

# The influence of knowledge and attitudes on snack industry consumption on the nutritional status of students nutrition program, University of Muhammadiyah Bima

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## ABSTRACT

They go to campus, thus increasing the likelihood of buying snacks is higher. As well as foods that are often consumed by students are industrial snacks which contain more carbohydrates, so they can cause other nutritional deficiencies. Foods that are often consumed by students are industrial snacks which contain more carbohydrates so that they can cause other nutritional deficiencies. Wrong eating habits in adolescence will have an impact on nutritional status. Malnutrition can reduce the body's resistance to disease, increase the incidence of disease (morbidity), reduce the level of intelligence and productivity. Meanwhile, nutrition is more associated with degenerative diseases at a younger age and the tendency for adolescents to experience obesity (Emilia et al., 2021). The purpose of this research is to know the effect of knowledge and attitudes on consumption of industrial snacks on the nutritional status of students of the University Of Muhammadiyah Bima Nutrition Study Program. This research was conducted at University Of Muhammadiyah Bima from November 12 to November 30, 2022. This type of research is a cross-sectional study. The population in this study were all students of the first semester of the nutrition study program with the sample selection using the accidental sampling method, namely 71 people. Data on nutritional status were taken by measuring student height and weight, and knowledge and attitudes towards snack consumption were measured using a questionnaire. Then the data were analyzed using the SPSS application using the Chi-Square test. The research results showed that there was a relationship between knowledge ( $P = 0.016$ ) and attitude ( $0.006$ ) consumption of industrial snacks on the nutritional status of University Of Muhammadiyah Bima nutrition study program students. This researcher hope that this study can increase the readers' awarness and knowledge about the consumption of industrial snacks in order to avoid various diseases related to snack consumption, such as obesity.

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## INTRODUCTION

Nutritional status is a condition caused by a balance between nutrients from food and the need for nutrients needed for the body's metabolism. A person's nutrient intake depends on age, weight, physical activity, and gender, and the intake of nutrients needed by each person's body is different (Melani et al., 2022). The nutritional status of adolescents is something that needs special attention because it has a big influence on the growth and development of the body as an adult (Arieska & Herdiani, 2020). Diet during this period determines psychophysical and emotional development as well as effectiveness in learning, which influences adulthood (Duma-Kocan et al., 2017)..

Hunger while on campus will cause students to buy snacks on campus; moreover, students rarely have breakfast when they go to campus, thus increasing the likelihood of buying snacks. As well as foods that are often consumed by students, industrial snacks contain more carbohydrates, which can cause other nutritional deficiencies (Harahap et al., 2020). A snack, or snack, is a type of food served outside the main meal time. Snacks can help meet calorie needs apart from those obtained from the main meal. In terms of calorie content, a poor snack should be lower than the main meal. Therefore, you shouldn't feel full after consuming snacks because snacks are only meant to make you not feel hungry. Snacks can be in the form of food or traditional snacks, such as cakes, snacks, and so on. Most snacks are not only empty of calories but also contain very few nutrients and can interfere with appetite (Emilia et al., 2021).

Wrong eating habits in adolescence will have an impact on nutritional status. Malnutrition can reduce the body's resistance to disease, increase the duration of illness (morbidity), and reduce the level of intelligence and productivity. While nutrition is more associated with degenerative diseases at a younger age and the tendency of adolescents to be obese (Emilia et al., 2021). WHO explained that in 2014, there were 1.9 billion adults who were overweight and around 600 million who were obese, and obesity was a cause of death in various countries. (RI Ministry of Health, 2018a) In Indonesia, the obesity rate has also increased from 15.4% in 2013 to 21.8% in 2018. Likewise with NTB, the prevalence of obesity in the population has also increased, from 12.0% in 2013 (RI Ministry of Health, 2013) to 14.9% in 2018 (RI Ministry of Health, 2018b).

The increase in the prevalence of obesity is due to an increase in sweet food and drinks, and the snack industry contributes the most energy substances after industrial drinks (Wardah & Ekayanti, 2015). In addition to obesity, students can also suffer from malnutrition caused by a lack of nutritional intake resulting from frequent consumption of foods that contain carbohydrates but are low in other nutrients; besides, the consumption of snacks can also interfere with appetite (Emilia et al., 2021). The malnutrition rate in Indonesia is 9.3%, and in West Nusa Tenggara it is 14.0% (RI Ministry of Health, 2018b). Adolescent eating patterns are now influenced by peer socialization, which aims for pleasure only and so as not to lose status among their peers. Teenagers are also easily receptive to the influence of westernized diets that are high in calories, fat, and fiber (Alif, 2020).

To obtain normal nutritional status, good nutritional knowledge is needed (Avila et al., 2021). Knowledge of nutrition is closely related to the ability to choose healthy foods and healthy snacks that affect nutritional status (Zerlina & Humayrah, 2023). The results showed that there was a relationship between nutritional knowledge and the nutritional status of health students at UNUSA with a p value > 0.05 (Arieska & Herdiani, 2020). Good knowledge will give birth to a positive attitude and then form healthy behaviors. The formation of a person's positive or negative attitude means having beliefs about something that give him a tendency to act in accordance with his opinion or in the form of a response, whether he likes it or not, to the object that is felt (Notoatmodjo, 2003; Surkti, 2021). A study (Julinar & Lubis, 2021) shows that there is a relationship between the habit of consuming snacks and the nutritional status of children. Attitudes toward choosing snacks play an important role in snacking habits and have an impact on the nutritional status of adolescents (Nasriyah et al., 2021). The researcher wanted to analyze the

effect of knowledge and attitudes about snack consumption on the nutritional status of students in the Nutrition Study Program at University of Muhammadiyah Bima.

## RESEARCH METHOD

This research was conducted at University of Muhammadiyah Bima from November 12 to November 30, 2022. This type of research is a cross-sectional study. The population in this study was all students in the first semester of the nutrition study program, with the sample selection using the accidental sampling method, namely 71 people. The knowledge data collection technique uses a true-false questionnaire instrument. Score one if the answer is correct and zero if the answer is wrong. The results of knowledge measurement will be divided into three categories: the good category if the answer is correct > 75%, the enough category if the answer is 61-75% correct, and the poor category if the answer is correct 60%. Furthermore, measuring attitudes using a questionnaire statement means strongly agree, agree, disagree, and strongly disagree. with scores for strongly agreeing = 4, agreeing = 3, disagreeing = 2, and strongly disagreeing = 1. The results of attitude measurement will be divided into two categories: support if the respondent's T score is > mean T and no support if the respondent's T score is mean T. The formula for finding a T score is  $50 + 10$  (mean or standard deviation). Furthermore, nutritional status data is taken by measuring the height and weight of students, which is then calculated based on the Body Mass Index (BMI).

Additionally, the data will proceed to the data processing stage after the initial steps, which include coding (grouping data and assigning codes or values to the provided questions to facilitate data entry and data analysis, after which each variable is categorized in accordance with a number). The second step is editing, and the third is data entry, which involves entering all of the collected data into the SPSS program. The fourth step is cleansing, which involves reviewing previously submitted data. The penultimate step involves data analysis using the Chi-square test to determine the impact of knowledge and attitudes on nutritional status. Additionally, the tabulated results of the analysis of the data.

## RESULTS AND DISCUSSIONS

**Table 1.** Description of the characteristics of the Nutrition Study Program Student at the University of Muhammadiyah Bima

| Variables           | n(Total=71) | %    |
|---------------------|-------------|------|
| Age (years)         |             |      |
| 16-18 Years         | 44          | 62   |
| 19-21 Years         | 27          | 38   |
| Father's Education  |             |      |
| SD                  | 12          | 16,9 |
| JUNIOR HIGH SCHOOL  | 9           | 12,7 |
| SENIOR HIGH SCHOOL  | 36          | 50,7 |
| D1/D2               | 2           | 2,8  |
| D4/S1               | 11          | 15,5 |
| S2/S3               | 1           | 1,4  |
| Father's occupation |             |      |
| civil servants      | 14          | 19,7 |
| Farmers             | 42          | 59,2 |
| Farm workers        | 3           | 4,2  |
| Fisherman           | 2           | 2,8  |
| Private employees   | 3           | 4,2  |
| Self-employed       | 7           | 9,9  |
| Mother's Education  |             |      |
| SD                  | 11          | 15,5 |
| JUNIOR HIGH SCHOOL  | 14          | 19,7 |
| SENIOR HIGH SCHOOL  | 41          | 57,7 |
| D3                  | 1           | 1,4  |
| D4/S1               | 4           | 5,6  |

| Mother's job   |    |      |
|----------------|----|------|
| civil servants | 4  | 5,6  |
| Farmers        | 5  | 7,0  |
| IRT            | 59 | 83,1 |
| Farm workers   | 1  | 1,4  |
| Self-employed  | 2  | 2,8  |

Based on Table 1, it was found that the average student of the nutrition study program was 16–18 years old, namely 44 people (62%). This is a group of adolescents who belong to the vulnerable group. In late adolescence, relatively large nutritional needs are caused because at this age there is rapid growth accompanied by physiological changes, so constant nutrition is needed, including frequency of meals and types and sources of food consumed. (Simanjuntak, 2022). The average education of the fathers of nutrition study program students is high school for as many as 36 people (50.7%) and working as farmers for as many as 42 people (59.2%). The average education of the mothers of nutrition study program students is high school; as many as 41 people (57.7%) work as IRT (housewives), as many as 59 people (83.1%).

**Table 2.** The Influence of Snack Consumption Knowledge on the Nutritional Status of Nutrition Study Program Students at the University of Muhammadiyah Bima

| Snack Consumption Knowledge | Nutritional status |      |        |      |     |      | Total |      | <i>p.s</i> |
|-----------------------------|--------------------|------|--------|------|-----|------|-------|------|------------|
|                             | thin               |      | Normal |      | Fat |      |       |      |            |
|                             | n                  | %    | n      | %    | n   | %    | N     | %    |            |
| Not enough                  | 7                  | 9,9  | 3      | 4,3  | 4   | 5,6  | 14    | 19,7 | 0.016      |
| Enough                      | 13                 | 18,2 | 36     | 50,7 | 7   | 9,9  | 56    | 78,9 |            |
| Good                        | 0                  | 0    | 0      | 0    | 1   | 1,4  | 1     | 1,4  |            |
| Total                       | 20                 | 28,1 | 39     | 55   | 9   | 16,9 | 71    | 100  |            |

Based on table 2, it was found that out of 56 (78.9%) students of the nutrition study program who had sufficient knowledge, 13 people (18.2%) were undernourished, 36 people (50.7%) had normal nutritional status, and 7 people (9.9%) had more nutritional status. Furthermore, only 1 person (1.4%) had good knowledge but had a higher nutritional status. The results of the Chi-square test stated that there was an effect of knowledge of snack consumption on the nutritional status of students in the University Muhammadiyah Bima Nutrition Study Program with a value of  $P = 0.016$  ( $P < 0.05$ ). This is in line with research (Arieska & Herdiani, 2020), which shows that there is a significant influence between knowledge and nutritional status of students, which means that the lower a student's knowledge of snack consumption, the greater the effect that the student has an unbalanced nutritional status such as undernutrition or obesity. As well, research (Aulia, 2021) shows that there is an influence between knowledge of nutrition and attitudes about nutrition on the nutritional status of students at SMPN 2 Banjarharjo.

Someone who has knowledge about the amount, frequency, content, type, method of administration, and benefits of nutrients will try to choose foods that contain nutrients according to their nutritional needs so that their nutritional status can become normal (Aulia, 2021). Meanwhile, based on research, it shows that there is no significant relationship between nutritional knowledge and attitudes towards choosing snacks and the nutritional status of students at SMPN 1 Palu (Laenggeng & Lumalang, 2015). Yessy Octa Fristika and Siti Amallia (2022) said that students who have good knowledge about nutrition have the opportunity to get good nutritional status 9.7 times more often than students who have poor knowledge about nutrition. In addition, nutritional knowledge is also very important in determining a person's behavior in determining the type of food that is chosen. The better the knowledge of nutrition, the better a person is at determining the type and amount of food needed by the body. Students also really like snack food (dense in calories and junk food compared to a balanced staple food) (Aulia, 2021).

Errors in choosing food and insufficient knowledge about nutrition will result in nutritional problems, which in turn affect nutritional status. Good nutritional status can only be achieved with a good diet, namely a diet based on the principle of balanced nutrition (Yessy Octa Fristika & Siti Amallia, 2022). Adding knowledge can improve a person's cognitive abilities, which can then produce responses in the form of good attitudes and behaviors (Roring et al., 2020). The availability of food at home and at the boarding house is one of the factors that is influenced by knowledge (Jayanti & Novananda, 2019).

**Table 3.** The Influence of Snack Consumption Attitudes on the Nutritional Status of Nutrition Study Program Students at the University of Muhammadiyah Bima

| Snack Consumption Attitude | Nutritional status |      |        |      |     |      | Total |     | p.s   |
|----------------------------|--------------------|------|--------|------|-----|------|-------|-----|-------|
|                            | thin               |      | Normal |      | Fat |      | N     | %   |       |
|                            | n                  | %    | n      | %    | n   | %    |       |     |       |
| Positive                   | 3                  | 4,2  | 21     | 29,6 | 3   | 4,2  | 27    | 38  | 0.006 |
| Negative                   | 17                 | 23,9 | 18     | 25,4 | 9   | 12,7 | 47    | 62  |       |
| Total                      | 20                 | 28,1 | 39     | 55   | 2   | 16,9 | 71    | 100 |       |

Based on Table 3, it was found that out of 47 people (62%) who had a negative snack consumption attitude, there were 17 people (23.9%) with undernourished status, 18 people (25.4%) with normal nutritional status, and 9 people (12.7%) with more nutritional status. Furthermore, of the 27 students (38%) who had a positive consumption attitude, 3 people (4.2%) were undernourished, 21 people (29.6%) had normal nutritional status, and 3 people (4.2%) had nutritional status. more. The results of the Chi-square test found that there was an influence of the attitude toward consuming snacks on the nutritional status of students in the nutrition study program, with a value of  $P = 0.006$  ( $P < 0.05$ ). This is in line with research (Julinar & Lubis, 2021), which shows that snack consumption habits have an influence on the nutritional status of children. But research (Hasibuan, 2020) This shows that there is no relationship between snack consumption attitudes and children's nutritional status.

About 62% of nutrition students have a negative attitude towards consuming industry snacks. This is due to the large number of students who live in boarding houses, so they skip breakfast, and the lack of access to healthy snacks around campus, which makes students prefer to consume industrial snacks compared to healthy snacks. A study (Alhidayati et al., 2018) shows that the absence of a healthy canteen increases the risk of choosing unhealthy snacks by 13 times compared to healthy snacks. As well, irregular breakfast habits can affect concentration in learning, reduce work productivity, and affect short-term memory (Simanjuntak, 2022). College students in their late teens spend most of their time on campus. Campus activities such as lectures, doing assignments, and other activities that lead to the fulfillment of food with snacks outside the home Attitude has three main components: trust, evaluation, and emotion towards an object. Of the three components, they tend to form a complete attitude. To form an attitude requires knowledge, belief, and emotion (Hasibuan, 2020). Attitudes are also easily influenced by the environment; research shows that adolescents who are on a diet will have poor eating habits, which result in a lack of nutritious food intake. (Sustainable, 2020). Attitude is a component that precedes action. Attitude shows a tendency to behave that exists within a person and is reflected in the form of behavior towards objects, such as knowledge variables. Attitudes can also influence behavior, as stated by Gren, where perceptions then give birth to attitudes and in turn give birth to actions or actions. (Rahayu et al., 2019)

## CONCLUSION

Based on the research results, the average age of 16–18 years is 62%. Most of the students had knowledge about the consumption of the snack industry in the moderate category, namely 78.9%, and only 1.4% had knowledge about the consumption of the snack industry in the good category. Most students in the nutrition

study program have a negative attitude, namely as many as 62%. And the average nutritional status of students in the nutrition study program is in the normal category, which is as much as 55%. Furthermore, there is a relationship between knowledge about industrial snack consumption and the nutritional status of students in the nutrition study program, University of Muhammadiyah Bima with a P value of 0.016, and there is an influence of attitudes about industrial snack consumption on the nutritional status of students in the nutrition study program, University Of Muhammadiyah Bima with a P value of 0.006. This research is useful for providing information to the public and students to increase knowledge about the consumption of industrial snacks in order to avoid various diseases related to snack consumption, such as obesity.

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