

Nutrition Surveillance on Nutrition Adequacy and Eating Behavior amongst Toa Payoh Residents

NHG DSRB: 2022/00196

INTRODUCTION AND OBJECTIVES

In 2022, Singapore peaked at 16.6% of citizens aged ≥ 65 .^[1] Prevalence of nutritional risk (under and over-nutrition) is expected to accelerate in regions housing higher proportions of older adults ($>20\%$) like Toa Payoh (TPY), due to altered dietary patterns, physiological and socioeconomic changes with aging.^[2]

Research regarding TPY's nutrition landscape is lacking. Findings from local nutrition studies including national nutrition surveys, cannot be entirely extrapolated due to lack of geographical specificity and exclusion of older adults aged ≥ 70 .^[3,4]

The aim of this study was to conduct a nutrition surveillance in collaboration with TTSH and Care Corner, in TPY with the following objectives:

- Assess dietary adequacy, quality and practices
- Assess prevalence and variables associated with nutritional risk:
 - Socio-demographic, diet adequacy and quality variables with under-nutrition risk (NST- Com)
 - Socio-demographic and dietary practices variables with overweight/obesity (BMI ≥ 23)
- Identify factors influencing food choices
 - Barriers and facilitators to healthy eating

METHODS

Study design: Cross sectional mixed methods study.

Inclusion criteria: Singaporean/PR ≥ 21 years old residing in TPY.

Door-to-door surveying was employed with purposive sampling to select a subset for the semi-structured interviews.

DATA COLLECTION

DATA ANALYSIS

QUANTITATIVE	DATA COLLECTION	DATA ANALYSIS
	Nutrition Survey (n=200) <ul style="list-style-type: none"> • Socio-demographics • Nutrition screening (NST-Com) • 37-item Dietary screener & dietary practices questionnaire 	Comparative analysis: <ul style="list-style-type: none"> • Diet adequacy: 'My Healthy Plate' dietary guidelines • Diet quality: Adherence to DASH diet Descriptive and inferential analysis (logistic regression): <ul style="list-style-type: none"> • Independent risk factors ($p < 0.05$) of undernutrition risk and overweight/obesity
QUANTITATIVE	Semi-structured Interviews (n=15) <ul style="list-style-type: none"> • What is important to you when choosing food to eat? • What are the barriers and facilitators to eating healthy food? 	Braun & Clarke's ^[5] 6-step thematic analysis: <ul style="list-style-type: none"> • Codes and themes categorised into the Social Ecological Model

RESULTS

QUANTITATIVE

45.2% of TPY residents were found with under-nutrition risk, which was higher than the local prevalence among community-dwelling elderly (30%).^[6]

58.5% of TPY residents were overweight/obese and this is similar to the national proportion (58.6%).^[7]

REFERENCES

A higher proportion of **Malay** and **Indian** residents were found with an overweight/obese BMI as compared to Chinese.

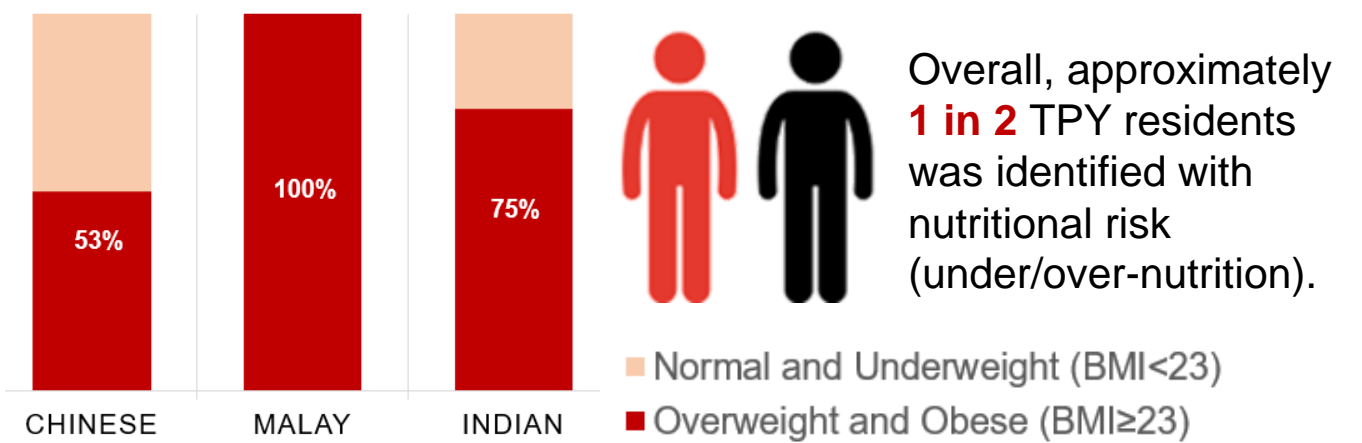


Table 1: Independent risk factors of under-nutrition risk and overweight/obesity

Variables ^a	Categories	Under-nutrition Risk		
		OR	95% CI	p-value
Age	21-39 (ref)	-	-	-
	40-64	5.17	0.45-6.81	0.284
	≥ 65	25.2	19.21-38.88	0.008
BMI	18.5-22.9 (ref)	-	-	-
	< 18.5	8.72	4.06-11.32	<0.001
	≥ 23	0.50	0.21-1.15	0.103
Adequacy in grains	No (ref)	-	-	-
	Yes	0.19	0.08-0.45	<0.001
Adequacy in protein-rich foods	No (ref)	-	-	-
	Yes	0.33	0.12-0.88	0.033
Variables ^b	Categories	Overweight/Obesity (BMI ≥ 23)		
		OR	95% CI	p-value
Frequency of eating out in Western fast-food outlets	Never or rarely (ref)	-	-	-
	At least once a month	1.65	0.81-3.36	0.168
	At least once a week	4.41	1.41-13.81	0.011

Note. ref, reference; OR, odds ratio; CI, confidence interval
 Variables that were significant ($p < 0.05$) in the univariate analysis were included in the multivariate analysis but only variables that remained significant in the multivariate analysis were presented in table above.
^a Multivariate model was adjusted for variables: education, living alone, employment, and IADL status.
^b Multivariate model was adjusted for variables: partner status and living alone.

QUALITATIVE

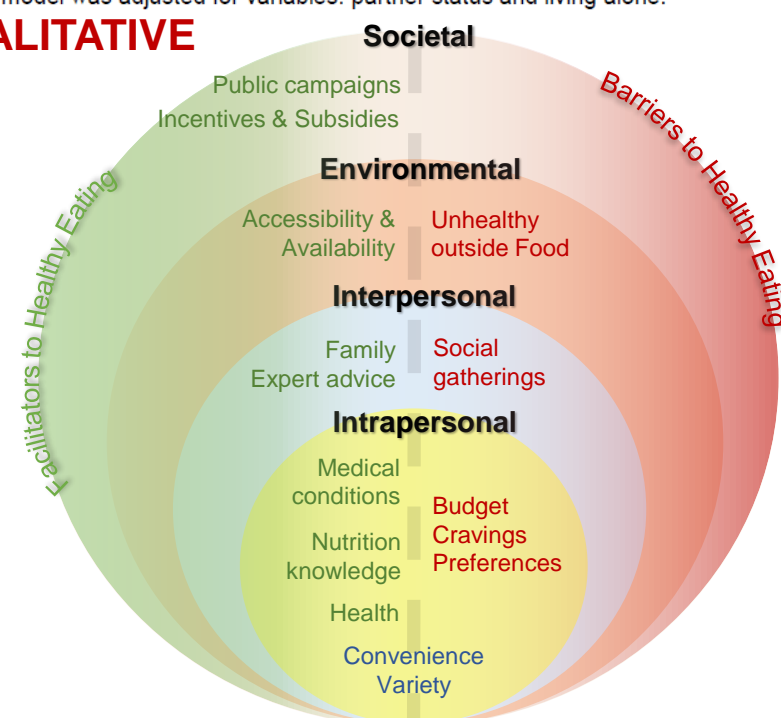


Figure 1: Factors Influencing Food Choices of TPY Residents

CONCLUSION

A higher prevalence of residents were found with an overweight/obese BMI as compared to under-nutrition risk.

Community-based interventions can be directed at the intrapersonal level, prioritizing adequate grains and protein-rich foods consumption among older adults to reduce under-nutrition risk, and reducing the frequency of eating out in Western fast-food outlets to less than once a week to maintain a healthy BMI. More attention should be given to Malay and Indian residents to effectively combat overweight/obesity in TPY. The findings of our study can contribute to the development of multi-level dietary interventions in community settings, tailored to improve the nutritional status of TPY residents.

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