Prevalence of Elevated Cholesterol in Portugal: National Health Examination Survey (2015) Results

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INSEF Inquérito Nacional de Saúde com Exame Físico 2013-2016

BACKGROUND

High cholesterol level is a major risk factor for cardiovascular disease, responsible for 4.4 million deaths per year worldwide [1].

According to the WHO, in 2008 prevalence of elevated total cholesterol among adults in European region was 54% [2].

This study aims to estimate the prevalence of elevated cholesterol in the Portuguese population based on the direct measurement of total serum cholesterol.

METHODS

Study design: the Portuguese National Health Examination Survey (INSEF) is a cross-sectional population-based study.

Target population: individuals aged between 25 and 74, living in Portugal for more than 12 months, non-institutionalized and able to follow an interview in Portuguese.

Sampling: two-stage stratified cluster sampling, with selection of geographical areas in the first stage and individuals in the second stage. In the first stage the sample was stratified by region and typology of urban area.

Sample size: n=4911

Fieldwork: February 2015 – December 2015

The survey encompasses three components:

Core physical measurements + Blood collection + Interview (CAPI)

Measurement: Serum from participants' blood samples was used for total cholesterol measuring, using the enzymatic method in accordance with international quality standards.

Definition: Elevated cholesterol (EC) was defined as having a total serum cholesterol concentration above 190 mg/dL (current Portuguese recommendation for treatment) or reporting taking lipid-lowering medication.

Statistical analysis: EC estimated prevalence was stratified by sex, age, level of education and employment status.

Adjusted prevalence ratios were estimated using Poisson regression.

RESULTS

The overall prevalence of EC was 63.3%. [$CI_{95\%}$: 61.2%-65.4%].

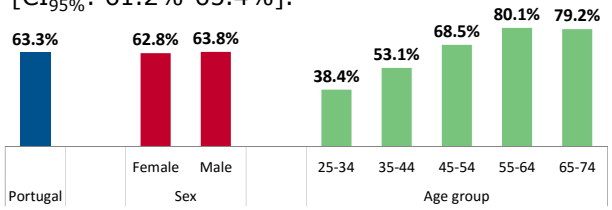

Figure 1. Prevalence of elevated total cholesterol by sex and age group

- Prevalence of EC was similar for males and females.
- Prevalence of EC increased with age, from 38.4% for 25-34 age group to 80.1% for 55-64 age group.

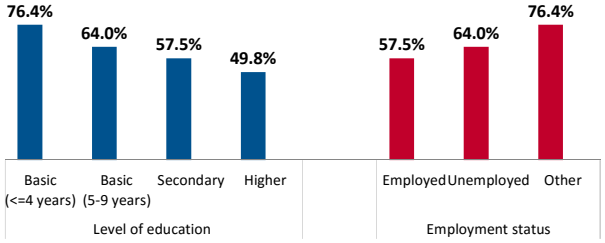

Figure 2. Prevalence of elevated total cholesterol by level of education and employment status

- Prevalence of EC was higher for individuals with basic education, unemployed and with other employment status.

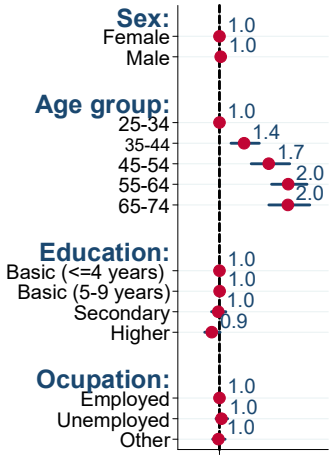

Figure 3. Adjusted Prevalence ratios of elevated total cholesterol by sex, age group, level of education and employment status

- After adjustment for confounding, prevalence of EC was twice as high among groups aged 55-64 and 65-74 compared with age 25-34.
- No significant differences were observed according to sex, level of education or employment status.
- 19.3% of the study participants reported taking lipid-lowering medication.

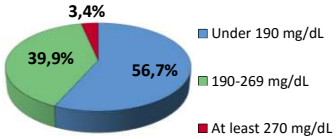

Figure 4. Total cholesterol level among those using lipid lowering medication

- Within this treated population, the proportion of individuals under control was 56.7%.
- 3.4% of individuals taking lipid-lowering medication still had total cholesterol level above 270 mg/dL.

CONCLUSIONS

- Results from the Portuguese National Health Examination survey in 2015 showed that 63.3% of the population aged between 25-74 years had total cholesterol above the desirable level.
- Prevalence of elevated cholesterol increased with age.
- Among those under treatment, almost half was not controlled.
- Although the total cholesterol level should be evaluated considering other cardiovascular risk factors, lowering cholesterol levels may contribute to reducing the burden of cardiovascular disease in Portugal.

REFERENCES

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