

# Knowledge, Attitude, and Practice Related to Eating Behavior for the Prevention of Type 2 Diabetes Among High School Students

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## Abstract

**Aims:** Diabetes mellitus is a major global public health concern, particularly in Indonesia. Eating behavior, particularly type 2 diabetes mellitus (T2DM), plays a crucial role in the prevention of diabetes. This study aimed to assess high school students' knowledge of T2DM, attitudes toward healthy eating, and dietary practices related to diabetes prevention, as well as to examine the correlations among these variables.

**Methods:** The study was conducted from May to October 2024 in three sub-districts of Kampar Regency, Riau Province, Indonesia. A total of 207 high school students were recruited through convenience sampling. Data were collected using a validated knowledge, attitude, and practice (KAP) questionnaire comprising four sections: Sociodemographic characteristics, Knowledge about T2DM, Attitudes toward healthy eating, and Dietary practices. Univariate analysis was conducted to describe the distribution of KAP levels, and Spearman's rank-order correlation was used to examine the relationships among KAP scores.

**Results:** Most senior high school students (80.2%) demonstrated a moderate overall KAP level. Specifically, 49.3% had moderate knowledge of T2DM, 81.2% exhibited a neutral attitude toward healthy eating, and 59.9% reported moderate dietary practices. Spearman's rank correlation analysis revealed a weak but statistically significant positive correlation between knowledge and attitude ( $p=0.145$ ,  $p=0.037$ ), and between knowledge and practice ( $p=0.137$ ,  $p=0.048$ ). A moderate-to-strong positive correlation was found between attitude and practice ( $p=0.530$ ), indicating a stronger association between these two variables.

**Conclusion:** The findings indicate that students' knowledge of T2DM is positively associated with both their attitudes toward healthy eating and their dietary practices, although the strength of these correlations is weak. In contrast, a moderate to strong positive correlation was observed between attitude and practice, suggesting that students with more positive attitudes toward healthy eating were more likely to engage in desirable dietary behaviors.

*Keywords: adolescence, attitude, diabetes mellitus, eating behavior, practice.*

## **Introduction**

Diabetes remains a major global public health concern (Lancet 2023). An estimated 537 million people worldwide are living with diabetes (IDF, 2024), with nearly 80% of them residing in developing countries (Mohan et al., 2019). While China, India, and Pakistan account for the highest number of individuals with diabetes, Indonesia ranks fifth globally with over 19 million cases reported in 2021. This figure is projected to rise to 28.6 million by 2045 (Magliano et al., 2021). Approximately 90% of all diabetes cases are T2DM cases (Goyal et al., 2023). Although T2DM is most common among adults aged >45 years, it is increasingly being diagnosed in children and adolescents (Goyal et al., 2023). The major risk factors include a family history of diabetes, smoking, and physical inactivity. Fortunately, T2DM is largely preventable through healthy behaviors, such as regular physical activity, maintaining an ideal weight, avoiding tobacco, and adopting healthy eating behavior (Gal et al., 2024).

Eating behavior is a complex, multifaceted process influenced by psychological, cultural, genetic, and social factors (Freitas et al., 2018). This includes food choices, portion control, meal timing, and frequency (Mahmood et al., 2021). Global evidence consistently shows that adolescents often engage in unhealthy eating behaviors (Nakamura et al., 2023; Dokhani et al., 2022; Gan et al., 2018), largely driven by their growing independence and autonomy in food-related decisions (Albani et al., 2017; Banna et al., 2020). In the Indonesian context, many adolescents fall short of the recommended daily fruit and vegetable intake, frequently consume sugary drinks and high-carbohydrate snacks, and rely heavily on fast food for energy (Rachmi et al., 2021), particularly in schools, where students spend most of their time, and such foods are both accessible and affordable (Kusumawati, 2023).

Unhealthy eating habits formed during adolescence significantly increase the risk of being overweight, obese, and having T2DM later in life (Mahmood et al., 2021). Changing these behaviors is often challenging and requires sustained effort, with habit formation lasting an average of 59 days (Keller et al., 2021). While knowledge is a critical foundation for behavioral change, it is often insufficient on its own. Adolescents must also be empowered to develop positive attitudes toward nutrition and maintain healthier dietary practices over time (Lunn et al., 2020). Although research on adolescent nutrition in Indonesia is growing, few studies have specifically examined adolescents' KAP regarding eating behavior in the context of diabetes prevention. This study aimed to explore adolescents' KAP related to eating behavior, providing essential evidence to inform targeted interventions and policy strategies that support healthier lifestyles and help prevent future cases of T2DM in Indonesia.

## **Methods**

This study was conducted in Kampar Regency, Riau Province, Indonesia. Riau Province ranks 9th out of 38 provinces in Indonesia for diabetes prevalence, with rates having doubled compared to previous data (SKI, 2023). Kampar Regency reports the second-highest diabetes prevalence among the province's 12 regencies and cities. Consistent with findings from other regions of the country, adolescents in public schools in Kampar Regency exhibit unhealthy eating behaviors (Putri et al., 2020; Kurnianingsih et al., 2022; Kusumawati et al., 2023).

This quantitative study used a cross-sectional design. The target population consisted of 22,948 high school students across Kampar Regency. The required

minimum sample size was calculated using G\*Power (version 3.1.9.7) for a chi-square test with a medium effect size  $w=0.3$ ,  $\alpha=0.05$ , power=0.80, and  $df=4$  yielding a sample size of 143. The final sample consisted of 207 participants, which represented an increase of approximately 44.8% above the minimum required, ensuring sufficient power for the planned bivariate analyses. Study participants were recruited using convenience sampling from three schools located in three sub-districts. The inclusion criteria were students who were present during the data collection period, agreed to participate, and did not exhibit disordered eating behavior. Data were collected between May 2 to May 15, 2024.

Data were collected using a KAP questionnaire adapted from Wijaya (2022) with modifications made to suit the study context. The validity and reliability of the questionnaire were tested on a sample of 50 senior high school students at SMAN 1 Kampar Utara, located in Kampar Utara District, Kampar Regency, Riau Province. All sections showed acceptable reliability with Cronbach's alpha values of 0.638 for knowledge, 0.666 for attitude, and 0.709 for practice. The questionnaire included four sections: (1) sociodemographic characteristics (gender, class, age, school name, father's education, mother's education, number of siblings, parents' income, and food choice autonomy), (2) knowledge of T2DM (14 items), (3) attitude toward healthy eating (17 items), and (4) dietary practices (13 items). The knowledge section used a binary agree/disagree scale. No new knowledge items were added, although some have been paraphrased for clarity. Each correct answer was scored as 1 and incorrect answers were scored as 0, yielding a maximum score of 14. Knowledge levels were categorized as high (12–14), moderate (9–11), or low (below 9).

The attitude section included three newly added items (Items 15–17). Responses were rated on a 4-point Likert scale (strongly agree to strongly disagree), with negatively worded items reverse coded. The total possible score was 68, with scores of 55–68 categorized as positive attitude, 41–54 as neutral, and below 41 as negative. The practice section included three additional items (Items 14–16). Responses were rated on a 4-point scale based on the percentage of correct or desirable practices: 80–100% was classified as good, 60–79% as moderate, and below 60% as poor practice.

Univariate analysis was used to summarize the frequency distributions and categorize the KAP levels, including the overall KAP level. In addition, due to the non-normal distribution of knowledge ( $p<0.001$ ) and attitude ( $p<0.001$ ) scores, correlations among these variables were analyzed using Spearman's rank-order correlation.

Informed consent was obtained from all participants and school principals to ensure that participation was fully informed and voluntary. This study received official permission from the Education Department of Kampar Regency, Riau Province (Number: 421/Cabdisdik/6.2/2024/302), and ethical clearance from Universitas Pahlawan Tuanku Tambusai (Number: 050/LPPM/UPTT/V/2024).

## Results

Among the 207 study participants, 61.8% were female and the majority were 17 years old. Regarding parental education, 52.7% reported that their fathers had completed senior high school, whereas 45.9% indicated the same for their mothers. The most commonly reported monthly household income is Rp. 500,000 and Rp. 1,500,000 (44%), which is significantly lower than the average income level in Kampar Regency (Table 1).

**Table 1.** Socio-demographic Characteristics of the Study Participants

<b>Characteristics</b>	<b>n</b>	<b>%</b>
	207	100
<b>Gender</b>		
Male	79	38.2
Female	128	61.8
<b>Class</b>		
Ten <sup>th</sup> grade	84	40.6
Eleven <sup>th</sup> grade	123	59.4
<b>Age</b>		
15 years	16	7.7
16 years	67	32.4
17 years	100	48.3
18 years	20	9.7
19 years	4	1.9
<b>Father's education</b>		
No education	4	1.9
Elementary school	39	18.8
Junior high school	43	20.8
Senior high school	109	52.7
College	12	5.8
<b>Mother's education</b>		
No education	3	1.4
Elementary school	36	17.4
Junior high school	54	26.1
Senior high school	95	45.9
College	19	9.2
<b>Number of siblings</b>		
Only child	9	4.3
2 siblings	53	25.6
3-5 siblings	117	56.5
>5 siblings	28	13.5
<b>Parents' income</b>		
Rp. 500,000 – 1,500,000/month	91	44
Rp. 1,600,000 – 2,500,000/month	53	25.6
Rp. 2,600,000 – 3,500,000/month	30	14.5
Rp. 3,600,000 – 5,000,000/month	20	9.7
Rp. >5,000,000/month	13	6.3

### **Participants' Knowledge on T2DM, Attitude on Healthy Eating, and Dietary Practices**

Approximately 82.6% of the respondents were aware of diabetes. However, 37.2% of the participants believed that diabetes was solely caused by a family history of the condition. Additionally, 38.2% disagreed with the notion that a healthy diet can help prevent diabetes, and the same percentage agreed that the daily consumption of fizzy drinks, syrups, and other sweetened beverages does not lead to diabetes. Furthermore, 42% of the participants agreed that food intake does not necessarily need to be aligned with the body's energy requirements. A total of 26.1% believed that consuming high-fat foods would not contribute to diabetes and 22.2% agreed that individuals with diabetes do not need to maintain a healthy diet if they are

already on medication (Table 2).

**Table 2.** Frequency Distribution of the Responses to Knowledge Questions

Questions and Responses	n	%
Diabetes is a disease in which blood sugar levels increase beyond normal limits		
Agree	171	82.6
Disagree	36	17.4
The possibility of developing diabetes is only influenced by family history		
Agree	130	62.8
Disagree	77	37.2
Family history, obesity, poor diet and lack of physical activity are factors that trigger the onset of diabetes		
Agree	157	75.8
Disagree	50	24.2
Diabetes can occur if I cannot regulate my diet.		
Agree	169	81.6
Disagree	38	18.4
Unhealthy eating patterns at a young age are not the cause of diabetes		
Agree	80	38.6
Disagree	127	61.4
A good diet can be used as a preventive measure against the onset of diabetes		
Agree	128	61.8
Disagree	79	38.2
Setting the amount of food, type of food and a good eating schedule can reduce the risk of developing diabetes		
Agree	165	79.7
Disagree	42	20.3
Consuming excessive fizzy drinks, syrups and sweet drinks every day does not increase blood sugar levels in the body		
Agree	79	38.2
Disagree	128	61.8
Consuming fast food continuously can increase the risk of developing diabetes		
Agree	138	66.7
Disagree	69	33.3
The food intake consumed does not have to be adjusted to the energy needs of our body		
Agree	87	42
Disagree	120	58
Regardless of when you eat, eating nutritious foods is still a healthy diet		
Agree	176	85
Disagree	31	15
The best times to eat are three times a day: breakfast, lunch and dinner		
Agree	182	87.9
Disagree	25	12.1
Consuming excessive foods high in fat has no effect on the onset of diabetes		
Agree	54	26.1
Disagree	153	73.9
A person suffering from diabetes does not have to maintain a good diet because they have been given antidiabetic medication		
Agree	46	22.2

Disagree	161	77.8
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The estimated 31.4% of the respondents reported preferring to eat or snack when experiencing frustration. Additionally, 53.1% indicated that they ate based on feelings of hunger rather than adhering to a regular eating schedule. Regarding meal composition, 36.7% agreed and 9.7% strongly agreed that they typically consumed rice and side dishes without vegetables. Furthermore, 31.4% agreed and 7.2% strongly agreed that they used their pocket money to purchase fried and fast food. In terms of snacking behavior, 48.8% agreed and 21.7% strongly agreed that they snack when bored, while 32.4% agreed and 15.5% strongly agreed that they snack when feeling emotional (Table 3).

**Table 3.** Frequency Distribution of the Responses to Attitude Questions

Questions and Responses	n	%
I chose to vent my frustration through eating or snacking rather than exercising		
Strongly agree	21	10.1
Agree	65	31.4
Disagree	78	37.7
Strongly Disagree	43	20.8
I don't think maintaining a healthy diet is important because I'm still a teenager		
Strongly agree	8	3.9
Agree	17	8.2
Disagree	102	49.3
Strongly Disagree	80	38.6
I don't feel the need to maintain my diet because I don't have diabetes yet		
Strongly agree	10	4.8
Agree	12	5.8
Disagree	114	55.1
Strongly Disagree	71	34.3
I prefer to eat fibrous foods such as fruit and vegetables rather than eating various types of fast food		
Strongly agree	83	40.1
Agree	101	48.8
Disagree	18	8.7
Strongly Disagree	5	2.4
I tend to eat when I'm hungry without having to set a regular eating schedule		
Strongly agree	35	16.9
Agree	110	53.1
Disagree	57	27.5
Strongly Disagree	5	2.4
I feel the need to maintain a healthy diet even though I am not obese.		
Strongly agree	101	48.8
Agree	97	46.9
Disagree	9	4.3
I prefer drinking water over fizzy drinks and drinks with artificial sweeteners		
Strongly agree	109	52.7
Agree	82	39.6
Disagree	13	6.3
Strongly Disagree	3	1.4
I don't feel worried about eating sweets every day		

Strongly agree	13	6.3
Agree	47	22.7
Disagree	113	54.6
Strongly Disagree	34	16.4
I feel that going straight to sleep after eating a big meal can be bad for my health		
Strongly agree	27	13
Agree	86	41.5
Disagree	71	34.3
Strongly Disagree	23	11.1
I prefer a big meal with just rice and side dishes without vegetables		
Strongly agree	20	9.7
Agree	76	36.7
Disagree	96	46.4
Strongly Disagree	15	7.2
I feel the need to give a break between large meals at least 3 hours		
Strongly agree	20	9.7
Agree	109	52.7
Disagree	68	32.9
Strongly Disagree	10	4.8
I prefer to eat at home using rice, side dishes and vegetables cooked myself rather than eating at fast food places (junk food)		
Strongly agree	102	49.3
Agree	88	42.5
Disagree	15	7.2
Strongly Disagree	2	1
I am more likely to spend my pocket money on foods like fried foods or fast food.		
Strongly agree	15	7.2
Agree	65	31.4
Disagree	101	48.8
Strongly disagree	26	12.6
I feel eating 3 large meals a day is enough		
Strongly agree	21	10.1
Agree	113	54.6
Disagree	60	29
Strongly disagree	13	6.3
I tend to eat snacks when I'm bored		
Strongly agree	45	21.7
Agree	101	48.8
Disagree	51	24.6
Strongly disagree	10	4.8
I tend to eat snacks when I'm feeling emotional		
Strongly agree	32	15.5
Agree	67	32.4
Disagree	89	43
Strongly disagree	19	9.2
I love trying new dishes		
Strongly agree	68	32.9
Agree	109	52.7
Disagree	25	12.1
Strongly disagree	5	2.4

Almost half (36.7%) of the participants consumed three large meals daily. Additionally, 50.7% reported eating only rice and a side dish without including vegetables or fruits, whereas 33.8% consumed fewer than one serving of vegetables per day. In terms of sweet food consumption, 48.3% ate sweets and snacks on a weekly basis and 33.3% consumed sweetened beverages three times or more per day (Table 4).

**Table 4.** Frequency Distribution of the Responses to Practice Questions

Questions and Responses	(n)	(%)
How many times do you eat large meals a day?		
Not regularly every day	53	25.6
Regularly, 2 times a day	58	28
Regularly, more than 3 times a day	20	9.7
Regularly 3 times a day	76	36.7
To fulfil your nutritional needs, what foods do you eat every time you eat?		
Rice + side dish + vegetable + fruit	24	11.6
Rice + side dish + vegetable	78	37.7
Rice + side dish	105	50.7
Which of the following animal protein sources do you consume frequently (more than 3 times a week)?		
1 source	33	15.9
2 sources	9	4.3
3 sources	20	9.7
4 sources	145	70
Which of the following plant-based protein sources do you consume frequently (more than 3 times a week)?		
1 source	34	16.4
2 sources	27	13
3 sources	29	14
4 sources	117	56.5
How many servings of vegetables do you eat a day?		
Less than 1 serving a day	70	33.8
Less than 2 servings a day	35	16.9
2 servings a day	58	28
More than 2 servings a day	44	21.3
Which of the following snacks do you often consume?		
Sugar	9	4.3
Sweet bread	132	63.8
Fruit	66	31.9
How many times a day do you eat fruit?		
Less than once a day	69	33.3
Less than 2 times a day	58	28
2 or more times a day	80	38.6
In a week, how many times do you eat fast food at restaurants?		
More than 3 times	26	12.6
Less than 3 times	63	30.4
Less than once	118	57
How many times a week do you usually skip breakfast?		
Never at all	85	41.1
Less than 3 times	52	25.1

3 times or more	70	33.8
Which of the following dishes do you often consume?		
Deep-fried dishes	72	34.8
Cuisine with fat/broth	15	7.2
Fried/steamed/boiled dishes	84	40.6
Cuisine with coconut milk	36	17.4
How many times have you eaten fried food?		
More than once a day	42	20.3
1 time a day	61	29.5
3 times or more than 3 times a week	59	28.5
Less than 3 times a week	45	21.7
How many times do you eat sweets (cake/bread) or snacks (chiki, chitato) in a week?		
3 times or more	100	48.3
Less than 3 times	57	27.5
Less than 1 time	50	24.2
How many times do you consume drinks such as sweet tea, syrup, or other drinks containing sugar in a day?		
3 times or more	69	33.3
Less than 3 times	58	28
Once	56	27.1
Less than once	24	11.6

### Participants' KAP Levels, Overall KAP, and Their Correlations

Based on the composite KAP score, 13.5% of the participants had low KAP, 80.2% had moderate KAP, and 6.3% had high KAP. The overall mean KAP score was 87.71 (SD=9.88). Regarding knowledge, 23.7% of participants had low knowledge, 49.3% had moderate knowledge, and 27.1% had high knowledge, with a mean score of 9.71 (SD=2.60). For attitude, 14% were categorized as having a negative attitude, 81.2% as neutral, and 4.8% as positive, with a mean of 46.67 (SD=5.34). Regarding practice, 24.2% had poor practice, 59.9% had moderate practice, and 15.9% had good practice, with a mean score of 31.33 (SD=5.14).

The correlations between participants' knowledge about T2DM, attitudes towards healthy eating, and dietary practices. A weak but statistically significant positive correlation was found between knowledge and attitude ( $p=0.145$ ,  $p=0.037$ ), and between knowledge and practice ( $p=0.137$ ,  $p=0.048$ ). A moderate to strong positive correlation was observed between attitude and practice ( $p=0.530$ ,  $p<0.001$ ) (Table 5).

**Table 5.** Correlations between Participants' KAP

Variable Pair	$\rho$ (Spearman)	$p$ -value
Knowledge - Attitude	0.145	0.037
Knowledge - Practice	0.137	0.048
Attitude - Practice	0.530	<0.001

### Discussion

Our findings revealed that the majority of senior high school students demonstrated a moderate overall level of KAP related to eating behaviors for the prevention of T2DM. Most students possessed moderate knowledge of T2DM, exhibited a neutral attitude

toward healthy eating, and reported moderate dietary practices. Despite their moderate knowledge, more than a quarter of the adolescents believed that a healthy diet would not help prevent T2DM and that consuming sweetened beverages might not lead to the disease. This misconception aligns with a study among Indian adolescent girls (Sivasubramanian et al., 2024), although a scoping review in India presented a contrasting perspective, reporting that most adolescents had inadequate knowledge about healthy food choices, suggesting that awareness levels may differ across populations (Jena et al., 2023).

Similar disparities have been reported in other parts of Indonesia, Pakistan, and China, where most high school students exhibit poor knowledge of dietary behaviors (Agustina et al., 2022; Huo et al., 2024). Adolescents' understanding of healthy eating plays a critical role in preventing T2DM. Therefore, effective health promotion and education is essential. As emphasized by Kusumawati et al. (2024), school-based health education should be adequately resourced, well-structured, and engaging, with a thoughtfully designed curriculum and compelling relevant materials.

Second, this study found that most respondents held a neutral attitude toward eating behavior in relation to diabetes. Nevertheless, the tendency of over a quarter of the participants to snack when feeling frustrated or emotionally distressed suggests an underlying emotional attitude toward food as a coping mechanism within this group. A study by Ripoli et al. (2022) found a positive association between emotional eating and elevated HbA1c levels, indicating an increased risk of diabetes. Therefore, identifying adolescents' emotional eating tendencies is crucial for developing effective intervention strategies. Ameneh et al. (2023), in their cluster-randomized trial, proposed peer education as an effective intervention. The program successfully enhanced both adolescents' knowledge of and attitudes toward healthier eating behaviors.

In terms of practice, most respondents exhibited moderate dietary practices. However, over a quarter of adolescents reported consuming three large meals per day, more than half of the rice without vegetables, and nearly half regularly consumed sweets and snacks. One possible explanation for these practices could be the family's socioeconomic status. Although students' family incomes varied, the majority reported their parents' earnings to be between Rp. 500,000 and 1,500,000 per month, respectively, which are significantly lower than the average income in the study region. Nishinakagawa et al. (2023) indicated that low income was associated with unhealthy eating habits. Given that children's dietary patterns are strongly influenced by their parents (Mahmood et al., 2021), parental income may play a key role in shaping adolescents' dietary practices.

Similar to a study conducted in China (Jiang et al., 2024), our findings revealed correlations between knowledge of T2DM and attitudes toward both healthy eating and dietary practices, although the associations were weak. This suggests that, while a relationship exists, it may not be consistent across all high school students. Although most adolescents demonstrated knowledge about T2DM prevention and its connection to diet and nutrition, some lacked this understanding, which was reflected in their attitudes and practices.

One possible reason for this weak association is that knowledge alone may not be sufficient to influence behavioral change. Adolescents may be aware of what constitutes a healthy diet, but may lack motivation, environmental support, or

personal skills to apply that knowledge in daily life. Moreover, external factors such as peer influence, family eating habits, food culture, availability and affordability, and media exposure could significantly impact dietary behaviors, independent of knowledge level (Trübswasser et al., 2021). These findings underscore the importance of designing health promotion programs that go beyond information delivery, incorporate strategies to shape attitudes, build practical skills, and foster supportive environments.

Furthermore, our study revealed a significant association between attitude and practice, suggesting that adolescents with positive attitudes toward healthy eating behaviors, particularly in relation to T2DM prevention, were more likely to engage in healthier dietary practices. Conversely, those with negative attitudes tended to exhibit poor eating habits. This finding is consistent with that of a study conducted in Sudan, which found that individuals with positive attitudes were more likely to adhere to dietary recommendations (Adam et al., 2021). Identifying adolescents' beliefs about healthy eating and its role in the prevention of chronic diseases such as diabetes is crucial. Supporting this, a study in Hong Kong highlighted that emphasizing the short-term consequences of unhealthy eating may effectively enhance adolescents' attitudes and motivate positive health behaviors (Liu et al., 2022).

### **Limitations**

This study utilized convenience sampling rather than simple random sampling, which limits the generalizability of the findings on KAP related to eating behaviors among senior high school students in the study area. Additionally, the adolescent participants may have been influenced by social desirability bias, responding in a way that they perceived as socially favorable rather than accurately reporting their actual eating behaviors. Furthermore, there is a need to assess the associations between sociodemographic characteristics (such as age, sex, parental education, and socioeconomic status) and KAP to better understand which subgroups may be more vulnerable to poor dietary behaviors or limited awareness. Identifying these relationships could help to inform targeted interventions tailored to the specific needs and contexts of different adolescent populations.

### **Contribution to Global Nursing Practice**

This study provides evidence-based insights for community and public health nurses in adolescents' KAP regarding eating behaviors, which are essential for developing culturally appropriate interventions for the prevention of T2DM among adolescents.

### **Conclusion**

In conclusion, current study found that most senior high school students demonstrated a moderate overall level of KAP related to T2DM. Most students possessed moderate knowledge of T2DM, held a neutral attitude toward healthy eating, and reported moderate dietary practices. Statistical analysis revealed a weak but statistically significant positive correlation between knowledge and attitude as well as between knowledge and practice. In contrast, a moderate-to-strong positive correlation was observed between attitude and practice, indicating a stronger association between students' attitudes and their dietary behaviors.

### **Author Contribution**

All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

### Conflict of Interest

Authors state no conflict of interest

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