The Relationship between Education, Knowledge, and Attitudes with The Prevention of COVID-19 in Comorbid Patients at Kuta Alam Public Health Center in Banda Aceh

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Abstrak

COVID-19 berada pada masa transisi menuju endemi, sehingga penderita komorbid memiliki risiko untuk terpapar penyakit tersebut. Penderita COVID-19 yang meninggal dunia rata-rata memiliki setidaknya satu komorbid, oleh karena itu penderita komorbid harus waspada dan taat pada protokol kesehatan.Tujuan penelitian adalah untuk mengetahui hubungan pendidikan, pengetahuan, dan sikap dengan pencegahan COVID-19 pada penderita komorbid di Puskesmas Kuta Alam Banda Aceh. Jenis penelitian ini adalah observasional dengan desain cross sectional. Pengambilan data pada tanggal 2-13 Maret 2023, subjek penelitian adalah penderita komorbid di Puskesmas Kuta Alam Banda Aceh yang berjumlah 100 orang. Hasil penelitian menunjukkan dari 100 penderita komorbid, komorbiditas paling banyak adalah hipertensi (60%), penderita yang memiliki 1 komorbiditas (78%), dan sebagai penyintas COVID-19 (62%). Responden dengan tingkat Pendidikan tinggi, 98,4% melakukan upaya pencegahan yang baik terhadap COVID-19, responden dengan pengetahuan yang baik, 93,8% melakukan upaya pencegahan yang baik dan responden dengan sikap setuju, 96, 9% melakukan upaya pencegahan yang baik. Hasil uji Spearman rank pada confident interval 95% dan α 0,05 antara pendidikan, pengetahuan dan sikap dengan pencegahan COVID-19 pada penderita komorbid masing masing diperoleh (P value = 0,000, r = 0,871), (P value = 0,000, r = 0,778) dan (P value = 0,000, r = 0,847). Dapat disimpulkan bahwa terdapat hubungan yang kuat antara pendidikan, pengetahuan, dan sikap dengan pencegahan COVID-19 pada penderita komorbid di Puskesmas Kuta Alam Banda Aceh. Semakin tinggi pendidikan, semakin baik pengetahuan, dan sikap yang setuju terhadap pencegahan COVID-19 oleh penderita komorbid.

Kata kunci: komorbid; COVID-19; pendidikan; pengetahuan; sikap

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Abstract

COVID-19 is in a transitional phase towards becoming endemic, which means individuals with comorbidities are at risk of contracting the disease. On average, individuals who succumb to COVID-19 have at least one comorbidity. Therefore, individuals with comorbidities should be cautious and adhere to health protocols. The research aims to determine the relationship between education, knowledge, attitudes, and COVID-19 prevention among patients with comorbidities at the Kuta Alam Community Health Center in Banda Aceh. This study is observational with a cross-sectional design. Data collection took place from March 2nd to 13th, 2023, involving 100 individuals with comorbidities at the Kuta Alam Community Health Center in Banda Aceh. The research findings indicate that out of 100 individuals with comorbidities, the most common comorbidity is hypertension (60%), with 78% having one comorbidity, and 62% being COVID-19 survivors. Respondents with higher education levels showed that 98.4% made good efforts in preventing COVID-19. Additionally, respondents with good knowledge demonstrated that 93.8% made good preventive efforts, while those with a positive attitude showed 96.9% engagement in preventive measures. The Spearman rank test results at a 95% confidence interval and α of 0.05 showed correlations between education, knowledge, and attitudes with COVID-19 prevention among comorbid patients, obtaining respective values of (P value = 0.000, r = 0.871), (P value = 0.000, r = 0.778), and (P value = 0.000, r = 0.847). In conclusion, there exists a strong correlation between education, knowledge, attitudes, and COVID-19 prevention among comorbid patients at the Kuta Alam Community Health Center in Banda Aceh. Higher education levels correspond to better knowledge and favorable attitudes towards COVID-19 prevention among individuals with comorbidities.

Keywords : comorbid; COVID-19; education; knowledge; attitude

Introduction

The Indonesian government has made the Instruction of the Minister of Home Affairs Number 53 of 2022 concerning the Prevention and Control of Corona Virus Disease 2019 (COVID-19) during the transition to endemic period as a guide for all related agencies with the aim of ensuring that people can carry out activities as before the pandemic and can live. coexist with these conditions. In reality, until now COVID-19 is still around us with the same serious risks as before, so this should make people remain aware of the impacts it has and continue to comply with health protocols.(1) According to the Minister of Health of the Republic of Indonesia on March 2 2022, changing the status of the pandemic to endemic has become the government's plan, but until now the World Health Organization (WHO) has not stated that globally there has been a change from the COVID-19 pandemic to endemic, because it is still There are several countries with warning status which indicates that this case is still high in several countries.(2) WHO stated that COVID-19 is still around us, since it was declared a Public Health Emergency of International Concern on January 30 2020 until now.(3) As of January 10 2023, there were 659,108,952 confirmed patients in the world, with 6,684,756 deaths. Meanwhile, in Indonesia there were 6,724,281 confirmed cases, 7,920 active cases, 6,555,664 recovered, and 160,697 died.(4,5)

The mortality rate due to COVID-19 in Aceh on May 9 2021 was 4.03%, which is relatively high compared to the national mortality rate of 2.7%.(6) Patients confirmed positive for COVID-19 in Banda Aceh City are spread across nine sub-districts, the most in Kuta Alam District with a total of 363 cases per day.(7) Based on a preliminary survey by researchers at the Kuta Alam Community Health Center on December 20 2022, 1,072 patients were confirmed positive for COVID-19, 1,023 cases recovered, and 49 cases died. The number of comorbid sufferers treated at the Kuta Alam Banda Aceh Community Health Center is 167 people, but only around 40 people routinely carry out re-controls every month. On average, COVID-19 sufferers who died had comorbidities other than exposure to the corona virus, 20-51% of sufferers had at least one comorbidity.(6,8) If COVID-19 sufferers were accompanied by various comorbidities, it would indicate a poor prognosis.(9,10) According to the COVID-19 Handling Task Force report, on April 7 2022, of the 6,203 cases of COVID-19 deaths in Indonesia that were sampled, they had comorbid DM, namely (9.4%), hypertension (9.2%), heart disease (94.8%), kidney function disorders (2%), chronic obstructive pulmonary disease (1.2%), cancer (0.5%), and immune disorders (0.5%).(11) Comorbid sufferers are very vulnerable to exposure to COVID-19 and have a high potential for clinical deterioration, thereby increasing the risk of death.(12) Therefore, prevention efforts for comorbid sufferers must

receive special attention so that the COVID-19 mortality rate can be reduced. Efforts to prevent COVID-19 are influenced by several factors including level of education, knowledge and attitudes. The higher a person's level of education, the more information they obtain so that their knowledge becomes better. Someone who has good knowledge tends to agree with preventing COVID-19.(13) COVID-19 is still around us, as many as 167 comorbid sufferers in the Kuta Alam Banda Aceh Community Health Center work area are at risk of exposure to the disease.

Methods

The type of research used is analytical observational with a cross sectional design. The research was carried out at the Kuta Alam Community Health Center, Banda Aceh, from March 12 to March 13 2023. The research sample was comorbid sufferers who had one or more chronic diseases who visited the Kuta Alam Community Health Center, Banda Aceh. The population in this study was 167 comorbid sufferers in the work area of the Kuta Alam Banda Aceh Community Health Center in March 2023 and the samples taken were 100 samples of comorbid sufferers who had one or more chronic diseases (DM, hypertension, COPD, asthma, obesity, impaired kidney function (acute/chronic), stroke, heart disease, cancer, HIV/AIDS, chronic hepatitis, tuberculosis, thyroid disease, systemic lupus erythematosus (SLE), rheumatoid arthritis) and fulfill the research criteria. The inclusion criteria in this study were respondents who were willing to be sampled by filling out informed consent, comorbid sufferers aged >18-75 years, while the exclusion criteria were respondents who were uncooperative, did not complete the interview, had hearing problems, and could not speak. The sampling technique was nonprobability sampling with a consecutive sampling method, and data analysis used the Spearman Rank test at a confidence interval (CI) of 95% and α 0.05.

Research Results

1. Characteristics

General characteristics of comorbid sufferers at Kuta Alam Public Health Center, Banda Aceh can be seen in Table 1 below.

Tabel 1. Frequency distribution of general characteristics of comorbid patients at Kuta Alam Public Health Center, Banda Aceh

Characteristics	Frequency(n=100)	Percentage(%)
Age		
18-25	0	0
26-35	10	10
36-45	15	15
46-55	20	20
56-65	42	42

66-75	13	13
Gender		
Male	36	36
Female	64	64
Education		
Elementary	2	2
Secondary	35	35
higher	63	63
Work		
Civil servant	12	12
Private Employee	3	3
Entrepreneur	36	36
Hommaker	32	32
Retiree	15	15
Unemployed	2	2
Number of Comorbidities		
1	78	78
2	16	16
3	4	4
4	2	2
History of COVID-19		
Yes	62	62
No	38	38

The results of the study showed that of the 100 people with comorbidities, most were aged 56-65 years (42%), 64% were female, 63% had a high level of education, 36% worked as entrepreneurs, 78% had 1 comorbidity, and 62% were survivors COVID-19.

2. Comorbidities

Comorbidities among respondents can be seen in Figure 1 and 2 below.

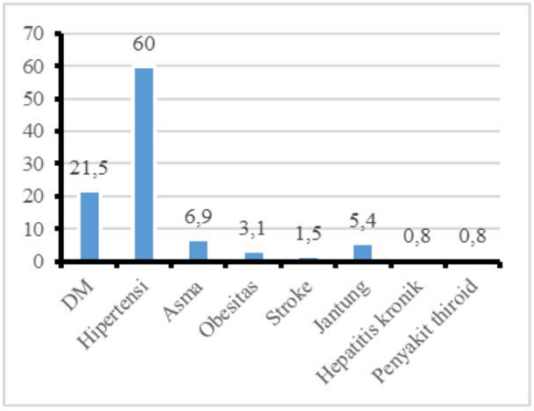

Figure 1. Comorbidities

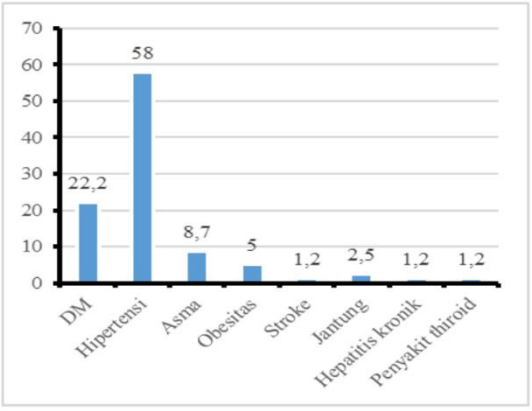

Figure 2. Comorbidities in COVID 19 Survivors

Figure 1 shows that the most common comorbidities among respondents were hypertension (60%), diabetes melitus (21.5%) and comorbid sufferers as COVID-19 survivors are 62%. Figure 2 shows that 47 respondents (58%) who suffered from hypertension and 18 respondents (22.2%) who suffered from DM were exposed to COVID-19.

3. Prevention of COVID-19

Prevention of COVID-19 in comorbid patients at the Kuta Alam Banda Aceh Community Health Center can be seen in Figure 3.

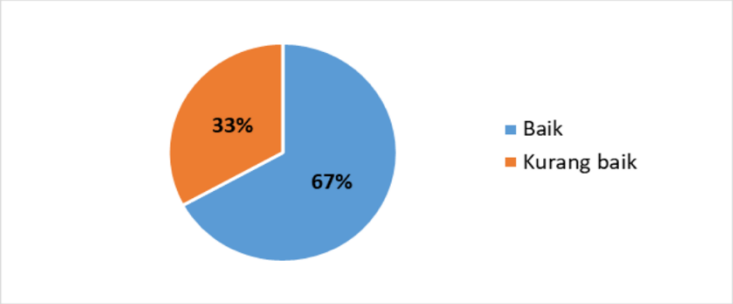

Figure 3. Prevention of COVID-19 in Comorbid Patients

The results of this research show that 67% of comorbid patients at the Kuta Alam Community Health Center, Banda Aceh, have prevented COVID-19 well and 33% have not done well.

4. The relationship between education, knowledge, and attitude with the prevention of COVID-19

The relationship between education with the prevention of COVID-19 in comorbid sufferers at the Kuta Alam Banda Aceh Community Health Center can be seen in Table 2 below.

Table 2. Relationship between education, knowledge, and attitude with the erevention of COVID-19 among comorbid patients at Kuta Alam Public Health Center, Banda Aceh

Education	**Covid-19 Prevention**						P-*value*	*r*
	Good		Not Good		Total			
	n	%	n	%	n	%		
Basic	0	0	2	100	2	100		
Intermediate	5	14,3	30	85,7	35	100	0,000	0,871
High	62	98,4	1	1,6	63	100		
Attitude	n	%	n	%	n	%		
Agree	62	96,9	2	3,1	64	100		
Disagree	5	13,9	31	86,1	36	100	0,000	0,847
Knowledge	n	%	n	%	n	%		
Good	61	93,8	4	6,2	65	100	0,000	0,778
Insufficient	6	17,1	29	82,9	35	100		

The research results show that: patients with high levels of education, 98.4% about comorbidities make good efforts in preventing COVID-19, meanwhile, only 14.3% of those with intermediate levels of education made good efforts in preventing COVID-19; patients with good knowledge, 93.8% about comorbidities make good efforts in preventing COVID-19, meanwhile, only 17.1% of those with

insufficient knowledge made good efforts to prevent COVID-19; and patients with agree attitude, 96.9% about comorbidities make good efforts in preventing COVID-19, meanwhile, only 13.9% of those with disagree attitude made good efforts to prevent COVID-19. The results of the Spearman rank test at CI 95% and α 0.05 obtained: The P value of 0.000 and an r value of 0.871, so there is a strong relationship between education with the prevention of COVID-19 in comorbid sufferers at the Kuta Alam Community Health Center, Banda Aceh. A positive value for r depicts a unidirectional relationship or means having a parallel relationship, so that the higher the level of education, the better the efforts to prevent COVID-19; The P value of 0.000 and an r value of 0.778, so there is a strong relationship between knowledge with the prevention of COVID-19 in comorbid sufferers at the Kuta Alam Community Health Center, Banda Aceh. A positive value on r describes a relationship that is in the same direction or means having a relationship that is in the same direction, so that the better the knowledge, the better the efforts to prevent COVID-19 carried out by comorbid sufferers at the Kuta Alam Community Health Center, Banda Aceh; The P-value of 0.000 and an r-value of 0.847, so there is a strong relationship between attitude and COVID-19 prevention among comorbid patients at the Kuta Alam Community Health Center in Banda Aceh. A positive value in r signifies a direct relationship, meaning that the more positive the attitude, the better the efforts in COVID-19 prevention made by comorbid patients at the Kuta Alam Community Health Center in Banda Aceh.

Discussion

The research results indicate that the most prevalent comorbidity among the respondents is hypertension (60%), and individuals with hypertension have the highest exposure to COVID-19 (60%). Hypertension induces various pathophysiological changes in the cardiovascular system such as left ventricular hypertrophy and fibrosis. Consequently, individuals with comorbid hypertension are highly susceptible to SARS-CoV-2.(14) Following hypertension, diabetes mellitus (DM) is the second most common comorbidity exposed to COVID-19 (21.5%). When individuals with DM contract COVID-19, the virus binds to angiotensin II, activating the Renin-Angiotensin-Aldosterone System (RAAS) and increasing insulin resistance. This condition can lead to more severe hyperglycemia, causing vascular endothelial damage and increased blood viscosity. These processes contribute to cardiovascular disturbances, thromboembolism, and Disseminated Intravascular Coagulation, potentially elevating mortality.(15)

These research findings align with a study conducted by Rhomalia at the Meuraxa Regional General Hospital and the dr. Imai Indra Infectious Disease Laboratory at Syiah Kuala University in 2021, involving 1026 COVID-19 cases. Among 862 patients with comorbidities, constituting 84.02% of the cases, hypertension accounted for the highest exposure at 33.43%, followed by DM at 28.75% (16). The research results show that patients with high levels of education, 98.4% about comorbidities make good efforts in preventing COVID-19, meanwhile, only 14.3% of those with

intermediate levels of education made good efforts in preventing COVID-19. The results of the Spearman rank test at CI 95% and α 0.05 obtained a P value of 0.000 and an r value of 0.871, so there is a strong relationship between education with the prevention of COVID-19 in comorbid sufferers at the Kuta Alam Community Health Center, Banda Aceh. A positive value for r depicts a unidirectional relationship or means having a parallel relationship, so that the higher the level of education, the better the efforts to prevent COVID-19.

The results of research conducted by Suharmanto among the community in the Jati Agung District of Lampung in 2020 indicate that there were no respondents with elementary or higher education. However, 83.0% of respondents with high school education practiced good COVID-19 prevention measures, while 77.3% of those with junior high school education practiced inadequate COVID-19 prevention. The Chi-Square test yielded a P value of 0.000, signifying a relationship between education and the prevention of COVID-19 transmission.(17)Education is a process individuals use to acquire knowledge, insight, develop attitudes, and skills. Education is closely related to an individual's knowledge about something. The higher someone's educational level, the broader their perspective and the better their behavior in addressing health issues.(18)

The research results show that patients with good knowledge, 93.8% about comorbidities make good efforts in preventing COVID-19, meanwhile, only 17.1% of those with insufficient knowledge made good efforts to prevent COVID-19. The results of the Spearman rank test at CI 95% and α 0.05 obtained a P value of 0.000 and an r value of 0.778, so there is a strong relationship between knowledge with the prevention of COVID-19 in comorbid sufferers at the Kuta Alam Community Health Center, Banda Aceh. A positive value on r describes a relationship that is in the same direction or means having a relationship that is in the same direction, so that the better the knowledge, the better the efforts to prevent COVID-19 carried out by comorbid sufferers at the Kuta Alam Community Health Center, Banda Aceh.

Based on the research conducted by Indrawati and Karo involving 259 respondents in the Gaga Subdistrict, Larangan Tanggerang, the findings reveal that respondents with good knowledge, amounting to 76.6%, also practice good COVID-19 prevention. With a P value of 0.05, it can be concluded that there is a significant correlation between knowledge and COVID-19 prevention behavior. The preventive efforts made by these respondents are greatly influenced by their knowledge, the higher the knowledge, the better the preventive efforts against the disease.(19) The research conducted by Taghrir et al in 2020 also demonstrates that high knowledge leads to a high performance in COVID-19 prevention behaviors.(20)

Knowledge is what we know about a specific object through observation, reasoning, and thinking. Knowledge about health becomes the primary motivator in maintaining one's health. The higher an individual's knowledge or understanding of health, the better their perspective on the concepts of health and illness, ultimately improving their overall health. Motivation influences a person's desire to learn about something, the higher the curiosity about a particular subject, the higher the motivation to seek. information about it. Knowledge is a crucial asset in shaping an individual's behavior.(21) Mubarak et al state that there are several factors influencing an individual's knowledge, including information and experience. Experience is gained from events an individual encounters while interacting with their environment. Access to information and experiences accelerates the acquisition of new knowledge.(22) Rogers' theory in Notoatmodjo states that behavior based on knowledge, awareness, and positive attitudes will endure longer than behavior lacking these foundations.(21)

According to the author, controlling COVID-19 can be achieved through increasing knowledge about COVID-19 prevention efforts, particularly for high-risk groups with comorbidities. The higher an individual's knowledge, the more it can influence their behavior. In this context, it means that the higher the knowledge of individuals with comorbidities, the more robust their efforts will be in preventing COVID-19. The research results show that patients with agree attitude, 96.9% about comorbidities make good efforts in preventing COVID-19, meanwhile, only 13.9% of those with disagree attitude made good efforts to prevent COVID-19. The results of the Spearman rank test at CI 95% and α 0.05 obtained a P-value of 0.000 and an r-value of 0.847, so there is a strong relationship between attitude and COVID-19 prevention among comorbid patients at the Kuta Alam Community Health Center in Banda Aceh. A positive value in r signifies a direct relationship, meaning that the more positive the attitude, the better the efforts in COVID-19 prevention made by comorbid patients at the Kuta Alam Community Health Center in Banda Aceh.

The findings of this research align with studies conducted by Indrawati and Karo involving 259 respondents in the Gaga Subdistrict, Larangan Tanggerang, where 92% of respondents with positive attitudes tended to practice good COVID-19 prevention. With a P value $\leq$ 0.05, a significant relationship between community attitudes and COVID-19 prevention behaviors was evident.(19) Similarly, research by Suharmanto in the Jati Agung District of Lampung in 2020 shows that 77.6% of respondents with a positive attitude practice good COVID-19 prevention, while only 33.9% with a negative attitude do so. Data analysis using Chi-Square obtained a P value of 0.000, indicating a relationship between attitude and COVID-19 prevention.(17)

Moreover, a study by Amalia and Pratomo in 2021 revealed a significant association between attitudes and COVID-19 prevention practices with a P value of 0.011. Based on the odds ratio (OR), hypertensive patients with a positive attitude toward COVID-19 were 2.31 times more likely to have good COVID-19 prevention practices compared to hypertensive patients with a negative attitude toward COVID-19.(23) Similarly, research by Retnaningsih et al. showed a connection between attitude and COVID-19 prevention practices.(24) Wardati et al. study also indicated a relationship between attitude and COVID-19 prevention practices, illustrating that better attitudes correspond to better COVID-19 prevention practices in the community in Depok City.(25) Additionally, Peng et al. research in China in 2020 mentioned a significant relationship between attitudes and behaviors in preventing COVID-19, supported by Spearman correlation analysis with a P value of ≤ 0.05.(26)

According to Notoatmodjo, attitude is an inclination as a psychological response formed by knowledge derived from known material and objects.(21) In reality, knowledge does not always directly generate attitudes. The formation of attitudes is influenced by several factors, such as personal experiences, culture, influential individuals, mass media, educational institutions, religious institutions, and individual emotional factors.(27)

The attitude toward social distancing in COVID-19 prevention is closely linked to the knowledge held. According to Azwar, attitude is an evaluative predisposition that largely determines how individuals act. However, attitudes and actual actions often differ significantly because actions are not solely determined by attitudes but by various other external factors. Attitudes are primarily personal, while actions are more general or social, making actions more sensitive to social pressures. Allen, Guy, and Edgley in Azwar state that there is no consistent relationship between attitudes and behaviors. Attitudes and behaviors are two separate, distinct dimensions within an individual, indicating that attitudes do not necessarily predict behavior.(27) The relationship between attitudes and behavior is heavily influenced by specific situational factors.(24) This theory is also supported by Notoatmodjo, stating that to translate attitudes into actual actions, supportive factors are necessary. Factors. (21) influencing attitude formation include the influence of others, personal experiences, culture, mass media, among others. (17)

Conclusions and Suggestions

The Conclusions in this research are:

1. Patients with comorbidities at Kuta Alam Community Health Center in Banda Aceh mostly suffer from hypertension, DM, have at least 1 comorbidity, and 62% are COVID-19 survivors.

2. Patients with comorbidities at Kuta Alam Community Health Center in Banda Aceh have made good efforts in preventing COVID-19.
3. There is a strong relationship between education and COVID-19 prevention among comorbid patients at Kuta Alam Community Health Center in Banda Aceh.
4. There is a strong relationship between knowledge and COVID-19 prevention among comorbid patients at Kuta Alam Community Health Center in Banda Aceh.
5. There is a strong relationship between attitude and COVID-19 prevention among comorbid patients at Kuta Alam Community Health Center in Banda Aceh.

The recommendations in this research are: (1) During this transition phase towards an endemic state, it is advised for individuals with comorbidities and the community in the Kuta Alam Community Health Center area to remain vigilant and adhere to health protocols This approach will enable them to carry out daily activities while coexisting with this situation; (2)

For patients with comorbidities, it's recommended to maintain their health and manage their existing comorbidities. This can be achieved by adjusting their nutrition based on their health condition, undergoing regular medical check-ups, and avoiding risk factors associated with their comorbidities. Additionally, elderly comorbid patients should focus on boosting their immune system. Family members should also receive education to assist in adopting a healthy lifestyle, preventing the onset of new accompanying diseases for the patient.

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