Evaluation of Malaysian Dietary Guidelines: Knowledge among students in International Medical University (IMU)

Looi KS[1], Norimah AK[1]

[1]Division of Nutrition and Dietetics, School of Health Sciences, International Medical University

Undergraduate

1. Introduction

- **Malaysian Dietary Guidelines (MDG)** provides information on how to eat healthily.
- **University students** often have poor eating habits: Skip breakfast, consuming snacks [1].
- Thus, to improve their eating habits and enable them to practice the key messages and recommendations in the MDG wisely, they need to have a certain level of knowledge of MDG.
- **To date, no study has been carried out to evaluate the knowledge of the updates MDG 2020 in Malaysia.**

2. Objective

To determine the knowledge of MDG among students in IMU and the association of knowledge with sociodemographic factors.

3. Methodology

Study methods	**Study design**: Cross-sectional study **Setting**: IMU, Kuala Lumpur **Sampling method:** Convenient sampling	**Sample size:** 140 students in IMU **Statistical analysis:** SPSS version 26.0
Subject Criteria	<u>Inclusion Criteria</u> ✓ Healthy university students ✓ Aged 18 to 28 years old ✓ All ethnic groups in Malaysia	<u>Exclusion Criteria</u> • Subjects on a weight-reducing diet • Physical disability • Female subjects who are pregnant or lactating • Students from Bachelor of Science (Hons) in Dietetics with Nutrition programme • Students from Bachelor of Science (Hons) in Nutrition programme
Knowledge Assessment	\multicolumn{2}{l}{<u>Malaysian Dietary Guidelines 2020 knowledge questionnaire</u> • Total 23 questions • **First 3 questions**: subject's **awareness** of MDG and the Malaysian Food Pyramid 2020 (MFP 2020) ➤ Subjects to choose a "Yes" or "No" answer ➤ No mark given •**Remaining 20 questions**: subject's level of **knowledge** of the MDG 2020 and MFP 2020. ➤ **Correct answer**: 1 mark, **Wrong answer & Do not know answer:** No mark ➤ Score < 50 = poor, 51 – 74 = moderate, > 75 = good (Department of Nutrition and Dietetics, UKM 2004)}

4. Results

- **Only 19% (26 subjects) had awareness of MDG and MFP2020**.
- **Overall, the subjects of this study have a moderate level of knowledge of MDG, with a mean score of 63 ±17.2.**
- Independent Sample t-Test showed that **females** (66.25 ±15.07) have a **significantly ($p<0.001$) higher mean score** compared to males (47.67 ±18.11), and **subjects with awareness** (72.50 ±15.18) achieved a **significantly ($p<0.001$) higher mean score** than subjects without awareness (57.92 ±16.19).
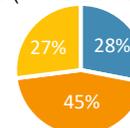
Good (Score >75) 28%
Moderate (Score >50 and <75) 45%
Poor (Score <50) 27%

Figure 1: Distribution of knowledge level of the Malaysian Dietary Guidelines (%) (n=79).

Table 2: Malaysian Dietary Guidelines knowledge level by sociodemographic and awareness status of the subjects.

Factors	Knowledge Level		
Sociodemographic factors	Good n (%)	Moderate n (%)	Poor n (%)
Gender			
Male	2 (13.3)	3 (20.0)	10 (66.7)
Female	20 (31.3)	33 (51.6)	11 (17.2)
Programme of study			
School of Health Sciences	7 (38.9)	5 (27.8)	6 (33.3)
School of Medicine	9 (25.0)	17 (47.2)	10 (27.8)
School of Pharmacy	2 (28.6)	4 (57.1)	1 (14.3)
School of Dentistry	3 (30.0)	6 (60.0)	1 (10.0)
Postgraduate	0 (0.0)	1 (33.3)	2 (66.7)
Foundation in Science	1 (20.0)	3 (60.0)	1 (20.0)
Ethnicity			
Chinese	19 (28.4)	29 (43.3)	19 (28.4)
Non-Chinese**	3 (25.0)	7 (58.3)	2 (16.7)
Place of living			
Home	15 (28.8)	22 (42.3)	15 (28.8)
Hostel	7 (25.9)	14 (51.9)	6 (22.2)
P-value = 0.704*			
Living with parents			
Yes	15 (31.9)	18 (38.3)	14 (29.8)
No	7 (21.9)	18 (56.3)	7 (21.9)
P-value = 0.289*			
Household income			
B40:<RM4360	3 (25.0)	6 (50.0)	3 (25.0)
M40:>RM4360-RM9619	13 (31.7)	18 (43.9)	10 (24.4)
T20:>RM9619	6 (23.1)	12 (46.2)	8 (30.8)
Awareness			
With awareness	10 (38.5)	15 (57.7)	1 (3.8)
Without awareness	12 (22.6)	21 (39.6)	20 (37.7)

*P-value using Chi-square test
**Non-Chinese included Malay, Indian, and Others

Table 1: Subject's responses towards the Malaysian Dietary Guidelines 2020 knowledge questionnaire

Number of questions	n=79		
	Correct n (%)	Incorrect n (%)	Do not know n (%)
1. Based on the new food pyramid, which two food groups have changed their level?	29 (36.7)	13 (16.5)	37 (46.8)
2. Which food group is located at the top of MFP 2020?	54 (68.4)	7 (8.8)	18 (22.8)
3. What is the meaning of "Serving size"?	30 (38.0)	43 (54.4)	6 (7.6)
4. It is recommended to choose at least half of your grain products from whole grains	52 (65.8)	4 (5.1)	23 (29.1)
5. It is recommended to eat _____ servings of fruits every day.	40 (50.6)	29 (36.7)	10 (12.7)
6. It is recommended to eat ____ servings of vegetables every day.	60 (75.9)	12 (15.2)	7 (8.9)
7. It is recommended to consume ____ servings of fish every day.	45 (57.0)	18 (22.8)	16 (20.3)
8. It is recommended to consume ____ servings of legumes every day.	39 (49.4)	17 (21.5)	23 (29.1)
9. It is recommended to consume ____ servings of rice, other cereal, cereal based products, and tubers every day.	14 (17.9)	51 (64.1)	14 (17.9)
10. It is recommended to consume ____ servings of milk every day.	23 (29.1)	41 (51.9)	15 (19.0)
11. It is recommended to limit intake of fat.	72 (91.1)	4 (5.1)	3 (3.8)
12. It is recommended to limit intake of sugar.	78 (98.7)	1 (1.3)	0 (0.0)
13. It is recommended to limit intake of oil.	77 (97.5)	1 (1.3)	1 (1.3)
14. It is recommended to limit intake of fish.	54 (67.9)	18 (23.1)	7 (9.0)
15. It is recommended to limit intake of legumes.	42 (53.2)	18 (22.8)	19 (24.1)
16. It is recommended to limit intake of egg.	38 (48.1)	26 (32.9)	15 (19.0)
17. What cooking method is the healthiest cooking method for fish, meat, poultry and egg dishes?	68 (86.1)	11 (13.9)	0 (0.0)
18. It is recommended to prepare foods with less salt and sauces.	76 (96.2)	1 (1.3)	2 (2.5)
19. It is recommended to drink how many glasses of plain water a day?	70 (88.6)	9 (11.4)	0 (0.0)
20. When increased physical activity and sweating, it is recommended to drink at least an extra _____ glasses of plain water.	31 (39.2)	30 (38.0)	18 (22.8)

5. Discussion

Subjects in this study have a moderate knowledge of MDG
- In agreement with Norimah et al. (2010), whereas studies in other countries showed conflicting results [2-5].

**Female subjects obtained a significantly higher mean score and had better knowledge of MDG**
- Incoherent with Norimah et al. (2010), where their study reported that the mean score of understanding between gender was not significantly different [2].
- Coherent with previous studies that focused on nutritional and healthy eating knowledge [6-8].
- Based on Yahia et al. (2016), females are more interested in nutrition and diet than males, especially during their undergraduate years [9]

Subjects with the awareness of MDG and MFP 2020 achieved a significantly higher mean score and contained better knowledge of MDG
- Hassan et al. (2015) showed a similar result in which they reported that subjects with the awareness of MDG had a higher chance to achieve a good knowledge of healthy eating [10].

6. Conclusion

- IMU students have a moderate knowledge level of MDG.
- Females and subjects with awareness of MDG and MFP 2020 demonstrated a higher mean score and had better knowledge of MDG.
- An unacceptable low awareness of MDG and MFP 2020 was observed among the IMU students.
- More nutrition education and promotion programs are required to educate university students.

References:
1. Chen Yun T, Ahmad S, Soo Quee D. Dietary habits and lifestyle practices among university students in Universiti Brunei Darussalam. Malays J Med Sci. 2018;25(3):56-66
2. Norimah A, Hwong C, Liew W, Ruzita A, Siti Sa'adiah H, Ismail M. Messages of the newly proposed Malaysian Dietary Guidelines (MDG): Do adults in Kuala Lumpur understand them?. Mal J Nutr. 2010;16(1):113-23
3. Chea M, Mobley A. Interpretation and understanding of the dietary guidelines for Americans consumer messages among low-income adults. J Am Coll Nutr. 2019;39(1):63-71.
4. Hakim N, Alsini N, Kutbi H, Mosli R, Eid N, Mulla U. Knowledge status of dietary guidelines and portion sizes in Saudi Arabian mothers; A cross-sectional study. Journal of Food and Nutrition Research. 2020;8(12):716-721.
5. Jia G, Li L, Liu B. Study on the awareness of Chinese dietary guidelines and relative nutritional knowledge among customers in Nanjing. Modern Preventive Medicine. 2010;37(24):4614-4616.
6. Labban L. Nutritional knowledge assessment of Syrian university students. Journal of the Scientific Society. 2015;42(2):71-77.
7. Hassan M, Ghazi H, Umar N, Masri N, Jamil S, Isa Z et al. Knowledge, attitude and practice of healthy eating and associated factors among university students in Selangor, Malaysia. Pakistan J Nutr. 2015;14(12):892-897.
8. Milosavljević D, L. Mandić M, Banjari I. Nutritional knowledge and dietary habits survey in high school population. Coll Antropol. 2015;39(1):101–107
9. Yahia N, Brown C, Rapley M, Chung M. Level of nutrition knowledge and its association with fat consumption among college students. BMC Public Health. 2016;16(1).
10. Hassan M, Ghazi H, Umar N, Masri N, Jamil S, Isa Z et al. Knowledge, attitude and practice of healthy eating and associated factors among university students in Selangor, Malaysia. Pakistan J Nutr. 2015;14(12):892-897.