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## DIFFERENCES IN DIETARY PATTERNS AND NUTRITIONAL STATUS BETWEEN UNIVERSITY STUDENTS LIVING IN DORMITORIES AND THOSE LIVING WITH THEIR PARENTS: A COMPARATIVE CROSS-SECTIONAL STUDY

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### ABSTRACT

University students often experience lifestyle changes that influence their dietary behaviors and nutritional status, particularly when they transition from living with their parents to living independently in dormitories. This study aimed to analyze differences in dietary patterns and nutritional status between students living in dormitories and those living with their parents. A quantitative comparative study with a cross-sectional design was conducted among 60 undergraduate students, consisting of 30 dormitory residents and 30 students living with their parents. Participants were selected using purposive sampling. Data were collected using a structured questionnaire assessing meal frequency, breakfast habits, fruit and vegetable consumption, and fast-food consumption, while nutritional status was determined using Body Mass Index (BMI). Descriptive statistics were used to summarize respondents' characteristics, and differences between the two groups were analyzed using the Pearson Chi-square test with a significance level of 0.05. The findings showed that students living in dormitories were more likely to have irregular meal frequency, skip breakfast, and consume fast food more frequently than students living with their parents. In addition, a higher proportion of overweight and obesity was observed among dormitory students, whereas normal nutritional status was more prevalent among students residing with their parents. Statistical analysis indicated significant differences in dietary patterns and nutritional status between the two residence groups ( $p < 0.05$ ). These findings suggest that living arrangement plays an important role in shaping dietary behaviors and nutritional outcomes among university students. Universities should strengthen nutrition education and promote healthier food environments, particularly for students living independently.

**Keywords:** dietary patterns; nutritional status; university students; dormitory; living arrangement.

### INTRODUCTION

Dietary patterns and nutritional status are fundamental determinants of health and well-being throughout the life course, particularly during late adolescence and early adulthood. University students represent a vulnerable population because the transition from secondary education to higher education is frequently accompanied

by substantial changes in lifestyle, dietary habits, and living environments. Increased academic demands, greater autonomy in food choices, financial limitations, and reduced parental supervision often encourage unhealthy eating behaviors that may adversely affect nutritional status. The World Health Organization has emphasized that unhealthy dietary behaviors during

early adulthood contribute to the increasing prevalence of overweight, obesity, micronutrient deficiencies, and non-communicable diseases later in life. Consequently, understanding the factors influencing students' dietary behaviors has become an important public health priority.

One of the most influential determinants of students' eating behavior is their living arrangement. Students residing with their parents generally benefit from regular meal schedules, family support, and greater access to balanced home-cooked meals. In contrast, students living in dormitories or rented accommodations are often responsible for planning, purchasing, and preparing their own meals while simultaneously managing academic responsibilities. These conditions frequently result in irregular eating schedules, increased reliance on convenience foods, meal skipping, and lower dietary quality. During the COVID-19 pandemic, Majida et al. [1] demonstrated that students living in dormitories had significantly lower Individual Dietary Diversity Scores and poorer nutritional status than students living with their families, indicating that living arrangements substantially influence dietary diversity and overall nutritional health. Likewise, Ryu and Heo [2], reported significant differences in nutritional status among university students according to residence type, suggesting that housing environment contributes to variations in body mass index and nutritional outcomes.

Several international studies further support these findings. Students living away from home consume packaged foods, fast foods, snacks, and alcoholic beverages more frequently than students living with

their parents, whereas those residing with their families consume greater quantities of fruits, vegetables, and home-prepared meals [3][4]. The availability of family meals and parental supervision appears to promote healthier dietary behaviors by encouraging regular eating schedules and balanced food choices. Conversely, independent living often exposes students to greater dietary freedom, which may increase the consumption of energy-dense foods while reducing the intake of nutrient-rich foods. These differences suggest that living arrangements extend beyond physical residence and represent an important social determinant influencing students' dietary decisions.

Residence type also affects specific eating habits associated with nutritional status. Previous studies have consistently shown that students living in dormitories are more likely to skip breakfast, consume fried and processed foods, eat fewer fruits and vegetables, and exhibit irregular meal frequencies than students living with their parents [5][6][2]. These unhealthy dietary behaviors reduce overall diet quality and may increase the risk of both undernutrition and overnutrition. Breakfast skipping has been associated with inadequate nutrient intake, impaired cognitive performance, and increased consumption of high-calorie snacks later in the day. Similarly, insufficient fruit and vegetable consumption contributes to inadequate vitamin, mineral, and dietary fiber intake, increasing the risk of chronic diseases. Collectively, these findings indicate that dietary behaviors among university students are strongly influenced by environmental conditions associated with their living arrangements.

The preliminary findings of the present study also indicate differences in dietary behaviors between students living in dormitories and those living with their parents. Students residing in dormitories tend to consume fast food and sugar-sweetened beverages more frequently, skip meals because of academic activities and time constraints, and have lower frequencies of fruit and vegetable consumption. Several students reported consuming only one or two main meals per day, whereas students living with their parents generally maintained more regular eating schedules because daily meals were supported and supervised by family members. These behavioral differences are accompanied by variations in body mass index, where some dormitory students were classified as overweight or obese despite having irregular meal patterns. Such observations suggest that living environment may substantially influence dietary practices and nutritional outcomes among university students.

Various mechanisms may explain these differences. Students living independently often experience financial constraints, limited cooking facilities, insufficient nutritional knowledge, and restricted access to healthy food options. These challenges encourage greater dependence on inexpensive ready-to-eat foods that are typically high in fat, sugar, and sodium while providing limited nutritional value. Furthermore, academic stress, limited time for meal preparation, and adaptation to independent living frequently lead students to prioritize convenience over nutritional quality. Kolesnikova et al. [7], demonstrated that inadequate dietary intake among university

students was associated with compromised antioxidant status, reflecting poor nutritional quality. Similarly, Omenge and Omuemu [6], emphasized that inappropriate dietary patterns among undergraduate students were closely associated with abnormal nutritional status. Therefore, dietary behavior should be understood as a multidimensional phenomenon influenced by social, environmental, economic, and behavioral factors.

Although numerous studies have examined dietary habits and nutritional status among university students, several important research gaps remain. First, many previous investigations primarily evaluated dietary behaviors or nutritional status separately without comprehensively comparing both outcomes according to students' living arrangements. Second, several studies focused on specific dietary components, such as breakfast consumption or dietary diversity, without integrating broader indicators of eating behavior, including meal frequency, fast-food intake, fruit and vegetable consumption, and nutritional status simultaneously. Third, most available evidence originates from specific countries or cultural settings, limiting the generalizability of findings across different educational and socioeconomic environments. Consequently, further comparative studies are needed to provide a more comprehensive understanding of how residence type influences dietary behavior and nutritional status among university students.

The present study offers scientific novelty by simultaneously comparing dietary patterns and nutritional status

between students living in dormitories and those living with their parents using multiple indicators of dietary behavior and anthropometric assessment. Unlike previous studies that primarily focused on individual dietary variables, this research integrates meal frequency, breakfast habits, fast-food consumption, fruit and vegetable intake, sugar-sweetened beverage consumption, and body mass index within a comparative framework based on living arrangements. This comprehensive approach provides broader evidence regarding the influence of residential environments on students' nutritional health and offers practical implications for developing targeted nutrition promotion strategies within higher education institutions.

Therefore, this study aims to analyze the differences in dietary patterns and nutritional status between students living in dormitories and those living with their parents. Specifically, the study compares meal frequency, breakfast habits, fast-food consumption, fruit and vegetable intake, sugar-sweetened beverage consumption, and body mass index between the two groups. The findings are expected to contribute to the growing body of evidence regarding environmental determinants of dietary behavior, support the development of effective nutrition education programs for university students, and provide scientific evidence for institutional policies aimed at promoting healthy eating behaviors and improving students' nutritional status.

## **RESEARCH METHODS**

### **Study Design and Setting**

This study employed a quantitative comparative analytic design with a cross-sectional approach. A cross-sectional study allows the independent and dependent variables to be measured simultaneously at a single point in time, making it appropriate for identifying differences between comparison groups [8]. The study was conducted at a university in Indonesia during the 2026 academic year. The research setting was selected because the university accommodates students with different living arrangements, including those residing in dormitories and those living with their parents, thereby providing an appropriate setting for comparative analysis.

The independent variable was students' living arrangement, categorized as living in a dormitory or living with parents. The dependent variables included dietary patterns and nutritional status. Dietary patterns were assessed through meal frequency, breakfast habits, fast-food consumption, and fruit and vegetable intake, while nutritional status was determined using Body Mass Index (BMI).

### **Population and Sample**

The study population consisted of all active undergraduate students residing either in university dormitories or with their parents. Respondents were selected using purposive sampling based on predetermined inclusion and exclusion criteria. Inclusion criteria were active undergraduate students aged 18–25 years, residing either in a dormitory or with their parents for at least six months, and willing to participate voluntarily in the study. Exclusion criteria included students

undergoing therapeutic diets, having chronic illnesses that could influence nutritional status, or submitting incomplete questionnaires.

A total of 60 respondents participated in the study, consisting of 30 students living in dormitories and 30 students living with their parents. Equal numbers of respondents in both groups were selected to facilitate balanced comparative analysis between residence types [9].

### **Research Instruments**

Data were collected using a structured questionnaire and anthropometric measurement instruments. The questionnaire consisted of two sections. The first section collected respondents' demographic information, including age, sex, and place of residence. The second section assessed dietary behavior through questions regarding the frequency of main meals, breakfast habits, fruit and vegetable consumption, and fast-food consumption.

Anthropometric measurements included body weight and height. Body weight was measured using a calibrated digital weighing scale with an accuracy of 0.1 kg, whereas body height was measured using a microtoise with an accuracy of 0.1 cm. Both measurements were conducted directly by the researchers following standardized anthropometric procedures recommended by the World Health Organization.

### **Data Collection Procedure**

Data collection was conducted directly after obtaining respondents' informed consent. Each respondent first received an explanation regarding the

objectives and procedures of the study before voluntarily agreeing to participate.

Anthropometric measurements were performed before questionnaire administration. Body weight and height were measured using standardized equipment, after which respondents completed the dietary behavior questionnaire under the supervision of the research team. Researchers remained available throughout the questionnaire completion process to clarify any questions and ensure that all items were answered completely. Each completed questionnaire was checked immediately to minimize missing or inconsistent responses.

### **Measurement of Variables**

Dietary patterns were evaluated using four indicators: meal frequency, breakfast habits, fruit and vegetable consumption, and fast-food consumption.

Meal frequency was categorized into 1–2 meals per day and three or more meals per day. Breakfast habits were classified as regular or irregular based on respondents' usual breakfast practices during the previous week. Fruit and vegetable consumption was assessed according to respondents' habitual daily intake, whereas fast-food consumption was classified into frequent and rare consumption based on weekly eating habits.

Nutritional status was determined by calculating Body Mass Index (BMI) using the following formula:

$$\text{BMI} = \text{Body Weight (kg)} / \text{Height}^2 (\text{m}^2)$$

BMI values were subsequently classified into underweight, normal weight, overweight, and obesity according to the Indonesian Ministry of Health classification for adults.

## Data Processing and Statistical Analysis

Collected data underwent editing, coding, data entry, data cleaning, and tabulation before statistical analysis [8]. Data were entered into the Statistical Package for the Social Sciences (SPSS) software for analysis.

Descriptive statistics were used to summarize respondents' characteristics and study variables, including frequencies and percentages for categorical variables. Respondent characteristics included place of residence, meal frequency, breakfast habits, fast-food consumption, and nutritional status.

Bivariate analysis was performed using the Pearson Chi-square test to determine differences in dietary patterns and nutritional status between students living in dormitories and those living with their parents. The Chi-square test was selected because all variables analyzed were categorical. Statistical significance was established at a 95% confidence level with a significance level of  $\alpha = 0.05$ . A p-value of less than 0.05 indicated a statistically significant difference between the two groups.

## RESEARCH RESULTS

### Respondent Characteristics

A total of 60 undergraduate students participated in this study, consisting of 30 students living in dormitories and 30 students living with their parents. The equal distribution of respondents in both groups provided a balanced basis for comparing dietary patterns and nutritional status according to living arrangements.

**Table 1. Distribution of Respondents by Living Arrangement**

Living Arrangement	n	%
Living in a dormitory	30	50.0
Living with parents	30	50.0
Total	60	100.0

Table 1 shows that the respondents were equally distributed between the two residence groups. This balanced sample supports an objective comparison of dietary patterns and nutritional status among university students.

### Differences in Dietary Patterns

#### Meal Frequency

The frequency of daily meals differed between students living in dormitories and those living with their parents. Students residing in dormitories tended to consume fewer main meals each day.

**Table 2. Distribution of Respondents by Meal Frequency**

Meal Frequency	Dormitory Students (n)	Living with Parents (n)
1-2 times/day	20	8
$\geq 3$ times/day	10	22
Total	30	30

Table 2 shows that the majority of students living in dormitories (20 respondents) consumed only one to two meals per day, while most students living with their parents (22 respondents) reported consuming at least three meals daily. This finding suggests that students residing with their parents tended to maintain more regular eating patterns than those living in dormitories.

#### Breakfast Habits

Breakfast habits also varied according to living arrangement.

**Table 3. Distribution of Respondents by Breakfast Habits**

Breakfast Habit	Dormitory Students (n)	Living with Parents (n)
Irregular	18	7
Regular	12	23
Total	30	30

Table 3 demonstrates that irregular breakfast habits were more common among students living in dormitories, while regular breakfast consumption was more frequently observed among students living with their parents.

### Fast-Food Consumption

Differences were also identified in fast-food consumption between the two groups.

**Table 4. Distribution of Respondents by Fast-Food Consumption**

Fast-Food Consumption	Dormitory Students (n)	Living with Parents (n)
Frequent	21	9
Rare	9	21
Total	30	30

As shown in Table 4, frequent fast-food consumption was reported by the majority of students living in dormitories, whereas students living with their parents were more likely to consume fast food only occasionally.

### Differences in Nutritional Status

Students' nutritional status was assessed using Body Mass Index (BMI).

**Table 5. Distribution of Respondents by Nutritional Status**

Nutritional Status	Dormitory Students (n)	Living with Parents (n)
Underweight	3	2
Normal	14	22
Overweight	9	5
Obesity	4	1
Total	30	30

Table 5 indicates that students living with their parents were predominantly classified as having normal nutritional status. In contrast, students

living in dormitories showed a higher proportion of overweight and obesity. These findings suggest that living arrangement may influence students' nutritional status.

### Comparative Analysis

The Chi-square analysis revealed significant differences in dietary patterns and nutritional status between students living in dormitories and those living with their parents ( $p < 0.05$ ). Students residing with their parents demonstrated healthier dietary behaviors, including more regular meal frequency, more consistent breakfast consumption, lower fast-food intake, and a greater proportion of normal BMI compared with students living in dormitories.

## DISCUSSION

### Meal Frequency

The present study found a significant difference in meal frequency between students living in dormitories and those living with their parents. Most dormitory students consumed only one to two main meals per day, whereas the majority of students living with their parents reported consuming three or more meals daily. These findings indicate that students residing with their parents tend to maintain more regular eating schedules than students living independently.

The findings are consistent with those reported by Ryu and Heo [2], who found that students living with their parents exhibited healthier dietary behaviors, including more regular meal frequency, compared with students residing in dormitories. Similarly, Shimbo et al. [10], observed that students living away from home were more likely to have irregular

meal patterns because they were responsible for preparing their own meals while simultaneously managing academic responsibilities. Lupi et al. [4], also reported that students living independently frequently skipped meals and demonstrated poorer dietary habits than those living with their families.

The difference in meal frequency may be explained by environmental and behavioral factors associated with independent living. Students residing in dormitories generally experience greater autonomy in food selection, limited cooking facilities, academic workload, and financial constraints, which may reduce the regularity of meal consumption. In contrast, students living with their parents benefit from family meal routines, easier access to home-cooked foods, and parental supervision, all of which contribute to healthier eating behaviors.

### **Breakfast Habits**

This study also demonstrated that breakfast habits differed significantly according to students' living arrangements. Irregular breakfast consumption was more common among dormitory students, whereas students living with their parents reported significantly higher rates of regular breakfast consumption.

These findings support those of Ryu and Heo [2], who reported that students residing with their parents were more likely to consume breakfast regularly than those living independently. Ozdogan et al. [11], similarly found that university students frequently skipped breakfast because of limited time before attending classes, while Shimbo et al. [10], observed that students living away from home experienced greater

difficulty maintaining regular breakfast habits than those living with their families.

Regular breakfast consumption plays an important role in maintaining energy balance and supporting cognitive performance during academic activities. Students who skip breakfast often compensate by consuming energy-dense snacks or fast foods later in the day, potentially reducing overall dietary quality. Therefore, the higher prevalence of breakfast skipping among dormitory students may reflect the combined influence of academic schedules, limited time, and independent lifestyle.

### **Fast-Food Consumption**

The present study revealed that frequent fast-food consumption was considerably higher among students living in dormitories than among those living with their parents. Conversely, students living with their parents tended to consume fast food less frequently.

These findings are in agreement with Lupi et al. [4], who reported that students living away from home consumed more ready-to-eat foods and convenience meals than students living with their families. Likewise, Vishwakarma et al. [12] explained that convenience, affordability, food accessibility, and social influences are important determinants of university students' food choices. Jun et al. [5], further demonstrated that students living independently consumed fried foods and energy-dense meals more frequently than students living with their parents.

The greater reliance on fast food among dormitory students may be attributed to limited cooking facilities, time constraints, and easier access to commercial food outlets around university

campuses. Fast food is generally inexpensive, readily available, and requires minimal preparation, making it an attractive option for students with demanding academic schedules. However, excessive fast-food consumption may contribute to poor dietary quality because these foods are typically high in saturated fat, sodium, and added sugars while containing relatively low amounts of dietary fiber and essential micronutrients.

### **Nutritional Status**

This study found that students living with their parents were more likely to have normal nutritional status, whereas overweight and obesity were more prevalent among students living in dormitories.

These findings are consistent with Ryu and Heo [2], who reported significant differences in nutritional status according to residence type among Korean university students. Brunt and Rhee [13], likewise found that college students living independently exhibited higher risks of overweight and obesity because of unhealthy eating habits and lifestyle behaviors. However, Jun et al. [5], reported no significant difference in BMI according to residence type, suggesting that nutritional status is influenced not only by dietary habits but also by physical activity, socioeconomic status, and other lifestyle factors.

The higher prevalence of overweight among dormitory students observed in the present study may be associated with the combination of irregular meal frequency, breakfast skipping, and frequent fast-food consumption. These dietary behaviors may increase total energy intake while reducing

overall diet quality, thereby contributing to unfavorable nutritional status over time. Consequently, interventions promoting healthier eating behaviors among students living independently are essential to prevent long-term nutrition-related health problems.

### **CONCLUSION**

This study demonstrated that living arrangement is associated with differences in dietary patterns and nutritional status among university students. Students living in dormitories were more likely to exhibit unhealthy dietary behaviors, including irregular meal frequency, breakfast skipping, and frequent fast-food consumption, compared with students living with their parents. These differences were accompanied by less favorable nutritional status, with a higher proportion of overweight and obesity among dormitory residents, while students living with their parents were predominantly classified as having normal nutritional status. Overall, the findings indicate that the family living environment contributes positively to healthier eating behaviors and better nutritional outcomes.

These findings emphasize the need for targeted nutrition interventions for students living independently. Universities are encouraged to strengthen nutrition education, promote regular breakfast consumption, improve access to affordable healthy foods on campus, and develop supportive food environments within student dormitories. Future studies should involve larger and more diverse populations and include additional determinants such as physical activity, nutrition knowledge, socioeconomic status,

psychological factors, and food accessibility to provide a more comprehensive understanding of factors influencing dietary behavior and nutritional status among university students.

## BIBLIOGRAPHY

- [1] L. A. Majida, M. I. Kartasurya, S. A. Nugraheni, A. Margawati, and E. R. Noer, "Individual Dietary Diversity Score and Nutritional Status Differences between Students Living in Dormitory and Home during COVID-19 Pandemic," *Amerta Nutr.*, vol. 7, no. 4, pp. 527–533, 2023, doi: 10.20473/amnt.v7i4.2023.527-533.
- [2] G.-B. Ryu and Y.-R. Heo, "Differences in Nutritional Status According to the Residence Types among University Students in Gwangju," *J. Korean Soc. Food Sci. Nutr.*, vol. 53, no. 2, pp. 207–213, 2024, doi: 10.3746/jkfn.2024.53.2.207.
- [3] F. Bagordo, T. Grassi, F. Serio, A. Idolo, and A. De Donno, "Dietary habits and health among university students living at or away from home in Southern Italy," *J. Food Nutr. Res.*, vol. 52, no. 3, pp. 164–171, 2013, [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84889561186&partnerID=40&md5=f21e99f34c483cfaeb1717cba4c334c2>
- [4] S. Lupi *et al.*, "Assessment of lifestyle and eating habits among undergraduate students in Northern Italy," *Ann. Ist. Super. Sanita*, vol. 51, no. 2, pp. 154–161, 2015, doi: 10.4415/ANN\_15\_02\_14.
- [5] Y.-S. Jun, M.-K. Choi, and Y.-J. Bae, "Night eating and nutrient intake status according to residence type in university students," *J. Korean Soc. Food Sci. Nutr.*, vol. 44, no. 2, pp. 216–225, 2015, doi: 10.3746/jkfn.2015.44.2.216.
- [6] K. Omage and V. O. Omuemu, "Assessment of dietary pattern and nutritional status of undergraduate students in a private university in southern Nigeria," *Food Sci. Nutr.*, vol. 6, no. 7, pp. 1890–1897, 2018, doi: 10.1002/fsn3.759.
- [7] L. I. Kolesnikova, M. A. Darenskaya, L. A. Grebenkina, E. V. Osipova, M. I. Dolgikh, and N. V. Semenova, "Analysis of antioxidant status and actual diet of students," *Vopr. Pitan.*, vol. 84, no. 4, pp. 66–73, 2015, [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84960989830&partnerID=40&md5=fdc8c99d80d0fe8cb12a6e2e22c61379>
- [8] J. W. Creswell and J. D. Creswell, "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches ( 3rd ed.)," in *SAGE Publications*, 2018.
- [9] D. W. Hosmer, S. Lemeshow, and R. X. Sturdivant, *Applied Logistic Regression*, 3rd ed. New York: John Wiley & Sons, 2013.
- [10] S. Shimbo *et al.*, "Effects of life away from home and physical exercise on nutrient intake and blood/serum parameters among girl students in Japan," *Tohoku J. Exp. Med.*, vol. 203, no. 4, pp. 275–286, 2004, doi: 10.1620/tjem.203.275.
- [11] A. G. Y. Ozdogan, A. O. Ozcelik, and M. S. Surucuoglu, "The breakfast habits of female university students," *Pakistan J. Nutr.*, vol. 9, no. 9, pp. 882–886, 2010, doi: 10.3923/pjn.2010.882.886.
- [12] K. Vishwakarma, V. Chandra Sekaran, V. Patwardhan, and A. Kamath, "Conceptualizing university students' food choices

- based on theory of planned behavior,” *F1000Research*, vol. 11, p. 1192, 2022, doi: 10.12688/f1000research.123325.4.
- [13] A. R. Brunt and Y. S. Rhee, “Obesity and lifestyle in U.S. college students related to living arrangements,” *Appetite*, vol. 51, no. 3, pp. 615–621, 2008, doi: 10.1016/j.appet.2008.04.019.