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Research article

Epidemiology of COVID-19 in the Kuningan Regency Tourism Area, Indonesia

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Abstract.

The transmission of COVID-19 in tourist areas before social restrictions were implemented became a serious problem because in tourist attractions, including in the Cigandamekar tourism area in Kuningan Regency, there was a high potential for contact and rapid transmission and spread. The purpose of this study was to analyze the epidemiological data of COVID-19 in the Cigandamekar tourism area. The sample included 216 people diagnosed with COVID-19. Data were collected through interviews and documentation analysis of the public health center surveillance data, and were analyzed using the Chi-square test. The results showed that the majority of respondents were aged < 65 years (95.4%), were male (54.0%), and did not have comorbidities (81.0%) ($p = 0.022$, $p = 0.038$, $p = 0.033$, respectively). We can conclude that age, sex and comorbidities have a relationship with COVID-19 in the Cigandamekar tourism area. Early vigilance is needed to prevent the transmission of COVID-19 in tourist areas.

Keywords: epidemiology, COVID-19, tourism area

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1. Introduction

China reports to the WHO on December 31, 2019, that the disease found at Wuhan is a city with 11 million people which is the main transportation. This disease was associated with wet markets that sell fish, marine animals, and various other animals. The first patients who fell ill from this virus were known to be traders in the market. On January 10, 2020, it was identified that the genetics were a new type of coronavirus, beta-corona virus, and a group with the coronavirus that causes severe acute respiratory syndrome (SARS) and Middle East Respiratory Syndrome (MERS CoV) [1].

Coronaviruses are a group of viruses that can cause disease in animals and humans. Several types of coronaviruses are known to cause respiratory tract infections in humans ranging from coughs, colds to more serious ones such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). Coronavirus is an RNA virus with a particle size of 120-160 nano-meter. This virus mainly infects animals, including bats and camels [2].

The pattern of high transmissibility near and before symptom onset and likely short infectious period of the virus could inform control strategies for COVID-19 [3]. The spread of the SarsCov virus is very fast, with the spread of less than a month, this disease has spread in various other provinces in China, Thailand, Japan, and South Korea including in Indonesia. The spread of COVID-19 in Indonesia began when the Chinese government provided an opportunity to repatriate Indonesian citizens from Hubei Province, China. On February 1, 2020, the Indonesian government picked up 243 Indonesian citizens from Hubei using complete PPE and sprayed disinfection, and immediately evacuated them to undergo quarantine and observation for two weeks in Natuna, Riau Islands.

Indonesia is defined as a tourist destination where international and domestic tourists enjoy the tourist attractions [4]. West Java Province has many destinations attracting tourists to visit also has a risk of increasing infectious disease cases. West Java Province is the area with the second-highest number of cases in Indonesia after capital Jakarta with the number of cases on August 17, 2021, with a total of 657,156 cases with a death toll of 11,432 deaths. At the peak of the second case on July 22, 2021, West Java Province was the province with the most daily additions of cases in Indonesia, namely 10,499 cases per day. Until August 2021, all regencies/cities in the West Java Province have found positive cases of Covid-19. The three highest cases are Bekasi City, Depok City and Bekasi Regency, while Banjar City has the lowest Covid-19 cases. The measurement of pandemic control in Indonesia uses a pandemic level from level 1 to 4 and Kuningan Regency is one of the districts included at level 4 in West Java in the period 26 July-1 August 2021.

Kuningan is one of the tourist areas in Indonesia which has a tourist village located at the foot of Mount Ciremai. Several tourist villages in Kuningan are also ranked as the 5th tourist village with the best homestay/tourist lodge in Southeast Asia and the 2nd best tourist village in the CBT (Community Based Tourism) event held by the Ministry of Tourism. Before the social restriction policy at the beginning of the pandemic, tourism in Kuningan Regency was still open, so the potential for transmission of COVID-19 cases in the Cigandamekar tourist area was very high [5]. Based on the evaluation of the COVID-19 surveillance in Cigandamekar District which is a tourist area, it shows that there is good completeness of data in the period March 2020 - March 2021.

The purpose of this study was to analyze the epidemiological data of COVID-19 in the Cigandamekar tourist area, Kuningan Regency.

2. Material and Method

This study uses analytical descriptive research with quantitative methods with a non-reactive research approach. The population and research subjects were 216 community cases in the Tourism Area of Cigandamekar District, Kuningan Regency. The type of secondary data with data analysis using descriptive epidemiological data analysis with a time, place and person approach with Datawrapper and analytical epidemiology with bivariate analysis with Chi-square test with STATA. The variables analyzed were the number of cases based on the time from March 2020- March 2021, based on place and based on population characteristics, namely age, gender and comorbidities.

3. Result

3.1. Descriptive Epidemiology

3.1.1. Distribution case by the time

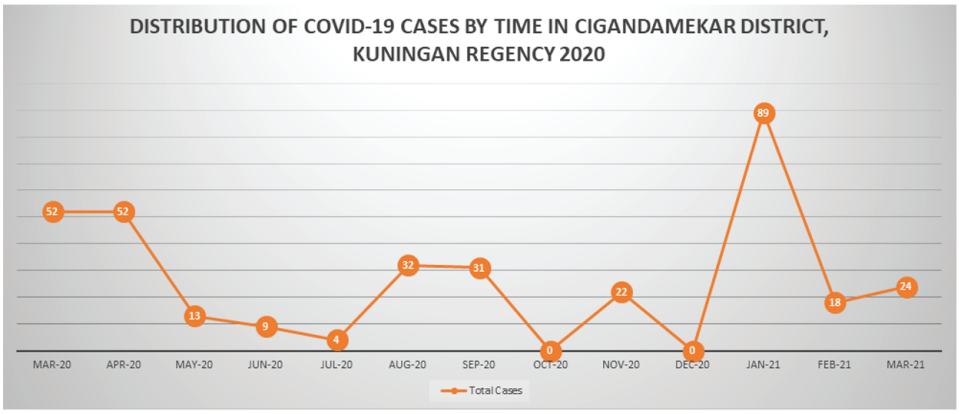

Figure 1: Distribution of Covid-19 by the time in Tourism Area Cigandamekar.

The lowest case was in October 2020 with 0 cases. and the highest cases were in January 2021 with a total of 89 cases. It can be concluded that every month there is a decrease and increase in cases which is influenced by various factors.

1. Distribution case by place

The lowest distribution of COVID-19 cases is based on location in Indapatra Village with a total of 6 cases. Then the highest Covid-19 cases were in Sangkanurip Village with a total of 89 cases.

1. Distribution case by the person

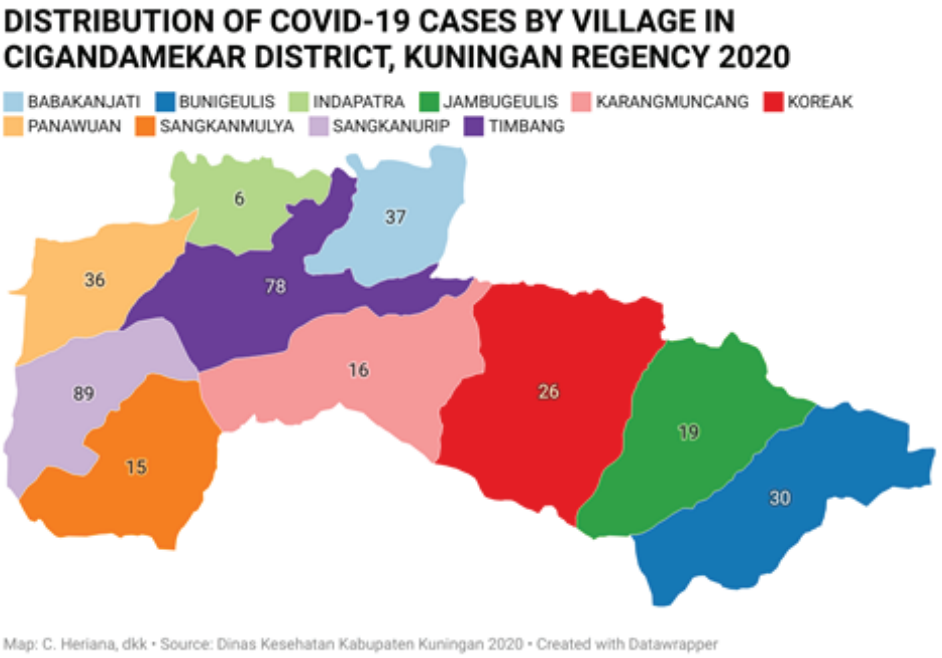

Figure 2: Distribution Covid-19 by Place.

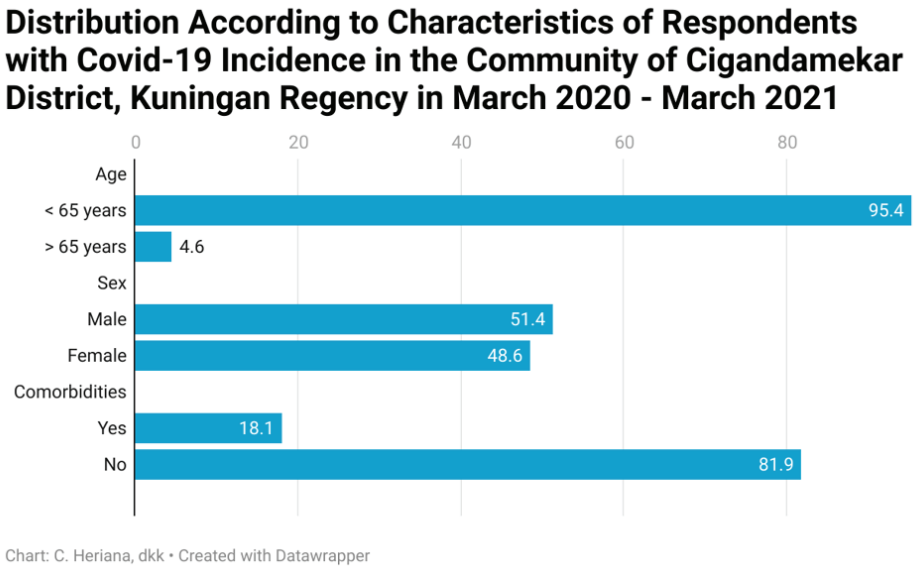

Figure 3: Distribution by the person characteristics.

It can be concluded that most of the respondents' age is <65 years (95.4%) with most of them being male (51.4%), while for comorbid diseases most of the respondents do not have comorbidities or comorbidities, namely (81.9%).

Table 1: Epidemiological Analytic.

Variable	Covid-19						Total		P-Value
	Suspect		Probable		Confirm				
	n	%	n	%	N	%	n	%	
Usia									0,022
< 65 Years	114	55,3	7	3,4	85	41,3	206	100	
> 65 Years	3	30,0	2	20,0	5	50,0	10	100	
Sex									0,038
Male	69	62,2	5	4,5	37	33,3	111	100	
Female	48	45,7	4	3,8	53	50,5	105	100	
Comorbidities									0,033
Yes	14	35,9	3	7,7	22	56,4	39	100	
No	103	58,2	6	7,4	68	38,4	177	100	
Total	**117**	**54,2**	**9**	**4,2**	**90**	**41,7**	**216**	**100**	

3.2. Analytic Epidemiology

Based on table 1 above, shows that the results of the chi-square bivariate analysis test, age variable p-value 0.022, gender p-value 0.038 comorbidities p-value 0.033 meaning that there is a relationship between age, gender and co-morbidities with COvid-19 in the Cigandamekar tourist area.

4. Discussion

4.1. The Relationship between age and Covid-19

The results of this study stated that there was a significant relationship between giving age to Covid-19 in Cigandamekar Tourism Area, Kuningan Regency with a significance value of 0.022. The risk of the extent of Covid-19 increases with age: compared with those aged 20 - 39 years (proportion of severe and critical cases, 12.1%), the elderly (80 years) have a higher risk for severe or critical illness (proportion of, 41 .3%; risk ratio, 3.61 [95% CI, 3.31-3.95]) whereas younger people (<20 years) had a lower risk (proportion, 4.1%; risk ratio, 0.47 [95% CI, 0.31-0.70]). [6] judging from the risk of death due to exposure to the Covid-19 virus, in terms of age, it was 11% (7/61) aged < 5 years; 4% (1/23) for ages 5 – 9 years; 2% (3/133) for ages 10-19 years; 2% (8/638) for ages 20-29; 3% (26/755) for 30-39 years old; 7% (61/819) for 40-49 years old; 17% (155/941) for ages 50-59 years; 22% (132/611) for age 60-69 years; and 34% (96/284) for age >70

years. Death from Covid-19 can occur at any age, with a risk of death >10% in children aged <5 years and adults aged>50 years [6].

4.2. The Relationship Sex age and Covid-19

The results of this study stated that there was a significant relationship between giving sex to Covid-19 in Cigandamekar Tourism Area, Kuningan Regency with a significance value of 0.038. The Pan (2020) study conducted in China, showed that among the 32,583 confirmed cases of COVID-19, 16817 (51.6%) of them were women who had a higher case rate than men, but men were more likely to be infected. to suffer from a severe or critical illness, because they tend to be smokers [7]. Several studies show the distribution of cases occurs in women (67.1%) men (32.9%) [8]. Result of Research from [9] show that male sex (odds ratio [OR], 2.0; 95% CI, 1.3-3.2; P = .001), severe obesity (OR, 2.0; 95% CI, 1.4-3.6; P = .02), and chronic kidney disease (OR, 2.0; 95% CI, 1.3-3.3; P = .006) were independently associated with intensive care unit admission. Patients admitted to the intensive care unit had a longer length of stay and higher incidence of respiratory failure and acute respiratory distress syndrome requiring invasive mechanical ventilation, acute kidney injury requiring dialysis, shock, and mortality (57 patients [40.4%] vs 15 patients [7.0%]) compared with patients in the general practice unit. Twenty-nine (11.2%) of those discharged from the hospital were readmitted and, overall, 20.0% died within 30 days. Male sex (OR, 1.8; 95% CI, 1.1-3.1; P = .03) and age older than 60 years (OR, 5.3; 95% CI, 2.9-9.7; P < .001) were significantly associated with mortality, whereas African American race was not (OR, 0.98; 95% CI, 0.54-1.8; P = .86)

4.3. The Relationship between Cormobidites and Covid-19

The results of this study stated that there was a significant relationship between giving commodities to Covid-19 in Cigandamekar Tourism Area, Kuningan Regency with a significance value of 0.033. Comorbidity is associated with worse health outcomes, more complex clinical management, and increased health care costs. Comorbidity is the presence of additional diseases in relation to an index disease in one individual. Multimorbidity presence of multiple diseases in one individual. Morbidity the burden is the overall impact of the different diseases in an individual taking into account their severity. The patient's other complexity is the overall impact of the different diseases in an individual taking into account their severity and other health-related attributes [10]. A

meta-analysis of comorbidities in Covid-19 cases, of 1.786 confirmed patients of Covid-19, the most common comorbidities identified were hypertension, cardiovascular and cerebrovascular conditions (11.7%), and diabetes (9.4%). Less common comorbidities are HIV infection and hepatitis B (1.5%), malignant disease (1.5%), respiratory disease (1.4%), kidney disorders (0.8%), and immunodeficiency (0.01%). An estimated 14% and 6with of people withCOVID-19 have illnesses critical illnesses [11]. The risk of death from Covid-19 is associated with older age with comorbidities such as hypertension, heart disease, chronic kidney disease or liver disease, clinical diagnosis of pneumonia and some comorbidities with >3 perceived symptoms as well as a shorter time of onset of symptoms entering the body. Patients <50 years with >1 comorbidities have a nearly six-fold higher risk of death than those who do not have comorbidities [6], Having a higher comorbidity burden (OR, 1.64 [95% CI, 1.54- 1.75]; P < .001), a respiratory condition (OR, 4.09 [95% CI, 3.36-4.97]; P < .001), circulatory condition (OR, 2.85 [95% CI, 2.34-3.47]; P < .001), type 2 diabetes (OR, 2.01 [95% CI, 1.61-2.50]; P < .001), kidney disease (OR, 2.82 [95% CI, 2.18-3.66]; P < .001), liver disease (OR, 3.33 [95% CI, 2.42-4.57]; P < .001), or autoimmune disease (OR, 2.44 [95% CI, 1.94-3.06]; P < .001) were associated with positive test results [12]

5. Conclusion

From the results epidemiolocal descriptive of the research that has been done, it is concluded that there is a distribution by time volatile cases, the highest Covid-19 cases were in Sangkanurip Village, most of the respondents' age is <65 years, with most of them being male, while for comorbid diseases most of the respondents do not have comorbidities or comorbidities. From the results epidemiological analytic relationship between the age, sex, comorbidities to the incidence of Covid-19 in Cigandamekar Tourism Area, Kuningan District. add recommendation for future, including practical implication or future research implication

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