

Food Choices and Adequacy among Elderly Singaporeans

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Introduction

Singapore has faced a surge in inclining elderly population and has resulted in an increased rate of nutrition-related health issues such as metabolic diseases - Heart diseases, Diabetes Type 2 and High Blood Pressure (Koo et al., 2014). In order to understand the contributing factors of such diseases, it is important to identify the food intake and eating habits of the elderly population. Food Frequency Questionnaire (FFQ) will be focused towards collecting dietary data and dietary habits.

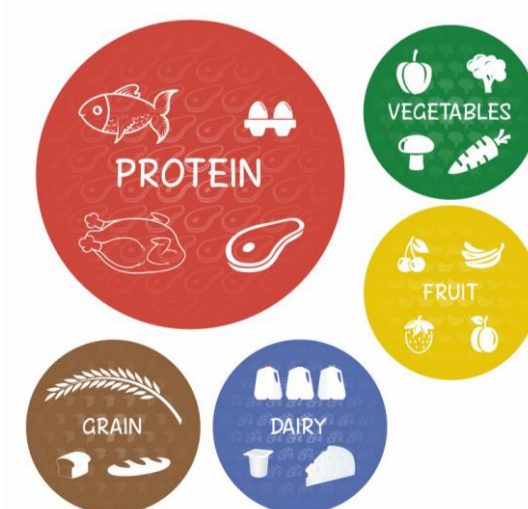
Aims & Objectives

- To understand the food intake and dietary adequacy of elderly population through FFQ.
- To identify dietary adequacy by comparing food intake against the Recommended Daily Allowance (RDA) Singapore and Singapore Dietary Guidelines for Older Adults 2012.



Methodology

- Validated interviewer-administered FFQ were prepared, based on Health Promotion Board (HPB)'s National Nutrition Survey & Dietary Practices Questionnaire 2010.
- FFQ consists of 109 questions of commonly eaten food items.
- A total of 51 ethnic Malay participants (10 Males, 41 Females) aged 69≥ years old participated in the survey.
- Participants were recruited from various mosque and senior citizen centers across Singapore.
- Data were analyzed using Microsoft Excel.
- Food intake and nutritional adequacy compared against RDA Singapore and Singapore Dietary Guidelines for Older Adults 2012.



Results

Table 1: Mean serving size/amount of various food groups across elderly Singaporeans, by gender

Food Groups/Nutrient		N = 51 (100%)	
		Males, n = 10 (20%)	Females, n = 41 (80%)
Rice & Alternatives	Total	4	3.4
	Wholegrain Products	0.5	0.7
Fruits		2	1
Vegetables		3	2.6
Meat & Alternatives	Total	4.4	3.3
	Dairy & Calcium-Rich Products	0.7	0.6
Calcium (mg)		1824	1801

Table 2: Proportion of elderly Singaporeans (%) meeting the Dietary Guidelines, by gender

Food Groups/Nutrient		Recommended Serving Size / Amount	Total	N = 51 (100%)	
				Males, n = 10 (20%)	Females, n = 41 (80%)
Rice & Alternatives	Total	≥4-6 servings	33	40	31.7
	Wholegrain Products	≥2-3 servings	7.8	10	7.3
Fruits		≥2 servings	15.7	20	14.6
Vegetables		≥2 servings	45.1	50	44
Meat & Alternatives	Total	≥3 servings	55	70	51.2
	Dairy & Calcium-Rich Products	≥1-1.5 servings	25.5	30	24.4
Calcium		1000mg	80.4	90	78

- Male participants has a slightly higher average intake of Meat & Alternatives (4.4 vs 3.3 servings) than the Females (see Table 1).
- Only 7.8% of the elderly meets Wholegrain intake (see Table 2).
- Only 15.7% and 45.1% of the elderly meets Fruits and Vegetable intake respectively (see Table 2)

Discussion

- The results from Table 2 shows that only 33% of the elderly population meets the Rice & Alternatives requirements, in which only 7.8% meets the recommended wholegrain intake.
- Only 15.7% and 45.1% of the elderly meets the recommended serving size for Fruits and Vegetable respectively.
- Previous study conducted on Chinese adults aged 45 – 74 years old in Singapore discovered positive correlations between unhealthy eating habits and the development of metabolic diseases (Odegaard et al., 2011).
- Although only 25.5% meets recommended Dairy intake, 80.4% meets Calcium requirement - consumption of other calcium-rich sources and supplementation contributed to the calcium intake.
- Age-related reduced cognitive function affected memory recall and may affect accuracy of food intake.
- Psychological and physiological challenges of the elderly in consuming food were not explored in the study.



Conclusions

- Inadequate intake of certain food groups may affect overall health status of the elderly – malnutrition of certain nutrients.
- Unhealthy eating habits and food choices may be related to psychological, physical and socio-economical status of elderly.
- Further studies should be conducted in exploring psychological, physical and socio-economical challenges of the elderly.

Acknowledgement

- Sincere thanks to Health Promotion Board (HPB) and Kassim Mosque for assisting in gathering participants .

References

- ODEGAARD, A. O., KOH, W.-P., BUTLER, L. M., DUVAL, S., GROSS, M. D., YU, M. C., YUAN, J.-M. & PEREIRA, M. A. 2011. Dietary patterns and incident type 2 diabetes in chinese men and women: the singapore chinese health study. *Diabetes care*, 34, pp 880.
- HPB, 2004. *National Nutrition Survey 2004* [Online]. <https://www.hpb.gov.sg/workplace/useful-information-for-organisations/national-reports-and-surveys>: Health Promotion Board. [Accessed 25th July 2017].
- KOO, Y. X., KANG, M. L., AUYONG, A., LIAU, G. Z., HOE, J., LONG, M., KOH, A., KOH, F., LIU, R. & KOH, G. 2014. Malnutrition in older adults on financial assistance in an urban Asian country: a mixed methods study. 17, 2834-2843