

# Risk factors in an ageing population: Evidence from SAGE

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# Rationale

- Modern risks (associated with chronic disease and accidents) with high impact on mortality and burden of disease even in low income countries specially in ageing population.
- Over time, major risks to health shift from traditional risks (associated with poverty) to modern risks (e.g. overweight and obesity).
- Modern and traditional risks may have different time trajectories in different populations (countries) depending on the context.
- As proximal cause, modifiable risk factor as target of public policy.
- The roots of risks factors as complex chain of determinants that varies across population and age categories.

# Item from STEPS

## STEPS Risk Factors

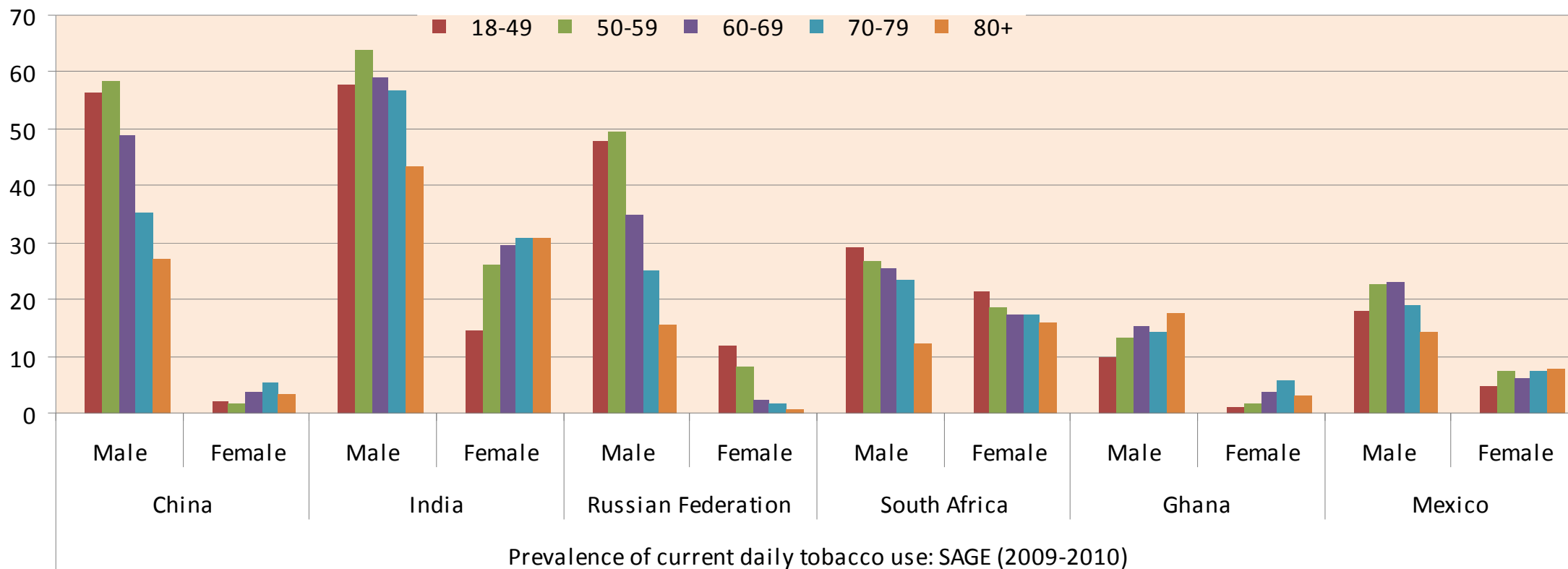
	Core Items	Expanded Items	Optional Modules
<b>Step 1 Behavioural</b>	<p>Basic demographic information, including age, sex, literacy, and highest level of education</p> <p>Tobacco use</p> <p>Alcohol consumption</p> <p>Fruit and vegetable consumption</p> <p>Physical activity</p>	<p>Expanded demographic information including years at school, ethnicity, marital status, employment status, household income</p> <p>Smokeless tobacco use</p> <p>Past 7 days drinking</p> <p>Oil and fat consumption</p> <p>History of blood pressure, treatment for raised blood pressure</p> <p>History of diabetes, treatment for diabetes</p>	<p>Mental health, intentional and unintentional injury and violence and oral health.</p> <p>Objective measure of physical activity behaviour</p>
<b>Step 2 Physical measurements</b>	<p>Weight and height</p> <p>Waist circumference</p> <p>Blood pressure</p>	<p>Hip circumference, Heart rate</p>	<p>Skin fold thickness, assessment of physical fitness</p>
<b>Step 3 Biochemical measurements</b>	<p>Fasting blood sugar</p> <p>Total cholesterol</p>	<p>Fasting HDL-cholesterol and triglycerides</p>	<p>Oral glucose tolerance test, urine examination, salivary cotinine</p>



# SAGE: Risk Factors Methods

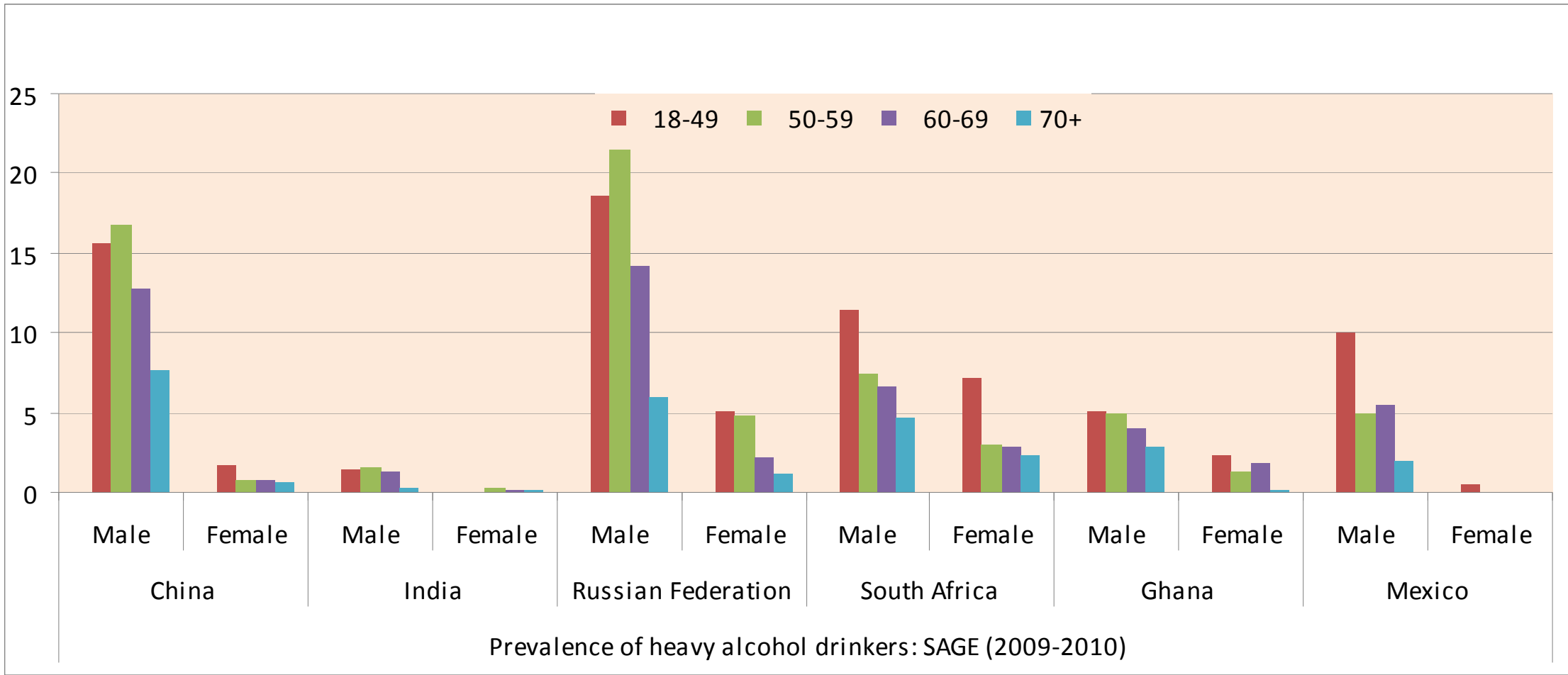
- National representative samples of 6 participating countries:
  - China, India, Russian Federation, South Africa, Ghana and Mexico.
  - Over sample of 50+ Population
- A selected set of risk factors indicators
  - Individual Questionnaire:
    - Physical activity (GPAQ), Tobacco, Alcohol and Fruit and Vegetables.
  - Physical examination:
    - Anthropometry (BMI and WC) and Blood pressure.
- Proportion of the population classified as high risk
- Time trends: SAGE(2009-2010) - WHS(2002-2003)

# Daily tobacco use (Smoke and smokeless)

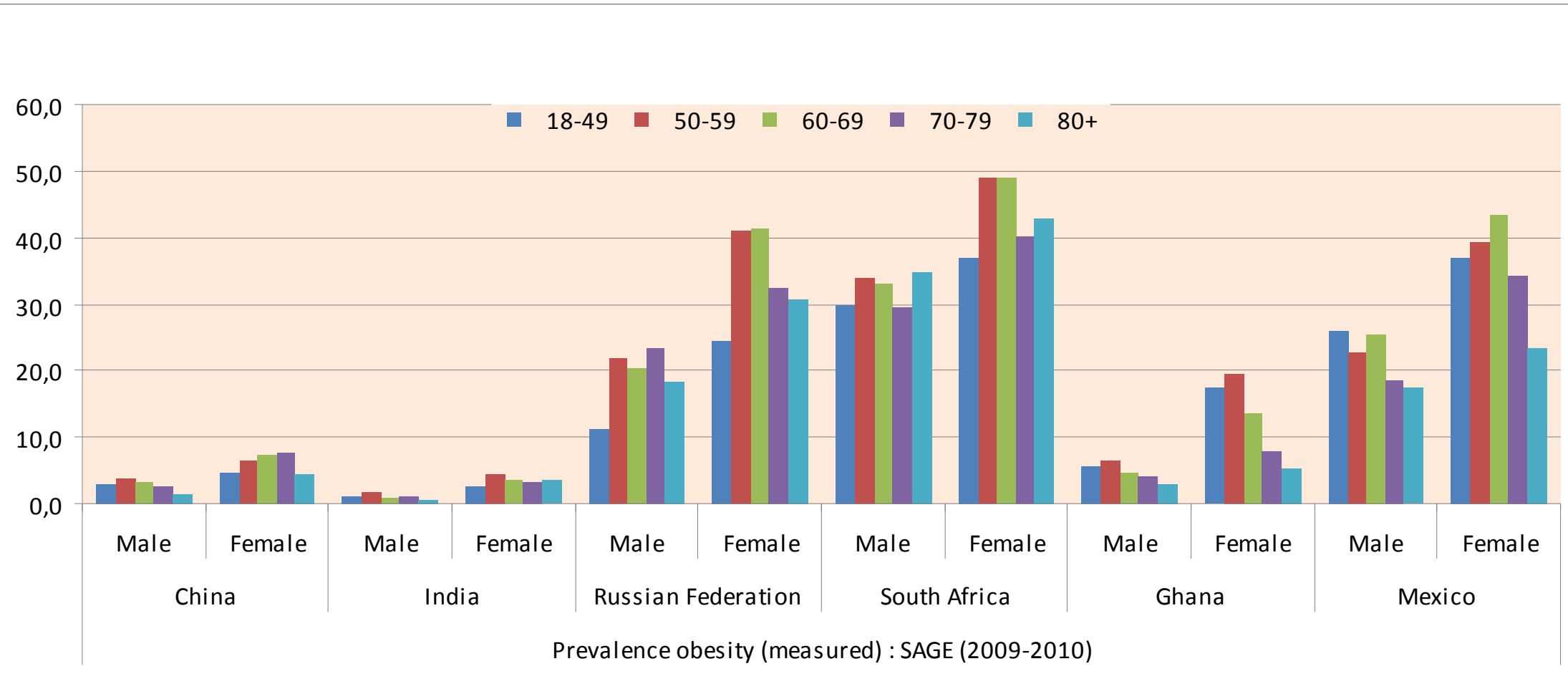


# Heavy alcohol consumption

(More 5 (♂) 4 (♀) drinks in at least 2 days per week)

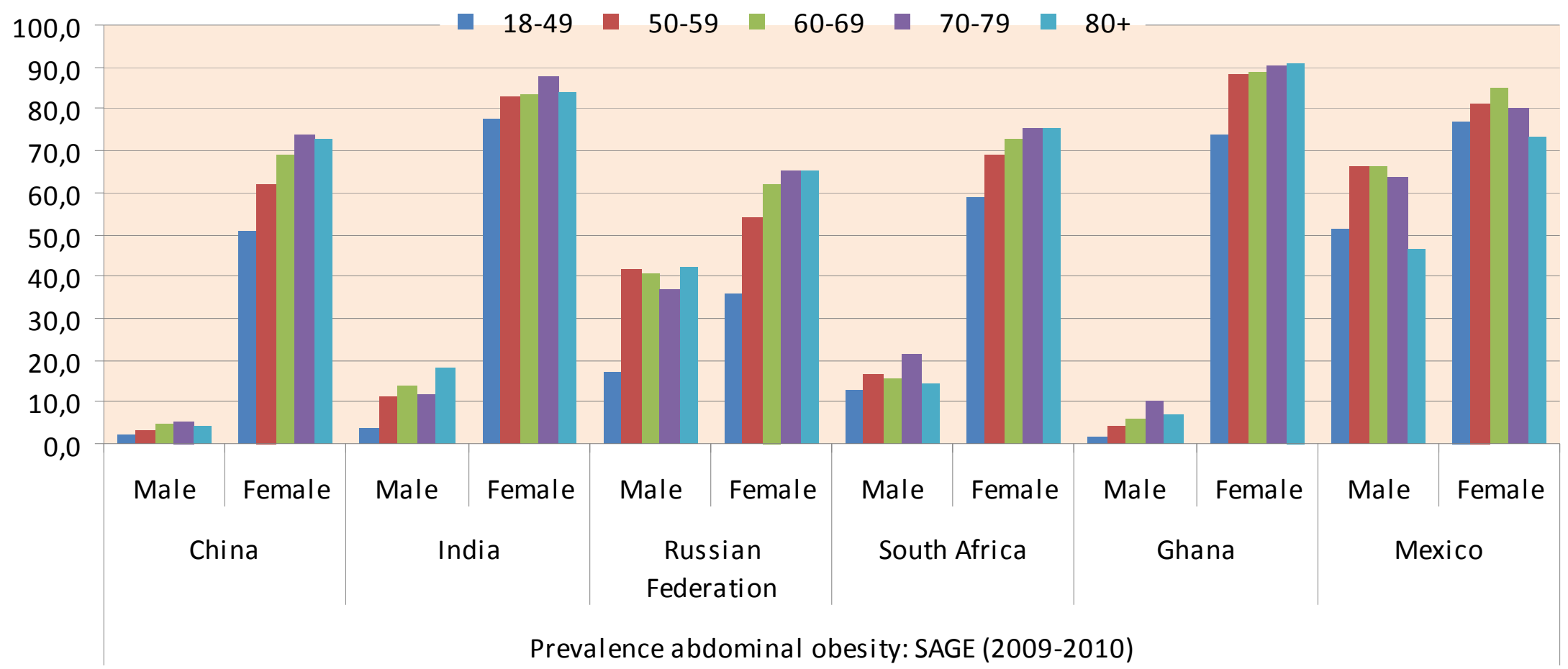


# Obesity (BMI $\geq$ 30 Kg/m<sup>2</sup>)

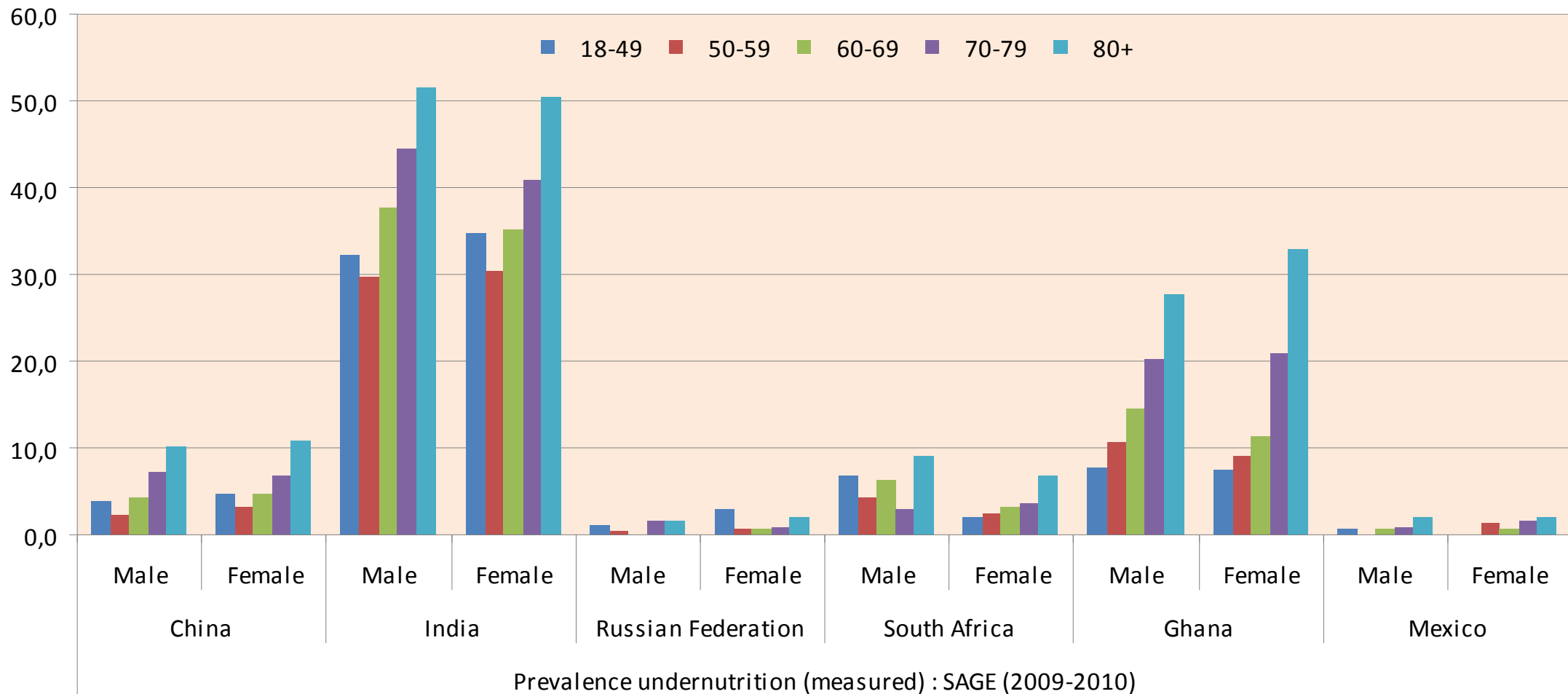


# Abdominal Obesity

(WC:  $\geq 85$ cm for women and  $\geq 95$ cm for men)



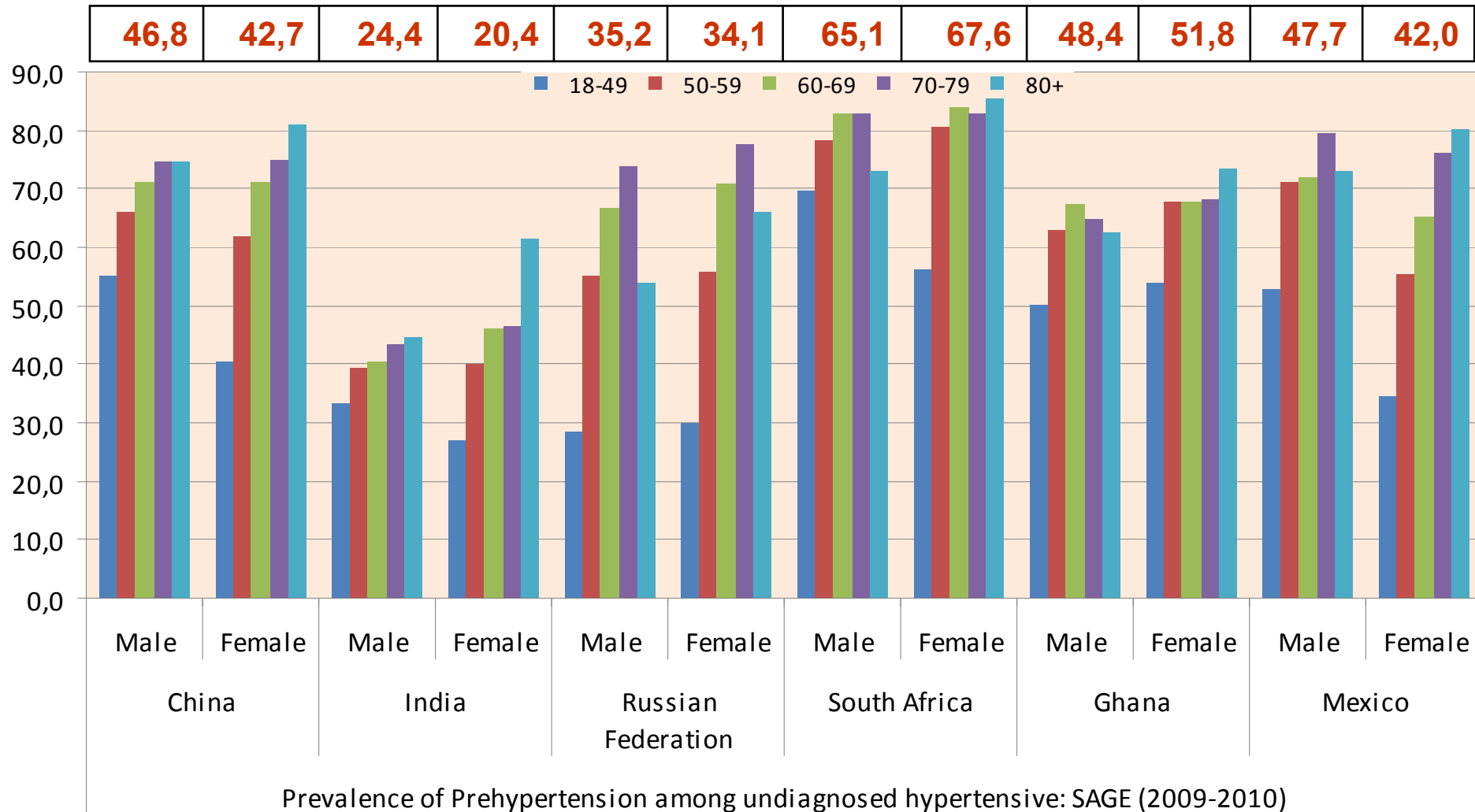
# Underweight (BMI $\leq$ 18.5 Kg/m<sup>2</sup>)



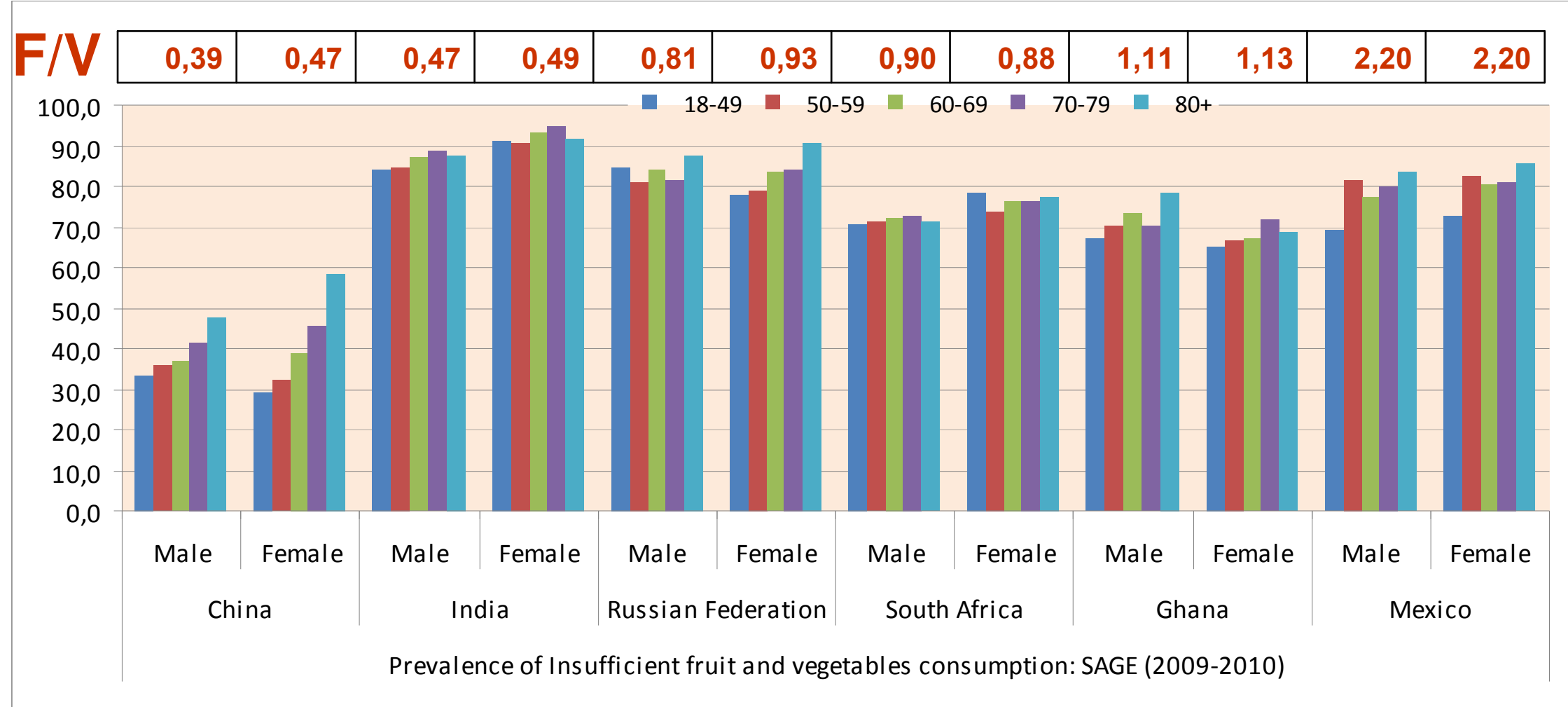
# High blood pressure

(SBP  $\geq$ 130 or DBP  $\geq$ 85 among undiagnosed hypertension)

## Undiagnosed hypertension

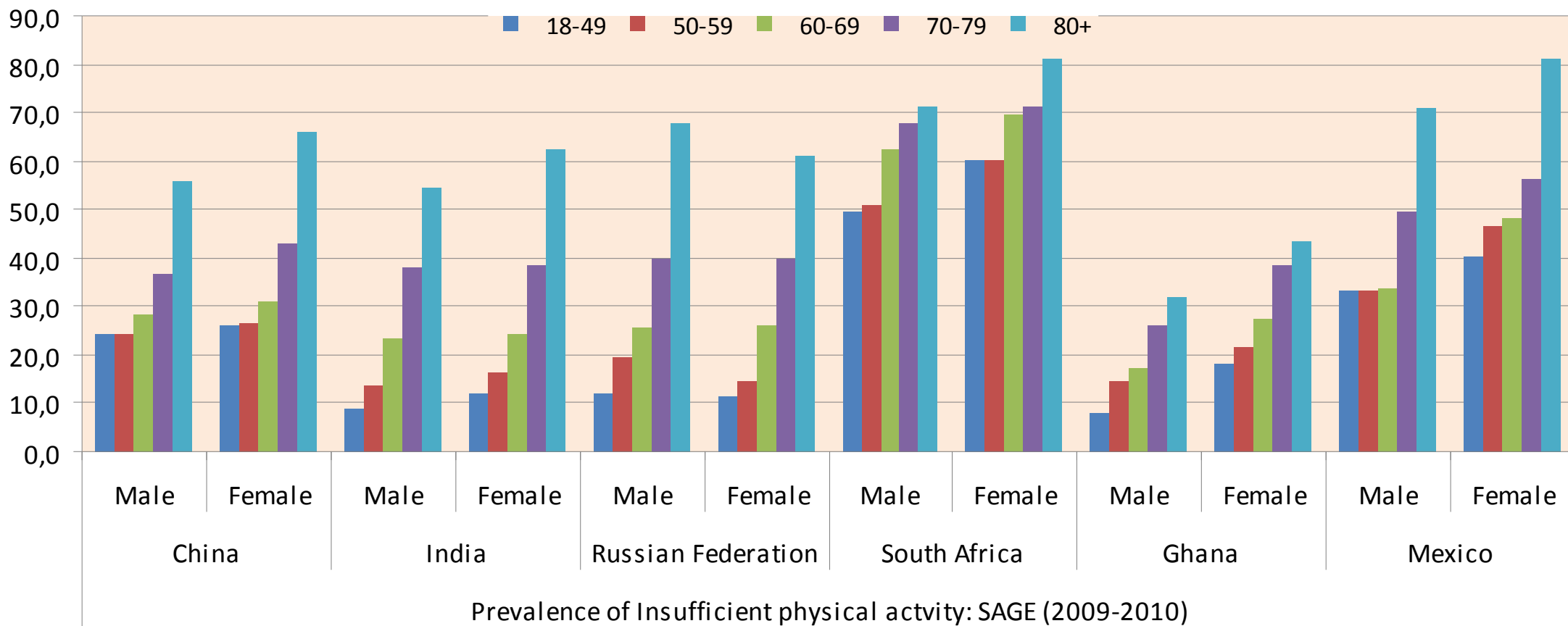


# Insufficient Fruit & Veg Consumption ( $\leq 5$ portion per day)



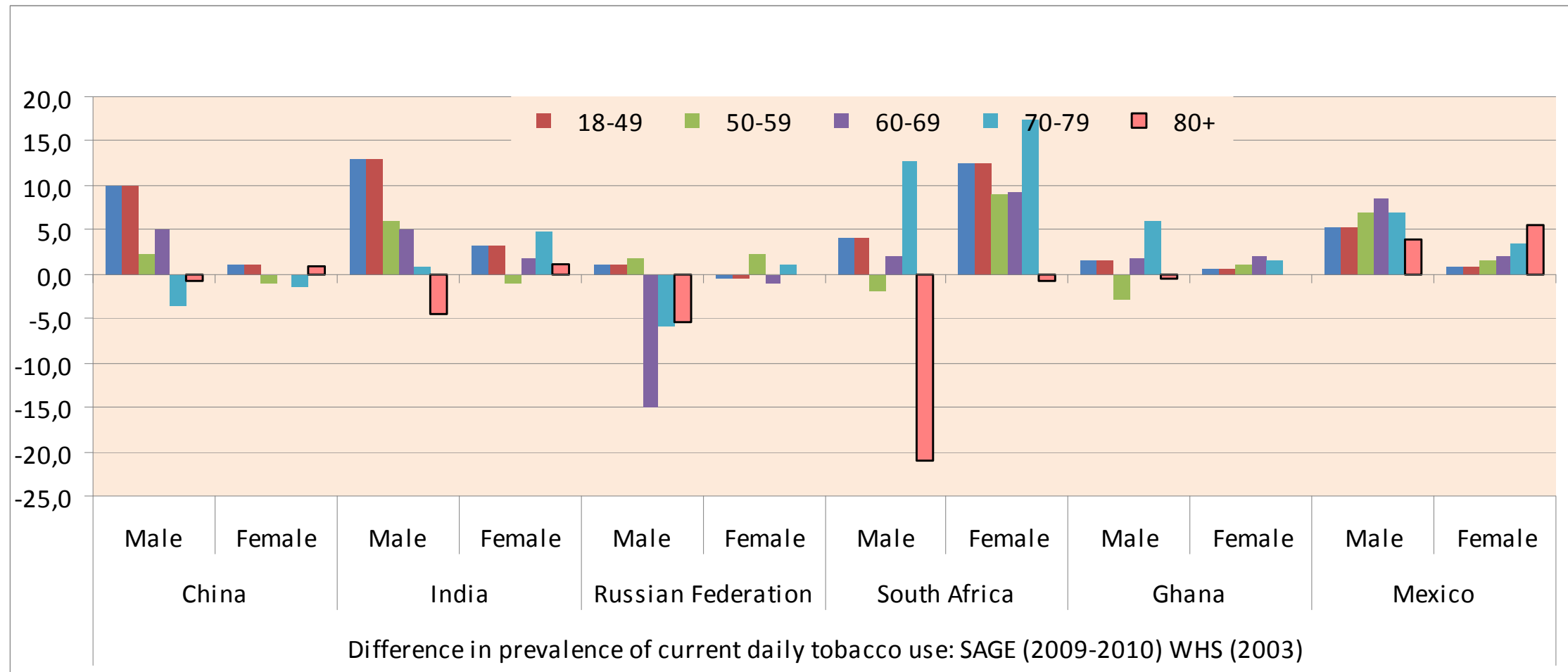
# Insufficient physical activity

( $\leq 600$  METs/ week or  $\leq 5$  days Moderate PA / week)

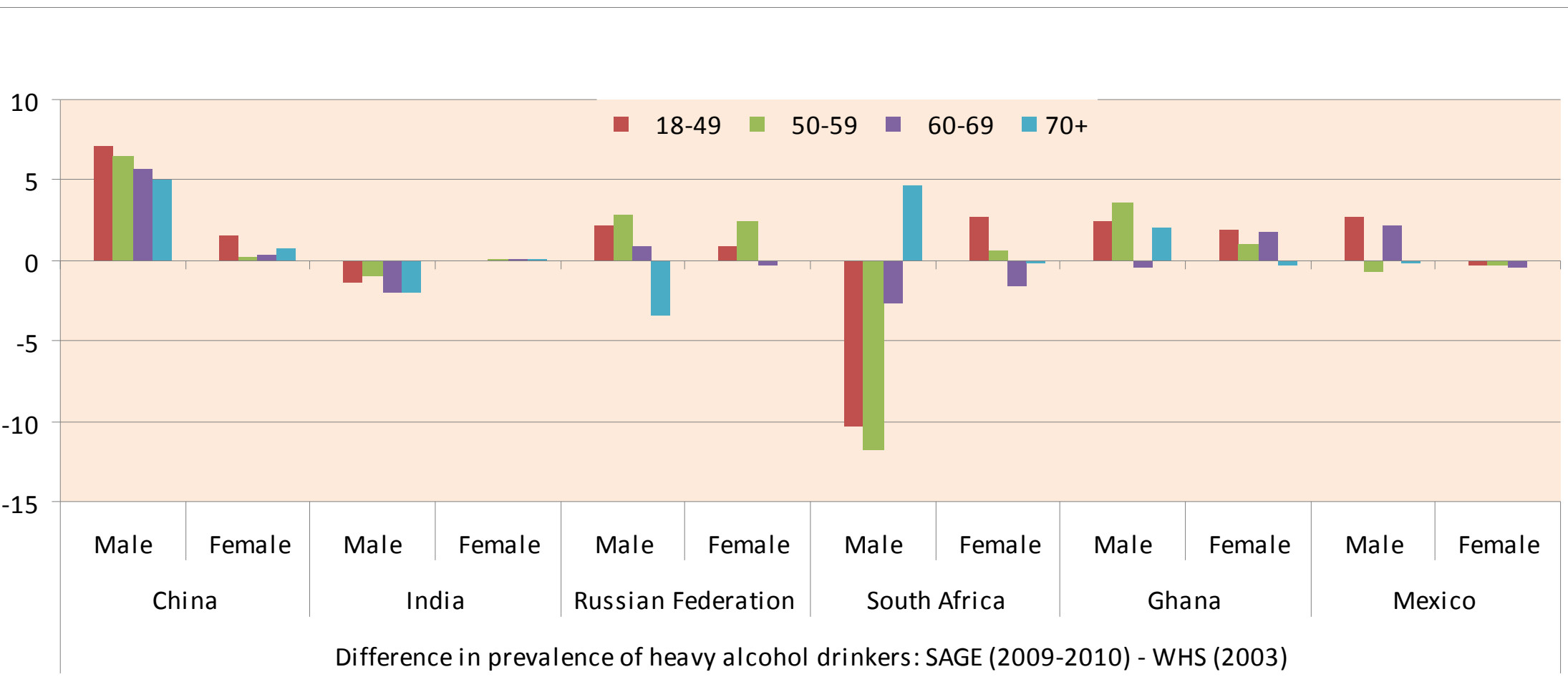


# Time Trends: SAGE (2009) - WHS (2003)

# Daily Tobacco use trends: SAGE (2009) - WHS (2003)

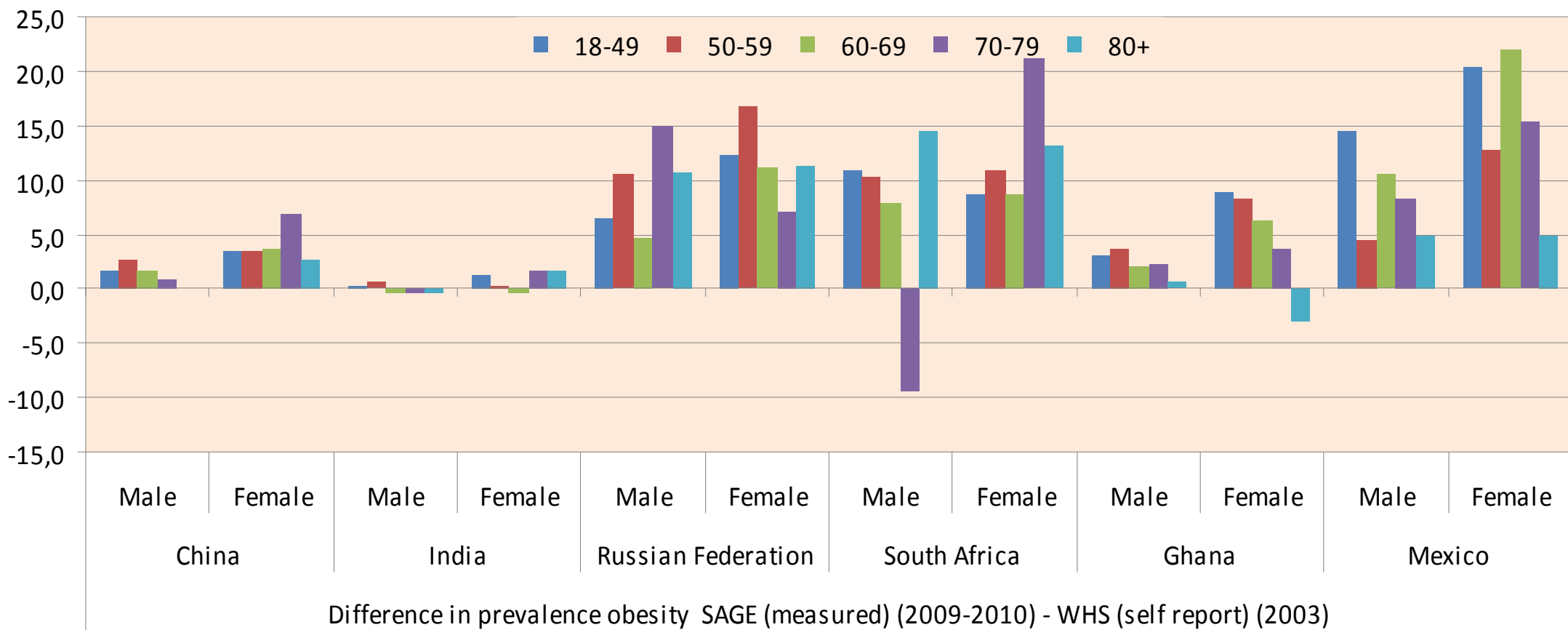


# Heavy alcohol time trends: SAGE (2009) - WHS (2003)



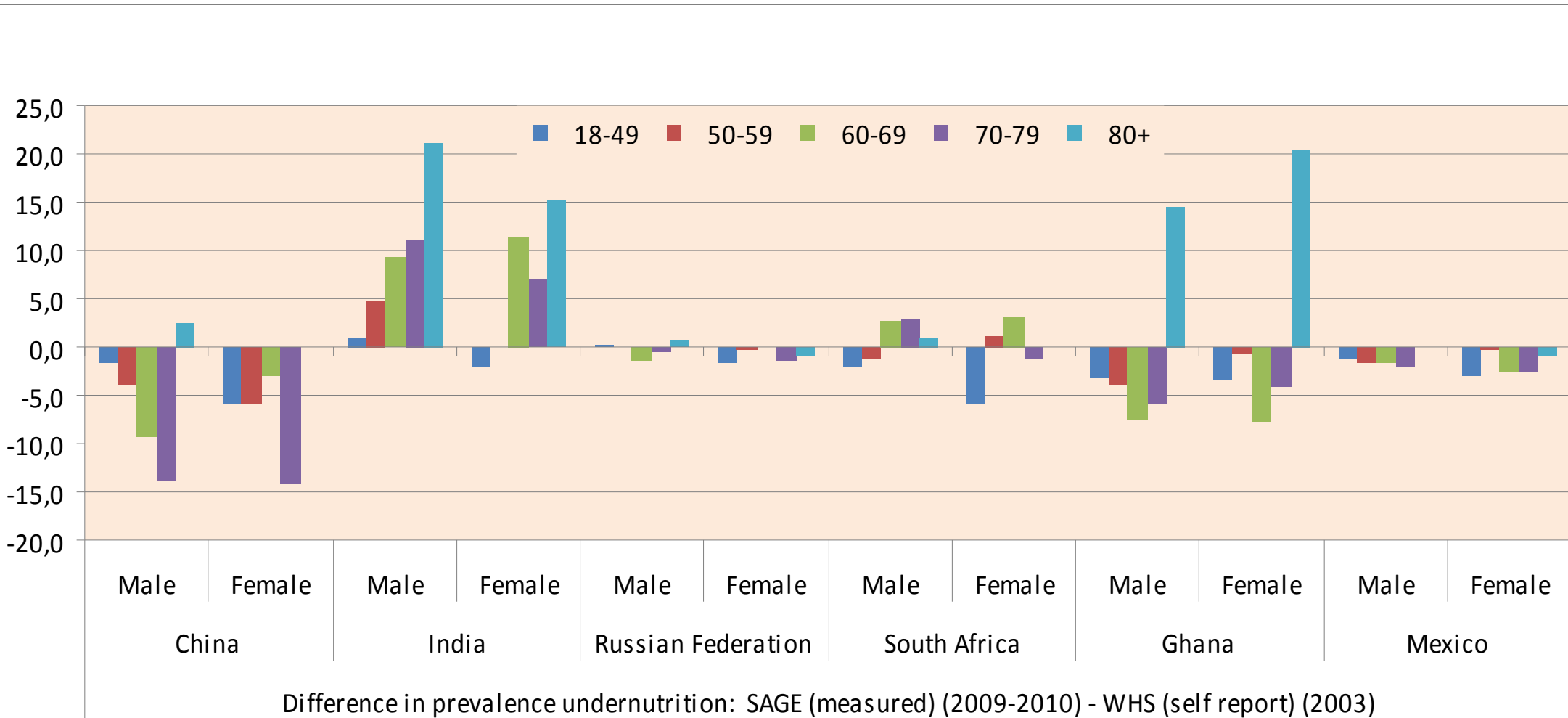
# Obesity time trends

## SAGE (2009) - WHS (2003)



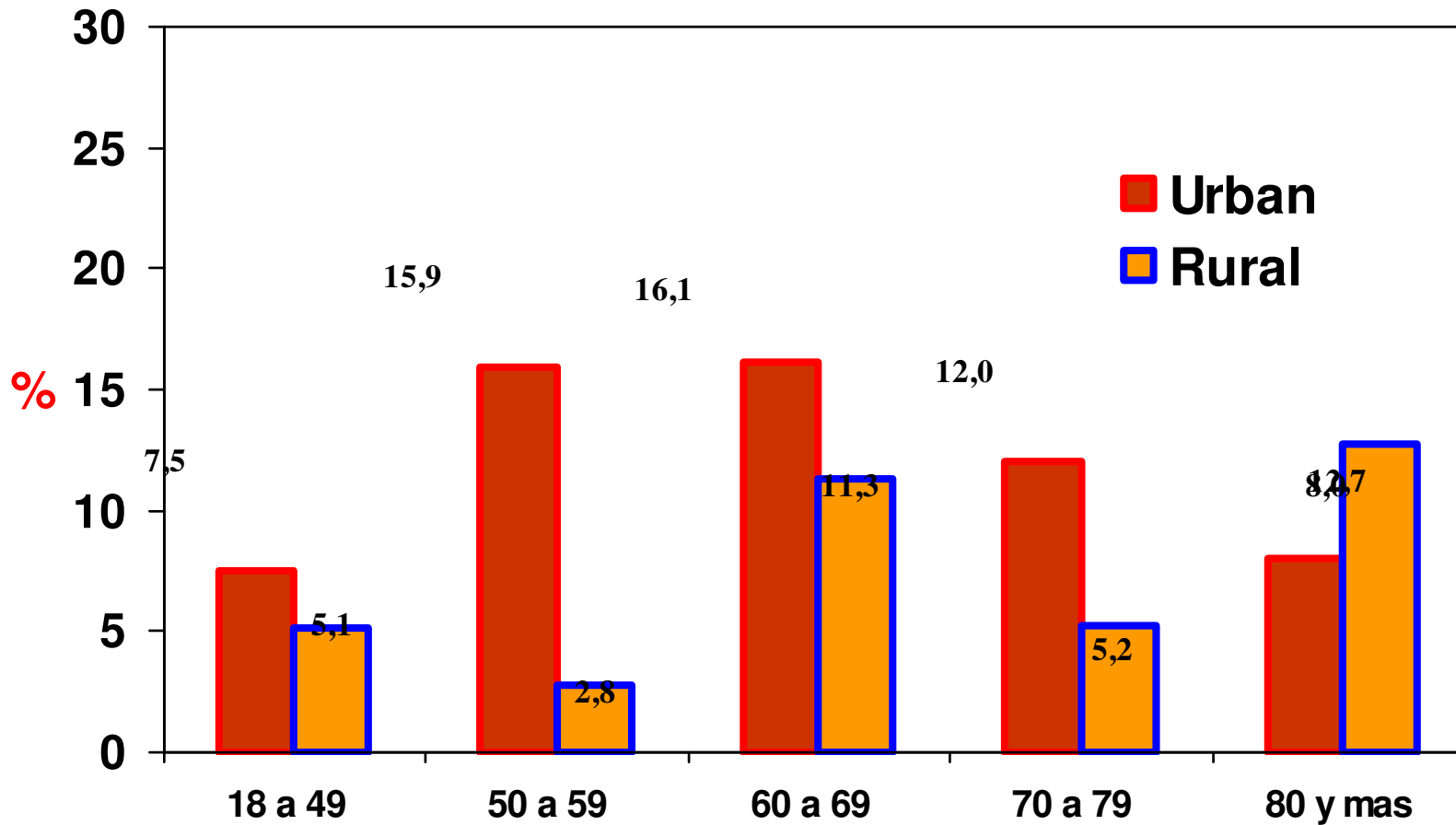
# Underweight Time Trends

## SAGE (2009) - WHS (2003)



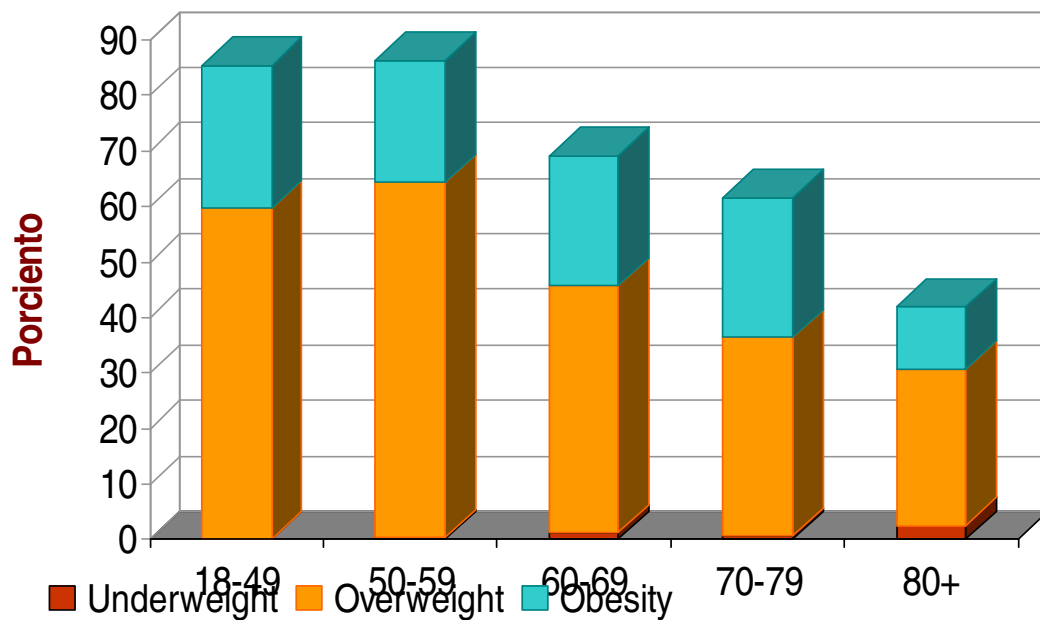
# Urban-Rural (Mexico)

# Daily tobacco use– SAGE México

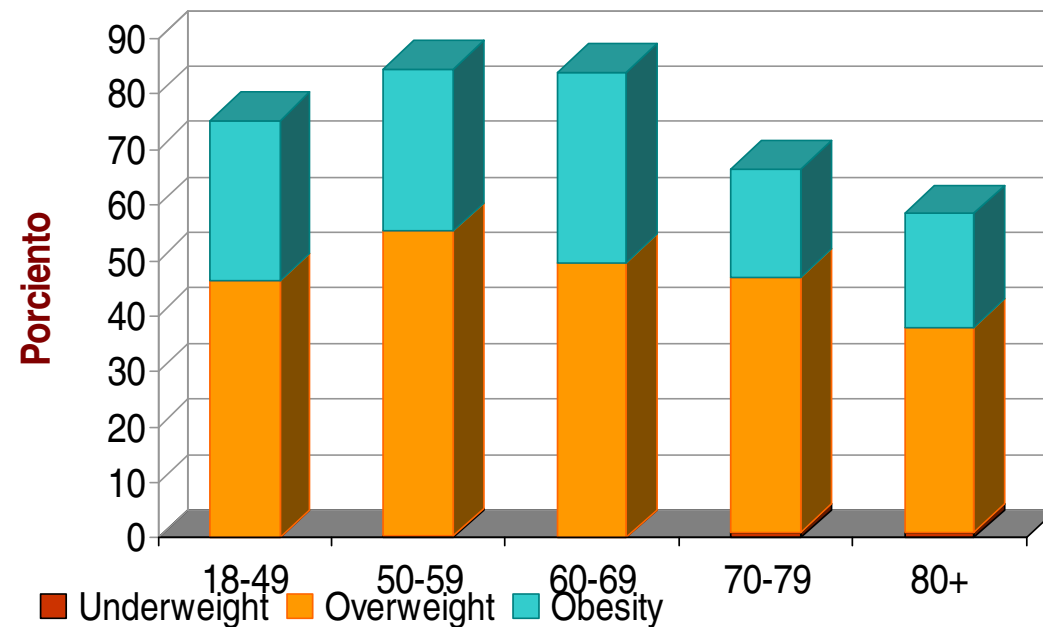


# BMI-SAGE-México

## Rural

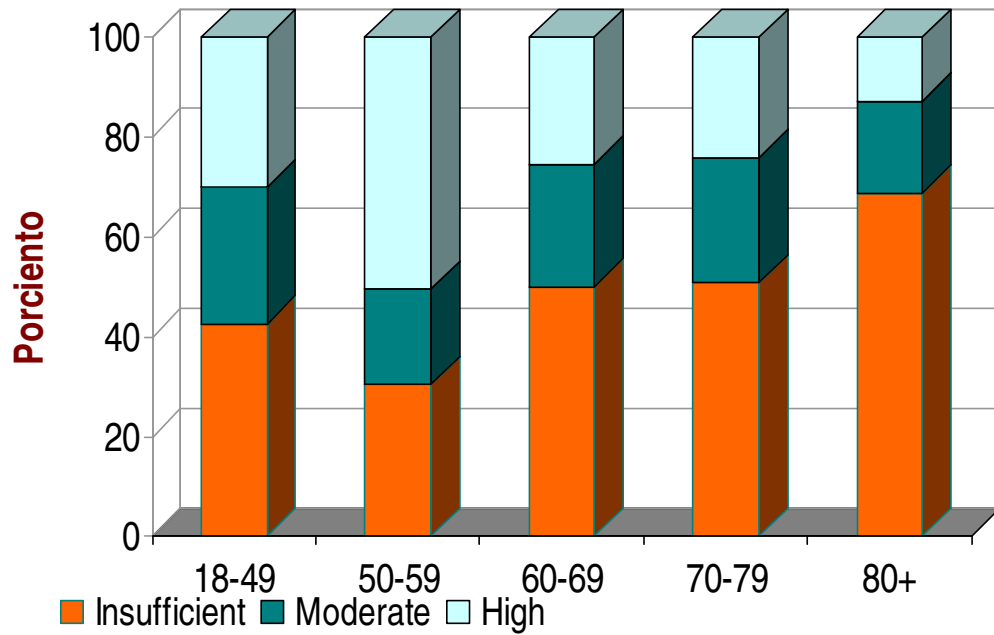


## Urban

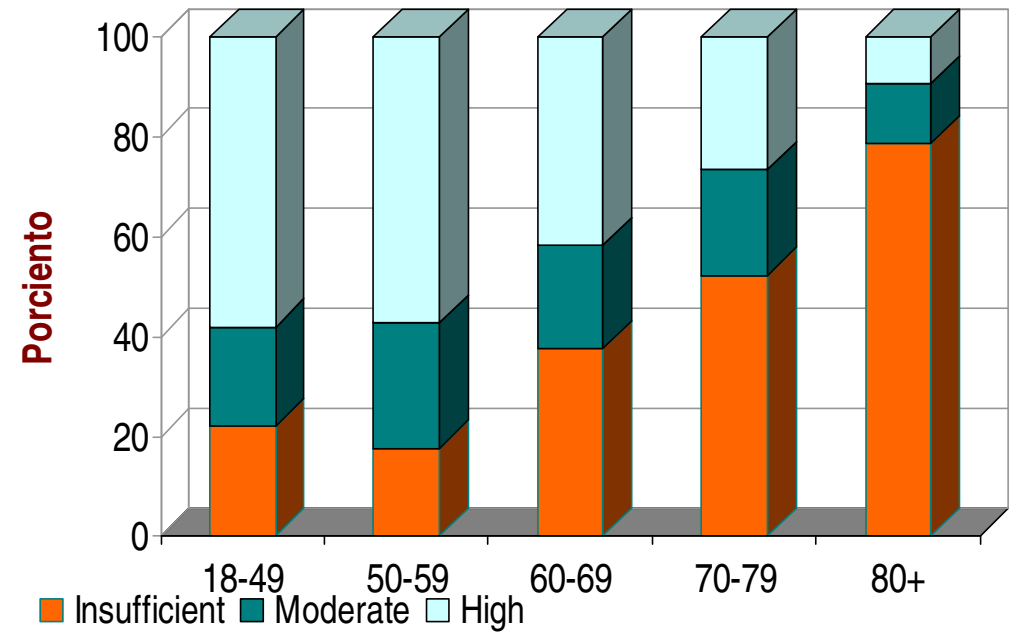


# Physical activity-SAGE-México

## Urban



## Rural



# Conclusions

- Wide variation across country, gender and age categories.
- Countries in different stages of "risk transition"
- Old people behaves accordingly to the country estimates.
- High proportion of old people in the high risk categories for some risk factors:
  - HBP and insufficient fruit and vegetables in all countries
  - Tobacco y alcohol in some countries
  - Obesity and underweight in different countries.
- The health impact of these risks in the older population still unclear, at least for some of them.
- Differences across population might be explained by context differences, which can be explored with SAGE data

# Next steps

- Preliminary results, need to be confirmed after including sampling weights and standardized rates to compare across countries.
- Evaluate variables explaining variation across populations.
- Expand our evaluation:
  - "Traditional" risk factors.
  - Biomarker to come (HbA1c, CRP, and others)
- As a panel study, SAGE will allow us to evaluate the impact of this risk factors in mortality, disease incidence and wellbeing specifically during the ageing process.

# Acknowledgments

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- SAGE participants.