The Relationship between Knowledge, Attitude, and Behavior of Fiber Food Consumption with Defection Pattern

Abstract

Nowadays, most people like to choose their food from good taste varieties without considering the nutrition. Generally, The average fiber consumption in Indonesia is 10,5 grams/day. This value is not quite enough for the requirement of fiber. An inadequacy of fiber can cause some diseases, and one of them is defecation disorders. This study examines the correlation between knowledge, attitude, and behavior of consuming fibrous food with defecation. This study utilizes Cross Sectional Method. Take an experiment by Consecutive sampling in a total population of 273 respondents and a sample is as many as 162 respondents. The study subjects are students of the Universitas Kristen Indonesia 2018 Medical Faculty. Data preparation will use IBM SPSS Statistic 22, and the result of the research will be presented analytically. The knowledge of students is not enough for fibrous food. Most have a bad attitude toward fibrous food and still rarely consume it. A Chi-Square test shows no correlation between knowledge of fibrous food and defecation pattern, significant frequency of defecation (p =0,071), and stool consistency (p= 0,746). The correlations between the attitude of fibrous food with defecation patterns are frequency of defecation (p=0.012) and stool consistency (p=0.038). The correlations between behaviors of fibrous food with defecation patterns are frequency of defecation (p=0,012) and stool consistency (p = 0,038).

***Keywords**: Knowledge, attitude, behavior, fiber, and Defecation pattern*

Introduction

Everyone needs food to maintain their survival. The definition of food is a material other than medicine that contains nutrients and chemical elements that can be converted into nutrients by the body, which are useful when put into the body. [1] Healthy food is food that is hygienic and contains lots of nutrients. Food is considered nutritious if it contains sufficient nutrients in quantity and quality according to the body's needs. [2] Good nutrition is essential to the needs of the human body. Nutritionally inadequate foods will cause nutritional deficiency diseases. Modern diets imitating Western societies increase the incidence of several diseases. The recommended dietary change is to increase the consumption of foods that contain starch and are rich in fiber (rice, bread, corn, vegetables, and fruits) and reduce the consumption of refined sugars, fats (salt), salt, and alcohol. [3]

In the current era, most people choose food that tastes better than food that is good for health. This statement is quoted from the preface to the DHSS Eating for Health publication. The nutritional value of food is not the main factor influencing the decision to choose food for most people. Food choices are influenced by the price and availability of food, people's culture, and each person's preferences. [4]

There has been a change or shift in the pattern of diseases that cause mortality and morbidity in the community, namely the pattern of infectious diseases into degenerative and metabolic diseases. The results of the Household Health Survey showed an increasing trend in deaths caused by cardiovascular disease, from 16.5% to 18.9%. It

happens due to old age and attacks at a younger age. One of the factors that may be the cause is lifestyle (lifestyle), unhealthy diet, and lack of physical activity. The pattern of life in urban areas, where most people are very mobile and busy, tends to consume fast food, but it is known that these foods are low in fiber and contain a lot of salt. Attention to the role of dietary fiber in health began to emerge after experts compared the high incidence of colon cancer in advanced industrialized countries where fiber consumption was low compared to developing countries, especially in rural Africa, where fiber consumption was high. [5]

Dietary fiber can bind water in the colon, making the stool volume larger, and will stimulate the nerves in the rectum, causing the desire to defecate. Thus faeces are more easily eliminated. The real effect of fiber has been proven, namely increasing stool volume, softening stool consistency, and shortening transit time in the intestine [6]. Besides fiber, another factor that can affect stool is water intake. Water has many functions; one of the functions of water is as a medium for eliminating unnecessary metabolic waste, including toxins [7]. These various metabolic wastes are excreted through the urinary, respiratory, skin, and digestive tracts, which require aqueous media.

Various studies in Indonesia show that fiber consumption in Indonesia is not sufficient. The recommended fiber requirement based on the Nutrition Adequacy Rate for adults 19-29 years is 38 gr/day for men and 32 gr/day for women. [8] Several facts related to fiber consumption in Indonesia: 1) The average fiber consumption in Indonesia, in general, is 10.5 grams/day [9]. This value is not sufficient for the recommended fiber requirement. 2) The 2013 Basic Health Research (Riskesdas) showed that the national average proportion of under-consumption of vegetables and fruit in the population over ten years reached 93.5%; this did not show much change from the previous Riskesdas 2007 data of 93.6%. 3) World Health Organization (WHO) records show that Indonesians consume only 2.5 servings of fruit and vegetables daily, or 34.55 kg per year. This amount is far below the Food Agriculture Organization (FAO) recommendation for fruit consumption per capita per year of 73 kg. [10]

Students are part of the community, an age group that is relatively free to choose the type of food to consume. The tendency to follow modern diets and lifestyles makes students prefer food outside the home. The imbalance in fiber consumption is caused by a lack of knowledge and inappropriate behavior in choosing daily meals. It can cause digestive system disorders, namely defecation pattern disorders. Based on the description above, it is necessary to research to determine the relationship between knowledge, attitudes, and behavior of consuming fibrous foods with defecation patterns in students of the Faculty of Medicine, Universitas Kristen Indonesia (UKI) Batch 2018.

Based on the description and explanation above, the formulation of the problem that will be discussed in this study is the relationship between knowledge, attitudes, and behavior of consumption of fibrous foods with defecation patterns in students of the Faculty of Medicine, UKI Batch 2018. The aim of the study, namely to determine the relationship between knowledge, attitudes, and consumption behavior of fibrous foods with defecation patterns in students of the Faculty of Medicine, Universitas Kristen Indonesia Batch 2018.

Literature Review

Nutrition comes from the Arabic ghidza, which means "food." Nutrients are chemical bonds the body needs to carry out its functions, namely, to produce energy,

build and maintain tissues, and regulate life processes. So the body needs carbohydrates, fiber, fat, protein, vitamins, and minerals. [11]

Carbohydrates play an important role because they are the main source of energy. All carbohydrates come from plants. Through photosynthesis, plant chlorophyll, with the help of sunlight, can form carbohydrates and carbon dioxide (CO2) from the air and water (H2O) from the soil. The function of carbohydrates is as a source of energy, giving a sweet taste to food, saving protein, regulating fat metabolism, and helping to expel feces. To maintain health, WHO recommends that 50-65% of total energy consumption comes from complex carbohydrates; at most, only 10% comes from simple sugars. [12]

Lipids include heterogeneous compounds, including fats and oils commonly found in foods, phospholipids, sterols, and other similar compounds in food and the human body. The function of lipids is as a source of energy for the body, a source of essential fatty acids for the body, a means of transporting fat-soluble vitamins, conserve protein, give a feeling of satiety and delicacy, serve as a lubricant and help remove digestive residues, maintains body temperature, and protects the organs of the body. Fat requirements are not stated absolutely; WHO recommends consuming fat as much as 20-30% of total energy needs is considered good for health. [13]

Protein is part of all living cells and is the largest part of the body after water. All enzymes, various hormones, transport of nutrients and blood, intracellular matrix, and so on are proteins. Protein has a unique function that cannot be replaced by other nutrients, namely building and maintaining cells and tissues of the body, besides that protein also functions to regulate water balance, maintain body neutrality, form antibodies, transport nutrients, and also as a source of energy for the body. According to WHO (1985), protein requirements are "consumption needed to prevent body protein loss and enable the production of protein needed during growth, pregnancy, and lactation. The Protein Adequacy Rate (PAR) for adults, according to the results of research on nitrogen balance, is 0.75 gram/kg body weight. [14]

Vitamins are complex organic substances that are needed in very small amounts. Vitamine is included as a regulator substance and life maintenance. Each vitamin has a specific function in the body. Vitamin A functions in various physiological functions of the body. Vitamin A functions for vision, cell differentiation, growth and development, and immune function. Vitamin B1 (thiamine) is a coenzyme for various energy metabolism reactions. Vitamin B2 (Riboflavin) functions to bind to phosphoric acid and is part of two types of coenzymes, FMN and FAD. Vitamin C functions as a coenzyme or cofactor functions as an antioxidant; in the food industry, it functions to prevent rancidity and discoloration of fruits and preserve meat. Vitamin D helps to build and maintain bones. Vitamin E functions as an antioxidant. Vitamin K functions in blood formation, although the mechanism is uncertain. [15]

Minerals are part of the body and play an important role in maintaining body functions at the level of cells, tissues, organs, and overall body function. Minerals are classified into macro minerals and micro minerals. Macro minerals are minerals that the body needs in amounts of more than 100 mg daily, while micro minerals in the body are less than 15 mg daily. [16] Fiber is a type of insoluble carbohydrate. The fiber in the human digestive tract cannot be digested because humans do not have enzymes. For health, fiber or fiber can prevent constipation, hemorrhoids, and other intestinal problems, reduce the risk of disease, and control body weight. [17]

Dietary fiber is a plant component not enzymatically digested into parts that can be absorbed in the digestive tract. Fiber is naturally found in plants. Fiber consists of various substances, but the most abundant are complex carbohydrates. [18] The Health Council of the Netherlands defines dietary fiber as a combination of substances that are not digested or absorbed in the small intestine and have a chemical structure of carbohydrates, carbohydrate analogs, lignin, and other substances that are almost the same. [19] Fiber is part of plants or carbohydrates resistant to digestion and absorption in the small intestine with complete or partial fermentation in the intestine. This dietary fiber consists of polysaccharides, oligosaccharides, lignin, starch, and other plants. [20]

The chemical composition of dietary fiber varies depending on the composition of the cell wall of the plant it produces. Based on chemical analysis, fiber in food is classified into three groups: 1) Cellulose group, a polysaccharide. Cellulose is the most commonly found fiber. Vegetables and fruits are sources of cellulose. 2) The pectin, gum, and mucilage groups are non-cellulose polysaccharides. Pectin has the property of forming a gel when combined with water. Gum in plants is usually produced when the bark is scraped off, whereas mucilage is mixed with the endosperm in seeds, such as beans, peas, and peas. 3) Lignin group. Lignin provides a unique structure, shape, and strength to wood. [21] According to the solubility of food, fiber is divided into two groups: soluble dietary fiber and insoluble fiber in water. [22] Soluble dietary fiber (soluble fiber) consists of pectin and gum, part of the plant's food cells. This fiber is found in many fruits and vegetables, and insoluble dietary fiber, including this fiber, are cellulose, hemicellulose, and lignin, which are mostly found in cereals, nuts, and vegetables.

Fiber adequacy is now recommended to be higher because it is known that fiber has many benefits for the body. Adequate Intake (AI) for dietary fiber as a reference for maintaining digestive tract health and other health has now been issued by the International Health Organization. AI for dietary fiber for adults is 20-35 gr/day. [23] The recommended fiber consumption in Indonesia is 25-35 grams/day. However, the research results show that the average fiber consumption of Indonesian people is still far from the recommended fiber needs; the average fiber consumption is between 9.9-10.7 grams/day.

The main role of fiber in food is the ability of fiber to bind water, cellulose, and pectin. Fiber can help speed up leftovers through the digestive tract, to be excreted. Fiber also prevents and reduces constipation by absorbing water through the digestive tract. A high-fiber diet can reduce colonic transit time and increase stool bulk. Schematically, fiber can be useful for preventing the occurrence of several diseases, including colon cancer, constipation, diverticular disease, cardiovascular disease, obesity, and diabetes. [24]

The Household Health Survey results of the Indonesian Ministry of Health in 1995 proved that for the first time in the history of Household Health Survey since 1972, infectious diseases in Java and Bali had been replaced by diseases caused by the circulation system. The Household Health Survey results showed that the causes of death were dominated by diseases of the circulation system (24.2%) rather than infectious diseases (22.8%). One of the important factors as a result of the causes of this disease is the change in people's lifestyles leading to an unhealthy lifestyle, including lack of exercise, consuming too many sweet and fatty foods (a diet high in fat and carbohydrates), lots of foods containing salt, lack of fibrous foods and other unhealthy habits such as smoking and drinking alcohol. [25] This wrong diet includes coronary

heart disease, stroke, diabetes, digestive disorders (difficult bowel movements, hemorrhoids, colon cancer), tooth and gum damage, and obesity.

Knowledge results from knowing, which occurs after sensing a particular object. Sensing occurs through the human senses: sight, hearing, smell, taste, and touch. Most of human knowledge is obtained through the eyes and ears. Attitude is a reaction or response still closed from someone to a stimulus or object. Attitudes have three main components, namely: 1) Beliefs, ideas, and concepts towards an object; 2) Emotional life or evaluation of an object; 3) The tendency to act. These three components together form a complete attitude. Attitudes can become an action (overt behavior) if there are supporting factors, such as facilities and support from other parties. The practice has several levels, namely: a) Guided response, being able to do it in the right order and according to the example is an indicator of first-level practice; b) Mechanism, if someone has been able to do something right automatically and it becomes a habit, then he has reached the second level of practice; and c) Adoption, is a well-developed practice or action. The action has been modified without reducing the correctness of the action.

The large intestine consists of the colon, cecum, appendix, and rectum. Under normal circumstances, the colon receives about 500 ml of chyme from the small intestine, taking 8-15 hours daily. Most digestion and absorption occur in the small intestine, so the colon receives indigestible residues such as cellulose and other materials that will pass as feces. The haustral contraction movements in the colon have an interval between two contractions of 30 minutes, while the small intestine contracts 9-12 times a minute. Haustral contractions are in the form of back-and-forth movements that cause the contents of the colon to be exposed to the absorptive mucosa involving the intrinsic plexus. These slow contractions can cause bacteria to thrive in the large intestine. [26]

Increased motility in the form of simultaneous colon contractions occurs three to four times a day. This contraction is called a mass movement that can push the stool as far as one-third to three-quarters of the length of the colon until it reaches the distal part of the large intestine, where the stool is stored. The gastro colon reflex, mediated by gastrin from the stomach to the colon and by the extrinsic autonomic nerves, occurs when food enters the stomach and triggers the defecation reflex. Therefore, most people will feel the urge to defecate after breakfast. This reflex encourages the colon's contents to enter the rectum so that there is a place in the intestine for the food that has just been consumed. Furthermore, the contents of the small intestine will be pushed into the large intestine through the gastro ileum reflex. [27]

The mass movement pushes the colon's contents into the rectum so that the rectum stretches. This stretching elicits a defecation reflex caused by the activation of the intrinsic reflex. The intrinsic reflex, specifically the myenteric plexus, causes peristalsis along the descending colon, sigmoid, and rectum, forcing feces into the anus and relaxing the anal sphincter. However, defecation can be prevented if the external anal sphincter, a skeletal muscle, remains under conscious control. The wall of the originally stretched rectum will slowly relax, and the urge to defecate subsides until the next mass movement comes. The peristalsis triggered by the intrinsic reflex is weak. Therefore, there is a parasympathetic reflex to strengthen it. Signals from the rectum are first continued to the spinal cord and then sent back to the colon, sigmoid, and rectum via the pelvic nerves to strengthen the peristaltic movements. Defecation signals that enter the

spinal cord cause other effects, such as deep breathing, closure of the glottis, and abdominal contractions that push the stool out. [28]

In the large intestine, the digestion process does not occur due to the absence of digestive enzymes, and the absorption that occurs is lower than that of the small intestine due to a narrower surface area. Under normal circumstances, the colon absorbs salt (NaCl) and H2O. Sodium is the most actively absorbed substance, Cl- passively moves down the electrical gradient, and H2O moves by osmosis. Through the absorption of both, solid feces are formed. About 500 ml of material enters the colon, 350 ml is absorbed, and 150 g of feces is excreted. This stool consists of 100 g of H2O and 50 g of solids such as cellulose, bilirubin, bacteria, and small salts. Thus, the main waste product excreted through the feces is bilirubin and food that the body cannot absorb. [29] Factors influencing defecation patterns are age, diet, fluids, muscle tone, psychological factors, lifestyle, drugs, pain, sensory and motor disturbances, and position during defecation. Constipation and diarrhea are two defecation patterns often associated with defecation [30].

Research Method

The research design in this study was an analytic design that was carried out using a cross-sectional approach, meaning that the researcher made observations or measured variables at one particular moment. [31] The sample in this study was FK UKI students Batch 2018. Data will be collected through a questionnaire. The research was conducted at the Faculty of Medicine, UKI at Major General Sutoyo Street No. 2, Cawang, East Jakarta. The time of research was conducted in October 2015. The population in this study were all students of the Faculty of Medicine at the UKI Batch 2018. The sample used in this study was students of the Faculty of Medicine at the UKI Batch 2018 using the Probability Sampling technique, which is a sampling technique that gives equal opportunity for every member of the population to be selected for the sample. The technique used is by using Simple random sampling technique. Namely, sampling is done randomly without regard to strata in the population. Research involving humans as subjects must be based on four basic research ethics: respect for the person, beneficence, non-maleficence, and justice. [32] The research instrument in this study was to use a questionnaire developed by the researcher himself. The first part of the questionnaire contains questions including the name, age, and gender of the respondent. The second part of the questionnaire was used to learn about fibrous foods. The third part of the questionnaire is used to determine the attitude of respondents toward fibrous foods. The fourth part is a questionnaire about the respondent's behavior towards fibrous foods, and the fifth part is a questionnaire used to determine the respondent's defecation pattern. The data that has been collected is then processed using computerized statistical data processing software to process and analyze the data. The data processing technique used is the SPSS (Statistical Product and Service Solution) program. Data analysis is adjusted to the research objectives, whether to 1) explain or describe data in a single variable and 2) compare or find the relationship between one variable and another. Univariate analysis was used to describe each student's frequency of knowledge, attitudes, and behavior of consuming fibrous foods and to determine defecation patterns. A bivariate analysis was used using the chi-square test to see the relationship between each independent and dependent variable. The chi-square test results, Ho, is rejected if the p-value $<\alpha$ (0.05) means a significant relationship exists between the dependent and

independent variables. Ho fails to be rejected if the p-value> (0.05) means no significant relationship exists between the dependent and independent variables.

Result and Discussion

The results of this study will first discuss univariate analysis, followed by a discussion of bivariate analysis. This analysis aims to explain or describe each of the variables studied: gender, age, knowledge, attitudes, and consumption behavior of fibrous foods, as well as the pattern of defecation of the respondents. This research was conducted on 162 respondents. Following are the characteristics of the respondents, which include; age and gender. It can be seen in the following table.

Table 1. Distribution by Gender and Age of Respondents to Respondents

No	Characteristics of Respondents	N	%
1	Gender		
	- Male	71	43,8
	- Female	91	56,2
	Total	**162**	**100**
2	Age		
	- 19 – 23	162	100
	Total	**162**	**100**

Based on Table 1, it was found that the characteristics of respondents based on gender were mostly women, namely as many as 91 people (56.2%), and as many as 71 people (43.8%) were men. Of the 162 respondents, the youngest was 19, while the oldest was 23.

Table 2. Distribution of Respondents Based on Level of Knowledge about Fibrous Foods (n=162)

Knowledge Level Category	Colleger	
	Frequency	(%)
Good	36	22,2
Moderate	76	46,9
Low	50	30,9
Total	162	100

Based on the results of the study, it was found that the level of knowledge of respondents regarding fibrous food knowledge was as many as 36 people (22.2%) in the good category, 76 people (46.9%) in the sufficient category, and 50 people (30.9%) in the less category.

Table 3. Distribution of Respondents' Attitudes toward Fibrous Foods (n=162)

Behavior	Frequency	%
Good	42	25,9
Moderate	60	37,0
Low	60	37,0
Total	162	100%

Based on the results of the study, the respondents' attitudes about fibrous foods were 42 people (25.9%) in the good category, 60 people (37.0%) in the moderate category, and 60 people (37%) in the less category.

Table 4. Distribution of Respondents Based on Fiber Food Consumption Behavior (n=162)

Behavior	Frequency	%
Often	56	34,6
Seldom	106	65,4
Total	162	100

Based on the study's results, it was found that 56 people (34.6%) often consumed fibrous foods, and 106 (65.4%) rarely consumed fibrous foods.

Table 5. Distribution of Respondents Based on Defecation Pattern (Frequency of Defecation and Stool Consistency) (n=162)

Defecation frequency	N	%
Normal	44	27,2
Abnormal	118	72,8
Total	162	100
Stool consistency		
Soft	61	37,7
Hard	101	62,3
Total	162	100

Based on the study's results, as many as 44 people (27.2%) had a normal defecation frequency, and as many as 118 people (72.8%) had an abnormal defecation frequency. Based on the study's results, 61 (37.7%) respondents had soft stool consistency, and 101 (62.3%) had hard stool consistency.

Bivariate analysis analyzes the relationship between the independent and dependent variables with an alpha value of 0.05. The independent variables used were knowledge, attitudes, and behavior, while the dependent variable in this study was defecation patterns.

Table 6. Distribution of the Relationship between Respondents' Knowledge of Fibrous Foods and Defecation Patterns (Frequency) (n=162)

Knowledge	Defecation Frequency		Total
	Normal	Abnormal	
Good	15 (41,7%)	21 (58,3%)	36 (100%)
Moderate	16 (21,1%)	60 (78,9%)	76 (100%)
Low	13 (26,0%)	37 (74,0%)	50 (100%)
Total	44 (27,2%)	118 (72,8%)	162 (100%)

Based on the cross table above, the results of the analysis of the relationship between the level of knowledge about fibrous foods and the pattern of defecation based on the frequency of defecation are that of the 36 respondents who have good knowledge, 15 people (41.7%) have a normal defecation frequency, while those who have an abnormal defecation frequency as many as 21 people (58.3%). Of the 76 respondents who had sufficient knowledge, 16 people (21.1%) had a normal defecation frequency, and as many as 60 people (78.9%) had an abnormal frequency. Meanwhile, out of 50 respondents with less knowledge, 13 people (26.0%) had normal defecation

frequency, and 37 people (74.0%) had abnormal defecation frequency. From the chi-square test results, the p-value was 0.071, which means the p-value> 0.05, so it can be concluded that there is no significant relationship between knowledge about fibrous foods and defecation frequency.

Table 7. Distribution of the Relationship between Respondents' Knowledge of Fibrous Foods and Defecation Patterns (Faces Consistency) (n=162)

Knowledge	Stool Consistency		Total
	Mushy	Hard	
Good	13 (36,1%)	23 (63,9%)	36 (100%)
Moderate	27 (35,5%)	49 (64,5%)	76 (100%)
Low	21 (42,0%)	29 (58,0%)	50 (100%)
Total	61 (37,7%)	101 (62,3%)	162 (100%)

Based on the cross table above, the results of the analysis of the relationship between the level of knowledge about fibrous foods and the pattern of defecation based on the consistency of the stool are that of the 36 respondents with good knowledge, 13 people (36.1%) had the consistency of soft stools, while those with the consistency of hard stools were as many as 23 people (63.9%). Of 76 respondents with sufficient knowledge, 27 people (35.5%) had soft stool consistency, and 49 (64.5%) had hard stool consistency. Meanwhile, of the 50 respondents with a lack of knowledge, 21 people (42.0%) had soft stool consistency, and 29 people (58.0%) had hard stool consistency.

From the chi-square test results, the p-value was 0.746, which means the p-value> 0.05, so it can be concluded that there is no significant relationship between knowledge about fibrous foods and stool consistency.

Table 8. Distribution of Respondents' Attitudes toward Fibrous Foods with Defecation Patterns (Frequency) (n=162)

Attitude	Defecation Frequency		Total
	Normal	Abnormal	
Good	19 (45,2%)	23 (54,8%)	42 (100%)
Moderate	13 (21,7%)	47 (78,3%)	60 (100%)
Low	12 (20,0%)	48 (80,0%)	60 (100%)
Total	44 (27,2 %)	118 (72,8%)	162 (100%)

Based on the cross table above, the results of the analysis of the relationship between the attitude of consuming fibrous foods and defecation patterns based on frequency show that out of 42 respondents with a good attitude, 19 people (45.2%) had a normal defecation frequency, while those with an abnormal frequency were 23. people (54.8%). Of the 60 respondents with a moderate attitude, 13 people (21.7%) had a normal defecation frequency, while 47 (78.3%) had an abnormal frequency. Of the 60 respondents with an attitude that lacked a normal defecation frequency, 12 people (20.0%), while those with an abnormal frequency were 48 people (80.0%).

From the Chi-Square test results, the p-value was 0.009, which means the p-value <0.05, so it can be concluded that there is a significant relationship between attitudes towards fibrous foods and defecation frequency.

Table 9. Distribution of Respondents' Attitudes toward Fibrous Foods with Defecation Patterns (Consistency) (n=162)

Attitude	Stool Consistency		Total
	Mushy	Hard	
Good	23 (54,8%)	19 (45,2%)	42 (100%)
Moderate	21 (35,0%)	39 (65,0%)	60 (100%)
Low	17 (28,3%)	43 (71,7%)	60 (100%)
Total	61 (37,7%)	101 (62,3%)	162 (100%)

Based on the cross table above, the results of the analysis of the relationship between attitudes towards fibrous foods and defecation patterns based on stool consistency were that of the 42 respondents with a good attitude, 23 people (54.8%) had soft stool consistency, while those with hard stool consistency were as many as 19 people (45.2%). Of the 60 respondents with a moderate attitude, 21 people (35.0%) had soft stool consistency, while 39 (65.0%) had hard stool consistency. Of the 60 respondents with an attitude that lacked the consistency of soft stools, 17 people (28.3%), while those with the consistency of hard stools were as many as 43 people (71.7%).

From the Chi-Square test results, the p-value was 0.022, which means that the p-value was <0.05, so it can be concluded that there is a significant relationship between attitudes towards fibrous foods and stool consistency.

Table 10. Distribution of Respondents' Behavioral Relationships with Fibrous Foods with Defecation Patterns (Frequency) (n=162)

Behavior	Defecation Frequency		Total
	Normal	Abnormal	
Often	22 (39,3%)	34 (60,7%)	56 (100,0%)
Seldom	22 (20,8%)	84 (79,2%)	106 (100,0%)
Total	44 (27,2%)	118 (72,8%)	162 (100%)

Based on the cross table above, the results of the analysis of the relationship between consumption behavior of fibrous foods and defecation patterns based on frequency are that of the 56 respondents who often consume fibrous foods, 22 people (34%) have a normal defecation frequency. In contrast, 34 people (60.7%) have an abnormal defecation frequency. One hundred-six respondents who rarely consumed fibrous foods had a normal defecation frequency of 22 people (20.8%) and an abnormal frequency of 84 (79.2%).

From the chi-square test results, the p-value was 0.012, which means the p-value <0.05, so it can be concluded that there is a significant relationship between the behavior of consuming fibrous foods and the frequency of defecation.

Table 11 Distribution of Respondents' Behavioral Relationships with Fibrous Foods with Defecation Patterns (Consistency) (n=162)

Behavior	Stool consistency		Total
	Mushy	Hard	
Often	15 (26,8%)	41 (73,2%)	56 (100,0%)
Seldom	46 (43,4%)	60 (56,6%)	106 (100,0%)
Total	61 (37,7%)	101 (62,3%)	162 (100%)

Based on the cross table above, the analysis results of the relationship between consumption behavior of fibrous foods and defecation patterns based on consistency are that of the 56 respondents who often consume fibrous foods, 15 people (26.8%) have soft stool consistency. In contrast, 41 people (73.2%)) have the consistency of hard

stools. Of the 106 respondents who rarely consumed fibrous foods, 46 people (43.4%) had soft stool consistency, while 60 (56.6%) had hard stool consistency.

From the results of the chi-square test, the p-value was 0.038, which means the p-value <0.05, so it can be concluded that there is a significant relationship between the behavior of consuming fibrous foods and stool consistency.

The discussion is the gap that arises after the researcher conducts the research. This research is on the Relationship between Knowledge, Attitudes, and Consumption Behavior of Fibrous Foods with Defecation Patterns in Students of the Faculty of Medicine, UKI Batch 2018.

Overview of Knowledge of UKI Medical Faculty Students about consuming fibrous foods - Knowledge results from tofu, which occurs after a person senses a certain object. Sensing occurs through the human senses: sight, hearing, smell, taste, and touch. Most human knowledge is obtained through the eyes and ears. [33] Based on the presentation of the study results, it can be seen that out of 162 respondents, the majority have a sufficient level of knowledge, namely as many as 76 people (46.9%). The results of this study follow research conducted by Dyah Ayu on Nutrition students at the Muhammadiyah University of Surakarta that most of the student's knowledge about fibrous foods is sufficient (72.5%). The results of this study also have the same results as research conducted by Welly Anggun Nanka Limo on psychology students at Syarif Hidayatullah State Islamic University Jakarta, namely that most of the student's knowledge about fibrous foods is not good at 53.8%, the category is sufficient 40.4% and 5.8 % with good category. According to Notoadmojo, one factor influencing knowledge is the facility used to obtain information about fibrous foods. Besides that, sufficient knowledge is likely affected by students' lack of desire and interest in finding information about fibrous foods. [34]

Description of the Attitudes of UKI Medical Faculty Students Batch 2018 about fibrous foods - Newcomb, one of the social psychologists, stated that attitude is readiness or willingness to act. Attitude is not yet an action or activity but a predisposition to a behavior. Based on the theory of Soekidjo, Notoatmodjo says that a person's positive or negative attitude impacts beliefs about something that has been owned and will give a tendency to act following his opinions and beliefs. The attitude referred to in this study is the student's response or reaction to consuming fibrous foods. The attitude held by students will affect the consumption of fibrous foods. [35] Based on the study's results, 60 students (37%) of the Faculty of Medicine at the UKI have a poor attitude towards consuming fibrous foods. The results of this study are not following the research conducted by Grace Theola Hanani regarding awareness in choosing the type of food, namely from 98 students. Some had a more positive attitude towards fibrous foods compared to fast food. However, the tendency to choose fast food is still high. This research is also not following the research conducted by Christina Dian W.A, that most of the bank employees studied have a good attitude.

Description of Consumption Behavior of Fibrous Foods in Students of the Faculty of Medicine, UKI Batch 2018 - Behavior is an action or activity of a person who has a very broad spectrum, including: talking, walking, working, crying, laughing, studying, writing, reading, and so on. From this description, it can be concluded that behavior is all activities or activities carried out by humans that outsiders, directly or indirectly, observe [35]. Based on the results of research conducted on 162 respondents studied, 106 respondents rarely consumed fiber, and 56 respondents often consumed fiber. From the results of this study, it can be concluded that most of the respondents' behavior

rarely consumes fiber. It is likely to occur due to interactions with many people so that they are easily influenced by the surrounding environment, in addition to the influence of print and electronic media, which offer food that has a good taste and an attractive appearance but lacks fiber content. Research by Christina Dian W.A found that knowledge, attitudes, and actions are needed to determine consumer behavior. The results of this study follow research conducted by Ida Farida that most adolescents have insufficient fruit and vegetable consumption behavior, namely 94.5%, while adolescents who have sufficient behavior towards fruit and vegetable consumption are 5.5%.

Description of defecation patterns of students at the Faculty of Medicine, UKI - Defecation patterns indicate digestive tract health. This study determined the defecation pattern from the defecation frequency and the stool's consistency. It is said that there is a disturbance in the pattern of defecation in the respondent if the frequency of defecation is <3 Times/week while the consistency of the stool is obtained using the Bristol Scale, namely, types 1-3 are hard, and types 4 and 5 are the ideal type of stool. Based on the research results of the 162 respondents studied, 118 respondents had an abnormal defecation pattern, and 44 had a normal defecation frequency. While the pattern of defecation according to consistency, of the 162 respondents studied, 101 had hard stool consistency, and 61 had soft stool consistency. So it can be concluded that most researchers had abnormal defecation patterns. The defecation pattern is considered an indicator of the health of the digestive tract. Defecation patterns can be influenced by diet, toilet training, and drugs. [36] The results of this study following the research conducted by Alsha Litsyobudi Hertanti and Yekti Wirawanni, namely that of the 30 respondents studied, most of the respondents had abnormal defecation patterns, namely 19 subjects with a frequency of < 3 times per week.

Description of the Relationship between Knowledge of Fibrous Foods and Defecation Patterns - Knowledge results from tofu and occurs after a person senses a certain object through sensing. Based on the results of research conducted on students of the Faculty of Medicine at the UKI with the chi-square test, the defecation frequency with a p-value of 0.071 and consistency with a p-value of 0.746, it can be concluded that there is no relationship between knowledge of fibrous foods and defecation patterns. The research results obtained may occur because defecation patterns are not only influenced by knowledge but are also influenced by several factors, such as the recommended consumption of fluids is eight glasses per day, stomach tone, and good pelvic and diaphragm muscles are important for defecation because muscle activity stimulates peristalsis which facilitates the movement of chyme along the colon. Weak muscles are often ineffective at increasing intra-abdominal pressure during defecation or controlling defecation. Weak muscles result from reduced exercise, immobility, or impaired nerve function. In addition, the pattern of defecation can also be influenced by psychological factors; namely, in people who are depressed, it can cause intestinal motility to slow down, and constipation occurs. Drugs also influence defecation patterns; for example, morphine and codeine can cause constipation.

Correlation between Attitudes toward Fibrous Foods and Defecation Patterns - Based on the results of a study conducted on students of the Faculty of Medicine at the UKI Batch 2018, it showed that there was a relationship between respondents' attitudes toward fibrous foods and defecation patterns, namely 48 people (80.0%) and a frequency of Abnormal defecation as many as 43 people (71.7) who had less knowledge had hard stool consistency. Acceptance of new behavior or adoption of behavior through a process based on knowledge, awareness, and a positive attitude means the

behavior will be long-lasting [37]. Conversely, if the behavior is not based on knowledge and awareness, it will not last long. An example can be found here, students studying nutrition and body physiology courses so that students know the meaning and purpose of consuming food every day. From the research, we can conclude that attitude has a relationship with behavior. A good attitude towards fibrous foods will make respondents often consume fibrous foods. So adequate fiber intake will lead to a good defecation pattern.

Relationship between consumption behavior of fibrous foods and defecation patterns - Based on The Food and Nutrition Board of The National Academy of Sciences Research Council, the fiber requirement for young men aged 14-18 years is 39 g/day while for young women aged 14-18 26 g/day [38]. Research results from the Research and Development Center for Nutrition at the Ministry of Health of the Republic of Indonesia show that the average consumption of food fiber in Indonesia is 10.5 g/day [39]. This figure shows that the Indonesian population has only met one-third of the ideal fiber requirement of 30 g per day. Based on the results of the study using the chi-square test, it was found that there was a significant relationship between the consumption behavior of fibrous foods and defecation patterns based on defecation frequency with a p-value of 0.012 and stool consistency with a p-value of 0.038. It shows that if the respondent often consumes fibrous foods, he will have a good defecation pattern. The results of this study, following research conducted by Alsha Listyobudi and Yekti Wirawan that the results of Spearman's correlation analysis showed that there was a relationship between fiber intake and defecation frequency (r=0.468, p=0.009) and very significant with stool consistency (r=0.837, p=0.837, p=0.009). 0.000), which means that the more adequate the fiber intake, the more normal the frequency of defecation and the consistency of soft stools. The more adequate the intake of fiber, the softer the consistency of the stool, namely types 4 and 5. Fiber intake makes the consistency of the stool soft and voluminous so that it is possible to reduce the transit time of the stool in the large intestine. [40]

Conclusion

Based on the results of research conducted on the UKI FK Students Batch 2018, the following conclusions can be drawn: a) Most students' knowledge of fibrous foods is still in the sufficient category; b) The attitude of students towards fibrous food is good (25.9%), moderate (37%) and less (37%); c) Most of the behavior of students still rarely consume fibrous foods (65.4%); d) There was no significant relationship between students' knowledge of fibrous foods and defecation patterns based on defecation frequency (p = 0.071) and stool consistency (p = 0.746); e) There is a significant relationship between students' attitudes towards fibrous foods and defecation patterns based on defecation frequency (p=0.009) and consistency (p=0.022); and f) There is a significant relationship between consumption behavior of fibrous food and defecation pattern based on defecation frequency (p=0.012) and stool consistency (p=0.038). Thus, students are expected to be able to pay attention to and regulate consumption patterns of fibrous foods and increase their consumption.

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