventions remains symptomatic relief aimed at alleviating the symptoms experienced by the patients (Abullais *et al*, 2022). Among these interventions, anti-inflammatory therapy has shown the most promising results in improving outcomes for inpatients. However, its widespread applicability majorly depends on the socio-demographic conditions (Murakami *et al*, 2023). This indicates that preventive measures with mass vaccination are the leading solution to prevent the rapid transmission of COVID-19 (Abullais *et al*, 2022; Murakami *et al*, 2023; Greenwood, 2014).

A book by Wetter showed that the success of an effort to improve public health, such as vaccination is determined by the individual level of knowledge towards the challenges being experienced (Wetter, 2016). The possession of high health literacy within the community can facilitate

the achievement of optimal results by promotive, preventive, curative, and rehabilitative efforts (Liu *et al*, 2020). Several factors have been identified as contributors to the quality of public health literacy, including aspects of knowledge, perception, and acceptance of information sources (Hinson *et al*, 2019; Liu *et al*, 2020; Sorensen *et al*, 2012; Walters *et al*, 2020). Furthermore, the successful execution of a series of mass vaccination initiatives is highly dependent on the active role of individuals in understanding the importance of this program in combating COVID-19 (Alduwayghiri and Khan, 2021; European Medicines Agency, 2021). Inadequate knowledge, as well as suboptimal perception and acceptance of the effectiveness of vaccine, can lead to a societal challenge known as 'vaccine hesitancy'. This phenomenon, as witnessed in China, can detrimentally affect the successful coverage of mass vaccination programs (Yang *et al*, 2020).

Bali Province, renowned as a prominent tourism destination, has also been negatively impacted by COVID-19. In a concerted effort, the regional government, working in tandem with the central government, has adopted strategic measures to curtail the exponential spread rate of the disease, including the widescale administration of vaccination (Indonesian Ministry of Home Affairs, 2020; Ministry of National Development Planning, 2021). Recent reports showed that the coverage of the program in province reached an impressive rate of 86.3% (Indonesian Ministry of Health, 2023). COVID-19 mass vaccination program in Bali is ongoing, extending to the second booster level. Booster vaccination is needed to strengthen the immune response of the body. The second, third, or subsequent doses of vaccine can potentially increase the level of neutralizing antibody titers against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its variants (Shekhar *et al*, 2021). Therefore, this study aimed to assess the aspects of knowledge, perception, and acceptance of health literacy toward booster doses of the two COVID-19 vaccine in Bali Province.

MATERIALS AND METHODS

This was a survey study with a cross-sectional design, which was conducted from 1 to 25 August 2022. The sample population consisted of 513 people in Bali Province, Indonesia, who received the second booster COVID-19 vaccine. The inclusion criteria were people living in Bali Province, aged at least 17 years old, willing to be respondents and being able to access and use electronic devices such as cellphones, laptops and computers, while the exclusion criteria were individuals who worked as health workers.

The participants were selected using the simple random sampling method. Data were collected with a questionnaire, which was filled in using a Google form. Researchers sent questionnaires in the form of a Google form to family members, friends, colleagues, and acquaintances. The researchers then selected the sample by looking at the district so that the sample could represent each district. Informed consent was obtained by having the participants tick at "agree" box on the Google form (online). Then the link to access the questionnaire was given to the research participants. Confidentiality of data was well maintained and the respondents were asked to fill in the answers honestly. This instrument had previously been tested for validity and reliability in 40 individuals not involved in the study. The validity of each question item was tested using the product-moment correlation test between the scores of each question item and the total score. Meanwhile, the reliability test was carried out using Cronbach's Alpha method. The validity value obtained for questions of knowledge, perception, and acceptance of the 2nd booster COVID-19 vaccine was considered at a significance level of 5%, where the calculated correlation value (r-count) was greater than the r-table of 0.312. The reliability test with a significance level of 5% indicated that both knowledge, perception, and acceptance showed reliable results, as

indicated by Cronbach's Alpha value of >0.600.

Statements on the questionnaire were divided into 3 aspects, namely knowledge, perception, and acceptance. The questionnaire on knowledge aspect was in the form of a statement with three answer choices, consisting of 'yes', 'no', and 'don't know' categories. Perception aspect contained statements with five possible answers, namely 'strongly agreed', 'agreed', 'hesitated', 'disagreed', and 'strongly disagreed'. The questionnaire on acceptance contained statements with two answer choices, namely 'yes' and 'no'. Knowledge and acceptance scores were calculated by giving a value of '1' for each positive/correct response and a value of '0' for each negative/false or don't know response. Respondents' perception was assessed using a 5-point Likert scale, ranging from 1 to 5 (1 = strongly disagreed; 2 = disagreed, 3 = neutral, 4 = agreed, 5 = strongly agreed).

The questionnaire comprised 21 questions; 10 questions about knowledge, 8 questions about perception, and 3 questions about acceptance of the second COVID-19 booster vaccine. The minimum score is 8 and the maximum score is 3. The final score was presented in percentage form by adding up all the respondent's score, followed by calculating the percentage. Furthermore, the final score of knowledge was divided into three classes depending on the percentage, namely insufficient (0-40%), sufficient (41-70%), and good (above 70%). The final score of perception was divided into two classes, namely good (≥30) and poor (<30). The collected data were then cleaned, coded, and entered into Microsoft Excel. Categorical variable data were presented in a frequency distribution and continuous variable data were presented as mean and standard deviation (SD). Between-group statistical comparisons of the distribution of categorical variables were tested using the Pearson Chi-square test. In this study, a *p*-value of less than 0.05 was considered statistically significant. All data were statistically analyzed using the

Statistical Package for Social Sciences (SPSS) version 26.0 for MS Windows (IBM Corporation, Armonk, NY).

This study received ethical approval at Bali International University with reference number 01.033/UNBI/EC/VIII/2022.

RESULTS

Data collection was carried out on 513 respondents who met the inclusion criteria. The characteristics of the respondents are presented in Table 1.

Based on Table 1, the majority of the participants were females (277 individuals, (54.0%). Furthermore, the dominant age group was 20-39 years (338, 65.9%). The age ranged from 17-60 years with an average age (± standard deviation (SD)) = 28.3 (± 10.14) years. A total of 231 respondents (45.1%) finished High School, followed by a Bachelor's degree (202, 39.4%). The results showed that the majority of the respondents were employed (n = 410, 79.9%).

The descriptive analysis results showed that 22.2% (114 people) of the respondents had insufficient knowledge regarding the second booster COVID-19 vaccine, as shown in Table 2. A total of 81 respondents (15.8%) and 318 respondents (62.0%) of them were in the sufficient and good categories.

Based on Table 3, significant differences in the level of knowledge regarding the second booster COVID-19 vaccine could be seen in the variables of gender, age, education, and employment. Furthermore, there was a significant difference in the level of knowledge between males and females (p<0.0001). The proportion of good knowledge was higher in the female group compared to the males. For the age variable,

Table 1

Socio-demographic characteristics of study respondents (N =513)

Characteristic	Frequency *n* (%)
Gender	
Male	236 (46.0)
Female	277 (54.0)
Age	
<20 years old	104 (20.2)
20-39 years old	338 (65.9)
40-60 years old	71 (13.9)
Education	
High school	231 (45.0)
Diploma	80 (15.6)
Bachelor	202 (39.4)
Employement	
Employed	410 (79.9)
Unemployed	103 (20.1)

Table 2

Level of knowledge regarding the second booster COVID-19 vaccine (N = 513)

Level of knowledge	Frequency *n* (%)
Good	318 (62.0)
Sufficient	81(15.8)
Insufficient	114 (22.2)

Good knowledge: final scores ranging from 0-40%; Sufficient knowledge: final scores ranging from 41-70%; Insufficient knowledge: final scores >70%.
COVID-19: Coronavirus disease 2019

Table 3

Comparison of knowledge of the second booster COVID-19 vaccine based on socio-demographic characteristics

Variable	Knowledge level, *n* (%)			*p*-value
	Insufficient	Sufficient	Good	
Gender				
Male (N = 236)	71 (30.1)	37 (15.7)	128 (54.2)	<0.0001
Female (N = 277)	43 (15.5)	44 (15.9)	190 (68.6)	
Age in years				
<20 (N = 104)	35 (33.7)	20 (19.2)	49 (47.1)	0.005
20-39 (N = 338)	68 (20.1)	52 (15.4)	218 (64.5)	
40-60 (N = 71)	11 (15.5)	9 (12.7)	51 (71.8)	
Education				
High school (N = 231)	68 (29.4)	42 (18.2)	121 (52.4)	0.001
Diploma (N = 80)	11 (13.7)	14 (17.5)	55 (68.8)	
Bachelor (N = 202)	35 (17.3)	25 (12.4)	142 (70.3)	
Employment				
Employed (N = 410)	73 (17.8)	60 (14.6)	277 (67.6)	<0.0001
Unemployed (N =103)	41 (39.8)	21 (20.4)	41 (39.8)	

Good knowledge: final scores ranging from 0-40%; Sufficient knowledge: final scores ranging from 41-70%; Insufficient knowledge: final scores >70%
COVID-19: Coronavirus disease 2019

the 20-39-year-old group was more knowledgeable compared to others (p=0.005). The results showed the undergraduate group had the highest proportion of good knowledge compared to high school and diploma education (p=0.001). Based on employment, respondents who worked had a higher level of good knowledge compared to those who were unemployed (p<0.0001).

The distribution of perception levels regarding the second booster COVID-19 vaccine was divided into two categories, namely 'poor' and 'good', as shown in Table 4. Based on the results, 234 respondents (45.6%) and 279 respondents (54.4%) were in the poor and good perception categories, respectively.

The analysis results showed significant differences in the level of perception in the variables of gender, age, education, and employment. The distribution of perception differed significantly between males and females (p<0.0001), where females had higher levels. There was a significant difference in the distribution of the variable according to the age group <20 years, 20-39 years, and 40-60 years, with a p-value of 0.033. In the <20 years group, more respondents had less perception of the second booster COVID-19 vaccine. The distribution of respondents' perception levels showed significant differences in the education variable (p=0.004). High school education was dominated by poor levels compared to diploma and Bachelor's degrees. A significant difference was observed in relation to employment status (p=0.015), where those who worked had higher levels.

Based on Fig 1, public acceptance was seen through three aspects, namely whether there were doubts, suggesting other people to get the second booster vaccine, and were willing to receive the second booster COVID-19 vaccine.

Table 4

Public perceptions of the second booster COVID-19 vaccine (N = 513)

Level of perception	Frequency *n* (%)
Good	279 (54.4)
Poor	234 (45.6)

Good perception: final scores >30%; Poor perception: final scores <30%
COVID-19: Coronavirus disease 2019

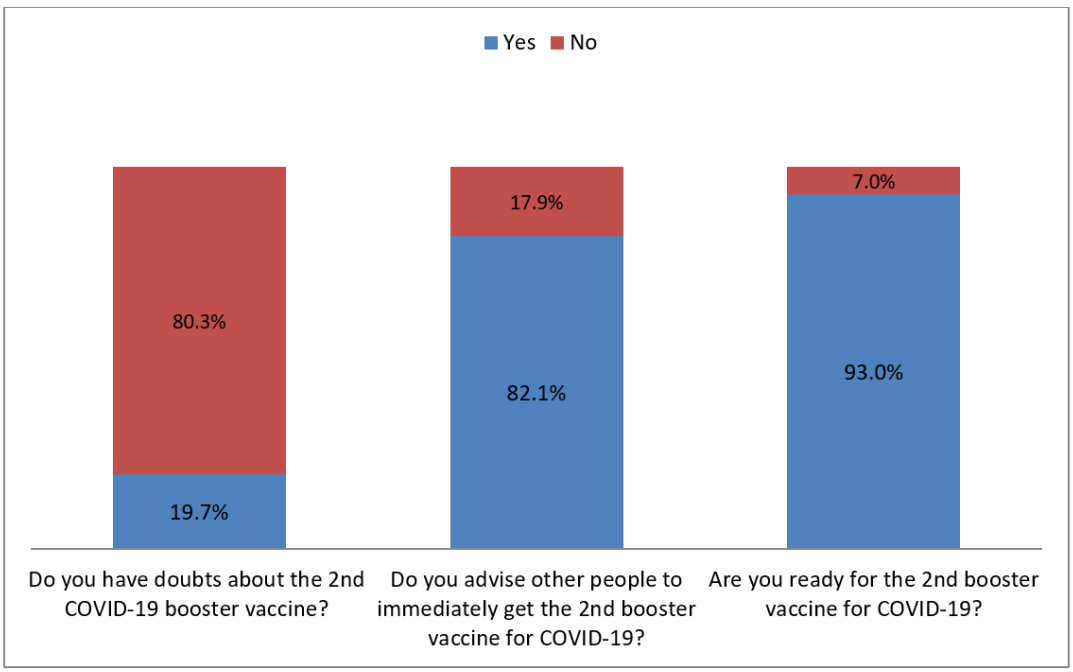

Fig 1 - Public acceptance of the second booster COVID-19 vaccine
COVID-19: Coronavirus disease 2019

On acceptance aspect, there were doubts about the second booster COVID-19 vaccine showing significant differences in the characteristics of gender (p<0.0001), age (p=0.011), and education (p<0.0001). Based on gender, both males and females had more doubts about the vaccination. Meanwhile, in all age groups, the majority of them had no doubts. The analysis on the aspect of recommending the second booster COVID-19

Table 5
Comparison of perceptions of the second booster COVID-19 vaccine based on socio-demographic characteristics

Variable	Perception, *n* (%)		*p*-value
	Poor	Good	
Gender			
Male (N = 236)	128 (54.2)	108 (45.8)	<0.0001
Female (N = 277)	106 (38.3)	171 (61.7)	
Age in years			
<20 (N = 104)	56 (53.8)	48 (46.2)	0.033
20-39 (N = 338)	154 (45.6)	184 (54.4)	
40-60 (N = 71)	24 (33.8)	47 (66.2)	
Education			
High school (N = 231)	124 (53.7)	107 (46.3)	0.004
Diploma (N = 80)	30 (37.5)	50 (62.5)	
Bachelor (N = 202)	80 (39.6)	122 (60.4)	
Employment			
Employed (N = 410)	176 (42.9)	234 (57.1)	0.015
Unemployed (N =103)	58 (56.3)	45 (43.7)	

Good perception: final scores >30%; Poor perception: final scores <30%
COVID-19: Coronavirus disease 2019

vaccine to other people showed no significant differences based on several variables, such as gender (p=0.190), age (p=0.276), education (p=0.208), and employment status (p=0.468). The analysis results on the willing aspect showed significant differences in the characteristics of gender (p=0.010), age (p=0.013), and education (p=0.025). The results showed that most of the males and females were willing to take the second booster vaccine. Individuals within the age group of <20 years, 20-39 years, and 40-60 years showed a high level of willingness. Similar results were also obtained in the education variable where high school, diploma, and Bachelor's degree were mostly willing.

DISCUSSION

The implementation of COVID-19 vaccination was one of the government's efforts to form community immunity to reduce the incidence of the disease or reduce the death rate. The possession of a higher level of knowledge about vaccination could provide a basis for deciding whether to be vaccinated, this is supported by some studies that found a relationship between knowledge about COVID-19 vaccination and COVID-19 vaccination (Pratama *et al*, 2022; Juin *et al*, 2022). The majority of the level of knowledge among 513 respondents was in the good categories. These results were in line with several previous studies where the respondents were dominated by individuals who had a good level of knowledge (Pratama *et al*, 2022; Adane *et al*, 2022; Hutapea *et al*, 2022; Agustina *et al*, 2022; Tamita *et al*, 2022; Andriani *et al*, 2023; Arisandi *et al*, 2023; Dharmapatni *et al*, 2023; Dong *et al*, 2019). However, the findings were inconsistent with other studies, where the participants were in the sufficient and less categories (Duong *et al*, 2022; Fakhriani *et al*, 2022; Monayo, 2022; Nurhidaya, 2022; Tuloli *et al*, 2022; Marhamah *et*

Table 6

Comparison of public acceptance of the second booster COVID-19 vaccine based on socio-demographic characteristics

Variable	Acceptance								
	Doubts about the 2nd Booster Vaccine			Recommend the 2nd Booster Vaccine			Ready for the 2nd Booster Vaccine		
	Yes *n* (%)	No *n* (%)	*p*-value	Yes *n* (%)	No *n* (%)	*p*-value	Yes *n* (%)	No *n* (%)	*p*-value
Gender									
Male (N = 236)	63 (26.7)	173 (73.3)	<0.0001	188 (79.7)	48 (20.3)	0.190	212 (89.8)	24 (10.2)	0.010
Female (N = 277)	38 (13.7)	239 (86.3)		233 (84.1)	44 (15.9)		265 (95.7)	12 (4.3)	
Age in years									
<20 (N = 104)	30 (28.8)	74 (71.2)	0.011	81 (77.9)	23 (22.1)	0.276	92 (88.5)	12 (11.5)	0.013
20-39 (N = 338)	63 (18.6)	275 (81.4)		278 (82.2)	60 (17.8)		314 (92.9)	24 (7.1)	
40-60 (N = 71)	8 (11.3)	63 (88.7)		62 (87.3)	9 (12.7)		71 (100.0)	0 (0.0)	
Education									
High school (N = 231)	63 (27.3)	168 (72.7)	<0.0001	182 (78.8)	49 (21.2)	0.208	207 (89.6)	24 (10.4)	0.025
Diploma (N = 80)	16 (20.0)	64 (80.0)		67 (83.8)	13 (16.2)		76 (95.0)	4 (5.0)	
Bachelor (N = 202)	22 (10.9)	180 (89.1)		172 (85.1)	30 (14.9)		194 (96.0)	8 (4.0)	
Employment									
Employed (N = 410)	77 (18.8)	333 (81.2)	0.302	339 (82.7)	71 (17.3)	0.468	383 (93.4)	27 (6.6)	0.445
Unemployed (N =103)	24 (23.3)	79 (76.7)		82 (79.6)	21 (20.4)		94 (91.3)	9 (8.7)	

COVID-19: Coronavirus disease 2019

al, 2023; Ramadani *et al*, 2023). The differences in the level of knowledge were caused by several factors, such as variations in how people receive information, the government's method to providing information about COVID-19, as well as socio-demographic characteristics between the areas studied. In this study, there were four socio-demographic variables whose differences were analyzed for knowledge level. This study obtained a significant difference in the level of knowledge about the 2nd booster COVID-19 vaccine between males and females ($p<0.0001$). These findings were consistent with previous study which reported the presence of a relationship between gender and level of knowledge about vaccination in Saudi Arabia (Abullais *et al*, 2022). Differences in perspectives between males and females regarding the prevention of diseases, such as vaccinations could lead to different interests in seeking and understanding information. Another study showed that females had better COVID-19 prevention behaviors compared to males (Yestica *et al*, 2022). Apart from gender, another component analyzed was the age of the participants. Age played an important role in decision-making, where physical and psychological changes occurred in the adult stage. These changes were considered maturity to make a person have a stable self-concept and develop knowledge (Ramadani *et al*, 2023). This study found a significant difference in the level of knowledge based on age group ($p=0.005$). These results were in line with other studies, which also found a link between both variables (Duong *et al*, 2022; Sonmezer *et al*, 2022). Education provided information on the extent to which respondents had undergone formal training. The higher a person's education, the longer the time of exposure to information and knowledge. This study showed significant differences in the level of knowledge based on recent education, which were divided into three categories, namely high school, diploma, and undergraduate ($p=0.001$). This result was in line with previous studies, which reported the presence of an association (Damayanti and Sofyan,

2022; Islam *et al*, 2021). Work was the basis for an individual's source of income. This study showed that there was a significant difference in the level of knowledge about the second booster of COVID-19 vaccine (p<0.0001). This was also supported by the proportion of good knowledge in the group of employed respondents, as reported by a study in Semirejo Village (Wildayanti *et al*, 2023). This could be due to government regulations regarding working safely during a pandemic. To operate properly, companies were required to implement health protocols and vaccinate their workforce. Therefore, more information about COVID-19 vaccine was obtained by participants with working status.

Perception of the second booster COVID-19 vaccine was important and influenced public acceptance. Based on the results, the majority of the participants had a good perception. These results were in line with the study of Abbulais *et al* (2022) who found that most people had a sufficient perception of 60.4%. The results were also consistent with Istighfaara *et al* (2022) who found higher levels of perceptions regarding the first booster COVID-19 vaccine. According to Tiwow *et al* (2022), 57.3% of the participants had a good perception. Vaccination was a public health effort that was considered the most effective and efficient in preventing the transmission of dangerous diseases. COVID-19 vaccine was one of the efforts carried out by the government as a step in dealing with the disease (Indonesian Ministry of Health, 2021). Vaccine basically aimed to prevent infectious conditions and to obtain a strong immune response (Makmun and Hazhiyah, 2020). Previous studies showed that the current vaccine was the best step to prevent the further spread of the disease, including in Indonesia. The first COVID-19 vaccine activities started in 2021 and were carried out in stages starting from health workers, and the elderly to targeting all levels of society. Since it was first announced by the Indonesian government, several problems had arisen regarding COVID-19 vaccine. However, the activities of the first, second, booster

one and second booster were successful and exceeded the target set by WHO (Octafia, 2021). Public perception, especially of the second booster COVID-19 vaccine, had mostly shown good results. This showed that several people believed it was needed, especially during the ongoing pandemic situation. The community felt the real benefits from the second booster of COVID-19 vaccine, which was believed to be more capable of protecting them from the virus. This was in line with a study by Latkin *et al* (2021) that the vaccination was an important component to prevent the virus. Another study also explained that perception regarding the safety of booster vaccine had an impact on the number of healthcare professionals in India who were willing to get vaccinated (Lai *et al*, 2021). Vaccine provided important benefits to all individuals and several factors encouraging people to be vaccinated varied. These factors included the benefits, willingness to help the government achieve herd immunity, and believe that the vaccination program announced by the government was a form of national protection. This showed that the benefits of vaccine were associated with community protection, as well as a contribution to the government in the vaccination program to break the chain of transmission of the virus (Octafia, 2021). Booster vaccines were needed by all individuals due to the inability of the first vaccination to provide full immunity. Another study reported that the effect of vaccination could decrease over time (Eyre *et al*, 2022). Six months after receiving the second dose, the humoral response decreased dramatically, especially among men, people aged 65 years and over, and immunosuppressed individuals (Levin *et al*, 2021). Therefore, it was necessary to increase the dose of vaccine to increase effectiveness and help reduce the transmission of SARS-CoV-2 (Moustsen-Helms *et al*, 2021). Poor perception could occur due to a lack of information received by the public regarding vaccine that were used to form body immunity/artificial antibodies (Samosir *et al*, 2023). Doubts were expressed by the majority of the participants,

as they believed the vaccination could cause unwanted side effects. The community preferred other steps to prevent the pandemic, which were believed to be able to overcome transmission without the need for vaccination (Islam *et al*, 2021). Negative perception developing in society could lead to a wider transmission. Furthermore, this was related to the willingness or intention felt by a person to be vaccinated, such as feelings of fear and worry about the danger that could occur (Karlsson *et al*, 2021).

Public acceptance of the second booster COVID-19 vaccine in Bali Province in this study comprised three interrelated aspects, namely the lack of doubts by the community, the willingness of the community to advise other communities, and the willingness of the community. Based on the results, 80.30% of respondents who were representatives of the people in Bali Province, had no doubts. These results were higher compared to a previous study conducted by Abullais *et al* (2022), which obtained only 52.9% among 609 participants in the Aseer region, Kingdom of Saudi Arabia (Abullais *et al*., 2022). Study on doubts about receiving the second COVID-19 booster vaccine were also carried out in Saudi Arabia using a population of 1,713 individuals (Alduwayghiri and Khan, 2021). The results showed that 60.80% and 48% of the participants were worried about side effects and allergic reactions, respectively. Furthermore, 23.90% and 23.90% thought the vaccination was ineffective and could not reduce the possibility of the virus, respectively (Alduwayghiri and Khan, 2021). In this study, 82.10% of the 513 respondents were willing to advise other members of the public to immediately get the second booster of vaccine. These results were in line with a study in the Aseer Region, Kingdom of Saudi Arabia, where 60.8% of participants were willing (Abullais *et al*, 2022). The community's willingness to recommend vaccine to others began with possessing a high level of confidence in their effectiveness and the public's adherence to being vaccinated. This was consistent with the results of this study, where 93% of the respondents were willing to

undergo the second booster COVID-19 vaccination. These results were in line with a study in China, where 84.8% of the respondents showed willingness (reference). One of the reinforcing factors in receiving the vaccination was based on public trust in the concept of the health belief model (HBM) (Lai *et al*, 2021). The low acceptance in previous studies conducted in Jakarta was partly due to the level of trust, fear of risks, and public perception (Umam *et al*, 2023). This condition was also caused by a lack of education and trust in the existing scientists and health workers. Comparison of the public acceptance aspects of the second COVID-19 booster vaccine with the socio-demographic characteristics showed significant results in the first and third sub-variables. In the first variable, namely the doubt level, significant results were obtained with the characteristics of sex ($p<0.0001$), age ($p=0.011$), and recent education ($p<0.0001$). The results of this study were inconsistent with a report in Saudi Arabia, where public doubts were only significant for gender with $p=0.012$ (Abullais *et al*, 2022). Yadete *et al* (2021) found that individuals who had very little or no confidence in the information on COVID-19 vaccine provided by public health or government agencies were more hesitant (55% versus 12%) compared to others. The mean score of vaccine confidence index and literacy was lower among the doubtful group compared to the non-doubtful group (Yadete *et al*, 2021). The results of the analysis on the third variable, namely the readiness aspect, also showed significant results in the characteristics of gender ($p=0.010$), age ($p=0.013$), and recent education ($p=0.025$). The majority of males and females were willing to take the second booster vaccine. The age group of <20 years, 20-39 years, and 40-60 years also had a high level of willingness. This was in line with a previous study, which identified age as a crucial factor influencing people's willingness to receive vaccinations (Ichsan *et al*, 2021). Similar results were also obtained in the variable of education, where the majority of individuals with high school, diploma,

and undergraduate education were willing. Previous reports showed that when the level of knowledge was low but the level of perception was good, public acceptance of the second COVID-19 booster was likely to be higher (Abullais *et al*, 2022).

In conclusion, this study found that, in Bali Province, majority of the respondents had good knowledge (62%), good perception (54.4%). As many as 93% of the respondents received the second booster COVID-19 vaccine.

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