



# **DOUBLE BURDEN OF MALNUTRITION IN MALAYSIA – AN UPDATE FROM NHMS 2023**

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The page features decorative geometric patterns in the corners. The top-left corner has a series of parallel diagonal lines. The top-right and bottom-left corners contain clusters of overlapping semi-circles in shades of orange, teal, and dark blue. The bottom-right corner features a thin, light blue curved line.

# INTRODUCTION

## DOUBLE BURDEN OF MALNUTRITION (DBM)



- Rapid nutrition transition driven by the economic growth and change in lifestyle has caused the coexistence of undernutrition and overnutrition within the same individuals, households, or countries.
- **Undernutrition:** wasting, stunting and underweight. **Overnutrition:** overweight, obesity and diet-related non-communicable diseases (NCDs)
- The DBM phenomenon in Malaysia is prominent: overweight and obesity among adults, adolescents, and older children are increasing and undernutrition among children is persistent.



# DBM IN MALAYSIA



# NHMS 2023:UPDATE

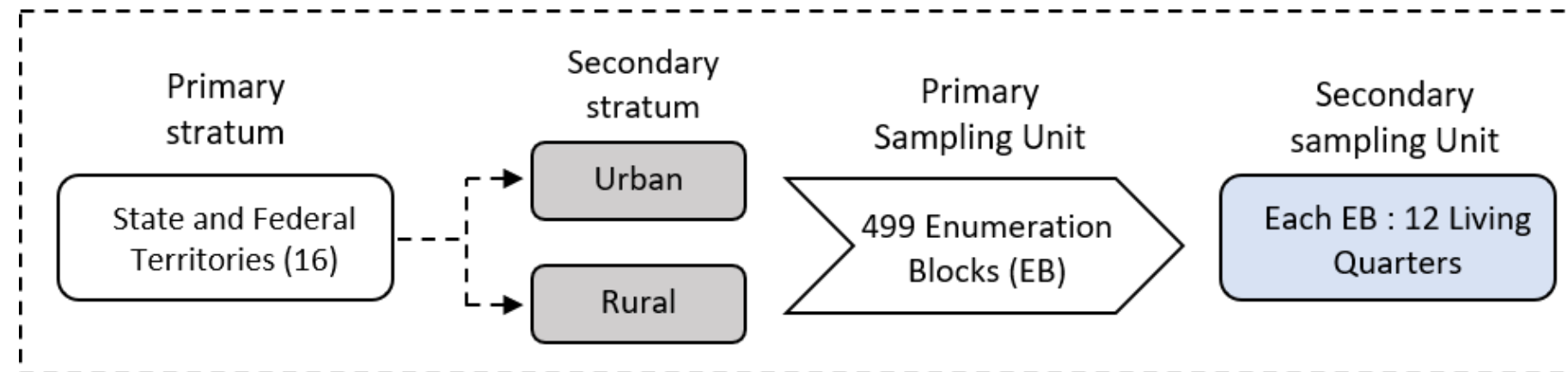
# NATIONAL HEALTH AND MORBIDITY SURVEY (NHMS) 2023: Non-Communicable Diseases and Healthcare Demand

- Malaysia: 72% of premature death & over 76 % burden of disease. [1-2]
- Develop evidence-based policies, determine the utilisation and expenditure of health services, and monitor indicators such as the Sustainable Development Goals (SDG), Universal Health Coverage (UHC), and the National Strategic Plan for Non-Communicable Diseases (NSP-NCD).

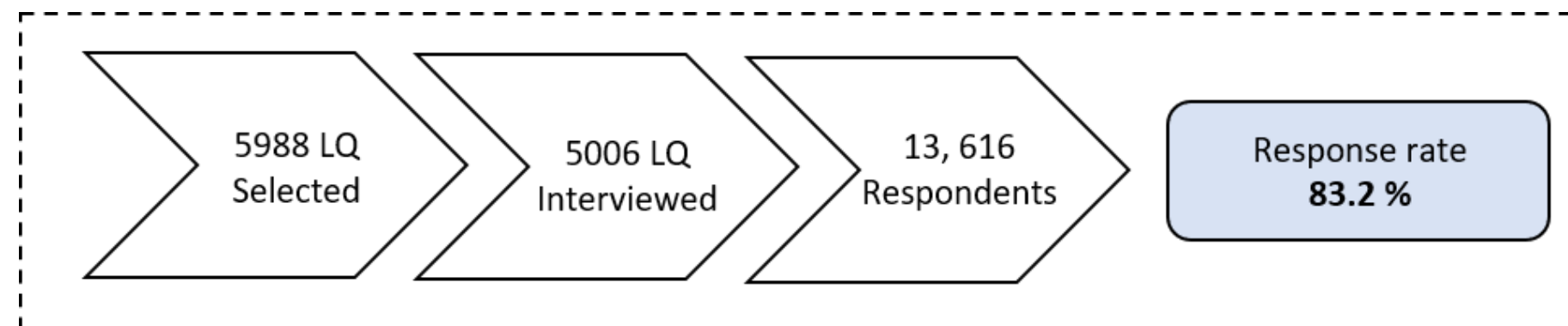
1. Malaysian burden of disease: years of life lost due to premature deaths [Internet]. BMC Public Health; [cited 2024 Mar 27]. Available from: <https://pubmed.ncbi.nlm.nih.gov/37464344/>
2. Malaysian Burden of Disease and Injury Study 2015-2017 [Internet]. Institute for Public Health (IPH); 2020. Available from: <https://iku.gov.my/images/teknikal-report/mbod-2015-2017.pdf>

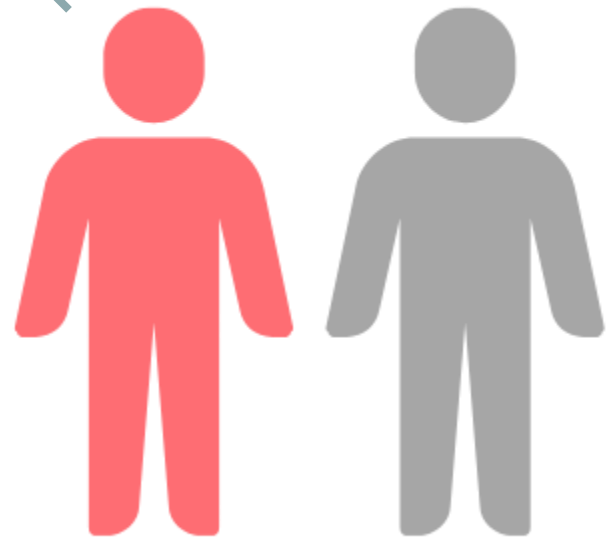
# METHODOLOGY

- Cross-sectional survey with complex sample analysis.
- Two-stage stratified random sampling.

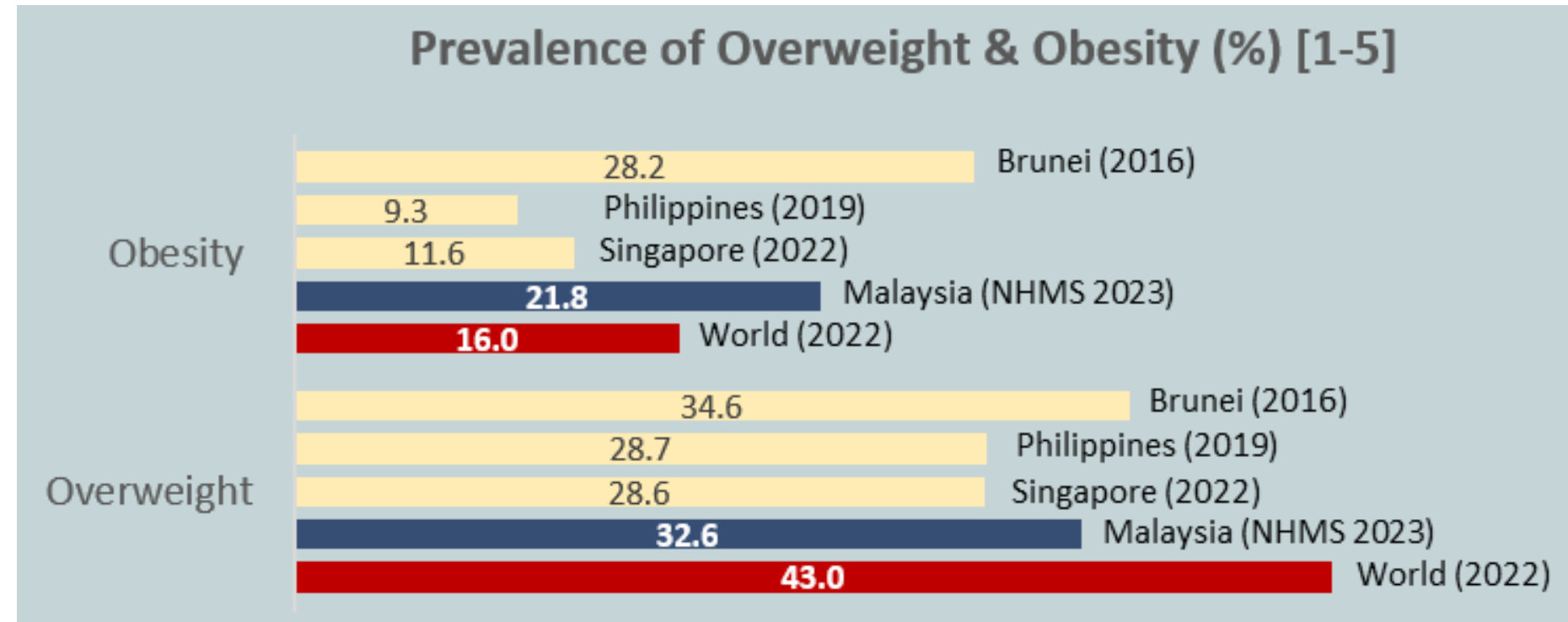


- Target population – all individuals residing in the Living Quarters (LQ) for at least 2 weeks prior to data collection.

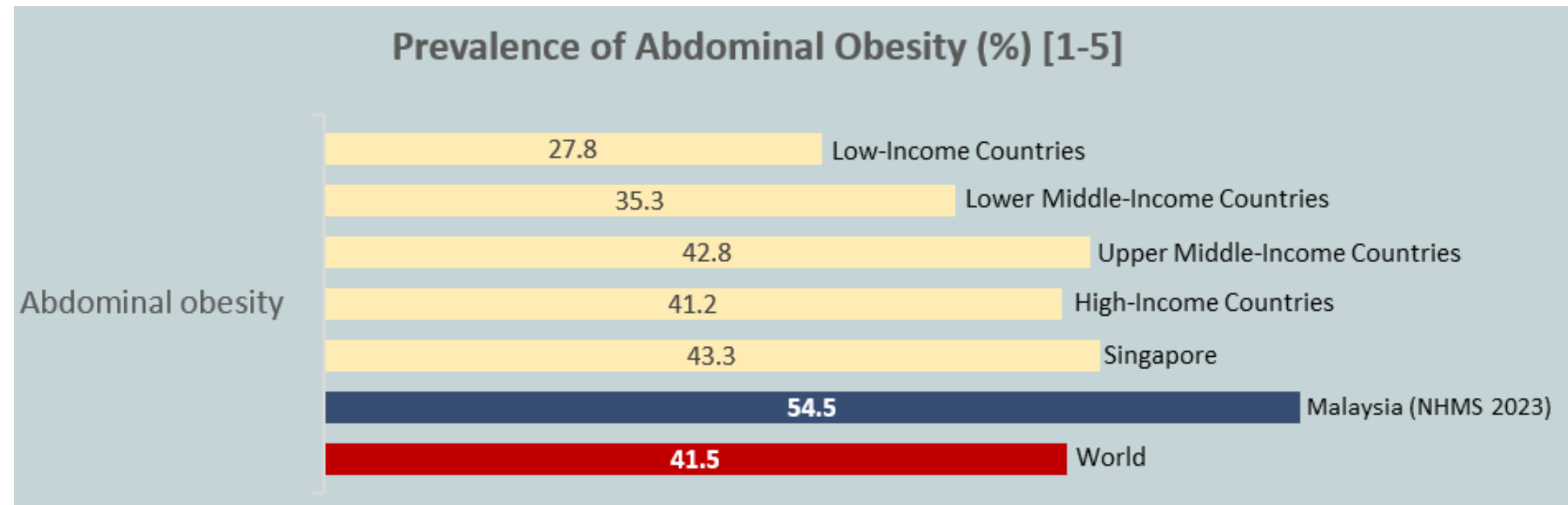




# 1 IN 2 ADULTS in Malaysia: overweight and obese (54.4%)



Note: Obesity= (BMI)  $\geq 30$ . Overweight= BMI  $\geq 25$ . [The World Health Organization (1998) Classification of Body Mass Index (BMI)]

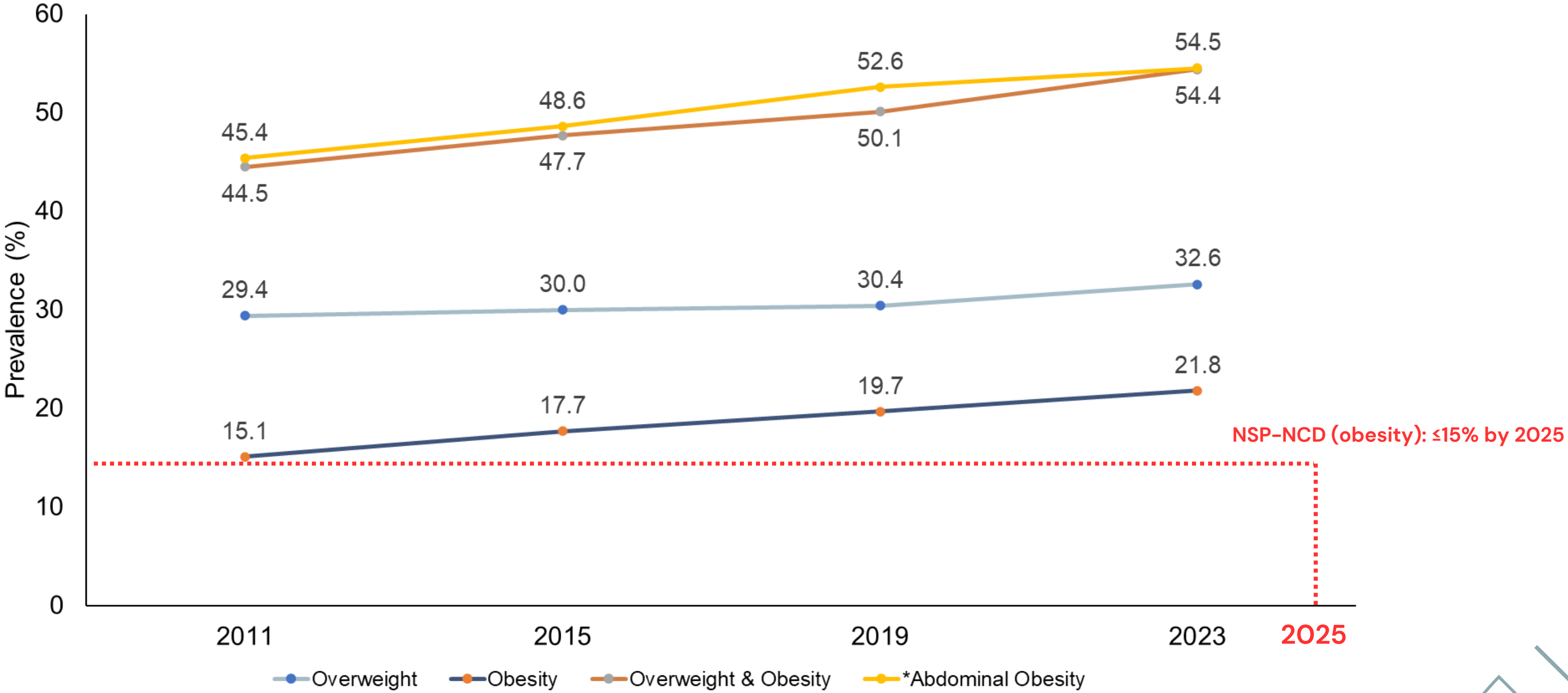


Note: Abdominal Obesity= Men  $\geq 90$ cm, Women  $\geq 80$ cm (The Western Pacific World Health Organization, 2000)

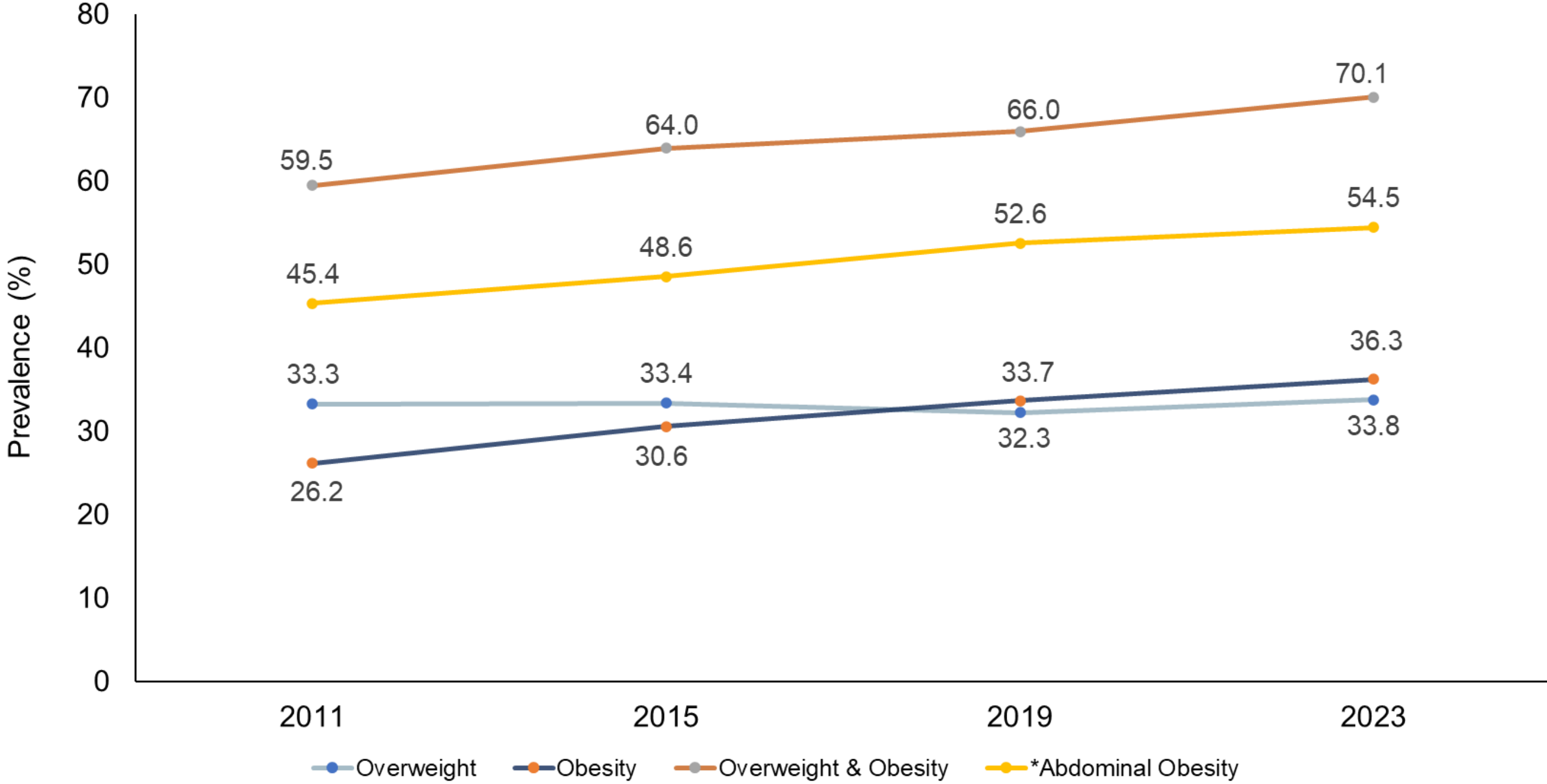
1. Obesity and Overweight [Internet]. World Health Organization; [cited 2024 Mar 27]. Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>  
 2. National Population Health Survey 2022 [Internet]. Epidemiology & Disease Control Division, Ministry of Health, Republic of Singapore; [cited 2024 Mar 27]. Available from: [https://hpb.gov.sg/docs/default-source/default-document-library/nphs-2022-survey-report.pdf?sfvrsn=3e8530aa\\_8](https://hpb.gov.sg/docs/default-source/default-document-library/nphs-2022-survey-report.pdf?sfvrsn=3e8530aa_8)  
 3. Global, regional and time-trend prevalence of central obesity: a systematic review and meta-analysis of 13.2 million subjects. [Internet]. European Journal of Epidemiology; [cited 2024 Mar 27]. Available from: <https://pubmed.ncbi.nlm.nih.gov/32448986/>  
 4. Expanded National Nutrition Survey: 2019 Nutritional Status of Filipino Adolescents [Internet]. Department of Science and Technology Food and Nutrition Research Institute; [cited 2024 Mar 28]. Available from <https://tinyurl.com/bp6tx2nn>  
 5. Cross-sectional STEPwise Approach to Surveillance (STEPS) Population Survey of Noncommunicable Diseases (NCDs) and Risk Factors in Brunei Darussalam 2016 [Internet]. Asia Pac J Public Health; [cited 2024 Mar 27]. Available from: <https://pubmed.ncbi.nlm.nih.gov/29082745/>



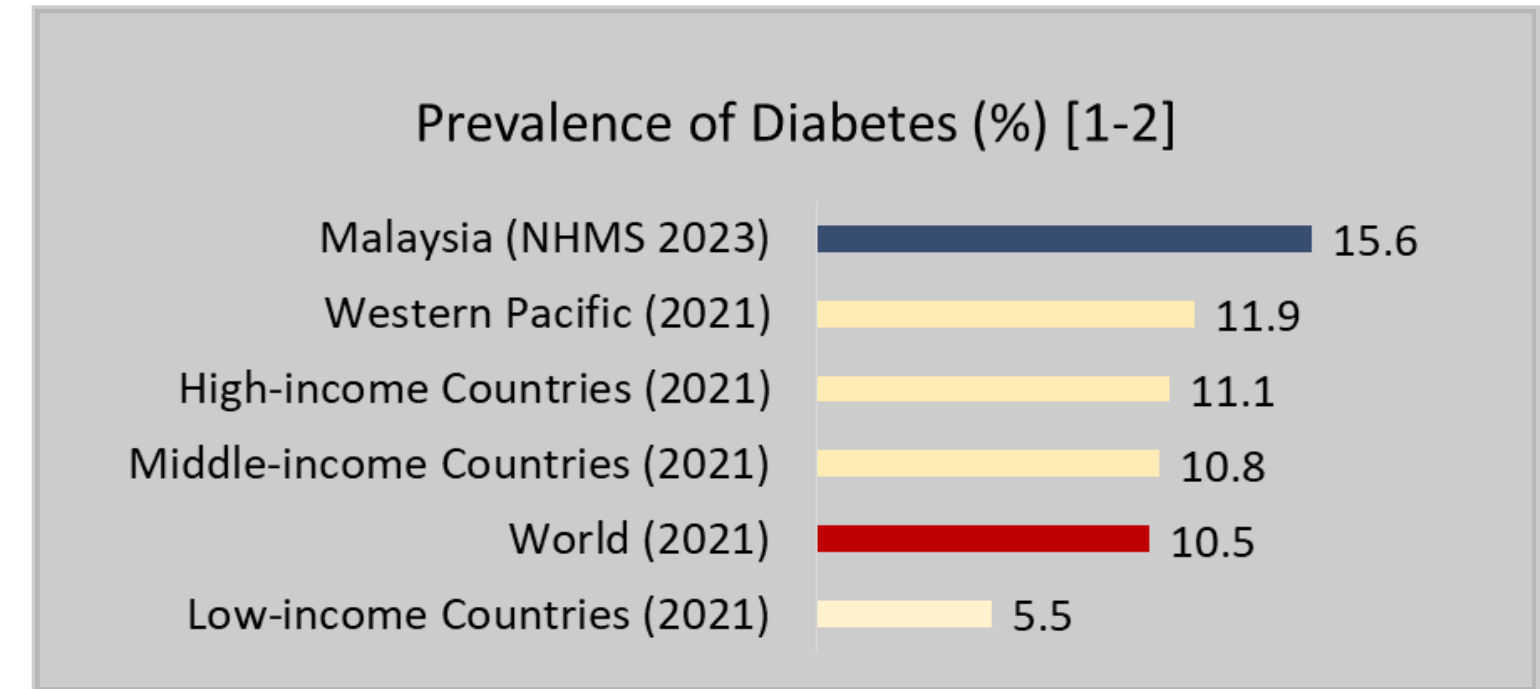
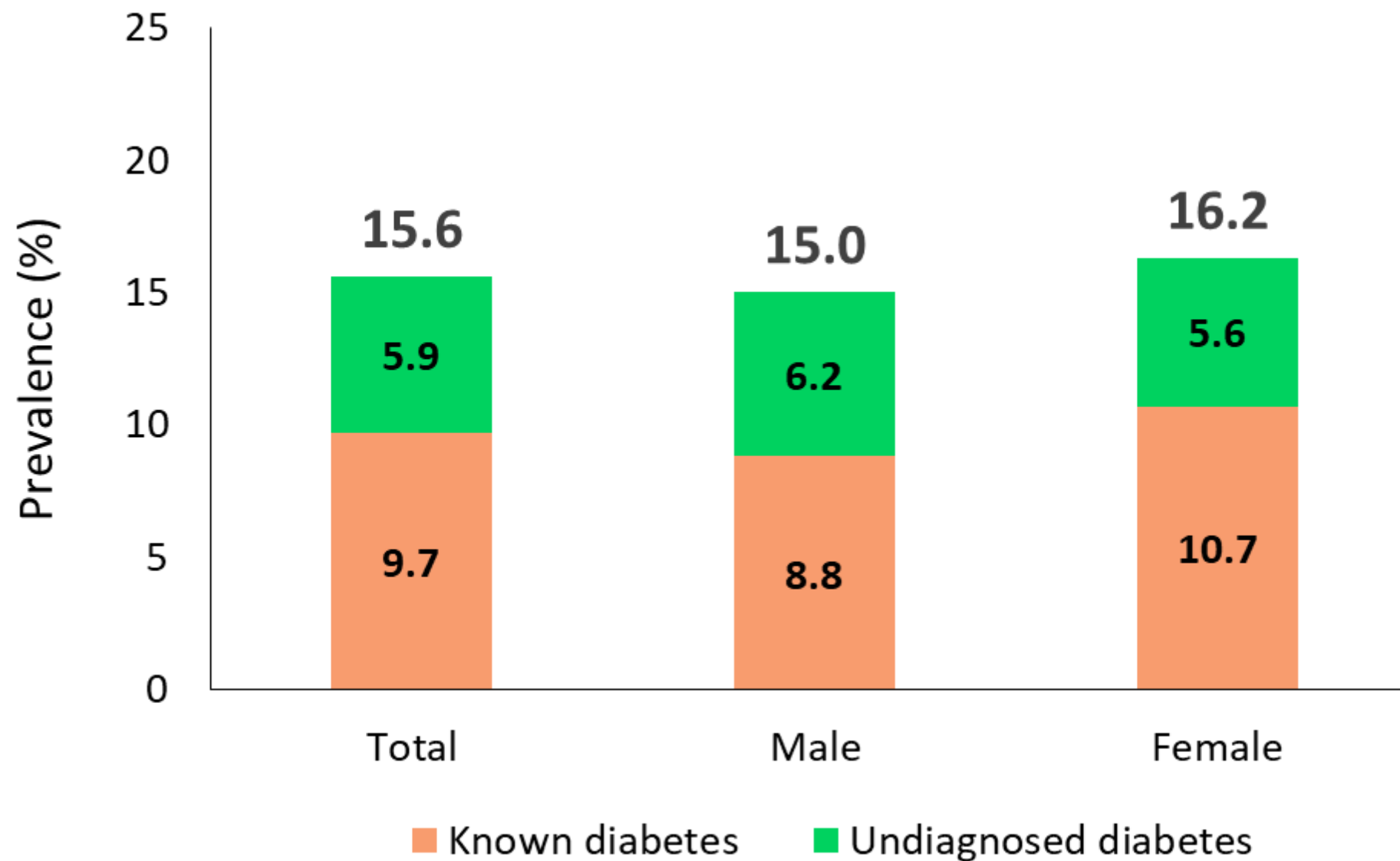
# TREND IN OVERWEIGHT, OBESITY AND ABDOMINAL OBESITY (WHO 1998) (2011-2023)



# TREND IN OVERWEIGHT, OBESITY AND ABDOMINAL OBESITY (CPG 2023) (2011-2023)



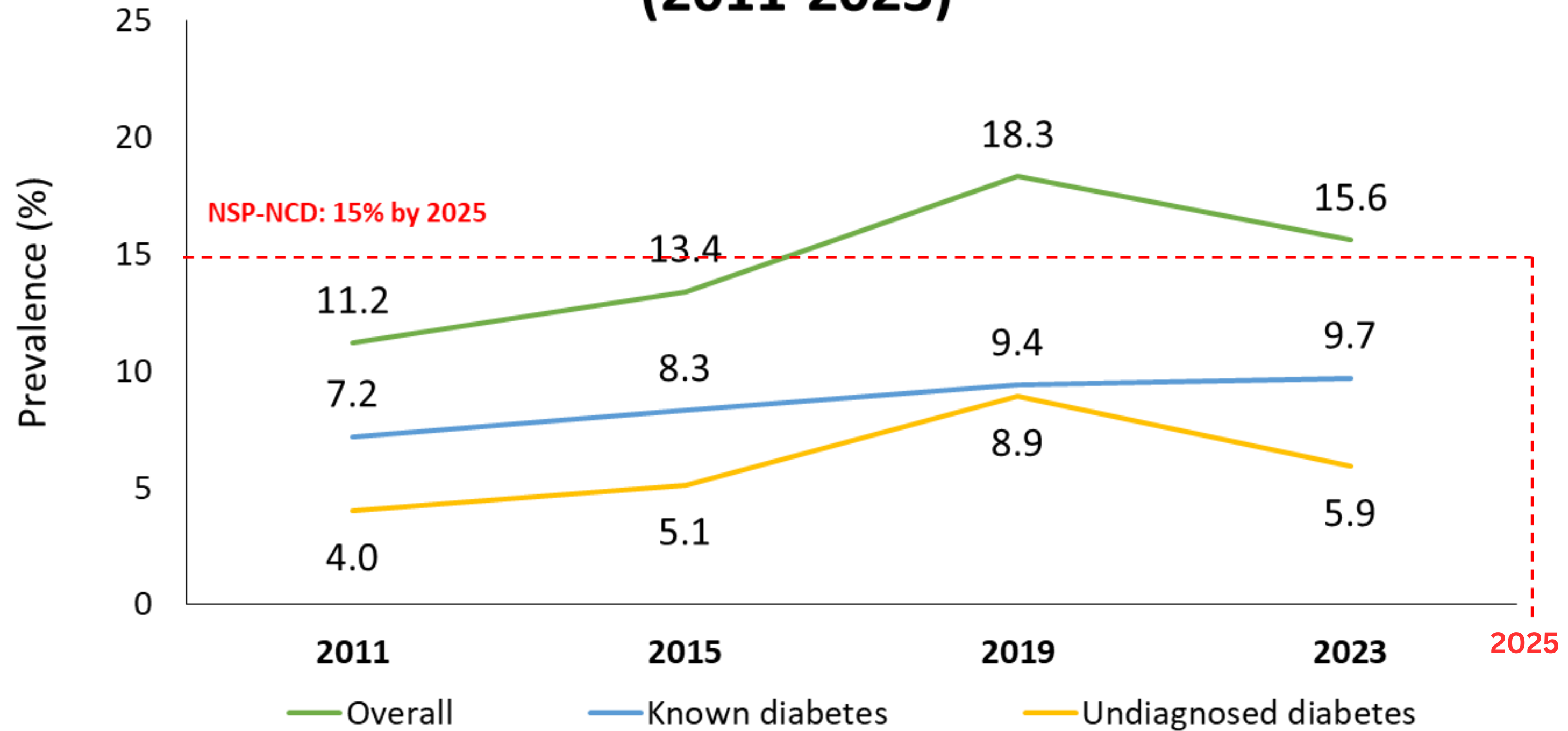
# PREVALENCE OF DIABETES IN MALAYSIA 2023



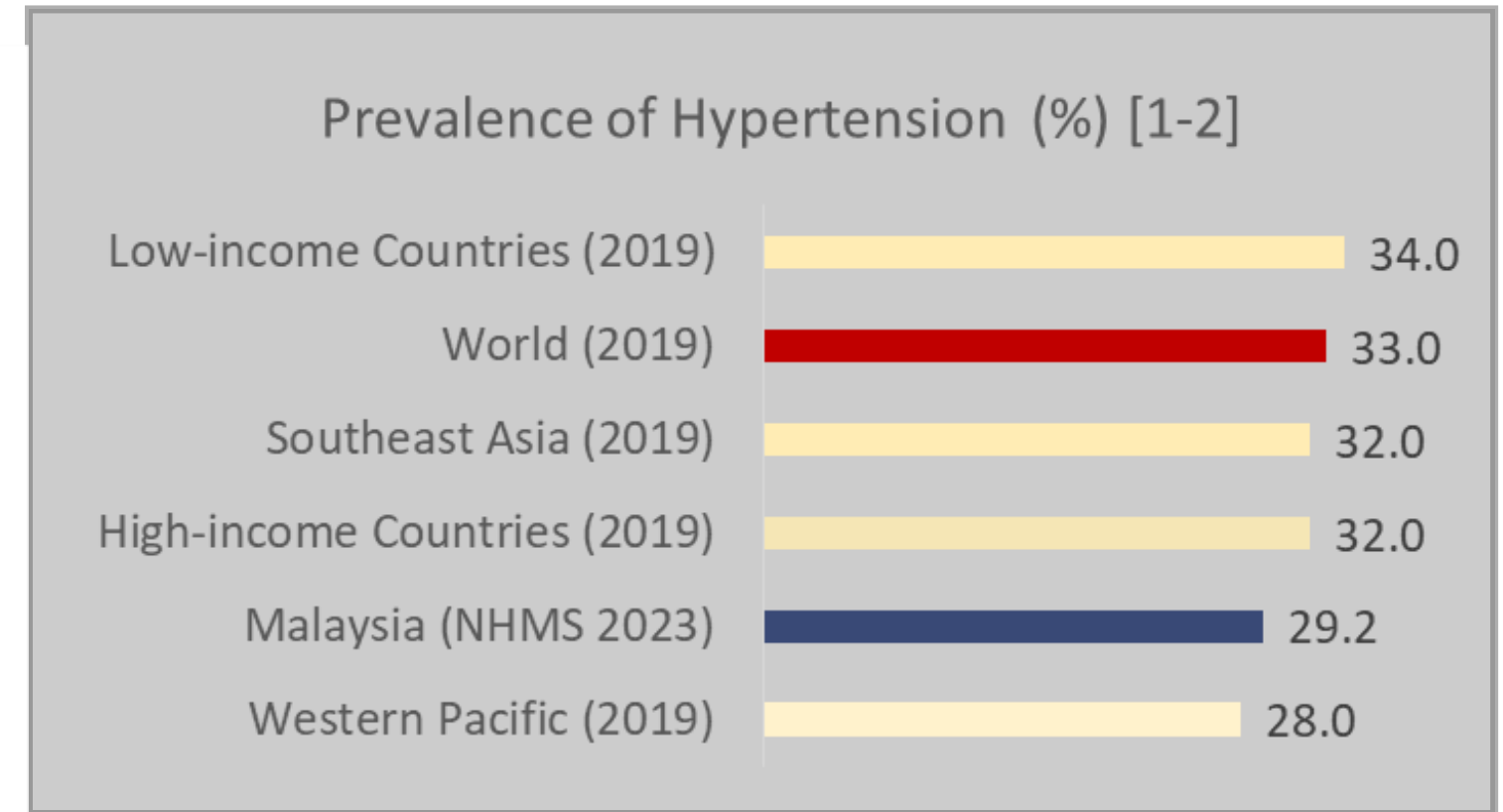
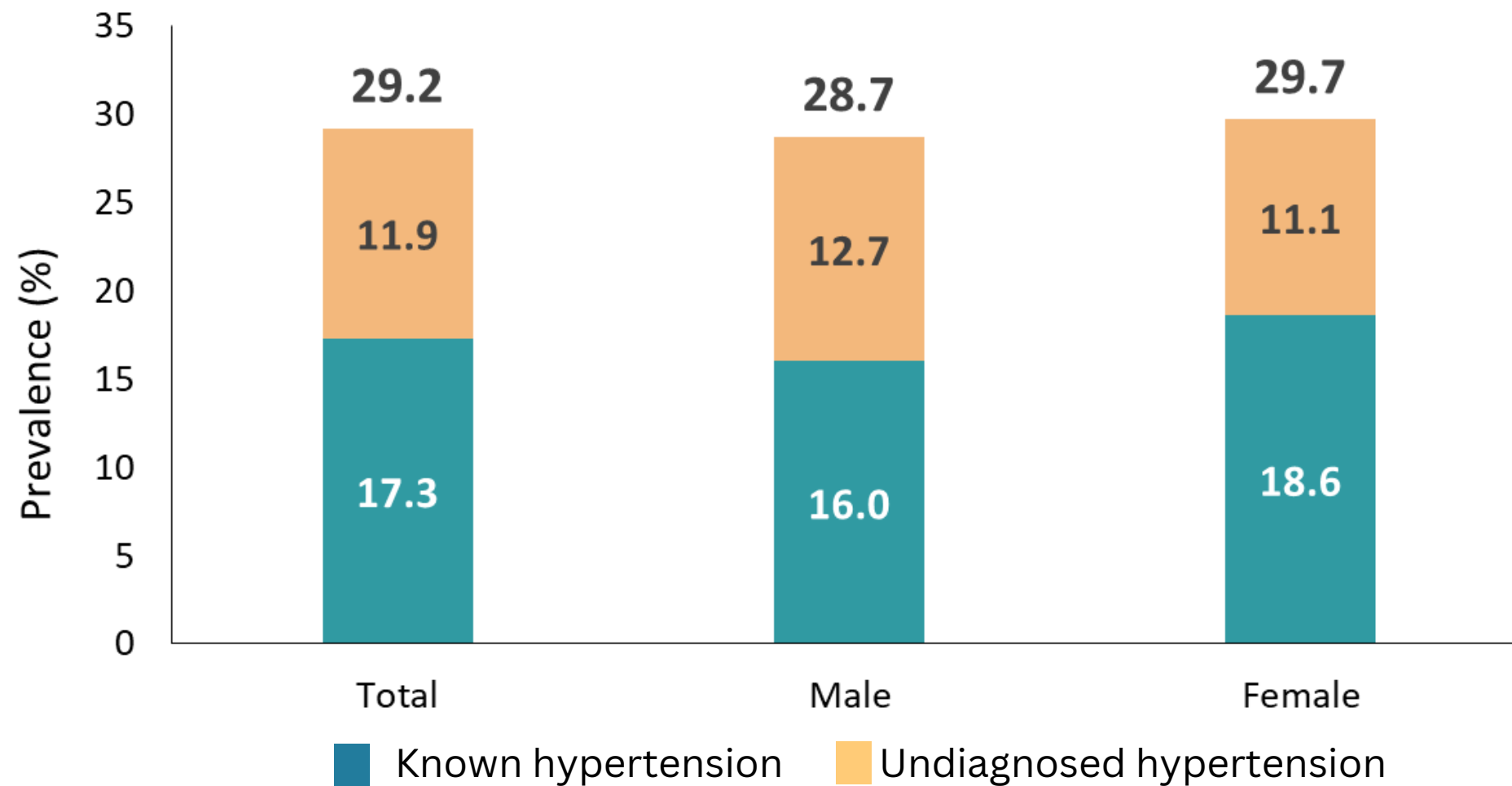
Notes: **Known Diabetes:** Self-reported - being told by a healthcare provider to have diabetes.  
**Raised Blood Glucose Among Those Not Known to Have Diabetes (Undiagnosed Diabetes):** (Fasting capillary blood glucose of  $\geq 7.0$  mmol/L OR random capillary blood glucose of  $\geq 11.1$  mmol/L). [1]

1. HEARTS D: diagnosis and management of type 2 diabetes [Internet]. World Health Organization; [cited 2024 Mar 27]. Available from: <https://www.who.int/publications/i/item/who-ucn-ncd-20.1>  
 2. IDF Diabetes Atlas: Global, regional and country-level diabetes prevalence estimates for 2021 and projections for 2045 [Internet]. Diabetes research and clinical practice; [cited 2024 Mar 27]. Available from: <https://pubmed.ncbi.nlm.nih.gov/34879977/>  
 3. Tee E, Yap RW. Type 2 diabetes mellitus in Malaysia: current trends and risk factors. European journal of clinical nutrition. 2017 Jul;71(7):844-9.

## Trend in prevalence of diabetes (2011-2023)



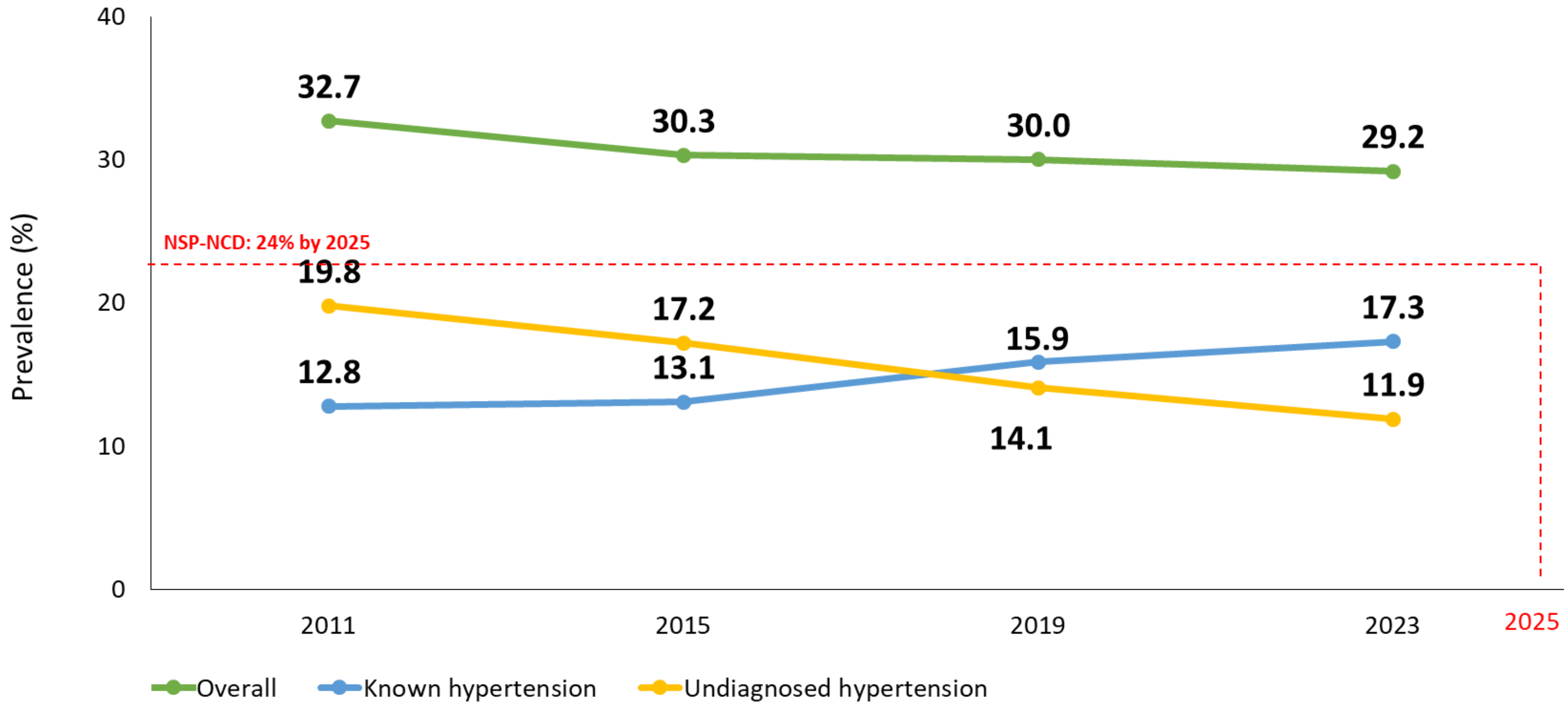
# PREVALENCE OF HYPERTENSION IN MALAYSIA 2023



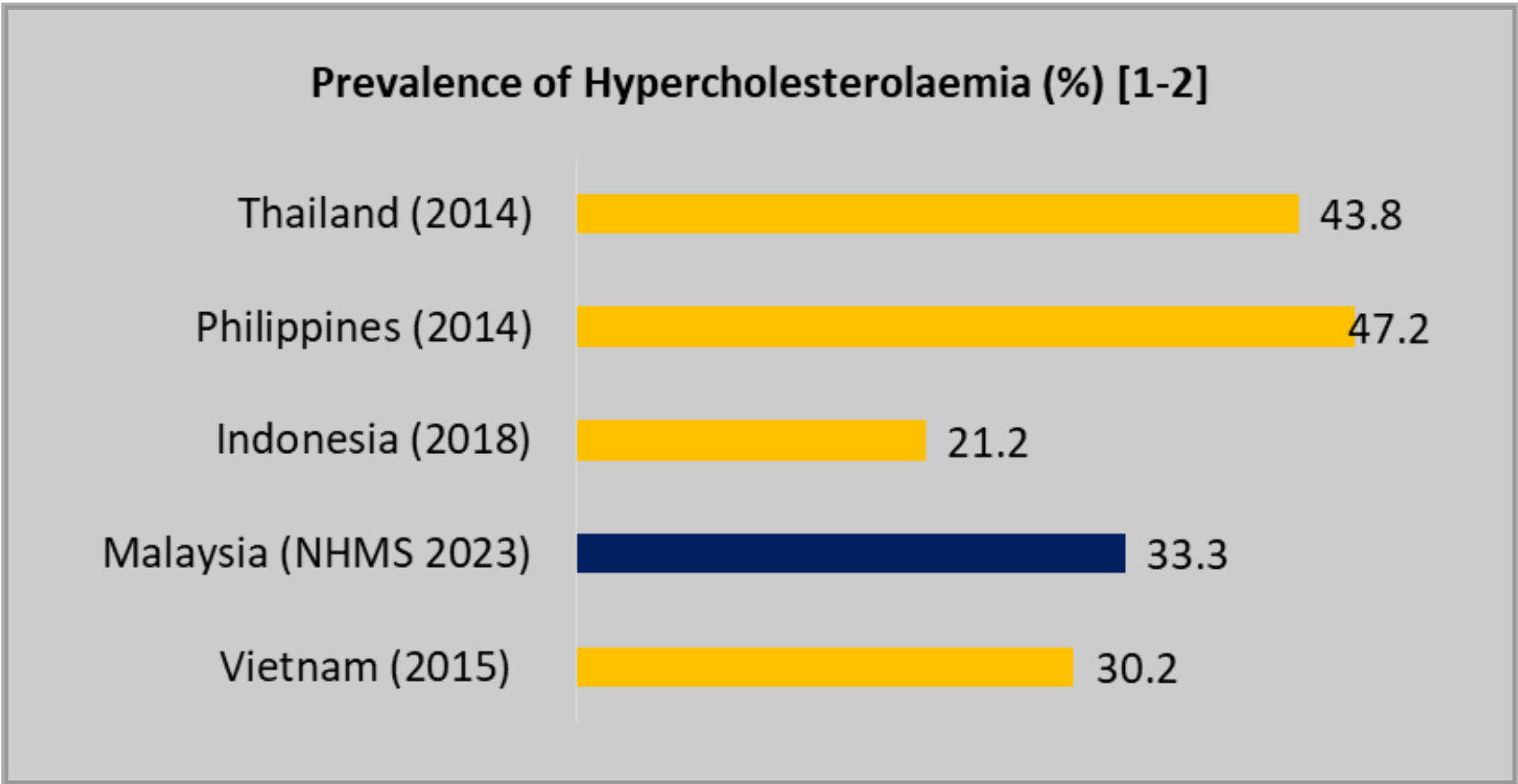
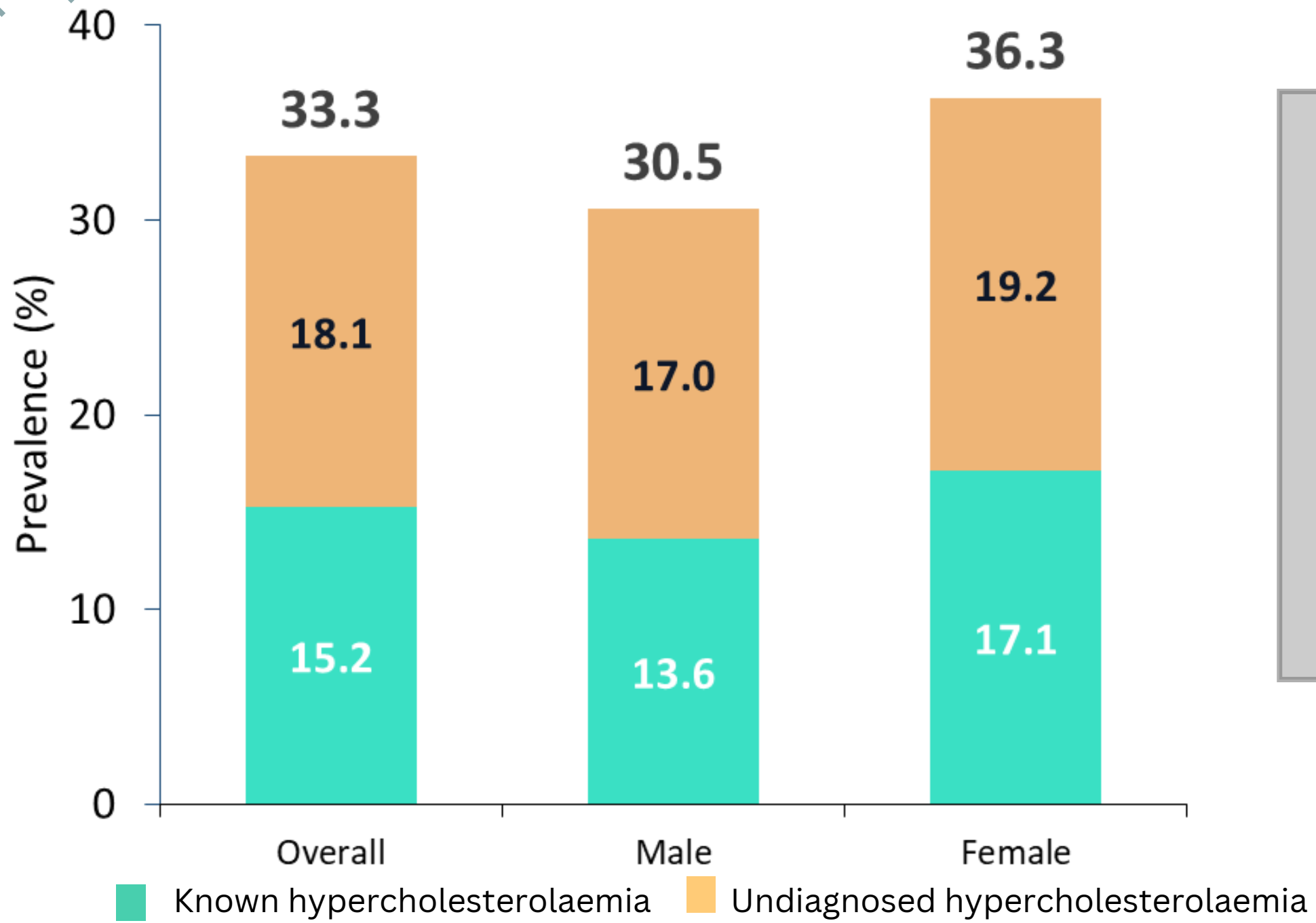
Notes: **Known Hypertension:** Being told by a healthcare provider to have hypertension.  
**Raised Blood Pressure Among Those Not Known To Have Hypertension (Undiagnosed Hypertension):**  
 (Systolic Blood Pressure  $\geq 140$ mmHg AND/OR Diastolic Blood Pressure Of  $\geq 90$ mmHg ).

1. Hypertension [Internet]. World Health Organization; [cited 2024 Mar 27]. Available from: <https://www.who.int/news-room/fact-sheets/detail/hypertension>  
 2. Global report on hypertension: the race against a silent killer [Internet]. World Health Organization; [cited 2024 Mar 27]. Available from: <https://www.who.int/publications/i/item/9789240081062>

## Trend in prevalence of hypertension (2011-2023)



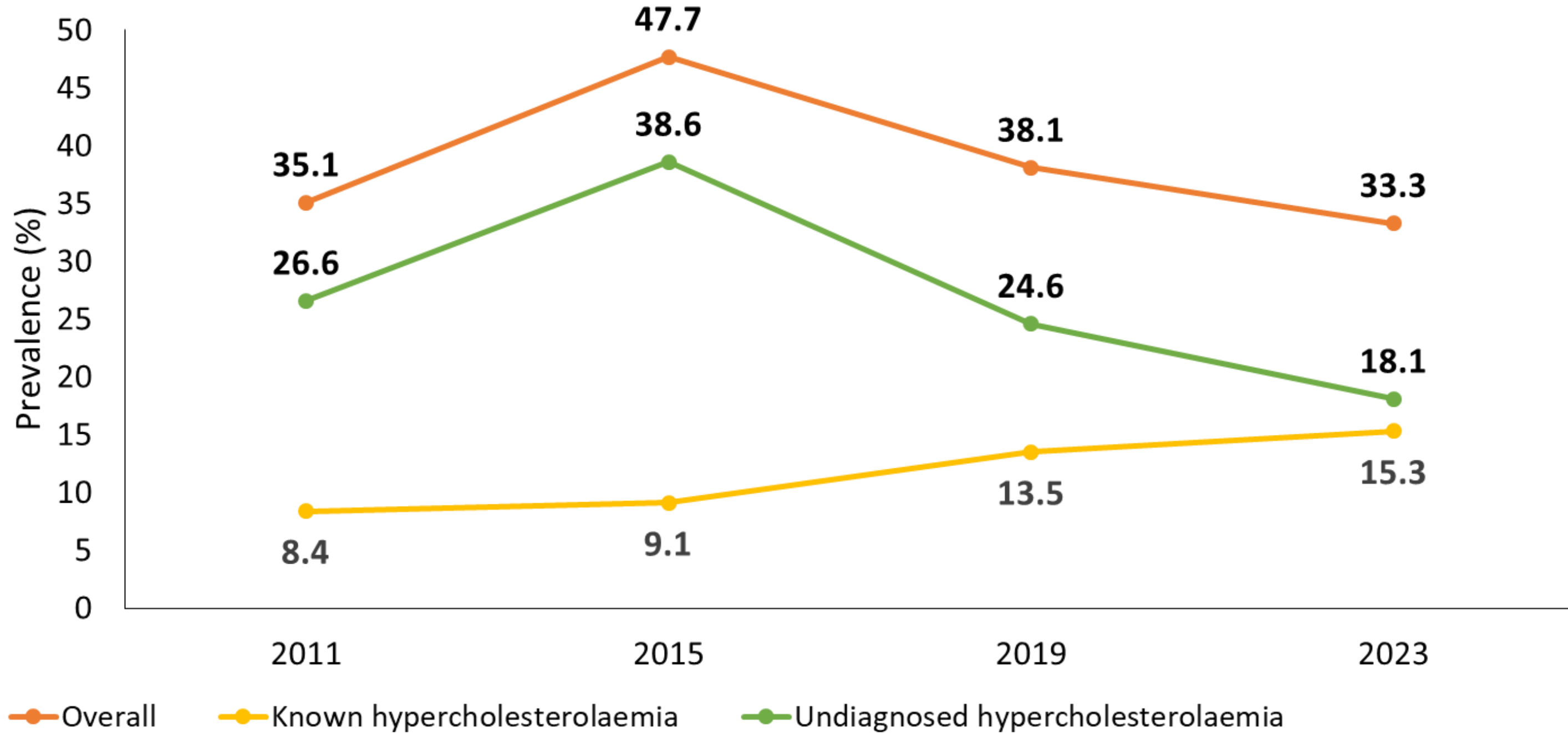
# PREVALENCE OF HYPERCHOLESTEROLAEMIA IN MALAYSIA 2023



1. Arsyad, D.S., Westerink, J., Cramer, M.J. et al. Modifiable risk factors in adults with and without prior cardiovascular disease: findings from the Indonesian National Basic Health Research. *BMC Public Health* 22, 660 (2022). <https://doi.org/10.1186/s12889-022-13104-0>

2. Lee, ZV., Llanes, E.J., Sukmawan, R. et al. Prevalence of plasma lipid disorders with an emphasis on LDL cholesterol in selected countries in the Asia-Pacific region. *Lipids Health Dis* 20, 33 (2021). <https://doi.org/10.1186/s12944-021-01450-8>

## Trend in prevalence of hypercholesterolaemia (2011-2023)



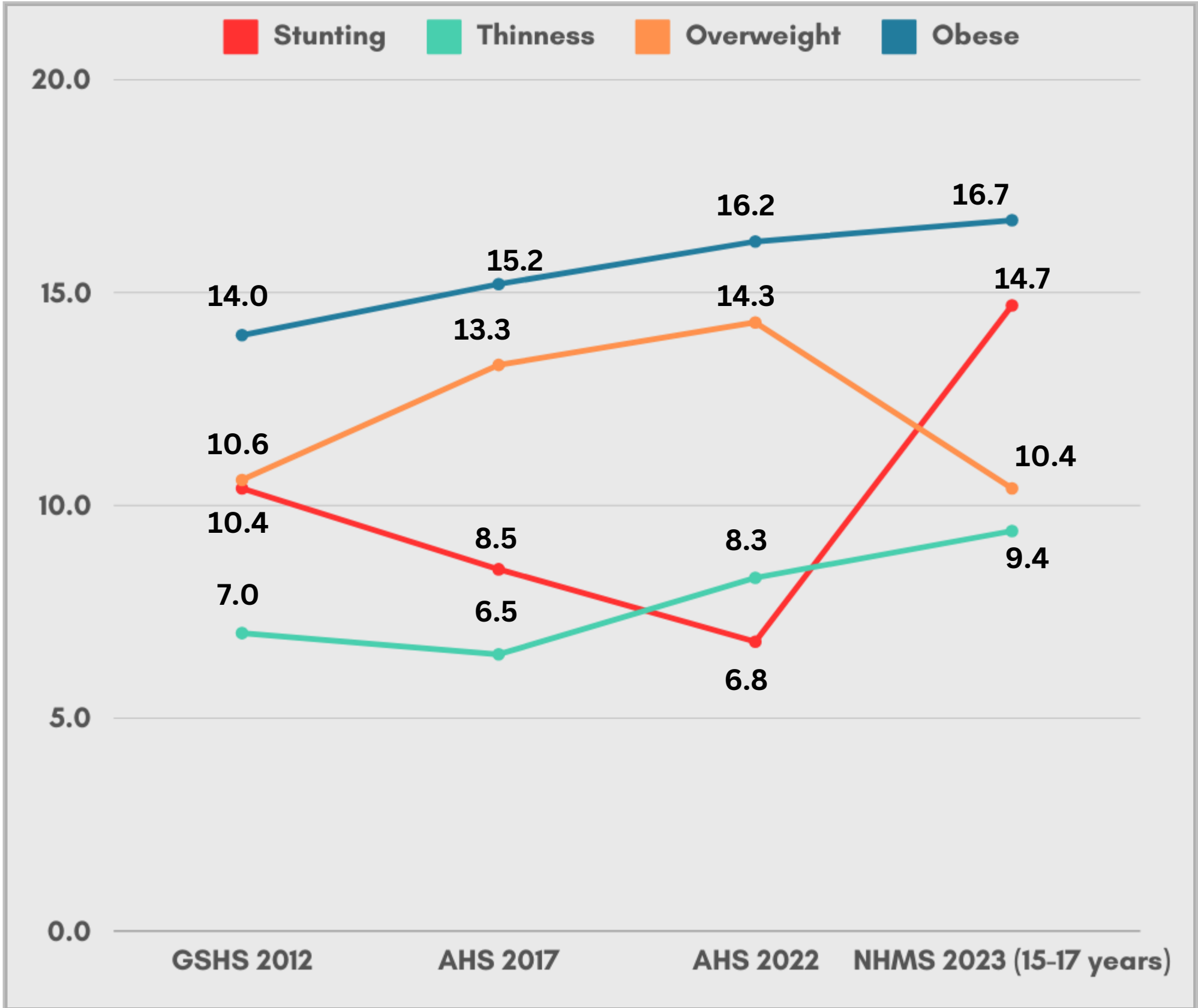




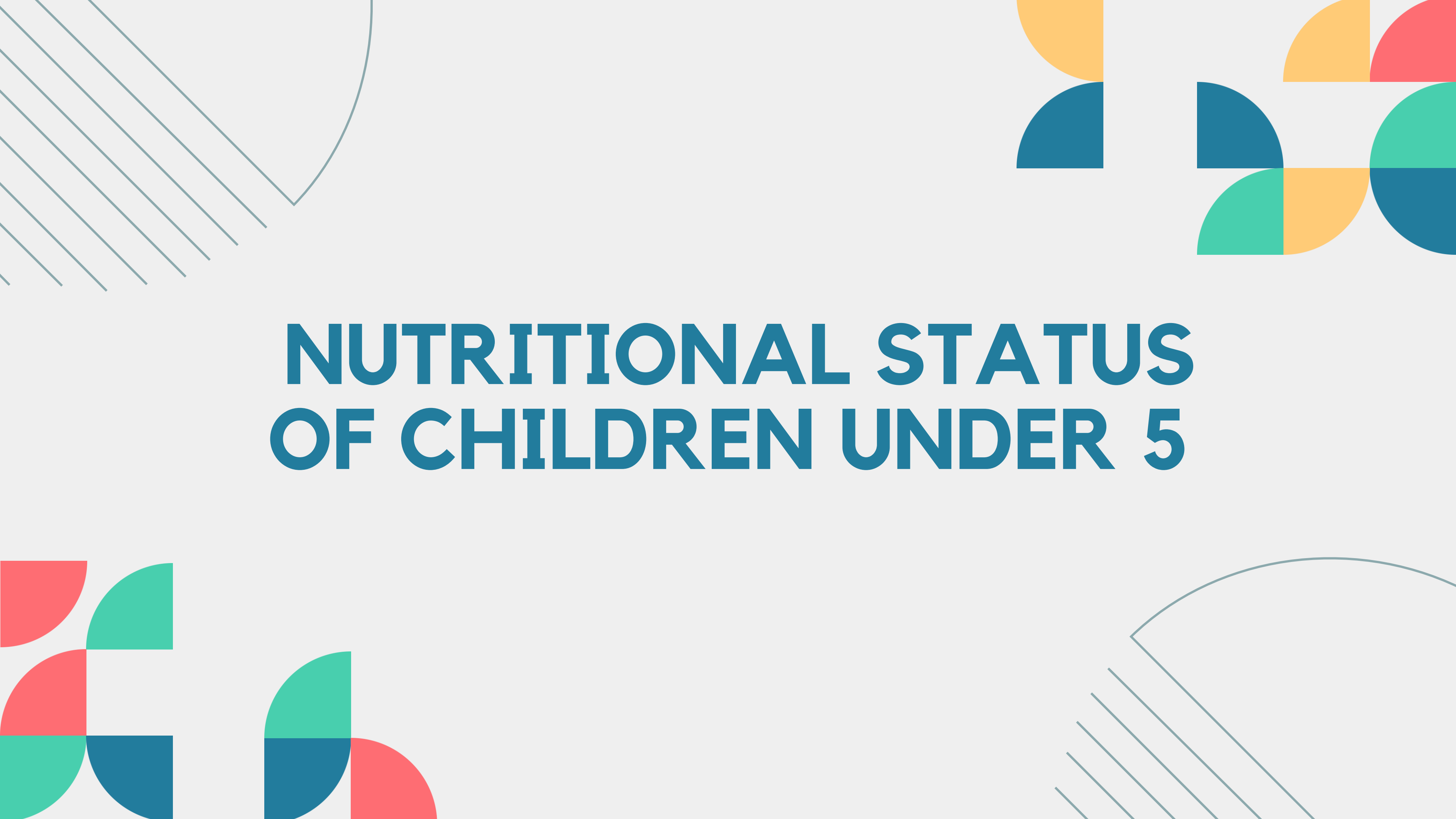
# NUTRITIONAL STATUS OF ADOLESCENT

# ADOLESCENT HEALTH SURVEY

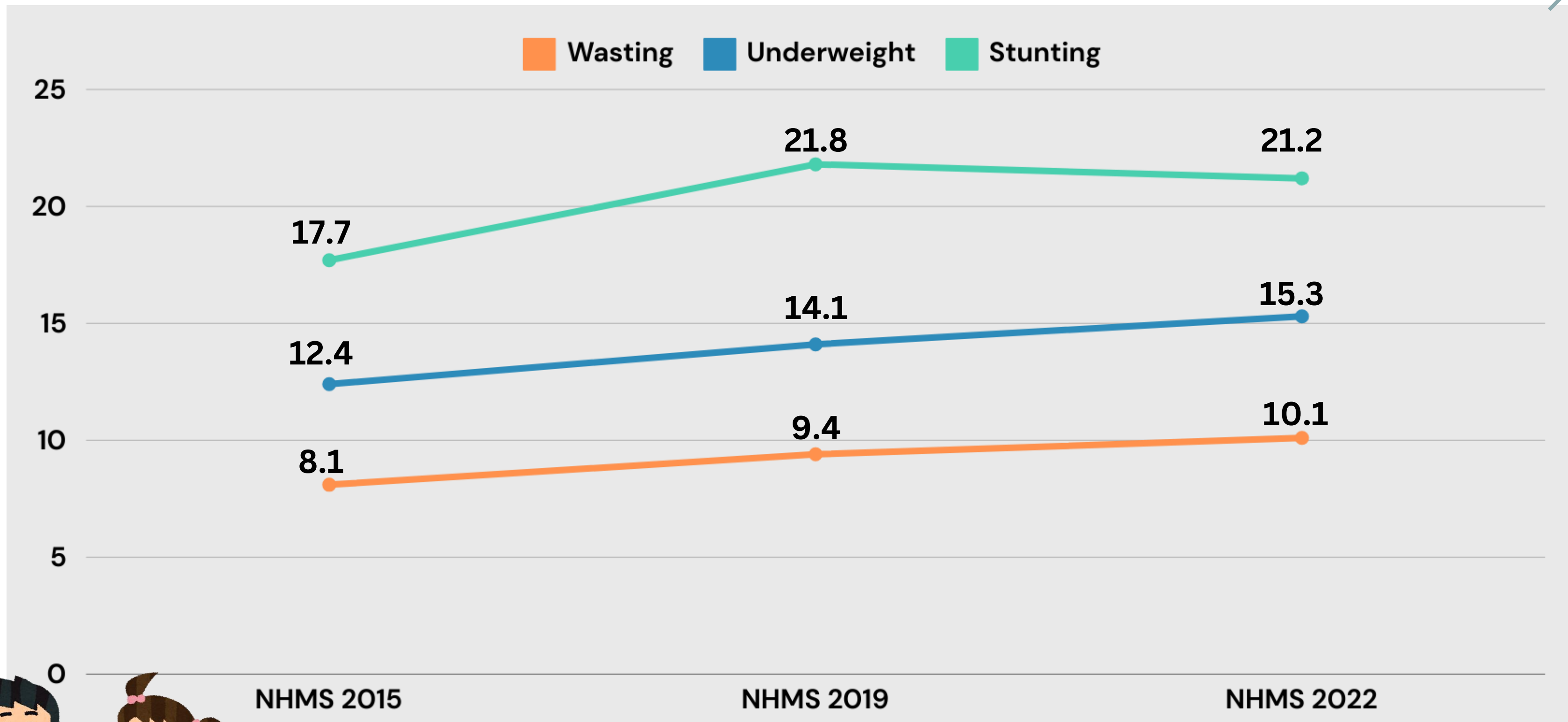
- Adolescent Health Survey (AHS) used secondary schools students as a proxy of health status among adolescents in Malaysia.
- NHMS 2023: Only adolescent aged 15–17 years were included with n=438



Thinness : BAZ > 2SD below the WHO Child Growth Standards median(<-2SD)  
 Overweight : BAZ > 1 SD to two standard deviations above the WHO Child Growth Standards median (>+1SD to ≤+2SD)  
 Obesity : BAZ > 2 SD above the WHO Child Growth Standards median(>+2SD)



# NUTRITIONAL STATUS OF CHILDREN UNDER 5



Nutritional status for children below 5 years old assessed by weight-for-age (WAZ), height for age (HAZ) and weight-for-height (WHZ) based on the WHO growth standards (WHO 2006)

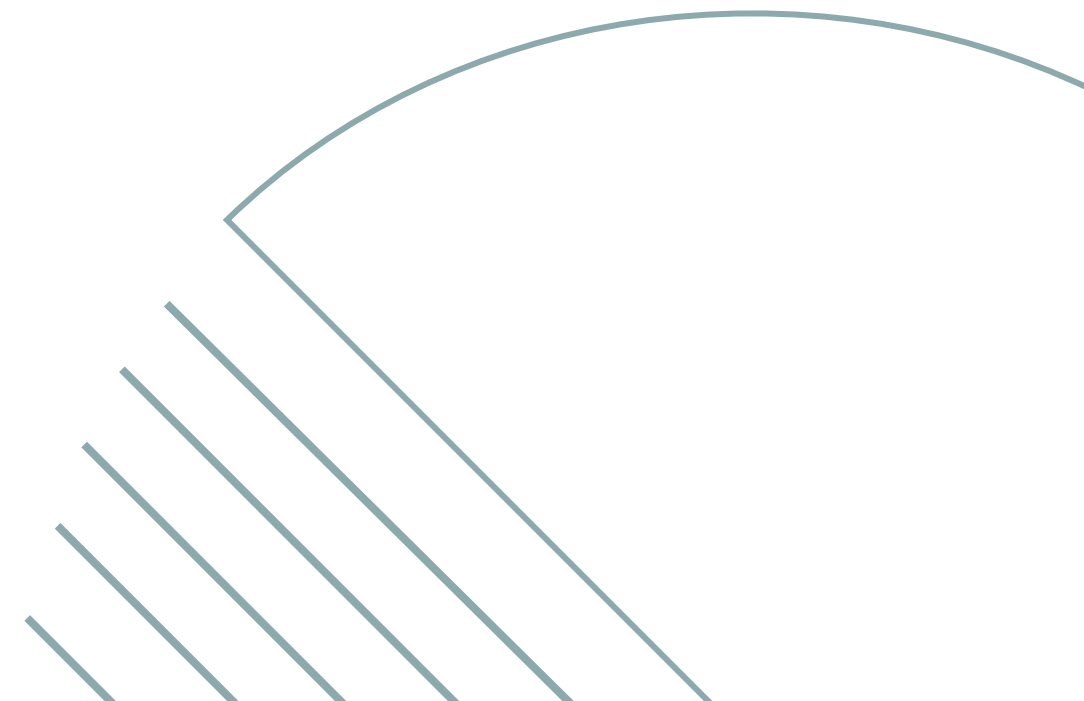
- Underweight : (WAZ < -2SD)
- Stunting : (HAZ < -2SD)
- Wasting : (WAZ < -2SD)



# CONCLUSION

# CONCLUSION

- An upward trend is observed in all forms of malnutrition in Malaysia across all age groups,
- Notable increases in the rates of NCDs, overweight, obesity, stunting, thinness, and wasting lead to high burden of double malnutrition in the country.
- The shifting from underweight to obesity can occur rapidly, and both conditions share common drivers such as early life nutrition, diet quality, food environments, and socioeconomic factors.
- Simultaneous double-duty actions are required to address both undernutrition and overnutrition concerns related to overweight, obesity, and diet-related NCDs.





KEMENTERIAN KESIHATAN MALAYSIA  
INSTITUT KESIHATAN UMUM

# TINJAUAN KEBANGSAAN KESIHATAN & MORBIDITI (NHMS) 2024 : PEMAKANAN

## *NATIONAL HEALTH & MORBIDITY SURVEY (NHMS) 2024 : NUTRITION*

Tempoh pengumpulan data

# Julai - September 2024

Melibatkan rumah yang terpilih secara rawak di Malaysia

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# THANK YOU

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