

Quantitative Analysis on Dietary Pattern among Year 4 Nursing Student During Clinical and Non-Clinical Posting

Suzilawati Mohamed Ariffin^{1*}, Muhammad Adam Akmal Mohd Romaizi², Che Azunie Che Abdullah³

¹Department of Critical Care Nursing, Kuliyah of Nursing, International Islamic University Malaysia, Pahang, Malaysia

²Thomson Hospitals, Selangor, Malaysia

³Department of Medical Surgical Nursing, Kuliyah of Nursing, International Islamic University Malaysia, Pahang, Malaysia

ABSTRACT

Background: The dietary patterns of Year 4 nursing students at the International Islamic University Malaysia (IIUM) Kuantan campus play a crucial role in shaping their overall health and wellbeing. Nursing students undergo rigorous training that encompasses both clinical and non-clinical postings. The objectives of this study were to assess the eating patterns of Year 4 nursing students during clinical posting and non-clinical postings.

Methods: A descriptive cross-sectional study was conducted among 131 nursing students in IIUM, Kuantan. A well-structured questionnaire was used to collect data. Statistical data was analysed by using SPSS.

Results: A total of 14 male (10.7%) and 117 female (89.3%) nursing students participated in this study. Their dietary pattern during clinical posting and non-clinical posting had been analysed using Likert scale.

Conclusion: There were significant changes in the dietary patterns of students between the two periods. The overall nutritional quality of the diet was lower during clinical postings. The findings suggest a need for better support systems for nursing students during their clinical postings. Ensuring nursing students maintain good dietary habits is crucial not just for their immediate health and academic performance, but also for their long-term well-being and professional effectiveness.

Keywords: Dietary pattern; University nursing student; Clinical posting

*Corresponding author

Suzilawati Mohamed Ariffin
Department of Critical Care Nursing,
Kuliyah of Nursing,
International Islamic University Malaysia,
Pahang, Malaysia
E-mail: suzilawatima@iium.edu.my

Article History:

Submitted: 21 November 2024
Revised: 14 January 2025
Accepted: 22 January 2025
Published: 31 March 2025

DOI: 10.31436/ijcs.v8i1.416
ISSN: 2600-898X

INTRODUCTION

The clinical posting period is a critical phase for nursing students, where they apply theoretical knowledge in real-life healthcare settings. The intensity of their duties, coupled with time constraints, can lead to irregular eating habits. Stress, a common element in the healthcare environment, can further influence food choices, potentially leading to less-than-optimal nutritional decisions (1). Nutrition is a fundamental aspect of overall well-being, and when nursing students face challenges in maintaining healthy eating habits, it can impact their energy levels, concentration, and overall resilience in the demanding academic and clinical environment (2). To bridge this knowledge gap, a comprehensive investigation into the eating patterns of Year 4 nursing students during clinical and non-clinical postings at IIUM Kuantan is essential. This research will provide valuable insights that can inform the development of targeted interventions, educational initiatives, and campus support services. The primary goal of this research also to shed light on the specific factors that shape the eating patterns of year 4 nursing students. These initiatives could prove instrumental in promoting healthy nutrition among nursing students, potentially impacting their overall well-being, academic performance, and their ability to deliver quality care as future healthcare professionals (3).

METHODS

A descriptive cross-sectional study design was used in this study. Further information for these sections as below:

Participant's Information

This study was conducted at the Kulliyah of Nursing International Islamic University Malaysia, Kuantan Campus, Pahang. It was conducted among nursing student, more specifically, year 4 nursing students. A total of 131 participants were agreed to be part of this study, where the numbers were calculated based on Raosoft sample size calculator. All the participants were included when they met the inclusion criteria; 1) Year 4 nursing students, 2) Willing to participate. Those who answered incomplete questionnaire were excluded.

Instruments

The questionnaire was used as the instrument in this study which adapted from the Modified

Malay Eating Behavior and Pattern Questionnaire (3) with the author's permission. This questionnaire was used to collect data from March 2024 to April 2024. The instruments consist of two parts:

Part A: Socio-demographic data. The part that collects the data on age, gender, daily money expenses on food, health status and their states of living.

Part B: This part accesses the dietary pattern of the student which consists of 2 parts with 22 questionnaires. The 2 parts of the questionnaire are meal skipping and snacking pattern. The item was scored by 5 Likert Scale from strongly agree to strongly disagree.

A pilot test was done to validate the questionnaire and consistency Cronbach's alpha of 0.7 was obtained.

Data Analysis

As data analysis, Statistical Package for the Social Sciences (SPSS) version 28.0 was used for analyse statistical data and make data-driven interpretation. P value <0.05 was set as statistically significant.

Ethical Approval and Flow of The Study

Ethical approval was taken from the Kulliyah of Nursing Post Graduate Research Center (KNPGRC) and IIUM Research Ethics Committee (IREC). After getting the approval, researcher conduct the pilot test. Then the purpose of the study was explained to the participants and after getting the informed consent, questionnaires were distributed using Google Form. The data then was analysed and all the information was kept anonymous.

RESULTS

Table 1 presents demographic data from 131 nursing students at International Islamic University Malaysia, reflecting an 85.1% response rate. The majority (87.8%) were 23 years old, with 9.2% aged 24. Gender distribution was predominantly female (89.3% vs. 10.7% male). Daily expenses ranged mostly from RM 11 to RM 20 for 92.4% of respondents, with few (1.5%) reporting underlying health issues.

Table 2 and **Table 3** explained about the dietary pattern which measured using Likert Scale whether the students are "strongly agree",

“agree”, “neutral”, “disagree” and “strongly disagree” with the statement according to their daily dietary pattern during clinical posting and non-clinical posting.

Table 2 details the dietary behaviours of year 4 nursing students during clinical postings, revealing a trend of adjusting meal habits based on timing and previous intake. A majority (95.5%

combined strongly agree and agree) skip lunch after a late or large breakfast and similarly modify supper with snacks after a substantial or late lunch (85.5% combined strongly agree and agree). Breakfast is frequently skipped (93.1% combined strongly agree and agree), likely due to scheduling pressures. Most students (88.6% combined strongly agree and agree) skip meals if not hungry, emphasizing flexibility over fixed schedules.

Table 1: Demographic data of respondents (N=131)

Variables		Frequency (n)	Percentage (%)
Age	22	1	0.8
	23	115	87.8
	24	12	9.2
	26	1	0.8
Gender	Male	14	10.7
	Female	117	89.3
Daily Expenses	RM 1 – 10	1	0.8
	RM 11 – 20	121	92.4
	RM 21 - 30	9	6.9
Health Status	Healthy	129	98.5
	Having underlying disease	2	1.5

Table 2: Dietary behaviours of Year 4 nursing students during clinical posting (N=131)

Question	Answer choices	Frequency (n)	Percentage (%)
During clinical posting period if I eat larger than usual or eat late for breakfast, I will skip lunch	Strongly Agree	23	17.6
	Agree	102	77.9
	Neutral	4	3.1
	Disagree	2	1.5
	Strongly Disagree	-	-
During clinical posting period if I eat larger than usual or eat late for lunch, I will replace supper with snack	Strongly Agree	21	16
	Agree	91	69.5
	Neutral	17	13
	Disagree	1	0.8
	Strongly Disagree	1	0.8
I rarely eat breakfast during clinical posting period	Strongly Agree	85	64.9
	Agree	37	28.2
	Neutral	7	5.3
	Disagree	1	0.8
	Strongly Disagree	1	0.8
During clinical posting period, If I do not feel hungry, I will skip a meal even if it is time to eat.	Strongly Agree	23	17.6
	Agree	93	71
	Neutral	9	6.9
	Disagree	5	3.8
	Strongly Disagree	1	0.8

During non-clinical posting periods **Table 3**, year 4 nursing students exhibit varied eating behaviours. A notable portion adjust their meals based on previous intake timing: for 6 lunches after a large or late breakfast (52.7% combined agreement), and for supper after a similar lunch (53.4% combined agreement). Skipping breakfast is common (68.7% combined agreement), while

many skip meals based on hunger cues (59.5% combined agreement). These findings illustrate the flexible and sometimes inconsistent eating practices among nursing students outside of clinical settings, characterized by irregular mealtimes and responsiveness to hunger rather than adherence to fixed meal schedules.

Table 3: Dietary behaviours of Year 4 nursing students during non-clinical posting (N=131)

Question	Answer choices	Frequency (n)	Percentage (%)
During non-clinical posting period if I eat larger than usual or eat late for breakfast, I will skip lunch	Strongly Agree	19	14.5
	Agree	50	38.2
	Neutral	32	24.4
	Disagree	28	21.4
	Strongly Disagree	2	1.5
During non-clinical posting period if I eat larger than usual or eat late for lunch, I will replace supper with snack	Strongly Agree	18	13.7
	Agree	52	39.7
	Neutral	26	19.8
	Disagree	34	26.0
	Strongly Disagree	1	0.8
I rarely eat breakfast during non-clinical posting period	Strongly Agree	29	22.1
	Agree	61	46.6
	Neutral	25	19.1
	Disagree	15	11.5
	Strongly Disagree	1	0.8
During non-clinical posting period, If I do not feel hungry, I will skip a meal even if it is time to eat.	Strongly Agree	43	32.8
	Agree	35	26.7
	Neutral	11	8.4
	Disagree	41	31.3
	Strongly Disagree	1	0.8

Table 4 examines factors influencing the dietary behaviours of year 4 nursing students. A significant majority snack multiple times daily (84.7% combined agreement), with a notable proportion occasionally replacing dinner with sweets (25.2% combined agreement). While opinions on cookies as ideal snacks vary (32.8% combined agreement agreeing), a substantial number express a preference for sweet foods (82.4% combined agreement). Many students keep snacks in their rooms (92.4% combined agreement), suggesting accessibility influences their snacking habits. These findings highlight a prevalent inclination towards frequent snacking, occasional substitution of meals with sweets, and a preference for sweet snacks among nursing students, reflecting their dietary choices and habits.

Comparing the dietary patterns of year 4 nursing students during their clinical and non-clinical posting periods, the result suggests that students maintain better dietary patterns during non-clinical postings, likely due to less pressure and more regular eating habits (**Table 5**). The comparison indicates that the demands of clinical postings may lead to more irregular and less balanced dietary behaviours among the nursing students. The study's findings reveal no significant association between the gender of nursing students and their dietary patterns during both non-clinical and clinical posting periods. Specifically, the *p*-value during non-clinical

posting is 0.851, which is higher than the significance threshold of 0.05, indicating no significant relationship between gender and dietary patterns in this context. Similarly, during clinical posting, the *p*-value is 0.396, also exceeding the threshold of 0.05, further suggesting no significant relationship between gender and dietary patterns. In summary, gender does not appear to influence the dietary patterns of nursing students in either non-clinical or clinical settings.

DISCUSSION

The comparison of dietary patterns between clinical and non-clinical posting periods among Year 4 nursing students reveals differences that suggest an impact of the academic context on students' eating behaviours. During clinical posting, students reported irregular dietary patterns and lower overall quality, contrasting their dietary habits during non-clinical periods. These findings suggest that the pressures associated with clinical duties, such as long working hours and irregular schedules, may hinder students' ability to maintain consistent and healthy eating habits. The findings align with existing literature, which has documented that clinical environment, particularly in healthcare settings, can affect dietary choices and quality. Factors such as limited access to healthy food, time constraints, and stress from clinical responsibilities have been identified as key contributors to these challenges (4,5).

Table 4: Factors influencing the dietary behaviours of Year 4 nursing students (N=131)

Question	Answer choices	Frequency (n)	Percentage (%)
I snack two or three times everyday	Strongly Agree	25	19.1
	Agree	86	65.6
	Neutral	14	10.7
	Disagree	4	3.1
	Strongly Disagree	2	1.5
I eat cookies, candy bars or ice cream in place of dinner	Strongly Agree	6	4.6
	Agree	27	20.6
	Neutral	47	35.9
	Disagree	50	38.2
	Strongly Disagree	1	0.8
For me cookies are an ideal snack food	Strongly Agree	7	5.3
	Agree	36	27.5
	Neutral	38	29
	Disagree	49	37.4
	Strongly Disagree	1	0.8
I have sweet tooth (Liking sweet tasting food)	Strongly Agree	29	22.1
	Agree	79	60.3
	Neutral	14	10.7
	Disagree	8	6.1
	Strongly Disagree	1	0.8
I usually keep snacks in my room	Strongly Agree	52	39.7
	Agree	69	52.7
	Neutral	6	4.6
	Disagree	3	2.3
	Strongly Disagree	1	0.8

Table 5: Gender as factor that influence dietary pattern (N=131)

	Meal Pattern During Non-Clinical Posting	Meal Pattern During Clinical Posting
t-statistic	-0.848	-0.188
p-value	0.396	0.851

The improvement in dietary patterns observed during non-clinical periods may be attributed to students' greater flexibility and time to prepare balanced meals. The non-clinical posting likely allows for a more predictable schedule, which may enable students to make more health-conscious food choices. This finding is consistent with research suggesting that individuals are more likely to adopt healthier eating patterns when they have the time and resources to plan and prepare meals (6).

An interesting aspect of the study was the relationship between snacking behaviours and overall dietary patterns, which appeared to be consistent across clinical and non-clinical posting periods. Snacking was found to play a significant role in shaping the dietary patterns of nursing students. The type of snacks consumed can significantly affect overall nutrient intake, with unhealthy snacks contributing to poor dietary outcomes. The statement aligns with previous

studies highlighting the influence of snacking on nutritional intake and dietary quality. For example, energy-dense, nutrient-poor snacks can contribute to excess energy intake, whereas healthier snack choices may improve nutrient adequacy (7,8). Therefore, while snacking is an important aspect of the students' diets, its impact on health outcomes is multifaceted, depending on the nutritional value of the snacks chosen.

Another important finding is that gender did not significantly influence dietary patterns in clinical or non-clinical settings. It is consistent with previous research showing that gender may not be a determining factor in eating behaviours. Studies among different age groups, including adolescents and elderly populations, have found that gender does not consistently predict dietary choices or patterns (9,10). These findings suggest that other factors, such as lifestyle, time availability, and stress levels, may have a more prominent role in shaping dietary habits among

nursing students.

These results highlight the complex relationship between the academic environment, individual eating behaviours, and health outcomes. Future research should explore other factors that may influence dietary patterns in nursing students, such as psychological stress, peer influence, and access to health education. Understanding these influences will be essential for developing targeted interventions to promote healthier eating habits among nursing students.

CONCLUSION

The study highlights significant differences in nursing students' dietary habits between clinical and non-clinical posting periods, with lower nutritional quality observed during clinical postings. This emphasizes the necessity for enhanced support systems to help students maintain healthier diets while managing the demands of clinical duties. Access to nutritious meals and adequate breaks during clinical postings is crucial for students' immediate health and academic performance, as poor nutrition can lead to fatigue and reduced concentration, affecting patient care quality. Establishing healthy eating habits early in their careers supports long-term well-being and professional effectiveness. Institutions can support students by providing nutritious meal options, promoting regular breaks, offering guidance on healthy eating, and assisting with stress management. Prioritizing nursing students' nutritional needs during clinical training not only enhances their educational experience but also improves future healthcare outcomes and overall quality of care.

LIMITATIONS

This study was only using self-administered questionnaire through Google Forms which the link disseminated by using WhatsApp. The number of respondents might differ if two or more methods were implemented for data collection.

CONFLICT OF INTEREST

The author(s) declare that there is no conflict of interest regarding the publication of this article.

FUNDINGS

This study was conducted without any financial support from funding agencies in the public, commercial, or not-for-profit sectors.

ACKNOWLEDGEMENTS

We would like to express our sincere gratitude to the participants and research team members for their valuable contributions to this research. Their support in data collection, reviewing the manuscript and providing feedback has been greatly appreciated.

AUTHOR CONTRIBUTIONS

SMA: Prepared and edited the manuscript.

MAAMR: Performed data collection and analysis.

CACA: Reviewed the manuscript.

REFERENCES

1. Gupta CC, Centofanti S, Dorrian J, Coates AM, Stepien JM, Kennaway D, et al. Subjective hunger, gastric upset, and sleepiness in response to altered meal timing during simulated shiftwork. *Nutrients*. 2019 Jun 1;11(6).
2. Farías R, Sepúlveda A, Chamorro R. Impact of Shift Work on the Eating Pattern, Physical Activity and Daytime Sleepiness Among Chilean Healthcare Workers. *Saf Health Work*. 2020 Sep 1;11(3):367–71.
3. Supramaniam P, Ismail SH, Ali A, Leong EL, Muninathan P, Adnan TH, et al. Modified-Malay Eating Behavior and Pattern Questionnaire (Malay-EBPQ): translation and validation among Malaysian women. *Health Qual Life Outcomes*. 2023 Dec 1;21(1).
4. Nicholls R, Perry L, Duffield C, Gallagher R, Pierce H. Barriers and facilitators to healthy eating for nurses in the workplace: an integrative review. *J Adv Nurs* [Internet]. 2017;73(5):1051–65. Available from: <http://europepmc.org/abstract/MED/27732741>
5. Sonnentag S, Pundt A, Venz L. Distal and Proximal Predictors of Snacking at Work: A Daily-Survey Study. *Journal of Applied Psychology*. 2016 Oct 13;102:151–62.
6. Schröder H, Gomez SF, Ribas-Barba L, Pérez-Rodrigo C, Bawaked RA, Fito M, et al. Monetary diet cost, diet quality, and parental socioeconomic status in Spanish Youth. *PLoS One*. 2016 Sep 1;11(9).
7. Heitman K, Thomas SE, Kelly O, Fanelli SM, Krok-Schoen JL, Luo M, et al. Snacks contribute considerably to total dietary intakes among adults stratified by glycemia in the United States. *PLOS*

- Global Public Health. 2023 Oct 1;3(10).
8. Hidayanti L, Rahfiludin MZ, Nugraheni SA, Murwani R. Association between the Habitual Snack Consumption at School and the Prevalence of Overweight in Adolescent Students in Tasikmalaya, Indonesia. Open Access Maced J Med Sci. 2022 May 26;10(E):980–6.
9. Pries AM, Ferguson EL, Sharma N, Upadhyay A, Filteau S. Exploratory analysis of nutritional quality and metrics of snack consumption among Nepali children during the complementary feeding period. Nutrients. 2019 Dec 1;11(12).
10. Khan FMM. A Correlational Study to Assess the Relationship Between Eating Pattern and Self-Esteem among Adolescents in a Selected School of Delhi. International Journal of Nursing & Midwifery Research [Internet]. 2018 Oct 31;05(03):2–6. Available from: <https://medical.adrpublications.in/index.php/IntlJ-NursingandMidwiferyRes/article/view/1739>