



“P.E. – Promoting Energy: Analyzing Food Intake Patterns and Nutritional Balance Among Physical Education Students”

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ABSTRACT

This qualitative study explores the food intake patterns and nutritional perceptions of Physical Education (PE) students, who are expected to lead active lifestyles and serve as health role models. Data were collected from 15 PE students through open-ended interviews to explore their food intake patterns and nutritional perceptions. Thematic analysis revealed a heavy reliance on carbohydrate-rich and processed foods, with minimal intake of fruits and vegetables. Participants recognized the nutritional imbalance in their meals and expressed a desire to improve their eating habits. Grounded in Maslow’s Hierarchy of Needs and Bandura’s Social Cognitive Theory, the findings highlight the need for accessible, practical nutrition education tailored to active learners. The study underscores the importance of promoting balanced nutrition to support the energy needs and professional readiness of PE students.

Keywords: nutrition, food intake, physical education, qualitative study, dietary balance, student health

INTRODUCTION

The Pyrenean Capercaillie (*Tetrao urogallus aquitanicus*) represents a Nutrition is a cornerstone of human functioning, directly influencing physical health, cognitive performance, and energy regulation. For Physical Education (PE) students, who juggle academic requirements with physically demanding routines, proper nutrition is not merely beneficial—it is essential. As future educators and health advocates, these students are expected to model healthy behaviors and lifestyles, including well-balanced dietary practices (Rodriguez, DiMarco, & Langley, 2009). However, recent research continues to show that even physically active individuals, including student-athletes and PE majors, often fail to meet optimal nutritional guidelines due to factors such as convenience, food accessibility, socioeconomic status, and personal preferences (Tolentino, Garcia, & Lantican, 2021; WHO, 2020).

This study is grounded in Maslow’s Hierarchy of Needs, which posits those physiological needs—such as food and water—must be fulfilled before higher-level functioning like learning and self-actualization can occur (Maslow, 1943). Furthermore, Bandura’s Social Cognitive Theory supports the idea that dietary habits are shaped through observation, self-regulation, and reinforcement, suggesting that students’ nutrition choices are influenced by both internal

beliefs and their surrounding environment (Bandura, 2001). Additionally, the Health Belief Model (HBM) complements this framework by explaining how students' susceptibility to illness or fatigue, perceived benefits of eating healthy, and barriers to change affect their health-related decision-making (Rosenstock et al., 1988).

In line with these theoretical perspectives, this study explores the food intake patterns and nutritional balance of PE students, aiming to determine whether their dietary habits support the energy and performance demands of their academic and physical routines. The insights generated are expected to inform wellness strategies that align nutrition with the holistic development of future health professionals.

This study also responds to the growing concern over nutrition among college students in health-related courses. Recent reports have highlighted those poor dietary habits are common among active students despite their awareness of nutritional principles. This creates a gap between knowledge and practice that needs to be addressed through evidence-based interventions. By focusing on Physical Education students, this research provides context-specific insights that can inform school health programs, nutrition campaigns, and teacher training modules aimed at promoting lifelong healthy habits.

Statement of the Problem

This study aims to investigate the food intake patterns of PE students by addressing the following questions:

1. What types of food do PE students consume the most and the least?;
2. Are their meals perceived to be nutritionally balanced?;
3. What dietary adjustments do they consider necessary?; and
4. How do these patterns reflect their understanding of nutrition and energy needs?

Methodology

Research Design

This study utilized a qualitative descriptive research design to explore the food intake patterns and perceptions of nutritional balance among Physical Education (PE) students. The qualitative approach allowed for a deeper understanding of the students' personal eating habits, the reasoning behind their food choices, and their reflections on dietary balance and energy needs. Descriptive qualitative research is especially suitable for investigating health behaviors, as it enables participants to express their lived experiences in their own words (Bradshaw, Atkinson, & Doody, 2017).

Participants

The study involved 15 PE students enrolled in a state university in Malaybalay City, Bukidnon. The participants were selected using purposive sampling, a non-probability sampling method that targets individuals who meet specific criteria relevant to the study (Palinkas et al., 2015). Inclusion criteria were:

- (a) enrollment in a PE or Sports Science course,
- (b) active participation in physical activities or sports,

- (c) willingness to participate voluntarily, and
- (d) availability during the data collection period.

The sample size was considered sufficient for qualitative inquiry, following Guest, Bunce, and Johnson's (2006) suggestion that saturation can be achieved with as few as 12 interviews in studies focused on a specific population.

Data Collection

Data were gathered through a guided questionnaire that included open-ended questions:

1. What food intake did you consume the most? The least?
2. Were your meals balanced in terms of nutritional value?
3. What adjustments would you make to improve your food choices?
4. Responses were collected through in-person interviews, then thematically coded.

Ethical Consideration

This study adhered to ethical standards for research involving human participants. Informed consent was obtained from all participants after explaining the purpose, procedures, and voluntary nature of the study. Confidentiality was ensured by assigning codes to participants instead of using names. Data were stored securely and used solely for academic purposes.

Data Analysis

The data gathered through open-ended questions and follow-up interviews were analyzed using thematic analysis, a method widely used in qualitative research for identifying, organizing, and interpreting patterns of meaning within textual data (Braun & Clarke, 2006). This approach was particularly suited to the study's goal of understanding subjective experiences related to food intake, nutritional awareness, and self-perceived dietary behaviors among Physical Education students.

Following Braun and Clarke's six-phase framework, the analysis began with familiarization, wherein the researcher reviewed all responses multiple times to gain an in-depth understanding of participant narratives. Initial codes were then generated through inductive coding—drawing insights directly from the data without imposing predefined categories. These codes were clustered into broader themes representing shared patterns in responses.

Three major thematic categories emerged:

Food Consumption Patterns – Participants consistently reported high consumption of carbohydrate-rich foods (e.g., rice, noodles, processed snacks), with minimal intake of fruits and vegetables. This theme aligns with literature suggesting that even active individuals tend to favor convenience and taste over nutritional value (Musaiger et al., 2011; Tolentino et al., 2021).

Perceptions of Nutritional Balance – Many students demonstrated awareness of the importance

of balanced meals but admitted inconsistency in applying this knowledge. This finding resonates with Bandura's Social Cognitive Theory (2001), which posits that behavior is influenced by both self-efficacy and environmental modeling—factors that may shape dietary decisions in the university setting.

Proposed Adjustments – Participants expressed a willingness to incorporate healthier options, such as fruits and vegetables, and reduce junk food intake. This reflects the Health Belief Model (Rosenstock et al., 1988), particularly the constructs of perceived benefits and barriers to change, as students cited cost and availability as limitations to healthy eating.

The data also support Maslow's Hierarchy of Needs (1943), especially in recognizing nutrition as a foundational physiological need that must be met before optimal learning and physical performance can occur. Students' self-reflections on poor eating habits, despite knowing their health implications, highlight a disconnect between knowledge and practice—an issue well-documented in student populations (Papadaki & Scott, 2002; Reyes & Francisco, 2019).

Overall, thematic analysis enabled a nuanced exploration of students' food behaviors, revealing both individual and systemic factors that influence their nutritional choices.

Results

1. Most Frequently Consumed Food

The analysis of participants' food intake patterns revealed that the most frequently consumed foods among Physical Education (PE) students were rice, meat products, and processed snacks. These food choices were predominantly driven by factors such as convenience, accessibility, and the filling nature of the meals. The consumption of these foods reflects both cultural and socioeconomic factors that influence eating behaviors, particularly in university settings.

Rice, being a staple food in Filipino cuisine, was reported by nearly all participants as part of every meal. It is a cost-effective and easily accessible carbohydrate source, providing immediate energy for active individuals. As noted by Acuña and Cabanilla (2019), rice is deeply ingrained in Filipino daily life and is often perceived as an essential component of a meal. The high frequency of rice consumption among students aligns with the Theory of Planned Behavior (Ajzen, 1991), which suggests that people's eating habits are influenced by their intentions, attitudes, and perceived control over their environment. In this case, the availability of rice in most university canteens and the absence of strong cultural alternatives reinforces this dietary preference.

Participants also reported regularly consuming meat products, such as chicken and pork, often fried or cooked in a savory sauce. Meat provides a significant source of protein, which is essential for muscle repair and overall physical health, particularly for PE students who engage in physical activities. However, the frequent consumption of fried meats may be a cause for concern, as it also introduces higher levels of saturated fats into the diet. Tolentino et al. (2021) found that Filipino college students often favored meat-heavy dishes due to their taste and satiety value, yet this practice may contribute to long-term health risks, such as cardiovascular diseases, when consumed excessively without sufficient vegetables or fiber.

Processed snacks, such as hotdogs, chips, and instant noodles, were also commonly mentioned. These foods are convenient and easily purchased, especially during breaks or between classes,

making them attractive options for busy students. Processed snacks are typically low in nutritional value, providing empty calories with little to no vitamins, minerals, or fiber. This finding supports the observations made by Ramirez et al. (2020), who highlighted that university students often rely on such quick, cheap, and convenient foods, despite being aware of their nutritional drawbacks.

One participant remarked, “Snacks like biscuits or chips are always part of my day, especially during breaks,” illustrating how the fast-paced academic environment drives students to seek readily available food options that can be eaten quickly during limited break times. This aligns with Maslow’s Hierarchy of Needs (1943), which suggests that individuals will prioritize immediate and basic needs, such as food, in a way that supports their daily functioning, even if those choices are not always nutritionally balanced.

Overall, the frequent consumption of rice, meat, and processed snacks reflects the socio-cultural influences on food choices, including convenience, cost, and availability. It also underscores the challenge of meeting nutritional needs within a fast-paced academic and athletic lifestyle, as the focus on convenience often outweighs health considerations. “I eat rice and meat every meal, especially fried chicken or pork.”

“Snacks like biscuits or chips are always part of my day, especially during breaks.”

2. Least Consumed Food

The least consumed food groups among the participants were fruits and vegetables. Several barriers were identified as contributing to the low intake of these essential food groups, including taste preferences, cost, limited availability, lack of time to cook, and budget constraints. These findings highlight the challenges that Physical Education students face in maintaining a balanced diet despite the health benefits of fruits and vegetables.

Taste preferences were one of the primary reasons cited for avoiding vegetables. Many participants expressed a strong preference for meat-based meals, indicating that they found vegetables less palatable unless they were incorporated into dishes with meats. One participant shared, “I rarely eat vegetables unless they're mixed with meat,” emphasizing how vegetables are often seen as secondary in their meals. This reflects broader cultural norms in Filipino cuisine, where meat takes center stage in most dishes, and vegetables are used primarily as sides or condiments. Cruz & Santiago (2021) note that cultural tastes strongly influence food choices, with many Filipino students prioritizing flavor over nutritional variety, particularly when vegetables are perceived as bland or difficult to prepare.

The cost of fresh fruits and vegetables emerged as another significant barrier. Participants noted that fruits and vegetables were often perceived as expensive, particularly for students on a budget. One participant stated, “Fruits are expensive and not always available in my dorm,” which reflects the financial constraints that many students face. As Acuña and Cabanilla (2019) noted, university students in the Philippines tend to prioritize affordable food options that can meet their immediate hunger needs, often sacrificing nutritional quality in favor of cost-effective meals. This is further complicated by the rising prices of fresh produce, making it difficult for students to integrate these items into their daily diets.

Another key barrier to consuming fruits and vegetables was the limited availability of fresh produce in students’ immediate environments. For many, living in dormitories or off-campus

accommodations means having restricted access to fresh food markets or groceries. In these situations, students often rely on campus canteens or convenience stores that sell more processed, ready-to-eat food options. As one participant mentioned, “There’s no time to go to the market, and we don’t have a kitchen in the dorm. It’s hard to get fresh fruits or vegetables.” This lack of time to cook or access to cooking facilities contributes to the reliance on quick and easy meals, which rarely include fresh produce.

In addition to time constraints, budget limitations were consistently cited by participants. Due to the high cost of nutritious foods, many students opt for inexpensive processed snacks or ready-to-eat meals, which are often low in vitamins, minerals, and fiber. Ramirez et al. (2020) also found that Filipino students in higher education institutions often choose cheap, high-calorie foods due to the combination of time pressure and financial limitations. For students balancing academic responsibilities and athletic activities, preparing home-cooked meals with fresh ingredients may seem impractical, leading them to default to more affordable and accessible options.

Furthermore, Maslow’s Hierarchy of Needs (1943) provides a theoretical framework for understanding how basic physiological needs, such as food, are prioritized. When students face multiple competing needs, such as academic pressures, physical activity demands, and financial constraints, the immediacy of hunger often leads them to choose quick and convenient foods, even if they are nutritionally sub-optimal. This can lead to a cycle where the desire for quick meals interferes with the pursuit of more nutritious, but less readily available, foods like fruits and vegetables.

In conclusion, the low consumption of fruits and vegetables among participants is complicated, involving not only personal preferences but also economic and environmental factors. Time constraints, lack of cooking facilities, limited budgets, and the perceived high cost of fresh produce all contribute to students' tendency to prioritize convenience foods over healthier options. Addressing these barriers may require systemic changes at the institutional level, such as providing more accessible, affordable, and convenient healthy food options for students.

3.Perceptions of Meal Balance

Many participants in the study acknowledged that their meals were not consistently balanced, often lacking vegetables or overemphasizing carbohydrates. The imbalance in their diets highlights the challenges PE students face in maintaining nutritional balance while managing the demands of academic and physical activities.

One participant stated, “I know my meals aren’t balanced. They’re mostly rice and meat with very little vegetables,” reflecting the common pattern of carbohydrate-dominant meals. Rice, as a staple in Filipino diets, is often consumed in large portions, providing a significant source of energy. However, the lack of variety in food choices, particularly the low inclusion of vegetables, leads to an imbalance in the nutrient profile of meals. Carbohydrates, while essential for energy, can become overemphasized at the expense of micronutrients, such as vitamins and minerals, that are primarily found in vegetables and fruits. Acuña and Cabanilla (2019) observe that many students, particularly in the Philippines, are more inclined to fill their plates with rice and meat due to their availability, familiarity, and satiating properties. As such, the concept of a “balanced meal” may not always be prioritized, especially when quick and familiar options are more readily accessible.

In addition to an imbalance between macronutrients, participants also revealed that they

occasionally skipped meals, further contributing to poor nutritional balance. One participant shared, “Sometimes I skip breakfast or just eat whatever is quick.” Skipping meals, particularly breakfast, is a common behavior among university students due to the pressures of time management, early class schedules, or simply not feeling hungry. As Ramirez et al. (2020) highlight, irregular meal patterns—such as skipping meals—can lead to nutrient deficiencies and disrupt metabolism, contributing to poor overall nutrition. In the case of PE students, skipping meals or opting for quick, processed foods not only disrupts their dietary balance but also affects their physical performance, as they may not be consuming the right nutrients to support their active lifestyles.

The Theory of Planned Behavior (Ajzen, 1991) can help explain the behavior of students in relation to meal balance. According to this theory, individual behaviors (like meal choices) are influenced by three factors: attitudes, subjective norms, and perceived behavioral control. In this case, many participants admitted that they lacked knowledge or time to plan balanced meals, which could be indicative of low perceived behavioral control over their food choices. The time constraints associated with a busy academic schedule, coupled with the availability of more convenient, quick-fix meals, likely diminished the students' ability to consistently make healthy, balanced choices.

Additionally, Maslow's Hierarchy of Needs (1943) offers insight into why students may prioritize quick, energy-dense foods over balanced meals. When basic physiological needs (like food) are unmet or inconsistent, individuals tend to gravitate toward what is easily available or familiar. For many students, eating meals that consist mainly of rice and meat may satisfy their hunger but fail to provide the necessary nutrients to meet all of their health needs. Energy density often takes precedence over nutrient density when students are pressed for time or financial resources.

A significant contributing factor to meal imbalances is the availability of food choices in students' immediate environments. Dormitories, canteens, and convenience stores typically offer meals that are easy to prepare or consume on-the-go, such as instant noodles, fried foods, and snacks—options that are high in carbohydrates and fats but low in essential nutrients like fiber, vitamins, and minerals. According to Tolentino et al. (2021), these environments encourage quick, cost-effective choices, making it challenging for students to consistently include nutrient-rich foods like vegetables in their meals.

In conclusion, the imbalance in the meals of participants reflects a combination of factors, including cultural preferences, time constraints, financial limitations, and the environmental availability of foods. While rice and meat are easily accessible and culturally ingrained in the Filipino diet, a lack of vegetables and irregular meal patterns contribute to a less-than-ideal balance of nutrients. Improving the meal balance for PE students will require addressing these barriers, promoting time-efficient and cost-effective ways to incorporate more fruits and vegetables, and increasing awareness about the long-term benefits of a well-balanced diet for both physical and cognitive performance.

Discussion

The findings confirm previous research indicating that even health-related students may struggle with balanced nutrition (Dela Cruz & Marquez, 2020; Tolentino et al., 2021). Despite being physically active and health-conscious, PE students often prioritize convenience and satiety over dietary variety and nutritional value.

Their limited consumption of fruits and vegetables mirrors trends found in other student populations (Reyes & Francisco, 2019), suggesting a broader issue of access, awareness, and habit formation. The acknowledgment of imbalance and willingness to improve, however, shows that self-regulation, a key element in Bandura's Social Cognitive Theory, is present, but may require external support through structured programs or interventions.

Furthermore, the predominance of high-carbohydrate meals supports Maslow's theory, indicating that students focus on immediate energy needs without necessarily considering long-term wellness. The study highlights the need for practical nutrition education and support systems that go beyond theoretical knowledge.

Conclusion

This study emphasizes the gap between nutritional knowledge and practice among PE students. Although they recognize the importance of balanced meals, their current food intake patterns reflect imbalances that could compromise health and performance. Promoting energy through proper nutrition must involve not only awareness campaigns but also accessible, affordable food options and habit-forming strategies.

Limitations of the Study

This study was limited to a small group of 15 PE students from one state university, which may not fully represent the food intake patterns of all PE students in different regions or school settings. Data were collected through self-reported responses, which may be affected by recall bias or social desirability bias. The study also focused only on qualitative data, so it did not include actual nutrient analysis or physical measurements. Future research may use a larger sample, mixed methods, and objective dietary assessments to provide a more comprehensive view of students' nutrition practices.

Recommendations

Based on the findings and limitations of this study, several recommendations are proposed. First, future research may include a larger and more diverse sample of PE students from different institutions to enhance the generalizability of results. Incorporating quantitative dietary assessments or food diaries is also encouraged to complement self-reported data.

Second, schools and universities may consider integrating practical nutrition programs that provide affordable and accessible healthy food options on campus. Nutrition education should go beyond theoretical lectures and include workshops, demonstrations, or meal planning activities that help students apply what they learn in real life.

Lastly, Physical Education instructors and student organizations can play a more active role in promoting balanced diets through peer-led campaigns, nutrition challenges, or health fairs that align with the students' physically active lifestyle.

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