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Effectiveness of Education on the Use of Turmeric in Efforts to Increase Immunity During Covid-19 in Preventive Efforts in RW 01 Pejaten Timur, South Jakarta

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Abstract

This study aims to determine how effective it is in providing education on the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period in RW 01 Pejaten Timur, South Jakarta. Immunity is a body's immunity where if there is a decrease it will have an impact on the ease of disease entering the body, and vice versa if it increases it will not be easy for disease to enter the body. Turmeric is one type of herbal plant that is abundant in Indonesia that contains curcumin which works to increase the body's resistance or immunity, meaning that the body's defense system to fight bacteria or viruses is increased. The purpose of this study is as an education that can increase knowledge about the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period. Cross Sectional research design with a quasi-experimental pretest-posttest design with one type of treatment. The results of this study show a p-value = 0.000 which is smaller than the value of $\alpha = 0.05$, which means that there is an effect of providing education that can increase knowledge about the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period in the Community. The conclusion is that education provided to the community increases knowledge of the Utilization of Turmeric in Efforts to Increase Immunity During Covid-19 before and after education is carried out.

Keywords: Utilization of Turmeric; Efforts to Increase Immunity; Covid-19; Community; Education

Introduction

The body's immune system has the function of helping repair human DNA; preventing infections caused by fungi, bacteria, viruses, and other organisms; and producing antibodies (a type of protein called immunoglobulin) to combat attacks by foreign bacteria and viruses into the body. The job of the immune system is to find and destroy invaders that endanger the human body. In the current pandemic season, good body immunity is expected by the community to avoid viral infections such as Corona-19 (Anonymous 2020).

The function of the body's immune system (immunocompetence) decreases with age. The body's immune ability to fight infection decreases, including the speed of the immune response with increasing age. This is what certain age groups need to be aware of, it does not mean that humans are more often attacked by disease, but when they reach old age, the risk of illness increases such as infectious diseases, cancer, autoimmune disorders, or chronic diseases. This is due to the natural course of the disease which develops slowly and the symptoms are not visible until several years later (Anonymous 2020).

In addition, the production of

immunoglobulin produced by the body of the elderly also decreases in number so that vaccinations given to the elderly group are less effective against disease. Another problem that arises is that the elderly's body loses the ability to distinguish foreign objects that enter the body or are indeed part of the body itself. So a lot of information is needed on how to increase body immunity, especially for the elderly and young age groups in general (Anonymous 2020).

Ways to improve the body's immune system can be done by eating nutritious food, getting enough rest, exercising or by consuming a number of vitamins and supplements. However, public understanding of choosing the right sport, the right vitamins and supplements to consuming the right food is still not widely known by the public. So that by carrying out this community service activity, it is hoped that the public will understand more about immunity and how to increase it (Anonymous 2020).

One of the viral infectious diseases that is easily transmitted through the air is COVID-19. COVID-19 cases spread very quickly and there was a very rapid spread and there was an exponential increase in COVID-19 cases. COVID-19 cases have increased from day to day, and there have been 37,423,660 confirmed cases of COVID-19 in more than 200 countries, including 1,074,817 deaths as of October 12, 2020 (Singh et al., 2021). COVID-19 cases in Indonesia have increased significantly in July 2021, the number of COVID-19 cases reached 1,231,386 people (Suhermin Ingsih, 2020).

The cause of COVID-19 is the Corona virus, this disease can actually heal itself (self-limiting disease) but is related to our body's immunity. If immunity is good, immunity is able to fight the COVID-19 virus so that it can avoid transmission of the disease. If immunity decreases, this is experienced by patients who have DM, heart disease, hypertension, cancer, and so on, including high levels of stress and fatigue, then there will be a decrease in body immunity which causes the body to be susceptible to disease, especially COVID-19

(Suhermin Ingsih, 2020).

Immunity is a system that involves various cells, proteins, and chemical signals as the body's response to infection or the presence of foreign substances entering the body. The immune system is divided into two, namely non-specific innate immunity and specific adaptive immunity. The body's defense is carried out by white blood cells or leukocytes by interacting with foreign cells, identifying, capturing foreign cells (phagocytosis) and eliminating foreign cells (Rosales, et al., 2016).

However, an uncontrolled immune system can cause several immune disorders such as hypersensitivity, autoimmune, and immunodeficiency (Suhermin Ingsih, 2020). Good body immunity plays a very important role in fighting the COVID-19 virus disease (Amalia et al., 2020). The role of nurses for the community in increasing immunity so that they can avoid COVID-19 disease, one of which is by providing education on the benefits of turmeric (*Curcuma domestica*) to increase immunity.

Turmeric is a kitchen spice that is very well known to the community, where turmeric is often used for fish, chicken, meat and vegetables if you use a lot of turmeric, the taste will be even more delicious. In addition, turmeric is used for drinks that can be mixed with tamarind known as *Jamu kunyit asam*, where Indonesian people have used it since ancient times for body health in avoiding or preventing diseases, especially diseases that are currently a pandemic throughout the world, namely COVID-19 (Suhermin Ingsih, 2020).

The content of turmeric associated with increasing immunity, one of which is containing curcumin which works to increase the body's resistance or immune system, meaning that the body's defense system to fight bacteria or viruses is increased, so the bacteria or viruses are not directly killed. the body's immune system works by building healthy cells to form protection and fight pathogens (viruses or bacteria) that enter the body, including the Covid-19 virus. In the case of Covid-19 which is relatively new, the

body does not yet know whether the type of virus is good or not, so the body does not have a response to fight the Corona virus (Covid-19) (Amalia et al., 2020).

How to maintain and improve the body's immune system is by consuming healthy foods, getting enough sleep, and exercising regularly, and reducing stress. To reduce the risk of spread and transmission, healthy habits must certainly be carried out, such as Consuming turmeric regularly will greatly help in fighting viruses or bacteria that infect the respiratory tract such as Covid-19.

Consuming turmeric has long been known and has even become a culture in increasing the strength of the immune system or endurance which plays a very important role in warding off the Corona virus itself (Wijayakusuma M. 2007)

In the Decree of the Minister of Health No. 1193/Menkes/SK/X/2004 states that one of the strategies in disease control is to carry out interventions and implementation of nursing that can be done through health education, Health Education is an action in an effort to improve the ability of the community by teaching clean and healthy living behavior through learning (with media) from, by, for, and with the community, aiming that the community can help themselves and can develop activities that are sourced from community resources, in accordance with local socio-culture supported by 17 public policies that are Health-oriented (Saragih, 2020).

The purpose of health education is to change the behavior of individuals/families/communities in the health sector, make the community able to carry out a healthy lifestyle, and invite the community to improve health behavior (Saragih, 2020). The implementation of health education has a big influence in improving the quality of life of individuals/communities, and is very effective as a way to prevent Covid-19 disease, where individuals/communities who are not yet at risk, who are already at risk, have experienced Covid-19 disease can take preventive measures so that individuals,

families and communities can achieve optimal health. Education can be done more effectively if using learning theory (Budiman, 2018)

One of the causes of the increasing prevalence of Covid-19 disease in the world and in Indonesia is the lack of knowledge from the community in efforts to prevent Covid-19 disease, therefore health workers must take the initiative in carrying out treatment as early as possible by providing information related to diseases, especially Covid-19 disease (Widodo, 2017). The provision of this information is the provision of health education, to increase knowledge and understanding, which can ultimately change the behavior of individuals and families so that prevention or prevention of Covid-19 disease can be carried out, support for health conditions in terms of recovery, increasing empowerment, and self-efficacy, and to prevent death from Covid-19 disease (Widodo, 2017).

Lack of exposure to information about the disease and cognitive limitations and ignorance of finding sources of information cause a lack of knowledge in individuals, families and the community. The use of a media tool greatly influences the success of an education process in conveying information, because it makes it easier to convey messages or materials that you want to convey and makes it easier to accept the material. Examples of media in providing health education can be in the form of powerpoints, leaflets, posters, films, etc. It has been proven that in this era providing education using digital media has proven to be more effective (SDKI, 2019 in Indonesia & Journal, 2020).

Immunity The body system is a physiological system of the body that provides immunity against the entry of foreign materials (non-self) called antigens, including germs, microorganisms. Induction of immunity by an antigen can provide specific immunity to the antigen in question, and this is utilized in preventive efforts through immunization. So based on its nature, body immunity can be specific which is related to the antigen that induces its immune

response and nonspecific, which is related to the nature of the body's anatomical barriers and the nature of the species and its genetics (Amalia, L 2020).

The existence of body immunity can occur naturally, innately from birth, namely because of the anatomical structure of the body and its species which are generally non-specific and can be obtained from the mother which can be specific. And acquired, naturally through having been infected/ill or artificially through immunization whose immunity is specific.

There are three main characteristics of body immunity that are the basis for immunity, especially acquired specific immunity, namely recognition, the ability of the immune system to recognize foreign materials (non-self) and its own materials (self); specificity, the ability of the immune system to provide a specific response to the antigen (foreign material) that induces it and memory/memory, the ability of a greater immune response in the second contact (secondary response) compared to the first contact (primary response) with the same antigen (Anonymous., 2020)

Between natural innate immunity and specific acquired immunity there is a relationship or interrelation that leads to the development and improvement of the body's immune ability. In simple terms, natural innate immunity can be explained as mediated by the body's anatomical barriers (skin and mucosa), physicochemical or biochemical properties and the ability of phagocytosis (non-specific) cells (by mononuclear macrophages).

Through the process of antigen recognition to the main immune cells, namely lymphocytes and proliferation of lymphocyte cells that produce molecular antibody immune products (humoral immunity pathway) by B lymphocyte cells (plasmocytes) and active immune cells To, Th, and Ts. (Anonymous., 2020)

Efforts that can be made by the community to survive during the Covid-19 pandemic are to increase body immunity because the virus will be weak if our immune

system is stronger. However, limited information, especially in maintaining and increasing body immunity, requires education for the community about the benefits of turmeric to increase body immunity during this pandemic (Rezki, et al., 2015).

Turmeric is one type of spice that is widely planted by people in Indonesia. This plant is included in the type of spice that is widely used as a cooking spice. In addition to being a cooking spice, turmeric can also be used as a basic ingredient for traditional drinks that are already widely known in Indonesia.

Today, functional foods and drinks have developed, and turmeric drinks have the potential for this. Turmeric is a drink made from the main raw material in the form of turmeric rhizome extract (*Curcuma domestica*). This is due to the high content of compounds or functional components in turmeric, such as curcuminoids and essential oils (Muniroh, et al., 2010, Rezki, et al., 2015).

Curcuminoids are compounds that have the potential to be antioxidants, maintaining and increasing the body's immune system is one of the important things to do. This is due to the rampant outbreak of the Coronavirus disease or Covid-19 virus which has become a global pandemic that has been declared by the World Health Organization (WHO). The antioxidants contained in turmeric drinks are known to help the immune system to increase immunity from harmful bacteria and viruses (Riza, 2020).

Turmeric (*Curcuma domestica*) is one of the plants that is widely cultivated in Indonesia. Turmeric is a plant that has many benefits in everyday life, in addition to increasing immunity, turmeric is also used as a spice, medicine and cosmetics as well as an industrial material. Turmeric contains curcumin which works to increase immunity. This means that the body's defense system against viruses or bacteria that cause disease is increased, not directly killing the germs.

Consuming yellow water regularly can also help fight viruses that infect the respiratory tract thanks to the presence of anti-

catarrhal substances (Rezki, et al., 2015). Good body immunity plays a very important role in fighting the COVID-19 virus disease. The role of nurses for the community in increasing immunity so that they can avoid COVID-19, one of which is by providing education on the benefits of turmeric (*Curcuma domestica*) to increase immunity (Amalia et al., 2020).

Method

The research method used is a case study by providing Health Education interventions or Health Education and knowledge

evaluation before and after the intervention.

This method was chosen because it is in accordance with the respondent's problem, namely the lack of respondent knowledge about the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period.

The sampling method was convenience sampling, the population in this study were all mothers in RW.01, Pejaten Timur Village, Pasar Minggu, South Jakarta, while the sample in this study were mothers who were in the M.T. Hubbi Arrassull study group.

Results

Table 1. Demographic Characteristics of Respondents

Data	(n = 40)	
	F	%
Age		
20-30 years	2	5
31-40 years	11	27,5
41-50 years	22	55
>51 years	5	12,5
Gender		
Male	0	0
Female	40	100
Education		
Elementary-High School	38	95
College	2	5

Table 1 shows that the age of respondents is 20-30 years old as many as 2 (5%), 31-40 years old as many as 11 (27.5%), 41-50 years old as many as 22 (55%), and >51 years old as many as 5 (12.5%). The gender of female

respondents is 40 (100%). Respondents' education is low, elementary school-high school as many as 38 (95%) and college as many as 2 (5%).

Table 2 Distribution of Respondent Characteristics Based on Knowledge Level

Data	(n = 40)	
	F	%
Knowledge		
Pre		
Less than average (Low)	40	
More than average (High)	-	
Knowledge		
Post		
Less than average (Low)	2	5
More than average (High)	38	95

Table 2 shows that the knowledge of respondents before education was low 40 (100%) and knowledge after education was low as many as 2 (5%) and high as many as 38 (95%).

Discussion

Gender, The results of the study showed that all respondents were female because the respondents taken were those who lived in RW. 01 Pejaten Timur and who were members of the Hubbi Arrassull ta'lim assembly.

Age, The average age of the largest respondents was 45-50 years old, there were 22 people (55%), the smallest age of respondents was 20-30 years old, there were 2 people (5%). The average age in this study was included in the age group of over 40 years. According to (Lina & Saraswati, 2020) the age of over 40 years is an age that is susceptible to disease.

Education, The results of the study found that the education of respondents with a low education category (Elementary-High School) was 38 respondents (95%) and respondents with a higher education category (College) were 2 (5%).

The results of this study were mostly respondents with a low education category. The results of the study are in line with (Rispati, 2019) which states that low knowledge has a low interest in reading, as a result many things that should be known become unknown including not knowing about diseases, especially the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period.

If knowledge is low, efforts to prevent covid-19 disease by educating about the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period, which then the community can increase immunity, one of which is by consuming turmeric regularly.

Knowledge, The results of the study can be seen that the knowledge of respondents

before education is in the low category 40 (100%) and knowledge after education is in the low category 2 (5%) and the high category 38 (95%). This is in line with research (Suratun et al., 2022)

Health Education is a very effective approach to influence individuals, groups, or communities so that they can make preventive efforts. Providing high knowledge and perceptions about diseases can avoid the dangers and complications of the disease. It has been proven that providing knowledge or education is very effective in preventive efforts.

Behavior is known as Knowledge, Attitude and Practice. Notoatmojo (1985) describes human behavior in 3 types, namely: (1) Knowledge, namely by knowing the situation or stimulus from outside, (2) Attitude, namely the inner response to conditions or stimuli outside the subject, so that nature itself will shape the behavior of humans who live in it, and (3) Concrete actions or practices, namely actions against situations or stimuli from outside the body.

Conclusion

The results of the study of 40 respondents regarding the Utilization of Turmeric in Efforts to Increase Immunity During the Covid-19 Period in Preventive Efforts in RW 01 Pejaten Timur, South Jakarta, can be concluded that the average level of knowledge of the RW Community. 01 on the Utilization of Turmeric in Efforts to Increase Immunity During Covid-19 before being given education was in the low category of 40 (100%) and the level of knowledge after education was in the high category of 38 (95%). The average level of knowledge of the RW. 01 Community about PJK after being given education on the Utilization of Turmeric in Efforts to Increase Immunity During Covid-19 was in the high category.

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