**Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development**
**Vol. 19, Issue 3, 2019**
**PRINT ISSN 2284-7995, E-ISSN 2285-3952**

# CORRELATION BETWEEN STUDENTS DIET TOWARDS GASTRITIS IN FACULTY OF AGRICULTURAL INDUSTRIAL TECHNOLOGY OF PADJADJARAN UNIVERSITY

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***Abstract***

*Gastritis or in Indonesian known as "maag" is a disease that disrupts activity and if not handled properly it could be fatal. The dietary habit that consists of the frequency of eating, the portion of food and the type of food that is not good greatly affects the occurrence of gastritis, occasionally these conditions cause injury to the stomach wall. The aims of this research was to discover the correlation between students dietary habit towards gastritis in faculty of agricultural industrial technology of Padjadjaran University. Data collection used is a questionnaire adjusted to the aim of this research and refers to the concepts and theories have been made. Data analysis used is a statistical test through univariate analysis and bivariate analysis. Univariate analysis which carried out is characteristics of respondents through age, gender, diet that consists of the frequency of eating, food portions, type of food and the occurrence of gastritis. In addition, bivariate analysis was carried out regarding the correlation between the characteristic of students diet (age, gender, frequency of eating, food portions and type of foods) towards gastritis. In the Agricultural Industrial Technology Faculty of Padjadjaran University, students who suffer gastritis as much as 70%. And 17-20 years old students who suffer gastritis as much as 77%. Female students who suffer gastritis is 65%, the students with less eating frequency is 56%, the students who like a type or variety of food is 63%, and the students with less of food portion is 63%. There was a significant correlation between age, gender, eat frequency, food portion and food types towards gastritis to students at Agricultural Industrial Technology Faculty of Padjadjaran University.*

***Key words*****:** *gastritis, diet, food portions*

## INTRODUCTION

World Health Organization (WHO) conducted a review of several countries and the results of the percentage of occurrence gastritis in England 22%, China 31%, Japan 14.5%, Canada 35% and French 29.5%. In the world, gastritis affects 1.8–2.1 million of the population each year. The occurrences of gastritis in Southeast Asia is approximately 583,635 of the population each year. The prevalence of endoscopic confirmed gastritis in population at Shanghai is approximately 17.2% which is substantially higher than the population in the west which approximately 4.1% and is asymptomatic. Gastritis is usually considered as a little thing, but gastritis is the beginning of a disease that could cause a trouble.

According to WHO in 2009, the percentage of occurrence gastritis in Indonesia as much as 40.8%. The incidence of gastritis in several regions in Indonesia is quite high with prevalence of 274,396 cases from 238,452,952 residents. The percentage of occurrence gastritis in Surabaya as much as 31.2%, Denpasar 46%, while in Medan it reaches 91.6%. Based on Indonesian Health profile in 2009, gastritis is one of the 10 most common diseases suffered by inpatients at the hospitals in Indonesia with 30,154 cases (4.9%). Based on data from the West Sumatera Provincial Health Office, Gastritis ranks 3$^{rd}$ out of the 10 most diseases in West Sumatera in 2009 which is 202,577 cases (11.18%).

Gastritis or in Indonesian known as "maag" is a disease that disrupts activity and if not handled properly it could be fatal. Usually gastritis occurs in human who have irregular diet and eat foods that stimulate stomach acid

production. Some infections of microorganism can also cause gastritis. The indications of gastritis are pain in the pit of stomach, nausea, vomiting weak bloating and crowded, decreased appetite, pale, fever, headache and always belch, and in the worst condition could vomit blood [15]. The causes of gastritis are distinguished by internal factors which is the presence of conditions that stimulate excessive stomach acid release, and external substances that cause irritation and infection. Some risk of gastritis are using aspirin or non-steroidal anti-inflammatory, helicobacter pylori infection, alcoholism, smoker, stress, irregular eating habits and lots of spicy and sour foods [19].

Gastritis usually begins with an irregular diet that make the stomach become sensitive if the stomach acid increases. Diet is an information that provides an overview of the types and models of food consumed every day, diet consists of the frequency of eating, food portions and food types. A balanced menu needs to be started and known so that balanced eating habits are formed. A good and regular diet is one of the management and preventive action of gastritis. Healing of gastritis requires food regulation as an effort to improve digestive tract. Diet or food consumption are the types and quantities of food consumed by a person or group at a certain time [17] [9].

The impact of gastritis is very disturbing the nutritional condition or nutritional status. Nutritional condition consists of malnutrition, good/normal or over nutrition. Lack of one nutrient could cause a disease in the form of a deficiency disease. Deficiencies in marginal limits cause a light disturbance or decreased functional ability [21]. For example, deficiency of vitamin B1 can cause the body get tired quickly, while in human iron deficiency can reduce work and learning performances, in addition to decreasing the body's resistance to infection so it is easy to get disease.

The researchers chose the Agricultural Industry Technology Faculty students of Unpad because they found that during college the students generally had unhealthy lifestyles such as lack of attention to food consumed both diet and food types. Providing a variety of foods is very influential, because that can cause boredom, reducing appetite and prefer fast food. So the researchers were interested in conducting a study on "Correlation between Students Diet towards Gastritis in Faculty of Agricultural Industrial Technology of Padjadjaran University".

Based on a preliminary study of several students who often eat late, like spicy food, and consume food carelessly. Unattractive presentation of foods, such as the taste and type of food that is not good, causes the students prefer fast food. The diet that consists of the frequency of eating, food portion and food type that is not good can affect the occurrence of gastritis, occasionally these conditions cause injury to the stomach wall.

Based on these data, the researchers were interested in researching about "Is there a correlation between students diet towards gastritis in Faculty of Agricultural Industrial Technology of Padjadjaran University?".

## MATERIALS AND METHODS

This research was designed to direct the controls factors that might affect the validity of the research. The methodology of this research is a quantitative using Cross Sectional design. In this study, all variables observed, measured at the same time. This research used primary data to determine the correlation between students diet and gastritis in Agricultural Industrial Technology Faculty of Unpad. The independent variable is diet and the dependent variable is the occurrence of gastritis will be collected at the same time. The advantage of this Cross Sectional method is the easiness, simple, economical in terms of time and the results can be obtained quickly. This research was conducted through distributing the questionnaires to Students.

The researcher used the student population of the Faculty of Agricultural Industrial Technology Unpad with the following inclusion criteria: 1. Students of the Faculty of Agricultural Industrial Technology Unpad. 2.

Willing to be a respondent. The time of this research is held from May 18 to May 21, 2017.

Data collection used is a questionnaire adjusted to the aim of this research and refers to the concepts and theories have been made. The instrument for data collection consists of 3 parts: 1.Demographic data (Identity includes the date of filling, initial name, age and gender). 2.Diet questionnaire (second part questionnaire to find out the frequency of eating habits, types of food, and portion of food. To measure the frequency of meals that will be filled by respondents with answers Yes or No). 3.Gastritis questionnaire (third part of questionnaire to determine the occurrence of gastritis).

Data analysis used is a statistical test through univariate analysis and bivariate analysis. Data analysis with univariate was carried out on each variable of the research results, and bivariate analysis was performed on two variables that were allegedly related.

*Univariate analysis*, the variables in this research were arranged descriptively with a diet distribution table. The diet distribution table contains the characteristics of the respondents including age, gender and diet.

*Bivariate analysis* is to know the correlation between independent variables and dependent variables using the Chi Square statistical test with a significance level of P≤0.05 and 95% of confidence interval (CI). There are several stages in bivariate analysis :

a. Establishing a hypothesis, hypothesis is a statement that needs to be tested for truth. The hypothesis used in this research is the alternative hypothesis (Ha) because the researcher has a temporary answer from the research results, which has a correlation between the characteristics of students on diet with gastritis. The statistical test directions used in this research are two tail because they only state differences/correlations in students diet with gastritis without looking at whether the dietary characteristic variables are higher/lower than gastritis.

b. Determination of appropriate statistical tests. This research aims to determine the correlation of diet with gastritis in students so that the Chi-Square test is used. This is because the research uses two categorical variables including diet and gastritis in students.

c.Determining the level of boundary significance/level of significance, often called the α value, in this research the value of α is 5%.

d.Statistical test. This stage is to calculate sample data into the appropriate hypothesis test. This research was aware of whether there was a correlation between diet and gastritis in students, the measurement data was entered into the Chi-Square test formula. The Chi-Square testing process is comparing the frequency that occurs (observation) with the frequency of expectations. If the frequency of observation with the expected frequency value is the same, then there is no significant correlation, otherwise if it is not the same, then there is a significant correlation.

e. Statistical test decisions. The results of statistical tests produce two possible decisions, namely rejecting the null hypothesis (Ho) and failing to reject the null hypothesis (Ho). The researcher looks for p (value) in the statistical test. The p value is used to make a statistical test decision by comparing the p value with α (alpha). This research uses α 5% so that if the value of p > α is obtained, the results of statistical calculations are not significant, meaning that there is no correlation between the characteristics of diet and gastritis in FTIP students. Conversely, if p≤α is obtained, the results become significant, meaning that there is a significant correlation between diet and gastritis in FTIP students.

So this research resulted in the existence of several variables which showed a significant correlation including the variables of age, gender, type of food, and diet with gastritis. And there are several variables that show no significant correlation, namely the frequency and portion of eating with gastritis.

## RESULTS AND DISCUSSIONS

### *Univariate Analysis*

Univariate analysis aims to describe systematically, actual or specific facts or

characteristics of a particular population or field consisting of respondent's age, respondent's gender, diet and gastritis incidence. The total number of samples consisting of several study programs at the Faculty of Agricultural Industrial Technology Unpad was 100 respondents and there were no missing data on respondent's age, respondent's gender, diet (frequency of eating, type or variety of foods, food portions) and the incidence of gastritis.

***a. Age***

The description of the age distribution of the respondents can be seen in Table 1.

Table 1. Frequency Distribution of Respondents Based on Age

| Age | Frequency | |
|---|---|---|
| | Number (n) | Percentage (%) |
| 17-20 | 77 | 77% |
| 21-25 | 23 | 23% |
| Total | 100 | 100% |

Source: processed data.

Based on Table 1, it was found that out of 100 respondents studied, the number of respondents aged 17-20 years was 77 respondents (77%) and respondents aged 21-25 years were 23 respondents (23%). So the majority of respondent's age is 17-20 years old compared to 21-25 years old.

Age is one of the risk factors for gastritis, especially in students or in the transition from being dependent on parents to periods of responsibility and the obligation to be able to stand alone. According to [20], dietary problems in students who are able to trigger gastritis are caused by several factors, including the habit of not having breakfast and usually girls are often stuck with an unhealthy diet, wanting a drastic weight loss to disrupt their diet. This because students have a body image that refers to their idols who are usually artists, models, celebrities who tend to have thin, tall, and slender bodies. Fast food eating habits also affect the occurrence of gastritis in which the nutritional composition is not balanced, which is too high in energy content, such as pasta, fried chicken, and usually consume excessive carbonated drinks and snacking habits that are low in nutrition (lack of calories, protein, vitamins and minerals) such as snacks, crackers, chips etc [5].

***b. Gender***

The description of gender frequency distribution in respondents can be seen in Table 2.

Table 2. Frequency Distribution of Respondents Based on Gender

| Gender | Frequency | |
|---|---|---|
| | Number (n) | Percentage (%) |
| Male | 35 | 35% |
| Female | 65 | 65% |
| Total | 100 | 100% |

Source: processed data.

Based on Table 2, it was found that out of 100 respondents studied, the number of male respondents was 35 respondents (35%) and female respondents was 65 respondents (65%).

Gender is an internal factor that determines nutritional needs, so there is a correlation between gender and the occurrence of gastritis [1]. Gender determines the size of nutritional needs for a person. Individual growth and development are very different between men and women.

According to [3], a wrong diet can affect other nutritional problems that occur in a lot students, especially women who lack iron or anemia. Anemia is a continuation of the effects of lack of macro nutrients (carbohydrates, proteins and fats) and lack of micro nutrients (vitamins, minerals). The prevalence of anemia in teenage-young adults in Indonesia is still quite high. Based on the national survey in 2000, the prevalence of anemia in adolescent girls was 57.1% while in adolescent boys it was 42.9%.

***c. Eating Frequency***

Table 3. Frequency Distribution of Respondents Based on Eating Frequency

| Eating Frequency | Frekuensi | |
|---|---|---|
| | Number (n) | Percentage (%) |
| 3 times a day (good) | 44 | 44% |
| <3 times a day (less) | 56 | 56% |
| Total | 100 | 100% |

Source: processed data.

The description of frequency distribution based on eating frequency in respondents can be seen in Table 3. Based on Table 3, it was found that out of the 100 respondents studied, the number of respondents who had a good frequency of eating was 44 respondents (44%) and respondents who had less frequency of eating were 56 respondents (56%). So the majority of respondents eat frequency is more the frequency of eating less than the frequency of eating well.

The results show that most students are at risk of gastritis. This is because more students have a frequency of eating less and have a habit of "snacking" that is low in nutrition. The purpose of eating frequency is the main meal frequency, which is 3 main meals every day, namely breakfast, lunch and dinner. The frequency of eating is a very important domain for gastritis [6] [10].

According to [12], the frequency of eating is good if the frequency of eating every day is 3 times the main meal or 2 times the main food with 1 meal interlude, and is considered less if the frequency of eating every day 2 main meals or less so at risk for gastritis.

According to [7], naturally the stomach will continue to produce stomach acid every time in small amounts in 4-6 hours after eating, usually glucose levels in the blood have been absorbed and used a lot until the body will feel hungry and the amount of stomach acid stimulated in at that time. If someone is eating late for 2-3 hours, the stomach acid produced is more and more excessive so that it can irritate the gastric mucosa and cause pain around the epigastrium.

### *d. Type of food*

Table 4. Frequency Distribution of Respondents Based on Type or Variety of Food

| Type or Variety of Food | Frequency | |
|---|---|---|
| | Number (n) | Percentage (%) |
| Not sour and not spicy (not irritating) | 37 | 37% |
| acidic and spicy (irritating) | 63 | 63% |
| Total | 100 | 100% |

Source: processed data.

The description of the frequency distribution of food types respondents can be seen in Table 4.

Based on Table 4, it was found that out of the 100 respondents studied, the number of respondents who did not irritate food were 37 respondents (37%) and respondents who had irritating food types were 63 respondents (63%). So it can be concluded that in the Faculty of Agricultural Industrial Technology Unpad, most students like irritating foods.

[4] state that foods that are not careful such as spicy foods and acids will stimulate the stomach wall to release stomach acid, ultimately the strength of the stomach wall decreases, occasionally such conditions cause injury to the stomach wall which causes gastritis.

### *e. Food portion*

The description of the frequency distribution of food portions to respondents can be seen in Table 5.

Based on Table 5, it was found that out of the 100 respondents studied, the number of respondents with less food portions was 63 respondents (63%) and respondents with good food portions were 37 respondents (37%). So it can be concluded that most respondents had less of food portions.

Table 5. Frequency Distribution of Respondents Based on Food Portions

| Food Portion | Frequency | |
|---|---|---|
| | Number (n) | Percentage (%) |
| Less than 300-500 grams (<3-5 rice dishes / day) | 63 | 63% |
| 300-500 grams (<3-5 rice dishes / day) | 37 | 37% |
| Total | 100 | 100% |

Source: processed data.

According to the [5], the portion of food consumed every day must follow the general guidelines for balanced nutrition, namely dishes composed of staple foods (3-5 servings/day), side dishes (2-3 servings/day), vegetables (2-3 servings/day), and fruit (3-5 servings/day), while the food portion of respondents, the types of food eaten every day have not followed the general guidelines for balanced nutrition, so many students are at risk of gastritis.

### *f. Gastritis*

The description of the frequency distribution of gastritis in respondents can be seen in Table 6.

Table 6. Frequency Distribution of Respondents Based on Occurrence of Gastritis

| Gasrtitis | Frequency | |
|---|---|---|
| | Number (n) | Percentage (%) |
| Occur | 70 | 70% |
| Did Not Occur | 30 | 30% |
| Total | 100 | 100% |

Source: processed data.

Based on Table 6, it can be seen that of the 100 respondents studied, the number of respondents who had gastritis were 70 respondents (70%) and respondents who had no gastritis were 30 respondents (30%). The majority of respondents have more gastritis compared to no gastritis. So it can be concluded that most of respondents have gastritis. This is due to students who often eat late and like to eat sour and spicy foods, in addition to the irregular student diet that is easily attacked by gastritis.

***2. Bivariate Analysis***

***a. Correlation of Age with Gastritis***

To find out the correlation between age and gastritis in the respondents used the chi-square test. The results of the analysis are presented in Table 7.

Table 7. Correlation Between Age and Gastritis in Respondents

| Age | Gastritis | | | | Total | | OR 95% CI | P Value |
|---|---|---|---|---|---|---|---|---|
| | Suffered | | Not Suffered | | | | | |
| | N | % | N | % | N | % | | |
| 17-20 | 50 | 65% | 27 | 35% | 77 | 100% | 0.2778 (0.07-1.019) | 0.0431 |
| 21-25 | 20 | 87% | 3 | 13% | 23 | 100% | | |
| Total | 70 | 70% | 30 | 30% | 100 | 100% | | |

Source: processed data.

The results showed a correlation of age with gastritis was 77 respondents at the age of 17-20 years, there were 50 respondents (65%) had gastritis and 27 respondents (35%) who did not have gastritis, while from 23 respondents aged 21-25 years there were 20 respondents (87%) had gastritis and 3 respondents (13%) did not have gastritis. The results of statistical tests found a significant correlation between age and gastritis, obtained P value = 0.0431. Odd ratio test shows that the age of respondents 17-20 years has a chance of 0.2778 times gastritis than the age of respondents 21-25 years.

[9] found that age has a significant correlation with gastritis According to [14] Adolescence is a period of seeking self-identity, the desire to be accepted by peers and being attracted by the opposite gender causes them to maintain their appearance. All of that affects their diet, including the selection of food ingredients and the frequency of eating. They are afraid to feel fat until they avoid breakfast and lunch or only eat once a day, which causes gastritis.

According to [18] the incidence of anorexia and bulimia has increased over the past decade. About 1 in 100 girls between the ages of 16 and 18 suffer from anorexia. The peak incidence of anorexia occurs at the age of 17 years, and female adolescents experience more eating disorders compared to adolescent boys with a ratio of 10:1. The disorder is generated by fear that the body will get fat after eating and this mental fear will emanate through physical torture. That research and theory can be concluded that age can affect the occurrence of gastritis, especially on diet. Teenagers-young adult have a greater impact on the occurrence of gastritis. The study is in line with this research, that there is a significant correlation between age and gastritis, because the majority of students being included in adolescence, namely the period of seeking self-identity and students getting interested in the opposite gender causing students very guarding their appearance and stuck to the wrong diet. This is in accordance with the theory of [14], which states that nutritional problems that

arise in adolescence are triggered by mis-understanding about nutrition, which they often have an understanding that the body becomes a dream is the body slim, so to maintain their slowness they make wrong diet and they are easily attracted to new things, including advertised food products, even though these foods do not necessarily have good nutritional content.

***b. Correlation of Gender with Gastritis***

To find out the correlation between gender and gastritis in respondents used the Chi-Square test. The results of the analysis are presented in Table 8.

Table 8. Correlation of Gender with Gastritis in Respondents

| Gender | Gastritis | | | | Total | | OR 95% CI | P Value |
|---|---|---|---|---|---|---|---|---|
| | Suffered | | Not Suffered | | | | | |
| | N | % | N | % | N | % | | |
| Male | 16 | 46% | 19 | 54% | 35 | 100% | | |
| Female | 49 | 75% | 16 | 25% | 65 | 100% | 0.275 (0.115-0.657) | 0.003 |
| Total | 65 | 70% | 35 | 30% | 100 | 100% | | |

Source: processed data.

The results showed that from 35 male respondents there were 16 respondents (46%) who had gastritis and 19 respondents (54%) who did not have gastritis. While from 65 female respondents there were 49 respondents (75%) had gastritis and 16 respondents (25%) did not have gastritis. Statistical tests showed that there was a significant correlation between gender and gastritis, obtained P value = 0.003. For the Odd Ratio test showed that female had a chance of 0.275 times a gastritis than male.

The results of [11] study which states that there is a significant correlation between gender and gastritis. This result can be interpreted that there are differences in diet with gender between female and male which can lead to gastritis. In this research also found that female experience more gastritis than male. The study is in line with this research, that there is a correlation between gender and gastritis, it can be because the majority of students have poor diet and students have different tendencies in each gender on their diet. Besides that, it can be assumed that female students pay more attention to their body posture than male students, this is in accordance with [13] which states that female are more concerned with their appearance than male, so they more at risk of gastritis. Whereas according to the [14] that nutritional needs between male and female are different, especially in adolescence.

Table 9. Correlation of Frequency of Eating With Gastritis in Respondents

| Frequency of Eating | Gastritis | | | | Total | | OR 95% CI | P Value |
|---|---|---|---|---|---|---|---|---|
| | Suffered | | Not Suffered | | | | | |
| | N | % | N | % | N | % | | |
| Good | 26 | 59% | 18 | 41% | 44 | 100% | | |
| Poor | 44 | 78% | 12 | 22% | 56 | 100% | 0.3939 (0.164-0.946) | 0.0348 |
| Total | 70 | 70% | 30 | 30% | 100 | 100% | | |

Source: processed data.

***c. Correlation between Frequency of Eating with Gastritis***

To find out the correlation between the frequency of eating and gastritis in respondents used the Chi-Square test. These results are presented in Table 9.

The results showed that from 44 respondents at the frequency of eating there were 26 respondents (59%) had gastritis and 18 respondents (41%) had no gastritis. Whereas 56 respondents who ate less frequency there were 44 respondents (78%) had gastritis and 12 respondents (22%) did not have gastritis.

The statistical test results showed that there was a significant correlation between the frequency of eating and gastritis, obtained P value = 0.0348. For the Odd Ratio test, respondents indicated that the frequency of eating <3 times a day had a chance of 0.3939 gastritis times compared to respondents who ate 3 times a day.

It can be concluded that research results are in accordance with [12], which states that respondents who have a frequency of eating <3 times a day can cause gastritis compared to respondents who have a frequency of eating 3 times a day. While the purpose of eating frequency is the main frequency of eating, which is 3 main meals every day, namely breakfast, lunch and dinner. Naturally, food is processed in the body through digestive devices starting from the mouth to the small intestine [8]. Duration of food in the stomach depends on the nature and type of food. If on average, generally the stomach is empty between 3-4 hours. The frequency of eating <3 times a day can cause gastritis, a person will develop gastritis if they are late eating.

The results of [16] study stated that there was no significant correlation between the frequency of eating and gastritis. The results can be interpreted that there is no difference in frequency of eating between 3 times a day with <3 times a day. The study is not in line with this research, that there is a correlation between the frequency of eating and gastritis. Naturally the stomach will continue to produce stomach acid every time in small amounts after 4-6 hours after eating, usually the glucose level in the blood has been absorbed and used so much that the body will feel hungry and at that time stimulated stomach acid. If someone is late to eat 2 to 3 hours, the stomach acid produced is more excessive.

***d. Correlation between Food Types and Gastritis***

To find out the correlation between type or variety of foods and gastritis in respondents, the Chi-Square test was used. The results of the analysis are presented in Table 10.

Table 10. Correlation between Types or Variety of Foods with Gastritis in Respondents

| Types of Food | Gastritis | | | | Total | | OR 95% CI | P Value |
|---|---|---|---|---|---|---|---|---|
| | Suffered | | Not Suffered | | | | | |
| | N | % | N | % | N | % | | |
| Not Iritating | 22 | 59% | 15 | 41% | 37 | 100% | | |
| Iritating | 48 | 76% | 15 | 24% | 63 | 100% | 0.4583 (0.19-1.10) | 0.0779 |
| Total | 70 | 70% | 30 | 30% | 100 | 100% | | |

Source: processed data.

The results showed 37 respondents did not like the type or variety of irritating foods, 15 respondents (41%) did not have gastritis and 22 respondents (59%) had gastritis. While 63 respondents liked the type or variety of irritating foods, 48 respondents (76%) had gastritis and 15 respondents (24%) did not have gastritis. The results of the statistical test showed that there was no significant correlation between types of food with gastritis, obtained P value = 0.0779. The odds ratio test showed that respondents eating acidic and spicy foods had a chance of 0.4583 times gastritis than respondents who did not eat sour and spicy.

Types of food that irritate include spicy food, corrosive substances (vinegar and pepper) can cause gastric mucosal damage and cause edema and bleeding, not infrequently these conditions cause injury to the stomach wall. Consuming spicy or acidic foods will stimulate the digestive system, especially the stomach and intestines. This assumption is in accordance with [2], that consuming excessive amounts of spicy and sour foods can result in heat and pain in the pit of the stomach accompanied by nausea and vomiting. These indications make sufferers decrease their appetite. If the habit of consuming spicy and sour foods ≥ 1 x in 1 week, for 6 months left to continue can cause irritation to the stomach called gastritis.

***e. Correlation between portion of food and gastritis***

To find out the correlation between meal portions and gastritis in respondents, the Chi-

Square test was used. The results of the analysis are presented in Table 11.

Table 11. Correlation between Portions of Food and Gastritis in Respondents

| Food Portion | Gastritis | | | | Total | | OR 95% CI | P Value |
|---|---|---|---|---|---|---|---|---|
| | Suffered | | Not Suffered | | | | | |
| | N | % | N | % | N | % | | |
| Good | 21 | 57% | 16 | 43% | 37 | 100% | | |
| Poor | 49 | 78% | 14 | 22% | 63 | 100% | 0.375 (0.155-0.904) | 0.0268 |
| Total | 70 | 70% | 30 | 30% | 100 | 100% | | |

Source: processed data.

The results showed that from 37 respondents with a good portion of food there were 21 respondents (57%) had gastritis and 16 respondents (43%) who did not have gastritis. Whereas 63 respondents with less food portion there were 49 respondents (78%) had gastritis and 14 respondents (22%) did not have gastritis. The statistical test showed that there was a significant correlation between the portion of food and gastritis, obtained P value = 0.0268. The odds ratio test showed the portion of food less than 300-500gr has a chance of 0.375 times gastritis than the portion of food of 300-500gr.

The results of [16] study stated that there was no significant relationship between the portion of food and gastritis. The study was in line with this research, that there is no relationship between eating portions with gastritis. If someone is late to eat 2 to 3 hours, the stomach acid produced is more excessive. However, although the food portion is <300-500 grams, if it is mixed with consuming snacks, stomach acid will remain controlled.

## CONCLUSIONS

Based on the results and discussion, researchers can conclude as follows:

(i)Students of the Faculty of Agricultural Industrial Technology Unpad have more gastritis with a percentage of 70% compared to students who do not have gastritis.

(ii)Students of the Faculty of Agriculture Industrial Technology Unpad aged 17-20 years have more gastritis with a percentage of 77% compared to students aged 21-25 years.

(iii)Female students of the Faculty of Agriculture Industrial Technology Unpad have more gastritis with a percentage of 65% compared to male students.

(iv)Students of the Faculty of Agricultural Industrial Technology Unpad have more of 'less eating frequency' with a percentage of 56% compared to students with a good frequency of eating.

(v)Students of the Faculty of Agricultural Industrial Technology Unpad who like the type or variety of irritating foods more with a percentage of 63% compared to students who do not like the type or variety of foods not irritating.

(vi)Students of the Faculty of Agricultural Industrial Technology Unpad have more of 'less food portion' with a percentage of 63% compared to students with good food portions.

(vii)There is a significant correlation between age and gastritis in students at the Faculty of Agricultural Industrial Technology Unpad.

(viii)There is a significant correlation between gender and gastritis in students at the Faculty of Agricultural Industrial Technology Unpad.

(ix)There is a significant correlation between the frequency of eating and gastritis in students at the Faculty of Agricultural Industrial Technology Unpad.

(x)There is no significant correlation between types of foods and gastritis in students at the Faculty of Agricultural Industrial Technology Unpad.

(xi)There is a significant correlation between the portion of food and gastritis in students at the Faculty of Agricultural Industrial Technology Unpad.

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