

SUPPLEMENTARY MATERIAL

Self-report of chronic diseases in old-aged individuals: extent of agreement with general practitioner medical records in the German AugUR study

Supplementary Note. Recruit and response in AugUR baseline.

Supplementary Table 1. Patterns of missing information in both self-reports and GP-reports.

Supplementary Table 2. Cross-tables showing number of self-reports and GP-reports.

Supplementary Table 3. Absolute and relative numbers on disease cases considered to be absent

Supplementary Table 4. Cross-tables showing number of self-reports and GP-reports as used in further analyses.

Supplementary Table 5. Characteristics of AugUR participants included in the GP sub-study and participants not included in the sub-study.

Supplementary Figure 1a)-k). Frequency of self-reports stratified by sex, age, status of living with a partner and education status. Percentages and valid number of totals for all objectives are shown. Threshold for age was generated through a median split. Total n varies due to missing values in diseases or independent variables. COPD=chronic obstructive pulmonary disease.

Supplementary Figure 2a)-k). Percentages of overall agreement stratified by sex, age, status of living with a partner and education status. Overall agreement includes all coincident statements of participants and general practitioners, whether they are positive or negative statements. Threshold for age was generated through a median split. Percentages and valid totals for each subgroup are given. Total n varies due to missing values in diseases or independent variables. COPD=chronic obstructive pulmonary disease.

SUPPLEMENTARY NOTE

Recruitment and response in AugUR baseline

For AugUR-1 baseline survey, a written invitation letter was sent to 5,644 persons aged 70 to 95 years (2,437 men, 3,207 women). A total of 2,457 persons were contactable (43.5% contact proportion) resulting in 1133 study participants (46.1% cooperation proportion). The overall net response rate was 20.1%, larger in men than in women (25.5% versus 15.9%) and decreasing by age (26.0% in age group 70-74, 7.2% in those 90-95 years). For the second cross-sectional survey (AugUR2-BL), we sent a written invitation letter to 7,878 contactable persons aged between 70 and 95 years (2,629 men, 5,249 women). Based on the response results of the first AugUR survey, we adjusted numbers and sex ratio in age groups to best fit the Bavarian population 70+ in our current study sample. Contact was possible with 2,894 persons (36.7% contact proportion) resulting in 1,316 study participants (45.5% cooperation proportion). The overall net response rate was 16.7%, larger in men than in women (21.0% versus 14.6%) and decreasing by age (18.2% in age group 70-74, 7.3% in those 90-95 years).

Supplementary Table 1. Patterns of missing information in self-reports and GP-reports.

Disease	Self-report			GP-reports on participants answering "I don't know"	GP-report			Self-reports on cases with missing GP-reports
	Yes	No	I don't know		Yes	No	missing	
Hypertension	432 (73.3)	156 (26.5)	1 (0.2)	Yes: 0 No: 1 Missing: 0	437 (74.2)	134 (22.8)	18 (3.1)	Yes: 9 No: 9 I don't know: 0
Diabetes	141 (23.9)	448 (76.1)	0 (0)	Yes: 0 No: 0 Missing: 0	171 (29.0)	415 (70.4)	3 (0.5)	Yes: 0 No: 3 I don't know: 0
Myocardial infarction	57 (9.7)	530 (90.0)	2 (0.3)	Yes: 0 No: 2 Missing: 0	43 (7.3)	536 (91.0)	10 (1.7)	Yes: 1 No: 9 I don't know: 0
Heart failure	473 (80.3)	112 (19.0)	4 (0.7)	Yes: 0 No: 4 Missing: 0	105 (17.8)	476 (80.8)	8 (1.4)	Yes: 2 No: 6 I don't know: 0
Stroke	54 (9.2)	531 (90.2)	4 (0.7)	Yes: 0 No: 4 Missing: 0	46 (7.8)	539 (91.5)	4 (0.7)	Yes: 1 No: 3 I don't know: 0
Kidney disease	171 (29.0)	417 (70.8)	1 (0.2)	Yes: 1 No: 0 Missing: 0	124 (21.1)	458 (77.8)	7 (1.2)	Yes: 3 No: 4 I don't know: 0
Cancer	158 (26.8)	430 (73.0)	1 (0.2)	Yes: 1 No: 0 Missing: 0	151 (25.6)	434 (73.7)	4 (0.7)	Yes: 3 No: 1 I don't know: 0
Asthma	57 (9.7)	530 (90.0)	2 (0.3)	Yes: 1 No: 1 Missing: 0	36 (6.1)	485 (82.3)	68 (11.5)	Yes: 5 No: 63 I don't know: 0
Chronic Bronchitis/ COPD	55 (9.3)	532 (90.6)	2 (0.3)	Yes: 0 No: 1 Missing: 0	31 (5.3)	485 (82.3)	73 (12.4)	Yes: 9 No: 64 I don't know: 0
Rheumatoid arthritis	79 (13.4)	505 (85.7)	5 (0.8)	Yes: 2 No: 3 Missing: 0	28 (4.8)	488 (82.9)	73 (12.4)	Yes: 10 No: 63 I don't know: 0
Arthrosis	391 (66.4)	195 (33.1)	3 (0.5)	Yes: 1 No: 1 Missing: 1	242 (41.1)	297 (50.4)	50 (8.5)	Yes: 32 No: 17 I don't know: 1

GP=general practitioner; COPD=chronic obstructive pulmonary disease.

As we did not incorporate missing values of GPs and "I don't know"-answers of participants in our analyses, we addressed them in this supplementary table. The left half of the table depicts the self-reported diseases and GPs data on cases where participants reported "I don't know". The right half of the table depicts GP-reports and self-reported data on cases where GPs did not provide information (missing). In most cases, the GP or participant did not report the disease if the counterpart did not provide information on the disease (i.e., missing or "I don't know"); except for arthrosis, where the majority of participants reported the disease when GPs did not provide information on it.

Supplementary Table 2. Cross-tables showing raw data of self-reports and GP-reports for diabetes, myocardial infarction, heart failure, stroke, kidney disease and cancer.

			GP-report		
			yes	no	total
Diabetes	Self-report	yes	126	15	141
		no	45	400	445
		total	171	415	586
Myocardial infarction	Self-report	yes	29	27	56
		no	14	507	521
		total	43	534	577
Heart failure	Self-report	yes	40	70	110
		no	65	402	467
		total	105	472	577
Stroke	Self-report	yes	30	23	53
		no	16	512	528
		total	46	535	581
Kidney disease	Self-report	yes	48	120	168
		no	75	338	413
		total	123	458	581
Cancer	Self-report	yes	110	47	157
		no	40	387	427
		total	150	434	584

This table shows raw data of self-reports and GP-reports on diabetes, myocardial infarction, heart failure, stroke, kidney disease and cancer. For these conditions, a diagnose date was given by the GP. If the disease was diagnosed after the participant's last chance of reporting it in an interview, it was considered absent. The adapted numbers of reported diseases are used in the following analyses and are presented in **Supplementary Table 4**.

Supplementary Table 3. Absolute and relative numbers on disease cases considered to be absent.

Disease	Disease cases considered to be absent	n (participants)	Proportion
Diabetes	5	586	5/586=0.85%
Myocardial infarction	5	577	5/577=0.87%
Heart failure	10	577	10/577=1.73%
Stroke	3	581	3/581=0.52%
Kidney disease	11	581	11/581=1.89%
Cancer	12	584	12/584=2.05%

Diseases diagnosed after the participant's last chance of reporting it in an interview were considered absent. The numbers of respective absent diseases are shown in reference to the number of cases (n) where both participant and GP gave information on the disease status (i.e., without missing values and "I don't know").

Supplementary Table 4. Cross-tables showing number of self-reports and GP-reports as used in further analyses.

			GP-report		
			yes	no	total
Hypertension	Self-report	yes	376	47	423
		no	61	86	147
		total	437	133	570
Diabetes	Self-report	yes	126	15	141
		no	40	405	445
		total	166	420	586
Myocardial infarction	Self-report	yes	29	27	56
		no	9	512	521
		total	38	577	577
Heart failure	Self-report	yes	40	70	110
		no	65	402	467
		total	105	472	577
Stroke	Self-report	yes	30	23	53
		no	13	515	528
		total	43	538	581
Kidney disease	Self-report	yes	48	120	168
		no	64	349	413
		total	112	469	581
Cancer	Self-report	yes	110	47	157
		no	28	399	427
		total	138	446	584
Asthma	Self-report	yes	25	27	52
		no	10	457	467
		total	35	484	519
Chronic bronchitis/ COPD	Self-report	yes	14	32	46
		no	17	451	468
		total	31	483	514
Rheumatoid arthritis	Self-report	yes	12	57	69
		no	14	428	442
		total	26	485	511
Arthrosis	Self-report	yes	183	176	359
		no	58	120	178
		total	241	296	537

Cross-tables show distributions of self-reports and GP-reports, with GP-reports as reference category. GP=general practitioner; COPD=chronic obstructive pulmonary disease.

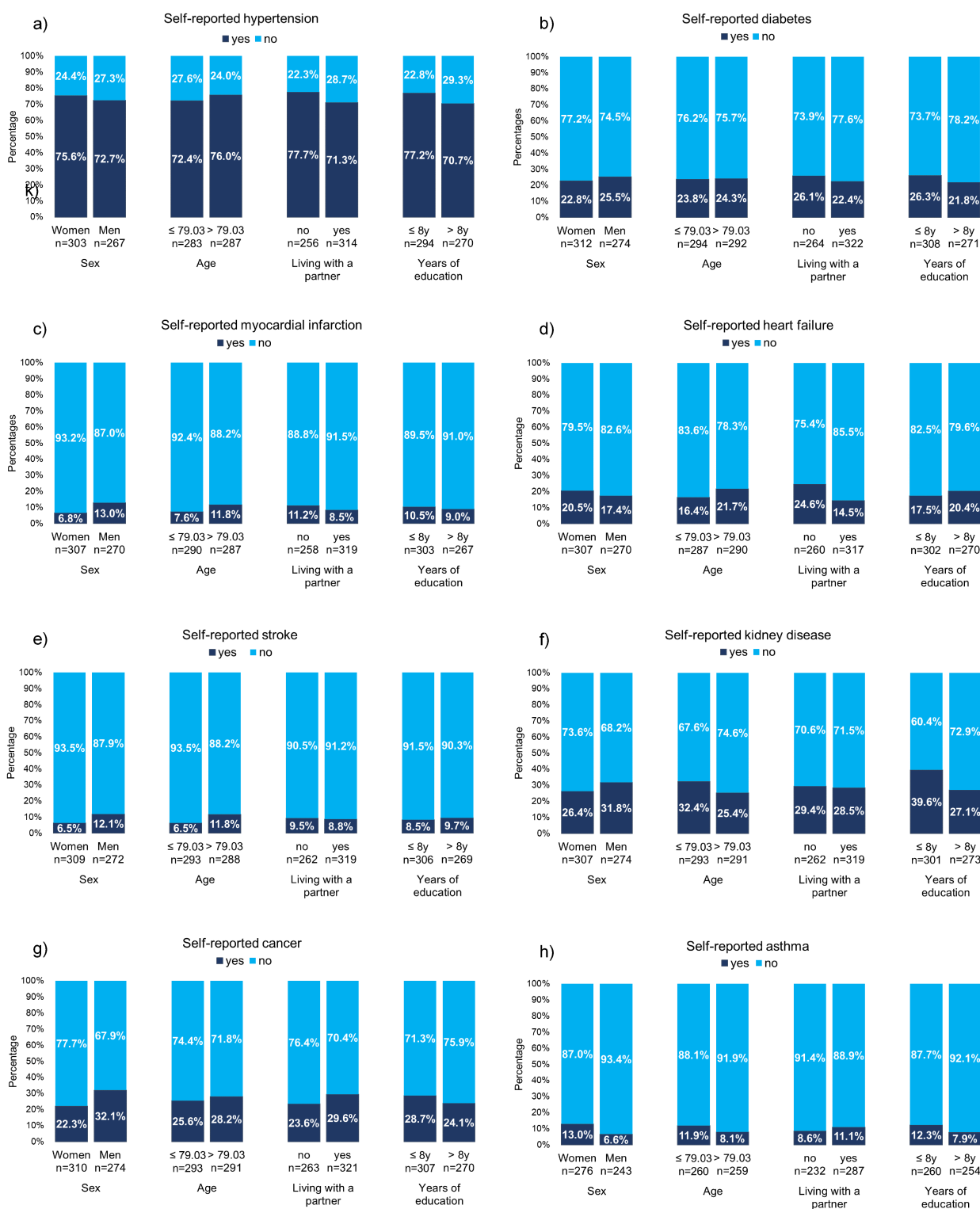
Supplementary Table 5. Characteristics of AugUR participants included in the GP sub-study and participants not included in the sub-study.

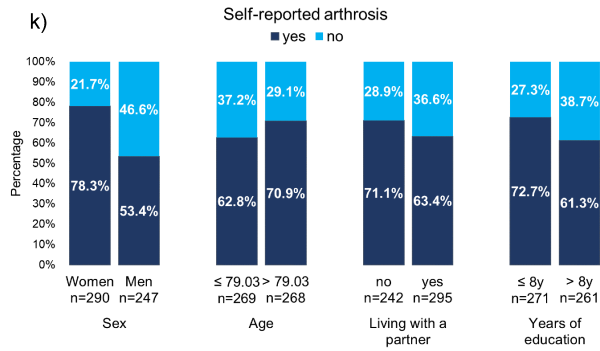
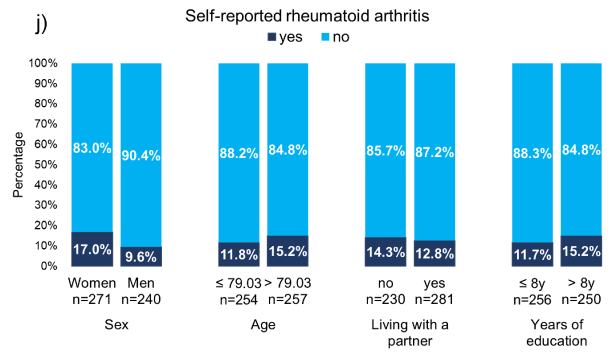
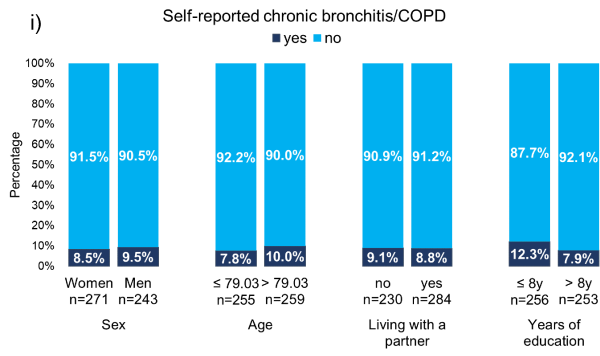
	GP sub-study participants n=589	AugUR participants not included in sub-study. n=1,732
Sex n (%)		
women	313 (53.1)	906 (52.3)
men	276 (46.9)	826 (47.7)
Age median (IQR)	79.0y (75.5-82.6y)	78.8y (75.8y-82.7y)
Living with partner n (%)		
no	265 (45.0)	689 (39.8)
yes	324 (55.0)	1,043 (60.2)
Education n (%)		
≤8 years	309 (53.1)	864 (50.2)
>8 years	273 (46.9)	857 (49.8)
Most recent interview time point n (%)		
2013-2015 (AugUR-1-BL)	72 (12.2)	250 (14.4)
2016-2018 (AugUR-1-F1)	146 (24.8)	459 (28.6)
2017-2019 (AugUR-2-BL)	340 (57.7)	904 (52.2)
2019-2020 (AugUR-1-F2)	31 (5.3)	83 (4.8)
Disease count mean (SD)	2.90 (1.6)	2.83 (1.5)

IQR=inter quartile range; y=years; AugUR-1-BL=baseline visit AugUR-1 cohort; AugUR-1-F1=follow-up-1 visit AugUR-1 cohort; AugUR-2-BL=baseline visit AugUR-2 cohort; AugUR-1-F2=follow-up-2 visit AugUR-1 cohort. Absolute numbers and percentages are shown.

To address the question of selection bias, we compared the characteristics of our sub-study participants with the characteristics of AugUR participants not included in the sub-study. Shown are the characteristics for 589 GP sub-study participants and for 1,732 participants of AugUR. The 1,732 participants gave consent and valid information to contact their GPs but were excluded from the sub-study as the respective GPs did not provide information on the disease status. In addition, we evaluated the mean number of self-reported diseases (disease count ranging from 0-11), to check whether GPs did preferentially provide information on "healthier" patients with shorter medical records; this was not the case.

Supplementary Figure 1.





Supplementary Figure 2.

