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Article

Description Of Packaged Food Consumption Behavior Of Nusa Cendana University Public Health Students, Class Of 2020

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Abstract

Background: High-sugar diets contribute to prolonged increases in blood sugar, insulin resistance, and leptin resistance, all linked to weight gain and excess body fat. The World Health Organization reports that more than 124 million children and adolescents (6% of girls and 8% of boys) were obese in 2016, and half of them lived in Asia. There has been an increasing trend in the proportion of obesity in adults in Indonesia since 2007, which is as follows: 10.5% (Riskesdas, 2007), 14.8%, and 21.8% (Riskesdas, 2013 and 2018). **Objectives**: This study aims to describe the consumption behavior of packaged food among public health students in Nusa Cendana University's 2020 class. **Methods**: The type of research used in this study is descriptive research, using qualitative descriptive methods to determine the description of the variables studied. The sample size in this study was 67 students selected by purposive sampling technique. **Results**: Based on the results of in-depth interviews as well as the results of surveys and observations, researchers found that excessive consumption of packaged food. **Conclusions**: Students' lack of knowledge of packaged food which is reflected in the habit of reading labels and understanding of poorly packaged food labels so that students are wary of limiting consumption of packaged food.

Keywords: *Behavior, food labels, consumption, packaged food, college students*

1. Introduction

High sugar intake contributes to prolonged elevation of blood glucose levels, insulin resistance, and leptin resistance—all of which are linked to weight gain and excessive body fat. A study published by the Multidisciplinary Digital Publishing Institute (MDPI) involving adolescents in China found an association between sodium intake and the risk of overweight and obesity (Fang et al., 2021). The World Health Organization (WHO) reported that more than 124 million children and adolescents (6% of girls and 8% of boys) were obese in 2016, with half of them residing in Asia. In Indonesia, the prevalence of adult obesity has steadily increased: 10.5% in 2007, 14.8% in 2013, and 21.8% in 2018 (Ministry of Health, Republic of Indonesia, 2018).

While consumption behavior is difficult to avoid, it can be minimized through adequate knowledge regarding packaged foods, nutritional information, and daily nutrient requirements. Packaged food refers to processed food products manufactured by the food industry and commonly purchased by consumers. Food labeling plays a crucial role, as accurate labeling enables consumers to select appropriate products. Knowledge of how to interpret nutritional information labels is important so that consumers can

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regulate their intake of nutrients in appropriate amounts and proportions (BPOM RI, 2018).

The respondents of this study were university students, who are considered late adolescents or young adults—a group prone to high levels of consumptive behavior, especially in terms of packaged food consumption. Frequent snacking among this demographic can lead to sodium and sugar intake levels that exceed daily recommendations, increasing the risk of degenerative diseases such as hypertension, obesity, diabetes, and other nutrition-related disorders

Interviews and observations conducted with several students from the Public Health Study Program at Nusa Cendana University revealed a high rate of packaged food consumption. Several students admitted to consuming packaged foods more than five times a day. Therefore, this study aims to provide an overview of packaged food consumption behavior among public health students at Nusa Cendana University.

2. Materials and Methods

2.1 Study Design and Setting

This study employed a descriptive qualitative approach to examine the consumption behavior of packaged food among public health students at Nusa Cendana University. The research was conducted at the Faculty of Public Health, Nusa Cendana University, Kupang, from December 2023 to September 2024.

2.2 Population and Sampling

The population are Public Health Students of Faculty of Public Health, Nusa Cendana University. The sample consisted of 67 students selected through purposive sampling.

2.3 Data Collection

Primary data were collected using questionnaires designed to capture a comprehensive overview of the variables studied. The collected data were analyzed using univariate methods and presented in the form of tables and descriptive narratives.

2.4 Variables and Operational Definitions

The variables are organized based on the PRECEDE-PROCEED model, which categorizes them into predisposing, enabling, and reinforcing factors.

The primary variable in this study is the frequency of packaged food consumption. This refers to how often respondents consume packaged food daily, with one instance defined as the intake of approximately 50–100 kilocalories. This variable is measured using a questionnaire and is classified into two categories: moderate (2–3 times per day) and high (more than 3 times per day), as adapted from Whitney and Rolfes (2013).

The first predisposing factor is nutrition knowledge, which encompasses what respondents know about healthy and nutritious foods. This is measured through a questionnaire and categorized into three levels: good (76–100%), fair (56–75%), and poor (less than 55%), based on criteria from Arikunto (2010).

The second predisposing factor is the respondent's attitude toward packaged food, assessed through a questionnaire. This reflects their personal views and responses to the consumption of packaged food, and is categorized as positive (>75%), neutral (25–75%), or negative (<25%).

Another predisposing factor is the habit of reading food labels. This includes the frequency and depth with which respondents read and understand food labels—such as product name, brand, ingredients, and nutritional value. This is evaluated through interviews and categorized into two groups: good and poor, following Maulida (2019).

The enabling factor in this study is the daily pocket money received by students from their parents, measured in Indonesian Rupiah. The amount is assessed through interviews and divided into two groups: low (below the median) and high (equal to or above the median), as referenced from Suhartini (2004).

Lastly, the reinforcing factor is peer influence, defined as the impact of peers in determining snack food choices. This is also obtained through interviews and categorized as either influenced or not influenced, as outlined by Mumtahanah (2002).

2.5 Data Analysis

Data analysis was conducted using univariate analysis. The purpose of univariate analysis is to describe the characteristics of each research variable. The variables analyzed in this study are categorical in nature and are presented in the form of percentages for each variable. Univariate analysis in this study employs frequency distribution and aims to identify the characteristics of each research variable (Notoatmodjo, 2012).

2.6 Ethical Considerations

The Ethics Comittee of Public Health Faculty, Universitas Nusa Cendana approved the Ethical Approval of the study by the number : **2024015 – KEPK** on 1st March 2024.

3. Results

3.1. General Characteristics of Respondents

Table 1. Distribution of Respondents by Age – Faculty of Public Health, Nusa Cendana University, 2024

Age (Years)	Frequency (f)	Percentage (%)
21	6	9.0%
22	40	59.7%
23	18	26.9%
24	3	4.5%
	67	**100%**

Table 1 shows that the majority of respondents were 22 years old (59.7%), while the fewest were 24 years old (4.5%).

Table 2. Distribution of Respondents by Gender – Faculty of Public Health, Nusa Cendana University, 2024

Gender	Frequency (f)	Percentage (%)
Male	26	38.8%
Female	41	61.2%
	67	**100%**

Table 2 shows that the majority of respondents were female (61.2%), while males accounted for 38.8%.

3.2. Deskripsi Perilaku Konsumsi Makanan Kemasan pada Mahasiswa Kesehatan Masyarakat Universitas Nusa Cendana

3.2.1. Nutrition Knowledge

Table 3. Distribution of Respondents by Nutrition Knowledge – Faculty of Public Health, Nusa Cendana University, 2024

Knowledge level	Frequency (f)	Percentage (%)
Good	52	77.6%
Moderate	15	22.4%
Poor	0	0.0%

	67	**100%**

Table 3 indicates that the majority of respondents had good nutritional knowledge (77.6%), while 22.4% had moderate knowledge

3.2.2. Attitude

Table 4. Distribution of Respondents by Attitude Toward Packaged Food – Faculty of Public Health, Nusa Cendana University, 2024

Attitude level	Frequency (f)	Percentage (%)
Good	38	56.7%
Moderate	29	43.3%
Poor	0	0.0%
	67	**100%**

Table 4 show that most respondents had a good attitude toward packaged food (56.7%), while the rest had a moderate attitude (43.3%).

3.2.3. Packaged Food Consumption Behavior

Table 5. Distribution of Respondents by Packaged Food Consumption Behavior – Faculty of Public Health, Nusa Cendana University, 2024

Consumption Behavior	Frequency (f)	Percentage (%)
Good	38	56.7%
Moderate	29	43.3%
	67	**100%**

Table 5 show that most respondents exhibited excessive packaged food consumption behavior (52.2%), while 47.8% had moderate consumption behavior.

3.2.4. Food Label Reading Behavior

Food label reading behavior refers to the frequency with which individuals read the labels on food packaging, including information such as product name, brand, ingredients, composition, and nutritional value as listed in the nutrition facts table. Respondents' label-reading behavior was assessed based on how often they read nutrition labels.

Responses of "never" or "rarely" were categorized as non-label users, while responses of "often" or "always" were categorized as label users. The food label reading behavior among students was further explored through interviews, as shown in the excerpts below:

"Of course, I read the name or brand before buying—it's necessary to know what product it is because the name or brand usually indicates what the product tastes like." (D)

"I read the product brand to identify the item I am going to buy." (TN)

These responses indicate that the participants generally read the brand and product name to identify the packaged food they intend to purchase, which suggests an initial level of awareness in recognizing packaged food products.

However, the results also revealed a lack of attention to nutritional composition, as shown in the following interview excerpts:

"No, after purchasing I usually just eat it right away. I rarely look into the product's information." (NW)

"Rarely—usually I only check the ingredients if I notice a particular taste after consuming it." (TA)

Some students categorized as label users also indicated they compared nutritional values and daily intake recommendations in line with their personal needs:

"Yes, I understand and calculate the estimated nutrient intake to avoid excess, for health maintenance." (SW)

"Yes, I understand the nutrients I consume in order to stay healthy." (PH)

Moreover, students reported that they frequently checked expiration dates before purchasing packaged food:

"Yes, to make sure the product is still safe to consume." (LL)

"Of course—especially with packaged foods like bread or similar products." (PK)

From the interviews conducted with students of the Faculty of Public Health, it can be concluded that while students are aware of the importance of reading food labels, in practice, they often neglect the nutritional composition. Only a small group of label users regularly read and compare nutritional content with the Recommended Dietary Allowances (RDA) to regulate their intake and maintain a balanced diet.

3.2.5. Food Label Reading Behavior

There is a strong correlation between consumption behavior and income or financial allowance. The more pocket money students receive, the more likely they are to spend it regardless of priorities. Students who feel that their allowance is sufficient are more inclined to spend all of it (Telisa et al., 2020). According to interview findings, respondents reported receiving daily allowances ranging from IDR 10,000 to IDR 30,000, with the most common amount falling between IDR 20,000 and IDR 30,000. This range is considered high, as it exceeds the median value.

A sufficient allowance enables students to afford packaged foods more easily. The researcher found that many students frequently bought ready-to-eat packaged foods as a time-saving option to satisfy hunger. In addition, the availability of various packaged food options in campus canteens and nearby stores further encouraged students to spend their pocket money on these items, often excessively.

This finding aligns with previous research by Arisdanni & Buanasita (2018), which revealed a similar association between pocket money and nutritional status among elementary school students in Surabaya. Most respondents with a daily allowance exceeding IDR 6,000 were found to be overweight. Increased financial means tend to lead to higher food expenditure, contributing to greater intake.

Similarly, research by Rahman et al. (2021) in Jakarta showed that allowance was related to overnutrition in adolescents. The study found that most respondents used their pocket money primarily for snacks and transportation, with 30% spending it solely on snacks. This is also supported by findings from Desi & Winda (2018), who concluded that there was a significant relationship between pocket money and snack purchases. Variations in pocket money income were found to influence students' food consumption behavior.

3.2.6. Peer Influence

Peer groups are composed of individuals of similar age and maturity levels who often think and act collectively. Peers, therefore, play a significant role in shaping behavior through shared interactions and experiences (Nufiar, 2021). Nutrition-related issues among adolescents are commonly influenced by lifestyle factors and social environments, especially peer groups. Peer support can strongly influence decision-making in areas such as school choice, sexual behavior, and food selection (Normate et al., 2017).

Based on the study findings, respondents frequently reported engaging in packaged food purchases together with peers while on campus. This social setting encouraged the selection of specific foods due to peer influence. The researcher posits that peer influence arises from campus interactions and personal bonds, which lead students to engage in collective activities—from studying to visiting the canteen.

"Yes, I always go to the canteen with friends to buy packaged food when I'm on campus." (J)

"Yes, I usually go with my friends when I buy food on campus." (D)

Peer influence also impacted food choices, as students tended to follow group trends or peer recommendations rather than make independent decisions:

"Yes, I usually get persuaded when friends suggest buying a certain food product." (TA)

"Of course—especially if a particular food is trending among my friends." (D)

"Yes, when I'm with my friends, I usually just follow what they choose." (HB)

"I prefer to follow my friends' suggestions rather than decide on my own—it saves time and avoids confusion." (PH)

These results indicate that students often follow their peers in choosing and purchasing packaged food, which suggests that peer influence plays a significant role in shaping consumption habits.

This conclusion is consistent with the findings of Koçak et al. (2017) in a study conducted at the Gulhane Military Medical Academy (GMMA) in Turkey, where peer groups were shown to exhibit similar eating behaviors. The study found that peer influence correlated with BMI levels.

Similarly, Arisdanni & Buanasita (2018) found a significant relationship between peer influence and overnutrition among elementary school students in Surabaya. Peer involvement influenced snack selection behavior, with stronger peer influence associated with more frequent and less selective snack consumption.

Figure 2. This is a figure. Schemes follow another format. If there are multiple panels, they should be listed as: (**a**) Description of what is contained in the first panel; (**b**) Description of what is contained in the second panel. Figures should be placed in the main text near to the first time they are cited.

4. Discussion

4.1. Students' Nutritional Knowledge

Knowledge is the result of a learning process, usually obtained through sensory experiences—primarily vision and hearing. It can also come from personal experience or information conveyed by others, such as through books, newspapers, or electronic media (Notoatmodjo, 2012). According to Green's theory (1980), as cited in Notoatmodjo (2003), behavior is determined by three factors: predisposing, enabling, and reinforcing. Knowledge is a predisposing factor that underlies individual behavior and is classified into six levels: knowing, understanding, application, analysis, synthesis, and evaluation (Notoatmodjo, 2003).

The findings of this study indicate that the majority of respondents had good knowledge. Most students with good knowledge did not consume packaged food excessively, although some still did. This suggests that knowledge serves as a predisposing factor related to packaged food consumption behavior—students with good knowledge generally do not consume packaged food excessively. However, the researcher assumes that for some students, knowledge is limited to understanding but not application, which explains why excessive consumption still occurs despite good knowledge levels.

These findings align with research by Rifka (2015), which found a significant relationship between knowledge of safe snacks and behavior in snack selection. Similarly, Alfi Nur Akhfa (2021) found a significant association between nutrition knowledge, nutritional status, and understanding with the behavior of reading nutrition labels. Label reading behavior can encourage healthier dietary habits. Future research is recommended to examine other factors influencing label-reading behavior and to include a broader community sample to assess public awareness of nutrition labeling.

4.2. Students' Attitudes Toward Packaged Food Consumption

According to Notoatmodjo (2010), attitude is a predisposition to act—a latent response or readiness to respond to environmental stimuli. Although not yet a behavior, it significantly influences behavior. Attitudes are shaped not only by knowledge but also by cultural background, family dietary habits, and educational experiences. A consistent pattern of eating behavior in the household helps form an individual's eating habits.

The results of this study show that most respondents had a good attitude toward packaged food consumption and generally exhibited moderate consumption behavior. A portion of those with moderate attitudes consumed packaged foods excessively, while others did not. Students viewed packaged food consumption as commonplace and not directly harmful to health. The researcher assumes that the better the attitude toward packaged food, the less likely students are to consume it excessively—and vice versa.

These findings are supported by Rifka (2015), who also reported a relationship between attitudes about safe snacks and snack selection behavior. This is consistent with research by Safriana (2012), which found a relationship between students' attitudes and their snack selection behavior at SDN Garot, Aceh Besar. Sociopsychological factors—such as attitudes, emotions, beliefs, habits, and motivation—are among the strongest influences on behavior.

4.3. Nutrition Label Reading Behavior

A food label includes any written, printed, or graphic information displayed on food packaging. A nutrition label specifically provides information about nutrient content and the amount per serving or package. Reading food labels is one of the 13 messages promoted in Indonesia's balanced nutrition guidelines. Failure to understand nutrition labeling can lead to excessive consumption of packaged foods.

Based on this study and accompanying observations, most students were categorized as non-label users, meaning they rarely or never read nutrition labels. Interviews revealed that these students often consumed packaged foods without checking the ingredients due to lack of time or interest. Ten respondents reported only checking product names and expiration dates, neglecting other critical details such as nutritional composition.

Only a small portion of students were label users who actively compared nutritional content with daily nutrient requirements to regulate intake. The researcher found that many students lacked the awareness or knowledge to read and interpret nutrition labels. This was due to a combination of low exposure to such information and a lack of initiative to seek it out.

These findings are consistent with Mahdavi et al. (2012), who found that 84% of university students at Tabriz University of Medical Sciences focused only on expiration dates, ignoring nutrition content. This behavior was attributed to limited exposure and knowledge about nutrition labeling, which in turn affected students' packaged food choices.

5. Conclusions

Excessive consumption of packaged food among students is primarily driven by inadequate knowledge regarding the nutritional value of packaged products. This is reflected in poor habits of reading and understanding food labels, which reduces students' awareness of the need to limit such consumption. Sufficient pocket money allows greater financial access, enabling students to purchase packaged foods more frequently and in larger quantities. In addition, peer influence significantly contributes to the normalization of packaged food consumption, as it becomes a habitual behavior within peer groups.

6. Acknowledgments

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7. Conflicts of Interest

The authors declare no conflict of interest.

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