NURISH
Journal of Nutrition Research in Sustainable Health Nurish, Vol. 1, No. 5, 2025

Overview of Eating Behavior among First-Semester Nutrition Students at Universitas Internasional Batam

Prananingrum Kinasih[1*], Wahyu Aulia Hasibuan[2], Miftahul Jannah[3], Adelia Paradya Zetta[4]
[1]Faculty of Health and Science, Universitas Internasional Batam, Indonesia
[2]Faculty of Health and Science, Universitas Internasional Batam, Indonesia
[3]Faculty of Health and Science, Universitas Internasional Batam, Indonesia
[4]Faculty of Health and Science, Universitas Internasional Batam, Indonesia
*Corresponding Author: prananingrum.kinasih@uib.ac.id

History of Article
Submitted : October 13th, 2025
Revised : October 27th, 2025
Accepted : November 5th, 2025
Published : December 5th, 2025
DOI : 10.37253/nurish.v1i1.11767

ABSTRACT

Background: Eating behavior among university students is an important determinant of health and nutrition outcomes. Although nutrition students possess theoretical knowledge about healthy eating, their actual dietary habits may not always reflect this understanding. This study aimed to describe the eating behavior of first-semester nutrition students at Universitas Internasional Batam.

Methods: A cross-sectional descriptive study was conducted among 14 first-semester students from the Nutrition Program, Faculty of Health and Science, Universitas Internasional Batam. Data were obtained from a self-administered online questionnaire consisting of 23 items assessing various eating behaviors, such as fruit and vegetable consumption, dessert habits, and fat and sugar intake control. Affirmative ("Yes") responses were treated as indicators of healthy behavior. A composite score was calculated as the percentage of "Yes" responses per participant, which was categorized as *Non-risk (≥75%)*, *Moderate (50–74.9%)*, or *At-risk (<50%)*.

Results: The mean percentage of healthy responses was 49.4% (SD 13.5%), ranging from 26.1% to 73.9%. None of the respondents were classified as *Non-risk*, while 28.6% were *Moderate* and 71.4% were *At-risk*. The most frequently reported healthy behaviors were "trying to eat more fruits and vegetables" (92.9%) and "often trying to follow a healthy eating pattern" (85.7%). Conversely, very few respondents reported eating three portions of fruit daily (14.3%) or choosing low-fat snacks (21.4%).

Conclusion: Most first-semester nutrition students demonstrated limited consistent healthy eating behaviors, with the majority categorized as *At-risk*. These findings highlight a potential gap between nutrition knowledge and dietary practice, emphasizing the need for practical, behavior-focused interventions in nutrition education.

Keywords: Batam, Dietary Habits, Eating Behaviour, Nutrition Students, University

A. BACKGROUND

University transition—especially for first-year students—often brings changes in food availability, meal regularity, autonomy in food choices, exposure to new social and peer influences, and different schedules. These transitions may improve or worsen eating behavior depending on context and support (1–3). Students in nutrition programs are presumed to have above-average knowledge about dietary recommendations; however, knowledge does not always translate into practice because of financial constraints, accessibility, time pressure, stress, social activities, and food environment (4–6).

Studies in student populations internationally report mixed findings: while nutrition students frequently show greater knowledge about healthy behavior, their actual dietary patterns sometimes mirror those of their non-nutrition peers, with frequent snacking, skipping meals, and consumption of convenience foods reported in several settings (7–9). Understanding the eating behavior patterns among incoming nutrition students at Universitas Internasional Batam can inform curriculum design, targeted counselling, and early interventions (peer programmes, practical cooking classes, campus food policy) to support formation of sustainable, health-promoting behaviors.

The present study aims to describe the cross-sectional profile of self-reported eating behaviors among first-semester nutrition students at Universitas Internasional Batam, using a questionnaire with 23 behavior items spanning fruit/vegetable intake, choices when eating outside, snack and dessert behaviours, and simple food preparation practices.

B. METHODS

This is a descriptive, cross-sectional analysis of responses from first-semester students in the Program Studi Gizi, Fakultas Kesehatan dan Sains, Universitas Internasional Batam. The dataset included responses from fourteen students who completed an online questionnaire. All analyses presented are fully anonymized (no names or emails are reported).

The questionnaire consisted of 23 items focusing on concrete eating behaviors and choices (e.g., preference for low-fat foods when eating out, frequency of consuming desserts, fruit and vegetable intake, sugar control behaviours, usage of spreads, bringing snacks, and selection of beverages). Response options varied but typically included “Ya”, “Tidak”, and “Tidak pernah” (or equivalent). The instrument in this dataset was not an EAT-26 questionnaire; rather it measures day-to-day choices and health-oriented behaviours.

Because the instrument records affirmative behavior for each specific healthy habit, we operationalized a simple composite *healthy behavior score*: for each respondent, count number

of items answered "Ya", divide by the number of items answered (to handle sporadic item non-response), and multiply by 100 to yield percent positive.

Rationale: for descriptive epidemiology and practical communication we considered affirmative responses to represent the behavior occurring for that respondent; while this is a simplification (frequency and intensity are not captured), it enables summarising across heterogeneous items.

The classification of eating behavior in this study was based on the proportion of positive responses ("Ya") provided by each respondent. The percentage of positive answers was calculated by dividing the number of healthy ("Yes") responses by the total number of items answered, then multiplied by one hundred. Respondents were subsequently grouped into three categories according to their composite scores. Those with a percentage of positive responses equal to or greater than 75% were classified as Non-risk (Good), indicating consistent engagement in healthy eating behaviors. Respondents with scores between 50% and 74.9% were categorized as Moderate, reflecting partial adherence to healthy behaviors. Meanwhile, respondents whose scores were below 50% were categorized as At-risk (Poor), suggesting inconsistent or limited healthy eating practices. These cut-off points were determined pragmatically to describe relative behavioral patterns rather than as diagnostic criteria, allowing for a clearer interpretation of tendencies within the sample.

Data processing and analysis were conducted systematically using Microsoft Excel and statistical software. The raw dataset was first imported into a data frame for cleaning and organization. The variable *'Usia'* (age) was standardized by extracting numeric values from textual responses such as "18 tahun" or "19 Tahun" to ensure uniformity in analysis. The variable *'Jenis kelamin'* (gender) was summarized as reported by the participants. For each behavior item, the proportion of respondents answering "Ya" was calculated to determine the frequency of positive behaviors across the sample. Subsequently, a respondent-level composite score was generated to classify each individual into one of the three behavioral categories. Descriptive statistical analyses—including mean, standard deviation, minimum, maximum, and quartile values—were performed for both the percent-positive scores and the age distribution. All data were reported in aggregate form to maintain confidentiality, with no individual identifiers disclosed.

C. RESULT AND DISCUSSION

A total of fourteen first-semester nutrition students participated in this study. After data cleaning, most respondents were between 18 and 19 years old, representing 85.7% of the

sample (six respondents aged 18 years and six respondents aged 19 years), while only one respondent each was aged 20 and 21 years. This age distribution reflects the typical entry age for undergraduate students in the nutrition program. In terms of gender, the majority were female (n = 12; 85.7%), with one male respondent (7.1%) and one respondent who did not specify gender (7.1%).

The questionnaire used in this study consisted of 23 items assessing various aspects of eating behavior, such as the selection of low-fat foods when eating outside, fruit and vegetable consumption, dessert habits, avoidance of fried foods, management of sugar and fat intake, and choices related to snacks or beverages. Responses were categorized into "Yes," "No," and "Never," with affirmative ("Yes") responses indicating engagement in a healthy eating behavior.

Across all respondents, the mean proportion of positive ("Yes") responses was 49.4%, with a standard deviation of 13.5%. The lowest percentage of positive responses was 26.1%, and the highest was 73.9%, indicating considerable variation in healthy eating behavior among participants. Based on classification thresholds—where respondents with ≥75% positive answers were categorized as *Non-risk (Good)*, those between 50–74.9% as *Moderate*, and those with <50% as *At-risk (Poor)*—none of the students achieved the *Non-risk* category. Ten respondents (71.4%) fell into the *At-risk (Poor)* group, while four respondents (28.6%) were in the *Moderate* group. This result suggests that most respondents had not yet consistently implemented healthy eating behaviors, even though they were students in a nutrition program.

When individual items were examined, several behaviors showed high adoption rates. The vast majority of students (92.9%) reported *"Mencoba banyak makan buah dan sayur"* (trying to eat more fruits and vegetables), followed by 85.7% who stated *"Sering mencoba pola makan sehat"* (frequently trying to follow healthy eating patterns). Other commonly endorsed behaviors included *"Makan makanan penutup jika ada"* (consuming desserts when available) and *"Makan makanan penutup di rumah mencoba yang rendah lemak seperti sayur dan buah"* (choosing low-fat desserts such as fruits and vegetables at home), both with 78.6% positive responses. About 71.4% of respondents reported *"Menjaga asupan gula agar tetap dalam batas rendah"* (keeping sugar intake within low limits), and 64.3% stated *"Saya pasti makan minimal satu porsi sayuran dalam sehari"* (always eating at least one portion of vegetables per day).

Conversely, several behaviors were found to have low adoption rates. None of the respondents reported *"Sering menambahkan krim pada makanan atau minuman"* (often adding cream to food or beverages), and only 14.3% stated that they *"Membawa bekal makan*

siang menambahkan coklat atau biscuit" (brought lunch with added chocolate or biscuits). Likewise, only 14.3% reported eating *"Makan minimal tiga porsi buah setiap hari"* (at least three portions of fruit daily). A small proportion (21.4%) chose *"Membeli cemilan keripik yang rendah lemak"* (buying low-fat snacks), and 28.6% indicated they *"Ketika makan siang diluar sering memilih makanan rendah lemak"* (often selected low-fat foods when eating out). Furthermore, only about one-third (35.7%) reported *"Memilih makanan penutup paling sehat saat makan di restoran"* (choosing the healthiest dessert option at restaurants).

Taken together, these findings illustrate that although nutrition students are aware of and practice some healthy habits—especially those related to fruit and vegetable intake—they tend to have inconsistent adherence to other healthy behaviors. The students generally exhibit positive intentions toward healthy eating but lack full consistency across a wide range of behaviors. The dominance of the *At-risk* category suggests that the transition to university life may influence eating patterns through environmental, social, or practical constraints, even among individuals trained in nutrition sciences.

The findings of this study reveal that most first-semester nutrition students at Universitas Internasional Batam demonstrated suboptimal eating behaviors, despite their academic background in nutrition. Although a considerable proportion of respondents reported making conscious efforts to consume more fruits and vegetables, their overall adherence to a wide range of healthy eating behaviors remained limited. The average percentage of positive (healthy) responses was 49.4%, and more than two-thirds of participants were categorized as *At-risk (Poor)*. This result suggests that knowledge of nutrition alone does not necessarily translate into consistent healthy eating practices, particularly during the early transition to university life.

The high frequency of affirmative responses to items such as "trying to eat more fruits and vegetables" and "frequently attempting to follow healthy eating patterns" indicates that students possess good awareness and positive intentions toward healthy eating. However, their low compliance with other behaviors—such as consuming three portions of fruit daily, choosing low-fat snacks, or selecting healthier desserts at restaurants—reflects challenges in transforming knowledge and intention into consistent daily habits. Similar patterns have been reported in studies conducted among nutrition students in other settings, where theoretical understanding of healthy diets does not always correspond with actual food choices due to various external and internal factors.

One plausible explanation for these findings lies in the multiple transitions that first-year university students experience. The shift from living with family to independent living can lead

to irregular meal schedules, reliance on convenience foods, and reduced control over food quality. Environmental factors, such as limited healthy food options around campus and time constraints due to academic workload, may also discourage consistent healthy eating. In addition, economic limitations might restrict access to fresh fruits, vegetables, and healthier food alternatives, causing students to opt for cheaper, calorie-dense foods. These situational barriers are often strong enough to outweigh personal knowledge and motivation.

Psychological factors may also contribute to inconsistent eating patterns. Stress, adaptation to new academic and social environments, and peer influence can impact dietary choices. Students under pressure may seek comfort in sweet or high-fat foods, as has been reported in several behavioral nutrition studies. Even though some students consciously attempt to control their sugar intake—as shown by 71.4% who reported maintaining low sugar consumption—stress-induced eating behaviors can undermine these efforts. Thus, interventions targeting behavior change should address not only knowledge but also self-regulation, emotional coping, and environmental modification.

The observed inconsistency between intentions and behavior underscores the importance of integrating practical skill-based learning into the nutrition curriculum. Instead of focusing solely on theoretical concepts, education should also include applied components such as meal planning, food budgeting, cooking demonstrations, and behavioral self-monitoring. These activities may help students develop real-life strategies to apply their nutritional knowledge in everyday situations. Moreover, creating a supportive food environment on campus—such as providing affordable healthy meals, promoting fruit and vegetable snacks, and improving the labeling of nutritious foods—could facilitate healthier choices among students.

Despite providing valuable insights, this study has several limitations that must be acknowledged. The small sample size (n = 14) limits the generalizability of findings, and self-reported data are inherently susceptible to bias, particularly social desirability bias, as students may overreport healthy behaviors. The use of yes/no responses also restricts the ability to capture frequency and portion size, which would provide a more comprehensive understanding of eating habits. Furthermore, the classification thresholds used in this study were pragmatic rather than standardized clinical criteria, which may influence category distributions. Nevertheless, these results serve as an important preliminary overview that can inform future research.

Overall, this study highlights a clear gap between nutritional knowledge and consistent practice among first-semester nutrition students. The early academic stage appears to be a critical period during which attitudes are still forming, and behavioral patterns are highly

modifiable. Therefore, early interventions that combine nutrition education with behavioral and environmental strategies could have long-term benefits, both for students' personal health and for their credibility as future nutrition professionals.

D. CONCLUSION

Among 14 first-semester nutrition students at Universitas Internasional Batam, self-reported attempts to eat more fruits and vegetables and to adopt healthy patterns are common, yet comprehensive adoption across a broad set of healthy behaviors is limited: the majority of respondents had less than half of the surveyed behaviors affirmed. These findings suggest the presence of a knowledge–practice gap and highlight the need for practical, context-sensitive interventions (curriculum, food environment, peer support) to translate nutritional knowledge into consistent daily practices. Given the small sample, these results should be considered preliminary; larger, mixed-methods research is recommended.

REFERENCES

1. Muraglia M, Faienza MF, Tardugno R, Clodoveo ML, Matias De la Cruz C, Bermúdez FG, et al. Breastfeeding: science and knowledge in pediatric obesity prevention. Front Med (Lausanne). 2024;11.
2. Palaska E, Antoniou E, Tzitiridou-Chatzopoulou M, Eskitzis P, Orovou E. Correlation between Breastfeeding, Maternal Body Mass Index, and Childhood Obesity. Epidemiologia. 2024 Sep 1;5(3):411–20.
3. Hummel S, Weiß A, Bonifacio E, Agardh D, Akolkar B, Aronsson CA, et al. Associations of breastfeeding with childhood autoimmunity, allergies, and overweight: The Environmental Determinants of Diabetes in the Young (TEDDY) study. American Journal of Clinical Nutrition. 2021 Jul 1;114(1):134–42.
4. Huang Y, Zhang L, Ainiwan D, Alifu X, Cheng H, Qiu Y, et al. Breastfeeding, Gestational Diabetes Mellitus, Size at Birth and Overweight/Obesity in Early Childhood. Nutrients. 2024 Apr 30;16(9).
5. Keyes M, Andrews C, Midya V, Carrasco P, Guxens M, Jimeno-Romero A, et al. Mediators of the association between maternal body mass index and breastfeeding duration in 3 international cohorts. American Journal of Clinical Nutrition. 2023 Jul 1;118(1):255–63.
6. Al-Anazi OM, Shafee M, Haneef M, Zafar M, Ahsan M. Association of maternal obesity and diabetes mellitus with exclusive breastfeeding among Saudi Mothers in Jubail, Saudi Arabia. Int J Prev Med. 2022;13(1):68.
7. Nagore González C, Iglesia Altaba I, Guillén Sebastián C, Alvarez Sauras ML, García Enguita S, Moreno LA, et al. Mediating Effect of Infant Rapid Weight Gain on the

Association Between Exclusive Breastfeeding and the Risk of Obesity Later in Life. Pediatr Obes. 2025 Oct 1;20(10).

8. Jayasinghe S, Herath MP, Beckett JM, Ahuja KDK, Byrne NM, Hills AP. Exclusivity of breastfeeding and body composition: learnings from the Baby-bod study. Int Breastfeed J. 2021 Dec 1;16(1).

9. Wu Y, Lye S, Dennis CL, Briollais L. Exclusive breastfeeding can attenuate bodymass-index increase among genetically susceptible children: A longitudinal study from the ALSPAC cohort. PLoS Genet. 2020 Jun 1;16(6).

10. Ma J, Qiao Y, Zhao P, Li W, Katzmarzyk PT, Chaput JP, et al. Breastfeeding and childhood obesity: A 12-country study. Matern Child Nutr. 2020 Jul 1;16(3).

11. Liu F, Lv D, Wang L, Feng X, Zhang R, Liu W, et al. Breastfeeding and overweight/obesity among children and adolescents: a cross-sectional study. BMC Pediatr. 2022 Dec 1;22(1).

12. Lin D, Chen D, Huang J, Li Y, Wen X, Ou P, et al. Breastfeeding is associated with reduced risks of central obesity and hypertension in young school-aged children: a large, population-based study. Int Breastfeed J. 2023 Dec 1;18(1).

13. Mafinezhad S, Abbaszade A, Bayani G, Manesh HA, Khalili MN, Pouladi M, et al. Relationship Between Exclusive Breastfeeding and Body Mass Index in 3-6 Years Old Children in Bojnourd in 2019. Journal of North Khorasan. 2020;12(2).

14. Palaska E, Lykeridou A, Zyga S, Panoutsopoulos G. Association Between Breastfeeding and Obesity in Preschool Children. Mater Sociomed. 2020;32(2):117–22.

15. Martin FPJ, Moco S, Montoliu I, Collino S, Da Silva L, Rezzi S, et al. Impact of breast-feeding and high-and low-protein formula on the metabolism and growth of infants from overweight and obese mothers. Pediatr Res. 2014;75(4):535–43.

16. Latorre G, Martinelli D, Capozza M, Grosso FM, Laforgia N, Baldassarre ME. The effect of on-site and on-call nurse on exclusive breastfeeding in two different hospital settings: a prospective observational cohort study. Ital J Pediatr. 2024 Dec 1;50(1).

17. Bürger B, Schindler K, Tripolt T, Griesbacher A, Stüger HP, Wagner KH, et al. Factors Associated with (Exclusive) Breastfeeding Duration—Results of the SUKIE-Study. Nutrients. 2022 May 1;14(9).

18. Perez MR, Castro LS de, Chang YS, Sañudo A, Marcacine KO, Amir LH, et al. Breastfeeding Practices and Problems Among Obese Women Compared with Nonobese Women in a Brazilian Hospital. Women's Health Reports. 2021 Jun 1;2(1):219–26.