

## Level of knowledge regarding COVID-19 health protocols in the tourism sector in Taro village before and after counseling

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### Abstract

**Introduction:** Taro village has a higher risk of gathering the people since it is one of the most popular tourism sectors in Bali hence increasing the potential to spread coronavirus disease 2019 (COVID-19). The level of knowledge plays an important role in determining whether the society is ready to implement the health protocols or not. This community service aims to evaluate the level of knowledge regarding COVID-19 health protocols in the tourism sector in the Taro village.

**Method:** This research was conducted using a quasi-experimental one-group pretest-posttest design in Taro village, Bali. Respondents filled out the questionnaire before and after counseling. The questionnaire consisted of 10 items of knowledge. The participants were Taro's residents who met inclusion and exclusion criteria. A total of 31 respondents were taken. The data were tested for normality with the Kolmogorov-Smirnov test and analyzed with paired T-test using the IBM SPSS statistics version 25. Significance was determined at a 5% level ( $P$ -value  $\leq 0.05$ ).

**Results:** A total of 31 valid filled-questionnaires were collected. In general, Taro's residents' knowledge regarding COVID-19 health protocol in the tourism sector was sufficient, but some topics are still insufficient. The mean score before counseling was  $79,03 \pm 1,340$  while the mean score after counseling was  $86,13 \pm 1,366$ . There was a significant difference ( $p < 0,05$ ) on level of knowledge ( $p = 0,000$ ) before and after counseling.

**Conclusion:** There was a significant difference in the level of knowledge of Taro village's residents toward COVID-19 health protocols in the tourism sector before and after counseling.

**Keywords:** COVID-19; Knowledge; Protocols; Tourism

### 1. Introduction

Coronavirus disease 2019 (COVID19) is defined as a disease caused by a new type of coronavirus, that now called Severe Acute Respiratory Syndrome Coronavirus 2 (SARSCoV2; formerly known as 2019nCoV). COVID19 is a new respiratory infection that was first detected in Wuhan, Hubei Province, China in December 2019 [1]. COVID19 has spread widely and rapidly from Wuhan to other parts of the world, threatening the lives of many people [2]. In late January 2020, the World Health Organization (WHO) announced a public health emergency of international concern and called on all countries to work together to prevent its rapid spread. Subsequently, the WHO declared COVID19 as a "global pandemic. To date, more than 190 million positive cases of COVID-19 have been confirmed worldwide and at least 4 million people have died from COVID-19 [3,4].

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The first two cases in Indonesia were confirmed in March 2020 and spread quickly across the country [3,4]. As of 20<sup>th</sup> July 2021, Indonesia has confirmed more than 2,9 million positive cases with more than 76 thousands death [5]. Therefore, the government has made many efforts in response to the COVID19 pandemic, including national budget policies, health emergency documents, and large-scale social restrictions [6]. Since the medical interventions available for treatment are limited, most countries have adopted various forms of non-pharmaceutical intervention (NPI), including lockdown (home isolation, voluntary/mandatory isolation), maintenance of social distance (vulnerable groups or the entire population), closure of schools/universities and non-essential businesses/workplaces, cancellation or postponement of events (i.e. large conferences and trade shows, concerts and festivals, political debates and elections, sports seasons and summer Olympics) and prohibit gatherings of more than a certain number of people are considered necessary to slow down the spread of COVID-19 as rapid person-to-person transmission has occurred [7,8]

Restrictions on international, regional, and local travel immediately affected the national economy, including the tourism system, namely international travel, domestic travel, day trips and air travel, cruises, public transport, accommodation, cafes and restaurants, conferences, festivals, conferences, etc. The announcement of the implementation of travel bans by the government affect 90% of tourist destinations and leisure businesses. The actual impact of the COVID19 pandemic on the tourism industry has become apparent [9]. The tourism sector has been a highly vulnerable sector to numerous environmental, political, socio-economic risks. The tourism sector is used to, and has become resilient in bouncing back from various crises and outbreaks [10]. Bali's tourism industry, as one of the most popular tourist destinations in the world, is also affected by this epidemic. Furthermore, this ongoing crisis may have a major impact on the tourism industry, especially small and medium-sized enterprises (SMEs) in tourist destinations, which are highly dependent on tourists as the main consumers [11]. Approximately 32.5 million workers were indirectly affected, including SMEs, money changers, souvenir shops, dancers, musicians, artists in tourist areas, hotel and restaurant suppliers, shopping malls, and retail workers. By the end of 2020, as many as 15 million jobs may be lost [12].

Public places and facilities especially in the tourism sector are areas where people carry out activities of social life and meet their needs. The risks of the movement of people and the gathering of people in the tourism area have great potential for the spread of COVID-19. To keep the wheels of the economy rolling, it is necessary to mitigate the impact of the COVID-19 pandemic, especially in public places and facilities. The community must change their lifestyle through a new order and habitual adaptation (new normal) so that they can live efficiently and avoid the spread of COVID-19. Adhering to the principles of a cleaner and healthier lifestyle is the key to slowing the spread of COVID-19 in the community [13,14] states that social coherence between regulations and preparedness to tackle the disease was influenced by knowledge, attitude, and practice (KAP). In this community service and research, the level of knowledge is important to measure how well the residents understand the COVID-19 health protocols in the tourism sector.

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## 2. Material and methods

This research used a quasi-experimental design with one group pretest-posttest design. The community service was conducted at Taro Village, Gianyar Province, Bali on 10<sup>th</sup> July 2021. The community service participants were Taro's residents who met inclusion and exclusion criteria. The inclusion criteria for this community service was residents aged 15-65 years old. While the exclusion criteria for this community service were those who did not attend the counseling and could not read and/or write. A total of 31 respondents were taken. Respondents filled out the pre-test questionnaire before the counseling then filled out the post-test questionnaire after the counseling. The questionnaire consisted of demographic characteristics and 10 items of knowledge. The questionnaire given has been tested for validity and reliability. The independent variable of this community service was counseling about COVID-19 health protocols in the tourism sector. The dependents variable of this community service was the level of knowledge regarding the COVID-19 health protocols in the tourism sector. The data used are primary data obtained from the questionnaire. The data were tested for normality with the Kolmogorov-Smirnov test and analyzed with paired T-test using the IBM SPSS statistics version 25. Significance was determined at a 5% level (P-value  $\leq 0.05$ ).

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## 3. Results

### 3.1. Demographic Characteristics

A total of 31 respondents was included in this community service. Table 1 shows the demographic characteristics of the community service respondents. As shown in Table 1, all the respondents were females. The majority of the sample (41,93%) were between the ages of 17 and 25, followed by 35,48% are 26-35 years old, 16,14% are 46-55 years old, and 6,4% are 17-25 years old.

**Table 1** Characteristics of Respondents by Gender and Age

Characteristic	N (Total=31)	Percentage (%)
<b>Gender</b>		
Female	31	100
Male	0	0
<b>Age</b>		
17-25	2	6,45
26-35	11	35,48
36-45	13	41,93
46-55	5	16,14

### 3.2. Level of Knowledge Before and After Counseling

The results showed that before attending the counseling, the highest pre-test score was 90 and the lowest score was 60. Table 2 shows the level of knowledge before and after counseling. The mean pre-test score was  $79,03 \pm 1,340$ . A total of 6 respondents (19,36%) had pre-test scores below the average and 25 respondents (80,64%) had pretest scores above the average. After attending the counseling, the highest post-test score was 100 and the lowest score was 70. The average post-test score was  $86,13 \pm 1,366$ . Only 1 respondent (3,23%) had post-test scores below the average and 30 respondents (96,77%) had post-test scores above the average, representing an acceptable level of knowledge on COVID-19 health protocols in the tourism sector. The knowledge score before and after counseling obtained a normal data distribution, so the paired T-test was used. The probability value obtained is  $p = 0,000$ , so there is a significant difference ( $p < 0,05$ ) in the average level of knowledge before and after counseling.

**Table 2** Level of Knowledge Before and After Counseling

Knowledge Score	N	Mean $\pm$ SD	Min	Max	P
Pre-test score	31	$79,03 \pm 1,340$	60	90	0.000
Post-test score	31	$86,13 \pm 1,366$	70	100	

SD=Standard Deviation, min=minimum, max=maximum

\*Paired T-test

In Table 3, we can see that all respondents were aware that the tourism management was obligated to provide a place for sanitation in the form of hand sanitizer or a place for washing hands (100%) and they were required to keep applying the health protocols even after getting COVID-19 vaccine (100%). However, there was noticeable confusion among the respondents when it came to the obligation of tourism workers in implementing the health protocols because only 12,91% of the respondents answered correctly.

**Table 3** Response to the Questionnaire on COVID-19 Knowledge about Health Protocols in Tourism Sector

No.	Questions	Pre-test		Post-test	
		Correct	Incorrect	Correct	Incorrect
1	Person obligated to carry out health protocols in the tourism sector	27 (87.09%)	4 (12.91%)	26 (83.87%)	5 (16.13%)
2	The latest variant of COVID-19	24 (77.41%)	7 (22.59%)	31 (100%)	0 (0%)
3	Individual health protection	28 (90.32%)	3 (9.68%)	31 (100%)	0 (0%)
4	The main role in preventing the spread of COVID-19	29 (93.54%)	2 (6.46%)	31 (100%)	0 (0%)

5	The obligation of tourism management in implementing the health protocols	31 (100%)	0 (0%)	30 (96.77%)	1 (3.23%)
6	Things to do after getting COVID-19 vaccine	31 (100%)	0 (0%)	31 (100%)	0 (0%)
7	Things to do if there is a crowd as a tourism worker	30 (96.77%)	1 (3.23%)	31 (100%)	0 (0%)
8	The obligation of tourism workers in implementing the health protocols	4 (12.91%)	27 (87.09%)	9 (29.03%)	22 (70.97%)
9	Enforcement of health protocols by tourism worker	28 (90.32%)	3 (9.68%)	25 (80.64%)	6 (19.36%)
10	Benefit of getting COVID-19 vaccine	17 (54.83%)	14 (45.17%)	18 (58.06%)	13 (41.94%)

#### 4. Discussion

Due to its rapid transmission, COVID-19 is an aggressive virus. Primary prevention measures are implemented by changing personal hygiene behaviors and restricting physical and social contact between people. In addition, since this disease is new, it is important to avoid misinformation that may lead to wrong preventive measures in society. To date, there has been limited published data on population knowledge regarding COVID-19 health protocols in the tourism sector, especially in Indonesia. This community service helps to fill the knowledge gaps in Indonesian people's knowledge about COVID-19 health protocols in the tourism sector since Indonesia especially Bali is one of the most favorite destinations for tourism.

All respondents of this community service came from females (100%). This may be related to the tendency of men to be more apathetic than females in participating in a survey. Previous study showed the same results, in which females mainly responded to the survey as 73% and 88,5% [15,16]. Most of the respondents aged between 36 and 45 years old and categorized as late adulthood or early elderly [17]. WHO stated that the elderly are at the highest risk of contracting the virus, with more than 95% of related deaths [4]. Various health conditions, especially chronic disease and decreased immunity are expected to significantly increase the vulnerability of the elderly to COVID-19. A large-scale campaign about COVID-19 health protocols encouraged the elderly to learn more about COVID-19 [18].

Based on respondents' results, it shows that most respondents had a sufficient level of knowledge regarding COVID-19 health protocols in the tourism sector. The mean score of the knowledge level on the pretest is  $79,03 \pm 1,340$  and 80,64% of respondents had a pretest score above the average. These results are in line with research conducted in China that reported the majority of the respondents (90%) had a satisfactory score on the COVID-19 knowledge level [19]. Similarly, a previous research report showed that Nepalese residents were aware of COVID-19 [20]. A study in Egypt also stated similar results that showed respondents generally had good knowledge [21]. However, another study conducted in Bangladesh showed that the knowledge of the participants is insufficient and suggests that health authorities should provide up-to-date knowledge to strengthen adequate prevention of COVID-19 outbreak [22]. Some studies have assessed the knowledge of respondents, but their studies include healthcare workers rather than community residents [23,24].

After the counseling about COVID-19 health protocols in the tourism sector, there is an increase in respondent's average scores. The average post-test score is  $86,13 \pm 1,366$ . This average score increases when compared to the average pre-test score. Based on the test carried out, there are significant differences at the level of knowledge ( $p < 0,05$ ) after getting counseling regarding COVID-19 health protocols in the tourism sector, indicating that it is necessary to increase knowledge level with counseling.

In the recognition process, a person recognizes objects in 2 ways, through observation and paying attention and through reason. The process of cognition through reason takes place in 3 stages, namely the formation of understanding, the formation of opinions, and the formation of decision-making. After someone observes and pays attention, there will be an image that stays in memory or called response. This response will affect the learning process. The respondents began to recognize the COVID-19 health protocols in the tourism sector after receiving the counseling. After the introduction process, the respondents get new learning that allows respondents to be able to answer questions better so that there is an increase in the level of knowledge [25].

This community service has certain limitations, therefore the interpretations of the results should be conducted with care. The first limitation is the instrument used in this community service. The questionnaire is self-designed because there is no gold standard questionnaire for measuring the level of knowledge regarding COVID-19 health protocols in the tourism sector. In addition, possible factors contributing to knowledge such as educational level, occupations, and health literacy were not measured in this community service. These would have been a useful addition in understanding the knowledge of COVID-19 health protocols in the tourism sector in Indonesia [26,27]. Additionally, the participants of this community service were over-representative of females. Therefore, there are limitations to the representativeness of this research.

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## 5. Conclusion

Based on the results and discussions that have been stated, it can be concluded that there is a significant difference in the level of knowledge regarding COVID-19 health protocols in the tourism sector of Taro Village's residents before and after counseling. The level of knowledge after counseling is better than before counseling.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare that there is no conflict of interest that would affect the findings of this study.

### *Statement of informed consent*

Informed consent was obtained from all participants included in this study.

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