SUPPLEMENTARY MATERIAL: Cholesterol- and blood pressure-lowering drug use for secondary cardiovascular prevention in 2004 - 2013 Europe

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SUPPLEMENTARY METHODS

1. SHARE Sampling Methodology

Eligibility rules:

- All individuals born in 1954 or earlier, speaking the official language of the country and not living abroad or in an institution such as a prison during the duration of the field work.

Sampling frames

- The requirement on the national sampling designs was that the resulting sample be a probability sample
- Since a common sampling frame for all countries was not available, the sampling frame and design differed across countries. In most participating countries, population registers of individuals permitted stratification by age. In case such sampling frames were not available, e.g. in countries such as France and Germany, where registers are administered at a regional level, multi-stage design required sampling at regional and individual level (see Table 1).
- Several countries had to draw refreshment samples in order to i) achieve representation of certain age-cohorts of the target population that were not age-eligible in the previous waves (especially younger age cohorts), and ii) to counter the reduction in sample size due to sample attrition (see Table 1)

Unit non-response

- The average response rate across the countries and survey waves varied between 56% and 62% and the retention rates in the longitudinal sample ranged between 73% and 81%.
- Sample attrition analyses showed that in most SHARE countries, attrition is not strongly related to gender. However, morbidity-related attrition is a potential concern since in almost all countries the oldest quartile of respondents had a significantly lower propensity to stay in the panel. Still, these statistics were not adjusted for actual mortality (mostly due to a lack of sound mortality data). An adjustment for actual mortality would improve the retention rates among the oldest age group.

Supplementary Methods Table: Sample type by wave and country

	2004/06	2007/09			2010/12			2013		
	Baseline	Panel	Refresh.	Baseline	Panel	Refresh.	Baseline	Panel	Refresh.	Baseline
Higher-GNI per capita										
Austria	✓	✓			✓	✓		✓		
Belgium	✓	✓	✓		✓	✓		✓	✓	
Denmark	✓	✓	✓		✓	✓		✓	✓	
France	✓	✓	✓		✓	✓		✓		
Germany	✓	✓	✓		✓			✓	✓	
Ireland										
Luxembourg										✓
Netherlands	✓	✓	✓		✓	✓		✓	✓	
Sweden	✓	✓	✓		✓			✓	✓	
Switzerland	✓	✓	✓		✓	✓		✓		
Lower-GNI per capita										
Czech Republic				✓	✓	✓		✓	✓	
Estonia							✓	✓		
Greece	✓	✓	✓							
Hungary							✓			
Israel	✓	✓	✓					✓	✓	
Italy	✓	✓	✓		✓	✓		✓	✓	
Poland				✓	✓					
Portugal							✓			
Slovenia							✓	✓	✓	
Spain	✓	✓	✓		✓	✓		✓		

Sources:

Börsch-Supan A, Jürgens H. 2005. The Survey of Health, Aging, and Retirement in Europe – Methodology. http://www.share-project.org/uploads/tx_sharepublications/SHARE_BOOK_METHODOLOGY_Wave1.pdf

Malter F, Börsch-Supan A. 2015. SHARE Wave 5: Innovations & Methodology. http://www.share-project.org/fileadmin/pdf_documentation/Method_vol5_31March2015.pdf

2. <u>Statistical Appendix</u>

The Hausman test was used to compare estimates from a fixed-effects panel logistic model and pooled random-effects panel logistic model and to guide the choice of the appropriate model. In the fixed-effects model, the patient is used as their own control and time-invariant errors are eliminated. Unlike the fixed-effects model, the pooled model assumes relative homogeneity across participants with respect to relationships investigated, and the presence of high degree of heterogeneity across patients, if correlated with the explanatory factors of interest, could bias the estimates.

The fixed-effects panel data model, though robust to biases from time-invariant factors, cannot shed light on the impact of characteristics which do not change over time (e.g. gender, education) on drug use. Similarly, the fixed-effects model is limited in studying factors that change very little over time (e.g. exercise, alcohol consumption) and it is potentially not robust to time-variant sources of biases.

Supplementary Table 1: Definitions of variables used in SHARE

Variable	Definition
Heart attack	History of heart attack was confirmed if the participant chose the response option "A heart attack including myocardial infarction or coronary thrombosis or any other heart problem including congestive heart failure" to the following question: "Has a doctor ever told you that you had /Do you currently have] any of the conditions on this card?"
Stroke	History of stroke was confirmed if the participant chose the response option "A stroke or cerebral vascular disease" to the following question: "Has a doctor ever told you that you had /Do you currently have] any of the conditions on this card?"
Hypertension	History of hypertension was confirmed if the participant chose the response option "High blood pressure or hypertension" to the following question: "Has a doctor ever told you that you had /Do you currently have] any of the conditions on this card?"
Hypercholesterolemia	History of hypercholesterolemia was confirmed if the participant chose the response option "High blood cholesterol" to the following question: "Has a doctor ever told you that you had /Do you currently have] any of the conditions on this card?"
Diabetes	History of diabetes was confirmed if the participant chose the response option "Diabetes or high blood sugar" to the following question: "Has a doctor ever told you that you had /Do you currently have] any of the conditions on this card?"
Number of other chronic diseases	Number of other chronic diseases excluding myocardial infarction, stroke, hypertension, hypercholesterolemia and diabetes: chronic lung disease (bronchitis, emphysema), asthma, arthritis (incl. osteoarthritis or rheumatism), osteoporosis, cancer or malignant tumour (incl. leukaemia or lymphoma, but excl. minor skin cancers), stomach/duodenal/peptic ulcer, Parkinson disease, cataracts, hip fracture or femoral fracture, other conditions not yet mentioned.
Time since first heart attack or stroke (years)	In case the participant reported to have had a myocardial infarction or stroke, time since first event was calculated relative to the interview year by asking: "About how old were you when you were first told by a doctor that you had [a heart attack or any other heart problem] / [a stroke or cerebral vascular disease]?" The time variable was updated every wave.
Time since latest heart attack or stroke (years)	Time since latest myocardial infarction or stroke was determined by asking about incident events since the last interview participation: "Have you [had a heart attack] / [had a stroke or been diagnosed with cerebral vascular disease] since we last interviewed you in 200x?" The time variable was updated every wave.
Cholesterol-lowering drug use	Current use of cholesterol-lowering drugs was confirmed if the participant chose the response option "Drugs for high blood cholesterol" to the following question: "Do you currently take drugs at least once a week for problems mentioned on this card?"
Blood pressure-lowering drug use	Current use of antihypertensive drugs was confirmed if the participant chose the response option "Drugs for high blood pressure" to the following question: "Do you currently take drugs at least once a week for problems mentioned on this card?"

Any cardiovascular drug use	Current use of any cardiovascular drugs was confirmed if the participant chose any of the four response options "Drugs for [1. high blood cholesterol/ 2. high blood pressure/ 3. coronary or cerebrovascular diseases/ 4. other heart diseases]" to the following question: "Do you currently take drugs at least once a week for problems mentioned on this card?"
Self-perceived health	Self-perceived health was determined by asking: "Would you say your health is [1. Excellent/ 2. Very good/ 3. Good/ 4. Fair/ 5. Poor?]"
Cognitive function (word memorisation)	Participants were asked to memorise and recall a list of 10 words read aloud by the interviewer. In a second recall attempt, participants were asked: "A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you can remember now."
Body-Mass-Index (BMI)	BMI was calculated with self-reported weight and height, using the following formula: BMI=weight/(height)^2 * 10000. Subsequently, the variable was reclassified into the standard categories of BMI determined by the World Health Organisation. These categories are: 1. Underweight (below 18.5)/ 2. Normal (18.5 – 24.9)/ 3. Overweight (25 – 29.9)/ 4. Obese (30 or higher)
Alcohol	Alcohol consumption was determined by asking: "I am now going to ask you a few questions about what you drink - that is if you drink. During the last 3 months, how often have you drunk any alcoholic beverages, like beer, cider, wine, spirits or cocktails? - [1. Almost every day/ 2. Five or six days a week/ 3. Three or four days a week/ 4. Once or twice a week/ 5. Once or twice a month/ 6. Less than once a month/ 7. Not at all in the last 3 months]"
Smoking	Smoking behaviour was determined by asking the following questions: "(i)Have you ever smoked cigarettes, cigars, cigarillos or a pipe daily for a period of at least one year? (ii)Do you smoke at the present time? (iii) Have you stopped smoking since we last interviewed you in 200x?"
Physical exercise	Frequency of physical activity was determined by asking: "We would like to know about the type and amount of physical activity you do in your daily life. How often do you engage in vigorous physical activity, such as sports, heavy housework, or a job that involves physical labour?" [1. More than once a week/ 2. Once a week/ 3. One to three times a month/ 4. Hardly ever, or never]
Current employment status	Employment status was determined by asking "In general, which of the following best describes your current employment situation?" [1. Retired/ 2. Employed or self-employed (including working for family business)/ 3. Unemployed/ 4. Permanently sick or disabled/ 5. Homemaker/ 97. Other (rentier, living off own property, student, doing voluntary work)]
Marital status	Marital status was determined by asking: "What is your marital status?" [1. Married and living together with spouse/ 2. Registered partnership/ 3. Married, living separated from spouse/ 4. Never married/ 5. Divorced/ 6. Widowed]
Education	Respondents were asked for their highest school degree and degrees of further education or vocational training. Subsequently, a standard coding (1997 International Standard Classification of Education ISCED-97) was applied in order to allow international comparisons.

Household income	In order to make net household income (national currency) comparable across different household sizes within a specific country, we equivalised the self-reported net household income with equivalisation scale elasticities w.r.t. household size (OECD technique).[1] Subsequently, household income was made comparable across countries on a relative scale. Therefore, we used the national median net household income (national currency)[2,3] for each country for the base year 2006 to create four income categories, i.e. to determine whether the self-reported equivalised net household income was lower or higher than the national median net household income. [1. household income < half national median household income/ 2. half national median household income ≤ household income < national median household income/ 3. national median household income ≤ household income < double national median household income/ 4. household income ≥ double national household income]

References:

1. Schwarze J. Using Panel Data on Income Satisfaction to Estimate Equivalence Scale Elasticity. Review of Income and Wealth 2003;**49**(3):359-372.
2. EUROSTAT -Statistical Office of the European Communities. Mean and median income by household type (source: SILC) [ilc_di04].EUROSTAT, Luxemburg 2015. Available at http://appsso.eurostat.ec.europa.eu/nui/show.do
3. OECD - Organisation for Economic Co-operation and Development. Mean disposable income (current prices). OECD.Stat, Paris 2015. Available at http://stats.oecd.org/Index.aspx?DataSetCode=IDD

Supplementary Table 2: Determinants of self-reported use of cholesterol- and BP-lowering drugs by individuals with CVD, by country income: a multivariate fixed-effects panel logistic regression

Participant characteristics†	Higher-GNI countries		Lower-GNI countries	
	Cholesterol-lowering drugs, n=6 503‡	BP-lowering drugs, n=6 554‡	Cholesterol-lowering drugs, n=4 823‡	BP-lowering drugs, n=4 441‡
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age				
≤ 67 (referent)				
68-77	1.40 (1.07-1.84)*	1.03 (0.77-1.37)	1.22 (0.89-1.67)	1.62 (1.12-2.34)*
+77	1.15 (0.75-1.75)	0.66 (0.42-1.02)	1.19 (0.75-1.90)	1.33 (0.78-2.28)
Hypertension	1.48 (1.14-1.93)**	38.0 (26.4-54.6)***	1.23 (0.91-1.66)	39.3 (26.8-57.5)***
Hypercholesterolemia	20.8 (15.2-28.6)***	1.39 (1.04-1.87)*	26.5 (18.8-37.5)***	1.58 (1.13-2.21)**
Diabetes	2.02 (1.37-2.98)***	1.17 (0.80-1.72)	1.23 (0.85-1.77)	1.25 (0.83-1.88)
Other comorbidities				
None (referent)				
1 disease	0.95 (0.76-1.20)	1.12 (0.89-1.40)	1.16 (0.90-1.50)	1.16 (0.87-1.54)
2-9 diseases	0.90 (0.67-1.22)	0.95 (0.70-1.29)	1.35 (0.97-1.88)	1.13 (0.79-1.62)
Time since latest heart attack or stroke (years)				
0-1 (referent)				
2-4	0.93 (0.72-1.19)	0.81 (0.62-1.06)	1.10 (0.82-1.46)	0.80 (0.58-1.11)
5-9	0.68 (0.51-0.90)**	0.73 (0.54-0.98)*	0.88 (0.65-1.19)	0.87 (0.62-1.22)
+9	0.62 (0.47-0.83)**	0.84 (0.63-1.13)	0.84 (0.62-1.13)	0.80 (0.57-1.13)
Missing	0.35 (0.30-0.42)***	0.61 (0.51-0.73)***	0.59 (0.48-0.72)***	0.73 (0.58-0.91)**
Self-perceived health status				
Excellent/very good (referent)				
Good	1.45 (1.15-1.83)**	1.70 (1.34-2.16)***	1.45 (0.97-2.17)	1.46 (1.00-2.15)
Fair/poor	1.57 (1.21-2.04)***	2.12 (1.63-2.75)***	2.18 (1.45-3.28)***	2.23 (1.51-3.29)***

Cognitive functioning (word memorisation)				
0-3 words	0.74 (0.60-0.92)**	0.66 (0.53-0.83)***	1.07 (0.83-1.39)	1.25 (0.93-1.67)
4-5 words	0.91 (0.76-1.09)	0.83 (0.68-1.01)	1.09 (0.85-1.38)	1.38 (1.05-1.81)*
6-10 words (referent)				
Missing	0.38 (0.23-0.62)***	0.40 (0.25-0.64)***	0.72 (0.47-1.11)	0.90 (0.57-1.43)
Body mass index (BMI)				
<18.5	1.11 (0.37-3.34)	0.96 (0.39-2.36)	0.15 (0.021-1.16)	0.19 (0.039-0.96)*
≥18.5, <25 (referent)				
≥25, <30	1.14 (0.85-1.54)	0.98 (0.72-1.32)	0.99 (0.72-1.35)	1.01 (0.72-1.40)
≥30	1.59 (1.03-2.46)*	1.38 (0.88-2.16)	1.17 (0.76-1.78)	1.64 (1.05-2.54)*
Alcohol consumption				
not at all - twice / month	0.76 (0.59-0.99)*	1.01 (0.77-1.31)	1.04 (0.78-1.38)	0.99 (0.73-1.36)
1-4/week	1.01 (0.79-1.28)	1.05 (0.82-1.34)	1.31 (0.92-1.85)	1.02 (0.71-1.46)
>5/week (referent)				
Smoking status				
Currently smoking (referent)				
Never smoked	2.82 (0.084-94.7)	0.24 (0.0084-6.93)	0 (0.00-0.00)	0 (0.00-0.00)
Stopped smoking	0.54 (0.0069-41.7)	1.50 (0.025-90.3)	0 (0.00-0.00)	0.91 (0.00-0.00)
Frequency of physical exercise				
More than once a week (referent)				
Once a week	0.92 (0.73-1.16)	0.86 (0.67-1.10)	0.97 (0.71-1.33)	1.04 (0.75-1.44)
One to three times a month	1.01 (0.76-1.35)	0.98 (0.73-1.31)	0.88 (0.64-1.21)	1.02 (0.72-1.46)
Hardly ever, or never	1.12 (0.92-1.36)	1.12 (0.92-1.37)	0.89 (0.70-1.13)	1.16 (0.90-1.50)
Employment status				
Retired	2.28 (1.57-3.31)***	2.03 (1.39-2.97)***	1.54 (1.02-2.33)*	1.38 (0.88-2.17)
Employed or self-employed (referent)				
Unemployed	1.75 (0.81-3.78)	1.10 (0.51-2.35)	0.99 (0.46-2.14)	1.11 (0.42-2.93)
Permanently sick or disabled	2.09 (1.25-3.47)**	1.20 (0.72-1.99)	1.30 (0.78-2.15)	1.25 (0.71-2.18)
Other (homemaker)	2.11 (1.33-3.33)**	1.39 (0.86-2.24)	1.10 (0.64-1.89)	0.93 (0.53-1.63)
Marital status				

Married/ partnership (referent)				
Never married/ divorced/ widowed	1.03 (0.64-1.64)	0.81 (0.49-1.33)	1.62 (1.03-2.56)*	1.30 (0.79-2.14)
Household income				
< Half median (referent)				
Half median to median	1.04 (0.79-1.36)	0.89 (0.67-1.17)	1.15 (0.88-1.51)	1.24 (0.93-1.65)
Median to double median	0.83 (0.60-1.15)	0.97 (0.70-1.35)	1.49 (1.02-2.17)*	1.25 (0.82-1.90)
≥Double median	0.63 (0.39-1.02)	0.64 (0.38-1.07)	1.26 (0.59-2.73)	2.49 (1.03-5.98)*
Missing	0.99 (0.78-1.26)	0.89 (0.70-1.13)	1.07 (0.87-1.31)	0.98 (0.78-1.23)
Residential area				
Urban (referent)				
Rural	1.11 (0.84-1.46)	0.99 (0.75-1.32)	0.99 (0.68-1.46)	0.86 (0.57-1.31)
Time trend				
SHARE wave 1 (referent)				
SHARE wave 2	0.68 (0.57-0.80)***	0.89 (0.75-1.06)	0.68 (0.53-0.87)**	0.51 (0.39-0.67)***
SHARE wave 4	1.40 (1.11-1.77)**	1.40 (1.10-1.76)**	0.89 (0.66-1.19)	0.58 (0.42-0.81)**
SHARE wave 5	0.68 (0.52-0.89)**	0.91 (0.70-1.20)	0.53 (0.38-0.74)***	0.36 (0.25-0.52)***

CVD, cardiovascular disease; GNI, gross national income; BP, blood pressure. SHARE, Study of Health and Retirement in Europe.

*p<0.05; ** p<0.01; ***p<0.001

†Effects of gender and educational attainment cannot be estimated in fixed –effects panel model as they do not change during the study period.

‡Fixed-effects panel model excludes individuals without variation in their medication use during the study; with one observation only; or from countries that participated only once in SHARE.

Supplementary Table 3: Self-reported use (%) of any cholesterol or BP-lowering medication among SHARE participants with CVD across study waves (n=21 371)

	Users of any cholesterol- or BP-lowering medication (%)				p-value for trend*
	2004/06	2007/09	2010/12	2013	
Higher-GNI per capita	**1917 (64)**	**2390 (68)**	**3469 (72)**	**4781 (72)**	**<0.001**
Austria	128 (62)	165 (71)	581 (69)	608 (71)	0.031
Belgium	397 (65)	459 (72)	700 (76)	788 (75)	<0.001
Denmark	134 (61)	290 (70)	285 (78)	519 (75)	<0.001
France	315 (65)	338 (67)	699 (71)	614 (67)	0.239
Germany	262 (63)	289 (66)	247 (76)	697 (75)	<0.001
Ireland	NA	85 (78)	NA	NA	NA
Luxembourg	NA	NA	NA	158 (76)	NA
Netherlands	259 (63)	282 (67)	352 (71)	540 (73)	<0.001
Sweden	356 (63)	388 (67)	364 (75)	607 (73)	<0.001
Switzerland	66 (70)	94 (64)	241 (64)	250 (67)	0.855
Lower-GNI per capita	**1094 (70)**	**2166 (72)**	**4614 (73)**	**4586 (74)**	**<0.001**
Czech Republic	NA	335 (67)	892 (74)	996 (77)	<0.001
Estonia	NA	NA	1292 (69)	1345 (72)	0.022
Greece	248 (61)	309 (66)	NA	NA	0.067
Hungary	NA	NA	620 (79)	NA	NA
Israel	422 (81)	550 (86)	NA	486 (84)	0.72
Italy	229 (71)	347 (72)	447 (74)	619 (76)	0.007
Poland	NA	407 (69)	361 (73)	NA	0.116
Portugal	NA	NA	230 (78)	NA	NA
Slovenia	NA	NA	327 (71)	432 (69)	0.367
Spain	195 (62)	218 (64)	445 (73)	708 (71)	<0.001
Total	**3011 (66)**	**4556 (70)**	**8083 (73)**	**9367 (73)**	**<0.001**

CVD, cardiovascular disease; BP, blood pressure; GNI, gross national income; NA, not applicable. *adjusted for age, gender, education and, if applicable, country.

Supplementary Table 4: Self-reported use (%) of any cardiovascular medication among participants with CVD across SHARE questionnaire waves (n=21 371)

	Users of any cardiovascular medication (%)				p-value for trend*
	2004/06	2007/09	2010/12	2013	
Higher GNI per capita	**2676 (89)**	**3019 (86)**	**4237 (88)**	**5802 (88)**	**0.636**
Austria	180 (88)	203 (87)	748 (89)	748 (87)	0.815
Belgium	565 (92)	565 (89)	825 (89)	938 (89)	0.225
Denmark	185 (84)	355 (86)	323 (88)	587 (85)	0.798
France	450 (93)	448 (89)	885 (90)	794 (87)	0.002
Germany	371 (90)	376 (85)	285 (88)	840 (90)	0.234
Ireland	NA	99 (91)	NA	NA	NA
Luxembourg	NA	NA	NA	191 (92)	NA
Netherlands	351 (86)	358 (85)	427 (86)	652 (88)	0.186
Sweden	489 (86)	487 (84)	435 (89)	742 (89)	0.025
Switzerland	85 (90)	128 (86)	309 (82)	310 (83)	0.077
Lower GNI per capita	**1438 (92)**	**2744 (91)**	**5690 (90)**	**5510 (89)**	**0.018**
Czech Republic	NA	444 (89)	1096 (91)	1171 (90)	0.791
Estonia	NA	NA	1650 (88)	1622 (87)	0.032
Greece	367 (91)	424 (90)	NA	NA	0.626
Hungary	NA	NA	724 (93)	NA	NA
Israel	491 (95)	602 (94)	NA	532 (92)	0.016
Italy	301 (94)	435 (91)	554 (92)	728 (89)	0.045
Poland	NA	544 (92)	442 (89)	NA	0.018
Portugal	NA	NA	272 (92)	NA	NA
Slovenia	NA	NA	402 (87)	563 (89)	0.356
Spain	279 (88)	295 (87)	550 (90)	894 (90)	0.384
Total	**4114 (90)**	**5763 (89)**	**9927 (89)**	**11312 (88)**	**0.082**

CVD, cardiovascular disease; GNI, gross national income; NA, not applicable. *adjusted for age, gender, education and, if applicable, country.

Supplementary Table 5: Determinants of self-reported use of (a) any cardiovascular medication and (b) any cholesterol or BP-lowering medication by individuals with CVD: multivariate fixed-effects panel logistic regression models

Participant characteristics†	Any cardiovascular medication, n=8 691‡	Any cholesterol or BP-lowering medication n=10 676‡
	OR (95% CI)	OR (95% CI)
Age		
≤ 67 (referent)		
68-77	1.70 (1.29-2.23)***	1.39 (1.11-1.75)**
+77	1.63 (1.08-2.47)*	1.03 (0.73-1.45)
Hypertension	8.51 (6.43-11.3)***	18.9 (14.9-24.1)***
Hypercholesterolemia	3.96 (2.90-5.41)***	7.39 (5.77-9.47)***
Diabetes	0.95 (0.64-1.41)	1.34 (0.98-1.82)
Other comorbidities		
None (referent)		
1	0.79 (0.64-0.98)*	1.00 (0.84-1.20)
2-9	0.75 (0.56-0.99)*	0.90 (0.71-1.15)
Time since latest heart attack or stroke (years)		
0-1 (referent)		
2-4	0.68 (0.51-0.89)**	0.88 (0.72-1.08)
5-9	0.51 (0.38-0.69)***	0.89 (0.71-1.12)
+9	0.35 (0.26-0.47)***	0.81 (0.65-1.03)
Missing	0.12 (0.10-0.14)***	0.56 (0.49-0.65)***
Self-perceived health		
Excellent/very good (referent)		
Good	2.00 (1.61-2.49)***	1.73 (1.42-2.11)***
Fair/poor	3.00 (2.36-3.80)***	2.27 (1.83-2.81)***
Cognitive function (word memorisation)		
0-3 words	0.82 (0.66-1.01)	0.83 (0.70-0.99)*
4-5 words	0.93 (0.77-1.12)	0.99 (0.85-1.16)
6-10 words (referent)		
Missing	0.60 (0.40-0.89)*	0.48 (0.34-0.66)***
Body mass index (BMI)		
<18.5	0.91 (0.40-2.07)	0.55 (0.28-1.11)
≥18.5, <25 (referent)		
≥25, <30	1.01 (0.76-1.32)	1.13 (0.90-1.42)
≥30	2.05 (1.34-3.13)***	1.78 (1.28-2.48)***
Alcohol consumption		
not at all - twice/month	0.96 (0.75-1.23)	0.98 (0.80-1.20)
1-4/week	1.01 (0.79-1.29)	1.05 (0.86-1.28)
≥5/week (referent)		
Smoking status		
Currently smoking (referent)		
Never smoked	1.50 (0.097-23.2)	0.42 (0.035-4.91)
Stopped smoking	0.30 (0.016-5.70)	0.51 (0.030-8.82)

|		
Frequency of physical exercise		
More than once weekly (referent)		.
Once a week	1.03 (0.82-1.29)	0.97 (0.80-1.18)
One to three times a month	1.27 (0.98-1.64)	0.94 (0.75-1.18)
Hardly ever, or never	1.03 (0.82-1.29)	0.97 (0.80-1.18)
Employment status		
Retired	1.90 (1.38-2.61)***	1.90 (1.44-2.52)***
Employed or self-employed (referent)		
Unemployed	1.17 (0.62-2.18)	1.00 (0.57-1.73)
Permanently sick or disabled	2.10 (1.37-3.21)***	1.61 (1.11-2.33)*
Other (homemaker)	1.74 (1.16-2.60)**	1.48 (1.04-2.11)*
Marital status		
Married/ partnership (referent)		
Never married/ divorced/ widowed	0.90 (0.59-1.38)	0.98 (0.68-1.40)
Household income		
<Half median (referent)		
Half median to median	1.11 (0.88-1.41)	1.08 (0.88-1.32)
Median to double median	1.03 (0.76-1.38)	1.12 (0.87-1.43)
≥Double median	1.06 (0.65-1.73)	0.69 (0.46-1.03)
Missing	1.00 (0.82-1.23)	0.98 (0.83-1.16)
Residential area		
Urban (referent)		
Rural	0.95 (0.72-1.25)	0.86 (0.68-1.08)
Time trend		
SHARE wave 1 (referent)		
SHARE wave 2	0.61 (0.52-0.72)***	0.67 (0.59-0.78)***
SHARE wave 4	1.78 (1.44-2.20)***	0.96 (0.80-1.15)
SHARE wave 5	0.95 (0.74-1.21)	0.57 (0.46-0.71)***

CVD, cardiovascular disease; BP, blood pressure; SHARE, Study of Health and Retirement in Europe. *p<0.05; **p<0.01; ***p<0.001

†Effects of gender and educational attainment cannot be estimated in fixed–effects panel model as they do not change during the study period.

‡Fixed-effects panel model excludes individuals without variation in their medication use during the study; with one observation only; or from countries that participated only once in SHARE.

Supplementary Figure 1: Self-reported use of cholesterol- and BP-lowering drugs (2004-2006 to 2013) among participants with CVD, by country GNI level
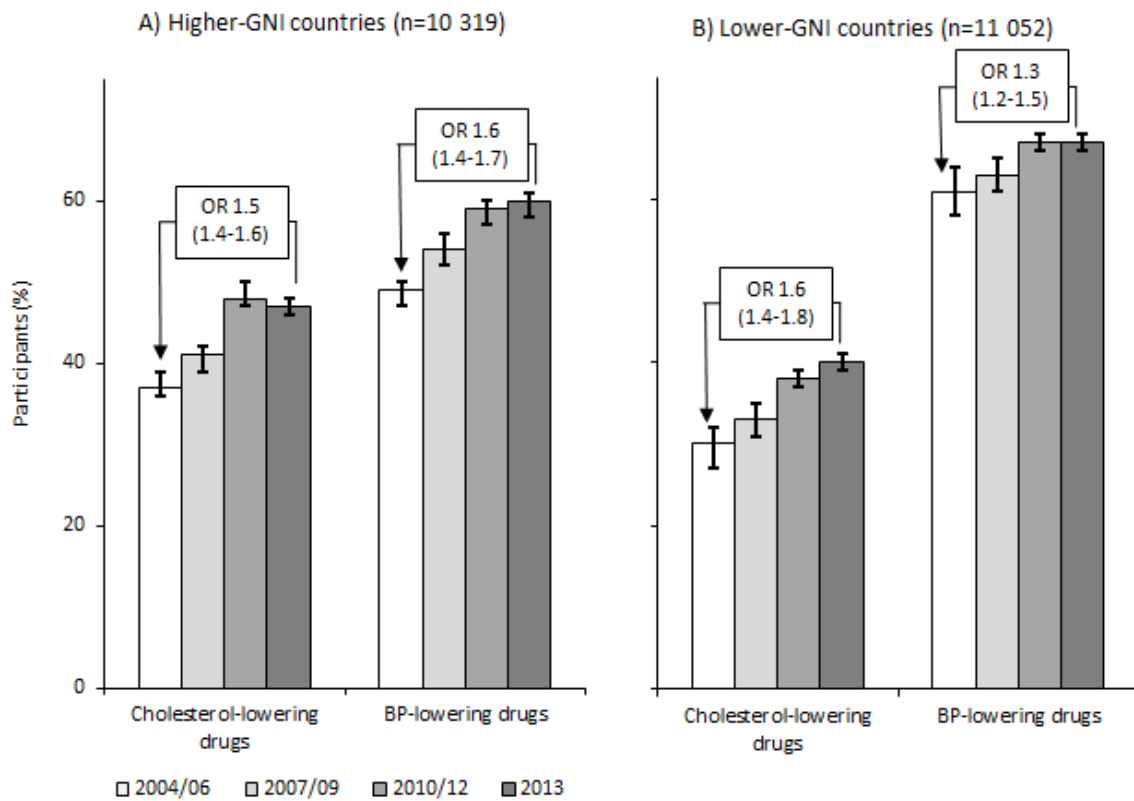
CVD, cardiovascular disease; GNI, gross national income; BP, blood pressure. Medication use percentages adjusted for age, sex, education and country. Tests for heterogeneity in time trends between higher- and lower-GNI countries: p=0.4 for use of cholesterol-lowering medication and p=0.03 for use of BP-lowering medication.