RS 4

Gender Differences in the Prevalence of Cardiovascular Disease (CVD) Risk Factors among Working-age Population in Malaysia: Findings from the National Health and Morbidity Survey (NHMS) 2019

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Introduction

Gender differences in the prevalence of cardiovascular disease (CVD) risk factors exist(1); however, comprehensive data on representative national samples among the working-age population in Malaysia are insufficient. These individuals are typically regarded as being in optimal health due to their economic productivity. This article aims to determine the gender differences in the prevalence of common CVD risk factors among working-age population in Malaysia.

Methodology

1. Data source: NHMS 2019
2. Study design: cross-sectional
3. Sampling: two-stage stratified cluster random sampling based on the enumeration blocks (EBs) sampling frame. EBs were taken as the primary sampling unit and the secondary sampling unit was living quarters (LQs). All households' members were invited to participate in this survey. Sample size was calculated according to the prevalence survey formula.
4. Study population: working-age population, excluding those below 18 years due to missing variables CVD risk factors. Written consent was taken prior to the study
6. Data collection tools: a validated questionnaire and point–of-care testing
7. Data collectors: trained research assistants for face-to-face interview and registered nurses to conduct clinical procedures.
8. Measured variables: sociodemographic profiles, body mass index, blood pressure, and capillary blood for glucose and cholesterol readings.
9. Data analysis: IBM SPSS version 25 for complex sample prevalence survey
10. Statistical test: Rao-Scott adjusted chi-square test to measure differences between genders
11. Ethical approval: KKM/NIHCEC/P18-2325(12); NMRR ID–18-3085-44207

Results

Table 1: Prevalence of eight CVD risks among the Malaysian working-age population (18-64 years) by gender.

Variables	Male respondents, n= 3694					Female respondents,n= 4423					*P*-value
	Unweighted count	%	95% CI Lower	95% CI Upper	Estimated population	Unweighted count	%	95% CI Lower	95% CI Upper	Estimated population	
Total Diabetes Mellitus	718	14.4	12.7	16.1	1,350,164	898	14.9	13.5	16.4	1,295,976	0.579
Total Hypertension	1,074	24.2	22.1	26.4	2,277,096	1,299	22.1	20.5	23.8	1,920,661	0.112
Total Hypercholesterolemia	1,273	29.0	26.6	31.5	2,728,942	2,049	40.3	37.8	42.8	3,506,698	**<0.001**
Abdominal obesity *	1,589	39.8	37.0	42.7	3,576,405	2,836	62.5	60.1	64.9	5,004,045	**<0.001**
BMI ≥ 25	1,865	45.9	43.2	48.7	4,178,235	2,505	55.1	52.6	57.6	4,457,787	**<0.001**
Physically Inactive	689	18.6	16.8	20.6	1,721,059	1,042	25.4	23.2	27.8	2,204,668	**<0.001**
Current smokers	1,666	45.3	42.3	48.3	4,242,621	50	1.3	0.9	1.9	113,225	**<0.001**
Current drinkers	472	18.2	15.4	21.5	1,717,260	207	7.1	5.6	9.1	622,096	**<0.001**

*(≥ 90 cm for male & ≥ 80 cm for female)
The prevalence in oval shape is higher and statistically significant for gender comparison.

Female respondents significantly had a higher prevalence of hypercholesterolemia (40.3% vs 29.0%), abdominal obesity (62.5% vs 39.8%), BMI of ≥ 25 kg/m2 and above (55.1% vs 45.9%) and being physically inactive (25.4% vs 18.6%). In contrast, male respondents significantly showed a higher prevalence of current tobacco smoking (45.3 vs 1.3%) and current alcohol drinking (18.2 vs 7.1%).

Discussion

- The rationale of this study was to increase general awareness and to highlight that the most economically active age group in Malaysia cannot be assumed to be healthy and productive because the youngest age for ischemic heart disease was documented among men aged under 30 years old [2,3].
- For women, the risk of fatality due to CVD event is lower at this age, but they are currently living in unhealthy lifestyle.
- Smoking among men may be related to masculine ideals and culturally normalized and accepted, however smoking is strongly associated with CVDs, particularly ischemic heart disease and stroke among men [4].
- On the other hand, women may use maladaptive behavior in facing stressful life events of unhealthy eating which leads to overweight and obesity[5].

Conclusion

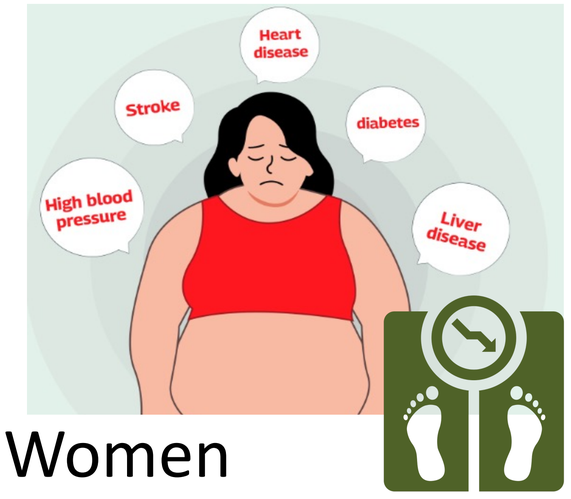
Gender differences were observed in the prevalence of hypercholesterolemia, abdominal obesity, BMI of ≥25 kg/m2 and above, physical inactivity, smoking and alcohol drinking.

Recommendation

Targeted interventions according to gender, such as correcting the maladaptive behaviors of smoking and alcohol abuse among men and increasing awareness among women to be more physically active and have an ideal BMI are recommended.

Take Home Messages

▶ Men



▶ Women

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