The Characteristics of Confirmed Covid-19 Patients on March-October 2020 at RSUD Labuang Baji Makassar

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Abstract:- The world is facing a non-natural disaster, the COVID-19 pandemic, which causes many victims and is very easy to spread to several countries and regions. On February 12, 2020, WHO officially designated this novel coronavirus disease in humans as *Coronavirus Disease* (COVID 19). Each patient exposed to both suspected and confirmed RT-PCR examination had many demographic, epidemiological and clinical characteristics including age, sex, clinical features, comorbidities, laboratory data and travel history. The purpose of this study was to analyze the relationship between patient characteristics and the incidence of COVID-19 in March-October 2020 at Labuang Baji Hospital Makassar. This research was conducted from March to May 2021 using an analytical observational *cross-sectional study* with a total sample of 202 respondents with suspected COVID-19, obtained 111 people who were confirmed to have COVID-19 by RT-PCR swab examination. Sampling using *non-probability sampling technique* with a *purposive sampling approach.* The data were then analyzed using the *chi square test.* COVID-19 were more than that of men. The relationship between age and the incidence of COVID-19 shows that more adults have confirmed COVID-19 than the elderly. In the relationship between education, respondents with the highest level of education were confirmed to have COVID-19 more than those with low levels of education. in the employment relationship, more workers status confirmed COVID-19 than patients who did not work and in the relationship history of illness, patients confirmed COVID-19 were more patients without a history of illness. There is a relationship between gender characteristics, age relationship, education relationship, employment relationship and disease history relationship to confirmed cases of COVID-19 at Labuang Baji Hospital, Makassar City.

Keywords:- Characteristics, Coronavirus Disease (COVID-19), Disaster.

I. INTRODUCTION

In April 2003, the Indonesian government officially declared SARS a national epidemic, with a total of 2 probable cases reported no fatalities. In July 2003 WHO declared the SARS outbreak over. At the end of 2019 the world was shocked by the presence of a new *emerging infectious disease* in China caused by the Coronavirus Disease (Covid-19).

This is reminiscent of the incident 17 years ago, when the *Severe Acute Respiratory Syndrome* (SARS) outbreak first appeared in China. On December 31, 2019, the WHO China Country Office reported a case of pneumonia of unknown etiology in Wuhan City, Hubei Province, China. On January 7, 2020, China identified the case as a new type of coronavirus. On January 30, 2020 WHO declared the incident a *Public Health Emergency of International Concern* (PHEIC).

On February 12, 2020, WHO officially designated this novel coronavirus disease in humans as *Coronavirus Disease* (COVID-19). COVID-19 is caused by SARS-COV2, which belongs to the same large family of coronaviruses that caused SARS in 2003, only with a different type of virus.

On March 19, 2020, 2 positive confirmed cases were reported, which was the first case in South Sulawesi. Based on the monitoring data on *platform* . Until the end of September 2020, the province of South Sulawesi had reported cases of COVID-19 with a total of 11297 suspects, 237 Probables, and a total of 15579 confirmations. Meanwhile, especially in Makassar City, based on monitoring data on the Makassar Corona Info Platform, there were reported cases of COVID-19 19 with a total of 4670 suspected cases, and 8398 confirmed cases.

The COVID-19 pandemic disaster caused many victims and was very easy to spread to several regions and even spread to several countries. Each exposed patient, whether suspected or confirmed by RT-PCR examination, has many demographic, epidemiological and clinical characteristics including age, sex, travel history, clinical features, comorbidities and laboratory data.

The idea behind the title of this problem arises from the observations of researchers. There are still many factors that exist in the Makassar city community that play a role in increasing cases of COVID-19 transmission and also there is no specific research that leads to this phenomenon.

II. METHODS

Population of this study were all patients who were confirmed to have Covid 19 through the RT-PCR test at the Labuang Baji Hospital, Makassar City. Sampling in this study used a non- *probability sampling technique with a purposive sampling approach,* namely the method of determining the sample was taken by a population that had the following inclusion and exclusion criteria:

➢ *Inclusion criteria Confirmed*
patients with positive RT-PCR swab results who: willing to be respondents, respondents whose health conditions have improved, have been hospitalized for COVID-19 treatment at Labuang baji Hospital

➢ *Exclusion Criteria Included in the exclusion criteria are respondents who are deep in communication.*
Collection using secondary data in the form of medical record data of patients who were confirmed to be COVID-19 at the Labuang Baji Regional General Hospital Makassar in March-October 2022 and primary data obtained through interviews and questionnaires containing several question items that have been made based on indicator of a variable to analyze the relationship between patient characteristics and the incidence of COVID-19 in March-October 2020 in Makassar City.

III. RESULTS

In this section, the general characteristics of the respondents are described based on the research results in the form of age group, gender, education level, occupation and history of disease.

Research Variable	Frequency (n)	Precentage (%)
Confirmed Covid		
Yes	111	55
No	91	45
Gender		
Male	67	33.2
Female	135	66.8
Age Group		
Infants and Children	5	2.5
Teenagers	25	12.4
Adults	158	78.2
Elderly	14	6.9
Education Level		
Low	48	23.8
Height	154	76.2
Occupation		
No	74	36.6
Yes	128	63.4
Medical History		
No	160	79.2
Yes	42	20.8

Table 1:- Frequency Distribution of Respondents Characteristics at Labuang Baji Hospital Makassar
Source: Primary Data, 2021

Based on Table 1 Research conducted on 202 suspected COVID-19 patients at Labuang Baji Hospital in 2020 showed that there were 11 respondents (55 %) who have confirmed COVID-19 and 91 respondents (45%) have not confirmed COVID-19. Based on the gender characteristics of the research respondents, the percentage was dominated by women (66.8%) and men (33.2%). In terms of age characteristics, respondents were classified as adults with a percentage (78.2%), while respondents with the least percentage (2.5%) were found in the infant and child age group. In terms of education, most of the samples are classified as having a high level of education with a percentage of (76.2%), where the respondents are generally workers with a percentage of 63.4%.

COVID-19 (such as hypertension, diabetes mellitus, heart disease, COPD, TB and malignancies, autoimmune and other conditions). In general, respondents do not have a history of diseases that can increase the risk of experiencing COVID-19 by a percentage of (79.2%).

Sex	Confirmed Covid-19				Amount		P Value
	Yes		No				
	n	%	n	%	n	%	
Male	25	37.3	42	62.7	67	100	
Female	86	63.7	49	36.3	135	100	0.001
Total	111	55	91	45	202	100	

Table 2:- The relationship between gender and the incidence of Covid-19 at the Labuang Baji Hospital Makassar.
Source: SPSS Results, 2021

Table 2 shows that the percentage of women with confirmed COVID-19 is (63.7%). more when compared to the percentage of men who only amounted to (37.3%). The results of the bivariate analysis using the *Pearson Chi-square* showed that there was a significant relationship between gender and the incidence of COVID-19 at Labuang Baji Hospital in 2020 (p <0.05).

The percentage of women who have confirmed COVID-19 more than men depicted in table 2 can be influenced by the respondent's employment status. Work activities cause a person's high mobility and increase the likelihood of being exposed to the COVID-19 virus.

Working Status	Gender				Amount	
	Male		Female			
	n	%	n	%	n	%
Yes	45	35.2	83	64.8	128	100
No	22	29.7	52	70.3	74	100
Total	111	55	91	45	202	100

Table 3:- Cross-tabulation of Occupational Status with Gender of Respondents at Labuang Baji Hospital Makassar.
Source: SPSS Results, 2021

Table 3 shows that the number of female respondents who work (64.8%) is higher than that of male respondents who work (35.2%).

Age Group	Confirmed COVID-19				Amount		P Value
	Yes		No				
	n	%	n	%	n	%	
Infants and Children	1	20	4	80	5	100	
Teenagers	12	48	13	52	25	100	
Adults	97	61.4	61	38.6	158	100	0.000
Elderly	1	7.1	13	92.9	14	100	
Total	111	55	91	45	202	100	

Table 4:- The relationship between age groups and the incidence of COVID-19 at Labuang Baji Hospital Makassar
Source: SPSS Results, 2021

Based on table 4 shows that the adult age group is the age group with the highest percentage of 97 people (61.4%) who have confirmed COVID-19, then followed by the adolescent age group of 12 people (48%), and the lowest is the group of infants and toddlers. 1 child (20%) and 1 elderly person (7.1%). The results of the bivariate analysis using the Pearson Chi-square test showed that there was a significant relationship between the age group and the incidence of COVID-19 at Labuang Baji Hospital in 2020 (p value <0.05).

Age Group	Working Status	Confirmed COVID-19				Amount	
		Yes		No			
		n	%	n	%	n	%
Infants and Children	Yes	0	0	0	0	0	0
	No	1	20	4	80	5	100
Teenagers	Yes	0	0	0	0	0	0
	No	2	8	23	92	25	100
Adults	Ya	72	56,7	55	43,3	127	100
	No	14	45,2	17	54,8	31	100
Elderly	Yes	1	100	0	0	1	100
	No	0	0	13	100	13	100
Total		90	44,6	112	55,4	202	100

Table 5:- Cross-tabulation between Employment Status and COVID-19 Incidence by Age Group of Respondents at Labuang Baji Hospital Makassar
Source: SPSS Results, 2021

Based on table 5 shows the percentage of the elderly group who are not working (100%) more confirmed COVID-19 than the group of adults who are not working (54.8%).

Education Level	Confirmed COVID-19				Amount		P Value
	Yes		No				
	n	%	n	%	n	%	
Low	20	41.7	28	58.3	48	100	
Height	91	59.1	63	40.9	154	100	0.046
Total	111	55	91	45	202	100	

Table 6:- The relationship between the level of education and the incidence of COVID-19 at Labuang Baji Hospital Makassar
Source: SPSS Results, 2021

Based on table 6 shows that the percentage Respondents with a higher education level (59.1%) had more confirmed cases of COVID-19 when compared to respondents with a low education level (41.7%).

The results of the bivariate analysis using the *Pearson Chi-square* showed that there was a significant relationship between the level of education and the incidence of COVID-19 at Labuang Baji Hospital in 2020 ($p < 0.05$). The percentage of respondents with higher education who have confirmed COVID-19 due to work status is as illustrated in table 6 below where a high level of education is related to employment status.

Education Level	Working Status				Amount	
	Working		Not Working			
	n	%	n	%	n	%
Height	123	96,1	31	41,9	154	76,2
Low	5	3,9	43	58,1	48	23,8
Total	128	44,6	74	100	202	100

Table 7:- Cross tabulation between work status and the incidence of COVID-19 based on the education level of respondents at the Labuang Baji Hospital Makassar.
Source: SPSS Results, 2021

Based on table 7 shows that working status and higher education are more (96.1%) of respondents compared to working status with a low level of education (3.9%) of respondents.

Working Status	Confirmed COVID-19				Amount		P Value
	Yes		No				
	n	%	n	%	n	%	
Yes	82	64.1	46	35.9	128	100	
No	29	39.2	45	60.8	74	100	0.001
Total	111	55	91	45	202	100	

Table 8:- The Relationship between Work Status and the Incidence of COVID-19 at Labuang Baji Hospital Makassar
Source: SPSS Results, 2021

Based on table 8, it is known that respondents who work have more confirmed COVID-19 (64.1%) than respondents who do not work (39.2%). The results of the bivariate analysis using the *Pearson Chi-square* showed that there was a significant relationship between the respondent's work status and the incidence of covid-19 at Labuang Baji Hospital in 2020 ($p < 0.05$).

History of Disease	Confirmed COVID-19				Amount		P Value
	Yes		No				
	n	%	n	%	n	%	
Yes	16	38.1	26	61.9	42	100	
No	95	59.4	65	40.6	160	100	0.015
Total	111	55	91	45	202	100	

Table 9:- Relationship between Disease History and COVID-19 Incidence at Labuang Baji Hospital Makassar
Source: SPSS Results, 2021

Based on table 9 it is known that the respondent Those who had no history of illness (59.4%) had more confirmed cases of COVID-19 when compared to respondents who had a history of disease (38.1%). The results of the bivariate analysis using the *Pearson Chi-square* showed that there was a significant relationship between the respondent's disease history and the incidence of COVID-19 at Labuang Baji Hospital in 2020 ($p < 0.05$).

Age Group	History of Disease				Amount	
	Yes		No			
	n	%	n	%	n	%
Infants and Children	0	0	5	100	5	100
Teenagers	3	12	22	88	25	100
Adults	31	19.6	127	80.4	158	100
Elderly	8	57.1	6	42.9	14	100
Total	42	20.8	160	79.2	202	100

Table 10:- Cross-tabulation of Age Groups with Respondents Disease History at Labuang Baji Hospital Makassar
Source: SPSS Results, 2021

Based on table 10 shows that the adult age group with no history of disease is (80.4%) more than adults who have a history of disease (19.6%) respondents.

IV. DISCUSSION

Patients who come to the Labuang Baji Hospital Makassar with complaints or symptoms that point to COVID-19 disease will be screened and confirmed by PCR Swab examination where if the results are positive and with moderate-severe symptoms, the patient will be immediately hospitalized in an isolation room. If a patient is found without symptoms or mild symptoms, the patient will be given education for self-isolation. This is in accordance with the guidelines for the prevention and control of *Coronavirus Disease* (COVID-19) patients. Based on the results of the research that has been done, a discussion of each of the variables studied will be presented.

A. The relationship between gender and the incidence of COVID-19

According to the results of the study of COVID-19 patients at the Labuang Baji Hospital, from the percentage of gender, it was found that there were more female patients

with confirmed COVID-19 by 63.7%. And male patients amounted to 37.3%. If we look at the data released by the journal of medical microbiology that in the city of Wuhan the predilection for COVID-19 is that there are many male genders. Although the two data obtained are different, according to the researcher's analysis, the female sex predilection is greater for COVID-19, especially in Indonesia, this is in accordance with data from several journals published by Indonesian researchers and the same is also found in data from the handling task force. The number of COVID-19 cases in Indonesia regarding the number of COVID-19 patients in Indonesia until July 29, 2021 was still dominated by women, namely 51.2% (Ministry of Health RI, 2021). This can also be influenced because women are more easily stressed in dealing with something new and according to existing research that men are better able to deal with stress or something new without excessive emotions and with lower levels of anxiety compared to women (Awalia et al. al, 2021). The body's reaction to stressors such as stress can trigger immune abnormalities associated with damage to autonomic nerve function and dysregulation of the hypothalamic-pituitary-adrenal axis (HPA) due to increased stress hormones (Papadimitriou A, 2009). HPA is a complex consisting of the hypothalamus, pituitary gland and adrenal gland that plays a role in stress reactions by regulating cortisol secretion and autonomic nervous stimulation. In addition, HPA also plays a role in the body's immune system, mood and emotions, energy regulation and storage. In a state of hypoactivity of the HPA, the secretion of endorphins is decreased and cortisol production is irregular. Cortisol secretion will be increased by the hypothalamus and will eventually lead to a decrease in body immunity. (Papadimitriou A, 2009) and it is known that a lack of body immunity can trigger exposure to the COVID-19 virus.

In addition, the percentage of women who have confirmed COVID-19 more than men described in table 4 can also be influenced by the patient's employment status. Researchers linked employment status with gender to the incidence of COVID-19 and found that the female gender who worked more than the male who worked. The reason is because outdoor activities cause a person's high mobility and increase the possibility of being exposed to the COVID-19 virus.

B. The relationship between age and the incidence of COVID-19

The results of the study found that the adult age group was the age group with the highest percentage (61.4%) of confirmed COVID-19, followed by the adolescent age group (48%), and the lowest was the elderly (7.1%). The results of this study are similar to those conducted in Wuhan in 2020 which stated that the most young adults (30-39 years) with asymptomatic cases of COVID-19 occurred (Li Y *et al*, 2020). Where in young adults mild or asymptomatic symptoms can occur without realizing it so that it contributes to transmission or asymptomatic transmission to other people, including people who are at risk of severe disease. (Boehmer *et al*., 2020). The age group of 30-39 years is also the age group suffering from COVID-19 which is known to

have entered a productive age which tends to be often involved in social activities and mobility, thus facilitating the transmission of COVID-19 in that age group (Hidayati, 2020). Researchers also tried to link employment status with the adult age group with many confirmed COVID-19 cases. That 80 percent of adults who work have confirmed COVID-19 compared to teenagers and the elderly because people who work have a lot of activities outside the home, causing a person's high mobility and increasing the likelihood of being exposed to the COVID-19 virus.

C. The relationship between education level and the incidence of COVID-19

The results of the study obtained at the Labuang Baji Hospital Makassar that the percentage of respondents with a higher education level (minimum DIII) was more confirmed with COVID-19. When compared with respondents with a low level of education (SD-SMA). In theory, a person's level of education will affect his level of knowledge if the level of education and knowledge is good, then behavior will also be good. As in a study by (Zhong BL et al, 2020) which examined the Chinese community as the initial place for the discovery of the corona virus, it was stated that the Chinese people had good and positive knowledge and behavior, but the results of previous research conducted in China found that people with high education, the level of prevention of COVID-19 is still lacking and vice versa education is low but the level of prevention is good. The higher a person's level of education, it can make it easier for that person to understand something so that his knowledge is higher and this can affect disease prevention behavior.

Similar to the research conducted by (Gannika L & Sembiring, 2020) it was found that people who have high education but the behavior of the level of prevention of COVID-19 are still lacking, on the contrary, education is low but the level of prevention is good. The results of the study (Khairunnisa, 2021) that most of the respondents who took higher education had good preventive behavior as much as 92.1% while only 2.6% had less preventive behavior. This is influenced by one factor, namely knowledge which is closely related to education.

This can be related from the results of the analysis that the researchers conducted by linking the percentage of respondents who had higher education and confirmed COVID-19 with working status, the results obtained were 123 respondents (96.1%) which author's opinion, most of the respondents with higher education were workers. Those who have a COVID-19 prevention level that is still lacking in addition to activities outside meeting many people and going to crowded places so they are easily exposed, at the beginning of the pandemic at work not many people are obedient to the prokes, the rules are not yet in order in several offices, the facilities and services are not yet available. Equipment that can support prevention so that they are easily exposed to COVID-19.

D. The relationship between work status and the incidence of COVID-19

The results of the study found that patients who were confirmed to have COVID-19 were more likely to have working status than patients who did not work. This study is in line with research conducted by (Lan FY *et al* , 2021) which identified the possibility of work-related COVID-19 cases, according to him there are 5 occupational groups with the most cases being health workers (22%), drivers and transportation workers (18 %), service and sales workers (18%), cleaning and domestic workers (9%) and public safety workers. According to the researcher, high activity, especially outside activities during a pandemic, can increase the occurrence of transmission, so that in the group studied, it mostly occurs in people who work.

Based on current epidemiological and virological studies, it has been proven that COVID-19 is mainly transmitted from symptomatic (symptomatic) people to other people who are in close proximity through droplets. Transmission occurs when a person is at close distance (within 1 meter) with someone who has respiratory symptoms such as coughing and sneezing so that it affects the mucosa (mouth and nose) or conjunctiva where transmission can also occur through objects and surfaces contaminated with droplets around an infected person. (Ministry of Health, 2020). According to the WHO, the risk of contracting COVID-19 is higher in crowded and poorly ventilated places where infected people spend a long time together in close quarters. Outbreaks have been reported in places where people congregate, often in crowded indoor environments and where they talk loudly, shout, sing, eat such as in restaurants, offices, nightclubs, choir practice and places of worship (WHO, 2010). 2020). This has prompted the government to issue a large-scale social restriction policy in Indonesia (PSBB), one of which regulates *Work from Home (WFH).* Where both state civil servants and other workers can do work from home to prevent the spread of COVID-19.

E. The relationship between comorbidities and the incidence of COVID-19

In this study, it was found that more patients with confirmed COVID-19 had no history of disease (comorbid) than those with a history of disease. This was associated with the average age of patients who were confirmed to have COVID-19 at home. Regional General Hospital (RSUD) Labuang Baji Makassar, where the highest age group found in the adult age group was 20-60 years. The results of the bivariate analysis using the *Pearson Chi-square* showed that there was a significant relationship between the respondent's disease history and the incidence of COVID-19. There are several studies related to comorbidities with the incidence of COVID-19 Comorbidities or comorbidities are significant predictors of morbidity and mortality in COVID-19 patients (Akhtar H *et al*, 2020). according to research conducted by Zhang et al in Wuhan which stated that 75.6% died having comorbidities and 30.5% had two or more underlying diseases. The population at higher risk for death from COVID-19 is 26.8% who have diabetes mellitus (Muniyappa R, 2020). Diabetes is a chronic inflammatory condition

characterized by several metabolic and vascular disorders that can affect our response to pathogens. Hyperglycemia and insulin resistance increase the synthesis of glycosylated end-products (AGEs) and pro-inflammatory cytokines, oxidative stress, in addition to stimulating the production of adhesion molecules that mediate tissue inflammation. This inflammatory process worsens patients with diabetes. (Akhtar H, *et al* 2020). in patients with SARS-CoV-2 infection with diabetes it triggers a higher stress condition, with a greater release of hyperglycemic hormones, such as glucocorticoids and catecholamines, which causes an increase in blood glucose and abnormal glucose variability (Wang A *et al*, 2020).

COVID-19 with hypertension and hypertensive patients with COVID-19 tend to show a higher mortality rate (Huang S, 2020). Research conducted by (Destylya D, 2021) from 110 samples found that 23 patients with COVID-19 had hypertension comorbid (30.7%) as well as research conducted (Wu *et al.*, 2020) from 201 patients around 66 patients(32.8%) had comorbidities of which the highest was hypertension (19.4%). This could be due to direct injury mediated through angiotensin converting enzyme 2 (ACE2), the relationship between hypertension and COVID-19 is not yet clear. *Angiotensin Converting Enzyme* II (ACE2) is a modulator of the angiotensin aldosterone (RAA) system, a neurohormonal pathway that regulates blood pressure and body fluid balance. Hypertension can worsen the condition of patients infected with COVID-19, this virus will bind to *Angiotensin Converting Enzyme* II (ACE2), an enzyme attached to the outer surface of several organs in the body. After binding to the enzyme, the virus can enter the organ and cause the patient to become infected with COVID-19 (Gunawan A *et al,* 2020). The end product of RAA, angiotensin 2 is a vasoactive hormone that binds to angiotensin 2 type 1 (AT1) which is present in the heart, lungs, blood vessels, kidneys, adrenal glands, and plays an important role in the process of myocardial hypertrophy and fibrosis, inflammation, and inflammation. vascular remodeling, and atherosclerosis. That SARS-CoV-2 infection is caused by the binding of viral proteins to the ACE2 receptor after protein activation. ACE2 is a monocarboxypeptidase known to cleave several peptides in the renin-angiotensin system and has been considered a protective factor against elevated blood pressure. Binding of SARS-CoV-2 to ACE2 can reduce the physiological function of ACE2, and then lead to adverse outcomes of hypertension such as multi-organ dysfunction. (Destylia D, 2021).

Research from (Zhou, 2020) that comorbid cardiovascular disease is often found in patients with COVID-19 infection, there is a high increase in cardiac troponin I in hospitalized patients who eventually die. This is because coronary heart disease has also been found to be associated with acute cardiac events and poor outcomes in influenza and other respiratory viral infections. Then the researcher also connected the history of the disease with the death of the respondent where as many as 51 respondents who had comorbidities who experienced death were 3 respondents (5.9%) while those who did not have comorbidities but

experienced the death of 1 respondent (0.7%). According to research, comorbidity is a factor that plays a role in cases of death of COVID-19 patients. Based on the results of a meta-analysis, it was found that comorbidities such as hypertension, diabetes, COPD, heart and cerebral vascular disease are significant risk factors for COVID-19 patients (Wang *et al. al.*, 2020). Research by (Duhri, *et al*, 2020) of 163 confirmed samples there were 3 people who had comorbidities and 2 of them died at the age of 50 years. It was found that the most comorbid cases of death from COVID-19 patients was hypertension, which was 29% (Paramita *et al.*, 2020).

V. CONCLUSIONS AND SUGGESTIONS

That in this study there was a relationship between gender characteristics where women were more confirmed to have COVID-19. There is a relationship with age that adults are more likely to have confirmed COVID-19. There is an educational relationship that higher education is more confirmed by COVID-19. There is a relationship between working status that those who work are more confirmed to have COVID-19. And there is a relationship between disease history and confirmed cases of COVID-19 at the Labuang Baji Hospital, Makassar City.

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