
Correlation between Understanding Covid-19 and Use of Supplements, Pharmacy Study Program Students at Aufa Royhan University in Padangsidempuan City

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ARTICLE INFO

Received: 20 Dec 2021

Accepted: 13 Feb 2022

Volume: 2

Issue: 1

Doi: 10.56338/jphp.v2i1.3728

KEYWORDS

COVID-19; Body Endurance;
Immunomodulator; Student;
Supplement

ABSTRACT

COVID-19 is a new type of disease caused by the SARS-CoV-2 virus and this new type of disease caused a pandemic that has caused thousands of deaths worldwide. COVID-19 can be prevented by improving the body's resistance to respiratory infections. The study was conducted to determine the relationship between students' understanding of the Pharmacy Study Program at Aufa Royhan University in Padangsidempuan City regarding the COVID-19 pandemic and the consumption behavior of immune-maintaining supplements which include dietary supplements, vitamins and immunomodulators. The students who were used as respondents were 45 students from 95 students of the Pharmacy Study Program at Aufa Royhan University in the City. Collecting data using a questionnaire instrument consisting of 15 questions. From the results of the Spearman Correlation Test, data showed that there was no significant relationship between students' understanding of the Pharmacy Study Program, Aufa Royhan University in Padangsidempuan City and the use of immune supplements ($p = 0.088$) > 0.05.

INTRODUCTION

In December 2019, a mysterious case of pneumonia emerged which was first reported in Wuhan, Hubei Province. The source of the transmission of this case is still unknown, but the first case was linked to a fish market in Wuhan (1). From 18 December to 29 December 2019, there were five patients who were treated with Acute Respiratory Distress Syndrome (ARDS) (2).

The sample under study shows the etiology of the new coronavirus (2). Initially the disease was temporarily named as 2019 novel coronavirus (2019-nCoV), then WHO announced a new name on February 11, 2020, namely Coronavirus Disease (COVID-19) caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) virus (3).

The virus can be transmitted from person to person and has spread widely in China and more than 190 other countries and territories. On March 12, 2020, WHO declared COVID-19 pandemic. As of March 29, 2020, there were 634,835 cases and 33,106 deaths worldwide (3).

The first COVID-19 was reported in Indonesia on March 2, 2020 a number of two cases (3). Data on March 31, 2020 showed that there were 1,528 confirmed cases and 136 deaths. The COVID-19 mortality rate in Indonesia is 8.9%, this figure is the highest in Southeast Asia (3).

COVID-19 is a newly discovered disease, therefore knowledge regarding its prevention is still limited. The key to prevention includes breaking the chain of transmission by isolation, early detection, and basic protection. Preparation of the immune system is one of the efforts to prevent COVID-19 that can be done. There are various efforts from various literatures that can improve the body's resistance to respiratory infections. Some of them are quitting smoking and alcohol consumption, improving sleep quality, and taking supplements (4).

Dietary supplements are finished products that are consumed to complement the daily diet. Dietary supplements contain one or more of the following ingredients: vitamins, minerals, plants or materials derived

from plants, amino acids, ingredients used to increase the Nutritional Adequacy Ratio (RDA); or concentrates, metabolites, constituents, extracts, or a combination of several ingredients (5). Taking dietary supplements is not wrong, but what needs to be considered is that its use must be adjusted to the needs of the body. Excessive consumption will interfere with digestion, cause diarrhea and poisoning (6).

Maintaining the immune system is something that must be done in the midst of the COVID-19 pandemic. Viruses have mechanisms to evade the host immune response. Dysregulation of the immune system then plays a role in tissue damage in SARS-CoV-2 infection. Inadequate immune response leads to viral replication and tissue damage. On the other hand, an exaggerated immune response can cause tissue damage (6).

Immunomodulators are also known as biological response modifiers, immunomodulators are various kinds of materials, both recombinant, synthetic, and natural which are drugs that restore the imbalance of the immune system used in immunotherapy. Immunotherapy is an approach to treatment by restoring, enhancing, or suppressing the immune response (7).

This study was conducted to determine the relationship between students' understanding of pharmacy study programs as prospective pharmaceutical technical personnel who protect the public in the health sector regarding the COVID-19 pandemic on their preventive behavior by consuming immune-maintaining supplements which include dietary supplements, vitamins and immunomodulators.

METHODOLOGY

This study uses an online-based questionnaire via Google Form containing 15 questions regarding the understanding of the COVID-19 pandemic and 15 questions regarding the use of immune supplements. The questionnaire used has been tested for validity and reliability using the Pearson Product Moment correlation method and the calculation of the Cronbach Alpha value. This research is a cross sectional survey research which is analyzed correlatively. This study connects pharmacy students' understanding of the COVID-19 pandemic and the use of immune supplements. The population of this study were active students of the Pharmacy Study Program, Aufa Royhan University in Padangsidempuan City, totaling 165 students. The number of samples was calculated using the Slovin formula (8):

$$n = \frac{N}{1 + N d^2}$$

Which resulted in 45 students who have met the criteria. Inclusion criteria: 1) Pharmacy Study Program students from the Regular Path and Path B, 2) Active students at Aufa Royhan University.

Students who are willing to fill out the questionnaire Exclusion criteria: 1) Students who are not cooperative, 2) Students who do not fill out the questionnaire completely.

RESULTS AND DISCUSSION

The population obtained was 95 students of the Pharmacy Study Program, Aufa Royhan University in Padangsidempuan City for the 2019/2020 academic year. Respondents obtained as many as 45 students and have met the inclusion and exclusion criteria that have been determined. Respondents came from the S-1 Study Program, which consisted of the Regular Path and Path B.

Table 1. Characteristics of Respondents

Gender	Amount	%
Man	10	22,2
Woman	35	77,8
Semester Student	Amount	%
Semester 6	8	17,8

Semester 4	17	37,8
Semester 3	13	28,9
B line	7	15,6
Age	Amount	%
17 - 25 year	38	84,4
26 - 35 year	5	11,11
36 - 45 year	2	4,4
Job beside student	Amount	%
There is not any	38	84,4
Health workers	7	15,6
Last education	Amount	%
SMA/ MAN/ SMK Equivalent	33	73,3
HEALTH VOCATIONAL SCHOOL	5	11,11
D.3 PHARMACEUTICAL	7	15,6

From the data in Table 1, respondents are dominated by female respondents with a total of 77.8% female respondents, because the respondents used are students of pharmacy study programs. This is supported by previous research which states that the Department of Pharmacy is more in demand by women than men (9). The characteristics of the respondent's age category are shown in Table 1 based on the age category issued by (10).

Table 2. Distribution of Total Respondent Characteristics Based on Semester Level

Semester Level	Knowledge level			Total Amount (%)
	Tall Amount (%)	Currently Amount (%)	Low Amount (%)	
Semester 6	6 (75%)	2(25%)	0(0,0%)	8 (17,8%)
Semester 4	14 (82,4%)	3(13,2%)	0 (0,0%)	17(37,8%)
Semester 2		2(15,4%)		
B line	11(84,6%)	0 (0,0%)	0(0,0%)	13(28,9%)
Total	7 (100%)	7 (15,6%)	0 (0.0%)	7(15.6 %)
	38 (84,4%)		0 (0,0%)	45 (100%)

Based on the results of Table 2, it shows that the respondents of Path B students have the highest level of knowledge among other semesters, namely 100% of respondents. This is supported by previous research which states that the higher the semester, the higher the knowledge possessed by pharmacy students (9).

Table 3. Distribution of Total Respondent Characteristics Based on Last Education

Level Semester	Knowledge level			Total Amount (%)
	Tall Amount (%)	Currently Amount (%)	Low Amount (%)	
senior High School	28(84,85%)	5 (15,15%)	0 (0,0%)	33 (73,3)

SMK Health	4 (80%)	1 (20%)	0 (0,0%)	5 (11,11)
D.3 Pharmacy	7 (100%)	0 (0,0%)	0 (0,0%)	
Total	39 (86,7)	7 (13,3)	0 (0,0%)	7 (15,6) 45 (100)

Table 3 shows that student respondents who are graduates of D.3 Pharmacy have a high level of knowledge, namely 100%. This is supported by previous research which states that pharmacy majors have knowledge about health that has been given since class X so that their understanding is higher (9).

Table 4. Distribution of Respondents' Knowledge Level by Occupation

Semester Level	Knowledge level			Total Amount (%)
	Tall Amount (%)	Currently Amount (%)	Low Amount (%)	
Student	20 (53,63%)	18 (47,36%)	0 (0,0%)	38 (84,4%)
Students and Health Workers	7 (21,21%)	0 (0,0%)	0 (0,0%)	7 (15,6%)
Total	27 (81,81%)	18 (40,%)	0 (0,0%)	100 (100%)

Based on the results of Table 4, it shows that student respondents without jobs other than students have a higher level of knowledge than students with health workers, namely 53.6%. The influencing factor is study time, where students with health workers work the most compared to students. Because of experience working in the field of health services, information about supplements is more accurate.

Seeing the significant correlation between students' understanding of pharmacy study programs at Aafa Royhan University in Padangsidempuan City regarding the COVID-19 pandemic and the use of immune maintenance supplements. The Spearman Rank test showed a p-value > 0.05, this means that there is no significant relationship between students' understanding of pharmacy study programs at Aafa Royhan University in Padangsidempuan City about the COVID-19 pandemic and the use of immune maintenance supplements.

Looking at the level of strength of the correlation between the understanding of pharmacy study students at Aafa Royhan University in Padangsidempuan City regarding the COVID-19 pandemic and the use of immune maintenance supplements which obtained a coefficient of 0.175 (very weak correlation strength).

Looking at the direction or type of correlation strength between the understanding of pharmacy study students at Aafa Royhan University in Padangsidempuan City regarding the COVID-19 pandemic and the use of immune maintenance supplements, the correlation coefficient number in these results is positive, namely 0.175 so that the correlation strength is unidirectional. Thus, there is little chance that as understanding of COVID-19 increases, the use of immune maintenance supplements increases. These results are consistent with research conducted by Aprelia, et al (2018), that there is no significant relationship between the level of knowledge and the use of multivitamin supplements because the use of multivitamin supplements is influenced by many factors.

Health behavior is basically a person's response to stimuli related to illness and disease, the health care system, food, and environmental behavior towards the health care system. This behavior concerns the response to service facilities, health workers and their medicines (11).

The factors that influence the level of supplement use consist of 6 things, namely: level of education, experience, age, beliefs, information, and income (11). A person's experience affects the use of supplements, among others: complaints, reasons for consumption, the number of supplements consumed and reasons for buying supplements as maintenance of endurance (12).

Besides that, there is also a change in behavior because the maturation process is essentially a combination or occurs both adaptively and instinctively. Through the course of his age getting older, the creature in question will adapt his life behavior to his environment (13).

The results of this study are also in line with previous research conducted by Fitriana (2017), the previous results stated that one's knowledge does not affect one's behavior in handling a disease (14). A person's behavior towards disease management is not only influenced by knowledge, behavior is also influenced by factors originating from within and from outside the individual himself, one of these factors is the environment.

Other factors beyond knowledge variables such as belief in access to health services, skills and references, family, neighbors, and community leaders. The behavior itself is determined or formed from 3 factors, namely: predisposing factors (knowledge, attitudes, beliefs, perceptions), supporting factors (access to health services, skills and references), driving factors manifested in the form of support from family, neighbors, and community leaders (11).

CONCLUSION

This study concludes that there is no significant relationship between students' understanding of Pharmacy Study Program, Aufa Royhan University in Padangsidempuan City and the use of immune supplements. The strength of the correlation between the two variables is classified as very weak and unidirectional. There are many factors that may influence the behavior of using immune supplements during the COVID-19 pandemic.

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