The Relationship of Knowledge and Attitude to The Behavior of Using Celery as An Antihypercholesterolemia at The Gandus Health Center in Palembang

Nia Savitri Tamzil[1], Debby Handayati Harahap[1], Evi Lusiana[1], Nita Parisa[1], Ayeshah Augusta Rosdah[1], Syarinta Adenina[1], Desi Oktariana[2]

[1]Pharmacology Department, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia
[2]Clinical Pathology Department, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia
E-mail: niatamzil@fk.unsri.ac.id

Abstract

Efforts to lower cholesterol levels can be made using traditional medicine. The better a person's knowledge and attitude towards traditional medicine will influence his actions in choosing medicine. This study aims to determine the relationship between knowledge and attitudes regarding traditional medicine on the behavior/actions of choosing celery to treat hypercholesterolemia in the community around the Gandus Health Center, Palembang. Analytical observational research with *a cross-sectional design* has been carried out at the Gandus Palembang Health Center from 13 to 20 September 2023. 30 respondents met the inclusion criteria. There are still many (43.3%) respondents who have poor knowledge about the use of herbs as anti-hypercholesterolemia, especially celery, while 30% of respondents with a negative attitude towards choosing traditional medicine were found. Based on statistical analysis, the results showed that there was an insignificant relationship between knowledge and behavior (PR = 1.500 (IK95% 0.325 − 6.918); p = 0.896). However, there is a significant relationship between attitudes and behavior (PR = 21.00 (95% CI 2.868 − 153.754); p = 0.002). A person's attitude towards traditional medicine is related to their behavior/actions in choosing celery for the treatment of hypercholesterolemia.

Keywords: Traditional Medicine, Knowledge, Behavior, Attitude, Celery

1. Introduction

Hypercholesterolemia is a condition in which the total blood cholesterol is quite high or excessive, which is >200mg/dl, and is the cause of atherosclerosis in the blood vessels. Increased cholesterol levels are most often caused by consuming foods that contain high cholesterol and high saturated fats plus other factors such as smoking habits, obesity, and infrequent physical activity. Cholesterol consumption within the recommended safe limit is less than 300 mg/dl daily.[1,2]

Hypercholesterolemia is one of the conditions that can increase the risk of heart disease. According to the WHO, by 2030, heart disease will be the cause of death for 23.6 million people in the world and account for about 25% of the total number of deaths, especially in developing countries such as ASEAN. The heart disease that has the highest morbidity rate is coronary heart disease (CHD). In Indonesia, the prevalence rate of CHD in working age is 1.45% (1.3% in men and 1.6% in women), equivalent to nearly 2 million people (865,855 men and 1.08 million women) with an age range between 15 and 55 years (retirement age).[2,3]

Efforts to lower cholesterol levels can be made by administering medications. However, the consumption of anti-cholesterol drugs can cause side effects so about a fifth of people stop taking them. Patient non-compliance in taking medication results in the goal of therapy not being achieved and the condition of the disease will worsen, even causing complications. This triggers efforts to find more effective and safe drugs so that people are increasingly fond of and switch to traditional medicine.[4,5] Several herbal plants

have properties to lower cholesterol levels, one of which is celery leaves.

There are still many people in the region who do not know about hypercholesterolemia and the use of herbal plants in efforts to handle the disease. The limited public information regarding the selection and use of drugs is the cause of irrational treatment if it is not accompanied by the provision of correct information. The attitude of seeking treatment is a person's action when suffering from illness. This attitude will vary from self-medication to seeking medical help. Self-treatment is a person's effort to self-medicate using traditional and modern medicine.[6]

One of the factors that will affect a person's attitude in choosing a drug is knowledge. Knowledge is a very important domain for the formation of one's actions while attitude is an important component as a preparation for one's actions. The better a person's knowledge and attitude towards traditional medicine will affect his actions in choosing medicine. Knowledge and a rational attitude in treatment can reduce the risk of errors in the use of drugs.[7]

This study aims to determine the relationship of knowledge and attitudes regarding traditional medicine to the behavior/action of celery selection for the treatment of hypercholesterolemia in the community around the Gandus Health Center, Palembang.

2. Methods

This study is an observational analytical research with *a cross-sectional* design with the independent variable being knowledge and attitude towards traditional medicine and the bound variable being celery selection behavior for the treatment of hypercholesterolemia. The research was carried out at the Gandus Palembang Health Center from September 13 to 20, 2023.

The research sample is people around the Gandus Health Center work area with an age range of 40 – 80 years who come to the Gandus Health Center for treatment. Samples were taken using *the consecutive sampling* method.

The relationship between knowledge and attitude to celery selection behavior for the treatment of hypercholesterolemia was analyzed using *the Chi-Square/Fisher Exact Test.* All data were analyzed using the SPSS version 22.0 program.

3. Results
3.1. *General Characteristics of Respondents*

Of the 30 respondents who filled out the questionnaire, the majority of respondents were women (60%). The average age of respondents was 55.9 ± 11.36 years old with an age range of 41-80 years. Respondents who consumed celery to lower high cholesterol were 66.7% (20 out of 30 respondents).

3.2. *Respondents' Knowledge about the Use of Celery as an Anti-Hypercholesterolemia*

There are still many respondents who have poor knowledge about the use of herbs as an anti-hypercholesterolemia, especially celery. The majority of respondents (90%) thought that cholesterol-lowering drugs did not need to be consumed anymore if they had consumed celery. Even if they have to be consumed at the same time, as many as 50% of respondents consider that herbal medicines can be taken at the same time as modern medicines without being given a time lag to increase the effectiveness of medicines. In addition, as many as 93.3% of respondents answered that celery has no side effects even if taken in large quantities and only 20% of respondents know the OHT (standardized herbal medicine) logo. However, the majority of all respondents knew the definition of herbal medicine (100%), the definition of

hypercholesterolemia (96.7%), and the antihypercholesterolemia effect of celery.

The respondents' knowledge score about the use of herbs as an anti-hypercholesterolemia was 5.1$\pm$, 1.47 (score range 3-8) from 8 knowledge-related questions (correct score is worth 1, false is worth 0). Knowledge is then divided into two categories: good (if the score is >4) and bad if the score $\leq$ is 4. Respondents with poor knowledge were found to be 43.3%.

Table 1. General Characteristics of Respondents

Variable	Sum	Percentage
Gender		
• Man	12	40
• Woman	18	60
Age (years)		
• Elementary school average $\pm$	55.9 $\pm$ 11.36	
• Median (Min-Max)	51 (41 − 80)	
Celery Consumption		
• Yes	20	66,7
• Not	10	33,3

3.3. Respondents' Attitudes on the Use of Celery as an Anti-Hypercholesterolemia

The majority of respondents (90%) agreed to consume herbal medicine as the first choice when sick and 83.3% agreed to consume celery even though they had taken cholesterol-lowering drugs. However, it is unfortunate that as many as 76.7% of respondents continue to consume herbal medicines when they feel side effects as long as the side effects are not harmful. In addition, 93.3% of respondents considered celery to be safer to consume than cholesterol-lowering drugs.

The respondents' attitude score about the use of herbs as an anti-hypercholesterolemia was 12.93 $\pm$ 2.02 (score range 11-16) from 4 questions related to attitude (the largest score of 1 question was 5). The attitude was then divided into two categories: positive (when the score > 10) and negative when the score $\leq$ is 10. Respondents with negative attitudes were found to be 30%.

3.4. Relationship of Respondents' Knowledge to the Use of Celery as an Anti-Hypercholesterolemia

In this study, 12 out of 17 (70.6%) respondents who had good knowledge chose to use celery for the treatment of hypercholesterolemia. In addition, 8 out of 13 (61.5%) respondents who had poor knowledge chose to use celery for the treatment of hypercholesterolemia. With statistical analysis, it was found that there was a meaningless relationship between knowledge and behavior (PR = 1,500 (IK95% 0.325 − 6,918); p = 0.896).

3.5. Relationship of Respondents' Attitudes towards the Use of Celery as an Anti-Hypercholesterolemia

In this study, 18 out of 21 (85.7%) respondents who had a positive attitude chose to use celery for the treatment of hypercholesterolemia. However, only 2 out of 9 (22.2%) respondents who had a negative attitude chose to use celery for the treatment

of hypercholesterolemia. With statistical analysis, the results were obtained that there was a meaningful relationship between attitude and behavior (PR = 21.00 (IK95% 2.868 – 153.754); p = 0.002).

Table 2. Respondents' Knowledge and Attitudes

Variable	Sum	Percentage
Knowledge		
• Good	17	56,7
• Not Good	13	43,3
Knowledge Score		
• Elementary school average $\pm$		5.1 ± 1.47
• Median (Min-Max)		$5\ (3-8)$
Attitude		
• Positive	21	70,0
• Negative	9	30,0
Attitude Score		
• Elementary school average $\pm$		12.93 ± 2.02
• Median (Min-Max)		$12\ (11-16)$

Table 3. Relationship of Knowledge and Attitude of Respondents to the Use of Celery as an Anti-Hypercholesterolemia

Variable	Uses of Celery		PR	P *value*
	Yes	Not	(IK95%0	
Knowledge				
• Good	12	5	1,500	0.896A
• Less	8	5	$(0,325-6,918)$	
Attitude				
• Positive	18	3	21,000	0.002b*
• Negative	2	7	$(2,868-153,754)$	
Total	20	10		

[a]Test *Only Square,* *$p < 0.05$
[b]Test *Fisher Exact,* *$p < 0.05$

4. Discussion

There is a lot of evidence about age-related increases in cholesterol. This is the result of the natural process of intrinsic aging (greater susceptibility in older people to the effects of cholesterol from food). It can also be caused by anthropometrics and/or lifestyle related to age and dietary changes. In this study, the average respondent with hypercholesterolemia was 55.9 years old with an age range of $41-80$ years.[8]

One of the causes of age-related lipid homeostasis disorders is a gradual decline in fractional clearance of LDL. As we age, there is a diminished ability to eliminate cholesterol through conversion to bile acids, and a decrease in the activity of rate-limiting enzymes. In the biosynthesis of bile acids, cholesterol 7α-hydroxylase (C7αOH). In addition, important changes in cholesterol and lipoprotein metabolism depend on a progressive decrease in the secretion of growth hormone (GH), which is a hallmark of aging. GH plays an important role in cholesterol homeostasis by modulating liver LDLr expression or controlling the activity of cholesterol 7α-hydroxylase.[9]

In this study, the majority of respondents were women (60%). In line with the research of Ahmed *et al.,* in 2014 which reported that data analysis showed that women statistically had significantly higher cholesterol levels than men. The increase in age-related women is caused by lifestyle and estrogen deficiency in postmenopausal women, which illustrates that menopause is strongly associated with hyperlipidemia. About 30% of postmenopausal women have total serum cholesterol levels above 250 mg/dl associated with LDL cholesterol above 160 mg/dl.[8]

The majority of respondents in this study had poor knowledge regarding the use of herbs as an anti-hypercholesterolemia, especially celery. There was no relationship between knowledge and behavior related to the use of celery as an anti-hypercholesterolemia in this study. This is likely because people prefer to listen to testimonials from other people rather than looking for information related to traditional medicine. So the use of herbal medicine is not based on knowledge but stories from the experiences of other communities. In contrast to knowledge, attitudes related to the use of celery as an anti-hypercholesterolemia. Respondents with a positive attitude towards traditional medicine were 21 times more likely to use celery as an anti-hypercholesterolemia than respondents with a negative attitude. The more positive a person's attitude towards traditional medicine will affect their actions in choosing medicine.[7]

5. Conclusion

There are still many respondents who have poor knowledge about the use of herbs as an anti-hypercholesterolemia, especially celery, However, the negative attitude towards the use of herbs as an anti-hypercholesterolemia is only as much as 30%. In this study, the results of attitudes regarding traditional medicine were found to have a meaningful relationship with the behavior/action of celery selection for the treatment of hypercholesterolemia in the community around the Gandus Health Center, Palembang.

References

1. Lestari WA, Utari DM. The dominant factor of hypercholesterolemia in the pre-elderly in the working area of the Rangkapanjaya Health Center, Depok City. Community Medicine News. 2017; 33(6):267–72.

2. Uli RE, Satyana RPU, Zomer E, Magliano D, Liew D, Ademi Z. Health and productivity burden of coronary heart disease in the working Indonesian population using life-table modeling. BMJ Open. 2020 Sep 9; 10(9).

3. Fitrah Sari W, Suwondo A. A Literature Review of Effect of Moringa Oleifera Leaf Extract Toward Lipid Profile Level in Hyperlipidemia Patients. International Journal of Nursing and Health Services (IJNHS). 2022; 5(3).

4. Kashyap AS, Manzar N, Nebapure SM, Rajawat MVS, Deo MM, Singh JP, et al. Unraveling Microbial Volatile Elicitors Using a Transparent Methodology for Induction of Systemic Resistance and Regulation of Antioxidant Genes at Expression Levels in Chile against

5. Yılmaz İ. Angiotensin-converting enzyme inhibitors induce cough. Vol. 20, Turkish Thoracic Journal. AVES İbrahim KARA; 2019. pp. 36–42.

6. Rubiyanti R, Rahman AA. The Relationship Between Knowledge and Attitudes Regarding Traditional Medicine and Modern Medicine Toward the Medicine Selection Action for Self-Medicine Among Students [Internet]. Vol. 9, Quest Journals Journal of Research in Hum

7. Meriati NWE, Goenawi LR, Wiyono W. Impact of Counseling on Public Knowledge on the Selection and Use of Self-Medication Cough Medicines in Malalayang District. PHARMACON Scientific Journal of Pharmacy-UNSRAT. 2013; 2(3):100–3.

8. Ahmed AM, Abdelwahab Rhmtallah A, Eledum HY. Relationship between Hypercholesterolemia, and Age, Gender and Body Mass Index.

9. Pallottini V, Trapani L. Age-related hypercholesterolemia and HMG-CoA reductase dysregulation: Sex does matter (A gender perspective). Curr Gerontol Geriatr Res. 2010;2010.