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Editorial

# Social inequalities in cardiovascular mortality in Spain: differences by age and gender and implications for prevention

## Desigualdades sociales en mortalidad cardiovascular en España: diferencias según la edad y el género e implicaciones en prevención

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Many national and international studies have described an inverse relationship between socioeconomic status, usually measured by educational attainment, and cardiovascular disease (CVD).[1–4] The fact that persons with lower levels of education or social status have a higher incidence of CVD and of mortality suggests that inequalities in CVD may be related to socioeconomic level. A recent article published in *Revista Española de Cardiología* by Haeberer et al.[5] is the first to describe a study that analyzed differences in CVD-related mortality in the overall population, as well as from an intersectional perspective that also considered sex, age, and education.

In Europe, mortality inequalities related to socioeconomic level are largely attributed to CVD, although the proportion varies according to region.[6,7] In Spain, CVD was the leading cause of mortality inequalities between 2001 and 2008, accounting for almost 50% of absolute inequality in mortality.[7] However, absolute inequality in cardiovascular (CV) mortality appears to be dropping in regions in northern, southern, and western Europe.[6–10] In contrast, relative inequalities in CV mortality are rising in a number of regions in Europe among both men and women.[10] Spain has seen a decrease in absolute inequalities in coronary mortality, but no increase in relative inequalities.[11]

The inequality observed in CV mortality associated with educational attainment does not appear to be present in all diagnoses.[12] In Spain, there were no data on inequality associated with various CVD diagnoses until Haeberer et al.[5] published their study. This Spanish study found inequality, both absolute and relative, associated with mortality due to ischemic heart disease, heart failure, and stroke, results consistent with the data observed in other countries of Europe.[12] Haeberer et al. also described greater relative inequalities in ischemic heart disease and heart failure in women than men, regardless of age group, as reported in other European regions,[12] as well as greater absolute inequalities in these diagnoses in women, except for the population aged 30 to 69 years.

Haeberer et al. explained that part of the differences in inequality found in men and women are due to individual differences in inequalities and vulnerability to CV risk factors. This explanation is plausible when considering that these risk factors could explain 17% to 70% of inequalities in the incidence of ischemic heart disease and stroke in the general European population.[13,14] Furthermore, in Spain, it has been observed that the inequalities associated with the prevalence of obesity and diabetes are higher in women than in men.[15] Apart from individual inequalities in CV risk factors, the greater inequality observed in CV mortality among women may also be due to lower access to diagnostic tests and specialized medical advice,[16] greater impact from environmental stressors and social support levels,[17] and lower availability of financial resources, access to the job market, and independence.[18,19]

Haeberer et al.[5] observed higher inequality in CV mortality in the population between 30 and 69 years old. The authors discovered that individuals with lower educational levels in this age group accounted for 50% to 65% of deaths due to CVD and ischemic heart disease. The mortality figures in the age bracket of 30 to 69 years could indicate, as in England,[9] that inequalities are declining among the youngest individuals, but not among the oldest group.

The presence of inequalities in mortality due to ischemic heart disease, heart failure, and stroke in Spain observed by Haeberer et al. suggests that strategies should be designed to reduce them. More specifically, the greater inequality observed in the group aged 30 to 69 years and in women shows that efforts should be aimed at offering CV prevention measures to the entire population, but most particularly to these groups with higher inequalities. Additionally, these results indicate the need to further analyze inequalities in CV risk factors and the contribution of these factors to inequalities in CV mortality and incidence in various regions in Spain. The analysis of CV risk factors should include not only personal factors, such as age, sex, smoking, diabetes, hypertension, and hypercholesterolemia, among others, but also population factors such as deprivation. It is essential to identify the risk factors that most strongly contribute to inequalities in CV mortality and incidence, for the purpose of defining specific strategies to reduce such inequalities and identifying the areas where it would be most feasible and most necessary to apply measures.

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## CONFLICTS OF INTEREST

None declared.

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