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## THE CORRELATION BETWEEN EATING PATTERNS AND CONSTIPATION IN ELDERLY AT GOTONG ROYONG HOSPITAL IN SURABAYA

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### ABSTRACT

**Introduction:** Constipation is defined as a decrease in the frequency of defecation that occurs less than three times a week, pushing during defecation, hard stool consistency, and the pain that accompanies when defecating. Constipation is one of the most common digestive tract complaints in the elderly. Constipation prevalence increases with age because there is a decrease in the function of the gastrointestinal system in elderly, therefore constipation is often complained. Complications of constipation include fecal impaction, which is interpreted as obstruction caused by hardened stool. As a result, the elderly cannot feel and respond to the existence of feces in the rectum, which requires careful monitoring in this population. **Objective:** To analyze the dietary patterns that influence the incidence of constipation in the elderly at the Gotong Royong Hospital in Surabaya. **Method:** In the study, the cross-sectional research method is used. The research instruments used in this study were the Food Frequency Questionnaire (FFQ) questionnaire and the constipation questionnaire. The sample of this study was a portion of the elderly population that meets the inclusion and exclusion criteria and seeks treatment at all polys at the Gotong Royong Hospital in Surabaya from September 1 - November 4, 2023. After the data was collected, the data was then analyzed using the Fisher Exact Test using SPSS. **Result:** The results of the Fisher's Exact Test analysis indicate the relationship between eating patterns and constipation in the elderly at Gotong Royong Hospital in Surabaya, with an Exact Sig value of 0.585 ( $p > 0.05$ ). This suggests that there is no significant correlation between eating patterns and constipation in the elderly at Gotong Royong Hospital in Surabaya. **Conclusion:** There is no correlation between eating patterns and constipation in the elderly at Gotong Royong Hospital in Surabaya.

**Keywords:** Eating pattern, constipation, elderly

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## INTRODUCTION

Elderly is a cycle in human life that occurs naturally.<sup>1</sup> Elderly people are categorized as individuals, both men and women, who are over 60 years old.<sup>2</sup> The number of elderly people will increase over time along with advances in the health sector, accompanied by an increase in life expectancy for the elderly.<sup>3</sup>

The proportion of the world's elderly population in 2019 reached 13.4%, in 2050 it is predicted to increase to 25.3%, and in 2100 it is estimated to be 35.1%.<sup>4</sup> As is the case in the world, the number of elderly people in Indonesia will increase from year to year, in 2018 there were 9.27% or around 24.49 million elderly people of the total population.<sup>5</sup>

Elderly people will experience decline in various aspects such as physical, sociological, psychological, and spiritual, so many elderly people will experience health problems. Decreased function and structure of the gastrointestinal system cause the elderly to frequently experience constipation.<sup>6</sup> The result of a decrease in the function of the digestive system is characterized by failure of the rectum to empty its contents, increased water and electrolytic absorption due to decreased colon motility, so the elderly often complain

of constipation.<sup>7</sup> In this case, the researcher wanted to research cases of constipation in the elderly, especially at the Gotong Royong Hospital in Surabaya.

As age increases, the prevalence of constipation will increase. Several health behavioral factors can influence constipation, such as consuming foods that are low in fiber, inadequate fluid intake, and minimal activity levels. Constipation can cause severe stress for sufferers because it feels uncomfortable.<sup>8</sup>

Each person's defecation pattern is different and is influenced by various factors, such as how much fluid they drink and the type of food they consume every day. If these factors are not met, the consequences can cause problems with the digestive system.<sup>9</sup> The risk factor of consuming low-fiber foods can be the cause of constipation because low fiber can reduce the mass of stool which in the end is difficult to expel.<sup>10</sup> The average Indonesian population consumes 10.5 grams of fiber every day, this value shows less than half of the recommended amount consumed, while the fiber requirement recommended by the World Health Organization (WHO) is 25-30 grams every day.<sup>10</sup> Therefore, the researcher wants to research to find out whether there is a relationship between eating patterns and the incidence of constipation in

the elderly at Gotong Royong Hospital, Surabaya.

## METHOD

This research uses an analytical observation research design with a cross-sectional method with a sample of 45 individuals. Sample collection in this study used a consecutive sampling technique. Research data was collected by filling out questionnaires by elderly people who came to Gotong Royong Hospital Surabaya during the research period and who had agreed to informed consent and had adjusted to the inclusion and exclusion criteria. Elderly people who have signed the informed consent can then fill out the questionnaire and individuals who do not sign will not continue filling out the questionnaire. Then the results were analyzed again using the Fisher Exact Test. This test is used in statistical analysis of research because both data scales are nominal and the number of two variables is small.

The research began on 01 September – 04 November 2023 and was carried out after obtaining research approval and having received a certificate of passing ethical requirements by the Health Research Ethics Commission, Faculty of Medicine, Widya Mandala Catholic University, Surabaya, and

having obtained a letter of research approval at Gotong Royong Hospital, Surabaya.

After the data has been collected, the next stage is to process the data. Data processing in this research will be carried out using the Statistical Product and Service Solution (SPSS) application with independent and dependent variables which are classified in the nominal data category. In this study, the Fisher Exact Test was used. The data that has been processed is then analyzed and the research results are presented.

## RESULT

### Location and Research Population Characteristics

This research was carried out at the Gotong Royong Surabaya Hospital which is located on Jl. Medokan Semampir Indah no 97, Medokan Semampir, Sukolilo, Surabaya, East Java. The population determined in the study is data on patients who came for treatment at Gotong Royong Hospital Surabaya in all polyclinics in June 2023.

The number of samples obtained was 44 individuals which was then adjusted to 45. The number of samples was calculated using the Slovin formula. In collecting data, the researcher carried out a sampling technique using interviews with individuals followed

by giving a questionnaire regarding eating patterns and a questionnaire regarding the incidence of constipation. Before taking the data, the researcher asked several questions regarding inclusion and exclusion criteria.

### Distribution of Research Sample Characteristics

**Table 1. Sample Distribution by Age and Gender**

Age	Frequency (n)	Percentage (%)
60-65	15	33,3
66-70	12	26,6
71-75	12	26,6
76-80	5	8,8
> 80	1	1,2
Gender	Frequency (n)	Percentage (%)
Female	35	77,7
Male	10	22,2

In the table above, it can be seen that the largest frequency is 15 people aged 60-65 years (33.3%) and the smallest frequency is one person aged >80 (1.2%). In the analysis based on gender, it was found that the largest frequency was female with a total of 35 people (77.7%), and male with a total of 10 people (22.2%).

**Table 2. Distribution of Research Sample Characteristics with Constipation**

Characteristic	Frequency (n)	Percentage (%)
Not Constipated	42	93,3
Constipated	3	6,6

The data showed that three individuals were constipated (6.6%) and 42 individuals were not constipated (93.3%).

**Table 3. Eating Patterns Distribution**

Characteristic	Frequency (n)	Percentage (%)
Inadequate: < research score menu (<389,6)	25	55,5
Adequate: ≥ research score menu (≥389,6)	20	44,4

From the data above, characteristics have been determined by calculating the median of the total research scores<sup>12</sup>. The results can be seen that as many as 25 individuals have a diet that is still classified as inadequate (55.5%), while there are 20 individuals with an adequate diet (44.4%).

**Table 4. Fisher Exact Test Analysis Test**

Eating Pattern	Constipation		Exact Sig. (1-Sided)
	Yes	No	
Inadequate	2	23	0,585
Adequate	1	19	

In the results of the Fisher Exact Test, the exact Sig results were obtained. of 0.585. This figure is greater than  $p = 0.05$  ( $0.585 > 0.05$ ) which means that  $H_0$  is accepted. So, it can be concluded that there is no relationship between eating patterns and constipation in the elderly at Gotong Royong Hospital Surabaya.

## DISCUSSION

### Definition of Elderly

Elderly is a cycle in human life that occurs naturally.<sup>1</sup> Elderly people are categorized as individuals, both men and women, who are over 60 years old<sup>2</sup>. The number of elderly people will increase over

time along with advances in the health sector, accompanied by an increase in life expectancy for the elderly.<sup>3</sup>

The proportion of the world's elderly population in 2019 reached 13.4%, in 2050 it is predicted to increase to 25.3%, and in 2100 it is estimated to be 35.1%<sup>4</sup>. As is the case in the world, the number of elderly people in Indonesia will increase from year to year. In 2018 there were 9.27% or around 24.49 million elderly people of the total population.<sup>5</sup>

### Physiological Changes in the Elderly

Elderlies will usually experience a decline in various aspects such as physical, sociological, psychological, and spiritual, therefore many elderlies experience health problems.<sup>9</sup> Here are some physiological changes that occur in the elderly:

#### 1. Physical Changes

Decreased function of organ systems can put elderly people at greater risk of developing chronic diseases. Apart from that, there are several other physical declines such as decreased muscle mass and strength, bone density, capacity for exercise, respiratory function, and the ability to improve the immune system which results in decreased body endurance<sup>10</sup>.

#### 2. Sociological Decline

The social life of the elderly is different from those who are young, this plays a role in identifying the life of the individual. While young people can develop independently and can access various resources easily, elderly people are limited because of their limitations.<sup>11</sup>

#### 3. Psychological Decline

The aging process cannot be avoided, although there are some elderlies who are healthy and remain productive, there are some who are not ready to enter this phase. As a result, many of them feel unappreciated and lonely. This is what causes stress in the elderly.<sup>12</sup>

#### 4. Spiritual Decline

Elderly people usually experience improvements in the spiritual aspect. However, this depends on their habits in the previous age period, so quite a few people enter old age with a low spiritual level. This results in the elderly being less able to handle stress.<sup>13</sup>

### Definition of Eating Patterns

Eating patterns are closely related to eating frequency and type of food. If the diet is poor, it could be that the type of food eaten is unhealthy and the frequency of eating could be more than 3 times a day.<sup>14</sup> The fiber

requirements recommended by WHO are 20 – 35 grams every day. For adults aged 19 – 29 years, women need 32 grams per day and men need 38 grams per day.<sup>10,15</sup>

### Eating Patterns in the Elderly

This eating pattern can change due to changes in the sense of smell and taste, resulting in changes in food selection and the use of food additives in cooking so that salty and sweet tastes tend to be dominant. Not only that, elderly people have difficulty chewing or swallowing, so this can affect the elderly's diet.<sup>16,17</sup>

### Definition of Constipation

As age increases and aging occurs, the elderly will experience a decline in physical, biological, and psychological functions, and also a decline in the function of the gastrointestinal system.<sup>8</sup> As a result of decreased function of the digestive system, the rectum will fail to empty its contents, colon motility will be reduced, causing increased water and electrolyte absorption so that constipation often occurs in the elderly.<sup>10</sup>

### Constipation Complications

Although complaints of constipation are disturbing in the elderly, complications of constipation can be serious, such as fecal

impaction or obstruction caused by hardened feces. Fecal impaction is the result of prolonged exposure of feces to the absorption capacity of the colon and rectum. This can result in the elderly being unable to feel and respond to the presence of feces in the rectum.<sup>11</sup>

### Factors that Cause Constipation

The incidence of constipation increases with age. However, several other factors can increase the incidence of constipation in the elderly, including lack of physical activity, medical conditions in the elderly, such as stress, stroke, hemorrhoids, and use of diuretic drugs. Constipation in the elderly can also be caused by neurological problems such as Parkinson's disease, which depends on the duration and degree of the disease.<sup>18</sup> Mechanical obstruction, such as the presence of malignant lesions, tumors, anal fissures, or strictures can be a risk factor for constipation in the elderly.<sup>19</sup>

### Interrelationship between Variables

The intestines cannot absorb fiber. However, in the digestive process, fiber has a very important role. Fiber can help improve digestion and can reduce or prevent the risk of obesity. Dietary fiber functions so that food can last a long time in the stomach.<sup>20</sup>

The easiest sources of fiber are found in vegetables and fruit.<sup>21</sup>

Fiber foods can last in the stomach for 24 hours, while other foods can last for 4 hours. Helping to stimulate the activity of the intestinal tract so that feces are expelled regularly is another function of dietary fiber. In addition, dietary fiber can absorb large amounts of water, which softens feces so that constipation can be prevented.<sup>20</sup>

### **Analysis of Eating Patterns with Constipation in the Elderly at Gotong Royong Hospital Surabaya**

From the results of the research analysis, it can be concluded that there is no significant relationship between eating patterns and constipation in the elderly at Gotong Royong Hospital, Surabaya. From the results, it was found that the amount of fiber that had been calculated based on the results of the frequency of eating patterns with fiber content in elderly people seeking treatment at Gotong Royong Hospital in Surabaya was 8.7g, which was still less than the recommended amount of fiber content that needed to be consumed every day, namely 20 – 35g.<sup>10,15</sup>

The cause of can occur due to several other unexpected predisposing factors such as fluid intake and physical activity in the

elderly as well as neurological problems or mechanical obstruction in the digestive tract system of the elderly<sup>18,19</sup>. Apart from that, constipation in the elderly can also be caused by health and environmental behavioral factors.<sup>19</sup>

### **CONCLUSION**

The results of the research can be concluded that the incidence of constipation in the elderly at Gotong Royong Hospital is relatively low, namely that three individuals were constipated (6.6%) and 42 individuals who were not constipated (93.3%). Analysis of the frequency of eating patterns showed that there were 25 individuals with poor eating pattern frequency (55.5%) and 20 individuals with sufficient eating pattern frequency (44.4%). The statistical test results obtained through the Fisher Exact Test using SPSS obtained Exact Sig = 0.585 (0.585 > 0.05), so it can be concluded that there is no significant relationship between eating patterns and constipation in the elderly at Gotong Royong Hospital, Surabaya.

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