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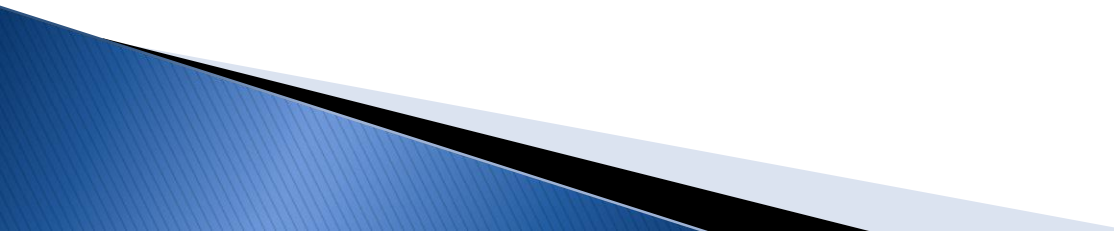


المركز السوري لأبحاث التدخين  
SYRIAN CENTER FOR TOBACCO STUDIES

# Social determinants of Noncommunicable diseases in Syria

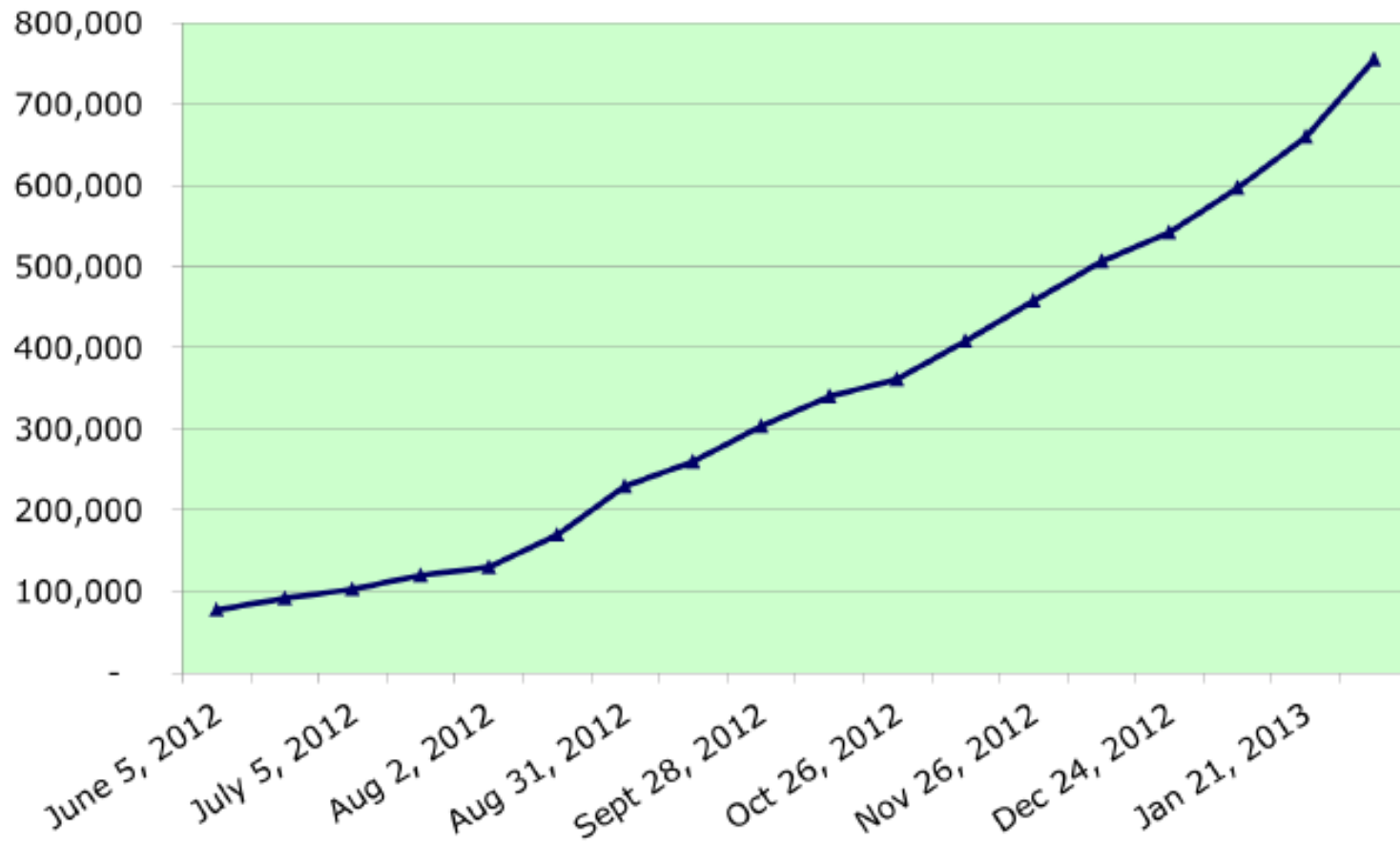
Meredith L Wilcox, MPH, Fouad Fouad, MD, Radwan al Ali, MD  
Wasim Maziak, MD, PhD

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# Crisis in Syria

**Syrian Refugee Numbers, June 2012 – Feb 2013**



Source: Brennan RJ. WHO Emergency Response to the Syria Crisis. Department of Emergency Risk Management & Humanitarian Response. World Health Organization.

# Crisis in Syria

Breakdown of Syrian refugee population planning figure up to June 2013<sup>1</sup>

	Syrian refugee population as of 12 December 2012	Projected Syrian refugee population by end of June 2013
Jordan	144,997*	300,000
Lebanon	156,612*	300,000
Turkey	137,756**	380,000
Iraq	65,527*	90,000
Egypt	10,169*	30,000
Total	515,061	1,100,000

\* Registered with UNHCR or awaiting registration.

\*\* This figure only includes Syrian refugees currently registered and assisted in camps by the Government of Turkey. To date Turkey has assisted over 190,000 Syrian refugees, some of whom have since returned to their country. According to the authorities, there are also 60,000 to 70,000 Syrian refugees living in urban locations across Turkey.

Source: United Nations High Commissioner for Refugees (UNHCR).  
*Syrian Regional Response Plan, January -June 2013.*

# Crisis in Syria

- ▶ Disrupted health system
  - 37% of public hospitals are out of service
  - 57% are damaged
  - 20% partially damaged
  - Operating with reduced capacity
- ▶ Health workforce
  - Damascus, Aleppo, and Homs
    - 70% of health providers cannot access their work place
    - Only 36 doctors practicing in and around Aleppo (compared to 5000 pre-crisis)
- ▶ Referral system has broken down
- ▶ Critical shortage of life-saving medicines
- ▶ Local production of medicines reduced by 90%

Source: World Health Organization (WHO). *Donor update; The Syrian Arab Republic, 9 April 2013.*

# Background (pre-crisis)

# Background

- ▶ Demographics
  - Low-middle country
  - Population (2010)  $\approx$  21 million
  - Population growth rate, 2.5%
  - 50.6% male
  - Age
    - Median, 21 years
    - Proportion 15–60 years, 57%
    - Proportion over 60 years, 6%



# Background

## ► Socioeconomics

- Gross national income (GNI) per capita:
  - \$3180 (2000) → \$5120 PPP (2010)
- Gini coefficient (income equality): 35.8
- Unemployment rate: 15%
- Proportion urbanized: 56%



# Background

## ► Social equity

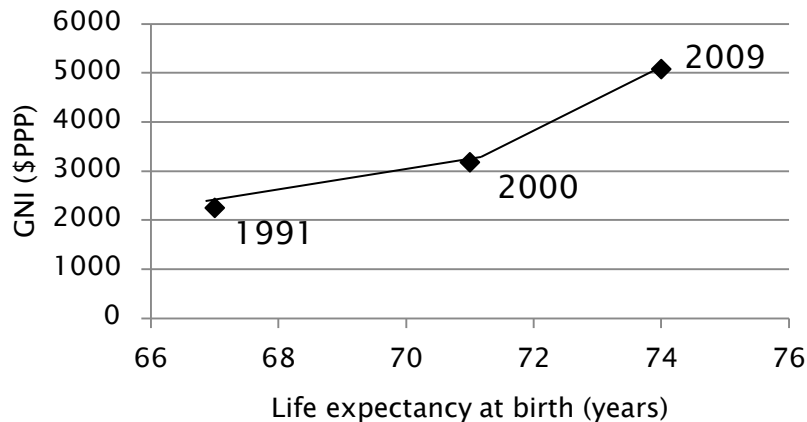
- Human development index (HDI): 0.632
- Years of schooling
  - Children (expected): 9.3 → 11.3 years
  - Adults: 2.6 → 5.7 years
- Illiteracy: 15% (women, 22%; men, 10%)
  - Aleppo: women 38%, men, 22%
- Illiteracy (children): 6% (girls, 7%; boys, 4%)
- Gender inequality index (GII): 47.4%

# Background

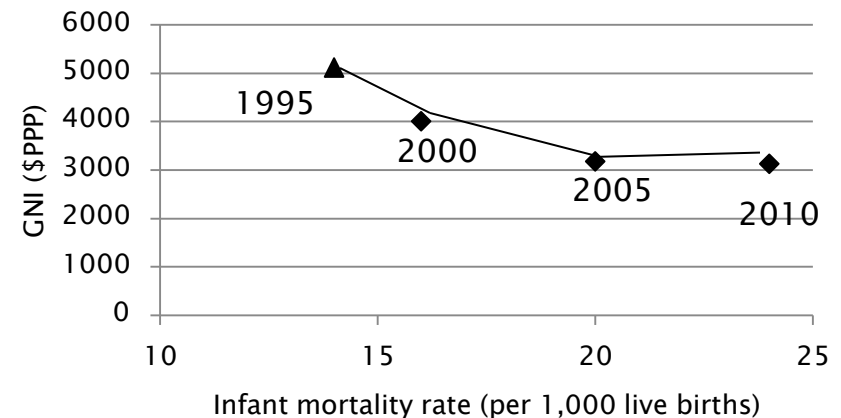
- ▶ General health measures
  - Life expectancy at birth (2009): 74 years
    - Male: 71 years/ Females: 76 years
  - Fertility rate: 2.9 (per woman)
  - Infant mortality: 14 per 1,000 live births
  - Under 5-mortality: 16 per 1,000 live births

# Gross national income vs. general health outcomes

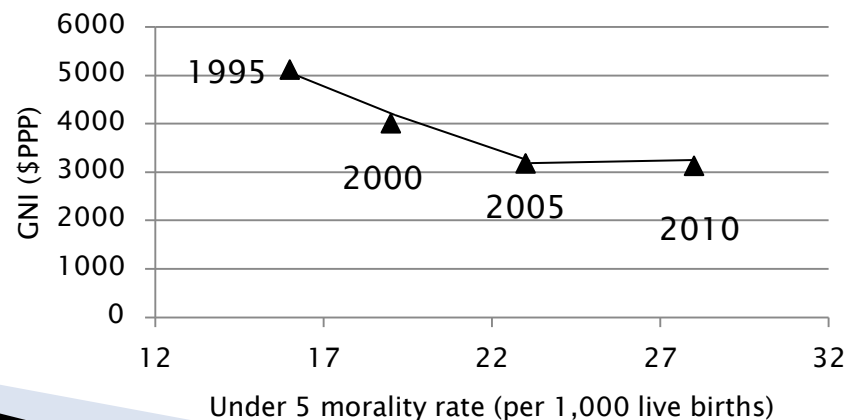
Life expectancy at birth (years)



Infant mortality rate (per 1,000 live births)



Under 5 mortality rate (per 1,000 live births)



# Background

## ► Health system

	Syria	EMR
Total health expenditures (per capita) (\$PPP)	\$174	\$324
Government health expenditures (per capita) (\$PPP)	\$80	\$165
Total health expenditures		
Government	46%	51%
Private	54%	49%
Government health expenditure as % of total government expenditures	5.6%	7.1%
Out-of-pocket expenses as % of total private health expenditures	100%	88%

# Background

## ► Healthcare services

Density (per 10,000 population)	Syria	EMR
Physicians	15	11
Nurses and midwives	19	16
Dentists	8	2
Pharmacists	8	5
Hospital beds	15	12

# Noncommunicable diseases

# NCDs

## Total mortality by broad causes (all ages)– Syria, 2008

### 2008 Total NCD deaths

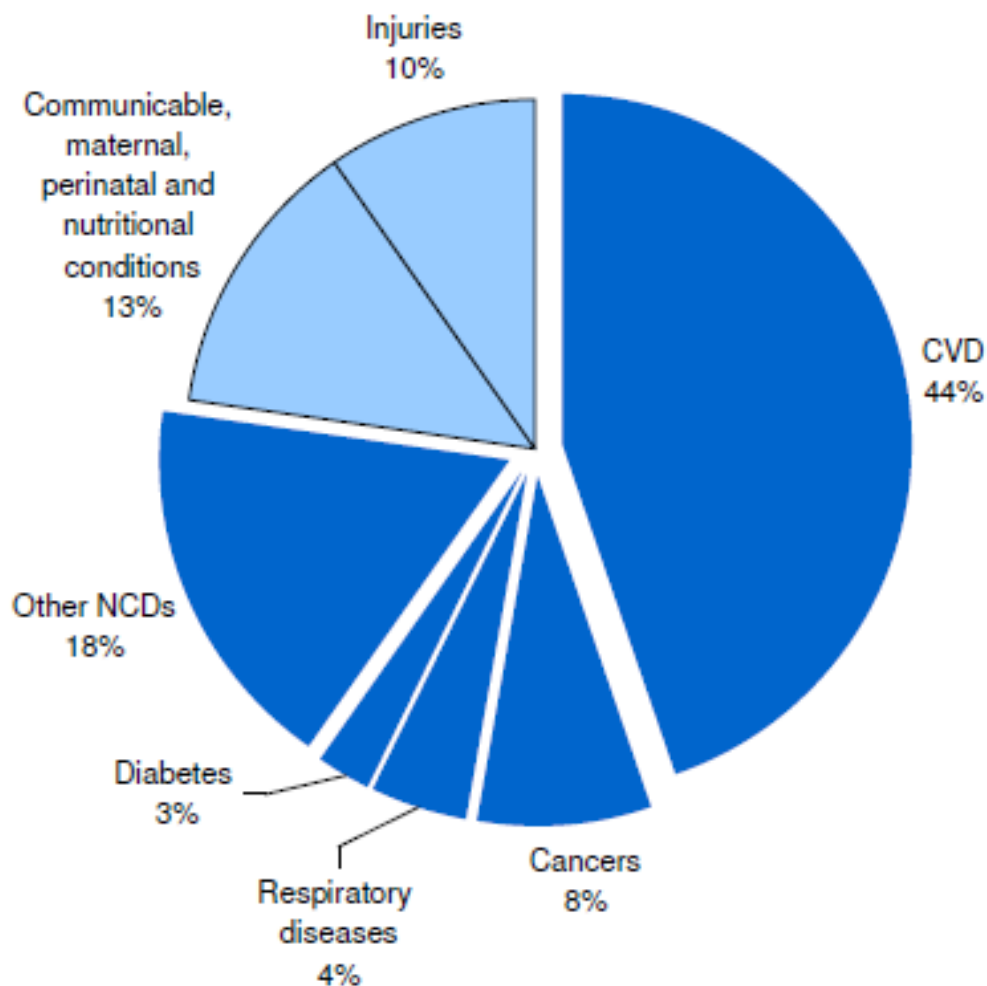
Males: 33,7000

Female: 26,1000

### % NCD deaths under age 60 (2008)

Males: 39.8%

Females: 33.1%



**NCDs are estimated to account for 77% of all deaths.**

Source: World Health Organization. Noncommunicable disease profiles by country, The Syrian Arab Republic.

# NCDs

## Age-standardized death rate (per 100 000) among Syrian adults, 2008

	Males	Females	Total*
All NCDs	730.4	503.5	619
CVD & Diabetes	471.7	326.1	327
Cancers	65.7	47.2	75
Respiratory diseases	46.5	28.8	27

\* Total numbers restricted to adults age 30-70.



# Cardiovascular disease

## Percent prevalence of CVD among adults-- Syria, 2004

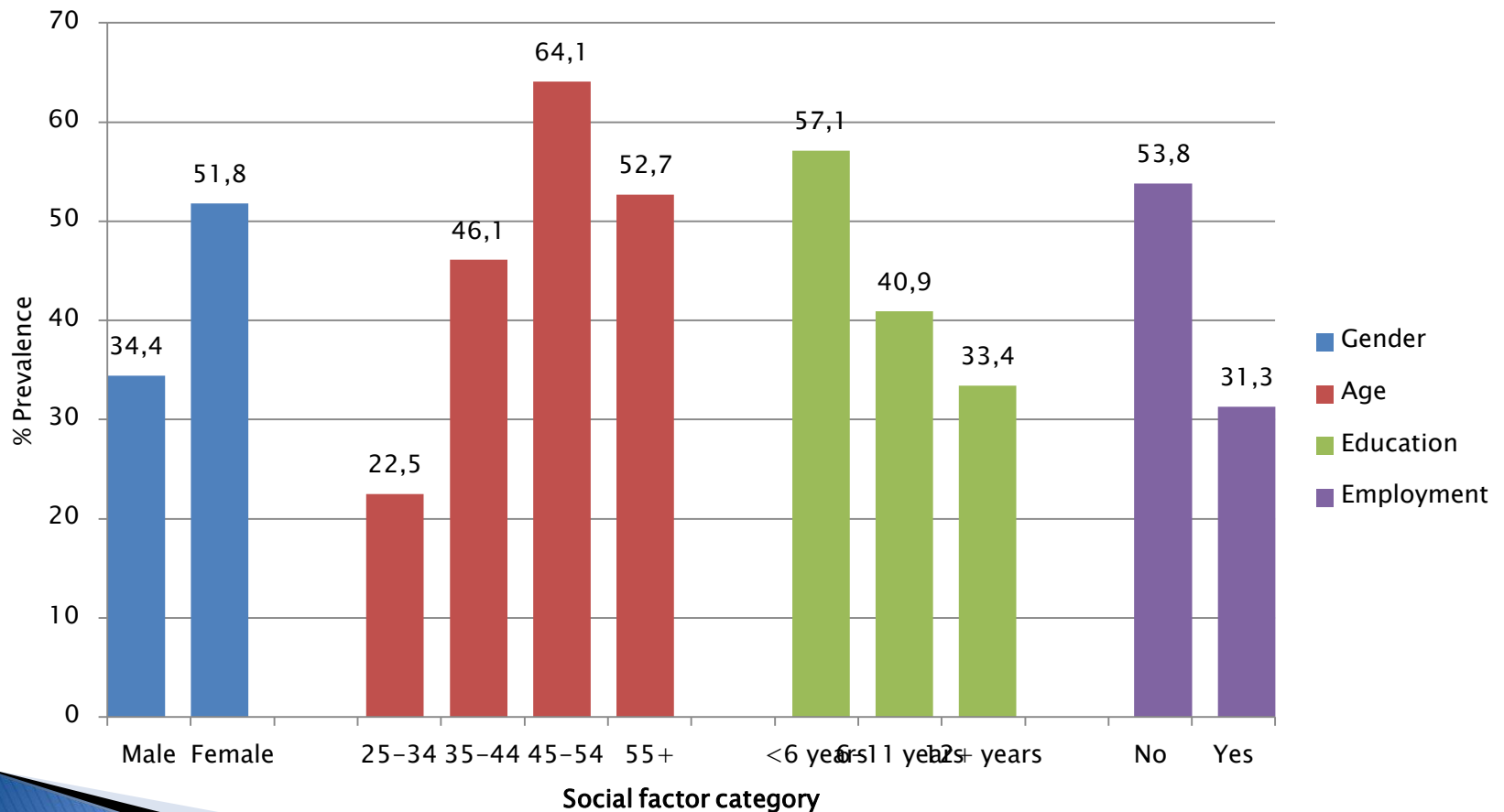
	Men	Women	Total
CHD	6.2	3.7	4.8
Stroke	0.9	1.0	1.0
All	6.5	4.6	5.4

## Age-adjusted mortality rates (per 100,000) of CVD among adults 20+ years of age-- Syria, 2004

	Men	Women	Total
CHD	433	398	418
Stroke	246	424	322
All	679	822	740

# Cardiovascular Clinical Risk Factors

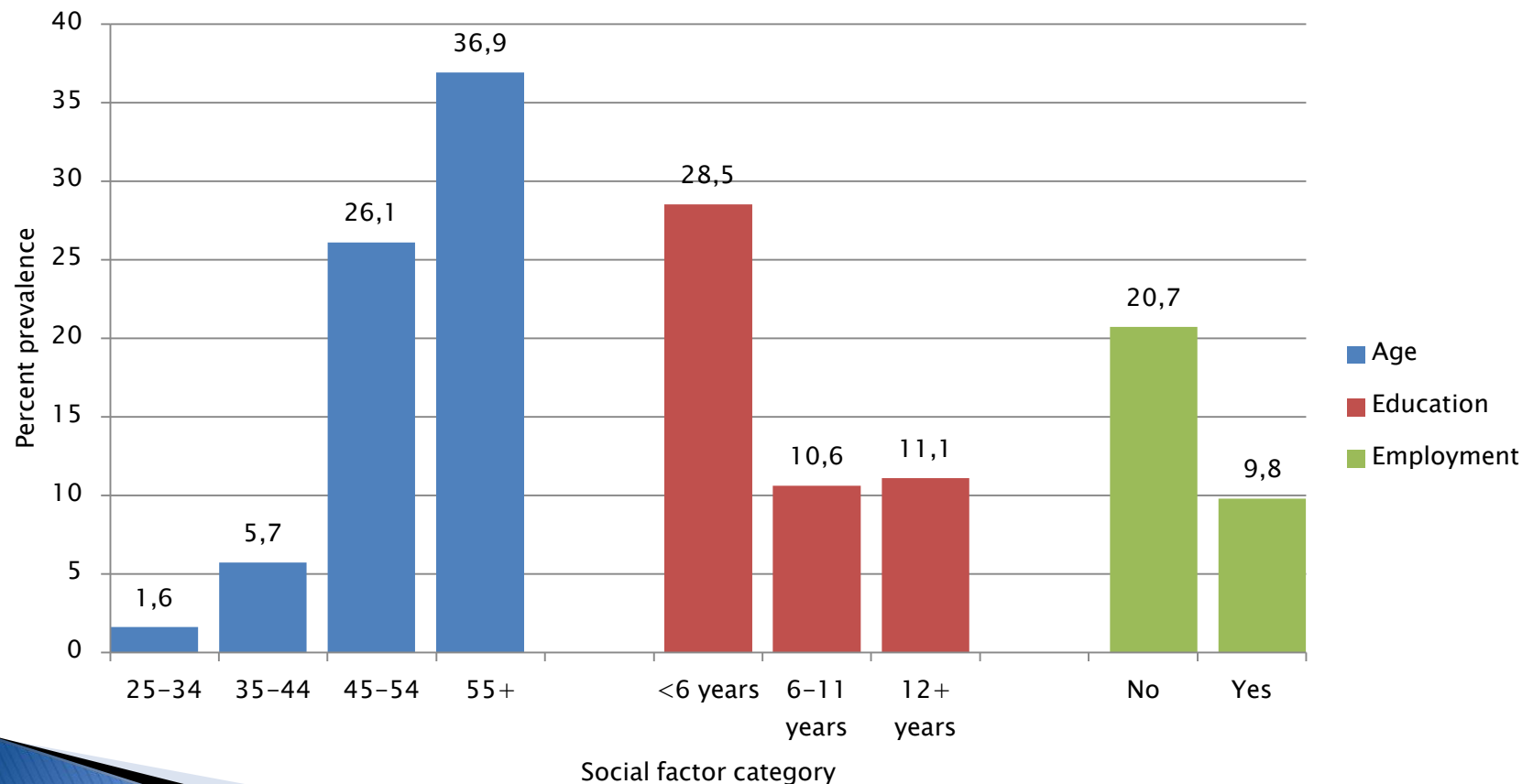
Prevalence of obesity by social factors-- Aleppo Household Survey, 2006, Syria



Source: Aleppo Household Survey, 2006

# Cardiovascular Clinical Risk Factors

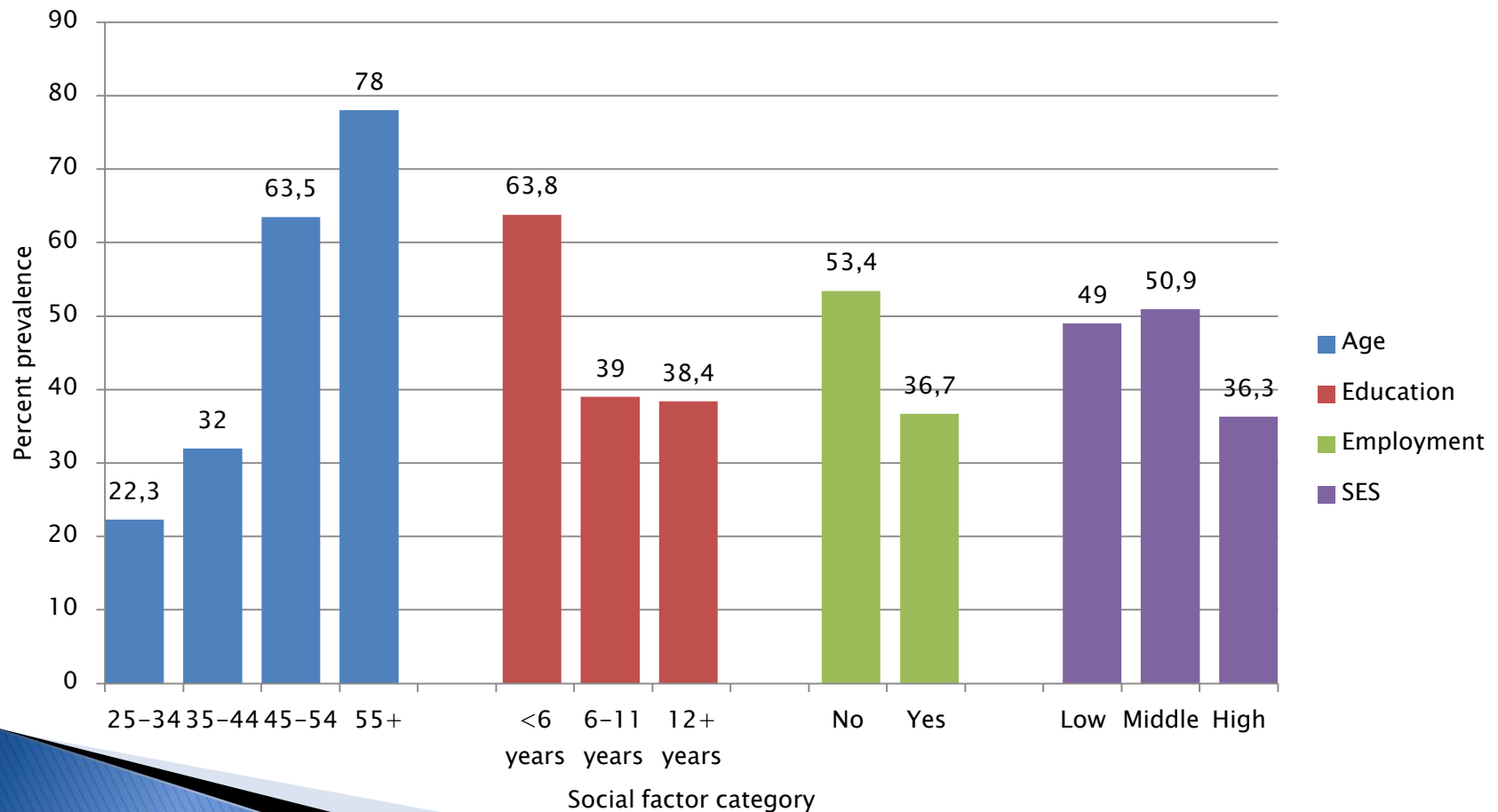
Prevalence of Type II diabetes by social factors-- Aleppo Household Survey, 2006,  
Syria



Source: Aleppo Household Survey, 2006

# Cardiovascular Clinical Risk Factors

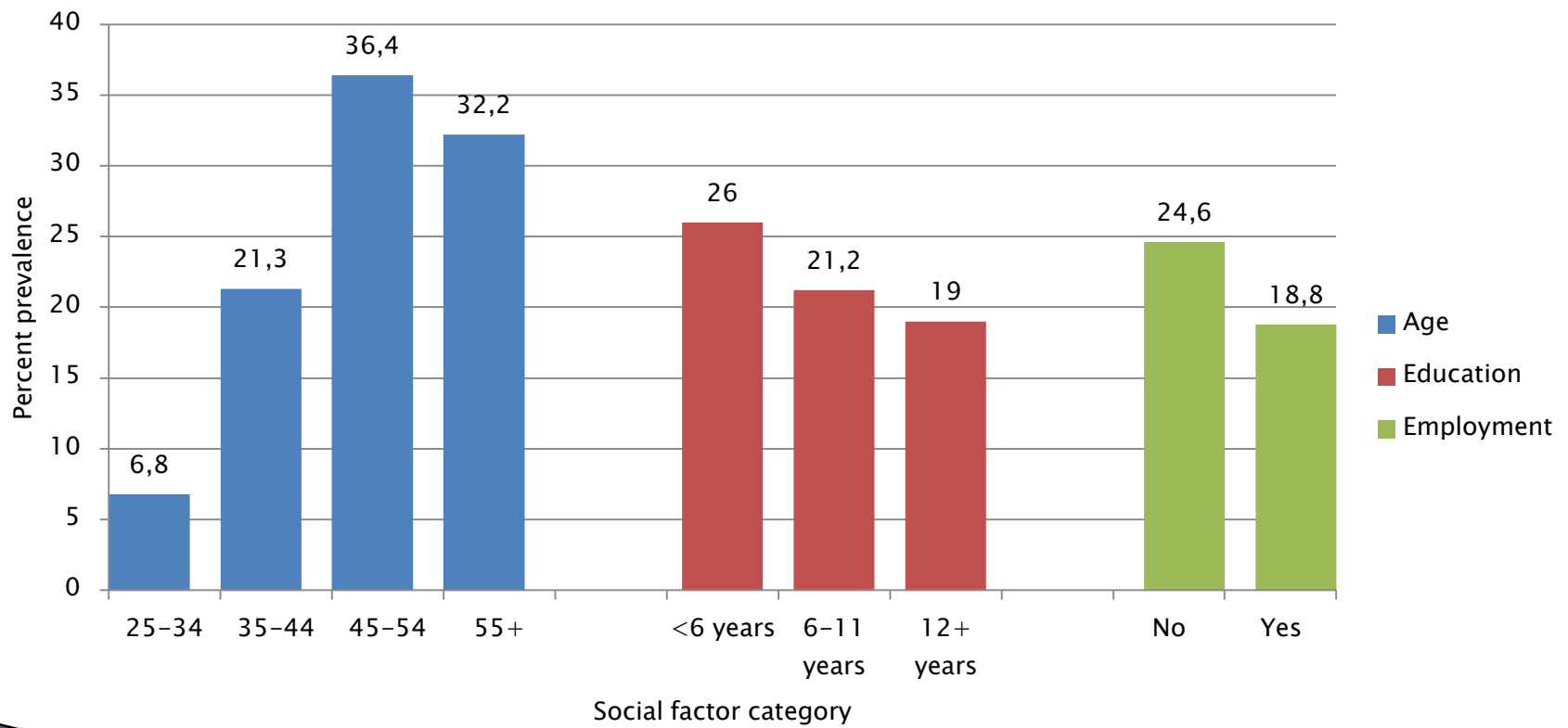
Prevalence of hypertension by social factors-- Aleppo Household Survey, 2006, Syria



Source: Aleppo Household Survey, 2006

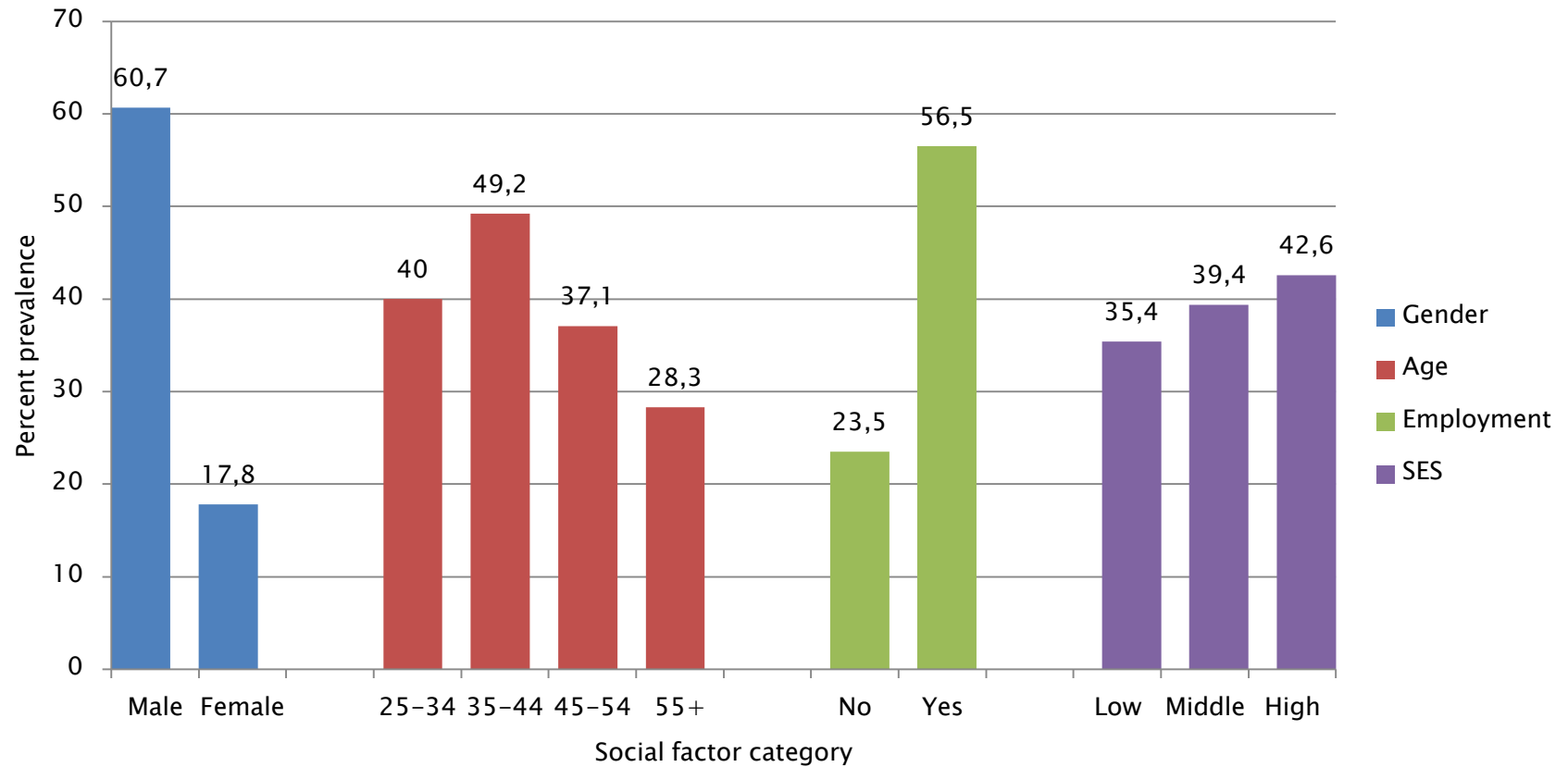
# Cardiovascular Clinical Risk Factors

Prevalence hypercholesterolemia by social factors-- Aleppo Household Survey, 2006,  
Syria



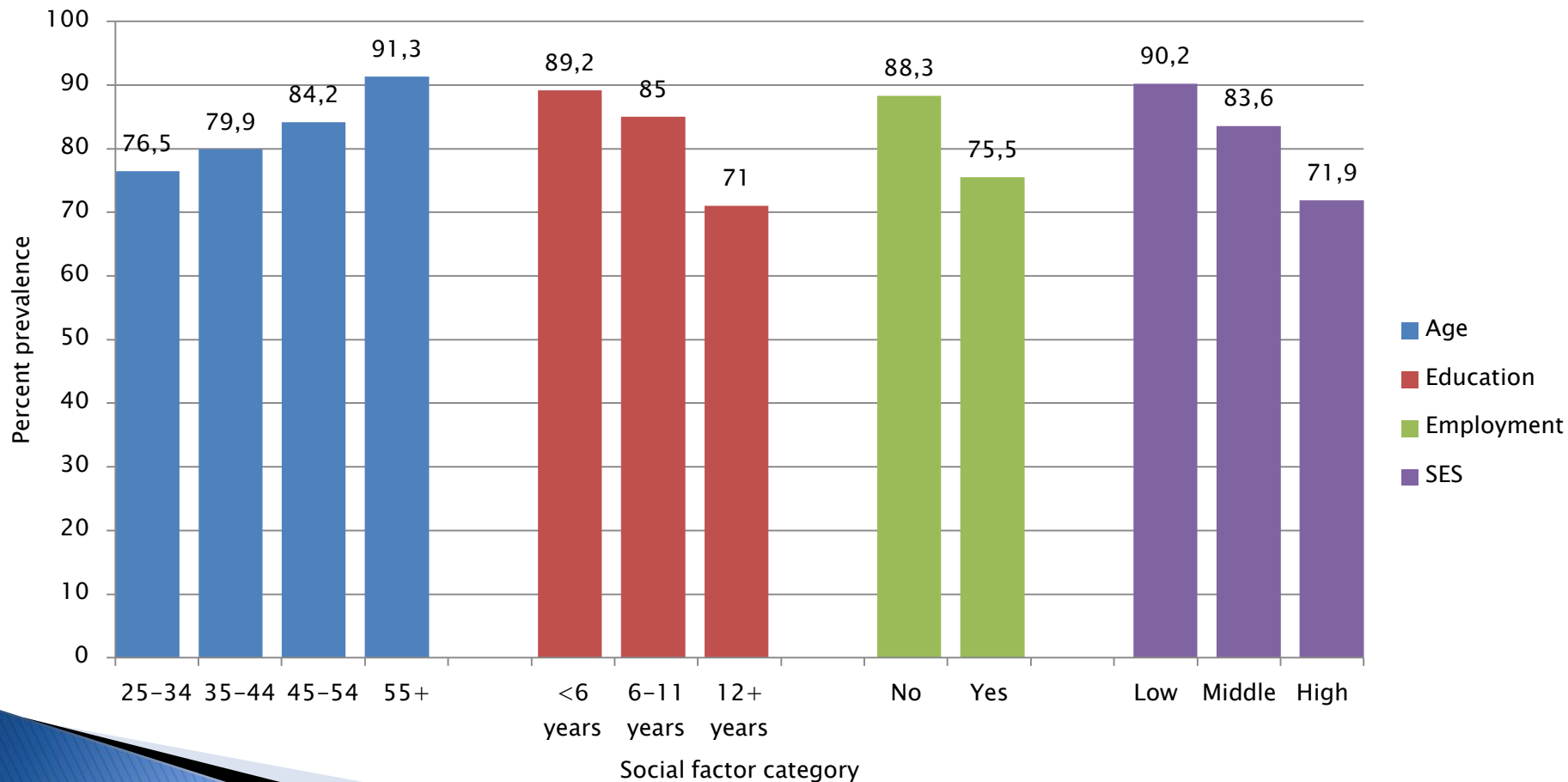
# Cardiovascular Behavioral Risk Factors

Prevalence of smoking by social factors-- Aleppo Household Survey, 2006, Syria



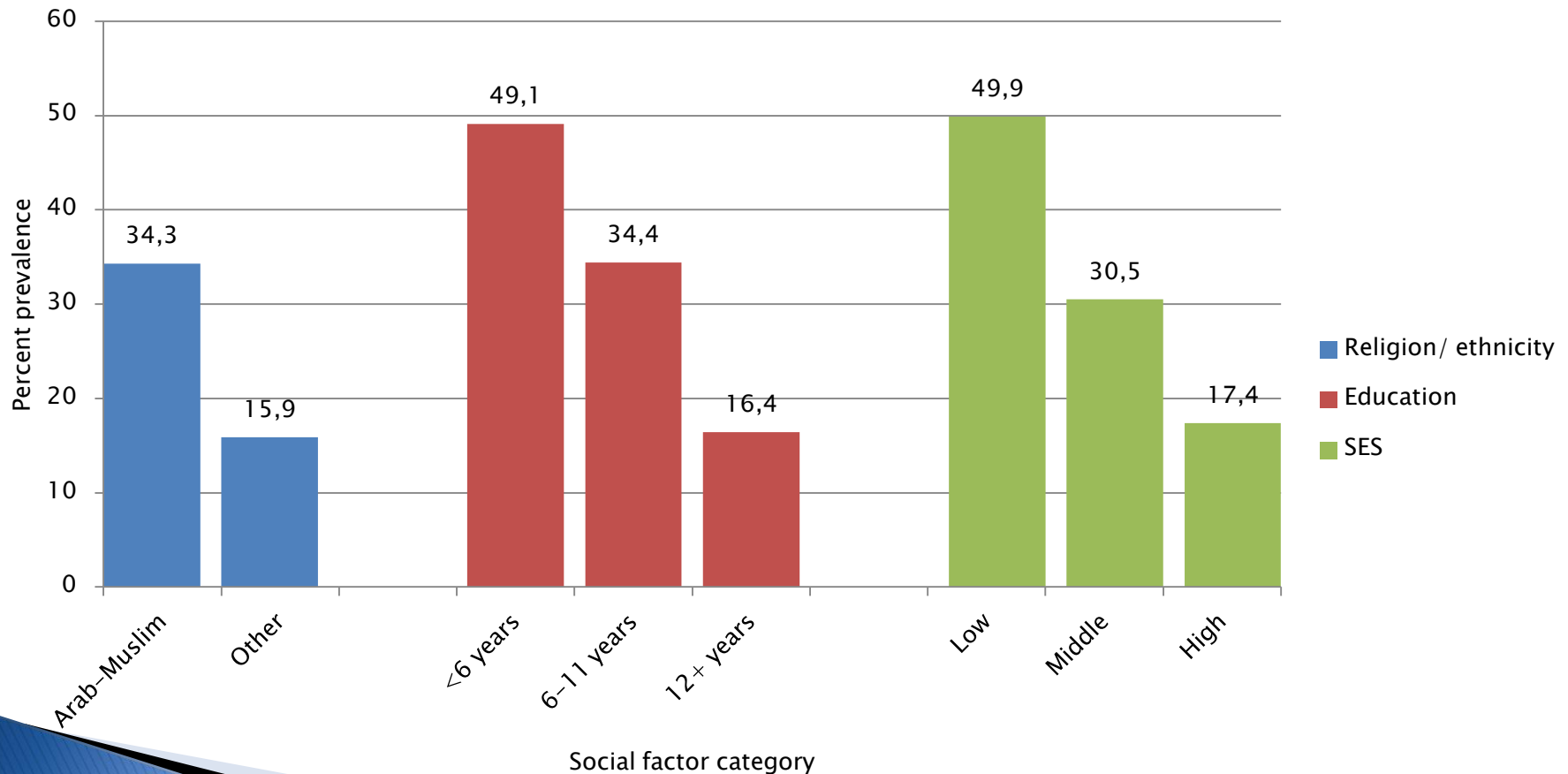
# Cardiovascular Behavioral Risk Factors

Prevalence of physical inactivity by social factors-- Aleppo Household Survey, 2006, Syria



# Cardiovascular Behavioral Risk Factors

Prevalence of unhealthy diet by social factors-- Aleppo Household Survey, 2006, Syria

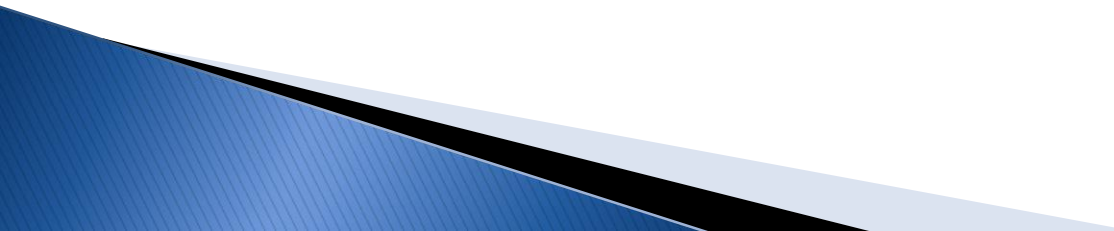




# Capacity to address/respond to NCDs

Dept in MoH responsible for NCDS	Yes
Funding available for...	
NCD treatment and control	Yes
NCD prevention and health promotion	No
NCD surveillance, monitoring, and evaluation	No
Integrated or topic-specific policy/ programme/ action plan that is currently operational for any NCDs or risk factors (CVD, cancer, chronic respiratory diseases, diabetes, alcohol, unhealthy diet, overweight/ obesity, physical inactivity, tobacco)	No

# Conclusions

- ▶ NCDs and CHD mortality in particular are high in the Syria
  - ▶ Age, education, employment, and socioeconomic status were consistently identified as social determinants of CHD
  - ▶ Caution: Data presented were collected prior to the start of the crisis within Syria
  - ▶ Many aspects of health, including the health system, risk factors, and social determinants of CHD are likely to be severely impacted
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# Thank you

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The Syrian Center for Tobacco Studies, MedCHAMPS,  
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