



Socioeconomic and Ethnic Influences on Food Choices in Singapore's Diabetes Cohort

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Introduction

Socioeconomic Disparities in the Global Burden of Diabetes

- Social economic status (SES) correlates with diabetes prevalence worldwide.
- Addressing social determinants of health (SDOH) is critical in diabetes, given its high prevalence, economic burden, and disproportionate impact on vulnerable populations.
- MOH's National Health Survey: those in smaller housing type and lower educational level had higher prevalence of diabetes

Association of SES, Diet and Health Outcomes

Lower SES → poorer diet quality → poorer health outcomes

Ethnic Disparity of Diabetes in Singapore

- Ethnic gaps in prevalence of diabetes : Indians (17.2%), Malays (16.6%), Chinese (9.7%).

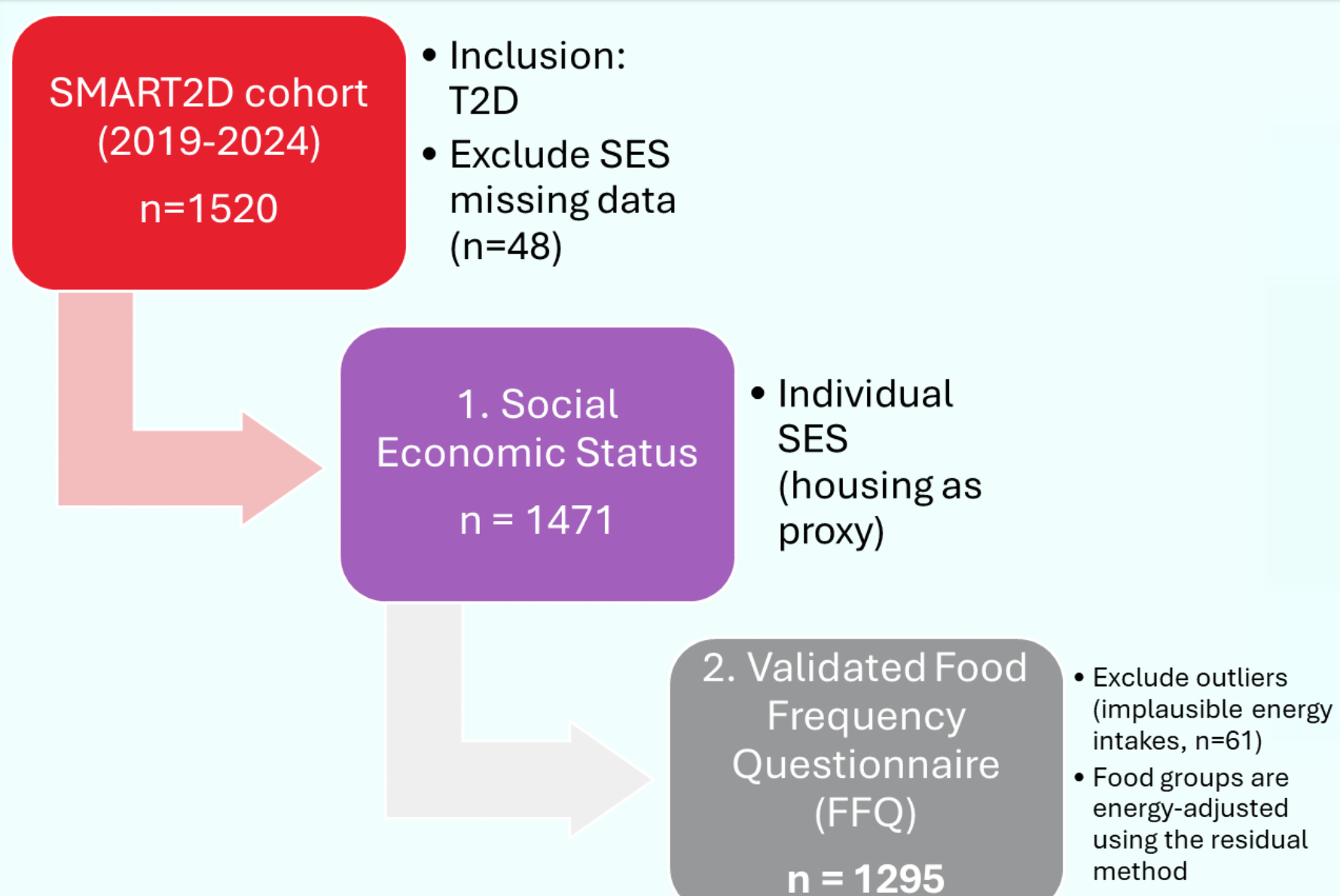
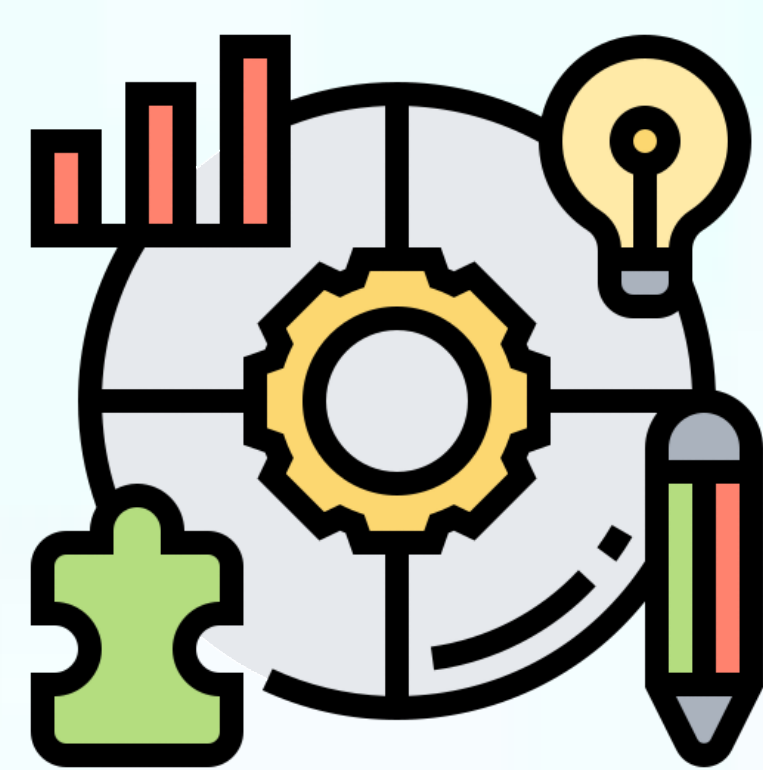
Beyond Choice

- Health behaviours shaped by social & environmental factors, not just personal responsibility.
- Social Determinants of Health (SDH) matter – increasingly recognised as fundamental drivers of health outcomes and inequalities
- SES functions as a key determinant across the socio-ecological spectrum, influencing individual purchasing power, community food environments, and policy structures.

Hypothesis & Aim

- **Hypothesis:** Lower SES is associated with lower quality food choices
- **Aim:** To examine the associations between socioeconomic status (SES), ethnicity, and dietary patterns among the diabetes population in Singapore

Methods



Baseline Characteristics of Participants

Characteristics of participants (n=1295)	Individual Social Economic Status			P for trend
	Overall n (%)	1-3 room HDB	≥ 4 room HDB	
Age (years) (mean ± SD)	61.3 ± 11.70	61.29±11.91	61.19±11.61	0.929
Male (%)	683 (52.7%)	127 (47.4%)	555 (54.3%)	0.045
Female (%)	612 (47.2%)	141 (52.6%)	468 (45.7%)	
BMI (kg/m²) (mean ± SD)	27.00 ± 5.21	27.68 ± 5.53	26.83 ± 5.11	0.029
HbA1c (%) (median (IQR))	7.7 (1.9)	7.8 (2.1)	7.6 (1.9)	0.094
DM duration (years) (median (IQR))	16.0 (13.0)	16.0 (15.0)	15.0 (13.0)	0.852
Systolic BP (mmHg) (mean ± SD)	138.5 ± 17.5	138.8 ± 16.8	138.4 ± 17.6	0.730
LDL (mmol/L) (mean ± SD)	2.5 ± 0.9	2.6 ± 1.0	2.5 ± 0.9	0.121
eGFR (mmol/L) (median (IQR))	88.1 (32.9)	88.9 (34.4)	87.9 (32.6)	0.601
Ethnicity (%)				0.211
Chinese	738 (57.0%)	140 (52.2%)	595 (58.2%)	
Indian	260 (20.1%)	65 (24.3%)	195 (19.1%)	
Malay	225 (17.4%)	46 (17.2%)	178 (17.4%)	
Others	72 (5.6%)	17 (6.3%)	55 (5.4%)	
Marital Status (%)				<0.001
Divorced/Widowed	189 (14.6%)	59 (22.0%)	129 (12.6%)	
Single	151 (11.7%)	54 (20.1%)	97 (9.5%)	
Married	955 (73.7%)	155 (57.8%)	797 (77.9%)	
Education (%)				<0.001
No formal/Primary	291 (22.5%)	82 (30.7%)	208 (20.3%)	
Secondary/ITE	570 (44.0%)	136 (50.9%)	432 (42.2%)	
Diploma/Professional Qualification	216 (16.7%)	29 (10.9%)	187 (18.3%)	
Degree/Post-grad	217 (16.8%)	20 (7.5%)	196 (19.2%)	
Income (%)				<0.001
<\$1000	703 (54.3%)	155 (57.8%)	544 (53.2%)	
\$1000 - <\$2000	164 (12.7%)	47 (17.5%)	117 (11.4%)	
\$2000- <\$4000	224 (17.3%)	50 (18.7%)	174 (17.0%)	
≥ \$4000	203 (15.7%)	16 (6.0%)	187 (18.3%)	
Smoking (%)				0.065
Never	964 (74.4%)	187 (69.8%)	775 (75.8%)	
Past	217 (16.8%)	49 (18.3%)	166 (16.2%)	
Current	113 (9.7%)	32 (11.9%)	81 (7.9%)	
Alcohol (%)				0.049
Yes	1112 (85.9%)	28 (10.4%)	155 (15.2%)	
No	183 (14.1%)	240 (89.6%)	868 (84.8%)	

Results

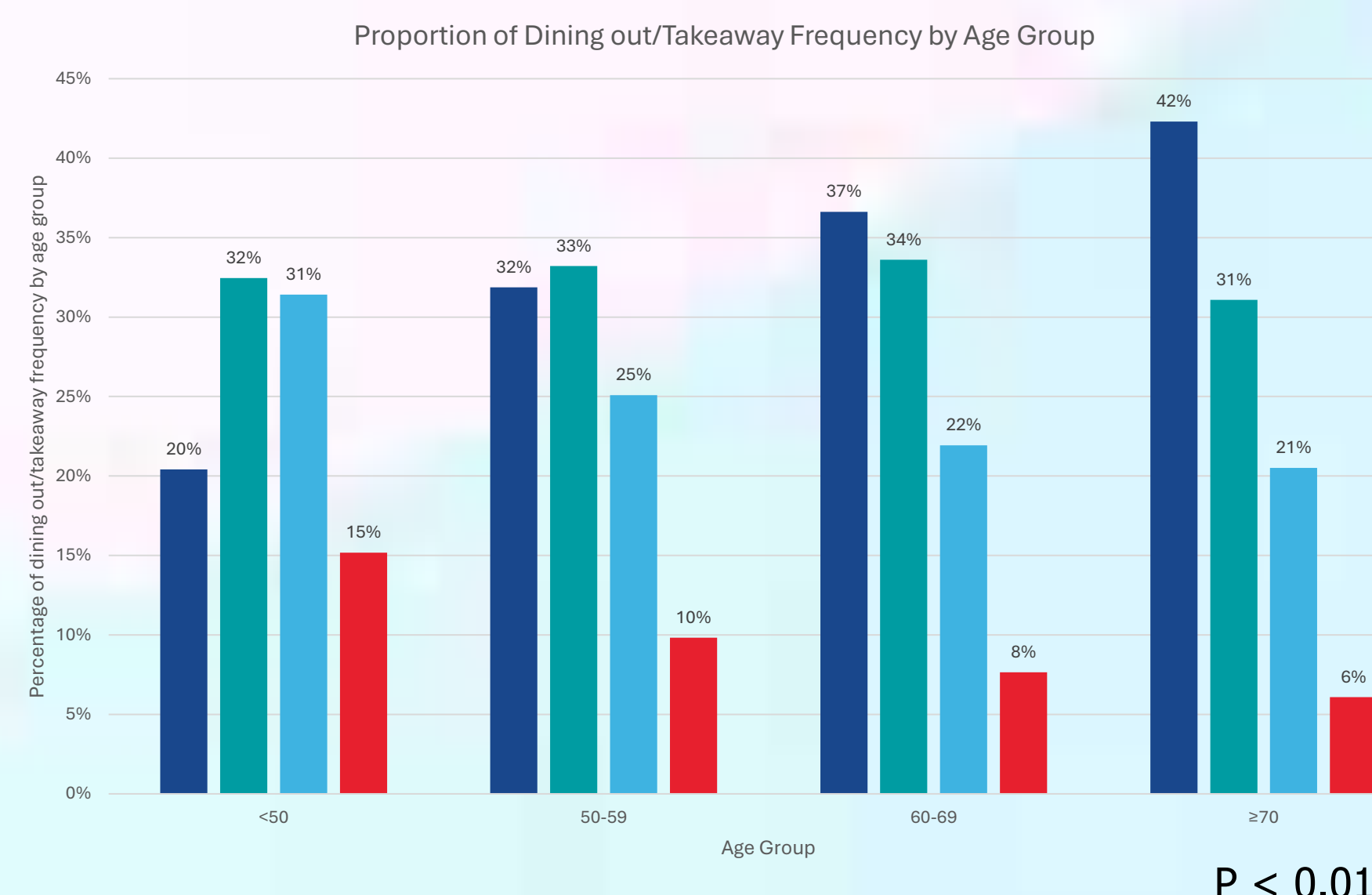


Fig 1. Proportion of Dining out/Takeaway Frequency by Age Group

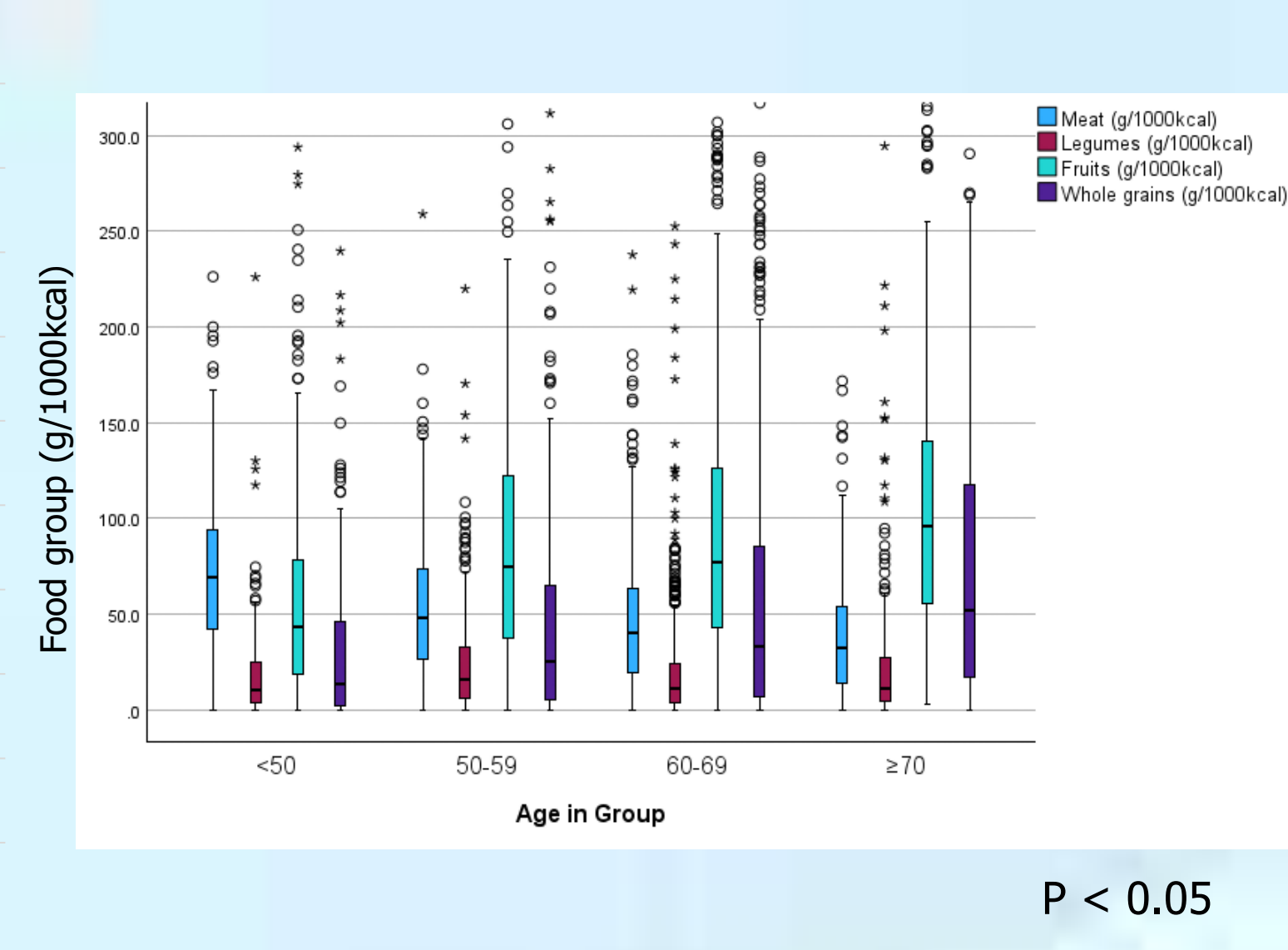


Fig 2. Median Intake of Food Groups (g/1000kcal) across Age Groups

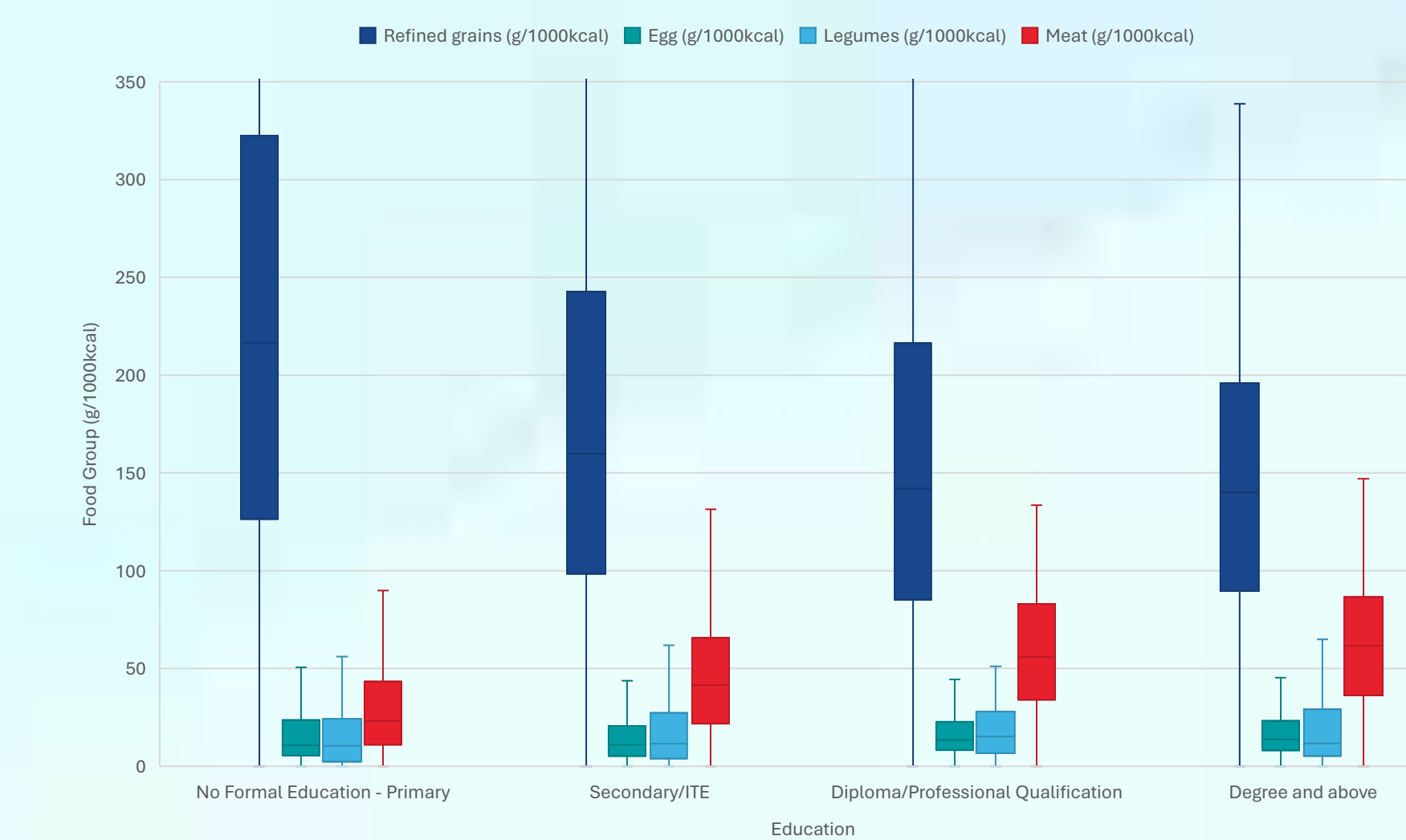


Fig 3. Median Intake of Food Groups (g/1000kcal) across Education brackets

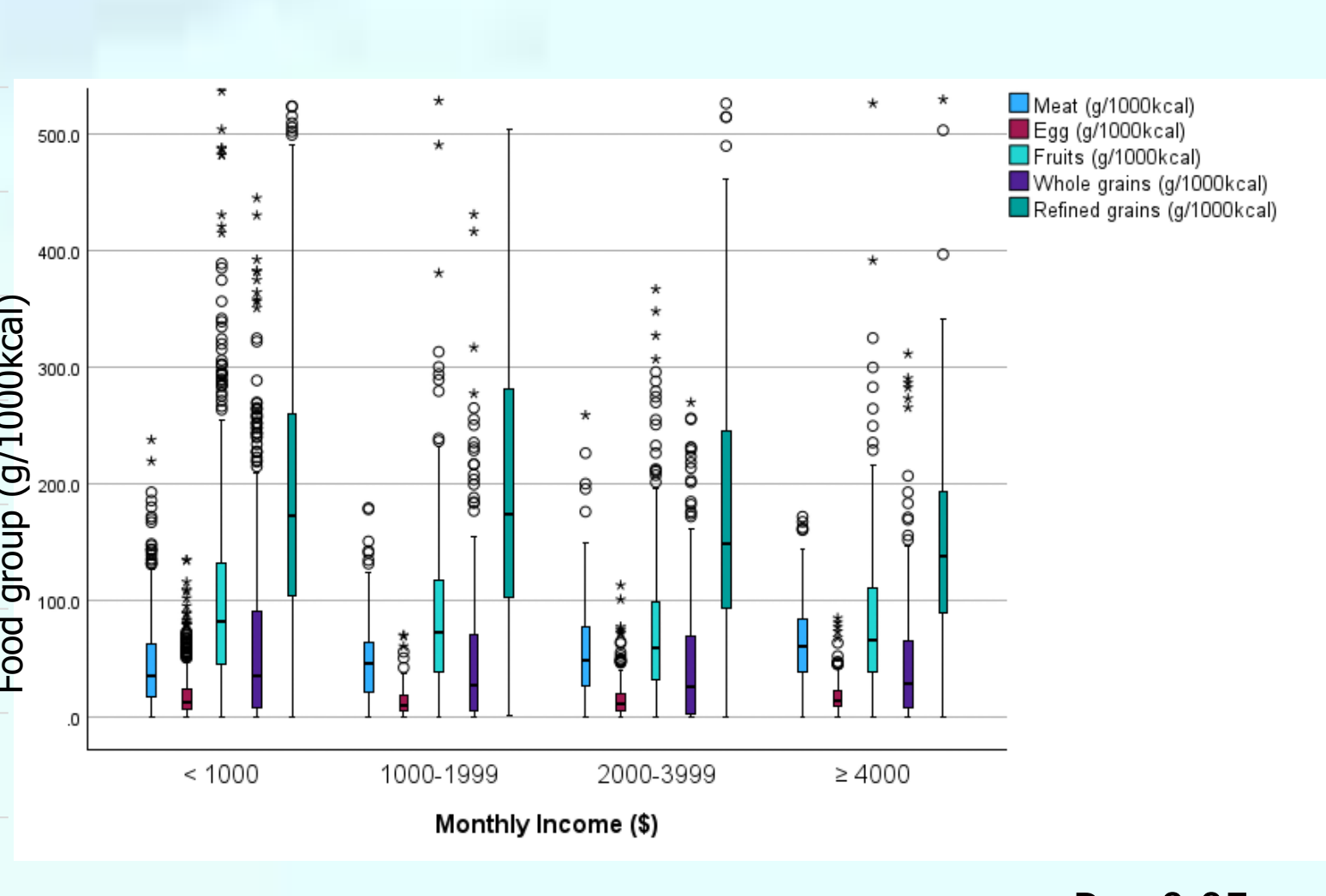


Fig 4. Median Intake of Food Groups (g/1000kcal) across Monthly Income

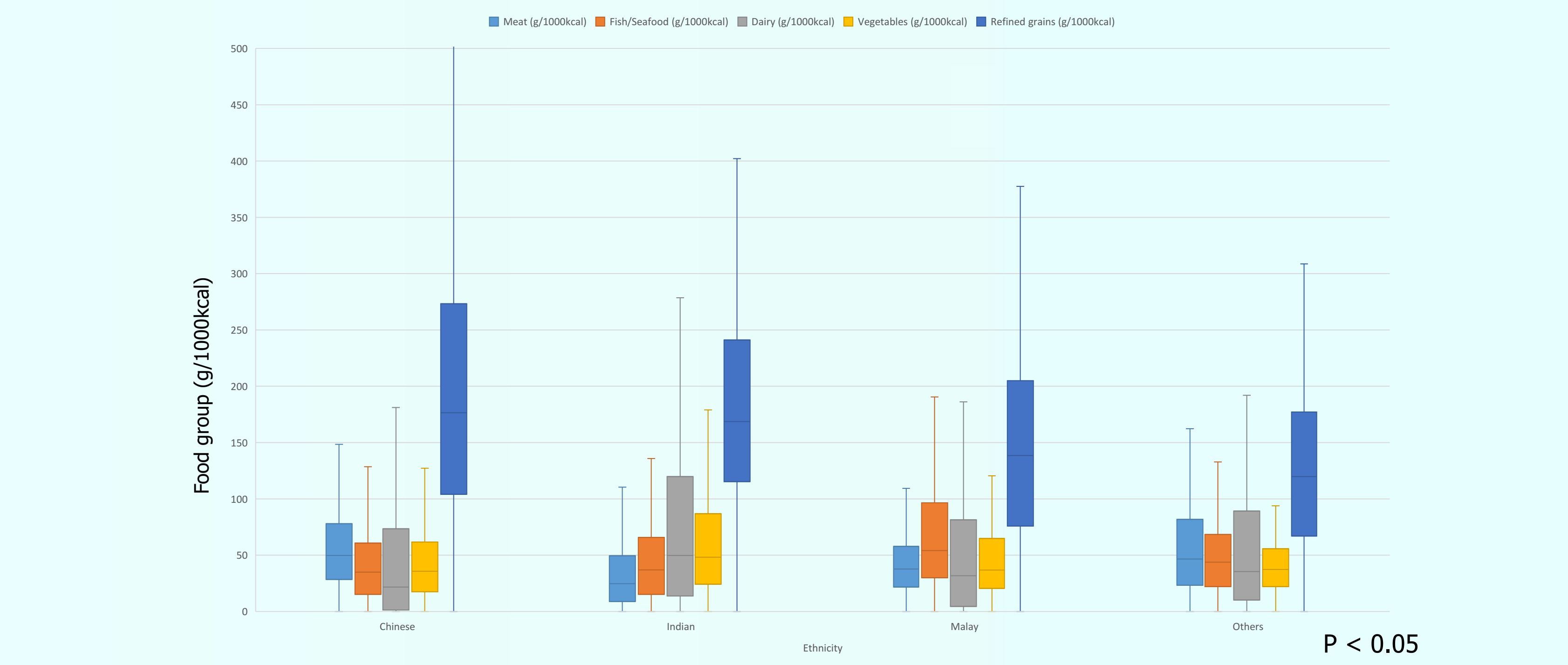


Fig 5. Median Intake of Food Groups (g/1000kcal) across Ethnicity

Discussion & Conclusion

Key Findings

- Lower SES groups consume more energy-dense, refined foods.
- Higher SES groups access more animal protein and diverse diets.
- Economic constraints and food priorities drive dietary disparities.

Study Limitations

- Focus on diabetic population limits generalisability.
- Lacks qualitative insights into food choice motivations across SES groups in Singapore.

Policy Implications

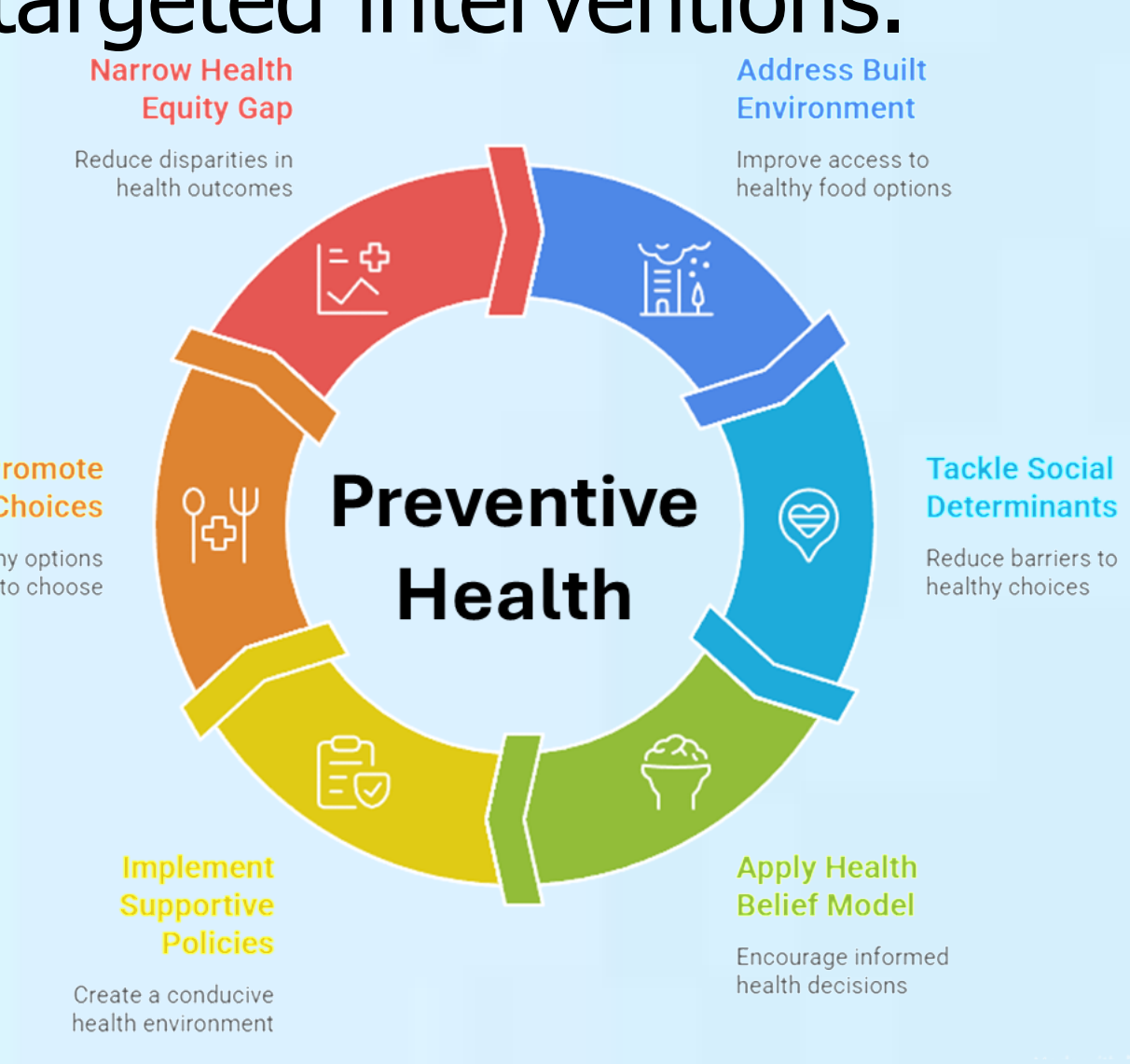
- Restructure food environments to support healthier choices.
- Improve affordability and accessibility of nutritious foods.
- Address SES-driven food priorities through targeted interventions.

Future Research

- Conduct qualitative studies on food choice drivers across SES levels.
- Test interventions that promote equitable food environments.

Ultimate Goal

Reduce health inequities by enabling healthier food choices for all, regardless of socioeconomic status.



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