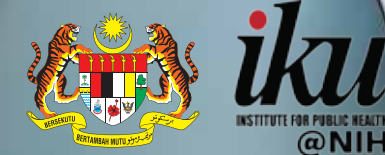




Prevalence and Factors Associated with Hypertension in Malaysia: NHMS 2019



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Introduction:

Hypertension is a global public health issue. In 2010, a total of 1.38 billion people (31.1%) of the global adult population had hypertension. It is estimated that the number of hypertensive patients will raise to 1.56 billion worldwide by 2025.

If left uncontrolled, hypertension causes stroke, heart disease, cognitive impairment, chronic kidney disease (CKD), and renal failure. Hypertension responsible for at least 45% of CVD death and 51% stroke death. CVD accounted for 17.3 million death in 2013 which represent 31% of all global deaths and made it the world's leading cause of death and disability.

The objective for this study is to determine the prevalence of hypertension and its factors associated among adults aged 18 years and above in Malaysia.

Methodology:

- The study used data from the National Health and Morbidity Survey in 2019.
- It was a cross sectional study with two-stage stratified random sampling design.
- Respondents were given structured questionnaire via face to face interview using mobile device for data collection.
- Blood pressure was recorded as the average reading from two electronic pressure monitoring measurements.
- Hypertension was defined as systolic BP \geq 140mmHg or diastolic BP \geq 90mmHg.
- Data was analysed using the complex sample design analysis.
- Multiple logistic regression was used to determine the factors associated with prevalence of hypertension.

Results

The prevalence of hypertension in Malaysia was 30.0% (95%CI: 28.57,31.50). The prevalence among male and female was 30.3% (95%CI: 28.22,32.50) and 29.7% (95%CI: 27.98,31.46) respectively.

Table 1: Sociodemographic characteristics of the respondents (N=10,463)

Variables	Overall	
	n	Percent
Age group (years old)	18-39	4316 41.6%
	40-59	3694 35.3%
	\geq 60	2453 23.4%
Locality	Urban	6376 60.9%
	Rural	4087 39.1%
Ethnicity	Malay	6744 64.5%
	Chinese	1326 12.7%
	Indian	662 6.3%
	Other Bumiputras	1113 10.6%
	Others	618 5.9%
Marital status	Single	2180 20.8%
	Married	7151 68.3%
	Widow(er)/Divorcee	1132 10.8%
Education	No formal education	644 6.2%
	Primary education	2378 22.8%
	Secondary education	4961 47.7%
	Tertiary education	2425 23.3%
Occupation	Employed	5941 56.8%
	Unemployed	4514 43.2%
Household income Group	B40	6694 68.2%
	M40	2324 23.7%
	T20	795 8.1%

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Table 2: Factors Associated with Hypertension by Male and Female (Multiple Logistic Regression)

Variables		Male			Female		
		AOR ^a	95% C.I.		AOR ^b	95% C.I.	
			Lower	Upper		Lower	Upper
Age group	18-39	1			1		
	40-59	3.129	2.571	3.807	<0.001*	4.149	3.423 5.028
	60 and above	8.120	6.284	10.493	<0.001*	12.897	9.938 16.738
Ethnicity	Malay	1			1		
	Chinese	0.950	0.744	1.213	0.681	0.642	0.513 0.804
	Indian	0.881	0.641	1.211	0.435	0.667	0.501 0.886
	Other Bumiputras	1.510	1.171	1.948	0.002	1.401	1.111 1.766
	Others	0.890	0.639	1.241	0.493	0.877	0.632 1.216
Marital Status	Single	1			1		
	Married	0.986	0.791	1.229	0.898	1.328	1.028 1.716
	Widow(er)/Divorcee	1.667	1.101	2.522	0.016	1.870	1.370 2.554
Education	No formal education				1		
	Primary education				0.805	0.606	1.070 0.135
	Secondary education				0.693	0.520	0.924 0.012
	Tertiary education				0.434	0.312	0.603 <0.001*
Occupation status	Employed	1			1.000	!	!
	Unemployed	1.258	1.027	1.541	0.026	1.303	1.116 1.521
Household income group (National-DOSM 2016)	B40	1					
	M40	0.805	0.674	0.961	0.017		
	T20	0.919	0.703	1.200	0.533		
BMI	Normal BMI	1			1		
	Overweight	1.771	1.504	2.086	<0.001*	2.253	1.898 2.674
	Obesity	3.187	2.590	3.920	<0.001*	3.589	2.987 4.312
Physical Activity	Active				"	!	!
	Inactive				1.280	1.081	1.515 0.004
Current Smokers	Non-Smokers	1					
	Current Smokers	0.731	0.629	0.850	<0.001*		
Current drinker	Past/Non-drinker	1					
	Current drinker	1.322	1.025	1.705	0.032		
Diabetes	Normal	1			"	!	!
	Diabetes	1.782	1.503	2.112	<0.001*	2.245	1.910 2.638
Cholesterol	Normal	1			"	!	!
	Raised Cholesterol	2.118	1.822	2.462	<0.001*	1.864	1.609 2.159

Discussion/conclusion:

- One third of Malaysian population have hypertension. It is higher than Iran (17.3%) [men: 18.9% women: 15.5%] and Laos (20.0%) [men: 18.5%, women: 21.1%].
- Increasing in age and BMI showed higher likelihood to get hypertension. It is similar to many previous studies which showed that increasing in age and higher BMI as an independent risk factor for hypertension.
- Divorcee, unemployed, Other Bumiputras, presence of diabetes and hypercholesterolemia showed higher odds to have hypertension for both genders.
- Among male, those from M40 household income group, current smokers and non-drinker showed lower likelihood to have hypertension compared to B40 household income group, non-smokers, and current drinker. Our findings on smoking was inconsistent with a study done in Nepal [9] but similar with a study in Korea
- Among female, higher education and physically active showed lower likelihood to have hypertension compared to lower educational group and physically inactive female.
- Systematic approaches are needed for better detection and risk factor modification among the targeted group.