

Multimorbilidad, determinantes sociales e interseccionalidad. Resultados de la Cohorte EpiChron

Aída Moreno Juste

Contrato Río Hortega 2022-2024

Grupo EpiChron de Investigación en Enfermedades Crónicas

1. Introducción

Los determinante sociales (DDS)

Son las circunstancias en que las personas nacen, crecen, viven, trabajan y envejecen, incluido el sistema de salud

**Subsanar las desigualdades en una generación:
Alcanzar la equidad sanitaria actuando sobre los
determinantes sociales de la salud**

Informe final de la
Comisión OMS sobre Determinantes Sociales de la Salud

28 de agosto de 2008

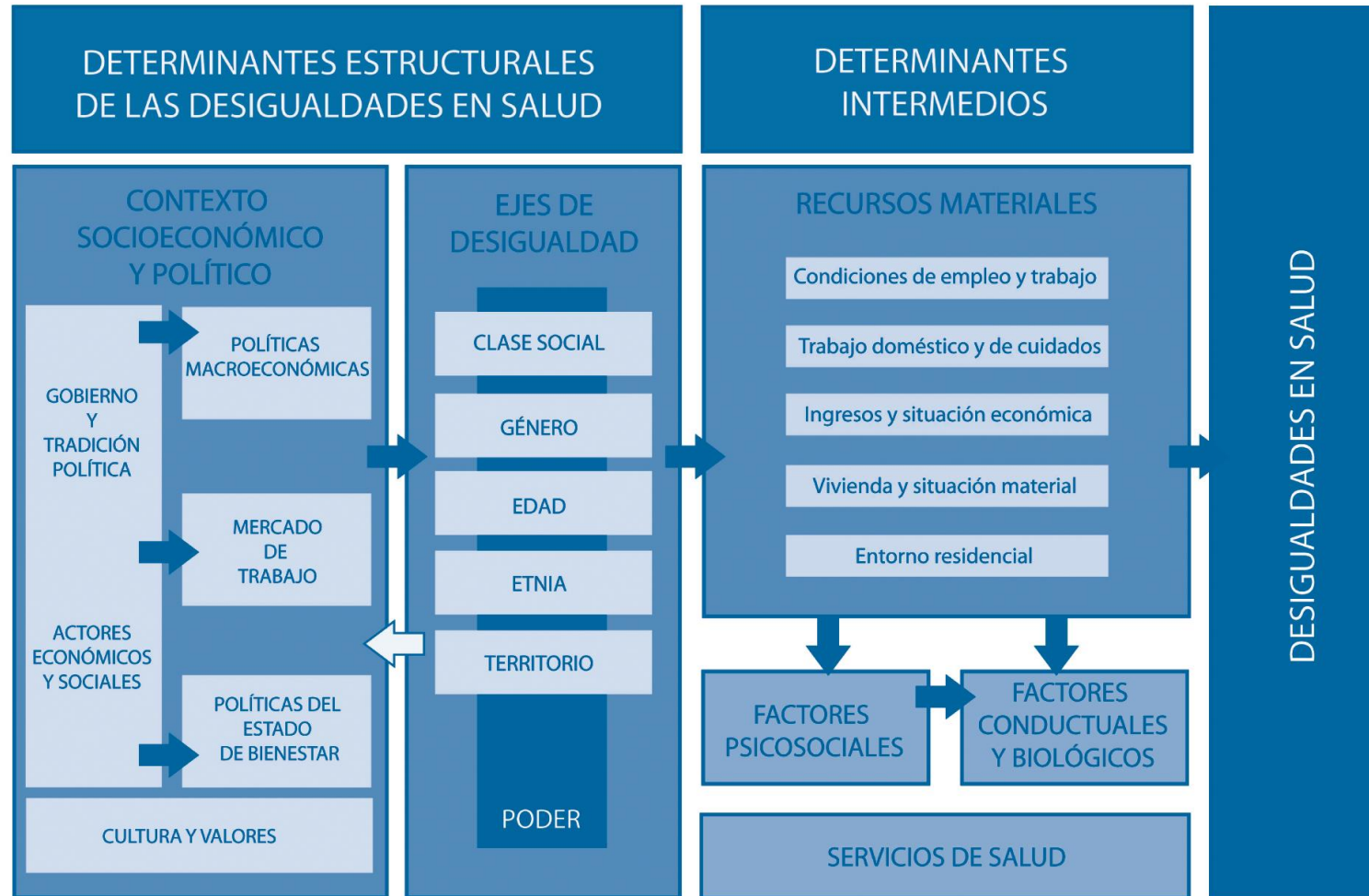


**Organización
Mundial de la Salud**



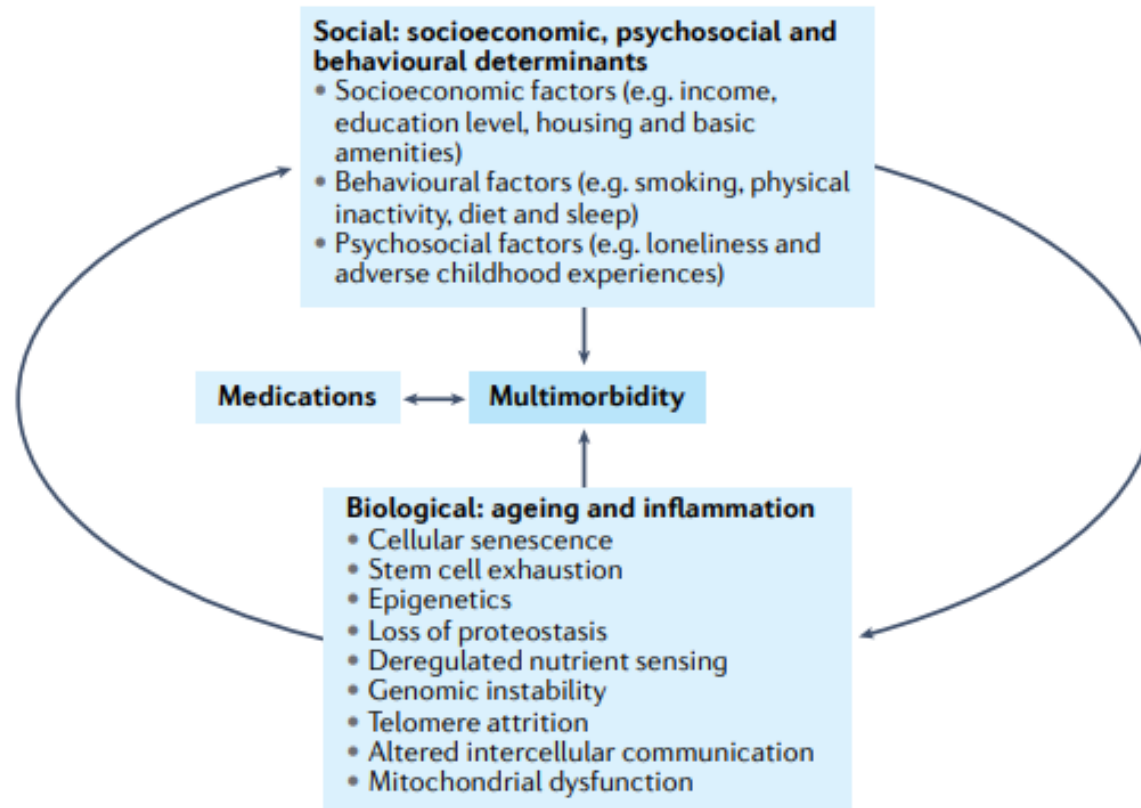
Commission on
Social Determinants of Health

1. Introducción



Ministerio de Sanidad, Servicios Sociales e Igualdad. Comisión para reducir las desigualdades sociales en salud en España. Avanzando hacia la equidad. Propuestas de políticas e intervenciones para reducir las desigualdades sociales en salud en España. Madrid 2015

1. Introducción



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Primer | Published: 14 July 2022

Multimorbidity

[Søren T. Skov](#) [Frances S. Mair](#), [Martin Fortin](#), [Bruce Guthrie](#), [Bruno P. Nunes](#), [J. Jaime Miranda](#), [Cynthia M. Boyd](#), [Sanghamitra Pati](#), [Sally Mtenga](#) & [Susan M. Smith](#)

Nature Reviews Disease Primers **8**, Article number: 48 (2022) | [Cite this article](#)

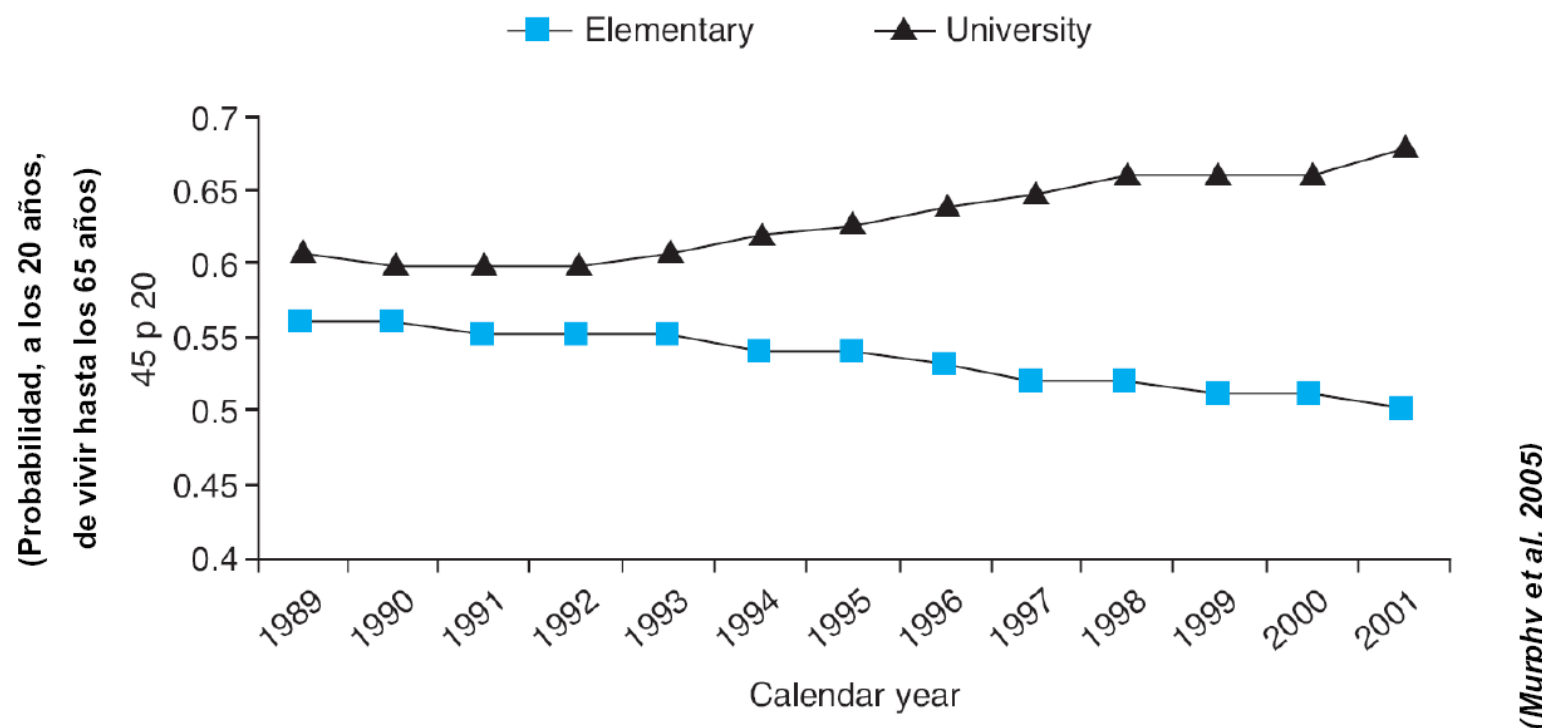
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Abstract

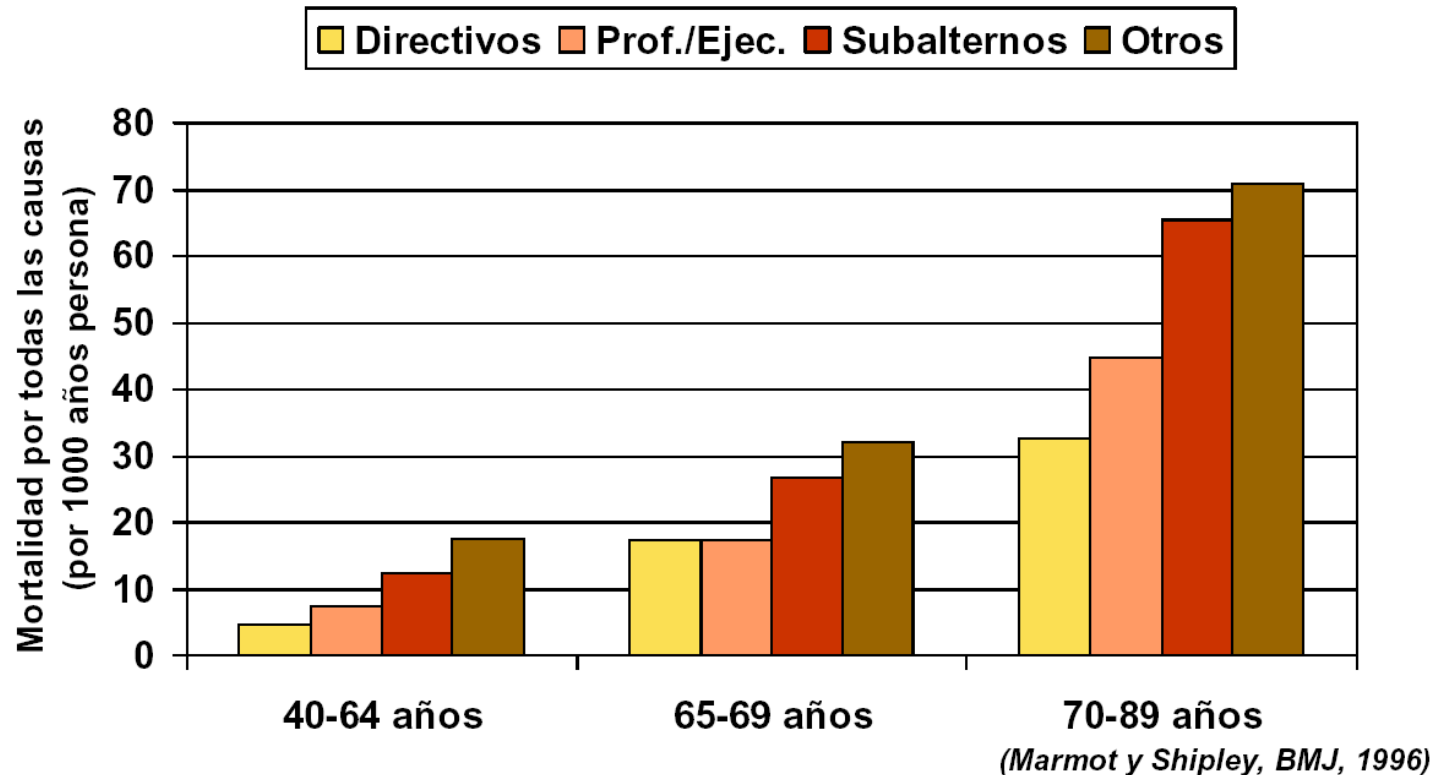
Multimorbidity (two or more coexisting conditions in an individual) is a growing global challenge with substantial effects on individuals, carers and society. Multimorbidity occurs a decade earlier in socioeconomically deprived communities and is associated with premature

<https://www.nature.com/articles/s41572-022-00376-4.pdf> [View PDF](#) and [download health care utilization, Medication](#)

Tendencia al aumento de las diferencias de mortalidad en función de la educación, Rusia, 1989-2001



Mortalidad con más de 25 años, según la jerarquía laboral: Whitehall



Male life expectancy, between- and within-country inequities, selected countries

Place	Life expectancy at birth
United Kingdom, Scotland, Glasgow (Calton) ^b	54
India ^a	62
United States, Washington DC (black) ^c	63
Philippines ^a	64
Lithuania ^a	65
Poland ^a	71
Mexico ^a	72
United States ^a	75
Cuba ^a	75
United Kingdom ^a	77
Japan ^a	79
Iceland ^a	79
United States, Montgomery County (white) ^c	80
United Kingdom, Scotland, Glasgow (Lenzie N.) ^b	82

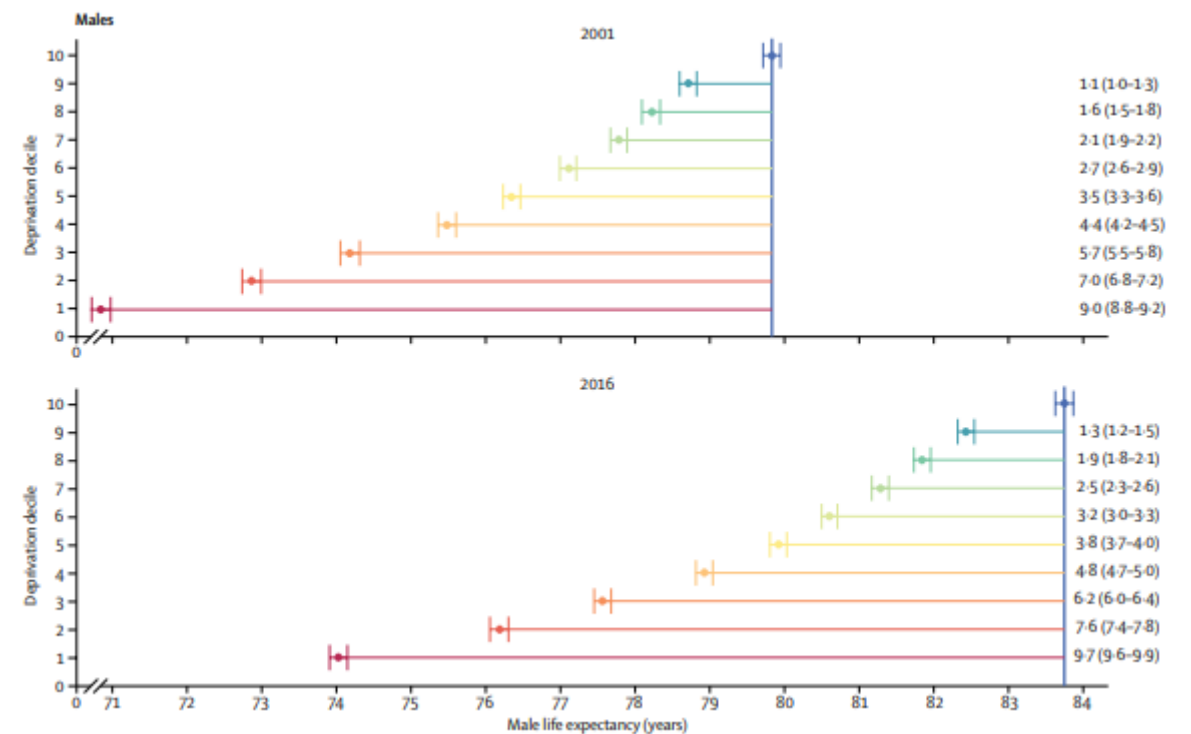
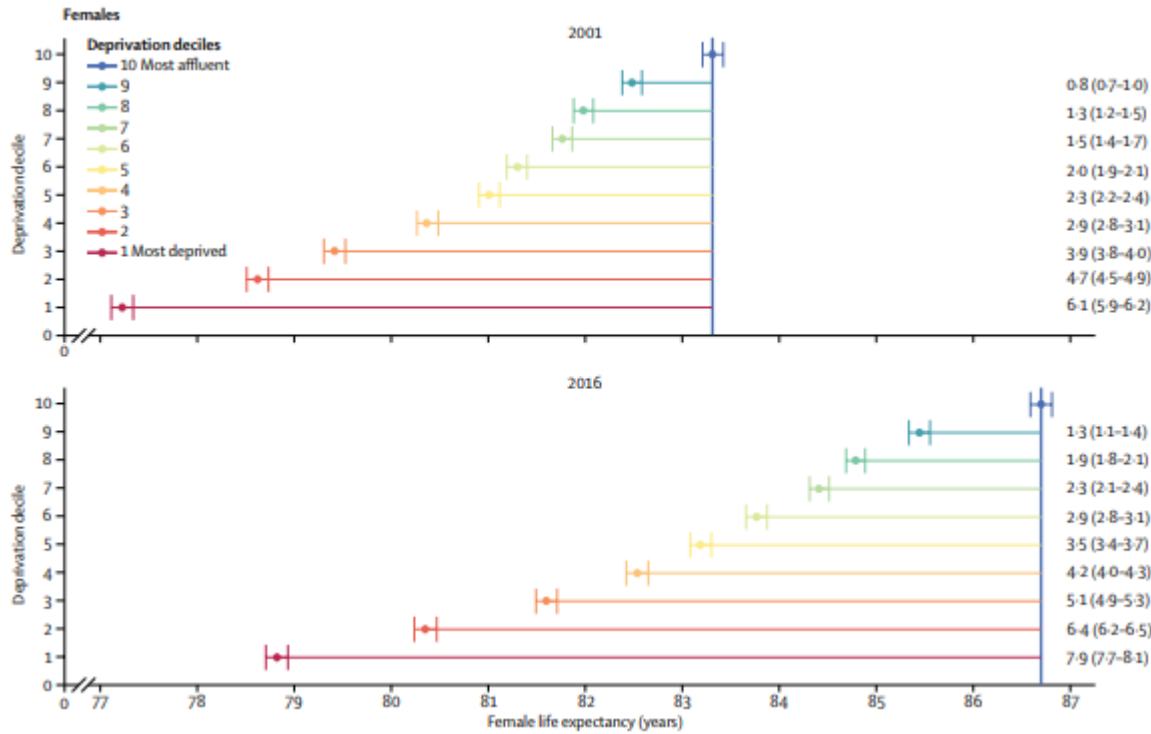
**Subsanar las desigualdades en una generación:
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28 de agosto de 2008



1. Introducción



Articles

Contributions of diseases and injuries to widening life expectancy inequalities in England from 2001 to 2016: a population-based analysis of vital registration data

James E Bennett, Jonathan Pearson-Stuttard, Vasilis Kontis, Simon Capewell, Ingrid Wolff, Majid Ezziati

Summary

Background Life expectancy inequalities in England have increased steadily since the 1980s. Our aim was to investigate how much deaths from different diseases and injuries and at different ages have contributed to this rise to inform policies that aim to reduce health inequalities.

Methods We used vital registration data from the Office for National Statistics on population and deaths in England by underlying cause of death, from 2001 to 2016, stratified by sex, 5-year age group, and decile of the Index of Multiple Deprivation (based on the ranked scores of Lower Super Output Areas in England in 2015). We grouped the 7.65 million deaths by their assigned International Classification of Diseases (10th revision) codes to create categories of public health and clinical relevance. We used a Bayesian hierarchical model to obtain robust estimates of cause-specific death rates by sex, age group, year, and deprivation decile. We calculated life expectancy at birth by decile of deprivation and year using life-table methods. We calculated the contributions of deaths from each disease and injury, in each 5-year age group, to the life expectancy gap between the most deprived and affluent deciles using Arriaga's method.



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See Comment page 450
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and Biostatistics, School of
Public Health, UCL (James E Bennett,
Jonathan Pearson-Stuttard,
Vasilis Kontis,
Prof M Ezziati (MEdS)),
MRC-PHE Centre for
Environment and Health,
UCL (Bennett, J Pearson-Stuttard,
Ezziati)

1. Introducción

Social inequalities in multimorbidity, frailty, disability, and transitions to mortality: a 24-year follow-up of the Whitehall II cohort study

Aline Dugravot, Aurore Fayosse, Julien Dumurgier, Kim Bouillon, Tesnim Ben Rayana, Alexis Schnitzler, Mika Kivimaki, Séverine Sabia, Archana Singh-Manoux

Summary

Background Social inequalities in mortality persist in high-income countries with universal health care, and the mechanisms by which these inequalities are generated remain unclear. We aimed to examine whether social inequalities were present before or after the onset of adverse health conditions (multimorbidity, frailty, and disability).

Methods Our analysis was based on data from the ongoing Whitehall II cohort study, which enrolled British civil servants aged 35–55 years in 1985–88. Participants were assessed for three indicators of socioeconomic status (education, occupational position, and literacy) at age 50 years. Participants underwent clinical examinations (in 2002–04, 2007–09, 2012–13, and 2015–16) for assessment of frailty (two or more of low physical activity, slow walking speed, poor grip strength, weight loss, and exhaustion) and disability (two or more difficulties in bathing, dressing, going to the toilet, transferring, feeding, and walking). In addition, electronic health records were used to assess the incidence of multimorbidity (two or more of diabetes, coronary heart disease, stroke, chronic obstructive pulmonary disease, depression, arthritis, cancer, dementia, and Parkinson's disease) and mortality. In analyses adjusted for sociodemographic factors, we used multistate models to examine social inequalities in transitions from healthy state to adverse health conditions and subsequently to mortality.

- Multimorbilidad, fragilidad y discapacidad se asocian con mayor mortalidad
 - Sobre todo MM
- Ocupación es el indicador social más fuertemente asociado a pasar de no tener enfermedad a MM, fragilidad y a discapacidad

1. Introducción

Socioeconomic status and multimorbidity: a systematic review and meta-analysis

Thanya I. Pathirana,¹ Caroline A. Jackson^{2,3}

The increasing prevalence of chronic conditions^{1,2} and the growth of the ageing population has led to an increase in multimorbidity worldwide.³ In this article, we distinguish between multimorbidity (the co-existence of two or more chronic conditions) and co-morbidity (co-occurrence of disease/s with a specific index disease). The impact of multimorbidity on the health and wellbeing of individuals, the burden on healthcare systems and

Abstract

Objectives: We performed a systematic review to identify, critically appraise and existing literature on the association between SEP and multimorbidity occurrence.

Methods: We searched Medline and Embase from inception to December 2014.¹ we performed meta-analysis to obtain summary odds ratios (ORs), exploring heterogeneity between studies through sub-group analysis.

Results: We identified 24 cross-sectional studies that largely reported on education or income in relation to multimorbidity occurrence. Differences in analysis method pooling of results for education only. Low versus high education level was associated with increased odds of multimorbidity (summary OR: 1.64, 95% CI: 1.41 to 1.91).

- MM y bajo nivel educativo
- MM y peor nivel de deprivación
- No clara relación entre MM e ingresos económicos
- El ingreso económico es peor marcador social que la educación en mayores
- No hay muchos estudios sobre MM, género y edad
- Limitaciones por ser estudios transversales, diferentes definiciones de MM, necesario incorporar Salud Mental

1. Introducción

La mayor parte de la investigación y las políticas que se ocupan de las desigualdades sociales analizan los DDS como fenómenos separados y disociados.

Lynn Weber → describe cómo las mujeres estadounidenses de color en los años setenta y principios de los ochenta, muchas de clase trabajadora, llegaron a criticar la tradición patriarcal de los estudios de género por privilegiar el género sobre la raza y clase

Argumentaron que estos ejes de desigualdad son de analíticamente inseparables, y que "la multidimensionalidad y la naturaleza interconectada de las jerarquías de raza, clase y género eran especialmente visibles para los que se enfrentan a la opresión"

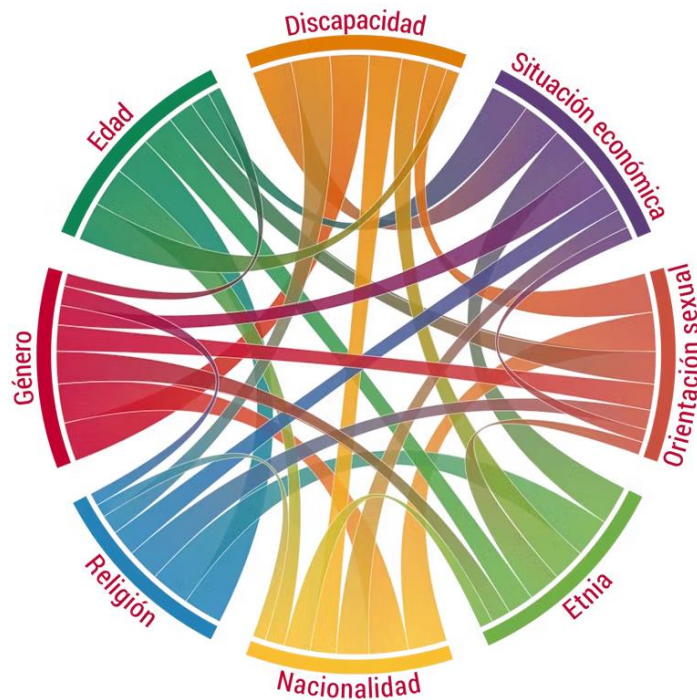
**RACE, GENDER,
AND CLASS**
Theory and Methods of Analysis



BART LANDRY

1. Introducción

Interseccionalidad



Los factores sociales como el género, la clase social y la raza/etnia están interconectados, y crean sistemas de discriminación o desventaja que se solapan e interactúan

Estudio de estratos definidos por la combinación de varias dimensiones socioeconómicas

Desplazar el foco del estudio de los factores de riesgo individuales a las interconexiones entre ellos, reforzando la importancia de intervenciones estructurales que aborden de forma global las causas sociales que influyen en la multimorbilidad


MariaCaterina La Barbera y DESiGNiA web para IMPEMAD

1. Introducción

Objetivo

Caracterización de la multimorbilidad, desde un punto de vista interseccional

- Género
- Edad
- Etnia
- Zona de residencia
- Clase socioeconómica



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Cite as: Moreno-Juste A, Gimeno-Miguel A, Poblador-Pou B, Calderón-Larrañaga A, Cano del Pozo M, Forjaz MJ, Prados-Torres A, Gimeno-Felíu LA. Multimorbidity, social determinants and intersectionality in chronic patients. Results from the EpiChron Cohort. J Glob Health 2023;13:04014.

Multimorbidity, social determinants and intersectionality in chronic patients. Results from the EpiChron Cohort

Aida Moreno-Juste^{1,2,3*}, Antonio Gimeno-Miguel^{1,3*}, Beatriz Poblador-Plou^{1,2}, Amaia Calderón-Larrañaga^{3,4}, Mabel Cano del Pozo^{1,3,5}, Maria João Forjaz^{3,6}, Alexandra Prados-Torres^{1,3,†}, Luis A Gimeno-Felíu^{1,2,3,7,†}


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²San Pablo Primary Care Health Centre, Aragon Health Service (SALUD), Zaragoza, Spain
³Network for Research on Chronicity, Primary Care, and Health Promotion (RICAPPS).

Background Multimorbidity is influenced in an interconnected way, both in extent and nature, by the social determinants of health. We aimed at implementing an intersectional approach to analyse the association of multimorbidity with five important axes of social inequality (i.e. gender, age, ethnicity, residence area and socioeconomic class).

Methods We conducted a cross-sectional observational study of all individuals who presented with at least one chronic disease in 2019 (n = 1 086 948) from the EpiChron Cohort (Aragon, Spain). Applying intersectional analysis, the age-adjusted likelihood of multimorbidity was investigated across 36 intersectional strata defined by gender, ethnicity, residence area and socioeconomic class. We calculated odds ratios (OR) 95% confidence interval (CI) using high-income urban non-migrant men as the reference category. The area under the receiver operator characteristics curve (AUC) was calculated to evaluate the discriminatory accuracy of multimorbidity.

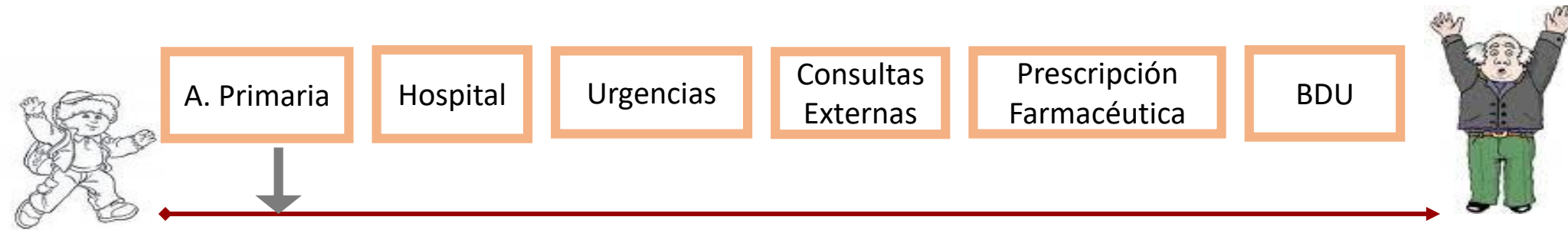
Results The prevalence of multimorbidity increased with age, female

PAPERS



La Cohorte EpiChron

Fuente de información clínica para la investigación epidemiológica en multimorbilidad



1.3 M de habitantes



International Journal of Epidemiology, 2018, 1–9
doi: 10.1093/ije/dyx259
Cohort Profile



Cohort Profile

Cohort Profile: The Epidemiology of Chronic Diseases and Multimorbidity. The EpiChron Cohort Study

A Prados-Torres,¹ B Poblador-Plou,² A Gimeno-Miguel,^{2*}
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F González-Rubio,⁶ C Laguna-Berna,² J Marta-Moreno,⁷
M Clerencia-Sierra,⁷ M Aza-Pascual-Salcedo,⁸ A C Bandrés-Liso,⁹
C Coscollar-Santaliestra,⁵ V Pico-Soler¹⁰ and J M Abad-Diez¹¹

EpiChron Research Group on Chronic Diseases: ¹Aragon Health Sciences Institute (IACS), IIS Aragon, Miguel Servet University Hospital, Zaragoza, University of Zaragoza, Health Services Research on Chronic Patients Network (REDISSEC), Spain, JA-CHRODIS+, EU, ²IACS, IIS Aragon, Miguel Servet University Hospital, Zaragoza, REDISSEC, Spain, ³Aging Research Center, Karolinska Institutet, Stockholm, Sweden, REDISSEC, Spain, ⁴Aragon Health Service (SALUD), REDISSEC, Spain, ⁵Primary Care Health Centre (PCHC) San Pablo, Zaragoza, SALUD, University of Zaragoza, REDISSEC, Spain, ⁶PCHC Dolicias-Sur, Zaragoza, SALUD, REDISSEC, Spain, ⁷Miguel Servet University Hospital, Zaragoza,



La Cohorte EpiChron

The EpiChron Cohort Study

**Investigación en enfermedades crónicas y multimorbilidad
útil para el sistema sanitario**

Objetivos

- Caracterización longitudinal de la multimorbilidad y de la comorbilidad de enfermedades crónicas prevalentes en población general y grupos de riesgo
 - Insuficiencia cardiaca
 - EPOC
 - Diabetes y obesidad
 - Enfermedad mental
 - Demencia
 - Fragilidad
 - Inmigración
 - Cáncer

- Polifarmacia y farmacoepidemiología

- Asociaciones sistemáticas entre enfermedades crónicas y fármacos: Patrones

- Determinantes e impacto de la multimorbilidad y polifarmacia

2. Metodología

- Estudio observacional retrospectivo en la **Cohorte EpiChron**
 - Pacientes con 1 enfermedad crónica en 2019 (n=1,086,948)
 - Variables:
 - Género
 - Edad: ≤14, 15-44, 45-64, 65-79, ≥80 años
 - Etnia: nativo e inmigrante (lugar de nacimiento distinto a España)
 - Años de estancia en España: ≤15 años o >15 años
 - Zona de residencia: urbano (municipios que concentran el 80% de la población) y rural
 - Clase socioeconómica:
 - Bajos ingresos <18 000€
 - Medios ingresos 18 000€-100 000€
 - Altos ingresos >100 000€

2. Metodología

Multimorbilidad ≥ 2 enfermedades crónicas

Análisis estadístico

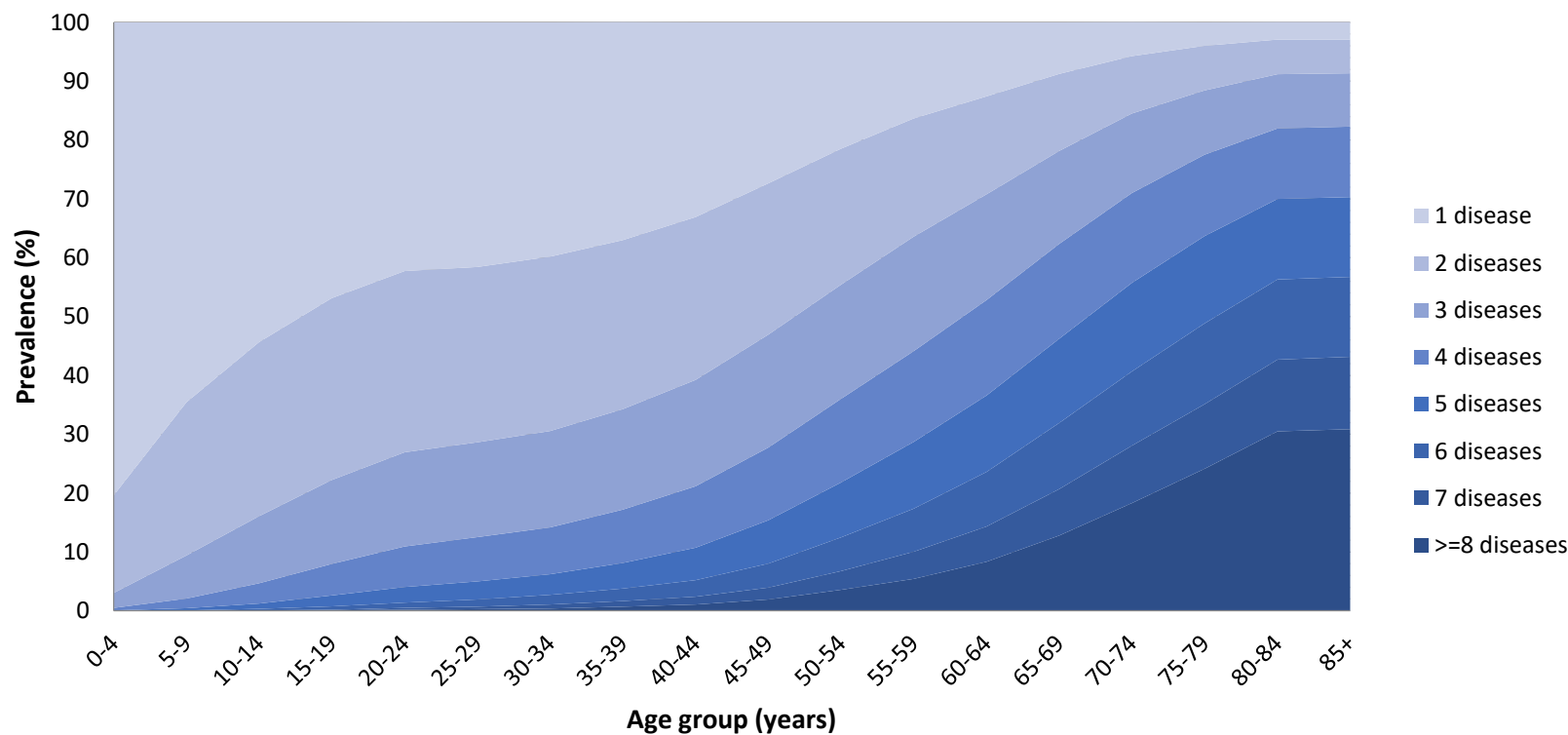
- Estudio descriptivo estratificado según género: test de Student o χ^2
- Interseccionalidad con 36 estratos
 - Combinando 2 géneros x 2 etnias (x 2 variables de estancia en inmigrantes) x 2 zonas de residencias x 3 clases socioeconómicas)
 - Referencia: Hombres nativos de altos ingresos que vivían en zonas urbanas
- 5 modelos consecutivos de regresión logística (OR, intervalo de confianza del 95%)
 - Variable dependiente: multimorbilidad
 - Se incluía de forma sucesiva: género (modelo 1), Ingresos (modelo 2), etnia-años de estancia (model 3), zona de residencia (model 4).
 - Model 5: model 4+ estratos
 - AUC para evaluar la precisión discriminadora de la multimorbilidad

	Men	Women	Total
Population (n, %)	481,008 (46.33)	557,299 (53.67)	1,038,307 (100)
Age, years (mean, SD)	52.88 (23.70)	54.77 (24.09)	53.90 (23.93)
Age group, years (n, %)			
0-14	38,918 (8.09)	34,115 (6.12)	73,033 (7.03)
15-44	127,751 (26.56)	157,115 (28.19)	284,866 (27.44)
45-64	152,822 (31.77)	164,007 (29.43)	316,829 (30.51)
65-79	91,570 (19.04)	99,275 (17.81)	190,845 (18.38)
≥80	69,947 (14.54)	102,787 (18.44)	172,734 (16.64)
Ethnicity (n, %)			
Non-migrant	424,153 (88.18)	483,289 (86.72)	907,442 (87.40)
Immigrant	56,855 (11.82)	74,010 (13.28)	130,865 (12.60)
Length of stay in Aragon (n, %)			
≤15years	42,309 (74.42)	58,041 (78.42)	100,350 (76.68)
>15 years	14,546 (25.58)	15,969 (21.58)	30,515 (23.32)
Residence area (n, %)			
Urban	281,728 (58.57)	342,690 (61.49)	624,418 (60.14)
Rural	199,278 (41.43)	214,604 (38.51)	413,882 (39.86)
Annual gross income			
Low	312,734 (65.02)	428,813 (76.94)	741,547 (71.42)
Medium	165,633 (34.43)	126,662 (22.73)	292,295 (28.15)
High	2,641 (0.55)	1,824 (0.33)	4,465 (0.43)
Number of chronic diseases (mean, SD)	3.41 (2.50)	4.00 (2.77)	3.73 (2.67)
Multimorbidity (n, %)	354,552 (73.71)	448,865 (80.54)	803,417 (77.38)
Number of chronic diseases (n, %)			
1	126,456 (26.29)	108,434 (19.46)	234,890 (22.62)
2	99,335 (20.65)	100,625 (18.06)	199,960 (19.26)
3	72,383 (15.05)	83,023 (14.90)	155,406 (14.97)
4	54,133 (11.25)	67,005 (12.02)	121,138 (11.67)
5	40,616 (8.44)	54,784 (9.83)	95,400 (9.19)
6	29,802 (6.20)	43,384 (7.78)	73,186 (7.05)
7	20,857 (4.34)	33,082 (5.94)	53,939 (5.19)
≥8	37,426 (7.78)	66,962 (12.02)	104,388 (10.05)

3. Resultados

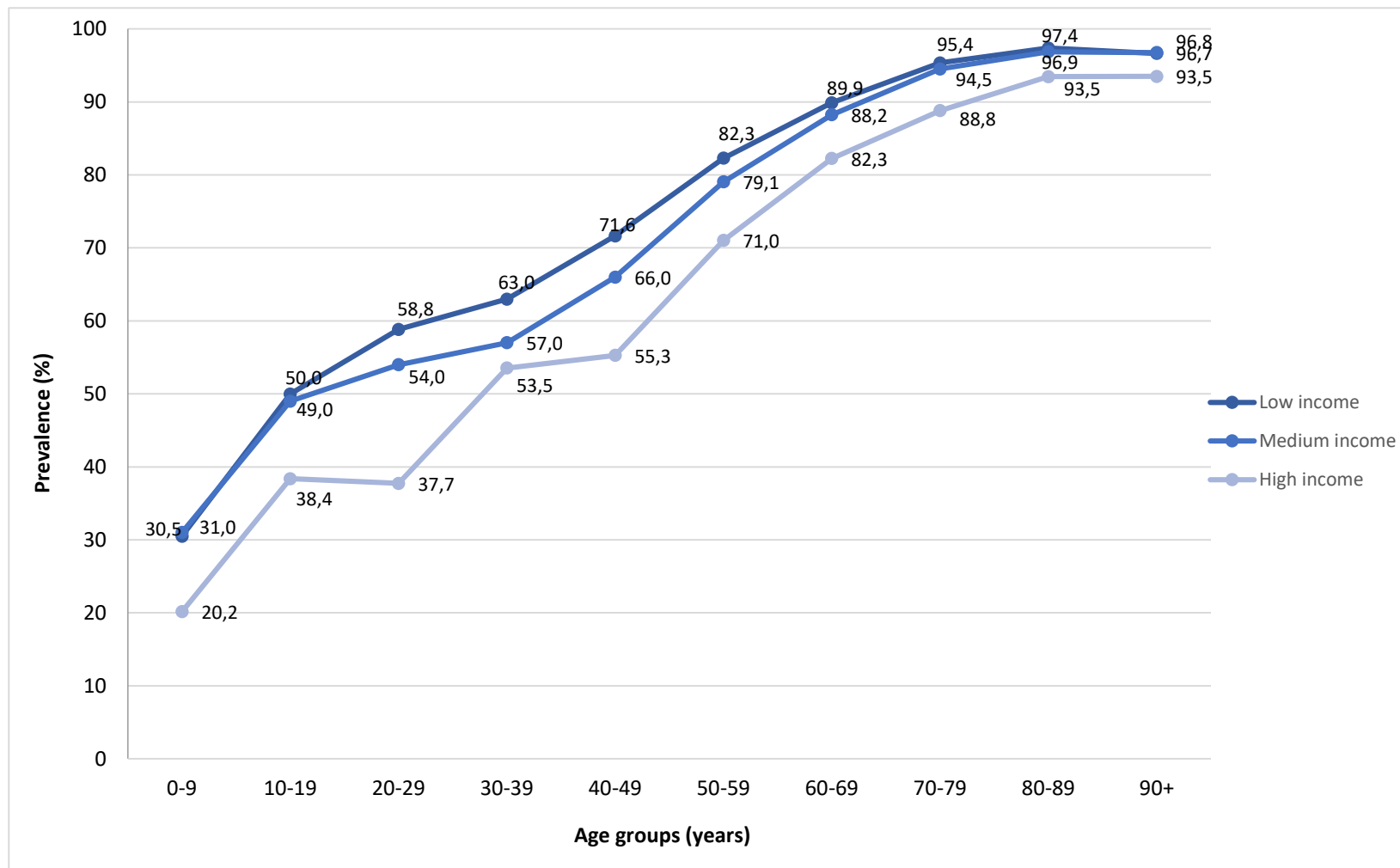
3. Resultados

Número de enfermedades crónicas según edad



3. Resultados

Prevalencia de multimorbilidad por grupo de edad e ingresos



Riesgo de multimorbilidad según factores sociodemográficos

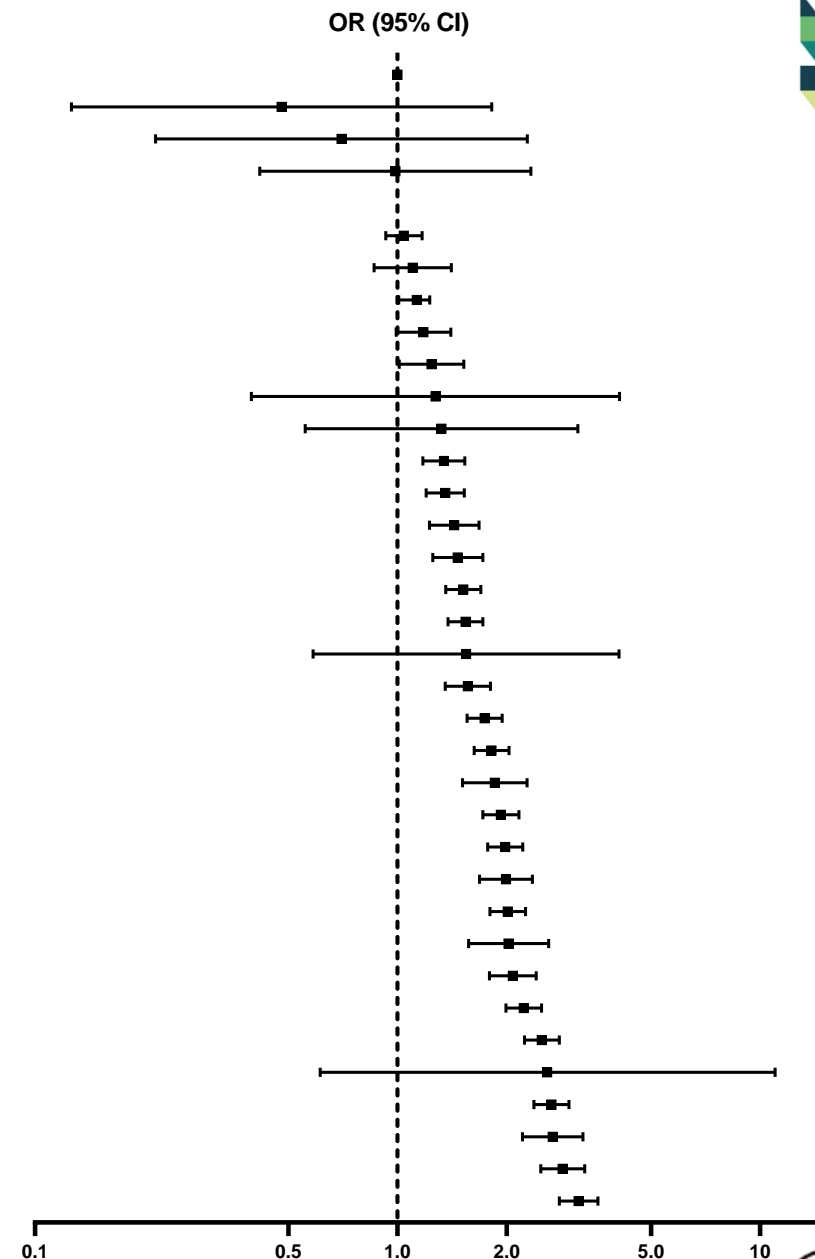
	Model 1	Model 2	Model 3	Model 4
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
<u>Gender</u>				
Men	Reference	Reference	Reference	Reference
Women	1.492 (1.477-1.507)	1.469 (1.455-1.485)	1.475 (1.460-1.491)	1.474 (1.458-1.489)
<u>Annual gross income</u>				
Low		1.142 (1.129-1.155)	1.194 (1.180-1.208)	1.198 (1.184-1.212)
Middle		Reference	Reference	Reference
High		0.650 (0.605-0.698)	0.648 (0.604-0.697)	0.647 (0.603-0.695)
<u>Ethnicity-length of residence</u>				
Native			Reference	Reference
Immigrant ≤15 years			0.739 (0.728-0.750)	0.737 (0.727-0.749)
Immigrant >15 years			0.962 (0.934-0.989)	0.957 (0.929-0.985)
<u>Residence area</u>				
Urban				Reference
Rural				0.957 (0.947-0.967)
AUC	0.7878	0.7884	0.7887	0.7888

Odds ratios (OR) and AUC with 95% confidence intervals (CIs) obtained from four consecutive logistic regressions modelling the presence of multimorbidity as a function of 4 variables. All models were adjusted for age.

3. Resultados

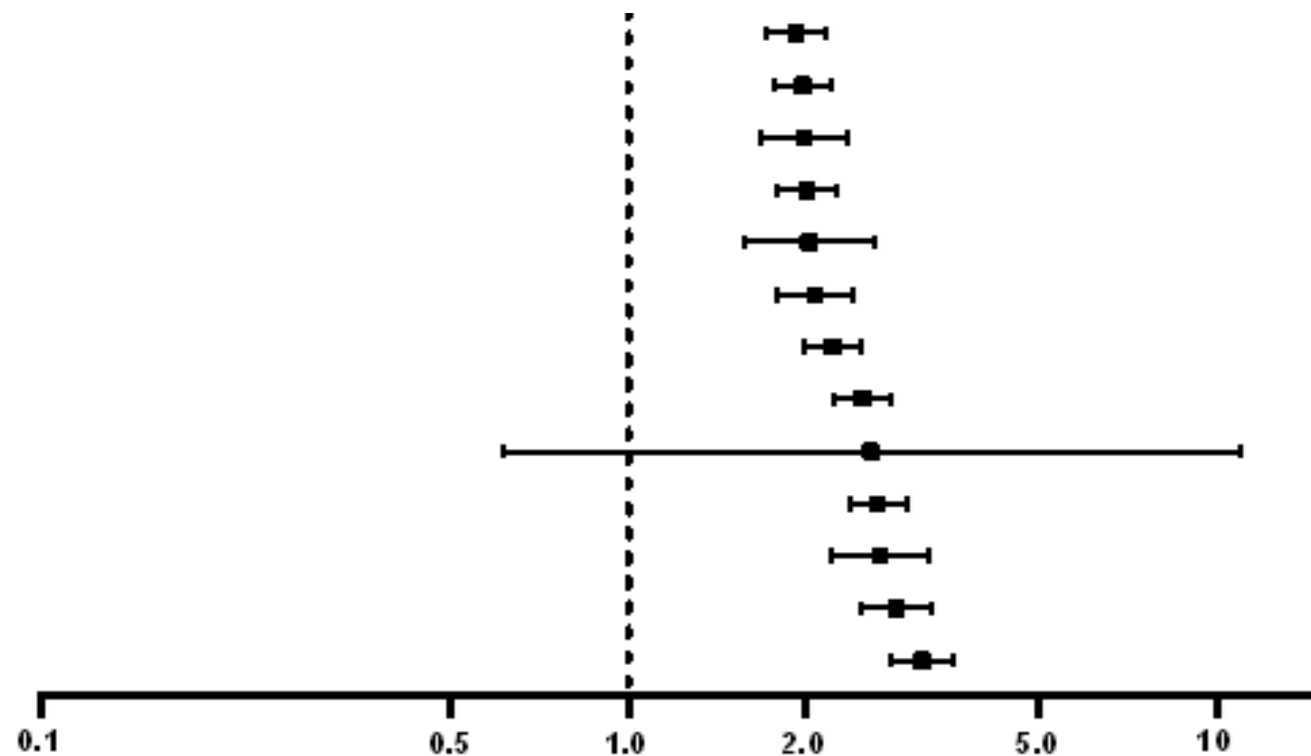
3. Resultados

Intersectional strata	n
Men/non-migrant/urban/high income (Reference)	1832
Men/immigrant >15 years/rural/high income	9
Men/immigrant ≤15 years/rural/high income	13
Women/immigrant >15 years/urban/high income	28
Women/immigrant >15 years/rural/high income	8
Men/immigrant ≤15 years/rural/low income	15,485
Women/non-migrant/rural/high income	447
Men/immigrant ≤15 years/urban/low income	23,078
Women/non-migrant/urban/high income	1,305
Men/non-migrant/rural/high income	749
Men/immigrant >15 years/urban/high income	16
Women/immigrant ≤15 years/urban/high income	25
Men/immigrant >15 years/rural/low income	3,640
Men/immigrant >15 years/urban/low income	8,368
Men/immigrant ≤15 years/rural/middle income	1,508
Men/immigrant >15 years/urban/middle income	1,709
Men/non-migrant/rural/middle income	55,547
Men/non-migrant/urban/middle income	103,862
Men/immigrant ≤15 years/urban/high income	22
Men/immigrant ≤15 years/urban/middle income	2,203
Men/non-migrant/rural/low income	121,523
Men/non-migrant/urban/low income	140,638
Men/immigrant >15 years/rural/middle income	804
Women/immigrant ≤15 years/rural/low income	19,716
Women/non-migrant/urban/middle income	85,078
Women/immigrant ≤15 years/rural/middle income	1,293
Women/non-migrant/rural/middle income	36,500
Women/immigrant >15 years/rural/middle income	494
Women/immigrant ≤15 years/urban/middle income	2,030
Women/immigrant ≤15 years/urban/low income	34,965
Women/non-migrant/rural/low income	151,124
Women/immigrant ≤15 years/rural/high income	11
Women/non-migrant/urban/low income	207,831
Women/immigrant >15 years/urban/middle income	1,266
Women/immigrant >15 years/rural/low income	4,011
Women/immigrant >15 years/urban/low income	10,162



3. Resultados

Women/immigrant ≤15 years/rural/low income	19,716
Women/non-migrant/urban/middle income	85,078
Women/immigrant ≤15 years/rural/middle income	1,293
Women/non-migrant/rural/middle income	36,500
Women/immigrant >15 years/rural/middle income	494
Women/immigrant ≤15 years/urban/middle income	2,030
Women/immigrant ≤15 years/urban/low income	34,965
Women/non-migrant/rural/low income	151,124
Women/immigrant ≤15 years/rural/high income	11
Women/non-migrant/urban/low income	207,831
Women/immigrant >15 years/urban/middle income	1,266
Women/immigrant >15 years/rural/low income	4,011
Women/immigrant >15 years/urban/low income	10,162



4. Discusión

Edad

MM aumenta con la edad
Ancianos > mediana edad
Jóvenes

Género

Ser mujer es factor de riesgo
En países desarrollados, peor salud → salud mental
Diferencias biológicas, comportamiento y psicológicas
Patriarcado

4. Discusión

**Situación
socioeconómica**

Principales impulsores de las desigualdades sanitarias
Mayor impacto en mujeres que en hombres → raza y clase social

Desigualdades

- Empleo inestable o mal pagado
- Condiciones precarias
- Trabajo poco seguro
- Regulación y protección social mínima

Etnia

Inmigrante protector de MM → teoría del inmigrante sano

4. Discusión

Geografía

Independientemente de otros factores, zona rural
protector de MM
Urbano → minorías étnicas, peor situación socioeconómica
Resultados diferentes

Visión interseccional

Grandes diferencias de las interconexiones entre los
distintos ejes de desigualdad social
Sinergias entre exposiciones
Atención biopsicosocial del paciente

4. Discusión

Limitaciones

- Estudios transversales
- Definición de MM
- Otras variables → nivel educativo

Continuar estudiando el impacto de DDS
Estudiar otras metodologías

5. Conclusiones

- La multimorbilidad es un desafío global y está influenciada por los determinantes sociales
- Multimorbilidad aumentó con la edad, el sexo femenino y los ingresos más bajos
- Jóvenes y de mediana edad con ingresos bajos presentaban tasas de multimorbilidad equivalentes a los de altos ingresos con unos 20 años más.
- El enfoque interseccional reveló diferencias entre grupos poblacionales que pueden pasar desapercibidas por sinergias entre factores socioeconómicos y demográficos, más allá de sus efectos aditivos. Esto invita a realizar políticas de universalismo proporcional



“Si los principales determinantes de la salud son sociales, así deben ser las soluciones”

Michael Marmot

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