

Original article

Socioeconomic Status and Health Inequalities for Cardiovascular Prevention Among Elderly Spaniards

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ABSTRACT

Introduction and objectives: Although it is known that social factors may introduce inequalities in cardiovascular health, data on the role of socioeconomic differences in the prescription of preventive treatment are scarce. We aimed to assess the relationship between the socioeconomic status of an elderly population at high cardiovascular risk and inequalities in receiving primary cardiovascular treatment, within the context of a universal health care system.

Methods: Cross-sectional study of 7447 individuals with high cardiovascular risk (57.5% women, mean age 67 years) who participated in the PREDIMED study, a clinical trial of nutritional interventions for cardiovascular prevention. Educational attainment was used as the indicator of socioeconomic status to evaluate differences in pharmacological treatment received for hypertension, diabetes, and dyslipidemia.

Results: Participants with the lowest socioeconomic status were more frequently women, older, overweight, sedentary, and less adherent to the Mediterranean dietary pattern. They were, however, less likely to smoke and drink alcohol. This socioeconomic subgroup had a higher proportion of coexisting cardiovascular risk factors. Multivariate analysis of the whole population found no differences between participants with middle and low levels of education in the drug treatment prescribed for 3 major cardiovascular risk factors (odds ratio [95% confidence interval]): hypertension (0.75 [0.56–1.00] vs 0.85 [0.65–1.10]); diabetic participants (0.86 [0.61–1.22] vs 0.90 [0.67–1.22]); and dyslipidemia (0.93 [0.75–1.15] vs 0.99 [0.82–1.19], respectively).

Conclusions: In our analysis, socioeconomic differences did not affect the treatment prescribed for primary cardiovascular prevention in elderly patients in Spain. Free, universal health care based on a primary care model can be effective in reducing health inequalities related to socioeconomic status.

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Nivel socioeconómico y desigualdades de salud en la prevención cardiovascular de la población española de edad avanzada

RESUMEN

Palabras clave:

Enfermedad cardiovascular
Factor de riesgo cardiovascular
Tratamiento farmacológico
Desigualdades socioeconómicas
Estilos de vida

Introducción y objetivos: Aunque se sabe que los determinantes sociales pueden ser causa de desigualdades en la salud, se ha evaluado escasamente si hay diferencias socioeconómicas relacionadas con el tratamiento preventivo. El objetivo de este estudio es analizar la relación entre el nivel socioeconómico de una población con alto riesgo cardiovascular y las desigualdades en el tratamiento cardiovascular recibido en un sistema sanitario gratuito y universal.

Métodos: Estudio transversal de 7.447 pacientes con alto riesgo cardiovascular (el 57,5% mujeres; media de edad, 67 años) procedentes del estudio PREDIMED, un ensayo clínico de intervención nutricional para la prevención cardiovascular. El nivel educativo alcanzado se usó como indicador del nivel socioeconómico para evaluar las diferencias en el tratamiento farmacológico contra la hipertensión, la diabetes mellitus y la dislipemia.

Resultados: Los participantes que con mayor frecuencia se encontraban en niveles socioeconómicos inferiores eran mujeres, ancianos, pacientes con sobrepeso y sedentarios y aquellos con peor patrón de adherencia a la dieta mediterránea; sin embargo, eran menos fumadores y consumidores habituales de alcohol. Asimismo, este subgrupo mostró mayor proporción de factores de riesgo cardiovascular. El análisis multivariable ajustado en la población general no mostró diferencias en el tratamiento de fármacos preventivos prescritos para los principales factores de riesgo cardiovascular en relación con el nivel socioeconómico (*odds ratio* [intervalo de confianza del 95%]): participantes hipertensos (0,75 [0,56-1,00] frente a 0,85 [0,65-1,10]); participantes diabéticos (0,86 [0,61-1,22] frente a 0,90 [0,67-1,22]); participantes con dislipemia (0,93 [0,75-1,15] frente a 0,99 [0,82-1,19]).

Conclusiones: No se observaron diferencias en el tratamiento recibido en prevención cardiovascular primaria por los pacientes de edad avanzada en relación con el nivel socioeconómico. Un sistema de salud universal y gratuito basado en un modelo de atención primaria puede ser eficaz en la reducción de las desigualdades en la salud.

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Abbreviations

CVD: cardiovascular disease
SES: socioeconomic status

heart disease, we found no inequalities in cardiovascular prevention related to SES in Spain's health care system, which provides free, universal coverage.¹³ The present study aimed to assess the relationship between SES and health inequalities for CVD prevention treatment in patients at high cardiovascular risk who have not yet developed CVD, within the context of a universal, free health care system.

INTRODUCTION

Cardiovascular diseases (CVD) continue to be the leading cause of death and disability worldwide, representing 30% of all deaths.¹ The impact of the main risk factors (smoking, hypertension, dyslipidemia, and diabetes mellitus [DM]) on this public health issue is well known. It has been estimated that 972 million people suffer from hypertension² and 366 million from DM.³ The World Health Organization estimates that dyslipidemia is associated with more than half of all cases of ischemic heart disease and more than 4 million deaths per year.⁴ It is well known that the elderly population has a higher incidence of CVD and a worse prognosis.⁵ The population aged 65 and older in the United States has more than doubled, from 35 million in 2000 to 71 million in 2030, while the worldwide population aged 65 and older is projected to increase from 420 million to 973 million during 2000-2030.⁶ Although researchers are increasingly interested in the study of multimorbidity and related determinants in this age group, this population is usually underrepresented in clinical trials.^{7,8} Socioeconomic or demographic factors are among the many factors that have been associated with unequal access to health care services, which can produce inequalities in the diagnosis, treatment, and management of CVD risk factors.^{9,10} Low socioeconomic status (SES) is directly related to a higher risk of CVD.^{11,12} In a previous study carried out in patients with established coronary

METHODS

Study Design

We conducted a cross-sectional study using baseline data from the PREDIMED study, a trial aimed at assessing the effects of the traditional Mediterranean diet on the primary prevention of CVD. Details of the protocol have been described elsewhere¹⁴ and are available online.¹⁵ Briefly, the PREDIMED study involved long-term follow-up of 7447 participants (55-80 years of age) at high cardiovascular risk, but with no CVD at enrollment. Participants were included during 2003 to 2009, and follow-up ended in December 2010. All patients were assigned to one of 3 diets: traditional Mediterranean diet supplemented with extra-virgin olive oil, traditional Mediterranean diet supplemented with mixed nuts, or a low-fat diet (used as control group receiving advice to reduce dietary fat). Primary endpoints were myocardial infarction and stroke; secondary endpoints were death from any cause, heart failure, DM, major cancers, dementia, or other neurodegenerative disorders. The main inclusion criteria were age (women 60-80 years old and men 55-80 years old) with either type-2 DM or 3 or more cardiovascular risk factors: smoking, hypertension, elevated low-density lipoprotein cholesterol levels, low high-density lipoprotein cholesterol levels, overweight or obesity, or a

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