MyBreakfast Study of School Children:

Findings, Implications & Solutions

SYMPOSIUM

Presentation 3 :

Nutritional status of primary and secondary school children

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3rd December, 2015

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Introduction

- Childhood obesity has become a global epidemic, the worldwide prevalence of overweight and obesity among children has been found to increase by 47.1% between 1980 to 2013 (Ng et al., 2014).

Nationwide survey conducted between 2010 and 2011 (Poh et al., 2013)	• 9.8% and 11.8% of Malaysian children aged 6 months to 12 years old were overweight and obese respectively
Malaysia School-Based Nutrition Survey (MSNS) in 2012 (Institute for Public Health, 2013)	• The prevalence of overweight and obesity of children aged 10 to 17 years, were 14.6% and 12.3% respectively

- The latter results indicate that there is a high prevalence of over nutrition as 26.9% school children were either overweight or obese.

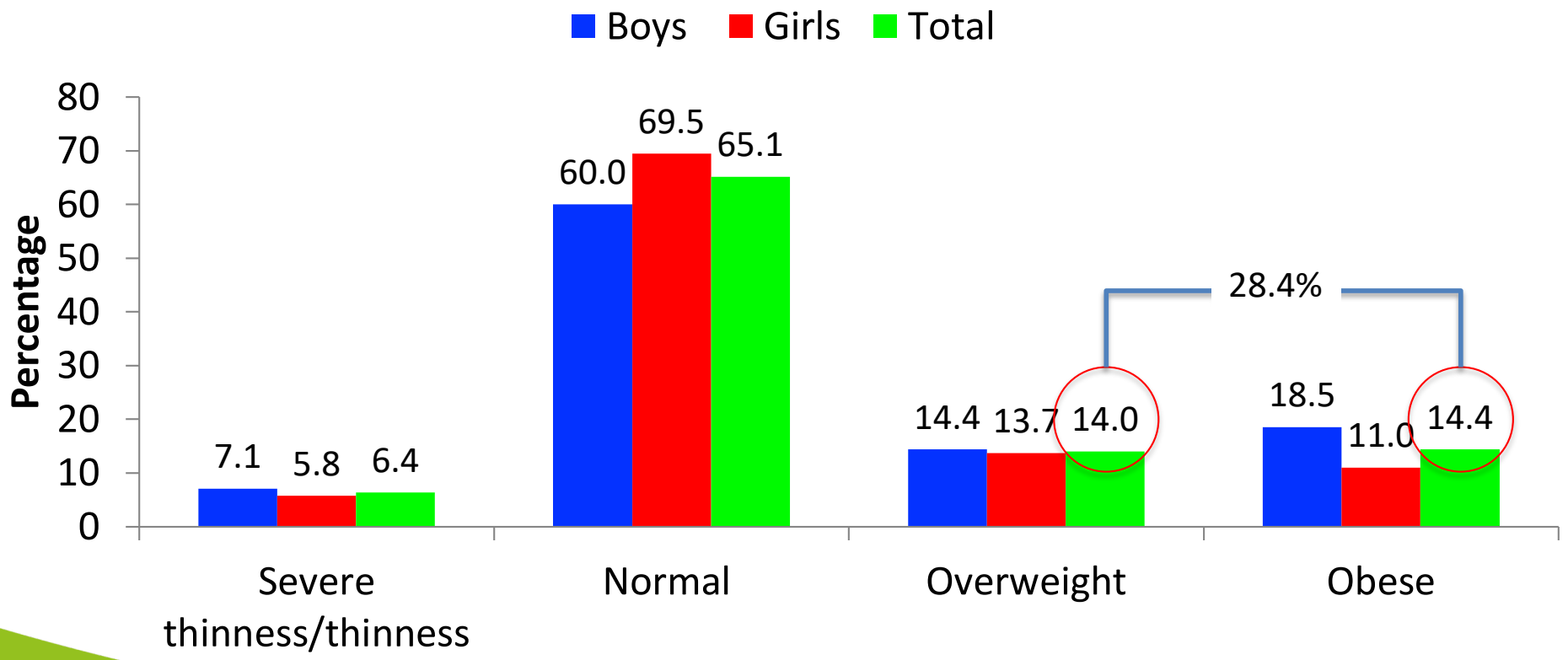
Objectives

- To determine bodyweight status among primary (*n*=5567) and secondary (*n*=3094) school children aged 6 to 17 years in Malaysia
- To determine the distribution of overweight and obesity by socio-demographic background, location, sex, age group, ethnic groups
- To determine the prevalence of stunting among the children

Prevalence of overweight and obesity among school children

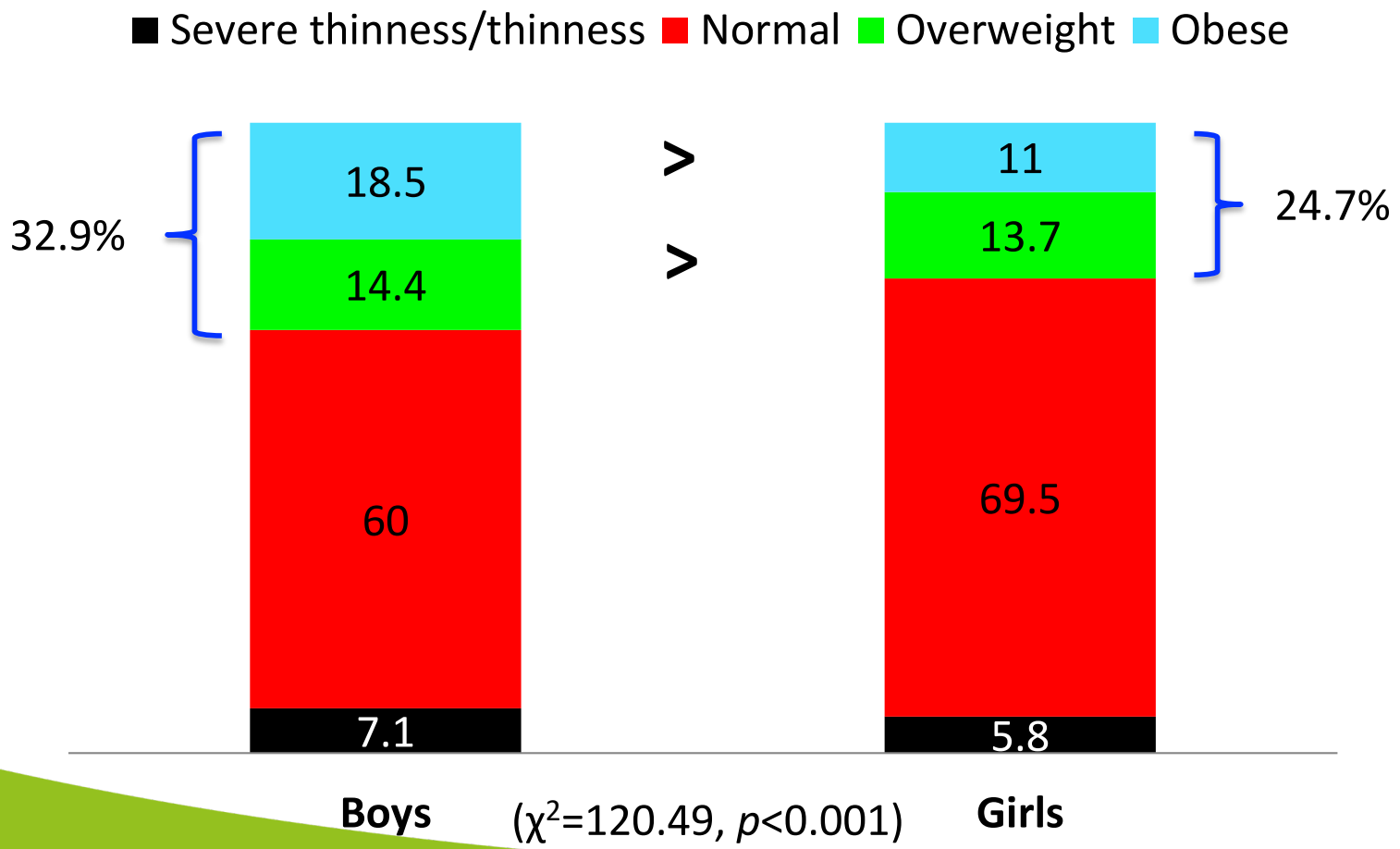
1 in 4 school children (28.4%) was either overweight or obese

Distribution of BMI status (primary & secondary school)
(Boys, n=4017; Girls, n=4644; Total, n=8661)

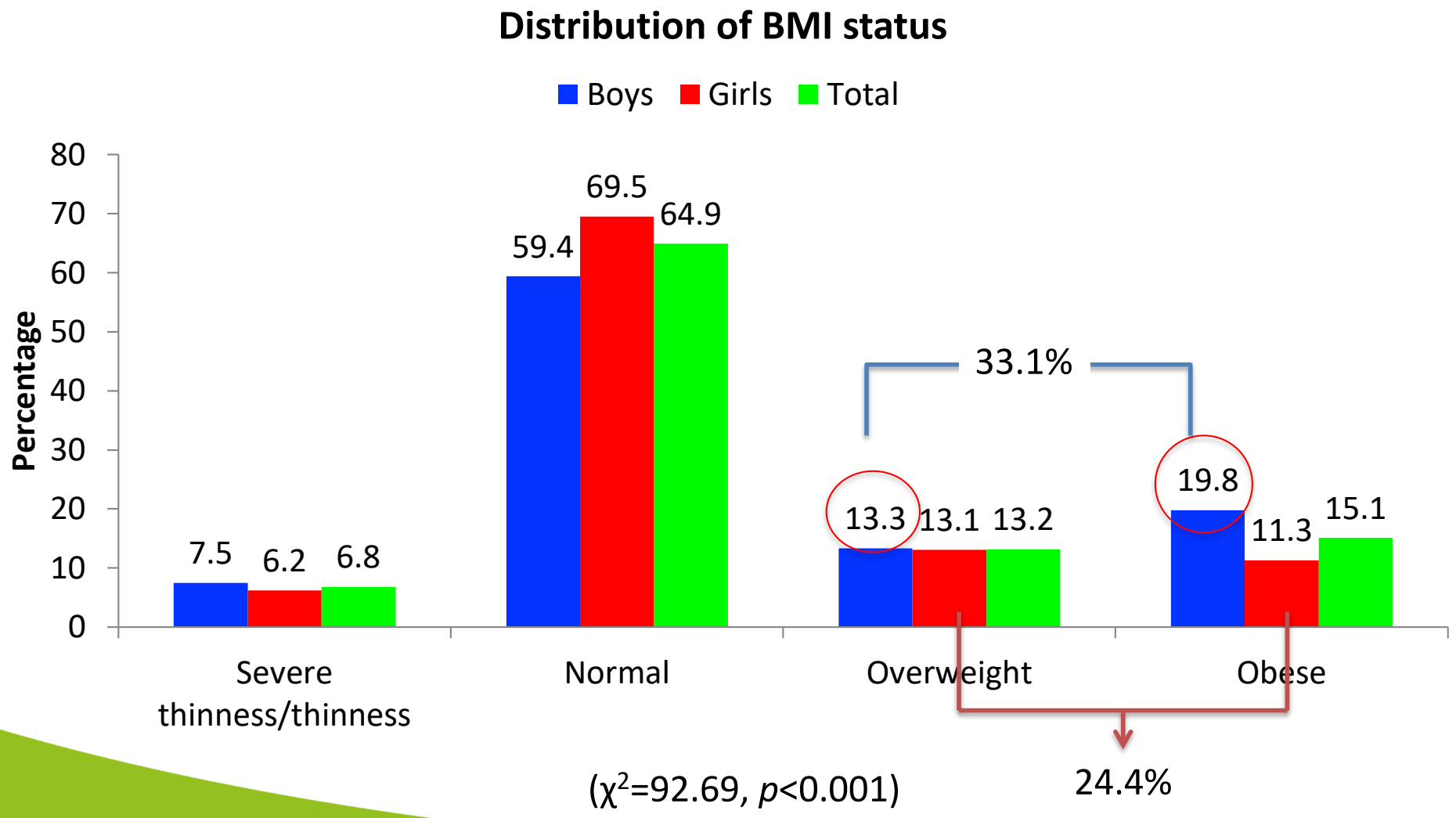


Primary & secondary school children: More boys (32.9%) were overweight and obese than girls (24.7%)

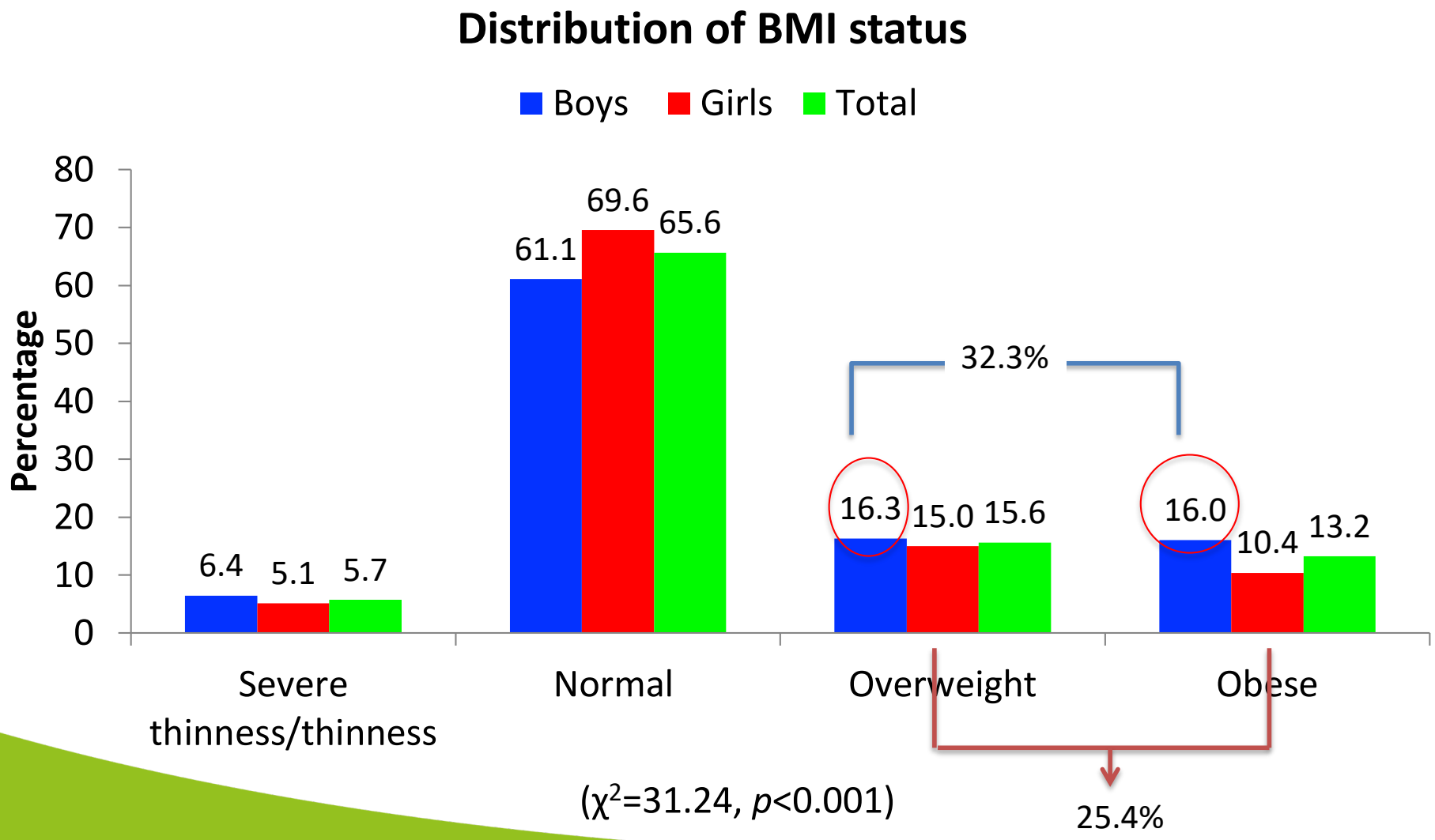
Distribution of BMI Status between boys (*n*=4017) and girls (*n*=4644)



Primary Schools: More boys were overweight or obese (33.1%) than girls (24.4%)

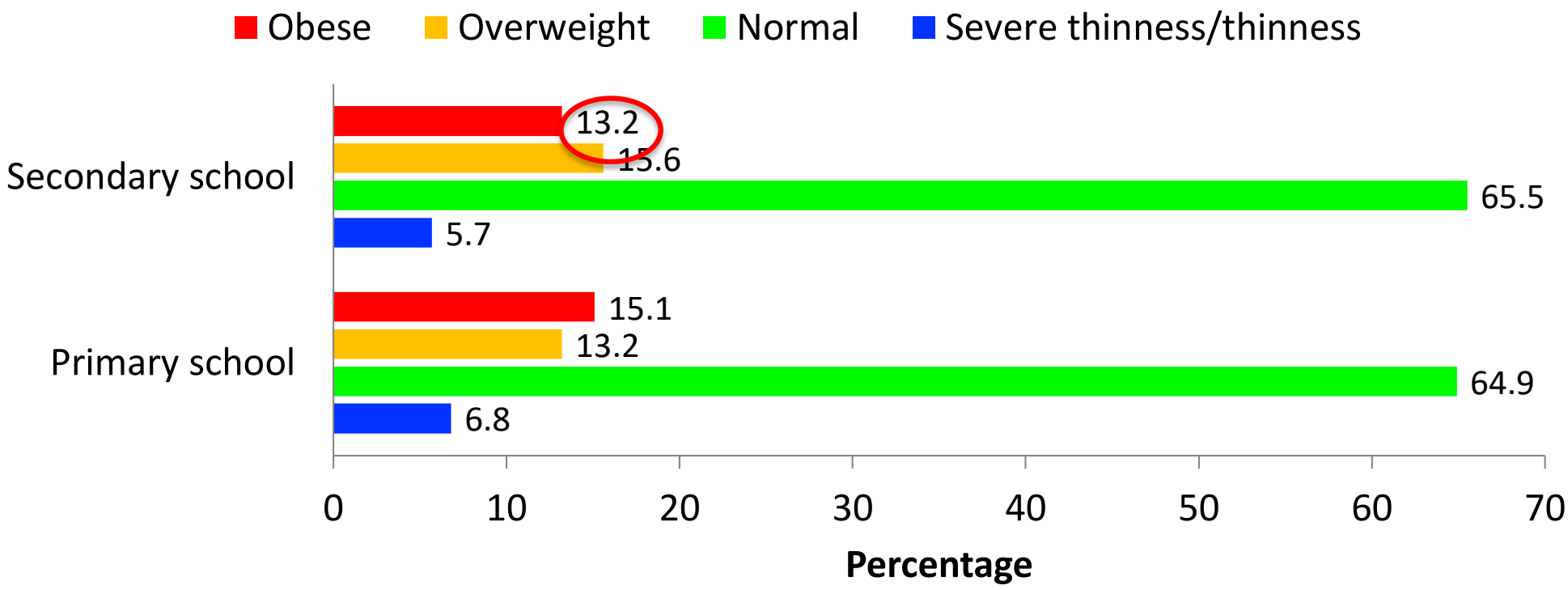


Secondary Schools: More boys were overweight or obese (32.3%) than girls (25.4%)



More secondary school children were overweight (15.6% vs 13.2%)
but
more primary school children were obese (15.1% vs 13.2%)

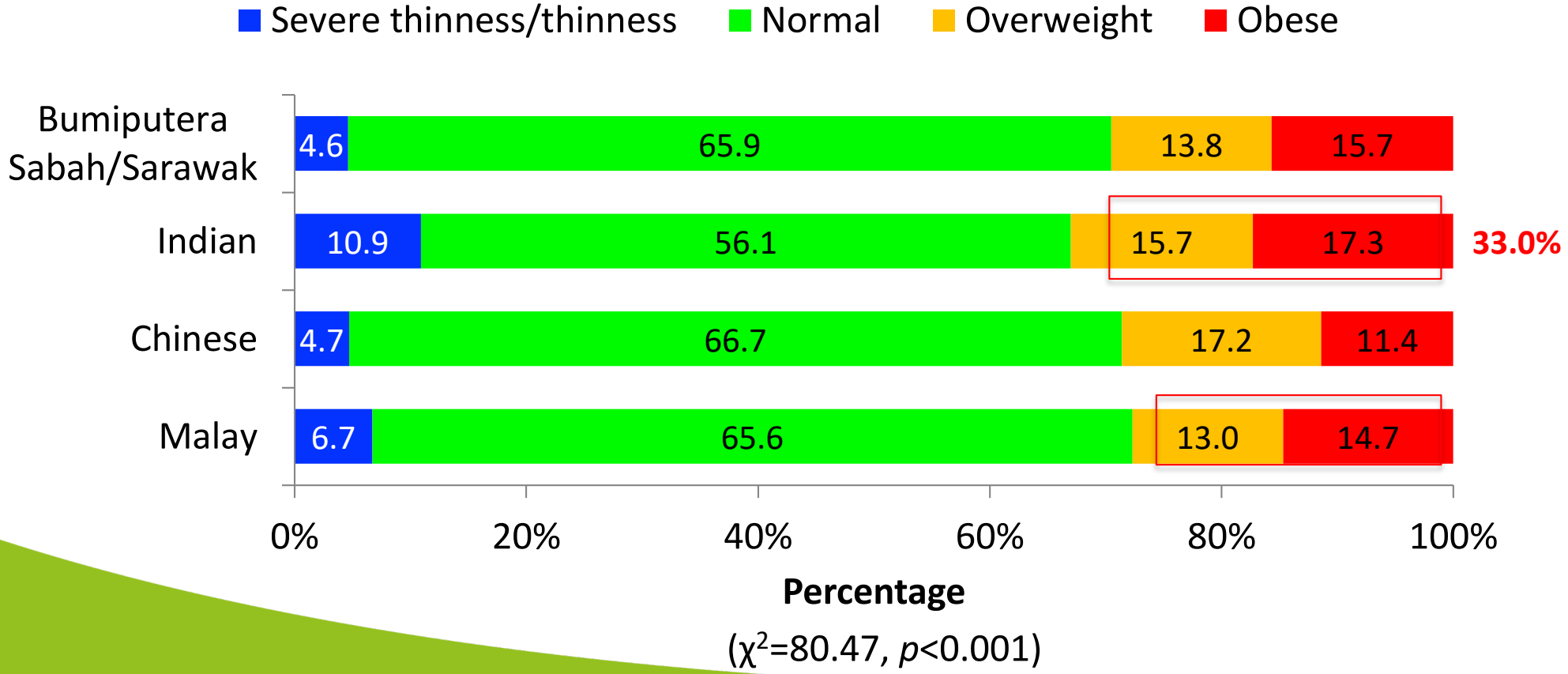
BMI Status Distribution between primary (*n*=5567) and secondary (*n*=3094) school Children



The prevalence of overweight/obesity was similar among primary (28.8%) and secondary (28.3%) school children

Primary and secondary school: Prevalence of overweight and obesity was highest among Indian (33.0%) and lowest among Malay (27.7%) children

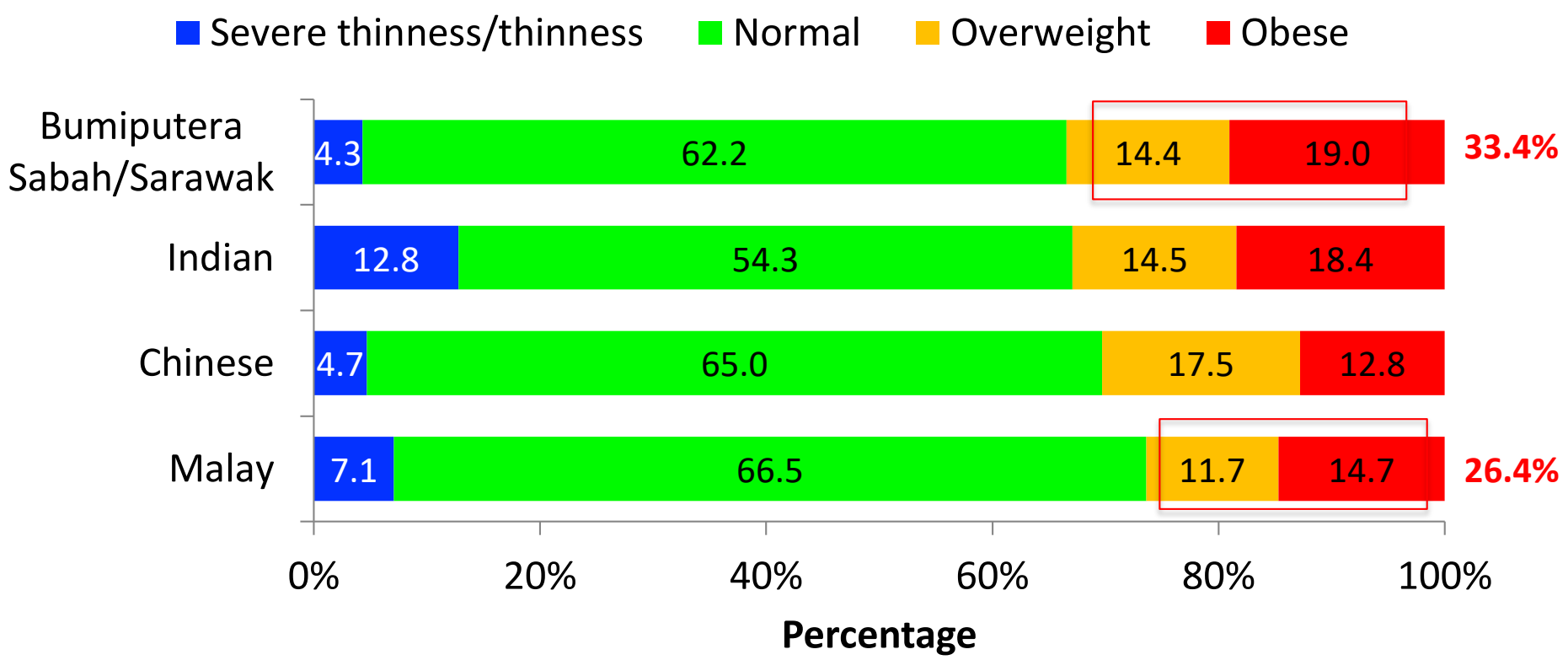
Distribution of the BMI status by ethnic groups
(Malay, n=5297; Chinese, n=1608; Indian, n=709, Bumiputera, n=986)



(χ^2=80.47, p<0.001)

Primary School children:
Prevalence of overweight and obesity was highest among Bumiputera Sabah/Sarawak (33.4%) and lowest among Malays (26.4%)

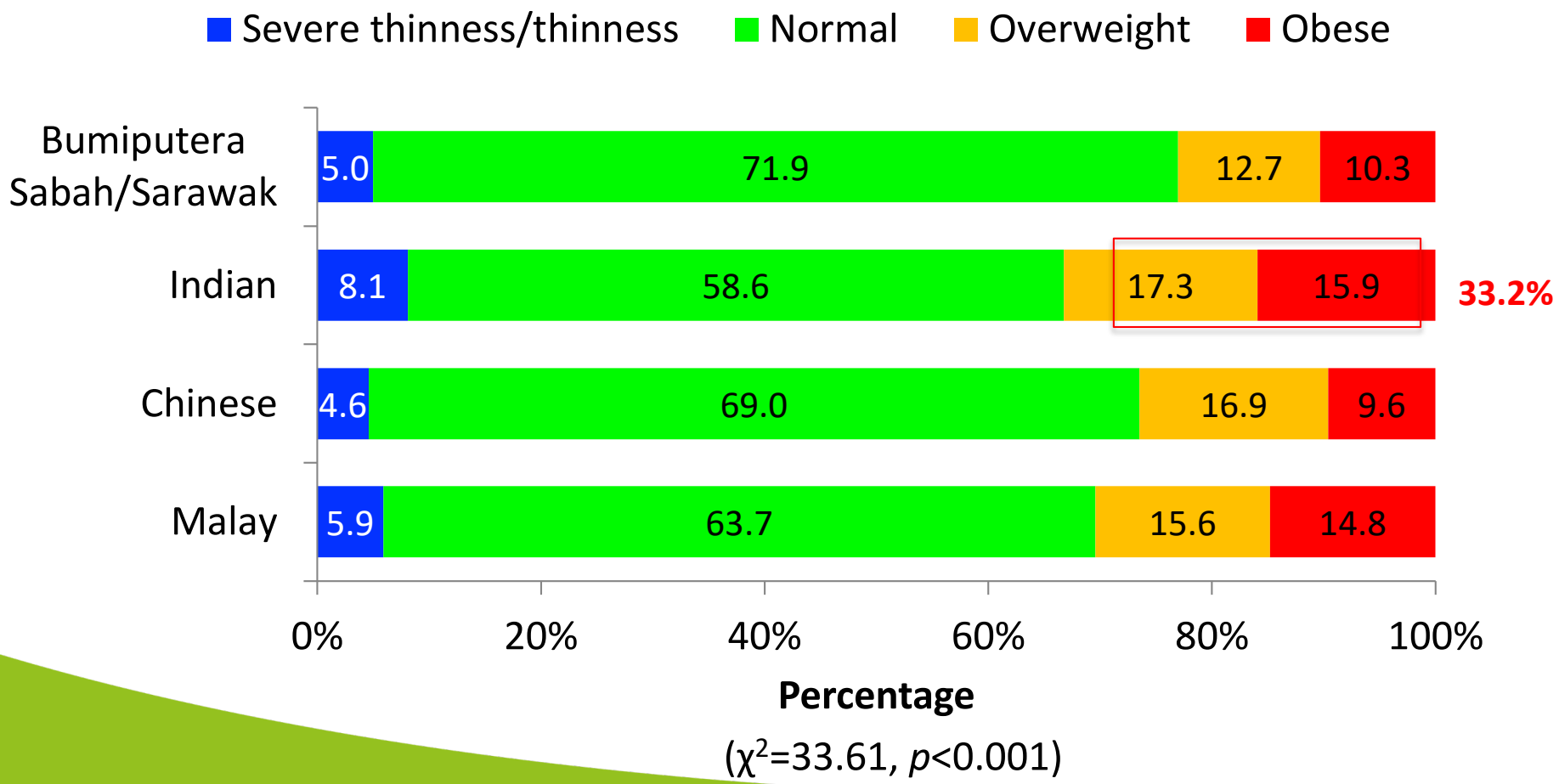
Distribution of the BMI status by ethnic groups
(Malay, n=3557; Chinese, n=938; Indian, n=414, Bumiputera, n=609)



(χ^2=79.29, p<0.001)

Secondary School children:
Prevalence of overweight and obesity was highest among Indian (33.2%) and lowest among Bumiputera Sabah/Sarawak (23.0%)

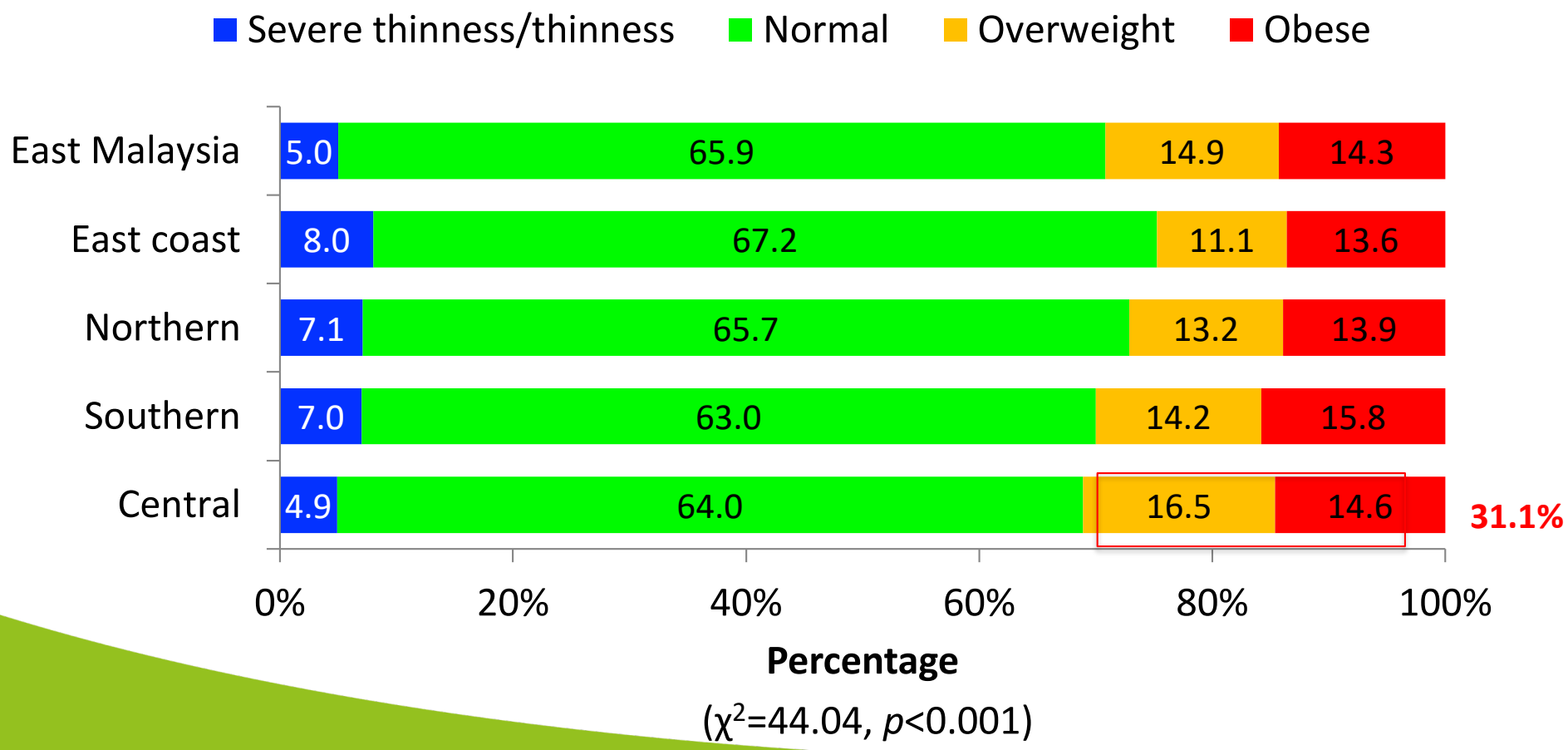
Secondary school: Distribution of the BMI status by ethnic group
(Malay, n=1740; Chinese, n=670; Indian, n=295, Bumiputera, n=377)



(χ^2=33.61, p<0.001)

Primary and secondary school children: Prevalence of overweight and obesity was higher among children in the Central than other regions

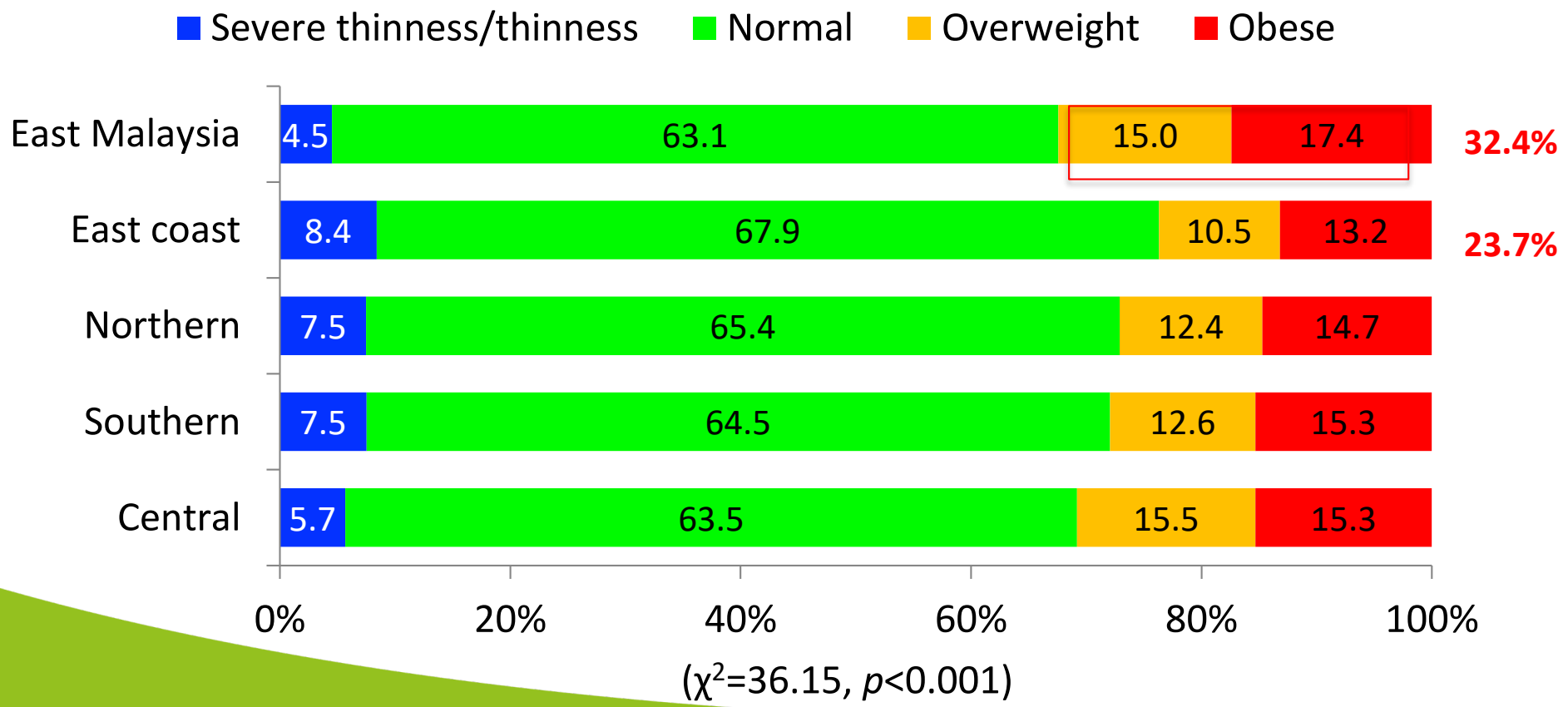
Distribution of the BMI status by region
(Central, n=1806; Southern, n=1091; Northern, n=1454; East coast, n=964; East Malaysia, n=953)



(χ^2=44.04, p<0.001)

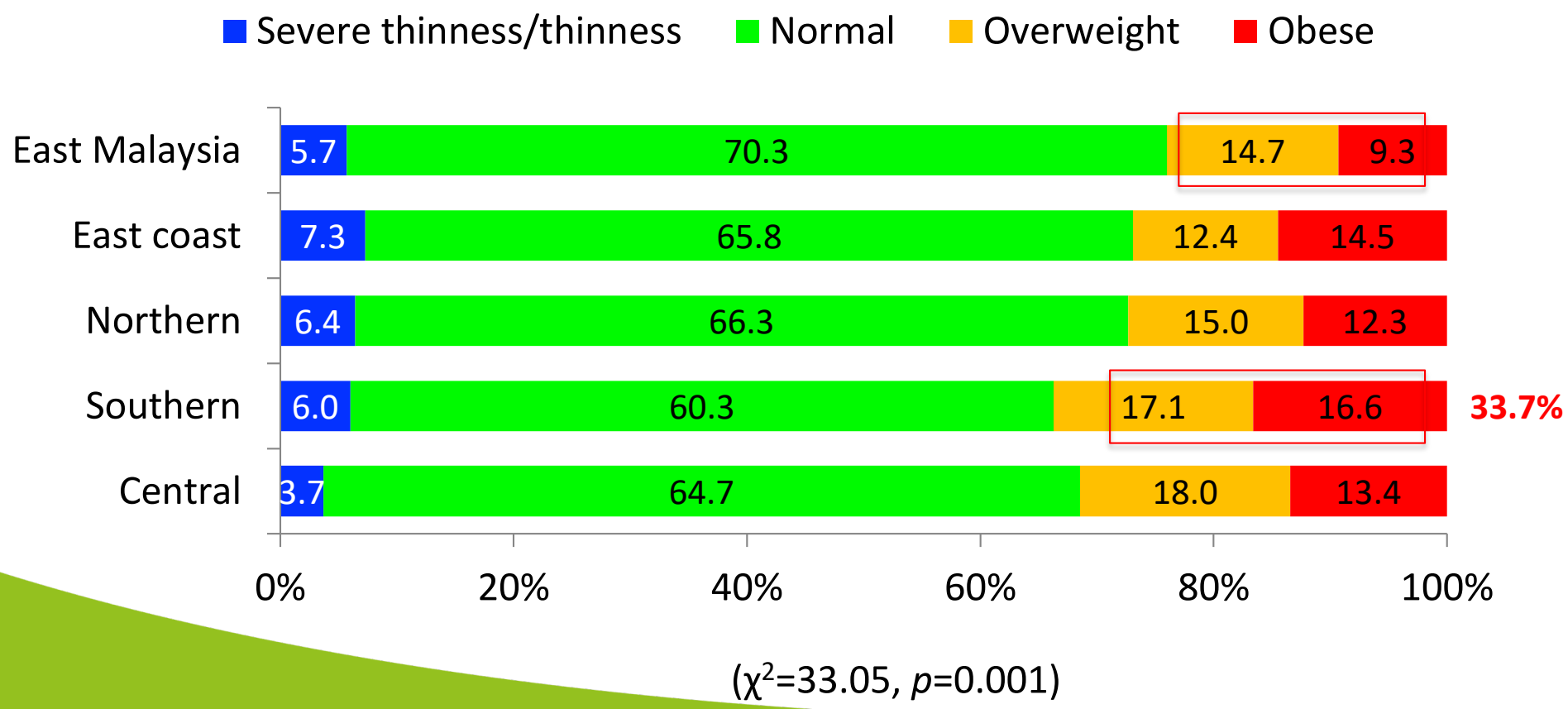
Primary school children:
Prevalence of overweight and obesity was highest in the East M'sia (32.4%) and lowest in the East coast (23.7%) region

Primary school: Distribution of the BMI status by region (Central, n=1806; Southern, n=1091; Northern, n=1454; East coast, n=964; East Malaysia, n=953)



Secondary school children:
Prevalence of overweight and obesity was highest in the Southern region (33.7%) and lowest in the East Malaysia (24.0%) region

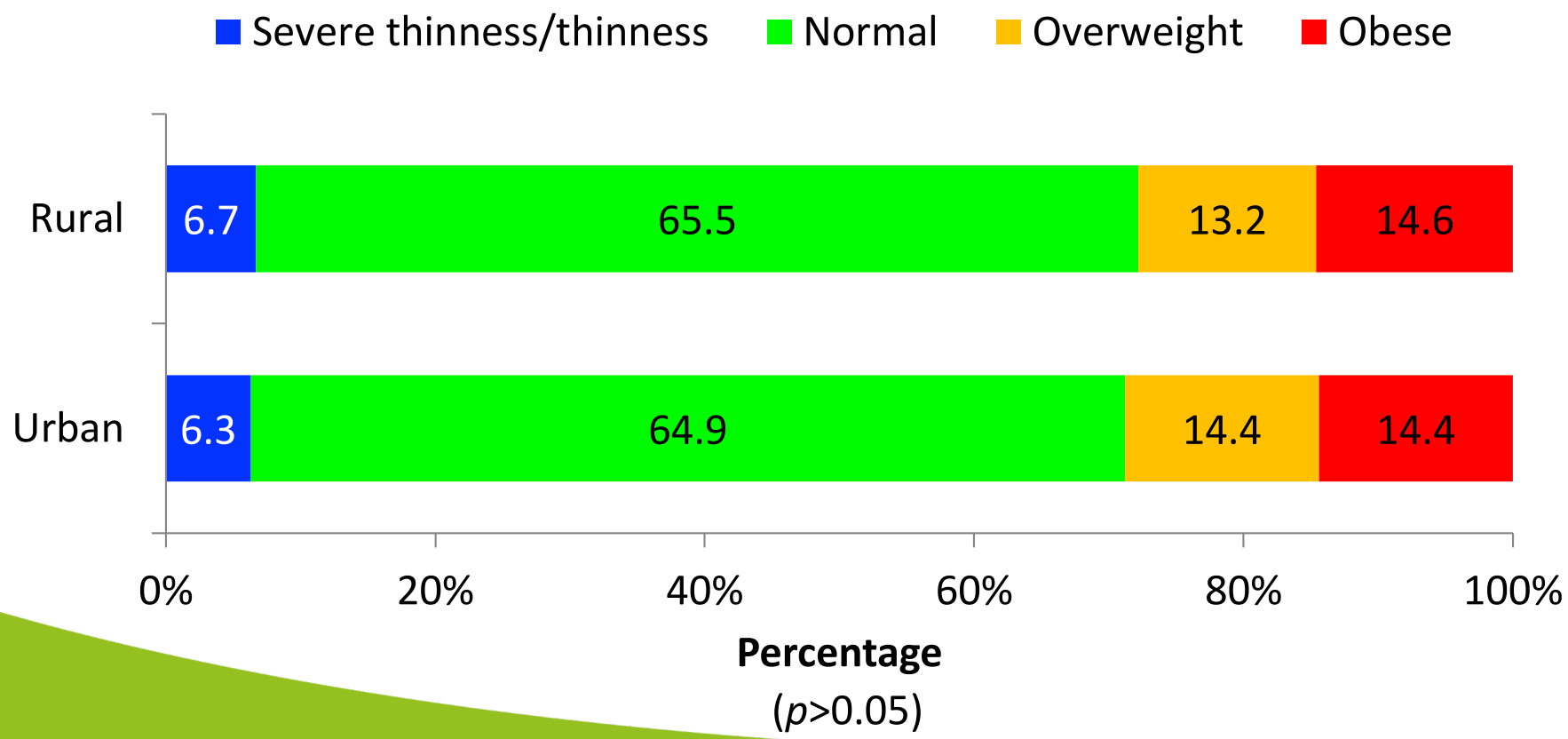
Secondary school: Distribution of the BMI status by region (Central, n=1806; Southern, n=1091; Northern, n=1454; East coast, n=964; East Malaysia, n=953)



(χ^2=33.05, p=0.001)

Primary and secondary school children: Prevalence of overweight and obesity was similar in the urban and rural areas

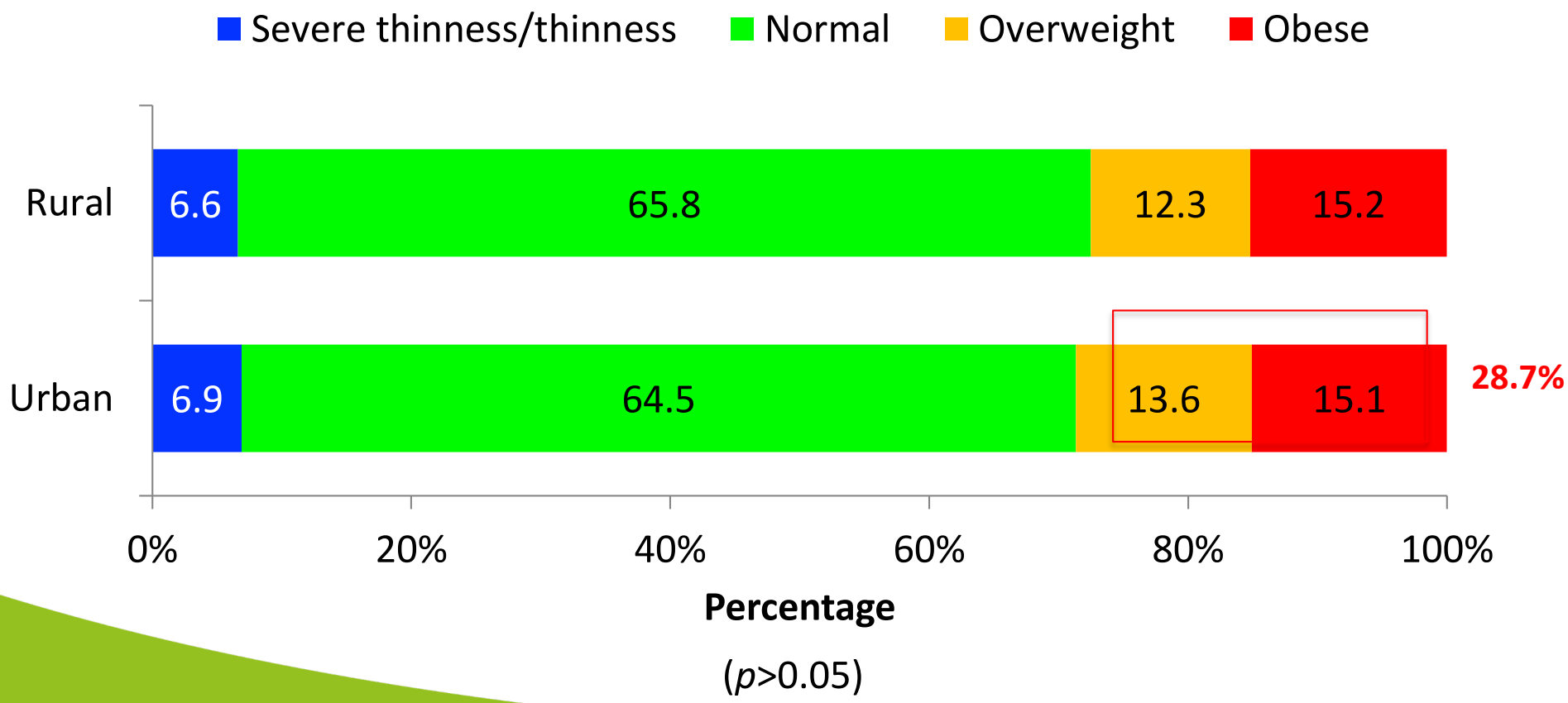
Distribution of BMI Status among children in the urban (n=5919) and rural (n=2742) Area



(p>0.05)

Primary school children:
Prevalence of overweight and obesity was marginally higher in the urban (28.7%) than rural (27.5%) areas

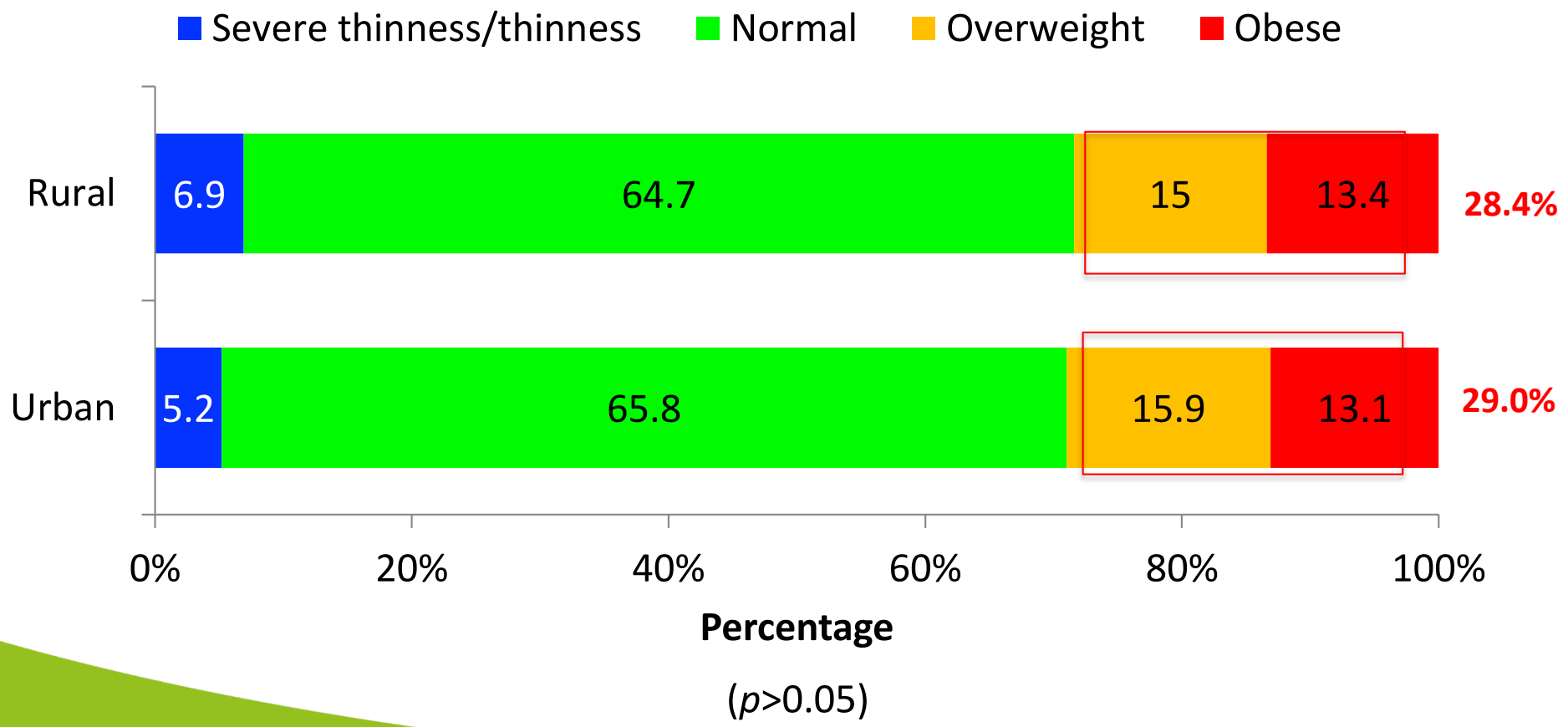
Distribution of BMI Status among children in the urban (n=3761) and rural (n=1806) area



(p>0.05)

Secondary school children:
Prevalence of overweight and obesity was similar in the urban (29.0%) and rural (28.4%) areas

Distribution of BMI Status among children in the urban (n=2158) and rural (n=936) Area



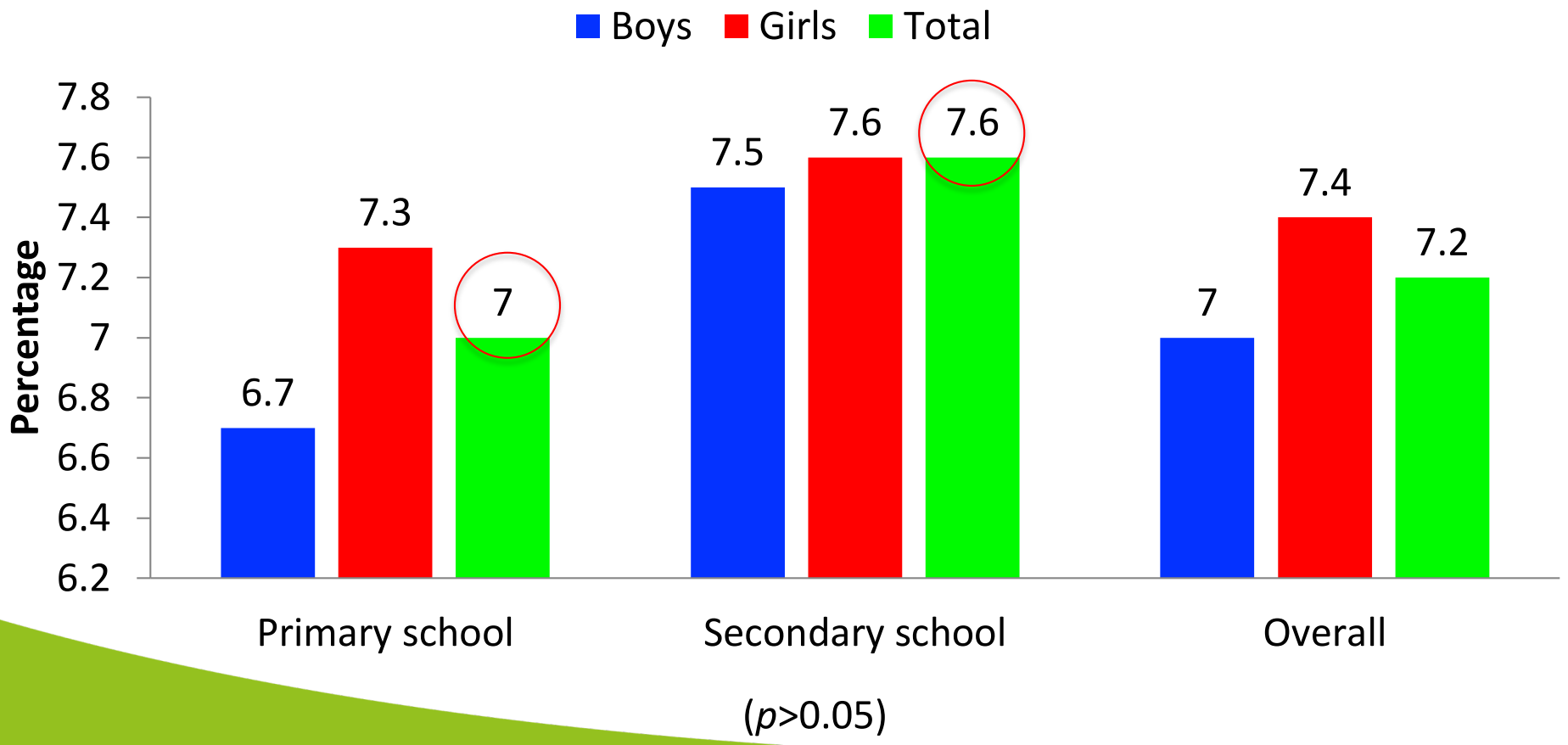
(p>0.05)

Findings indicate existence of double burden of malnutrition ….

Prevalence of stunting

Prevalence of stunting was marginally higher among secondary school children

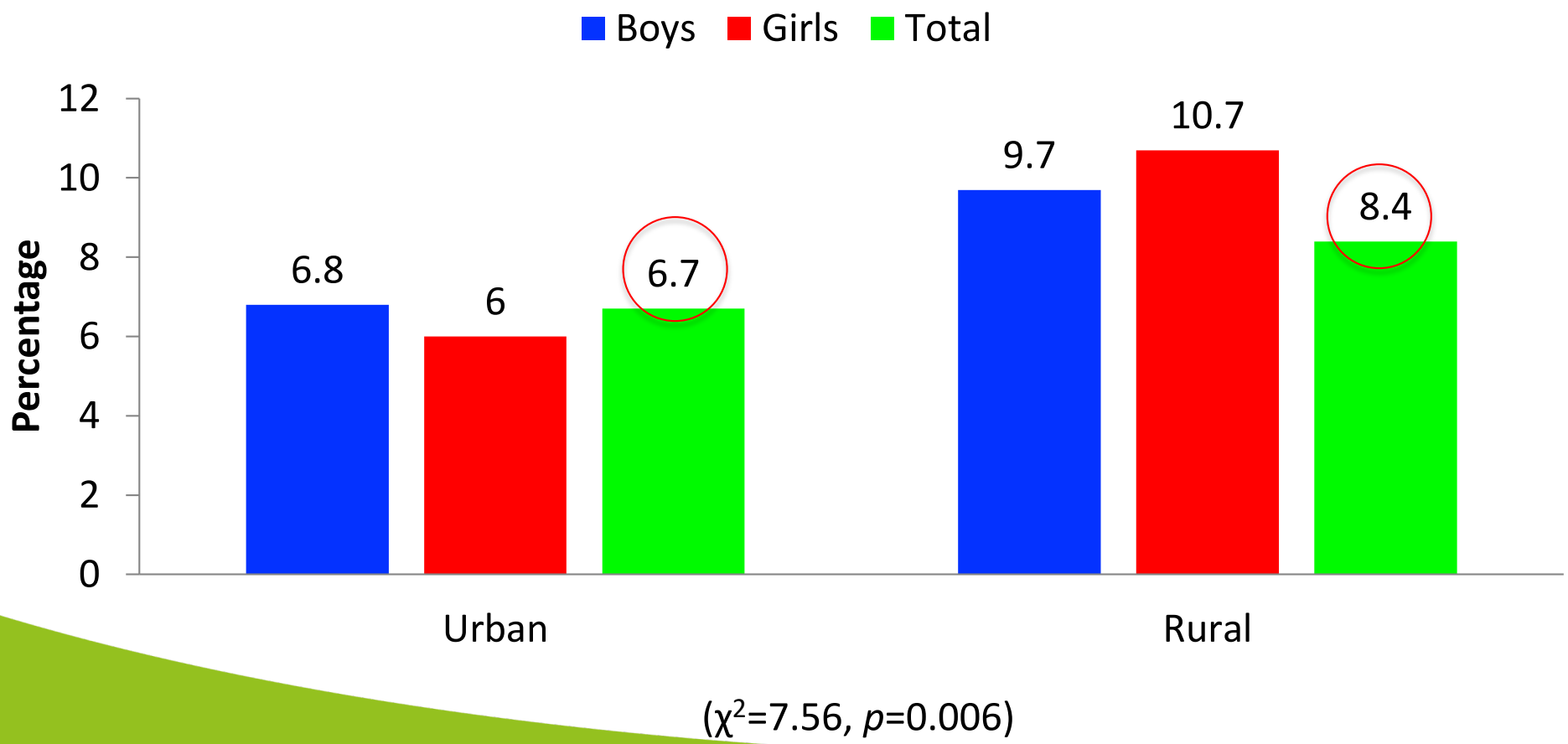
Prevalence of stunting among primary (n=5567) and secondary (n=3094) school children



(p>0.05)

Prevalence of stunting was higher among rural boys and girls

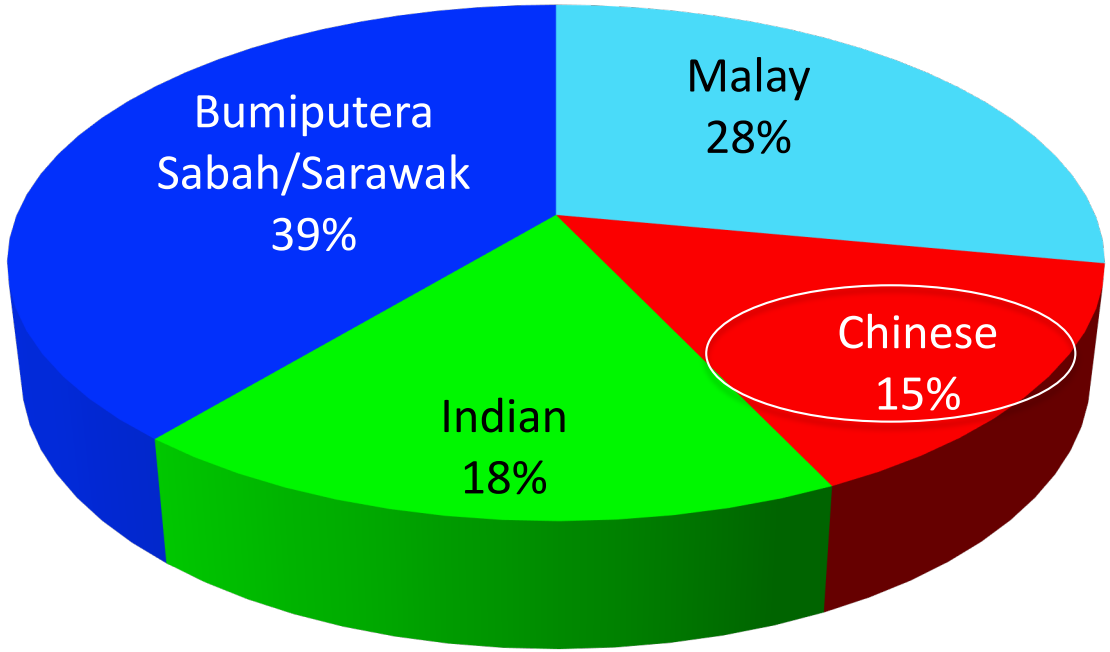
Prevalence of stunting among children in the urban (n=5919) and rural area (n=2747)



(χ^2=7.56, p=0.006)

Prevalence of stunting was highest among Bumiputera Sabah/Sarawak (39%) and lowest among Chinese (15%) children

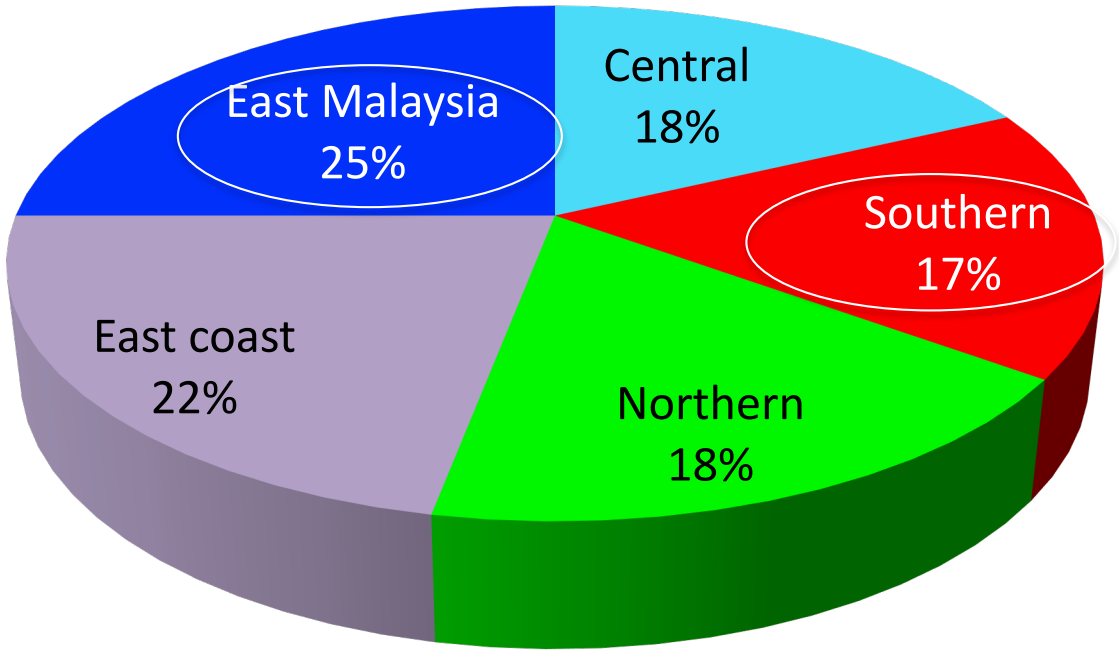
Prevalence of stunting by ethnic groups (*n*=8661)



(χ^2=51.64, p<0.001)

Prevalence of stunting was highest among children in East Malaysia (25%) and lowest in Southern (17%) region

Prevalence of stunting by regions (n=8661)



(χ^2=14.69, p=0.005)

Recommendations

- Urgent intervention programmes need to be implemented throughout the country to combat the high prevalence of overweight and obesity among children
  - as well as addressing significant problem of undernutrition
- Strategies and activities identified under National Plan of Action for Nutrition of Malaysia must be implemented in full
- Nutrition education should be systematically conducted in all schools
  - utilizing educational modules that have been proven effective
- It is imperative that parents act as a role models and be actively involved in all efforts to promote healthy eating and active living among children

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Presentation 4:

Breakfast intake and body weight status

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THANK YOU