The relationship between the vegetarian lacto diet and depression in the Sri Sri Jagannath Gaurangga Pasraman Community

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Abstract

Background: Depression is one of the most common mental disorders in society. The causes of multifactorial depression are factors: biology, psychology, and socio-culture. Diet is one of the socio-cultural stressors that is thought to cause depression. Vegetarian is one type of diet that reduces animal ingredients and prefers vegetable ingredients. A vegetarian diet is thought to prevent depression. This study aims to determine the relationship of the vegetarian lacto diet with depression in the Sri Sri Jagannath Gaurangga community in Denpasar.

Material and Methods: Study participants numbered 59 people in the Sri Sri Jagannath Gaurangga Pasraman community, Denpasar City, aged 18 years or older. Research using cross sectional analytic methods. Measurement of the vegetarian lacto diet using the Indonesian version of the Mediterranean Diet Score (MedDiet Score) questionnaire and depression using the Beck Depression Inventory (BDI) questionnaire. Data were analyzed descriptively and using chi square test with significance level of <0.05.

Results: The results showed an adequate vegetarian diet that was not depressed by 80% while a good vegetarian lacto diet that was not depressed by 78.8%. There was a negative significant relationship between the vegetarian lacto diet and depression in the Sri Sri Jagannath Gaurangga community of Denpasar ($p=0.043$).

Conclusion: The prevalence of depression in the Sri Sri Jagannath Gaurangga Pasraman community in Denpasar was 20.3%. We found that there was a significant negative relationship between the vegetarian lacto diet with depression.

Keywords: chi-square distribution, depression, Indonesia, mental disorders

Introduction

Diet is the way of person regulates the intake of food he consumes as a reaction to physiological, psychological, cultural, social, and spiritual influences. Diet is a repetitive activity that has three important components, namely type, frequency and amount. Diet is influenced by several factors such as: economic, social, cultural, religious, educational, and environmental. A healthy diet is widely used as a behavioral psychotherapy to prevent and cure disease, but an unhealthy diet will cause or aggravate a disease.¹⁻³ Changes in diet came to the attention of researchers especially in the field of mental health. Dietary changes are one of the factors causing the incidence of depression to increase in the world today.⁴

Depression disorder is a fundamental disorder characterized by changes in mood or affect toward depression that occurs in all age groups. Depression is one of the most common mental disorders and affects people throughout the world. In 2011 there were 24 million people around the world experiencing dietary disorders, more women. This disorder increases the incidence of depression that is comorbid with obesity. WHO reports that 10% of adolescents and 15% to 25% of adults currently face depression and dietary disorders.⁵ One in five people will experience depression along the point of their lives.⁶ This study aims to determine the relationship and prevalence of the vegetarian lacto diet with depression in the Sri Sri Jagannath Gaurangga Pasraman (SJGP) community.

Cite this article:

Palyngan O, Westa IW, Wahyuni AAS, Diniari NKS. The relationship between the vegetarian lacto diet and depression in the Sri Sri Jagannath Gaurangga Pasraman Community. *Journal of Clinical and Cultural Psychiatry*. 2021;2(1):7-10. DOI:10.36444/jccp.v2i1.21

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Material and Methods

This study is a correlational analytic study with a cross sectional study conducted at the Lacto vegetarian community of Pasraman Sri Sri Jagannath Gaurangga Denpasar City in April-June 2019. Data sources were collected directly from research subjects by questionnaires. The inclusion criteria were the lacto vegetarian community in SJGP aged >18 years and willing to participate in the research by signing an informed consent. Exclusion criteria were respondents with a history of mental illness and chronic physical pain.

Subjects were selected cluster random sampling, which is a way of sampling in groups or specific areas. Samples will be taken from the vegetarian lacto community in SGJP who met the inclusion criteria and agrees with informed written consent. In this study the status of depression is the status of a depressed community that is divided into two categories, namely depression is a community status that satisfies symptoms of depression and non-depression is a community status that does not meet the symptoms of depression. The Back Depression Inventory (BDI) questionnaire was used to assess depression. The BDI instrument had been tested for validity in Indonesia. This instrument has been widely used in general by researchers in Indonesia before and has become a standardized test that has been tested and accepted both internationally and in Indonesia with good validity and reliability tests (Alpha Cronbach's value of 0.889).

The vegetarian lacto diet variable is defined as a vegetarian community that consumes vegetable and milk ingredients and their derivatives and does not consume garlic and onions. This instrument was measured using the Mediterranean Diet Score (MedDit Score) questionnaire, which is one of the instruments to measure a high plant-based diet score. The MedDit Score instrument is widely used as a measurement tool for research worldwide. The Indonesian version of MedDit Score has been adjusted according to the type, frequency and amount of food consumed by the Indonesian people according to the provisions of the Indonesian Dietetic Association.

The data obtained were analyzed with the help of a computer using Statistical Package for the Social Sciences (SPSS) 21st edition and displayed in tabular and narrative form. A p value of <0.05 was considered significant.

Results

Among 65 subjects, 6 did not return the questionnaire so that those who met the inclusion criteria and filled out the questionnaire completely totaled 59 subjects. The mean age was 38.8 ± 1.71 years (Table 1). Of the total 59 participants, 62.7% were women and 37.3% were men. Based on Table 2, the description of the research data shows that overall respondents who are on the Lacto vegetarian diet: 67.8% are sufficient and 32.2% are good. Subjects who did not show depression were 47 (79.7%).

Table 1. Subject Characteristics

Characteristics	N=59	%
Age (years), mean $\pm$ SD	38.8 $\pm$ 1.71	
Gender		
Male	22	37.3
Female	37	62.7
Body Mass Index		
Low (<18.5 kg/m ²)	2	3.4
Ideal (18.5-24.9 kg/m ²)	35	59.3
Overweight (25-29.9 kg/m ²)	19	32.2
Obese (30.0-39.9 kg/m ²)	3	5.1
Vegetarian for		
<5 years	8	13.6
$\geq$ 5 years	51	86.4
Alcohol consumption		
Yes	1	1.7
No	58	98.3

Table 2. Table of variable frequency distribution

Variables	N	%
Diet Score		
Less	0	0
Enough	40	67.8
Good	19	32.2
Very good	0	0
Depression		
Yes	47	79.7
No	12	20.3

Table 3. Characteristics based on depression status

Characteristics	Depression Status			
	Depression		No Depression	
	N	%	N	%
Gender				
Male	3	13.6	19	86.4
Girl	9	24.3	28	75.7
Body mass index				
Less (<18.4 kg/m ²)	0	0	1	100
Ideal (18.5-24.9 kg/m ²)	9	25	27	75
Overweight (25-29.9 kg/m ²)	2	10.5	17	89.4
Obese (30-39.9 kg/m ²)	1	33.3	2	66.7
Vegetarian for				
<5 years	4	50	4	50
$\geq$ 5 years	8	15.69	43	84.31
Alcohol consumption				
Yes	1	100	0	0
No	11	18.9	47	81.1

The research data (Table 3) found that the most depressed were women by 24.3%, while men who were not depressed were 86.4%. From the body mass index (BMI), the research subjects who were most depressed were those who were obese / obese 33.3%, who did not experience the greatest depression on body weight less than 100%. The study subjects who drank the most alcohol experienced 100% depression, while the subjects who did not drink alcohol who did not experience depression were 81.1%. Table 4 shows the 2x2 relationship between vegetarian lacto diet and depression, where the Chi-Square test obtained $p=0.043$.

Table 4. The relationship between the vegetarian lacto diet and depression

Diet	Depression				p
	Depression		Not Depression		
	n	%	n	%	
Sufficient	8	20	32	80	0.043
Good	4	21.1	15	78.8	

Discussion

Vegetarian is a diet where there is no consumption of meat in the daily diet, which will eliminate the essential ingredients that may be needed for the synthesis of neurotransmitters.^{6,7} Vegetarian lacto dietary groups in addition to eating dishes made from vegetable ingredients, also consume milk and its processed products, such as cheese, butter, kefir cream, and yogurt. This group does not eat and drink from animal sources, do not eat onions and garlic.

The time or length of a vegetarian diet is one of the important sample characteristics in this study. This characteristic is important because according to previous studies, people who have been on a vegetarian diet for more than five years show low symptoms of depression. Most of the subjects who experienced depression in this study were those who had a vegetarian diet for less than 5 years which is 50%. This is consistent with previous research so it will not be a refractor in the study.

Previous research has said that excessive drinking of alcohol will make people easily depressed. In this study almost all participants did not drink alcohol as many as 58 people. Research subjects who drank depression with alcohol by 100%, this is in accordance with previous theories so that it will not be a biased factor in this study.

This research revealed that there is a significant relationship between the vegetarian lacto diet and depression. The SGJP community, who are on a vegetarian lacto diet, is likely to experience vitamin B12 deficiency which is mostly obtained from meat and lack of omega-3 fatty acids found in fish, especially sea fish. Both of these substances protect us from depression. People who go on a vegetarian diet are usually these substances will be obtained from vegetables, fruit, nuts, and seeds.

However, the SGJP community carried out a vegetarian lacto diet which means they still drink milk. Milk contains vitamin B12 which is good for preventing depression. The results of this study are supported by previous studies. Several other studies explain that a vegetarian diet has a protective effect on depression. One study explained that people on a vegetarian diet have EPA levels of 0.005 g, lower than 0.093 g omnivores ($p < 0.001$), DHA (0.015 vs. 0.162 g, $p < 0.01$). This explains that the vegetarian community is easily depressed due to low levels of EPA and DHA that are not obtained from animal products.

Another study supporting this study is a meta-analysis study who found the protective effect of vegetarian diets on depression. The incidence of depression was found to be lower in the vegetarian group with an odd ratio of 0.64 ($p < 0.001$).

A report showed the vegetarian lacto diet has a protective effect on the onset of depression especially in women ($OR=0.65$, 95%CI=0.46-0.91).²⁶ Another study reported that populations who consume vegetables more than three times per week are associated with a reduction in depressive events ($p=0.039$). A recent study showed that eating a diet high in fruits, soybeans, green tea, and vegetables can also reduce the incidence of depression.

Conclusion

The prevalence of depression in the Sri Sri Jagannath Gaurangga Pasraman community in Denpasar was 20.3%. We found that there was a significant negative relationship between the vegetarian lacto diet with depression, which indicated the vegetarian lacto diet is associated with a decreased incidence of depression.

Acknowledgment

The authors report no conflict of interests.

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