

Relationships between Nutritional Status, Beverage Consumption Habits, and Disease Frequency in High School Students

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ABSTRACT

This study aimed to analyze the relationship between nutritional status, beverage consumption habits, and disease frequency in high school students. Data were collected through an online questionnaire to explore the characteristics of the subjects: weight, height, beverage consumption habits, and disease frequency. The subjects were 78 students at SMA Muhammadiyah 25 Pamulang, Banten. This study has discovered nutritional status and nutritious beverage consumption habits are not related to disease frequency ($p > 0.05$). Meanwhile, herbal beverage consumption habits are related to disease frequency ($p < 0.05$). The herbal drink contains antioxidants that can improve immunity and cause less frequent disease.

Keywords: disease frequency, beverage consumption, herbal drink

INTRODUCTION

Changes in eating and drinking habits in the community occurred after the COVID-19 pandemic. People started to consume more foods and drinks that are believed to increase immunity, such as nutritious drinks and herbal drinks. Some nutritious drinks, such as milk and yogurt, and herbal drinks, such as herbs and spices, can support health and immunity (Isbill *et al.* 2020). Several studies have shown that foods and drinks rich in vitamins and minerals can boost immune system (Biçer 2020). An improved immune system will help lower bouts of disease. This study aimed to analyze the relationship between nutritional status, beverage consumption habits, and disease frequency in high school students.

METHODS

This study employed a cross-sectional study design and was conducted from February to May 2021. The subjects were 78 adolescents who were twelfth graders at SMA Muhammadiyah 25 Pamulang, Banten, Indonesia. Data were collected using an online questionnaire to explore the characteristics of the subjects: weight, height, beverage consumption habits, and disease frequency. The nutritional status was analyzed

using body mass index from subjects' body weight and height. The types of beverage consumption habits were collected and divided into non-nutritious drinks (tea, coffee, and boba drinks), nutritious drinks (milk, yogurt, and honey), and herbal drinks. The frequency of disease was categorized by the number of diseases in the last month into three categories: never, 1–2 times, and 3–4 times in a month. The data were analyzed using univariate tests and bivariate tests (chi-square test). Ethical approval was gained from the Ethics Committee of the Faculty of Medicine and Health, Universitas Muhammadiyah Jakarta (049/PE/KE/FKK-UMJ/II/2021).

RESULTS AND DISCUSSION

Relationships between nutritional status and disease frequency

Low nutritional status can make individuals more susceptible to diseases (Schneider 2023). The subjects of this study were female (65.4%) and male students (34.6%) aged 16–17 years old, and they mostly had a normal nutritional status (68%). Table 1 shows the relationship between nutritional status and the subjects' disease frequency.

Based on Table 1, subjects with normal nutritional status mostly experienced 1–2

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diseases in the past months (32%). Undernutrition and over nutrition can increase the risk of disease and exposure to viruses (Angraini & Ayu 2014). These results indicate lack of relationship between nutritional status and illness frequency ($p>0.05$).

Relationships between beverage consumption habits and disease frequency

Table 2 shows a relationship between the frequency of consumption of herbal drinks and the frequency of disease ($p<0.05$). The types of

Table 1. Relationships between nutritional status and frequency of disease among high school students in Banten

Nutritional status	Disease frequency in past month						Total		<i>p</i>
	None		1–2 times		3–4 times		n	%	
	n	%	n	%	n	%			
Underweight	7	8.97	8	10.26	1	1.28	16	20.5	0.283
Normal	21	26.92	25	32.05	7	8.97	53	68	
Overweight	4	5.13	3	3.85	2	2.56	9	11.5	
Total	32	41.03	36	46.15	10	12.82	78	100	

Table 2. Relationships between beverage consumption habits and frequency of disease among high school students in Banten

Drink consumption habits	Disease frequency in past month						Total		<i>p</i>
	None		1–2 times		3–4 times		%	n	
	%	n	%	n	%	n			
Tea									
Always	6.41	5	3.85	3	-	0	8	10.26	0.283
Often	23.08	18	19.23	15	7.69	6	39	50.00	
Seldom	11.54	9	23.08	18	5.13	4	31	39.74	
Coffee									
Always	11.54	9	16.67	13	3.85	3	25	32.05	0.332
Often	23.08	18	16.67	13	3.85	3	34	43.59	
Seldom	6.41	5	12.82	10	5.13	4	19	24.36	
Boba drinks									
Always	6.41	5	12.82	10	-	0	15	19.23	0.163
Often	30.77	24	26.92	21	8.97	7	52	66.67	
Seldom	3.85	3	6.41	5	3.85	3	11	14.10	
Milk									
Always	-	0	1.28	1	-	0	1	1.28	0.474
Often	21.79	17	25.64	20	3.85	3	40	51.28	
Seldom	19.23	15	19.23	15	8.97	7	37	47.44	
Yogurt									
Always	11.54	9	10.26	8	-	0	17	21.79	0.075
Often	21.79	17	25.64	20	5.13	4	41	52.56	
Seldom	7.69	6	10.26	8	7.69	6	20	25.64	
Honey									
Always	10.26	8	6.41	5	-	0	13	16.67	0.240
Often	19.23	15	23.08	18	5.13	4	37	47.44	
Seldom	11.54	9	16.67	13	7.69	6	28	35.90	
Herbal drinks									
Always	41.03	32	0	0	0	0	32	41.03	0.000*
Often	0	0	46.15	36	0	0	36	46.15	
Seldom	0	0	0	0	12.82	10	10	12.82	

*Significant at $p<0.05$

herbal drinks mostly consumed by subjects are tamarind, turmeric, and empon-empon. Spices and herbs are rich sources that provide powerful antioxidants (Embuscado 2015). Therefore, the community consumes herbs for immune boosters.

CONCLUSION

Nutritional status and nutritious beverage consumption habits are not related to disease frequency. Meanwhile, herbal beverage consumption habits are related to disease frequency. The herbal drink contains antioxidants that can improve the body's immunity and cause less frequent disease.

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DECLARATION OF CONFLICT OF INTERESTS

The authors have no conflict of interest.

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