

The Relationship Between Knowledge, Attitude, Family Income, and Peers with Healthy Eating Behavior In Students of Itekes Cendekia Utama Kudus

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Abstract. Healthy food is food that is hygienic and nutritious. Humans cannot survive without food, therefore humans will engage in eating behavior. Eating behavior can be influenced by various factors such as knowledge, attitudes, family income, and peers. This study aims to determine the relationship between knowledge, attitude, family income, peers, and healthy eating behavior in students at ITEKES Cendekia Utama Kudus. Research Method: This study employed an observational analytical method with a cross-sectional approach using a sample of students from ITEKES Cendekia Utama Kudus. Data was collected using a questionnaire that had been tested for validity and reliability. Data analysis was conducted using univariate and bivariate tests. The study showed that Itekes Cendekia Utama Kudus students had good knowledge (95.6%), positive attitudes (98.9%), high family income (82.4%), considered peers to have a strong role (68.1%), and good eating behavior (97.8%). There was no significant relationship between knowledge ($p=0.86$), attitude ($p=1.000$), family income ($p=1.000$), and peers ($p=0.538$) with healthy eating behavior of ITEKES Cendekia Utama Kudus students. This study revealed that there was no significant relationship between knowledge, attitude, family income, and peers with healthy eating behavior of ITEKES Cendekia Utama Kudus students.

Keywords: Healthy Eating Behavior, Knowledge, Attitude, Family Income, Peers

INTRODUCTION

Healthy food is food that is hygienic and nutritious. In addition to being influenced by sanitation conditions, healthy food is also determined by the types of food containing carbohydrates, proteins, fats, and minerals (Irianto, 2007). Humans cannot survive without food; this is because under conditions of starvation, humans become depressed and unable to sustain life, which is why humans engage in eating behavior to avoid such uncomfortable situations (Ahmed et al., 2012). Eating behavior represents an individual's actions toward food, influenced by dietary preferences and eating habits (Dewi, 2014).

Eating behavior is a crucial aspect of life as it can impact long-term health outcomes, given that unhealthy eating habits—such as consuming less nutritious food, skipping meals, and eating irregularly—can cause various health problems and malnutrition. Conversely, a balanced diet and consumption of quality food contribute to maintaining physical well-being and mental stability. Adolescence is an appropriate period for individuals to improve and establish healthy eating behaviors for their present and future well-being (Kabir et al., 2018). According to Notoatmodjo (2014), a person's behavior is influenced by several factors: predisposing factors, enabling factors, and reinforcing factors.

Based on nutritional status monitoring using the BMI-for-age ($\$BMI/A\$$) indicator for adolescents aged 16–18 years nationally, the prevalence of stunting in Indonesia reached 30.4%, severe stunting 6.6%, thinness 3%, and severe thinness 0.9%. Meanwhile, for adolescents aged 16–18 years in Central Java, the prevalence was 27.5% for stunted, 5.3% for severely stunted, 3% for thin, and 0.3% for severely thin (PSG Pocket Book, 2017). Looking at Riskesdas data for the Kudus region, adolescents aged 16–18 years showed a prevalence of 18.9% stunted, 1.53% severely stunted, 6.62% thin, and 1.71% severely thin (Riskesdas, 2018).

Changes in eating behavior also occur among university students as a subgroup within the adolescent demographic. Students' eating behavior tends to prioritize convenience, which requires special attention. Students frequently consume unhealthy foods, eat irregularly, snack often, and frequently skip breakfast and lunch (Andriani & Bambang, 2012). Yet, proper nutrition in adolescence is essential. Because adolescence is a transition phase from childhood to adulthood, individuals require food for body tissue development and growth. Additionally, adolescents undergo puberty and sexual maturation. They lead busy lives, requiring adequate nutrition to stay healthy and prevent disease, as current health status impacts long-term quality of life. If adolescents are accustomed early to healthy dietary patterns, they will be prepared to live healthy and productive adult lives, effectively preventing the development of non-communicable diseases later on (Putri et al., 2020).

Two main factors influence adolescent eating behavior: external and internal factors. External factors include family size and characteristics, peers, parental role, socio-cultural factors, values and norms, mass media, fast food, fashion/trends, nutritional knowledge, and individual experience. Internal factors include physiological needs, body image, self-concept, personal values and beliefs, food choices and meaning, psychosocial factors, and health (Mardalena, 2017).

Rahman et al. (2016) explained that there is a relationship between knowledge and eating behavior among students at SMA Negeri 1 Palu. Their study demonstrated that respondents in the low-knowledge category were more likely to have unbalanced eating behaviors (85.4%). This occurred because respondents lacked education or exposure to nutrition promotions, directly impacting their eating choices. Conversely, respondents with high nutritional knowledge showed unbalanced eating behaviors at a much lower rate of 25.6%. In addition, peer influence can affect eating behavior. Peers provided a positive influence in 60.4% of cases, while bad influences accounted for 39.6%. Environmental factors play a substantial role in shaping eating habits, with peers forming a major component of this environment.

According to Putri et al. (2020), the majority of respondents possessed good nutritional attitudes (51.4%). Chi-square test results revealed a significant relationship between respondent attitudes and healthy eating behavior among high school adolescents in Semarang City. Formed nutritional attitudes influence adolescents when choosing food types, which directly impacts nutritional status. Adolescents generally tend to consume sweet, high-energy foods derived from simple carbohydrates and high fats (Lidiawati et al., 2020). Furthermore, family economic status affects eating behavior, as higher-income families are better able to provide diverse food options—such as fruits, vegetables, meat, and fish—compared to lower-income families (Almatsier et al., 2011).

A preliminary study conducted in March 2024 among 25 students at ITEKES Cendekia Utama Kudus revealed that 15 students (60%) had not implemented healthy eating behaviors. Most students frequently consumed fast food and sugary drinks, while under-consuming fruits and vegetables. Based on this background, the researcher is interested in examining the relationship between knowledge, attitude, family income, and peers with healthy eating behavior among students at ITEKES Cendekia Utama Kudus.

METHODS

This research used an observational analytical design, which aims to explain a specific condition or situation (Notoatmodjo, 2012). The study was conducted at ITEKES Cendekia Utama Kudus in May 2024. The study employed a Cross-Sectional approach, where independent variables and dependent variables are collected simultaneously (Sudibyo, 2014). The population comprised all active students at ITEKES Cendekia Utama Kudus during the 2023/2024 academic year, totaling 1,001 students:

1. Bachelor of Nursing (S1): 256 students
2. Diploma in Nursing (D3): 131 students
3. Bachelor of Pharmacy (S1): 266 students
4. Diploma in Pharmacy (D3): 56 students
5. Bachelor of Public Health (S1): 68 students
6. Nurse Professional Program: 154 students
7. Apothecary Professional Program: 70 students

Sample size was determined using Slovin's formula:

$$n = \frac{N}{1 + (N \cdot e^2)}$$

Where:

N = Population size

n = Sample size

e = Margin of error 0.1 (10%)

$$n = \frac{1001}{1 + (1001 \cdot 0,1^2)} = 90,917 = 91$$

Thus, the sample consisted of 91 students.

The sampling technique used was probability sampling via cluster random sampling, which is applied when the target object or data source is broadly distributed (Sugiyono, 2019). The formula for determining cluster fractions:

$$f = \frac{N_i}{N}$$

The sample size per cluster was calculated as:

$$N_i = f_i \times n$$

Where:

f_i = Cluster fraction sample

N_i = Number of individuals in the cluster

N = Total population

n = Total sample size

Table 1. Distribution of Research Sample

No	Study Program	Population	Sample
1	Bachelor of Nursing (S1) & Nurse Professional Program	410	37
2	Bachelor of Pharmacy (S1) & Apothecary Professional Program	336	31
3	Bachelor of Public Health (S1)	68	6
4	Diploma in Nursing (D3)	131	12
5	Diploma in Pharmacy (D3)	56	5
Total		1001	91

The research instrument consisted of a questionnaire. According to Agung (2012), a questionnaire is a method of gathering data by administering a set of written questions to respondents. The questionnaire covered respondent demographics, knowledge level on healthy foods, attitudes toward healthy eating practices, family income, peer influence, and healthy eating behavior. Data analysis was performed using univariate and bivariate statistical tests.

RESULTS AND DISCUSSION

RESULTS

Table 2. Characteristics of Respondents

Variable	n	%
Gender		
Male	14	15,4%
Female	77	84,6%
Residence Status		
Boarding House (Kost)	39	42,9%
Non-Boarding House	52	57,1%
Age		
18	2	2,2%
19	26	28,6%
20	52	57,1%
21	7	7,7%
22	2	2,2%
23	1	1,1%
24	1	1,1%

Table 2 shows that among the 91 respondents, the majority were female (77 respondents, 84.6%). Regarding residence status, most respondents lived non-boarding (52 respondents, 57.1%). In terms of age, 20-year-olds constituted the largest proportion (52 respondents, 57.1%).

Table 3. Results of Univariate Analysis

Variable	n	%
Knowledge		
Good	87	95,6%
Moderate	4	4,4%
Attitude		
Positive	90	98,9%
Negative	1	1,1%
Family Income		
High	75	82,4%
Low	16	17,6%
Peers		
Strong Influence	62	68,1%
Weak Influence	29	31,9%
Healthy Eating Behavior		
Good	89	97,8%
Poor	2	2,2%

Table 3 demonstrates that out of 91 respondents, 87 (95.6%) had good knowledge, 90 (98.9%) had a positive attitude, 75 (82.4%) belonged to high-income families, 62 (68.1%) perceived peers as having a strong influence, and 89 (97.8%) exhibited good healthy eating behavior.

Table 4. Results of Bivariate Analysis

Variable	Healthy Eating Behavior		p-value
	Good	Poor	
Knowledge			
Moderate	1	3	0,086
Good	1	86	
Attitude			
Negative	0	1	1,000
Positive	1	88	
Family Income			
Low	0	16	1,000
High	2	73	
Peers			
Weak	1	28	0,538
Strong	1	61	

Table 4 displays Chi-Square test results. Knowledge, attitude, family income, and peer influence all yielded p-values > 0.05, indicating no statistically significant relationships with healthy eating behavior among students at ITEKES Cendekia Utama Kudus.

DISCUSSION

Relationship Between Knowledge and Healthy Eating Behavior

Among the 91 respondents, 1 student (1.1%) had moderate knowledge with poor eating behavior, while 3 students (3.3%) had moderate knowledge with good eating behavior. Conversely, 1 student (1.1%) had good knowledge with poor eating behavior, and 86 students (94.5%) had good knowledge paired with good eating behavior.

Statistical analysis using the Chi-Square test yielded $p = 0.086 > 0.05$, leading to the acceptance of H_0 . This indicates no significant relationship between knowledge and healthy eating behavior among students at ITEKES Cendekia Utama Kudus. The researcher posits that this lack of significance stems from a lack of motivation to translate knowledge into practice; students may understand healthy nutritional components (protein, fiber, complex carbohydrates) but lack the willingness to prepare or cook healthy meals themselves.

This finding aligns with Pradiningtyas & Ismawati (2023), who found no relationship between dietary knowledge and eating habits among 12th-grade students at SMA Negeri 1 Tarik during the COVID-19

pandemic. Eating habits are influenced by complex environmental, cultural, and personal preference factors that can prove difficult to change. Similarly, Rianti et al. (2023) observed that nutrition knowledge alone was insufficient to significantly alter eating behavior in Lebak Regency adolescents without positive eating attitudes.

Relationship Between Attitude and Healthy Eating Behavior

Out of 91 respondents, 0 students (0%) displayed a negative attitude with poor eating behavior, and 1 student (1.1%) displayed a negative attitude with good eating behavior. Meanwhile, 2 students (2.2%) had a positive attitude with poor eating behavior, and 88 students (96.7%) exhibited both a positive attitude and good eating behavior.

The Chi-Square test produced $p = 1.000 > 0.05$, accepting H_0 . Thus, no significant relationship exists between attitude and healthy eating behavior. Deeply ingrained personal eating habits often persist despite positive general attitudes toward healthy eating.

This result corresponds with Rianti et al. (2023) ($p = 0.087$), where positive attitudes did not guarantee healthy eating practices due to complex social interactions. Setyawan et al. (2019) similarly noted negative correlations between healthy dietary attitudes and eating out, driven by peer influence, food availability at home, and personal cognitive-affective factors.

Relationship Between Family Income and Healthy Eating Behavior

Of the 91 respondents, 0 students (0%) had low family income with poor eating behavior, whereas 16 students (17.6%) had low family income with good eating behavior. In contrast, 2 students (2.2%) had high family income with poor eating behavior, and 73 students (80.2%) had high family income with good eating behavior.

The Chi-Square test yielded $p = 1.000 > 0.05$, confirming no statistically significant relationship between family income and healthy eating behavior. Higher economic standing does not automatically translate to healthier dietary choices, as individuals with higher purchasing power often prefer convenient processed foods (e.g., burgers, pizza) over whole, fresh foods.

This finding is supported by Mahira et al. (2024), where Spearman correlation tests showed no significant link ($p > 0.05$) between family income and fruit consumption among adolescents, largely due to low awareness regarding nutritional value.

Relationship Between Peers and Healthy Eating Behavior

Among respondents who perceived weak peer influence, 1 student (1.1%) exhibited poor eating behavior, while 28 students (30.8%) exhibited good eating behavior. Among those who perceived strong peer influence, 1 student (1.1%) exhibited poor eating behavior, and 61 students (67.0%) exhibited good eating behavior.

Chi-Square analysis yielded $p = 0.538 > 0.05$, showing no significant relationship between peer influence and healthy eating behavior. Since the majority of respondents live at home with parents (57.1%), family dynamic and parental meal provision remain dominant determinants over peer choices.

This aligns with Jauziyah et al. (2021) ($p = 0.05$), where university students demonstrated strong personal preferences independent of peer pressure. Widianingtyas & Dinda (2022) also found no relationship between peers and snacking behavior ($p = 0.148$), emphasizing that individual attitudes and ingrained habits outweigh peer presence.

CONCLUSION

Among 91 respondents, 57.1% were 20 years old, 84.6% were female, and 57.1% were non-boarding students. Students exhibited good knowledge (95.6%), positive attitudes (98.9%), high family income (82.4%), strong peer influence perceptions (68.1%), and good healthy eating behavior overall (97.8%). No significant relationship was found between knowledge ($p = 0.086$), attitude ($p = 1.000$), family income ($p = 1.000$), or peer influence ($p = 0.538$) and healthy eating behavior among ITEKES Cendekia Utama Kudus students.

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