Journal of Public Health Sciences (JPHS)
Vol. 1, No. 01, p. 48-54
journal.iistr.org/index.php/JPHS
DOI: 10.56741/jphs.v1i01.70

Investigation of the Relationship Between Attitudes, Skills, Eating Knowledge and Student Learning Achievement

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ARTICLE INFO

Article history
Received 15 July 2022
Revised 12 August 2022
Accepted 22 August 2022

Keywords
Attitude
Skills
Knowledge
Feeding environment
Learning Achievements
Covid-19

ABSTRACT

The desire to eat is one of the dimensions of the eating environment. It is mainly seen in attitude, skill, and knowledge. This study aims to determine the relationship between attitudes, skills, and eating knowledge with student learning achievement. This research is analytical observational research with a cross-sectional design. The subjects were all students who were active in universities in Lampung. The sampling of 196 students was collected using a non-probability with snowball sampling techniques. The data include respondents' characteristics, learning achievements and eating desires (attitudes, skills and knowledge). Data analysis used the Chi-square test to determine the relationship between attitudes, skills, eating knowledge and student learning achievement. The results showed that most of the subjects (91.33%) had a good eating attitude, (69.90%) had less eating skills and (51.53%) also had less eating knowledge. There is no significant relationship between attitudes, skills and knowledge of eating and student learning achievement in Lampung.

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Introduction

In Indonesia, based on the Circular Letter of the Minister of Education and Culture of the Republic of Indonesia Number 4 of 2020 concerning the Implementation of Education Policies in the Emergency Period of the Spread of Corona Virus Disease (Covid-19), it is stated that learning activities from home through online/ remote to provide meaningful [1]. Learning achievement is considered essential for success in an online learning environment. Learning achievement is the maximum and highest ability at a particular moment by a child, which eventually occurs as a process of change to acquire skills and skills or an outcome that a person has achieved under the abilities and insights possessed in learning activities [2].

Ref. [3] shows that in student learning achievement in Lampung, as much as 51% have not reached the provisions of a high standard GPA. This is because many students still prioritize personal interests such as lack of interest in student in lectures, not doing assignments, being late for college and being absent from course hours, which impacts decreased learning achievement. Another internal factor that affects student learning achievement is nutritional status. Nutritional status is one of the main determining factors for the quality of human resources. A good nutritional status will affect the growth and development of a person, which can increase intellectual abilities that will impact learning achievement [4]. A person's nutritional status is also influenced by food intake. Previous research by Ref. [5] believes that the amount of a person's eating intake is one of the factors that can affect academic performance. This is in line with Ref. [6] that an individual's eating intake significantly affects educational performance. A high intake of healthy fruits, vegetables, milk, fish, and snacks and a good diet will also affect good academic performance. But on the contrary, the frequent consumption of fizzy drinks, sugary drinks, fast food, and unhealthy diets and snacks negatively correlates with academic performance.

The Covid-19 pandemic has also encouraged students to change their diet and intake. Before a person consumes food, it appears as a consideration that causes the onset of the desire to eat. The desire to eat is one of the dimensions of the eating environment. The desire to eat can be interpreted as the preference and selection of individual foods. It is a behaviour of liking and decision towards the food consumed by involving internal and external factors [7]. The desire to eat is mainly seen from attitude, skill, and knowledge. Attitude is a particular action or tendency toward food, and skill is a person's skill in choosing food, a menu to eating patterns and frequency. Knowledge is a person's ability to identify risks related to individual eating habits by paying attention to the nutritional value and content of a food ingredient [8]. These three main factors of eating desire can affect the eating habits of college students. Based on previous research, students with good eating habits positively impact academic achievement, namely GPA, which significantly rises higher than students with bad eating habits [9]. Based on the description above, no specific research has been conducted on the three factors of eating desire with learning achievement. So the purpose of this study is to determine the relationship between attitudes, skills, and eating knowledge with student learning achievement.

Method

This study is an analytical observational study with a cross-sectional design. The research subjects are all active students in Lampung City universities located in Lampung City. Sampling using inclusion and exclusion criteria was obtained by 196 students. The selection was carried out non-probability (non-random) with snowball sampling techniques—statistical analysis using chi-square. The entire data was taken using an online self-administered questionnaire, using secondary data from the student learning achievement assessment model based on the eating environment in Lampung. The data collected in this study include respondents' characteristics, learning achievements and eating desires (attitudes, skills and

knowledge). The questionnaire of respondents' characteristics included identity, age, gender, pocket money and type of residence. The measured learning achievement is the GPA of the last year and the desire to eat, which is measured based on attitudes, skills and eating knowledge.

Result

A. Univariate Analysis

Table 1 shows the univariate analysis result.

Table 1. Frequency Distribution of Respondent Characteristics

Characteristic	Total (n)	Percentage (%)
Gender		
• Man	48	24,49
• Woman	148	75,51
Types of residence		
• Own house (living with parents	134	68,37
• Own house (living alone)	5	2,55
• Boarding house/contract/dormitory	51	26,02
• Relatives' homes	6	3,06
Monthly allowance		
• < IDR 500,000	88	44,90
• IDR 500,000 - 999,000	65	33,16
• >Rp. 1000,000	43	21,94
Attitude		
• Negative	17	8,67
• Positive	179	91,33
Skills		
• Low	137	69,90
• Good	59	30,10
Knowledge		
• Low	101	51,53
• Good	95	48,47
Learning achievements		
• Decreased	117	59,69
• Increase	79	40,31
Age		
• Median		21
• Min-Max		(14-29)

The results showed that the majority were female, as many as 148 people (75.51%) with an age range of 14-29 years. Furthermore, the distribution of subjects based on the type of residence equals 134 people (68.37%). The majority lived in their own homes (with parents), which equals 88 people (44.90%) with an allowance of less than Rp500,000. The number of subjects based on learning achievements, as many as 117 people (59.69%), decreased, and learning achievements were seen from the cumulative achievement index (GPA) of students in the past year. Furthermore, 179 respondents (91.133%) had a good eating attitude (positive attitude), while 137 respondents (69.90%) had poor eating skills levels and 101 respondents (51.53%) also had insufficient levels of eating knowledge.

B. Bivariate Analysis

Table 2 shows the bivariate analysis result. Respondents with negative attitudes toward learning achievement decreased by 11 (64.71%) and 6 (35.29%). Meanwhile, respondents with a positive attitude toward learning achievement reduced by 106 (59.22) and 73 (40.78). From the results of the bivariate analysis using the Chi-Square test with a value of $\alpha = 5\%$ (0.05)

obtained results, there was no significant relationship between eating attitudes and student learning achievement in Lampung (p>0.05) (Table 2).

Table 2. The Relationship Between Eating Attitudes and Student Learning Achievement

Attitude	Learning Achievements						P-value
	Decreased		Increase		Sum		
	n	%	N	%	N	%	
Negative	11	64.71	6	35.29	17	100	0,659
Positive	106	59.22	73	40,78	179	100	
Total	117	59.69	79	40.31	196	100	

Table 3. The Relationship Between Eating Skills and Student Learning Achievement

Skills	**Learning Achievements**						**P-value**
	Decreased		**Increase**		**Sum**		
	n	%	N	%	N	%	
Low	78	56.93	59	43.07	137	100	0.230
Good	39	66.10	20	33.90	59	100	
Total	117	59.69	79	40.31	196	100	

Respondents who had fewer skill levels with learning achievement decreased by 78 (56.93%) and increased by 59 (43.07%). Meanwhile, respondents who had good skill levels with learning achievement decreased by 39 (66.10%) and increased by 20 (33.90%). From the results of the bivariate analysis using the Chi-Square test with a value of α = 5% (0.05), the results were obtained; there was no significant relationship between eating skills and student learning achievement (p>0.05) (Table 3).

Table 4. The Relationship between Eating Knowledge and Student Learning Achievement

Knowledge	**Learning Achievements**						**P-value**
	Decreased		**Increase**		**Sum**		
	n	%	N	%	N	%	
Lower	65	64.36	36	35.64	101	100	0.170
Good	52	54.74	43	45.26	95	100	
Total	117	59.69	79	40.31	196	100	

Respondents with fewer knowledge levels with learning achievement decreased by 65 (64.36%) and 36 (35.64%). Meanwhile, respondents who had a good level of knowledge with learning achievement decreased by 52 (54.74%) and increased by 43 (45.26%). The results of the bivariate analysis using the Chi-Square test with a value of α = 5% (0.05) obtained the results that there was no significant relationship between eating knowledge and student learning achievement (p>0.05) (Table 4).

Discussion

A study on 196 students in Lampung found that respondents were 14-29 years old. The proportion of the female sex (75.51%) was more than that of men (24.49%). The results of this study are under the statistical data [10] that in Indonesia, both public and private universities are dominated by female students. In this study, students lived with their parents more than in a boarding house or relative's house. It is because, during the pandemic, there was a decrease in student productivity, where all activities were carried out at home, both learning activities and daily activities [11].

Furthermore, the student's pocket money in this study is less than Rp. 500,000 was 45%. This study's results align with previous research by Ref. [12], which stated that the Covid-19 pandemic decreased student pocket money with an average of less than Rp. 500,000 and decreased transportation spending because it reduced activities outside the home. In this study, student learning achievement in the past year decreased by more (than 60%) during the Covid-19 pandemic. This study's results align with the research of Ref. [13], which states that students' average score (GPA) decreased significantly from 2019-2020 to 2020-2021. The Covid-19 pandemic harms education through learning disruptions, limited access to educational facilities, especially the online learning process, and obstacles in its implementation, namely poor infrastructure, internet networks, electricity, and poor digital skills [14].

A. The relationship between eating attitudes and learning achievements

This study showed no significant relationship between attitudes and learning achievement ($p>0.05$). The question items regarding a person's eating attitude prioritize hygiene, food safety, and religious prohibitions (84.18%). This is in line with research by Ref. [15] which states that religion is one of the essential factors for a person in choosing food. Furthermore, for hygiene and food safety, it becomes a health guarantee for someone who consumes it. Ref. [16] states that one of the main reasons students choose food is health. A person's health condition greatly supports the level of concentration and learning activities that lead to achievement and learning outcomes [17].

Student achievements and learning outcomes are related to many factors, both factors that come from within himself (internal) and factors that come from outside him (external). Although in this study, eating attitudes and learning achievements are not related, the eating attitude of a person who prioritizes health (hygiene and food safety) is an indirect factor related to learning achievement.

B. Relationship of eating skills with learning achievement

The results of this study showed that there was no significant relationship between eating skills and learning achievement (p-value >0.05). This is in line with research by Ref. [18] which states that there is no relationship between the dimensions of eating behaviour and student academic achievement. Eating skills are one of the factors that can influence a person's eating behaviour [19]. In this study, the most critical question item for a person's level of eating skills was to choose and distinguish foods that contain nutrients (63.77%) and read food labels (79.59%). Ref. [20] stated that a person who has healthy eating behaviours or habits by choosing varied and nutritious foods for consumption would be able to minimize academic difficulties and improve learning achievement. Furthermore, respondents' skills in reading food labels can also provide information related to the health of the food consumed. Not only that but reading food labels can also influence an individual's purchasing decision [21]. Ref. [22] shows that someone who can choose quality, good food for daily consumption can positively affect academic achievement.

Student achievements and learning outcomes are related to many factors, both factors that come from within himself (internal) and factors that come from outside him (external). Although eating skills with learning achievement were not related in this study, eating skills that prioritize reading labels and choosing healthy food types became indirect factors related to learning achievement.

C. The relationship of eating knowledge to learning achievement

The results of this study showed that there was no significant relationship between eating knowledge and learning achievement ($p>0.05$). This is because the best question items about a person's knowledge are knowledge of carbohydrate types (86.22%) and knowledge of

sodium (88.26%). A person with good knowledge will apply a healthy diet. This is in line with Ref. [23], which shows that nutritional knowledge is related to a more nutritious diet. Nutrition education supports a person's success in implementing a healthy diet and a good lifestyle. Ref. [24] revealed that healthy lifestyle behaviours could indeed have an impact on better academic performance, and conversely, unhealthy dietary behaviours are significantly associated with decreased academic performance [25].

Student achievements and learning outcomes are related to many factors, both factors that come from within himself (internal) and factors that come from outside him (external). Although eating knowledge and learning achievement were not related in this study, in previous studies eating knowledge became a supporting factor for students' healthy behaviour or lifestyle, which was positively associated with learning achievement.

Conclusion

There is no significant relationship between attitudes, skills and eating knowledge and student learning achievement. Therefore, there needs to be further research where there may still be other free variables that have a relationship with bound variables, such as eating habits, nutritional status, and eating intake.

References

[1] R. Pusdiklat Kemendikbud, "Surat Edaran Mendikbud No 4 Tahun 2020 tentang Pelaksanaan Kebijakan Pendidikan dalam Masa Darurat Penyebaran Corona Virus Disease (Covid-19)," 2020. https://pusdiklat.kemdikbud.go.id/surat-edaran-mendikbud-no-4-tahun-2020-tentang-pelaksanaan-kebijakan-pendidikan-dalam-masa-darurat-penyebaran-corona-virus-disease-covid-1-9/ (accessed Mar. 17, 2022).

[2] A. Syafi'i, T. Marfiyanto, and S. K. Rodiyah, "Studi Tentang Prestasi Belajar Siswa Dalam Berbagai Aspek Dan Faktor Yang Mempengaruhi," *Jurnal Komunikasi Pendidikan*, vol. 2, no. 2, p. 115, 2018, doi: 10.32585/jkp.v2i2.114.

[3] A. Wibasuri and Addriansyah, "Pengaruh Motivasi Terhadap Prestasi Belajar Mahasiswa Manajemen Informatics & Business Institute Darmajaya Lampung," *GEMA: Jurnal Gentiaras Manajemen dan Akuntansi*, vol. 6, no. 1, pp. 55–64, 2014.

[4] R. H. Sa'adah, R. B. Herman, and S. Sastri, "Hubungan Status Gizi dengan Prestasi Belajar Siswa Sekolah Dasar Negeri 01 Guguk Malintang Kota Padangpanjang," *Jurnal Kesehatan Andalas*, vol. 3, no. 3, pp. 460–465, 2014, doi: 10.25077/jka.v3i3.176.

[5] N. Farrah *et al.*, "Examining the Relationship between Food Insecurity and Students' Academic Performance in Public Universities," *Article in Journal of Social Sciences and Humanities*, vol. 5, no. 2, pp. 128–138, 2021.

[6] P. Chikwere, "Volume 7, Number 1," *Graduate Journal of Food Studies*, vol. 7, no. 1, 2021, doi: 10.21428/92775833.ec6a5432.

[7] S. Ahmed, C. B. Shanks, T. Smith, and J. Shanks, "HHS Public Access," vol. 10, no. 1, pp. 169–182, 2019, doi: 10.1007/s12571-017-0748-1.Fruit.

[8] C. R. Medina, M. B. Urbano, A. De Jesús Espinosa, and Á. T. López, "Eating habits associated with nutrition-related knowledge among university students enrolled in academic programs related to nutrition and culinary arts in puerto rico," *Nutrients*, vol. 12, no. 5, pp. 1–14, 2020, doi: 10.3390/nu12051408.

[9] P. R. Reuter, B. L. Forster, and S. R. Brister, "The influence of eating habits on the academic performance of university students," *Journal of American College Health*, vol. 0, no. 0, pp. 1–7, 2020, doi: 10.1080/07448481.2020.1715986.

[10] Kemendikbud, "Statistik Pendidikan Tinggi (Higer Education Statistic) 2020," *PDDikti Kemendikbud*, pp. 81–85, 2020.

[11] A. P. Nabilah, K. N. Fitri, R. K. Primastuti, R. T. Khoirunnisaa, A. Anju, and E. Ernawati, "Pengaruh Pandemi Covid-19 Terhadap Pola Konsumsi Mahasiswa," *Populika*, vol. 9, no. 2, pp. 13–22, 2021, doi: 10.37631/populika.v9i2.388.

[12] A. Andini, A. J. Hendi, I. Maharani, K. S. V. Ruku, T. A. S. Purba, and S. H. Wijayanti, "Pengaruh Pandemi Covid-19 Terhadap Pengeluaran Bulanan Mahasiswa di Jakarta.," *Kinerja*, vol. 18, no. 02, pp. 314–321, 2021.
[13] R. Breaux, N. C. Dunn, J. M. Langberg, C. N. Cusick, M. R. Dvorsky, and S. P. Becker, "COVID-19 Resulted in Lower Grades for Male High School Students and Students With ADHD," *J Atten Disord*, 2021, doi: 10.1177/10870547211044211.
[14] E. M. Onyema, F. Obafemi, S. Sen, and A. Sharma, "Impact of Coronavirus Pandemic on Education," *Journal of Education and Practice*, no. May, 2020, doi: 10.7176/jep/11-13-12.
[15] S. O. Santoso, A. Janeta, and M. Kristanti, "Faktor-Faktor yang Mempengaruhi Pemilihan Makanan pada Remaja di Surabaya," *Jurnal Hospitality dan Manajemen Jasa*, vol. 6, no. 1, pp. 19–32, 2018.
[16] D. Ratih, A. Ruhana, and A. B. Nugrahani Astuti, "Alasan pemilihan makanan dan kebiasaan mengkonsumsi makanan sehat pada mahasiswa unesa ketintang," *Jurnal Tata Boga*, vol. 11, no. 1, pp. 22–32, 2022.
[17] F. Firdaus and R. Rasydianah, "Hubungan Kebiasaan Makan Pagi Dengan Hasil Belajar Siswa," *BIOMA: Jurnal Biologi dan …*, vol. 1, no. 1, pp. 33–40, 2019.
[18] M. Valladares, E. Durán, A. Matheus, S. Durán-Agüero, A. M. Obregón, and R. Ramírez-Tagle, "Association between Eating Behavior and Academic Performance in University Students," *J Am Coll Nutr*, vol. 35, no. 8, pp. 699–703, 2016, doi: 10.1080/07315724.2016.1157526.
[19] A. Kabir, S. Miah, and A. Islam, "Factors influencing eating behavior and dietary intake among resident students in a public university in Bangladesh: A qualitative study," *PLoS One*, vol. 13, no. 6, pp. 1–17, 2018, doi: 10.1371/journal.pone.0198801.
[20] S. Ihbour *et al.*, "Links Between Eating Habits, Cognitive Skills Associated with Learning to Read, and Academic Achievement in Moroccan School-Age Children," *Current Research in Nutrition and Food Science Journal*, vol. 10, no. 1, pp. 221–230, 2022, doi: 10.12944/crnfsj.10.1.17.
[21] E. Adesina *et al.*, "Consumers' Knowledge and Use of Nutritional Labelling Information in Lagos, Nigeria," *Sustainability (Switzerland)*, vol. 14, no. 1, pp. 1–16, 2022, doi: 10.3390/su14010578.
[22] A. Woodhouse, "Christian Perspectives in Education The Relationship of Food and Academic Performance : A Preliminary Examination of the Factors of Nutritional Neuroscience , Malnutrition , and Diet Adequacy The Relationship of Food and Academic Performance : A Prelimina," vol. 5, no. 1, 2012.
[23] D. C. Noronha *et al.*, "Nutrition Knowledge is Correlated with a Better Dietary Intake in Adolescent Soccer Players: A Cross-Sectional Study," *J Nutr Metab*, vol. 2020, 2020, doi: 10.1155/2020/3519781.
[24] G. Maniaci *et al.*, "The impact of healthy lifestyles on academic achievement among Italian adolescents," *Current Psychology*, no. 2017, 2021, doi: 10.1007/s12144-021-01614-w.
[25] P. Correa-burrows, R. Burrows, E. Blanco, and S. Gahagan, "Nutritional quality of diet and academic performance in Chilean students," no. March, 2016, doi: 10.2471/BLT.15.161315.

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