

Analysis of the recovery determinant factors of COVID-19 sufferers

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ABSTRACT

The main factor that affects the recovery of people with COVID-19 is immunity. To increase immunity, sufferers of COVID-19 must be able to regulate their bodies and psychological conditions so they don't get stressed because they reduce immunity very quickly. The purpose of this study was to determine the determinants that affect the recovery of COVID-19 sufferers. This research employed a cross-sectional design. The respondent was 30 patients who recovered from COVID-19. The data collection instruments used questionnaires and interview sheets. Data analysis used Fisher's exact test ($\alpha=5\%$) and calculated the prevalence ratio to determine the determinant factors. The results showed that age (p-value 0.034, PR=0.667) and patient education (p-value 0.023, PR=0.600) showed a significant effect, while gender (p-value 0.687, PR=0.78), occupation (p-value 0.253, PR=0.333), income (p-value 0.520, PR=0.895), and patient origin (p-value 0.393, PR=1.118) did not show a significant effect. The determinants that affect the recovery of COVID-19 sufferers are age and education of the sufferer; while gender, occupation, income, and origin do not have a significant effect on the recovery of COVID-19 sufferers.

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1. INTRODUCTION

Epidemiologically, the prevalence of coronavirus disease 2019 (COVID-19) is increasing rapidly worldwide [1]. The world health organization (WHO) 2020 defines COVID-19 as a global pandemic. The number of people in Indonesia infected with the Corona virus (COVID-19) is increasing every day, bringing concern to all elements of society [2]-[4]. Positive confirmed cases of corona as of today (February 2021) have reached 1.1 million people. But on the other hand, the cure rate for COVID-19 patients is also reported to continue to increase, reaching 897 thousand people. As for the death toll confirmed positive for the corona virus, it was 30,581 people [5], [6]. The outbreak of the corona virus that has never ended has affected many sectors, from the economic, social, education, to health sectors [7], [8]. The emergence of the bad effects of the spread of the corona virus certainly makes the public uneasy; this is because the corona virus can cause casualties [9].

The emergence of bad effects from the spread of the corona virus can certainly disturb everyone's psychology, such as panic buying, stress and anxiety [10]. Even though the government has implemented a physical distancing policy that aims to break the chain of spreading this virus, there are still many people

who do not heed these rules [11], [12]. There are still many people who are still congregating in public places, there are still many stalls in traditional markets within close proximity and many people carry out work activities without heeding appeals from the government. This of course causes it to be difficult to break the chain of the spread of the corona virus [12], [13].

COVID-19 patients who receive support from their family and closest relatives will greatly influence their recovery, because it can generate optimism for these patients [14]. One of the factors that influence the adaptation of someone who has just been diagnosed with a disease is optimism for recovery. This is important for sufferers because it plays a role in increasing positive expectations for the patient's recovery. Optimism for patient recovery is influenced by several factors including age, gender, education level, marital status, self-esteem, family support, health status, stress, coping and self-efficacy [15].

Family support that is owned by a person can prevent the development of problems due to the pressure being faced. Person with high support will be more successful in dealing with and overcoming the problem than person who does not have support. Therefore, this study was conducted with the aim of knowing how family support is for the recovery of COVID-19 patients. In this study specifically discusses the characteristics of family support in providing support to COVID-19 sufferers, starting from the patient tested positive for COVID-19, undergoing treatment both at the hospital and independent isolation at home, until the patient is declared cured of COVID-19 [16].

Research on the factors that affect the recovery of COVID-19 sufferers is important to do. Some of the reasons for the importance of this study, including the COVID-19 virus is a very deadly virus and can attack anyone, psychological aspects, especially regarding patient recovery optimism, have not been considered in deciding therapy. Prevention of the worsening condition of COVID-19 sufferers can be minimized by increasing optimism about recovery from their disease. Healing optimism is one of the factors that influence adaptation to chronic conditions such as disease [17].

From some of the explanations above, the results of this study are very important to be used as a reference and a basis for health workers in providing therapy for patients who are confirmed positive. The family becomes an extension of the health worker when the patient takes medication at home or is in independent isolation or the patient is undergoing treatment at the hospital. This study specifically discusses family characteristics that can affect the recovery of COVID-19 patients.

2. RESEARCH METHOD

This was a cross-sectional study using an analytic observational approach. The respondents of this study were 30 patients who recovered from COVID-19 spread across the islands of Java and Kalimantan. Data retrieval instrument used a questionnaire and interview sheet.

The number of test samples was 20 persons with $df = 30 - 2 = 28$, $r_{table} = 0.361$. The validity test of each question item was tested using the corrected item-total correlation with the validity limit of the correlation coefficient ($r > r_{table}$). This means that the questionnaire question item was valid ($r_{corrected\ item} (0.466) > r_{table} (0.30)$). The research method was observational analytic with a cross-sectional approach. Data analysis used Fisher's exact test ($\alpha = 5\%$) and calculated the prevalence ratio to determine the determinant factors that affect the recovery of COVID-19 sufferers.

3. RESULTS AND DISCUSSION

3.1. Result

3.1.1. Frequency distribution of characteristics of patients cured of COVID-19

The frequency distribution of characteristics age, latest education, occupation, and income of study subjects consisting of 30 patients who recovered COVID-19 and 30 families of patients, who recovered COVID-19, is shown in Table 1.

The Table 1 explains that the age of patients recovering from COVID-19 is mostly (40%) aged 31-40 years. In the last education category, most (63.33%) had diplomas and degrees. The categories of work, most of whom are civil servants, military, police, are 46.67% and 36.67%, respectively. The last category is income, indicating that the income of people with COVID-19 recovered, and 36.67% have income > 5 million.

3.1.2. Frequency distribution of characteristics of patients cured of COVID-19

The next result is to explain the effect of each characteristic of research subjects on the recovery of COVID-19 patients, as shown in Table 2. Based on the Table 2, it shows that the patient's age and education have the most influence on the recovery of COVID-19 patients ($\alpha < 0.05$). The calculation of the prevalence ratio shows that the origin of the respondent who has the largest PR, but has a value of $\alpha > 0.05$, so it does not show a significant effect. Patient age had the most significant effect on the recovery of COVID-19 patients (PR=0.667), followed by patient income (PR=0.895).

Table 1. Frequency distribution of characteristics of patients cured of COVID-19

Characteristic of respondents	The patient's family		The patient recovered from COVID-19	
	n	%	n	%
Age				
21-30 years	13	43.33	11	36.67
31-40 years	12	40	12	40
41-50 years	3	10	1	3.33
>50 years	2	6.67	6	20
Total	30	100	30	100
Education				
Senior high school	2	6.67	5	16.67
Diploma and bachelor degree	23	76.67	19	63.33
Master degree	4	13.33	6	20
Total	30	100	30	100
Occupation				
Government employees/Police/Military	14	46.67	11	36.67
Employees of state owned corporation	2	6.67	3	10
Private job	5	16.67	4	13.33
Entrepreneur	5	16.67	8	26.67
Unemployed	3	10	4	13.33
Total	30	100	30	100
Income (IDR)				
<1 million	4	13.33	2	6.67
1-2 million	1	3.33	7	23.33
2-5 million	16	53.33	10	33.33
>5 million	8	26.67	11	36.67
Total	30	100	30	100

Table 2. Characteristics effect on the recovered of COVID-19 patients

Influence between variables	p-value exact Sig (2-sided)	Prevalence ratio (PR)
Age ⇒ recovery	0.034	0.667
Sex ⇒ recovery	0.687	0.780
Occupation ⇒ recovery	0.253	0.333
Education ⇒ recovery	0.023	0.600
Origin ⇒ recovery	0.393	1.118
Income ⇒ recovery	0.520	0.895

4. DISCUSSION

In this study, it was found that age affects the recovery of COVID-19 sufferers; this is because the majority of respondents have a high recovery optimism score. The experience of healing was obtained through interviews about the respondent's experience when he was sick, and the respondent's point of view regarding the optimism of healing from his illness. Respondents aged 31-40 years have higher optimism for recovery than respondents aged more than 40 years.

The centers for disease control and prevention (CDC) 2020 revealed that corona patients who are 30-40 years old have a twice higher risk of hospitalization compared to those under age and four times higher risk of death compared to those under age [18]. Meanwhile, patients over 40 years of age showed astonishing results, namely having a four times higher risk of hospitalization than those under age and 10 time higher risk of death than those under age. For sufferers, young and adult, it can take up to weeks to recover from the COVID-19 virus [19]. In this study, it shows that sufferers aged 31-40 years tend to have a higher stigma of optimism to recover from COVID-19 compared to those aged above. The results of data analysis showed that most respondents have a good sense of optimism among respondents aged 31-40 years (40%) compared to respondents aged over 40 years.

The news and information received by the general public that states that elderly people tend to be more at risk and cause a high mortality rate makes most respondents over 40 years of age tend to be more anxious and worried about their situation. Statistical data obtained from various countries also shows that several groups of people have a higher risk of COVID-19 infection, one of which is the elderly [19]. As people get older, they begin to realize that they shouldn't be pessimistic, on the contrary, they can become more optimistic because they already know themselves and know what they want [20]. The older a person is, he should still have positive expectations for his recovery [21].

The second result in this study shows that education affects the recovery of COVID-19 sufferers. Knowledge can be sustainable with the education level of a person suffering from COVID-19. The level of school education consists of basic education, secondary education, and higher education [22], [23]. Patient education can affect the level of knowledge about material and information obtained regarding COVID-19.

The higher the level of education of a person, the higher the ability to find information, as well as knowledge of a matter including about COVID-19, which is a new virus that attacks all people in the world [24].

Piaget's theory states that someone tends to build their knowledge from the information they get, whether it's from the mass media, friends, or parents. Someone combines their experiences and observations to form their knowledge and includes new thoughts they get from information sources because additional information will develop their understanding of knowledge [25]-[27]. The process of forming knowledge begins when information is captured through a perceptual process and then stored and displayed again through memory. A person adjusts to the information he gets in two ways, namely assimilation and accommodation. Assimilation is incorporating new information into the knowledge that one already has, while accommodation is adjusting oneself to new information [28]. The more information about health that comes in, the more knowledge is obtained about health [29], [30]. In this study, respondents were looking for more information about COVID-19, how it is transmitted, how to cure it and tips that should be done after recovering from this disease.

The results of this study are in accordance with research by Muslima *et al.* [30] which stated that there is a significant relationship between education and a person's level of knowledge (value $\rho=0.000$) [30], [31]. Nursalam and Parini's research also stated that the higher a person's education level, the easier it is to receive information so that the more knowledge one has [31]-[33].

5. CONCLUSION

The determinant factors that affect the recovery of COVID-19 sufferers are the patient's age (p-value 0.034, PR=0.667) and the patient's education (p-value 0.023, PR=0.600). Gender, occupation, income, and origin of the patient do not have significant influence in the recovery of COVID-19 sufferers. The findings of this study have the implication that the older the patients with COVID-19, the more they need to get serious attention during treatment. Likewise with education, the lower the education level of the patient, the need for continuous education to get optimal healing.

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