ASSOCIATION OF SMOKING WITH OVERALL OBESITY AND CENTRAL OBESITY AMONG MALAYSIAN ADULTS

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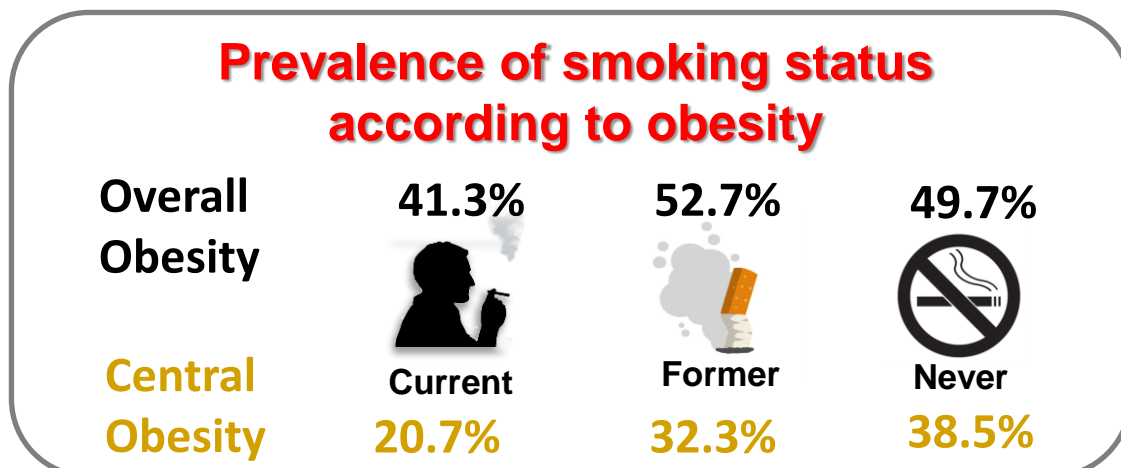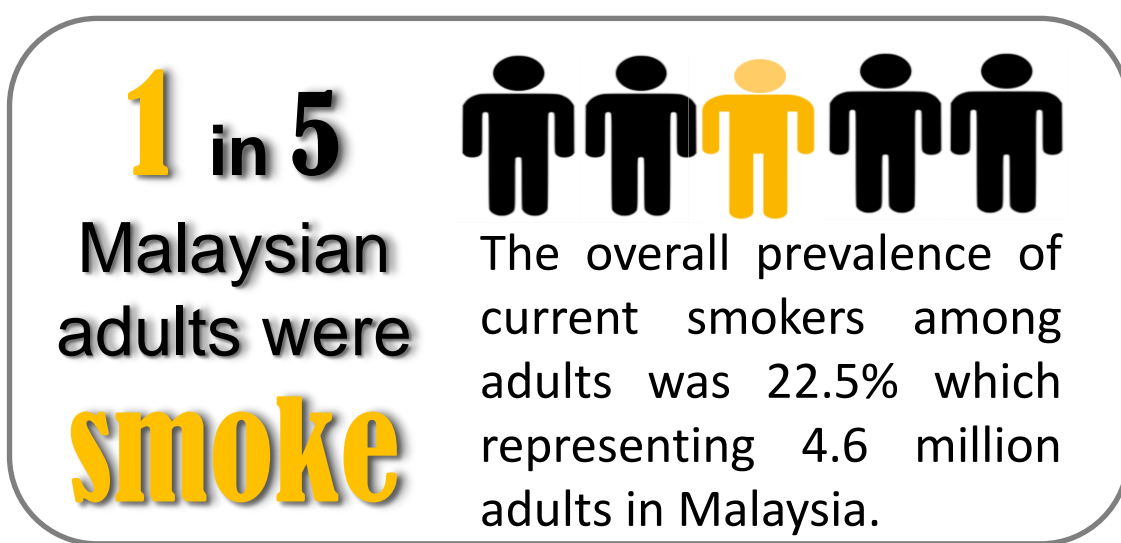
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INTRODUCTION

Smoking and obesity are major public health problems in Malaysia. A study in Korea showed that current smokers were more likely to be centrally obese than never smokers[1]. While other study showing a different result[2].

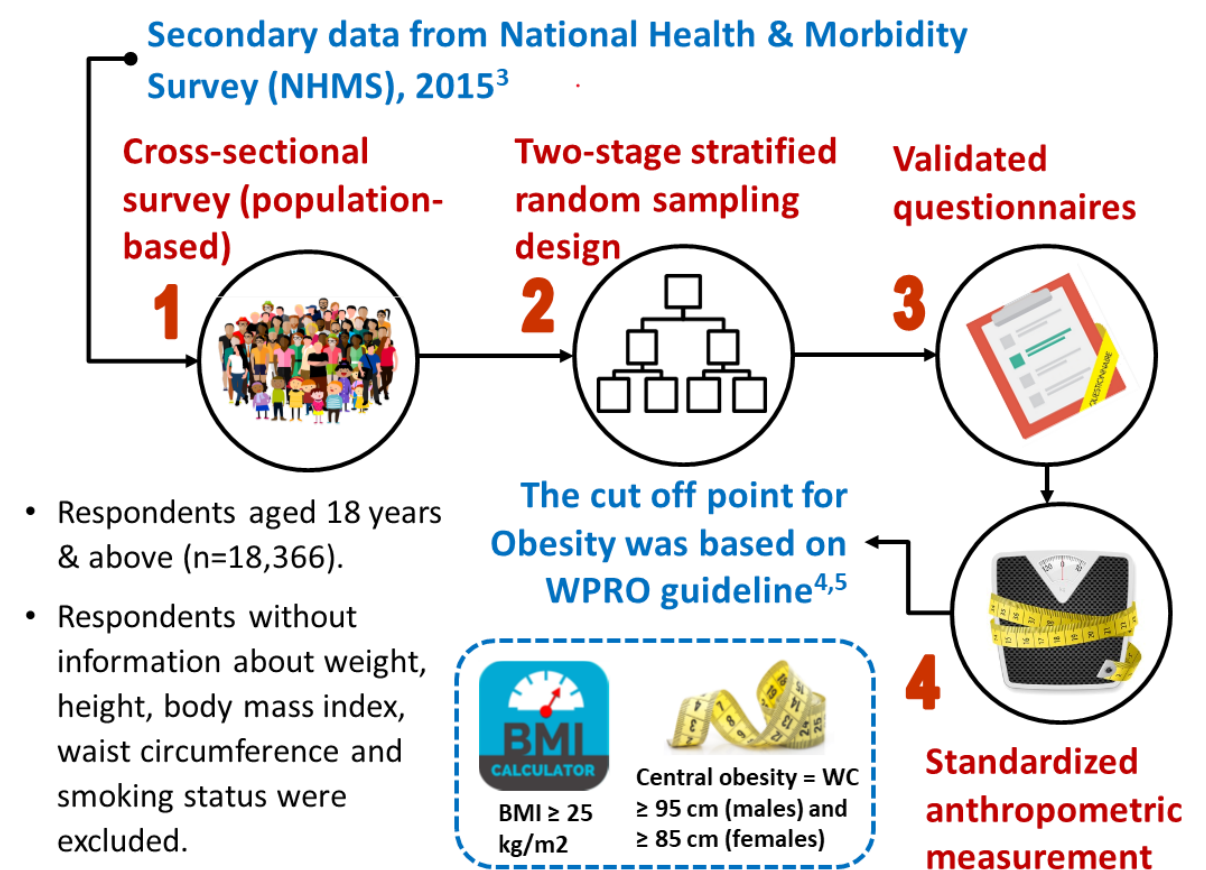## OBJECTIVE

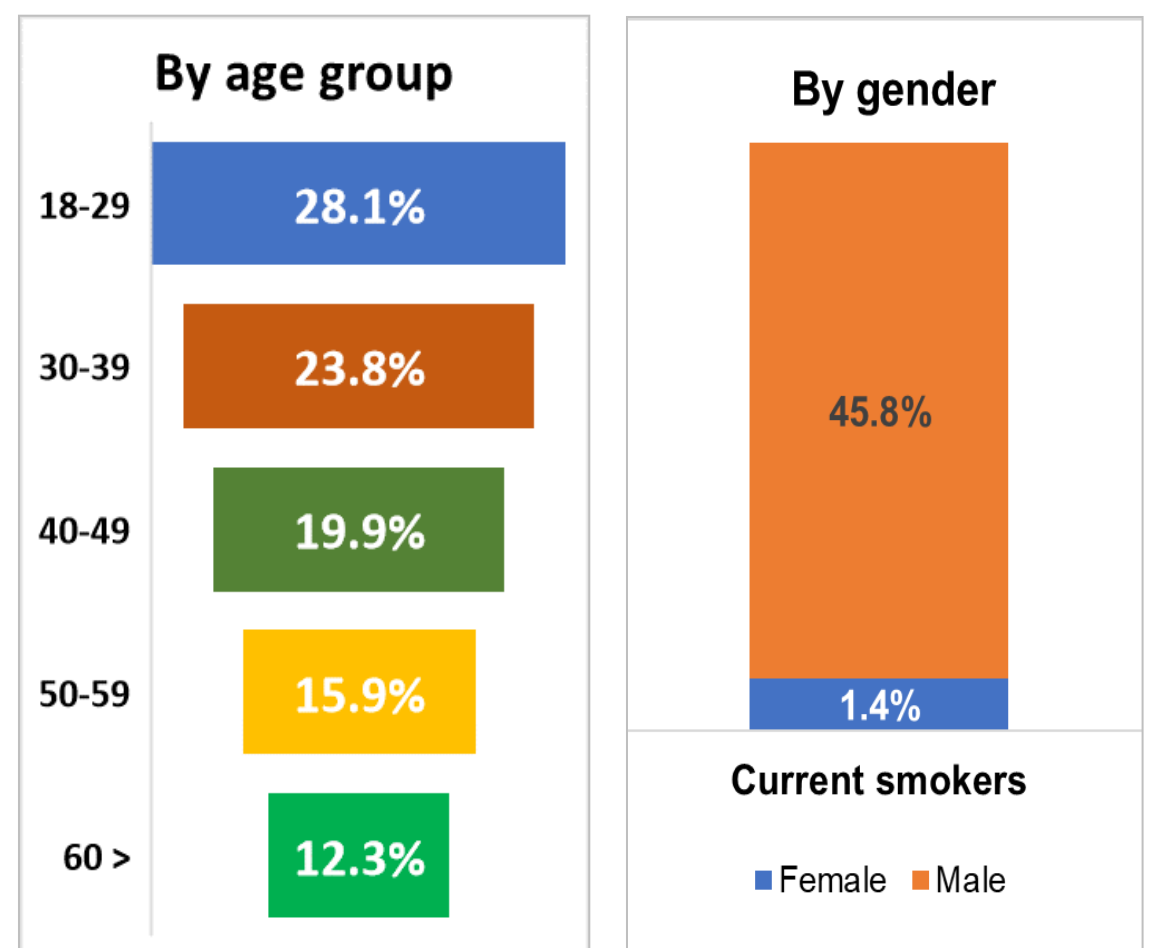This study aimed to examine the association between smoking status and obesity among Malaysian adults.

METHODOLOGY

Secondary data from National Health & Morbidity Survey (NHMS), 2015[3]

1 Cross-sectional survey (population-based)

2 Two-stage stratified random sampling design

3 Validated questionnaires

4 Standardized anthropometric measurement

- Respondents aged 18 years & above (n=18,366).
- Respondents without information about weight, height, body mass index, waist circumference and smoking status were excluded.

The cut off point for Obesity was based on WPRO guideline[4,5]

BMI CALCULATOR
BMI ≥ 25 kg/m2

Central obesity = WC ≥ 95 cm (males) and ≥ 85 cm (females)

RESULTS

i. Descriptive statistics

1 in 5 Malaysian adults were **smoke**

The overall prevalence of current smokers among adults was 22.5% which representing 4.6 million adults in Malaysia.

Prevalence of smoking status according to obesity

	Current	Former	Never
Overall Obesity	41.3%	52.7%	49.7%
Central Obesity	20.7%	32.3%	38.5%

WHO SMOKES?

By age group

Age	%
18-29	28.1%
30-39	23.8%
40-49	19.9%
50-59	15.9%
60 >	12.3%

By gender — Current smokers

Female: 1.4%
Male: 45.8%

■ Female ■ Male

ii. Multiple logistic regression analysis was done on smoking status using never smoker as a reference after controlling other sociodemographic factors.

Risk of obesity by smoking status

Smoking Status	Overall Obesity*				Central Obesity*			
	COR (95% CI)	p-value	AOR (95% CI)	p-value	COR (95% CI)	p-value	AOR (95% CI)	p-value
Current	0.71 (0.64-0.79)	< 0.001	0.73 (0.64-0.82)	< 0.001	0.42 (0.37-0.47)	< 0.001	0.76 (0.66-0.88)	< 0.001
Former	1.13 (0.89-1.43)	0.328	1.00 (0.78-1.30)	0.990	0.76 (0.60-0.98)	0.035	1.07 (0.82-1.40)	0.633

Classification table 57.2%, Nagelkerke Pseudo R Squared 3.1%   Classification table 68.6%, Nagelkerke Pseudo R Squared 11.7%

*Values are presented as odds ratio (95% confidence interval, Lower-Upper)

DISCUSSION / CONCLUSION

- Smoking was positively associated with overall obesity and central obesity.

- Further study should be done to see whether categories of current smoker (light/ moderate/ heavy) will give a difference result.

- The other possible impact of cofounding factors such as alcohol intake, diabetes, hypertension, stress and energy intake should be considered in the next study.

REFERENCE

1. Kim Y, Jeong SM, Yoo B, Oh B, Kang HC. (2016). Associations of smoking with overall obesity, and central obesity: a cross-sectional study from the Korea National Health and Nutrition Examination Survey (2010-2013). Epidemiology and Health. doi.org/10.4178/epih.e2016020.

2. Ginawia IA, Bashira AI, Alreshidia YQ, Dirweeshb A, et al. (2016). Association Between Obesity and Cigarette Smoking-A Community Based Study. Researchgate.net. doi.org/10.14740/ jem378e.

3. Institute for Public Health (IPH), National Institutes of Health, Ministry of Health Malaysia. 2016. National Health and Morbidity Survey (NHMS) 2015: Non-Communicable Diseases.

4. World Health Organization. The Asia-Pacific perspective: redefining obesity and its treatment. Geneva: World Health Organization Western Pacific Regional Office; 2000, p. 11-12.

5. Wen CP, David Cheng TY, Tsai SP, Chan HT, Hsu HL, Hsu CC, et al. Are Asians at greater mortality risks for being overweight than Caucasians? Redefining obesity for Asians. Public Health Nutr 2009;12: 497-506.