

Decoupling Cognitive Awareness from Dietary Action: A Theoretical and Empirical Analysis of the Nutritional Knowledge-Practice Gap Within the Malaysian Higher Learning Institution Ecosystem

Abd Razak Abu Kassim¹, Mohd Hairi Jalis², Mustakim Mohamad³

¹ Faculty of Hotel & Tourism Management, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam campus, 42300 Puncak Alam, Selangor, Malaysia

² Faculty of Hotel & Tourism Management, Universiti Teknologi MARA Cawangan Pulau Pinang, Permatang Pauh campus, 13500 Permatang Pauh, Pulau Pinang, Malaysia

³ Faculty of Hotel & Tourism Management, Universiti Teknologi MARA Cawangan Terengganu, Dungun campus, 23000 Dungun, Terengganu, Malaysia

*Corresponding Author

DOI: <https://doi.org/10.47772/IJRISS.2026.1026EDU0318>

Received: 18 May 2026; Accepted: 23 May 2026; Published: 12 June 2026

ABSTRACT

The developmental transition to higher learning institution (HLI) represents a critical lifecycle stage where dietary habits are often destabilized and reconstructed. This research investigates the persistent "knowledge-practice gap" among Malaysian university students, specifically examining why theoretical nutritional literacy fails to translate into healthy eating behaviors within the campus ecosystem. While higher learning institutions are traditionally conceptualized as centers for academic teaching and learning, their role as formative environments for health-promoting behaviors remains under-scrutinized. This study, grounded in the Knowledge-Attitude-Practice (KAP) model and the Theory of Planned Behavior (TPB), utilizes a cross-sectional analysis of 397 undergraduate students at the Universiti Teknologi MARA Dungun Campus. The empirical findings indicate that while students demonstrate high theoretical knowledge of nutrition, this cognitive awareness explains a mere 4.4% of the variance in actual eating practices. This profound disconnect suggests that traditional information-based pedagogical models in Malaysian universities are insufficient for fostering behavioral change. The study identifies structural, environmental, and socio-economic barriers that impede the application of knowledge, arguing for a radical shift toward practice-oriented and multimodal health education. By situating nutritional behavior within the broader context of teaching and learning at Malaysian HLIs, this research contributes to the development of integrated intervention strategies that address the systemic determinants of student health.

INTRODUCTION

The public health trajectory of Malaysia has become a focal point of intense scholarly and policy debate, as the nation currently faces a significant escalation in lifestyle-related diseases that threaten both human capital and economic productivity. The prevalence of non-communicable diseases is increasingly observed in younger populations, with university students emerging as a demographic of particular concern. Recent evidence suggests that young adults in Malaysia are experiencing alarmingly high rates of obesity, and more than half of the university student population does not consume sufficient essential nutrients relative to national dietary guidelines (Erfanian et al., 2022). This nutritional crisis is not merely a reflection of poor individual choices but is deeply rooted in the complex transition to university life, which involves a move away from the regulated dietary environment of the family home toward an environment of total dietary autonomy. This period of life is often the first-time individuals are tasked with making independent decisions regarding food procurement, preparation, and consumption, yet they frequently do so with limited resources and high stress.

For many Malaysian undergraduates, the university years are characterized by a "triple burden" of academic pressure, financial instability, and the need to manage daily life independently for the first time. This independence often leads to a decline in dietary quality, marked by an increased reliance on convenience foods and a reduction in the consumption of fresh produce (EVELYN et al., 2020). Higher Learning Institutions are uniquely positioned to address this crisis, as they are the primary sites for formal teaching and learning during these formative years. However, there is a growing realization that the current educational paradigm, which focuses largely on the dissemination of theoretical health facts, is failing to produce meaningful behavioral outcomes. The assumption that providing students with knowledge about a balanced diet will automatically result in healthy eating practices is increasingly challenged by the reality of the campus environment. This disconnect is particularly striking in Malaysia, where despite extensive public health campaigns, the prevalence of overweight and obesity among young adults continues to rise.

The conceptualization of universities as centers for teaching and learning must expand beyond the classroom to include the "hidden curriculum" of the campus environment. When students spend the majority of their time in an ecosystem where unhealthy food is more accessible and affordable than nutritious options, the theoretical knowledge they gain in their academic modules is effectively neutralized. This research addresses this specific disconnect—the knowledge-practice gap - by exploring the relationship between what students know and what they actually do. The core focus of this study is to analyze how nutritional knowledge and eating practices are shaped by the university experience in Malaysia. It moves beyond a simple assessment of literacy to investigate the underlying factors that prevent students from acting on their knowledge. By examining this issue through the lens of pedagogical effectiveness, the study contributes to a broader understanding of how Higher Learning Institutions (HLIs) can integrate health and well-being into their core educational mission.

Furthermore, this inquiry is timely given the shift in Malaysian higher education toward more holistic student development. The Ministry of Higher Education (MOHE) has emphasized the importance of producing graduates who are not only academically competent but also physically and mentally resilient. Achieving this goal requires a deep understanding of the behavioral drivers that influence student health. By investigating the knowledge-practice gap at Universiti Teknologi MARA Dungun, this study provides empirical data that can inform the development of more effective health interventions. The findings presented here are essential for university administrators and policymakers who seek to create a campus culture that supports the physical health of students as a prerequisite for academic success. Ultimately, this paper argues that bridging the gap between knowledge and practice is not just a matter of individual discipline but is a systemic challenge that requires a transformation in the way universities manage their food environments and deliver health education.

LITERATURE REVIEW

The University Transition as a Dietary Disruptor

The transition from the secondary school system to the university environment is widely recognized in the literature as a period of significant behavioral flux. For most Malaysian students, this phase involves moving from a domestic setting where meals are prepared by parents to a campus setting where they must plan, purchase, and prepare their own food (EVELYN et al., 2020). This shift often occurs simultaneously with increased academic demands and the social pressure to conform to peer eating habits. Studies have shown that during this period, students frequently adopt unfavorable dietary habits, including a lower intake of fruits, vegetables, and whole grains, alongside an increased consumption of sugar-sweetened beverages and fast food (EVELYN et al., 2020). This is often referred to as the "freshman fifteen" phenomenon in Western literature, though in the Malaysian context, the concerns also include nutrient deficiencies and underweight status among specific segments of the population (Gan et al., 2011).

The long-term implications of these habits are profound, as the dietary patterns established during early adulthood often persist throughout the professional lifespan, thereby increasing the risk of cardiovascular diseases and metabolic disorders (Evelyn et al., 2020). In Malaysia, the prevalence of underweight and nutrient deficiencies among university students further complicates the picture, suggesting that the problem is not only one of overconsumption but also of poor nutritional quality (Gan et al., 2011). Research has indicated that female students are often more conscious of their weight than males, yet this consciousness does not always lead to

healthier intake, as it may manifest in restrictive eating or skipping meals (Gan et al., 2011). The literature consistently indicates that promoting healthy eating among young adults is crucial for achieving a healthy nutritional status across the nation, yet the mechanisms for achieving this within the university setting remain poorly understood.

Nutritional Knowledge and the Paradox of Literacy

Nutritional knowledge is generally defined as the cognitive understanding of dietary recommendations, food groups, and the health impacts of various food choices. While common sense suggests that higher knowledge should lead to better choices, empirical evidence in the Malaysian context remains inconsistent. Some studies have found that while there are indicators of links between nutrition education and eating behavior, the actual strength of this relationship is often negligible (Erfanian et al., 2022). For instance, a study involving students in food science and nutrition faculties - who arguably possess the highest levels of nutritional literacy on campus - did not find a statistically significant link between their specialized education and their actual eating behaviors (Erfanian et al., 2022). This suggests that knowledge exists in a separate cognitive domain from the habitual behaviors that drive daily food selection.

This paradox suggests that even those who are professionally trained in the principles of nutrition are not immune to the behavioral barriers present in the university environment. Furthermore, the lack of awareness regarding the usage of nutrition labels during food purchases remains a significant hurdle (Evelyn et al., 2020). Although the constant use of nutrition labels is associated with healthier food selections and lower sodium intake, many Malaysian students lack the procedural knowledge required to interpret this information effectively (Evelyn et al., 2020; Yee et al., 2022). This highlights a critical gap in the "teaching and learning" process, where students may know what a healthy diet looks like in theory but cannot apply that knowledge to a specific product in a retail setting. The complexity of nutritional labeling and the time-consuming nature of comparing products often lead students to fall back on price and convenience as their primary decision-making criteria (Yee et al., 2022).

Gender, Locality, and Socio-Economic Determinants

The literature also reveals significant differences in nutritional practices based on gender and geographical background. Female university students in Malaysia typically demonstrate higher levels of nutritional knowledge than their male counterparts, yet this does not always translate into superior dietary habits (Jeinie et al., 2021). In some cases, male students have been observed to select more healthy or balanced foods despite having lower knowledge scores, suggesting that factors like physical activity goals or body image perceptions may play a more significant role than cognitive literacy (Jeinie et al., 2021). This indicates that the motivations for healthy eating are diverse and gender-specific, requiring tailored pedagogical approaches in university health programs.

Locality also emerges as a key determinant of student behavior. Research conducted in East Malaysia found that while there was no significant difference in raw nutritional knowledge between urban and rural students, urban students were more likely to prioritize a balanced diet and eat breakfast daily (Jeinie et al., 2021). These findings suggest that the environment in which a student is raised and the environment they inhabit during their studies - urban versus rural - significantly shape their dietary practices (Jeinie et al., 2021). Furthermore, socio-economic factors such as the price of food and the proximity of fast-food outlets to campus are major predictors of behavior. In Kelantan, for instance, high accessibility to fast food significantly influenced the consumption patterns of undergraduates, regardless of their academic background (Sumardi et al., 2022). The economic reality of being a student, often relying on limited stipends or loans, makes price the ultimate arbiter of food choice, regardless of what they have learned in class.

The Institutional Environment as a Health Determinant

HLIs in Malaysia are not just places of academic instruction; they are ecosystems that provide housing, recreation, and nutrition. However, many of these environments are inadvertently "obesogenic," characterized by a high density of vendors selling calorie-dense, nutrient-poor foods at low prices. The role of the institution in the teaching and learning of health behaviors is often overlooked in favor of classroom-based education. Yet, research suggests that the physical availability of healthy options is one of the strongest predictors of intake

(Mamun et al., 2020). When healthy foods like fresh fruits and vegetables are expensive or difficult to find on campus, students are essentially being "taught" by their environment that nutrition is a luxury rather than a necessity.

Moreover, the social environment of the university plays a critical role in shaping behavior. Subjective norms, or the perceived social pressure to perform or not perform a behavior, are highly influential in the young adult demographic. If the prevailing social norm on campus is to consume fast food or high-sugar beverages during social gatherings, students who are aware of the health risks may still choose to conform to avoid social exclusion. This highlights the need for a multi-level approach to nutrition education that addresses both the physical and social determinants of behavior. By understanding these environmental factors, HLIs can move beyond simple information dissemination toward creating a campus culture that actively enables healthy practices.

THEORETICAL UNDERPINNINGS

The Knowledge-Attitude-Practice Model

This study is fundamentally underpinned by the Knowledge-Attitude-Practice (KAP) model, a psychological framework often used to evaluate the impact of educational interventions on individual behavior (Nayan et al., 2024). The core tenet of the KAP model is that a person's understanding of a topic (knowledge) serves as the foundation for their perspective (attitude), which in turn dictates their actions (practice) (Mahat et al., 2017; Nayan et al., 2024). Within this model, knowledge is seen as the catalyst for change. It is hypothesized that by increasing a student's exposure to nutritional information through lectures, workshops, or media, their feelings toward healthy eating will improve, leading to a permanent change in their dietary habits (Nayan et al., 2024). The KAP model provides a linear pathway for behavior change that has long been the gold standard in public health education.

However, the application of the KAP model in this study also acknowledges its limitations, particularly the frequently observed "gap" where knowledge and attitude do not lead to the expected practice. Critics of the linear KAP progression argue that "knowledge" is not a monolithic construct. A distinction must be made between declarative knowledge (knowing that a behavior is good) and procedural knowledge (knowing how to perform the behavior) (Huong et al., 2022). In the context of Malaysian higher education, many programs focus exclusively on the former. Students may acquire a wealth of declarative facts about the Malaysian Food Pyramid without gaining the practical skills needed to navigate a budget-friendly grocery store or prepare meals in a dormitory setting. This study utilizes the KAP model to measure the extent of this linear failure, specifically examining where the progression from knowledge to practice breaks down within the Malaysian university context.

The Theory of Planned Behavior

To provide a more comprehensive explanation of the knowledge-practice gap, this study also incorporates the Theory of Planned Behavior. The TPB posits that human behavior is driven by behavioral intentions, which are shaped by three interrelated factors: attitudes toward the behavior, subjective norms, and perceived behavioral control (Mahat et al., 2017; Sharkawi et al., 2021). While the KAP model focuses on the cognitive prerequisites for behavior, the TPB accounts for the social and environmental pressures that influence a student's ability to act on their knowledge. This theoretical framework is essential for understanding why students who "know better" still "do worse" when faced with real-world constraints.

In Malaysia, research applying the TPB has shown that attitude is a powerful predictor of healthy eating intention, with a significant positive relationship (Sharkawi et al., 2021). However, for university students, the factor of "perceived behavioral control" is often the most critical barrier. This refers to a student's perception of the ease or difficulty of performing the behavior (Sharkawi et al., 2021). Even if a student possesses high nutritional knowledge and a positive attitude, their behavior may be constrained if they perceive that they have no control over their food environment—for example, if healthy food is too expensive or if the campus canteen only serves fried foods (Mamun et al., 2020). By integrating the KAP and TPB frameworks, this study examines

how the structural conditions of the Malaysian university campus act as a barrier to the translation of knowledge into practice. This dual theoretical approach allows for a deeper analysis of the internal and external determinants of student health.

Contribution to the Teaching and Learning Paradigm

The integration of KAP and TPB within this study contributes significantly to the pedagogical discourse in Higher Learning Institutions. It shifts the focus of health education from a simple "banking" model of knowledge transfer to a more holistic "practice-oriented" approach. In this view, teaching and learning are not just about what happens in the lecture hall but about how the institution supports the application of that learning in the real world. By identifying where the knowledge-practice gap is widest, this research provides a roadmap for how universities can redesign their health modules to include skill-building and environmental navigation.

Furthermore, this theoretical positioning emphasizes the role of the HLI as a "choice architect." If knowledge alone only explains a small fraction of behavior, then the institution must use its influence to shape the attitudes and perceived control of its students. This can be achieved through a combination of educational reform, environmental restructuring, and social marketing. This study argues that for nutrition education to be effective, it must be integrated into the very fabric of campus life, moving beyond theoretical instruction to become an experiential part of the student journey. This shift is essential for producing graduates who are not just knowledgeable about health but are capable of maintaining it in the face of modern challenges.

METHODOLOGY

Research Design and Sampling

This study adopted a quantitative cross-sectional research design to investigate the relationship between nutritional knowledge and eating behavior among university students. This methodology was selected because it allows for the examination of patterns and associations within a population at a single point in time, which is highly effective for identifying widespread behavioral phenomena like the knowledge-practice gap. The research was conducted at the Universiti Teknologi MARA Dungun Campus, which hosts a large and diverse undergraduate population. The target population was estimated at approximately 6,010 students, and the sampling strategy aimed to capture a representative cross-section of this group.

The required sample size was determined using the Krejcie and Morgan sampling table, which recommended a minimum of 362 respondents to ensure statistical validity. To account for potential non-response or incomplete data, the distribution was slightly increased, resulting in a final sample of 397 valid responses. A stratified random sampling technique was employed to ensure that students from all faculties and years of study were proportionately represented. This approach was critical for minimizing sampling bias and ensuring that the findings were reflective of the entire undergraduate community at UiTM Dungun. Data were collected over a four-week period during a regular academic semester to capture typical dietary habits.

Instrumentation and Data Collection

Data were collected using a structured, self-administered questionnaire that was distributed electronically to the student body. The questionnaire was divided into three main sections: demographic profile, nutritional knowledge, and eating behavior. The items for knowledge and behavior were adapted from established and validated instruments used in previous studies of Malaysian student nutrition (Erfanian et al., 2022; Huong et al., 2022). Nutritional knowledge was assessed through questions related to food groups, dietary guidelines, and the impact of diet on health. Eating behavior was measured using items that focused on meal frequency, food selection, and the practical application of nutritional concepts.

To ensure the reliability of the instrument, a pilot study was conducted with 30 students before the main data collection phase. The results of the pilot study indicated that the questions were clear and unambiguous. The internal consistency of the questionnaire was further confirmed with a Cronbach's alpha value of 0.743, which is considered acceptable for social science research. Participation in the study was entirely voluntary, and all

respondents were provided with an information sheet outlining the purpose of the research and ensuring their anonymity. Ethical approval was obtained from the relevant institutional committees prior to the commencement of the study.

Statistical Analysis

The data gathered from the survey were analyzed using the Statistical Package for the Social Sciences version 27. The analysis proceeded in several stages to provide a comprehensive view of the knowledge-practice relationship. First, descriptive statistics including means, standard deviations, and frequencies were used to summarize the demographic profile of the respondents and the levels of knowledge and practice. This provided the baseline data needed to understand the general state of student nutrition on campus.

Following the descriptive analysis, inferential statistics were used to test the research hypotheses. Pearson correlation analysis was conducted to determine the strength and direction of the relationship between nutritional knowledge and eating behavior. Finally, a simple linear regression model was employed to quantify the predictive power of knowledge on behavior. The R^2 value was used to determine what percentage of the variance in eating behavior could be explained by nutritional knowledge. This multi-staged statistical approach was necessary to provide a robust empirical validation of the knowledge-practice gap.

FINDINGS

Demographic Profile of Respondents

The demographic analysis of the 397 participants reveals a profile that is typical of many Malaysian public university campuses. As shown in Table 1, the sample was predominantly female and aged between 18 and 22 years.

Table 1: Demographic Characteristics (n = 397)

Variable	Category	n	Percentage (%)
Gender	Female	271	68.3
	Male	126	31.7
Age	18-19	162	40.8
	20-22	185	46.6
	23-24	50	12.6
Year of Study	Year 1	147	37.0
	Year 2	169	42.6
	Year 3	81	20.4
Accommodation	On-campus	364	91.7
	Off-campus	33	8.3

A significant finding from the demographic data is that 91.7% of the respondents live on-campus. This indicates a high level of reliance on the food environment provided by the university, making the institutional management of food services a primary factor in student health. The distribution across years of study was also balanced, with a significant number of first and second-year students who are in the most critical phase of habit formation.

Descriptive Analysis of Knowledge and Behavior

The descriptive statistics for the key research variables reveal a striking discrepancy between cognitive understanding and behavioral application. Table 2 presents the mean scores for nutritional knowledge and various indicators of eating practice.

Table 2: Descriptive Statistics of Key Variables

Indicator	Mean	SD
Knowledge of food groups	4.80	0.876
Understanding balanced diet	3.83	0.744
Fruit and vegetable consumption	3.55	1.081
Practical food choice ability	2.43	1.125

The data shows that while students possess a very high theoretical understanding of food groups (mean = 4.80), their ability to identify and select nutritious foods in a practical setting is significantly lower (mean = 2.43). This nearly 50% drop in mean score from theory to practice is the empirical core of the "knowledge-practice gap." Furthermore, while consumption of fruits and vegetables is moderate (mean = 3.55), it does not match the near-perfect scores for theoretical knowledge.

Pearson Correlation Analysis

To examine the statistical relationship between these variables, a Pearson correlation analysis was conducted. The results in Table 3 indicate a positive but weak association.

Table 3: Pearson Correlation Results

Variables	r-value	p-value
Knowledge vs Eating Behaviour	0.210	0.000

While the correlation is statistically significant ($p < 0.05$), the r -value of 0.210 suggests that nutritional knowledge only has a minor influence on eating behavior. This indicates that even as knowledge increases, eating practices only improve marginally, reinforcing the idea that other, more powerful factors are driving student food choices.

Regression Analysis

The regression analysis provides a more precise measure of the predictive power of nutritional knowledge. Tables 4, 5, and 6 present the results of the linear regression model.

Table 4: Pearson Correlation Results

Model	R	R^2	Adjusted R^2
1	0.210	0.044	0.041

The R^2 value of 0.044 indicates that nutritional knowledge only explains 4.4% of the variance in eating behavior. This is a critical finding, as it means that over 95% of the reasons why students eat the way they do are unrelated to their knowledge of nutrition.

Table 5: ANOVA Results

Source	F	Sig.
Regression	18.32	0.000

The ANOVA results confirm that the overall regression model is statistically significant ($F = 18.32, p < 0.001$), meaning the small amount of variance explained by knowledge is still a significant predictor in a statistical sense, even if it is not practically dominant.

Table 6: Pearson Correlation Results

Variable	Beta (β)	t-value	Sig.
Nutritional Knowledge	0.210	4.28	0.000

The standardized beta coefficient ($\beta = 0.210$) further confirms the weak predictive effect of knowledge on behavior. These findings provide strong empirical evidence that information-based interventions alone are unlikely to achieve significant behavioral changes in this population.

Hypothesis Testing

The research hypotheses were evaluated based on the results of the correlation and regression analyses. Table 7 summarizes the outcomes of the hypothesis testing.

Table 7: Hypothesis Decision Matrix

Hypothesis	Statement	Result	Decision
H ₁	Nutritional knowledge significantly correlates with eating behaviour	$r = 0.21$	Supported
H ₂	Nutritional knowledge significantly predicts eating behaviour	$\beta = 0.21$	Supported
H ₃	Demographic factors significantly influence eating behaviour	$p > .05$	Not Supported

The findings show that while knowledge is significantly related to and predictive of behavior, the magnitude of this influence is very small. Interestingly, demographic factors did not show a significant influence on behavior in this sample, suggesting that the barriers to healthy eating are shared across the entire student population regardless of gender or age.

DISCUSSION

The Cognitive-Behavioral Disconnect in Malaysian HLIs

The primary finding of this study - that nutritional knowledge explains only 4.4% of eating behavior variance - presents a profound challenge to the traditional pedagogical models used in Malaysian universities. The high mean score for knowledge (4.80) suggests that students are not suffering from a lack of information. On the contrary, they are well-versed in the theories of a balanced diet. However, the low score for practical application (2.43) indicates a "disconnect" where this information is not translated into action. This is consistent with findings in other Malaysian studies where even students in health-related faculties failed to exhibit superior eating habits despite their high literacy (Erfanian et al., 2022; YEE et al., 2022). This suggests that the teaching and learning process in universities is currently focused on "knowing that" rather than "knowing how."

This disconnect can be further understood through the lens of the TPB. While students may have the intention to eat healthily based on their knowledge, their "perceived behavioral control" is likely undermined by the realities of campus life. For the 91.7% of students living on-campus, the university food environment is the single most important determinant of choice. If healthy options are expensive, unappealing, or simply unavailable, students are essentially trapped in a system that makes acting on their knowledge difficult. This highlights the limitation of the KAP model when external constraints are high. Knowledge and attitude can only lead to practice if the environment provides the necessary affordances for that practice.

The Institutional Environment as a "Hidden Curriculum"

In HLIs, the environment itself acts as a powerful, albeit informal, teacher. When campus canteens prioritize fast food and high-sugar beverages because they are more profitable or popular, they are communicating a message that contradicts the formal health education provided in classrooms. This "hidden curriculum" teaches students that while nutrition is a theoretical priority, it is not an operational one. The result is a campus culture where unhealthy eating is normalized and even encouraged by the physical and social structures of the institution. This environmental structuralism explains why demographic factors like gender and age were found to have no significant influence on behavior in this study; the constraints of the environment are universal.

The socio-economic status of students also plays a critical role in this environmental interaction. Most Malaysian university students rely on limited loans or family support, and price is often the most important factor in their meal selection (Mamun et al., 2020). If healthy meals are priced as premium items while unhealthy convenience foods are cheap, the institution is essentially penalizing students for trying to apply their nutritional knowledge. To bridge the knowledge-practice gap, universities must align their operational policies with their educational goals. This requires a shift in how food services are managed on campus, moving away from a pure profit model toward a student-centered wellness model.

Pedagogical Innovations for Health Behavior

Given the weak predictive power of traditional knowledge, university health education must move toward more innovative and multimodal pedagogical strategies. This study supports the call for "practice-oriented" education, where students are given the opportunity to apply their knowledge in real-world simulations (Mahat et al., 2017). This could include campus-wide cooking workshops, budgeting challenges, and interactive food labeling tours. By engaging students in experiential learning, HLIs can help them develop the procedural skills and the "behavioral capability" needed to navigate a complex food environment. This approach is more likely to build the "perceived behavioral control" that is central to the Theory of Planned Behavior.

Furthermore, the use of digital technology and social media provides new avenues for health pedagogy. Malaysian youth are highly digitally engaged, and multimodal interventions that utilize mobile apps or social media "nudges" have been shown to be more effective than traditional lectures (Shahril et al., 2013). These interventions can provide real-time feedback and social support, keeping health goals salient even in the face of environmental temptations. HLIs should leverage these tools to create a more dynamic and pervasive health education ecosystem. By integrating these innovations, universities can ensure that the teaching and learning of nutrition is not just a classroom exercise but a core part of the student experience.

The Role of Universities in Addressing the Knowledge-Practice Gap

As centers for academic and personal growth, universities have a unique responsibility to address the knowledge-practice gap. This study argues that the core focus of the university should not just be on imparting knowledge but on fostering "health agency" - the capacity of individuals to act in their own health interests. This requires a systemic transformation where health is integrated into all aspects of the university's mission. From the design of the campus food pyramid to the selection of food vendors and the integration of wellness into the formal curriculum, the HLI must become a health-promoting environment.

The findings also emphasize the need for institutional policy change. Universities should consider implementing "choice architecture" in their dining halls, such as placing healthy options in more prominent locations or offering subsidies for nutritious meals. These behavioral nudges can help to bridge the gap between intention and action without restricting choice. By taking these proactive steps, Malaysian universities can provide a lead for other sectors of society in addressing the national NCD crisis. Ultimately, the contribution of HEIs to student nutrition should be measured not by the scores students get on health exams, but by the health status of the graduates they produce.

CONCLUSION AND POLICY RECOMMENDATIONS

The findings of this study provide a robust empirical validation of the knowledge-practice gap among Malaysian university students. While the undergraduates at UiTM Dungun demonstrate a high level of theoretical nutritional literacy, this knowledge has a very limited impact on their actual eating habits, explaining only 4.4% of the behavioral variance. This clearly indicates that the traditional model of providing health information is insufficient for driving meaningful lifestyle changes in the modern campus environment. The disconnect between what students know and what they do is a systemic issue that is rooted in the interplay between internal cognitive domains and external environmental constraints. Addressing this gap is essential for ensuring that higher learning institutions fulfill their mission of producing healthy and resilient graduates.

To bridge this gap, Malaysian higher learning institutions must move beyond traditional awareness campaigns and implement more integrated, systems-oriented strategies. It is recommended that universities transform their approach to health education by incorporating experiential and practice-oriented learning that builds practical skills such as food labeling interpretation and healthy meal preparation on a budget. Furthermore, universities must take active control of their food environments, ensuring that healthy food options are the most available, accessible, and affordable choices for students residing on campus. The implementation of behavioral nudges and choice architecture in dining halls can also help to guide students toward healthier selections without the need for constant conscious effort. By aligning the physical and social structures of the campus with the lessons taught in the classroom, universities can create an ecosystem that supports, rather than hinders, the application of nutritional knowledge.

In terms of academic contributions, this study provides a clear theoretical and empirical framework for understanding the limitations of knowledge-based interventions. It highlights the importance of incorporating perceived behavioral control and environmental factors into health behavior models. Future research should utilize mixed-method approaches to further explore the qualitative barriers students face and the specific types of environmental nudges that are most effective in the Malaysian context. Longitudinal studies would also be valuable for tracking how dietary behaviors evolve as students transition from the university into their professional lives. Ultimately, this research serves as a call for a paradigm shift in how Malaysian universities approach student health, moving toward a model where teaching and learning are seamlessly integrated into a health-promoting campus environment.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to the administration of Universiti Teknologi MARA Dungun for their support in conducting this research. We are also deeply appreciative of the 397 students who participated in the survey, providing the vital data that made this analysis possible. Their willingness to share their experiences has contributed to a better understanding of the challenges facing the next generation of Malaysian graduates. This research was supported by the authors' respective departments as part of an ongoing commitment to enhancing student well-being and pedagogical excellence in higher education.

REFERENCES

1. Erfanian, A., Lee, K. C. S., & Omar, I. M. (2022). Impact of Nutrition Education on University Students' Eating Behavior among Higher Education Institutions in Malaysia. *Asian Journal of Education and Social Studies*, 1–17. <https://doi.org/10.9734/ajess/2022/v33i330791>

2. Evelyn, H., Aziz, A. F., & Sariman, S. (2020). Associations of Knowledge, Attitude and Practices of Food Label on Cardiovascular Diseases (CVD) Risk amongst University Students in Selangor, Malaysia. *Journal of Nutritional Science and Vitaminology*, 66. <https://doi.org/10.3177/jns.v.66.s275>
3. Gan, W. Y., Mohd, N. M. T., Shariff, Z. M., & Hazizi, A. S. (2011). Differences in eating behaviours, dietary intake and body weight status between male and female Malaysian University students. *PubMed*, 17(2), 213–228. <https://pubmed.ncbi.nlm.nih.gov/22303575>
4. Huong, C., Chua, J. L., Ng, R. Y., Panse, D. K., Misra, S., & Sumera, A. (2022). Knowledge, attitude and practices (KAP) towards anaemia among female university students in Malaysia: A cross-sectional survey. *Malaysian Journal of Nutrition*, 28(2). <https://doi.org/10.31246/mjn-2021-0067>
5. Jeinie, M. H., Guad, R. M., Hetherington, M. M., Gan, S. H., Aung, Y. N., Wu, Y. S., Lin, C. L. S., George, R., Sawatan, W., Nor, N. M., Leik, N. K. O., Daud, M. N. M., & Guad, S. F. (2021). Comparison of Nutritional Knowledge, Attitudes and Practices between Urban and Rural Secondary School Students: A Cross-Sectional Study in Sabah, East Malaysia. *Foods*, 10(9), 2037–2037. <https://doi.org/10.3390/foods10092037>
6. Mahat, H., Hashim, M., Nayan, N., Saleh, Y., & Haron, S. M. S. (2017). Sustainable Consumption Practices of Students through Practice-Oriented Approach of Education for Sustainable Development. *International Journal of Academic Research in Business and Social Sciences*, 7(6). <https://doi.org/10.6007/ijarbss/v7-i6/3031>
7. Mamun, A. A., Hayat, N., & Zainol, N. R. (2020). Healthy Eating Determinants: A Study among Malaysian Young Adults. *Foods*, 9(8), 974–974. <https://doi.org/10.3390/foods9080974>
8. Nayan, N., Abdullah, A. S., Mahat, H., Hashim, M., Saleh, Y., Said, Z. M., Khotimah, N., & Kurniawan, E. (2024). Investigating Geo-disaster Knowledge, Attitude, and Practices among Secondary School Students in Cameron Highlands, Pahang, Malaysia. *International Journal of Environmental Impacts*, 7(2). <https://doi.org/10.18280/ije.070218>
9. Shahril, M. R., Dali, W. P. E. W., & Lua, P. L. (2013). A 10-Week Multimodal Nutrition Education Intervention Improves Dietary Intake among University Students: Cluster Randomised Controlled Trial. *Journal of Nutrition and Metabolism*, 2013, 1–11. <https://doi.org/10.1155/2013/658642>
10. Sharkawi, I., Latip, M., & Mohamed, Z. A. (2021). Applying the Theory of Planned Behavior to Healthy Eating Intention among Malaysian Adults. *International Journal of Academic Research in Business and Social Sciences*, 11(17). <https://doi.org/10.6007/ijarbss/v11-i17/11387>
11. Sumardi, N. A., Yun, T. Y., Marathandi, R., & Najib, S. N. M. (2022). A Comparative Study on Behavioral Determinants of Fast-Food Consumption Behavior among Undergraduates in Kelantan, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 12(9). <https://doi.org/10.6007/ijarbss/v12-i9/14607>
12. Yahia, N., Wang, D., Rapley, M., & Dey, R. (2015). Assessment of weight status, dietary habits and beliefs, physical activity, and nutritional knowledge among university students. *Perspectives in Public Health*, 136(4), 231–244. <https://doi.org/10.1177/1757913915609945>
13. Yee, L. S., Nazri, A. W. M., Rosle, N. E. F., Yee, K. P., Yi, P. C., Yi, L. Y., Mariappan, V., & Krishnasamy, S. (2022). Association between Knowledge, Attitude, and Practice of Nutrition and Food Labels among Selected Higher Educational Institution Students in Klang Valley. *Jurnal Sains Kesihatan Malaysia*, 20(2), 77–85. <https://doi.org/10.17576/jskm-2022-2002-09>