

Supplementary Appendix

Lower socioeconomic status predicts higher mortality and morbidity in patients with heart failure

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Supplementary Table 1: Variable definitions

Variable	Definition
Education	University/secondary school degree or attendance of compulsory school (9 years or less), from LISA (Statistics Sweden).
Income	Disposable income from LISA (Statistics Sweden), median is calculated for the respective year of registration.
Cohabitation status	Variable in SwedeHF.
Arterial hypertension	Diagnosis in SwedeHF or in the NPR (ICD-10 codes: I10-I15).
Diabetes mellitus	Diagnosis in SwedeHF or in the NPR (ICD-10 codes: E10-E14).
Obesity	Body mass index >30 kg/m ² .
Ischaemic heart disease	Previous coronary revascularisation in SwedeHF or ischaemic heart disease as HF aetiology in SwedeHF or previous myocardial infarction in the NPR or previous coronary revascularisation in the NPR (ICD-10 code: I20-I25; procedure codes: FNG, FNA, FNB, FNC, FND, FNE, FNF, FNH, Z951, Z955).
Atrial fibrillation	Diagnosis in SwedeHF (history of atrial fibrillation or ECG showing atrial fibrillation) or in the NPR (ICD-10 code: I48).
Neurologic/psychiatric disease	Diagnosis in the NPR (ICD-10 codes: F064, F40, F41, F32, F33, F34, F20, F22, F23, F24, F25, F28, F29, F302, F312, F315, G10, G11, G12, G13, G20, G21, G22, G254, G255, G312, G318, G319, G32, G35, G36, G37, G40, G41, G931, G934, R470, R56, G041, G114, G801, G802, G81, G82, G830, G831, G832, G833, G834, G839, F00, F01, F02, F03, F04).
Cancer in last 3 years	Diagnosis in the NPR within 3 years prior to the registrations in SwedeHF (ICD-10 codes: C00-C26, C30-C34, C37-C41, C43, C45-C58, C60-C76, C81-C85, C88, C90-C97).
Anaemia	Haemoglobin <120 g/l in females and <130 g/l in males.

Pulmonary disease	Diagnosis in SwedeHF (history of chronic obstructive disease; history of lung disease) or in the NPR (ICD-10 codes: J40-J47).
Valvular heart disease	Diagnosis in SwedeHF (history of valvular disease or valvular intervention) or in the NPR (ICD-10 codes: A520, I05-I08, I091, I098, I34-I39, Q230- Q233, Z952, Z954).
Peripheral vascular disease	Diagnosis in the NPR (ICD-10 codes: I70-I73).
Liver disease	Diagnosis in the NPR (ICD-10 codes: B18, I85, I864, I982, K70, K711, K713, K714, K715, K717, K72, K73, K74, K760, K762, K763, K764, K765, K766, K767, K768, K769, Z944).
Stroke/TIA	Diagnosis in the NPR (I61-I64, G458, G459, I639).
Prior revascularization	Diagnosis in SwedeHF or in the NPR (ICD-10 code: I20-I25; procedure codes: FNG, FNA, FNB, FNC, FND, FNE, FNF, FNH, Z951, Z955).
Heart failure hospitalisation	ICD-10 codes: I50, I42-I43, I25.5, K761, G45, J81, I11.0, I130, I132, P290 as main diagnosis in NPR
Cardiovascular events	ICD-10 codes I00-I99, K761, G45, J81 as main diagnosis in NPR and/or Cause of Death Registry
Non-Cardiovascular events	ICD-10 codes other than I00-I99, K761, G45, J81 as main diagnosis in NPR and/or Cause of Death Registry

Supplementary table 2: Percentage of missing values.

	% missing
Demographic factors	
Age	0
Female	0
Registration	0
Clinical factors	
Out-patient	<0.01
HF duration	0.7
NYHA	25.6
NT-proBNP	64.2
Hospitalisation for HF within 12 months	0
Heart rate	0.5
MAP	0.2
Ejection fraction	0
Comorbidities	
eGFR	<0.01
Current smoking	18.5
Obesity	46.3
Angina	0
PVD	0
Liver disease	0
Cancer within 3 years	0
Bleeding	0
Anaemia	0.1
Atrial fibrillation	0
Diabetes mellitus	0
Prior revascularisation	0
Ischaemic heart disease	0
Arterial hypertension	0
Valvular heart disease	0
Stroke/TIA	0
Pulmonary disease	0
Neurologic/psychiatric disease	0
Treatments	
ICD	<0.01
CRT	<0.01
Betablocker	<0.01
RASi	<0.01
MRA	<0.01
Digoxin	<0.01
Statins	<0.01
Anticoagulants	<0.01
Antiplatelets	<0.01
Nitrates	<0.01
Diuretics	0
Planned nurse-led HF follow-up	0.6
Planned specialty care follow-up	0.06

HF: heart failure; NYHA: New York Heart Association; NT-proBNP: N-terminal pro-B-type natriuretic peptide; MAP: mean arterial pressure; eGFR: estimated glomerular filtration rate (calculated by Chronic Kidney Disease Epidemiology Collaboration formula); ICD: implantable cardioverter-defibrillator; CRT: cardiac resynchronisation therapy; RASi: renin-angiotensin-system inhibitor; MRA: mineralocorticoid receptor antagonist; PVD: peripheral vascular disease; TIA: transient ischaemic attack.

Supplementary Table 3: Baseline characteristics stratified by number of socioeconomic risk factors in patients with heart failure with preserved ejection fraction

	Number of socioeconomic risk factors				P
	0 (N=1716, 17%)	1 (N=3090, 30%)	2 (N=3344, 32%)	3 (N=2217, 21%)	
Demographic factors					
Age (years)	71.58 (12.56)	75.73 (11.18)	78.62 (10.03)	82.69 (8.60)	<0.01
>75 years	748 (43.6%)	1846 (59.7%)	2365 (70.7%)	1883 (84.9%)	<0.01
Female	363 (21.2%)	1401 (45.3%)	2011 (60.1%)	1716 (77.4%)	<0.01
Registration					0.26
2000-10	700 (40.8%)	1319 (32.7%)	1463 (43.8%)	946 (42.7%)	
2011-16	1016 (59.2%)	1771 (57.3%)	1881 (56.2%)	1271 (57.3%)	
Clinical factors					
Out-patient	879 (51.3%)	1368 (44.3%)	1220 (36.5%)	620 (28.0%)	<0.01
HF duration (days)	292 [23, 1279]	348 [25, 1400]	427 [24, 1614]	473 [21, 1620]	<0.01
>6 months	826 (56.2%)	1591 (57.5%)	1777 (58.9%)	1239 (60.6%)	0.04
NYHA					<0.01
Class I	299 (24.1%)	375 (17.9%)	256 (12.3%)	143 (11.1%)	
Class II	600 (48.4%)	956 (45.7%)	905 (43.5%)	512 (39.7%)	
Class III	298 (24.0%)	689 (32.9%)	820 (39.4%)	565 (43.8%)	
Class IV	43 (3.5%)	73 (3.5%)	100 (4.8%)	70 (5.4%)	
NT-proBNP (pg/ml)	1402 [546, 3503]	1931 [719, 4405]	2174 [944, 4785]	2563 [1169, 5581]	<0.01
>2545 pg/ml	218 (31.9%)	487 (40.7%)	530 (44.2%)	400 (50.3%)	<0.01
Hospitalisation for HF within 12 months	1014 (59.1%)	1637 (53.0%)	1654 (49.5%)	1009 (45.5%)	<0.01
Heart rate (bpm)	71.03 (14.72)	72.86 (14.98)	74.40 (15.70)	75.34 (15.74)	<0.01
≥70 bpm	825 (51.8%)	1644 (56.7%)	1891 (60.0%)	1320 (62.7%)	<0.01
MAP (mmHg)	91.61 (13.22)	91.58 (13.11)	92.11 (13.24)	91.93 (13.36)	0.37
≥90 mmHg	935 (55.7%)	1692 (55.8%)	1893 (57.9%)	1239 (57.2%)	0.27
Comorbidities					
eGFR (ml/min/1.73m ²)	63.06 (23.55)	58.62 (22.79)	54.85 (22.70)	50.70 (20.92)	<0.01
<60 ml/min/1.73m ²	784 (46.2%)	1672 (54.5%)	2065 (62.3%)	1515 (68.5%)	<0.01
Current smoking	108 (7.6%)	234 (9.4%)	269 (10.7%)	141 (8.8%)	0.01
Obesity	234 (24.6%)	489 (29.5%)	494 (29.7%)	291 (28.0%)	0.03
Angina	466 (27.2%)	951 (30.8%)	1081 (32.3%)	750 (33.8%)	<0.01
PVD	206 (12.0%)	338 (10.9%)	380 (11.4%)	230 (10.4%)	0.41
Liver disease	44 (2.6%)	88 (2.8%)	91 (2.7%)	53 (2.4%)	0.77
Cancer within 3 years	239 (13.9%)	409 (13.2%)	395 (11.8%)	209 (9.4%)	<0.01
Bleeding	360 (21.0%)	717 (23.2%)	815 (24.4%)	524 (23.6%)	0.06
Anaemia	651 (38.5%)	1256 (41.2%)	1414 (42.8%)	998 (45.3%)	<0.01
Atrial fibrillation	1059 (61.7%)	2045 (66.2%)	2204 (65.9%)	1523 (68.7%)	<0.01
Diabetes mellitus	434 (25.3%)	837 (27.1%)	1014 (30.3%)	634 (28.6%)	0.01
Prior revascularisation	460 (26.8%)	754 (24.4%)	745 (22.3%)	386 (17.4%)	<0.01
Ischaemic heart disease	762 (44.4%)	1552 (50.2%)	1664 (49.8%)	1164 (52.5%)	<0.01
Arterial hypertension	1202 (70.0%)	2213 (71.6%)	2456 (73.4%)	1669 (75.3%)	0.01
Valvular heart disease	613 (35.7%)	1149 (37.2%)	1325 (39.6%)	891 (40.2%)	0.01

<i>Stroke/TIA</i>	264 (15.4%)	484 (15.7%)	592 (17.7%)	465 (21.0%)	<0.01
<i>Pulmonary disease</i>	382 (22.3%)	837 (27.1%)	1029 (30.8%)	598 (27.0%)	<0.01
<i>Neurologic/psychiatric disease</i>	209 (12.2%)	480 (15.5%)	627 (18.8%)	372 (16.8%)	<0.01
Treatments					
<i>ICD</i>	27 (1.6%)	45 (1.5%)	23 (0.7%)	9 (0.4%)	<0.01
<i>CRT</i>	22 (1.3%)	32 (1.0%)	17 (0.5%)	7 (0.3%)	<0.01
<i>Betablocker</i>	1372 (80.4%)	2498 (81.4%)	2661 (79.9%)	1723 (78.0%)	0.03
<i>RASi</i>	1314 (77.2%)	2251 (73.5%)	2273 (68.5%)	1463 (66.4%)	<0.01
<i>MRA</i>	491 (28.9%)	844 (27.6%)	959 (28.9%)	682 (31.0%)	0.07
<i>Digoxin</i>	249 (14.6%)	512 (16.7%)	577 (17.3%)	424 (19.2%)	<0.01
<i>Statins</i>	750 (43.9%)	1292 (42.1%)	1276 (38.3%)	686 (31.1%)	<0.01
<i>Anticoagulants</i>	799 (46.9%)	1299 (42.3%)	1318 (39.6%)	778 (35.3%)	<0.01
<i>Antiplatelets</i>	646 (38.0%)	1324 (43.2%)	1504 (45.3%)	1056 (48.0%)	<0.01
<i>Nitrates</i>	196 (11.5%)	491 (16.0%)	662 (19.9%)	494 (22.4%)	<0.01
<i>Diuretics</i>	1286 (74.9%)	2500 (80.9%)	2886 (86.3%)	2017 (91.0%)	<0.01
<i>Planned nurse-led HF follow-up</i>	511 (29.8%)	794 (25.7%)	729 (21.8%)	357 (16.1%)	<0.01
<i>Planned specialty care follow-up</i>	960 (55.9%)	1407 (45.5%)	1223 (36.6%)	581 (26.2%)	<0.01

Continuous variables are presented as mean (\pm standard deviation) and compared by one-way analysis of variance if normally distributed, and as median (25th, 75th percentile) and compared by Kruskal-Wallis test if non-normally distributed. Categorical variables are presented as absolute (relative) frequencies and compared by Chi²-test. HF: heart failure; NYHA: New York Heart Association; NT-proBNP: N-terminal pro-B-type natriuretic peptide; MAP: mean arterial pressure; eGFR: estimated glomerular filtration rate (calculated by Chronic Kidney Disease Epidemiology Collaboration formula); ICD: implantable cardioverter-defibrillator; CRT: cardiac resynchronisation therapy; RASi: renin-angiotensin-system inhibitor; MRA: mineralocorticoid receptor antagonist; PVD: peripheral vascular disease; TIA: transient ischaemic attack.

Supplementary Table 4: Baseline characteristics stratified by number of socioeconomic risk factors in patients with heart failure with mid-range ejection fraction

	Number of socioeconomic risk factors				P
	0 (N=2179, 22%)	1 (N=3272, 33%)	2 (N=2941, 30%)	3 (N=1457, 15%)	
Demographic factors					
Age (years)	69.68 (12.56)	73.38 (11.87)	76.79 (10.69)	81.40 (9.09)	<0.01
>75 years	799 (36.7%)	1615 (49.4%)	1843 (62.7%)	1168 (80.2%)	<0.01
Female	358 (16.4%)	1085 (33.2%)	1364 (46.4%)	995 (68.3%)	<0.01
Registration					0.02
2000-10	966 (44.3%)	1384 (42.3%)	1349 (45.9%)	666 (45.7%)	
2011-16	1213 (55.7%)	1888 (57.7%)	1592 (54.1%)	791 (54.3%)	
Clinical factors					
Out-patient	1412 (64.8%)	1850 (56.6%)	1454 (49.5%)	522 (35.8%)	<0.01
HF duration (days)	320 [43, 1462]	364 [35, 1582]	494 [47, 1631]	463 [25, 1669]	0.04
>6 months	1106 (58.7%)	1716 (58.6%)	1643 (61.5%)	819 (60.0%)	0.12
NYHA					<0.01
Class I	408 (23.0%)	387 (15.5%)	243 (11.3%)	91 (9.4%)	
Class II	924 (52.1%)	1335 (53.4%)	1075 (50.1%)	453 (46.6%)	
Class III	410 (23.1%)	716 (28.6%)	753 (35.1%)	384 (39.5%)	
Class IV	32 (1.8%)	63 (2.5%)	76 (3.5%)	44 (4.5%)	
NT-proBNP (pg/ml)	1460 [529, 3628]	1780 [667, 4233]	2263 [948, 5190]	3180 [1403, 7204]	<0.01
>2545 pg/ml	282 (34.8%)	463 (38.0%)	485 (46.5%)	271 (58.7%)	<0.01
Hospitalisation for HF within 12 months	1473 (67.6%)	2020 (61.7%)	1643 (55.9%)	733 (50.3%)	<0.01
Heart rate (bpm)	70.34 (14.26)	72.65 (15.35)	73.70 (14.83)	74.57 (15.84)	<0.01
≥70 bpm	1005 (48.6%)	1691 (54.8%)	1620 (58.5%)	843 (61.6%)	<0.01
MAP (mmHg)	90.95 (12.61)	91.40 (12.96)	91.88 (13.22)	92.82 (13.14)	<0.01
≥90 mmHg	1176 (54.8%)	1817 (56.4%)	1623 (56.1%)	851 (59.8%)	0.03
Comorbidities					
eGFR (ml/min/1.73m ²)	67.00 (23.13)	61.84 (23.61)	57.23 (23.61)	52.69 (21.46)	<0.01
<60 ml/min/1.73m ²	812 (37.5%)	1551 (47.8%)	1676 (57.4%)	931 (64.2%)	<0.01
Current smoking	153 (8.3%)	357 (13.1%)	284 (11.9%)	117 (10.9%)	<0.01
Obesity	297 (24.0%)	489 (27.3%)	395 (26.5%)	182 (25.7%)	0.21
Angina	674 (30.9%)	1070 (32.7%)	1063 (36.1%)	530 (36.4%)	<0.01
PVD	215 (9.9%)	382 (11.7%)	348 (11.8%)	172 (11.8%)	0.11
Liver disease	58 (2.7%)	75 (2.3%)	75 (2.6%)	30 (2.1%)	0.62
Cancer within 3 years	288 (13.2%)	366 (11.2%)	313 (10.6%)	148 (10.2%)	0.01
Bleeding	402 (18.4%)	695 (21.2%)	624 (21.2%)	305 (20.9%)	0.05
Anaemia	693 (32.3%)	1146 (35.6%)	1124 (38.7%)	581 (40.3%)	<0.01
Atrial fibrillation	1230 (56.4%)	1965 (60.1%)	1842 (62.6%)	948 (65.1%)	<0.01
Diabetes mellitus	516 (23.7%)	873 (26.7%)	876 (29.8%)	442 (30.3%)	<0.01
Prior revascularisation	800 (36.7%)	1107 (33.8%)	951 (32.3%)	351 (24.1%)	<0.01
Ischaemic heart disease	1206 (55.3%)	1868 (57.1%)	1794 (61.0%)	885 (60.7%)	<0.01
Arterial hypertension	1308 (60.0%)	2144 (65.5%)	2050 (69.7%)	1022 (70.1%)	<0.01
Valvular heart disease	634 (29.1%)	934 (28.5%)	958 (32.6%)	515 (35.3%)	<0.01

<i>Stroke/TIA</i>	301 (13.8%)	482 (14.7%)	481 (16.4%)	257 (17.6%)	<0.01
<i>Pulmonary disease</i>	373 (17.1%)	773 (23.6%)	778 (26.5%)	353 (24.2%)	<0.01
<i>Neurologic/psychiatric disease</i>	213 (9.8%)	433 (13.2%)	455 (15.5%)	243 (16.7%)	<0.01
Treatments					
<i>ICD</i>	78 (3.6%)	79 (2.4%)	50 (1.7%)	16 (1.1%)	<0.01
<i>CRT</i>	66 (3.1%)	73 (2.3%)	42 (1.4%)	15 (1.0%)	<0.01
<i>Betablocker</i>	1902 (87.8%)	2843 (87.3%)	2561 (87.4%)	1225 (84.4%)	0.01
<i>RASi</i>	1887 (87.0%)	2732 (83.9%)	2387 (81.6%)	1077 (74.5%)	<0.01
<i>MRA</i>	561 (26.0%)	871 (26.8%)	792 (27.1%)	391 (27.0%)	0.82
<i>Digoxin</i>	293 (13.5%)	544 (16.7%)	477 (16.3%)	270 (18.6%)	<0.01
<i>Statins</i>	1155 (53.2%)	1654 (50.8%)	1424 (48.6%)	554 (38.2%)	<0.01
<i>Anticoagulants</i>	939 (43.3%)	1430 (43.9%)	1152 (39.3%)	496 (34.3%)	<0.01
<i>Antiplatelets</i>	1008 (46.6%)	1543 (47.4%)	1505 (51.5%)	791 (54.7%)	<0.01
<i>Nitrates</i>	256 (11.8%)	470 (14.5%)	586 (20.0%)	313 (21.6%)	<0.01
<i>Diuretics</i>	1356 (62.2%)	2370 (72.4%)	2328 (79.2%)	1254 (86.1%)	<0.01
<i>Planned nurse-led HF follow-up</i>	800 (36.7%)	1088 (33.3%)	865 (29.4%)	322 (22.1%)	<0.01
<i>Planned specialty care follow-up</i>	1456 (66.8%)	1843 (56.3%)	1385 (47.0%)	458 (31.4%)	<0.01

Supplementary Table 5: Baseline characteristics stratified by number of socioeconomic risk factors in patients with heart failure with reduced ejection fraction

	Number of socioeconomic risk factors				P
	0 (N=5467, 22%)	1 (N=8238, 34%)	2 (N=7309, 30%)	3 (N=3411, 14%)	
Demographic factors					
Age (years)	69.52 (12.23)	71.70 (11.92)	74.92 (11.14)	78.43 (11.04)	<0.01
>75 years	1942 (35.5%)	3544 (43.0%)	4089 (55.9%)	2351 (68.9%)	<0.01
Female	690 (12.6%)	1935 (23.5%)	2507 (34.3%)	1816 (53.2%)	<0.01
Registration					<0.01
2000-10	2352 (43.0%)	3522 (42.8%)	3354 (45.9%)	1559 (45.7%)	
2011-16	3115 (57.0%)	4716 (57.2%)	3955 (54.1%)	1852 (54.3%)	
Clinical factors					
Out-patient	3232 (59.2%)	4648 (56.4%)	3635 (49.7%)	1344 (39.4%)	<0.01
HF duration (days)	308 [40, 1877]	470 [45, 2044]	490 [46, 1973]	441 [36, 1776]	<0.01
>6 months	2871 (55.5%)	4645 (59.3%)	4256 (60.9%)	1938 (59.0%)	<0.01
NYHA					<0.01
Class I	538 (11.7%)	587 (8.9%)	381 (6.8%)	125 (5.3%)	
Class II	2194 (47.9%)	2905 (44.1%)	2281 (40.8%)	893 (37.7%)	
Class III	1644 (35.9%)	2759 (41.8%)	2562 (45.9%)	1151 (48.6%)	
Class IV	208 (4.5%)	343 (5.2%)	361 (6.5%)	198 (8.4%)	
NT-proBNP (pg/ml)	2435 [1009, 5461]	2890 [1205, 6909]	3800 [1556, 9073]	4970 [2006, 11601]	<0.01
>2545 pg/ml	980 (48.2%)	1651 (53.9%)	1520 (61.9%)	707 (68.6%)	<0.01
Hospitalisation for HF within 12 months	2911 (53.2%)	4217 (51.2%)	3484 (47.7%)	1441 (42.2%)	<0.01
Heart rate (bpm)	72.16 (14.88)	73.09 (14.89)	74.32 (15.58)	75.07 (15.53)	<0.01
≥70 bpm	2812 (54.2%)	4529 (57.9%)	4188 (60.1%)	2033 (62.8%)	<0.01
MAP (mmHg)	88.91 (13.29)	88.88 (13.07)	88.92 (13.21)	89.31 (13.24)	0.44
≥90 mmHg	2560 (47.5%)	3850 (47.5%)	3437 (47.7%)	1623 (48.2%)	0.91
Comorbidities					
eGFR (ml/min/1.73m ²)	63.99 (23.70)	61.44 (24.10)	56.94 (23.55)	54.05 (23.59)	<0.01
<60 ml/min/1.73m ²	2353 (43.3%)	3971 (48.6%)	4179 (57.5%)	2138 (63.0%)	<0.01
Current smoking	465 (10.0%)	1029 (14.6%)	955 (15.8%)	411 (15.8%)	<0.01
Obesity	630 (19.8%)	1073 (22.8%)	822 (21.1%)	321 (19.2%)	<0.01
Angina	1585 (29.0%)	2725 (33.1%)	2463 (33.7%)	1179 (34.6%)	<0.01
PVD	546 (10.0%)	955 (11.6%)	960 (13.1%)	421 (12.3%)	<0.01
Liver disease	107 (2.0%)	218 (2.6%)	219 (3.0%)	98 (2.9%)	<0.01
Cancer within 3 years	645 (11.8%)	926 (11.2%)	747 (10.2%)	277 (8.1%)	<0.01
Bleeding	913 (16.7%)	1457 (17.7%)	1342 (18.4%)	597 (17.5%)	0.11
Anaemia	1655 (30.7%)	2766 (34.1%)	2696 (37.3%)	1320 (39.0%)	<0.01
Atrial fibrillation	3047 (55.7%)	4565 (55.4%)	4129 (56.5%)	1934 (56.7%)	0.44
Diabetes mellitus	1331 (24.3%)	2463 (29.9%)	2280 (31.2%)	1039 (30.5%)	<0.01
Prior revascularisation	1994 (36.5%)	3047 (37.0%)	2553 (34.9%)	945 (27.7%)	<0.01
Ischaemic heart disease	3043 (55.7%)	4939 (60.0%)	4669 (63.9%)	2152 (63.1%)	<0.01
Arterial hypertension	3057 (55.9%)	4840 (58.8%)	4444 (60.8%)	2128 (62.4%)	<0.01
Valvular heart disease	1451 (26.5%)	2302 (27.9%)	2303 (31.5%)	1187 (34.8%)	<0.01

<i>Stroke/TIA</i>	774 (14.2%)	1264 (15.3%)	1150 (15.7%)	556 (16.3%)	0.03
<i>Pulmonary disease</i>	923 (16.9%)	1741 (21.1%)	1726 (23.6%)	750 (22.0%)	<0.01
<i>Neurologic/psychiatric disease</i>	600 (11.0%)	1132 (13.7%)	1137 (15.6%)	571 (16.7%)	<0.01
Treatments					
<i>ICD</i>	591 (10.9%)	738 (9.0%)	430 (5.9%)	115 (3.4%)	<0.01
<i>CRT</i>	531 (9.8%)	636 (7.8%)	414 (5.7%)	126 (3.7%)	<0.01
<i>Betablocker</i>	5025 (92.3%)	7544 (92.0%)	6632 (91.0%)	3017 (88.7%)	<0.01
<i>RASi</i>	4940 (90.8%)	7346 (89.6%)	6276 (86.2%)	2825 (83.3%)	<0.01
<i>MRA</i>	1994 (36.7%)	3051 (37.3%)	2560 (35.3%)	1113 (32.8%)	<0.01
<i>Digoxin</i>	968 (17.8%)	1446 (17.7%)	1275 (17.5%)	571 (16.8%)	0.68
<i>Statins</i>	2764 (50.8%)	4224 (51.5%)	3522 (48.4%)	1369 (40.3%)	<0.01
<i>Anticoagulants</i>	2698 (49.5%)	3599 (43.9%)	2939 (40.4%)	1088 (32.1%)	<0.01
<i>Antiplatelets</i>	2351 (43.3%)	4072 (49.8%)	3807 (52.4%)	1901 (56.0%)	<0.01
<i>Nitrates</i>	652 (12.0%)	1215 (14.8%)	1357 (18.7%)	771 (22.7%)	<0.01
<i>Diuretics</i>	4033 (73.8%)	6530 (79.3%)	6130 (83.9%)	2958 (86.7%)	<0.01
<i>Planned nurse-led HF follow-up</i>	2390 (43.7%)	3440 (41.8%)	2632 (36.0%)	996 (29.2%)	<0.01
<i>Planned specialty care follow-up</i>	4015 (73.4%)	5466 (66.4%)	4095 (56.0%)	1416 (41.5%)	<0.01

Supplementary Table 6: Baseline characteristics stratified by higher vs. lower education

	Higher education (N=22,839, 51%)	Lower education (N=21,802, 49%)	P
Demographic factors			
Age (years)	72.00 (12.69)	77.10 (10.45)	<0.01
>75 years	10379 (45.4)	13814 (63.4)	<0.01
Female	7343 (32.2)	8898 (40.8)	<0.01
Registration 2011-16	13294 (58.2)	11767 (54.0)	<0.01
Clinical factors			
Out-patient	12259 (53.7)	9925 (45.5)	<0.01
Ejection fraction			<0.01
Preserved (≥50%)	4918 (21.5)	5449 (25.0)	
Mid-range (40-49%)	5180 (22.7)	4669 (21.4)	
Reduced (<40%)	12741 (55.8)	11684 (53.6)	
HF duration (days)	373 [38, 1755]	455 [38, 1771]	0.04
>6 months	12254 (58.0)	12173 (60.0)	<0.01
NYHA			<0.01
Class I	2362 (13.4)	1471 (9.5)	
Class II	8338 (47.2)	6695 (43.1)	
Class III	6269 (35.5)	6482 (41.7)	
Class IV	713 (4.0)	898 (5.8)	
NT-proBNP (pg/ml)	2263 [900, 5461]	2880 [1210, 6867]	<0.01
>2545 pg/ml	4026 (46.6)	3968 (54.0)	<0.01
Hospitalisation for HF within 12 months	12376 (54.2)	10860 (49.8)	<0.01
Heart rate (bpm)	72.85 (15.03)	73.91 (15.44)	<0.01
≥70 bpm	12255 (56.6)	12146 (59.0)	<0.01
MAP (mmHg)	90.05 (13.24)	90.40 (13.21)	<0.01
≥90 mmHg	11501 (51.2)	11195 (52.2)	0.03
Comorbidities			
eGFR (ml/min/1.73m ²)	61.98 (24.21)	55.94 (22.80)	<0.01
<60 ml/min/1.73m ²	10905 (48.1)	12742 (58.8)	<0.01
Current smoking	2443 (12.8)	2080 (12.0)	0.02
Obesity	3030 (23.7)	2687 (24.0)	0.63
Angina	6951 (30.4)	7586 (34.8)	<0.01
PVD	2505 (11.0)	2648 (12.1)	<0.01
Liver disease	653 (2.9)	503 (2.3)	<0.01
Cancer within 3 years	2556 (11.2)	2406 (11.0)	0.61
Bleeding	4389 (19.2)	4362 (20.0)	0.04
Anaemia	7792 (34.6)	8508 (39.4)	<0.01
Atrial fibrillation	13146 (57.6)	13345 (61.2)	<0.01
Diabetes mellitus	6092 (26.7)	6647 (30.5)	<0.01
Prior revascularisation	7312 (32.0)	6781 (31.1)	0.04
Ischaemic heart disease	12513 (54.8)	13185 (60.5)	<0.01
Arterial hypertension	14115 (61.8)	14418 (66.1)	<0.01
Valvular heart disease	6905 (30.2)	7357 (33.7)	<0.01
Stroke/TIA	3432 (15.0)	3638 (16.7)	<0.01

<i>Pulmonary disease</i>	4911 (21.5)	5352 (24.5)	<0.01
<i>Neurologic/psychiatric disease</i>	3327 (14.6)	3145 (14.4)	0.68
Treatments			
<i>ICD</i>	1392 (6.1)	809 (3.7)	<0.01
<i>CRT</i>	1228 (5.4)	753 (3.5)	<0.01
<i>Betablocker</i>	20104 (88.4)	18899 (87.0)	<0.01
<i>RASi</i>	19297 (84.9)	17474 (80.6)	<0.01
<i>MRA</i>	7430 (32.8)	6879 (31.8)	0.02
<i>Digoxin</i>	3875 (17.0)	3731 (17.2)	0.70
<i>Statins</i>	10805 (47.5)	9865 (45.4)	<0.01
<i>Anticoagulants</i>	9879 (43.5)	8656 (39.9)	<0.01
<i>Antiplatelets</i>	10493 (46.3)	11015 (50.8)	<0.01
<i>Nitrates</i>	3182 (14.0)	4281 (19.7)	<0.01
<i>Diuretics</i>	17485 (76.6)	18163 (83.3)	<0.01
<i>Planned nurse-led HF follow-up</i>	13124 (61.2)	13874 (67.9)	<0.01
<i>Planned specialty care follow-up</i>	7541 (35.1)	10172 (49.6)	<0.01

Supplementary Table 7: Baseline characteristics stratified by higher vs. lower income

	Higher income (N=22,855, 51%)	Lower income (N=21,786, 49%)	P
Demographic factors			
Age (years)	72.13 (12.36)	76.96 (10.92)	<0.01
>75 years	10371 (45.4)	13822 (63.4)	<0.01
Female	5217 (22.8)	11024 (50.6)	<0.01
Registration 2011-16	12801 (56.0)	12260 (56.3)	0.58
Clinical factors			
Out-patient	12384 (54.2)	9800 (45.0)	<0.01
Ejection fraction			<0.01
Preserved (≥50%)	4644 (20.3)	5723 (26.3)	
Mid-range (40-49%)	5160 (22.6)	4689 (21.5)	
Reduced (<40%)	13051 (57.1)	11374 (52.2)	
HF duration (days)	352 [37, 1722]	477 [39, 1803]	<0.01
>6 months	12114 (57.5)	12313 (60.4)	<0.01
NYHA			<0.01
Class I	2454 (13.8)	1379 (8.9)	
Class II	8389 (47.2)	6644 (43.0)	
Class III	6202 (34.9)	6549 (42.4)	
Class IV	729 (4.1)	882 (5.7)	
NT-proBNP (pg/ml)	2260 [900, 5436]	2890 [1200, 6940]	<0.01
>2545 pg/ml	3864 (46.3)	4130 (54.0)	<0.01
Hospitalisation for HF within 12 months	12476 (54.6)	10760 (49.4)	<0.01
Heart rate (bpm)	72.54 (14.94)	74.23 (15.50)	<0.01
≥70 bpm	12005 (55.5)	12396 (60.1)	<0.01
MAP (mmHg)	90.04 (13.15)	90.41 (13.30)	0.01
≥90 mmHg	11541 (51.3)	11155 (52.1)	0.11
Comorbidities			
eGFR (ml/min/1.73m ²)	62.08 (23.87)	55.83 (23.14)	<0.01
<60 ml/min/1.73m ²	10770 (47.5)	12877 (59.5)	<0.01
Current smoking	2317 (12.1)	2206 (12.7)	0.09
Obesity	2985 (23.3)	2732 (24.5)	0.03
Angina	7031 (30.8)	7506 (34.5)	<0.01
PVD	2528 (11.1)	2625 (12.0)	0.01
Liver disease	534 (2.3)	622 (2.9)	0.01
Cancer within 3 years	2750 (12.0)	2212 (10.2)	<0.01
Bleeding	4372 (19.1)	4379 (20.1)	0.01
Anaemia	7965 (35.3)	8335 (38.7)	<0.01
Atrial fibrillation	13405 (58.7)	13086 (60.1)	<0.01
Diabetes mellitus	6096 (26.7)	6643 (30.5)	<0.01
Prior revascularisation	7614 (33.3)	6479 (29.7)	<0.01
Ischaemic heart disease	12689 (55.5)	13009 (59.7)	<0.01
Arterial hypertension	14050 (61.5)	14483 (66.5)	<0.01
Valvular heart disease	6793 (29.7)	7469 (34.3)	<0.01
Stroke/TIA	3408 (14.9)	3662 (16.8)	<0.01

<i>Pulmonary disease</i>	4796 (21.0)	5467 (25.1)	<0.01
<i>Neurologic/psychiatric disease</i>	2897 (12.7)	3575 (16.4)	<0.01
Treatments			
<i>ICD</i>	1402 (6.2)	799 (3.7)	<0.01
<i>CRT</i>	1233 (5.4)	748 (3.5)	<0.01
<i>Betablocker</i>	20142 (88.5)	18861 (86.9)	<0.01
<i>RASi</i>	19318 (85.0)	17453 (80.5)	<0.01
<i>MRA</i>	7421 (32.7)	6888 (31.8)	0.05
<i>Digoxin</i>	3835 (16.9)	3771 (17.4)	0.15
<i>Statins</i>	10951 (48.1)	9719 (44.8)	<0.01
<i>Anticoagulants</i>	10138 (44.6)	8397 (38.7)	<0.01
<i>Antiplatelets</i>	10470 (46.1)	11038 (51.0)	<0.01
<i>Nitrates</i>	3161 (13.9)	4302 (19.9)	<0.01
<i>Diuretics</i>	17323 (75.8)	18325 (84.1)	<0.01
<i>Planned nurse-led HF follow-up</i>	13220 (61.6)	13778 (67.5)	<0.01
<i>Planned specialty care follow-up</i>	7482 (34.8)	10231 (49.9)	<0.01

Supplementary Table 8: Baseline characteristics stratified by living alone vs. cohabitating

	Cohabiting (N=25,186, 56%)	Living alone (N=19,455, 44%)	P
Demographic factors			
Age (years)	72.94 (11.33)	76.49 (12.37)	<0.01
>75 years	12024 (47.7)	12169 (62.5)	<0.01
Female	6397 (25.4)	9844 (50.6)	<0.01
Registration 2011-16	14115 (56.0)	10946 (56.3)	0.65
Clinical factors			
Out-patient	13967 (55.5)	8217 (42.2)	<0.01
Ejection fraction			<0.01
Preserved (≥50%)	5110 (20.3)	5257 (27.0)	
Mid-range (40-49%)	5682 (22.6)	4167 (21.4)	
Reduced (<40%)	14394 (57.2)	10031 (51.6)	
HF duration (days)	400 [41, 1788]	428 [34, 1740]	0.05
>6 months	13621 (58.9)	10806 (59.0)	0.82
NYHA			<0.01
Class I	2497 (12.8)	1336 (9.8)	
Class II	9080 (46.5)	5953 (43.4)	
Class III	7048 (36.1)	5703 (41.6)	
Class IV	902 (4.6)	709 (5.2)	
NT-proBNP (pg/ml)	2271 [923, 5400]	2971 [1203, 7158]	<0.01
>2545 pg/ml	4287 (46.4)	3707 (54.9)	<0.01
Hospitalisation for HF within 12 months	13871 (55.1)	9365 (48.1)	<0.01
Heart rate (bpm)	72.49 (15.07)	74.49 (15.38)	<0.01
≥70 bpm	13093 (55.1)	11308 (61.1)	<0.01
MAP (mmHg)	89.99 (13.14)	90.51 (13.33)	<0.01
≥90 mmHg	12642 (51.0)	10054 (52.6)	0.01
Comorbidities			
eGFR (ml/min/1.73m ²)	60.55 (23.30)	57.05 (24.12)	<0.01
<60 ml/min/1.73m ²	12480 (49.9)	11167 (57.7)	<0.01
Current smoking	2166 (10.3)	2357 (15.4)	<0.01
Obesity	3281 (23.7)	2436 (24.0)	0.62
Angina	8292 (32.9)	6245 (32.1)	0.07
PVD	2906 (11.5)	2247 (11.5)	0.98
Liver disease	587 (2.3)	569 (2.9)	<0.01
Cancer within 3 years	3067 (12.2)	1895 (9.7)	<0.01
Bleeding	4783 (19.0)	3968 (20.4)	<0.01
Anaemia	8810 (35.5)	7490 (38.9)	<0.01
Atrial fibrillation	14782 (58.7)	11709 (60.2)	0.01
Diabetes mellitus	7171 (28.5)	5568 (28.6)	0.74
Prior revascularisation	8901 (35.3)	5192 (26.7)	<0.01
Ischaemic heart disease	14676 (58.3)	11022 (56.7)	0.01
Arterial hypertension	15880 (63.1)	12653 (65.0)	<0.01
Valvular heart disease	7752 (30.8)	6510 (33.5)	<0.01
Stroke/TIA	3860 (15.3)	3210 (16.5)	0.01

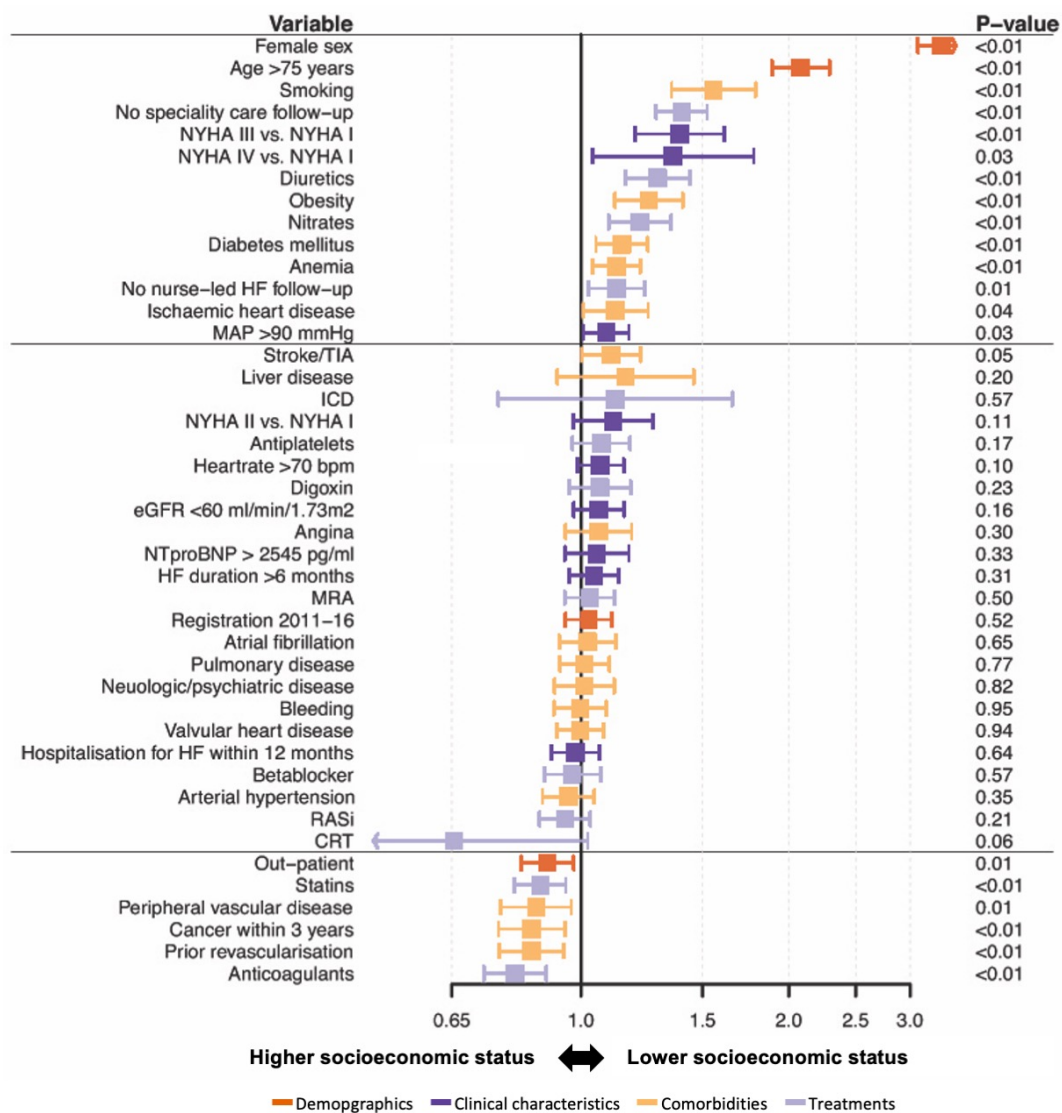
<i>Pulmonary disease</i>	5562 (22.1)	4701 (24.2)	<0.01
<i>Neurologic/psychiatric disease</i>	3151 (12.5)	3321 (17.1)	<0.01
Treatments			
<i>ICD</i>	1521 (6.1)	680 (3.5)	<0.01
<i>CRT</i>	1351 (5.4)	630 (3.3)	<0.01
<i>Betablocker</i>	22275 (88.8)	16728 (86.3)	<0.01
<i>RASi</i>	21402 (85.4)	15369 (79.5)	<0.01
<i>MRA</i>	8130 (32.5)	6179 (32.0)	0.27
<i>Digoxin</i>	4153 (16.6)	3453 (17.8)	<0.01
<i>Statins</i>	12813 (51.1)	7857 (40.6)	<0.01
<i>Anticoagulants</i>	11356 (45.3)	7179 (37.1)	<0.01
<i>Antiplatelets</i>	11746 (46.9)	9762 (50.5)	<0.01
<i>Nitrates</i>	3926 (15.7)	3537 (18.3)	<0.01
<i>Diuretics</i>	19361 (76.9)	16287 (83.7)	<0.01
<i>Planned nurse-led HF follow-up</i>	14408 (60.7)	12590 (69.4)	<0.01
<i>Planned specialty care follow-up</i>	8389 (35.2)	9324 (51.3)	<0.01

Supplementary Table 9: Association between individual socioeconomic risk factors and heart failure hospitalization or all-cause death

Socioeconomic risk factor	Unadjusted HR (95% CI)	P-value	Adjusted HR (95%CI)	P-value
Low income	1.25 (1.22-1.28)	<0.01	1.08 (1.05-1.10)	<0.01
Living alone	1.30 (1.27-1.33)	<0.01	1.12 (1.09-1.14)	<0.01
Compulsory school	1.21 (1.18-1.24)	<0.01	1.03 (1.01-1.06)	0.01

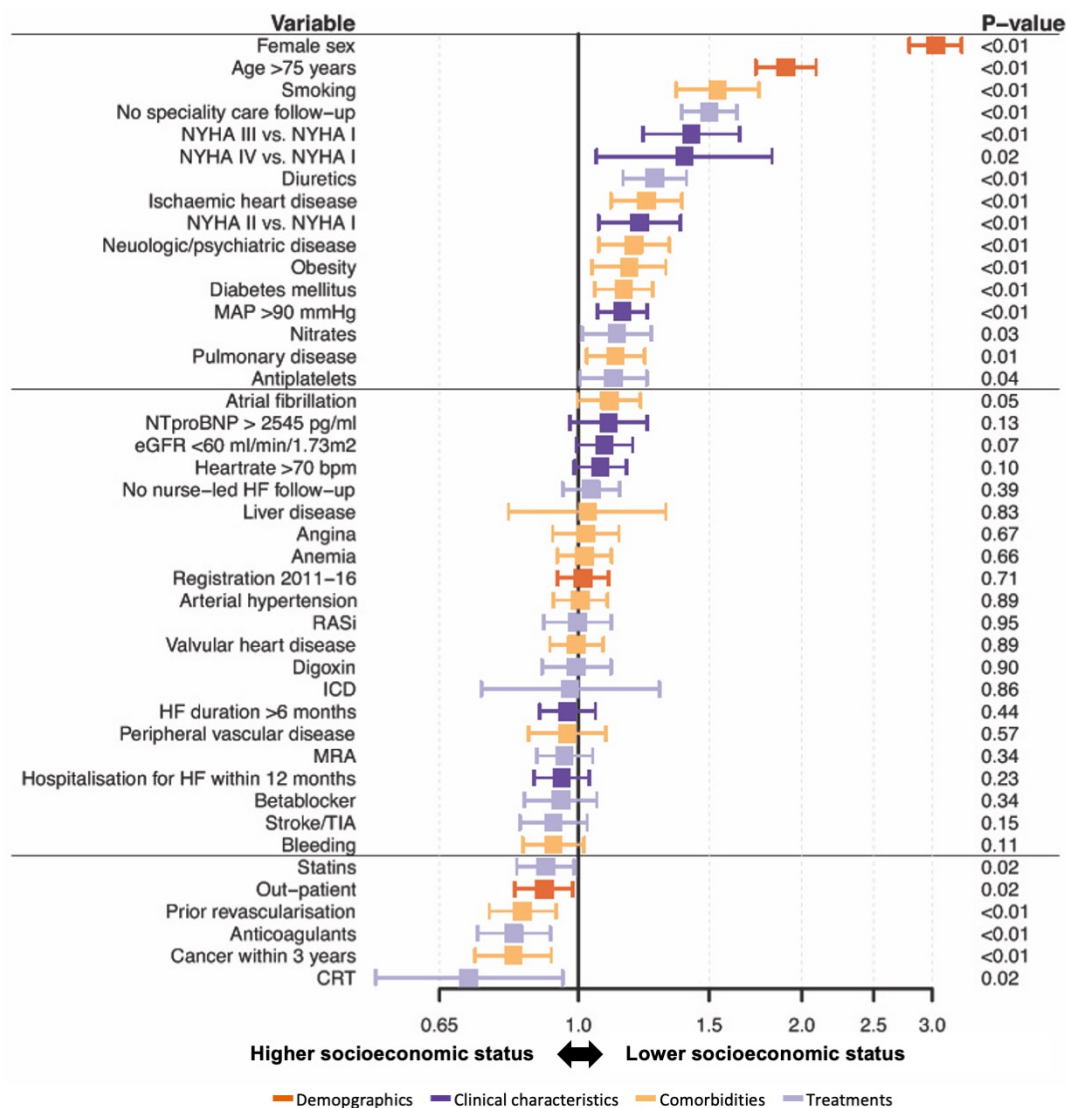
Unadjusted and adjusted hazard ratios (HR) and 95% confidence intervals (CI) for the association between individual socioeconomic risk factors and first heart failure hospitalisation or all-cause death. For variables used for the adjustment, see *Figure 4*.

Supplementary Figure 1: Association of patient characteristics with socioeconomic status in patients with heart failure with preserved ejection fraction

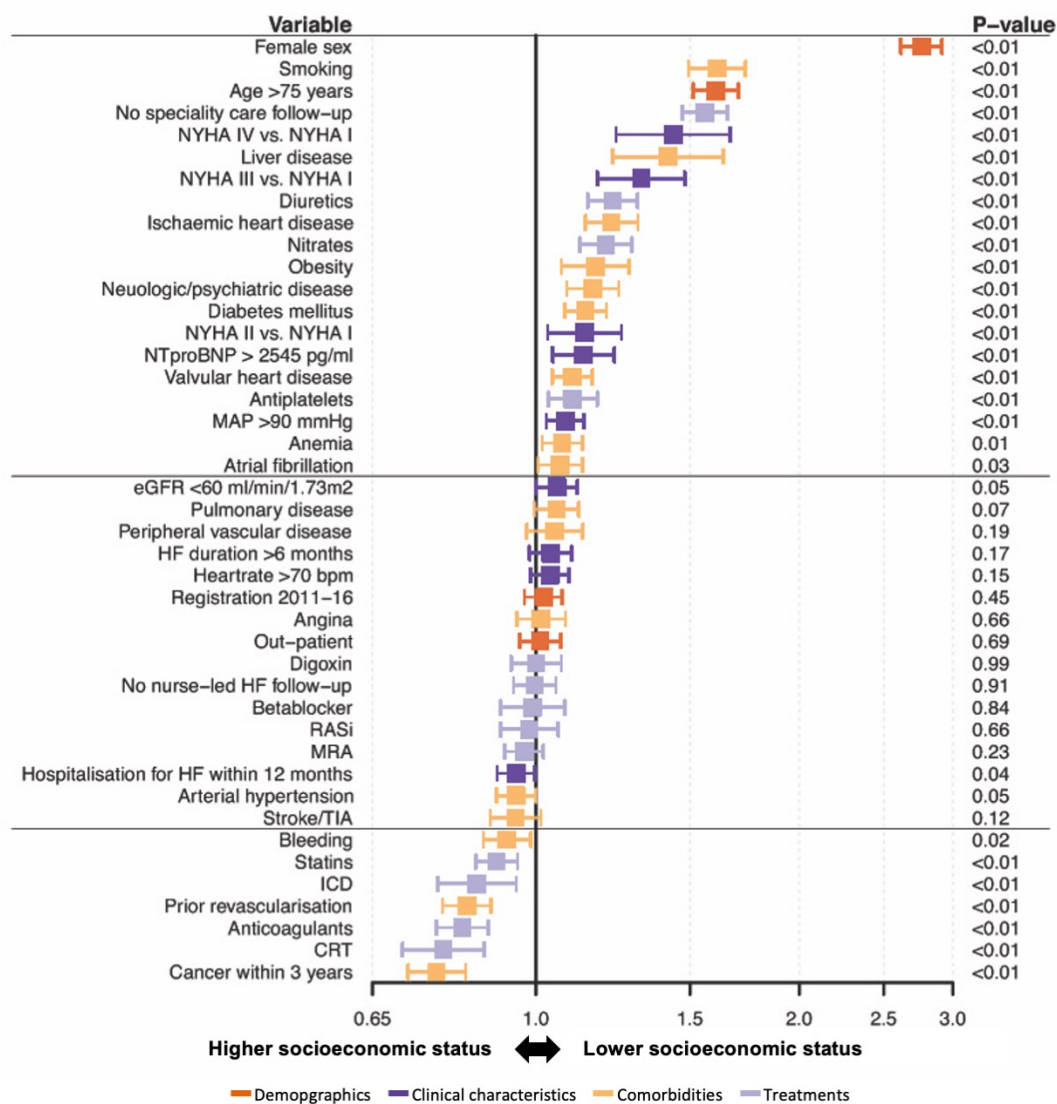


Odds ratios are shown on the x-axis, with an odds ratio below 1.0 indicating an association with higher socioeconomic status and an odds ratio above 1.0 indicating an association with a lower socioeconomic status. NYHA: New York Heart Association; NTproBNP: N-terminal pro-B-type natriuretic peptide; HHF: heart failure hospitalisation; MAP: mean arterial pressure; eGFR: estimated glomerular filtration rate (calculated by Chronic Kidney Disease Epidemiology Collaboration formula); ICD: implantable cardioverter-defibrillator; CRT: cardiac resynchronisation therapy; RASi: renin-angiotensin-system inhibitor; MRA: mineralocorticoid receptor antagonist; TIA: transient ischemic attack.

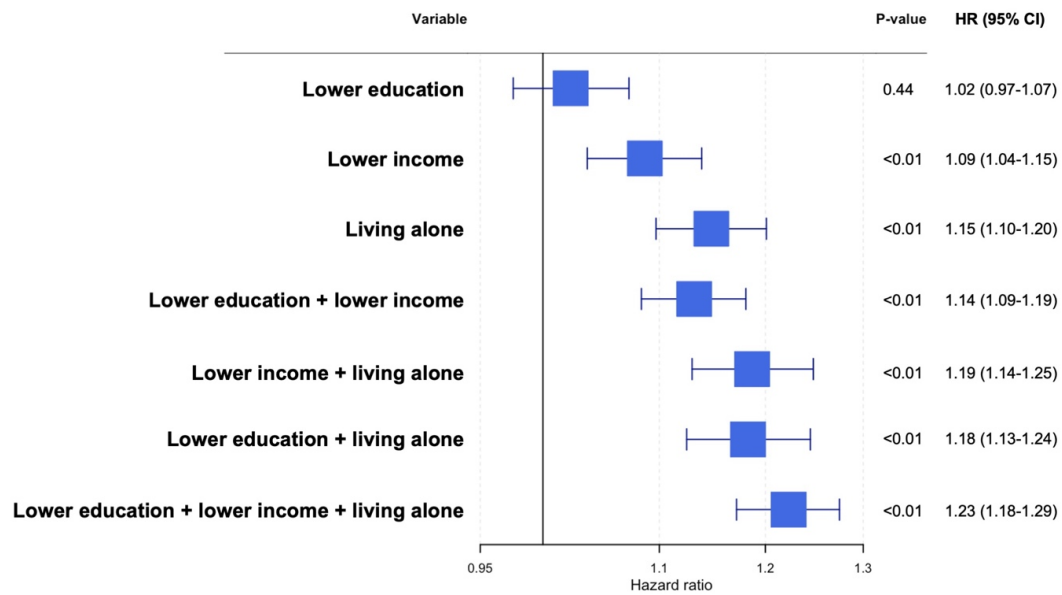
Supplementary Figure 2: Association of patient characteristics with socioeconomic status in patients with heart failure with mid-range ejection fraction



Supplementary Figure 3: Association of patient characteristics with socioeconomic status in patients with heart failure with reduced ejection fraction

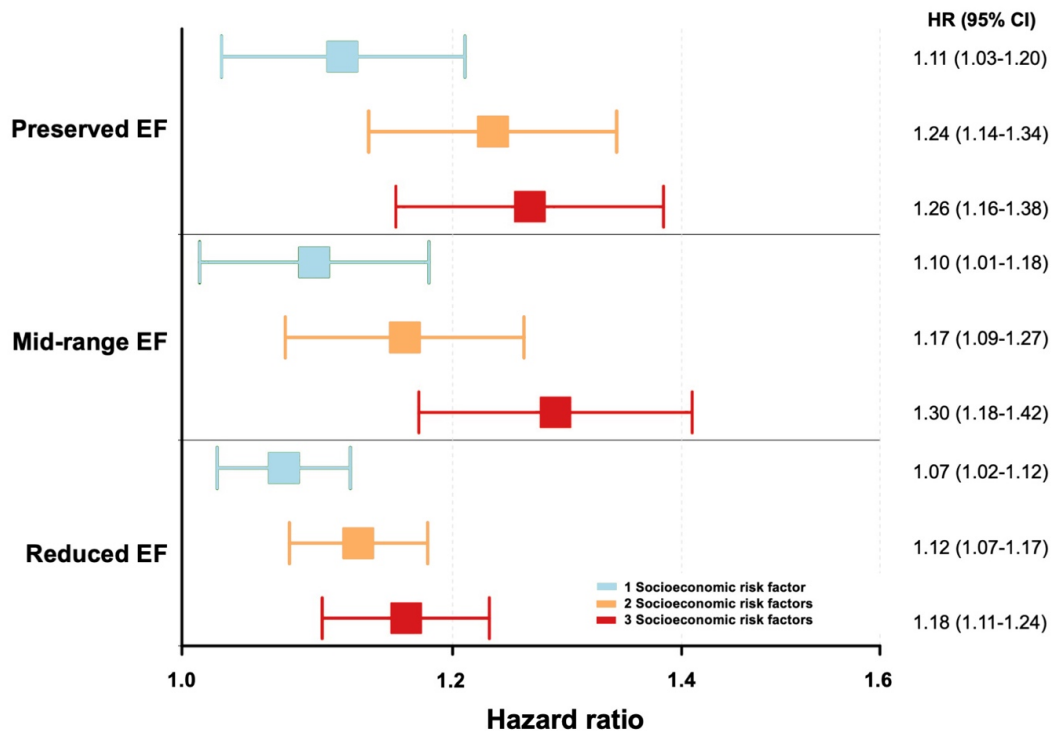


Supplementary Figure 4: Association between clusters of socioeconomic risk factors and heart failure hospitalization or all-cause death



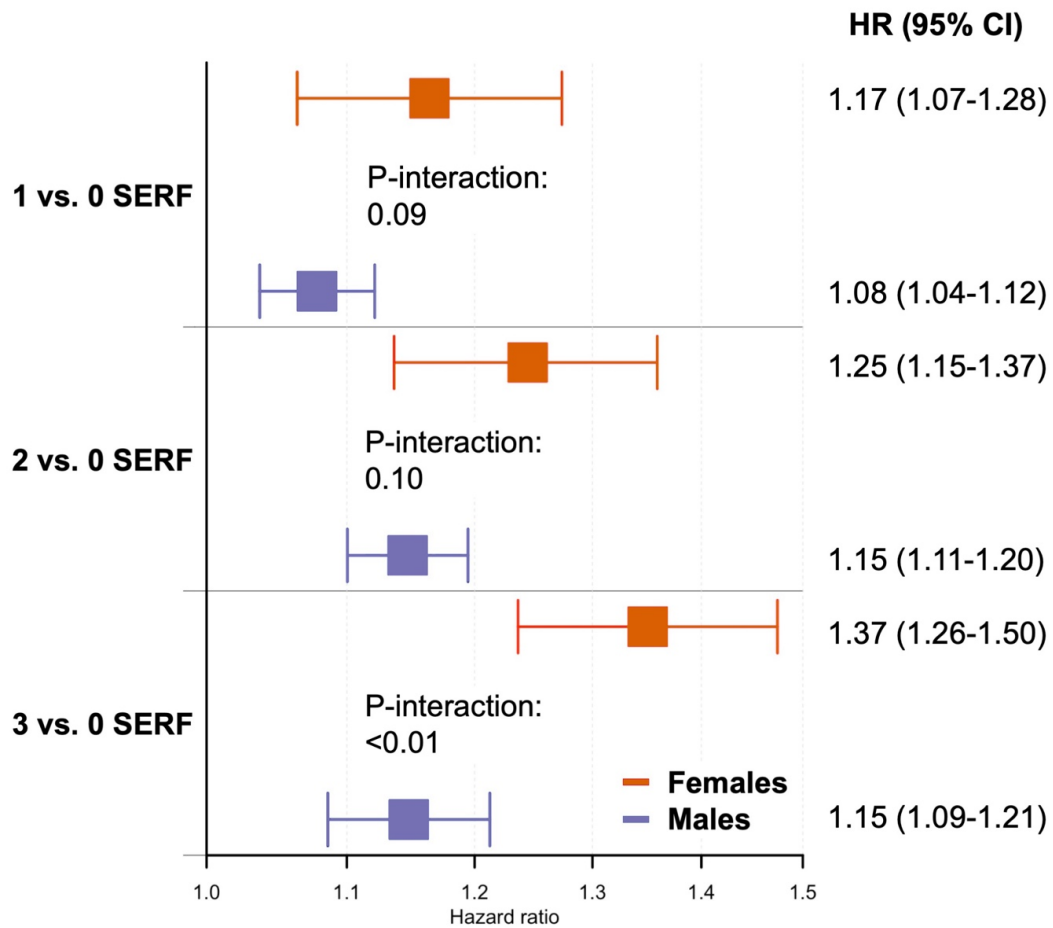
For variables used for the adjustment, see *Figure 4*. HR: hazard ratio; CI: confidence interval.

Supplementary Figure 5: Association between number of socioeconomic risk factors and heart failure hospitalization or all-cause death stratified by ejection fraction



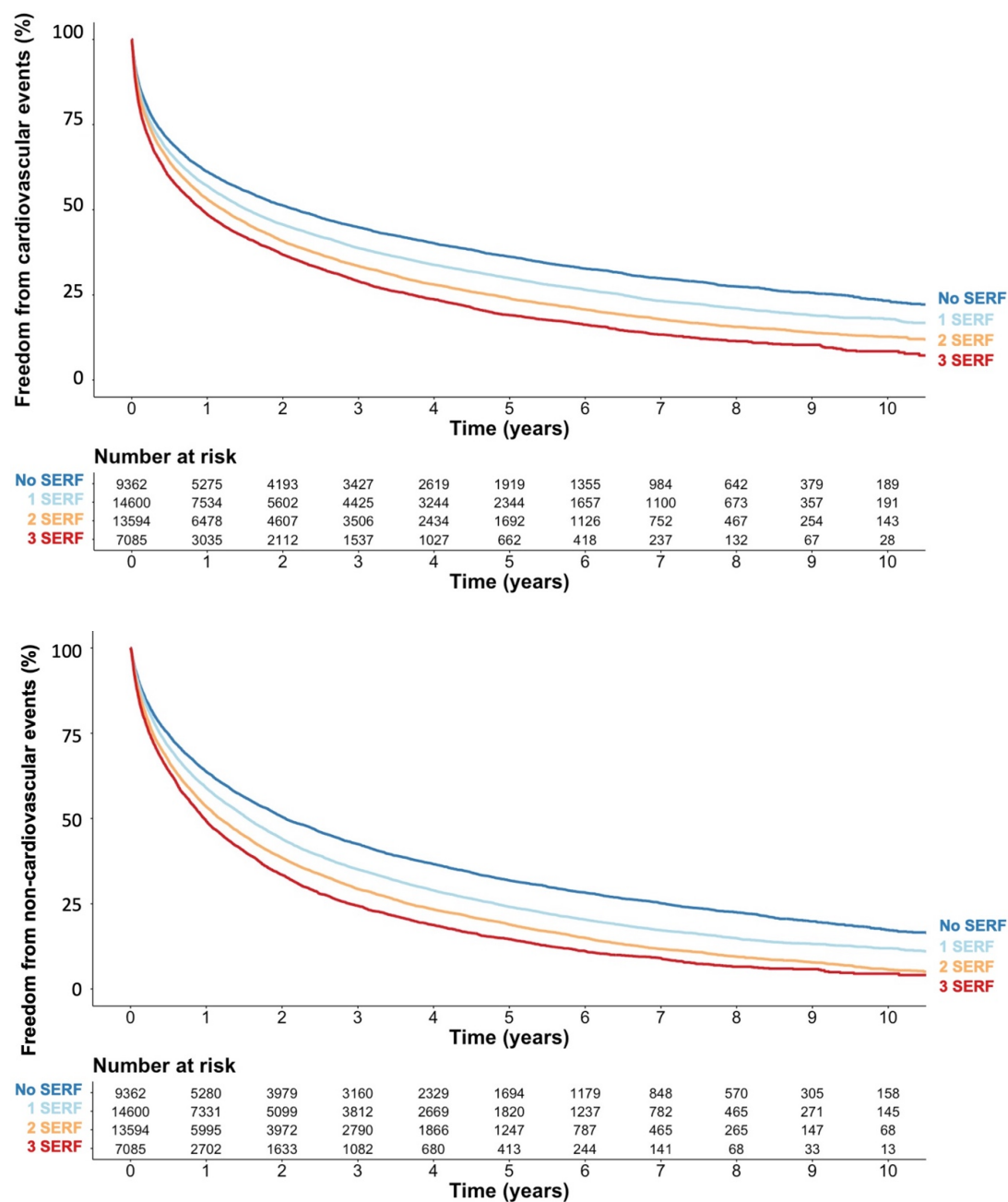
Reference level was "0 socioeconomic risk factors". For variables used for the adjustment, see *Figure 4*. EF: ejection fraction.
HR: hazard ratio; CI: confidence interval.

Supplementary Figure 6: Association between socioeconomic status and heart failure hospitalization or all-cause death in females vs. males



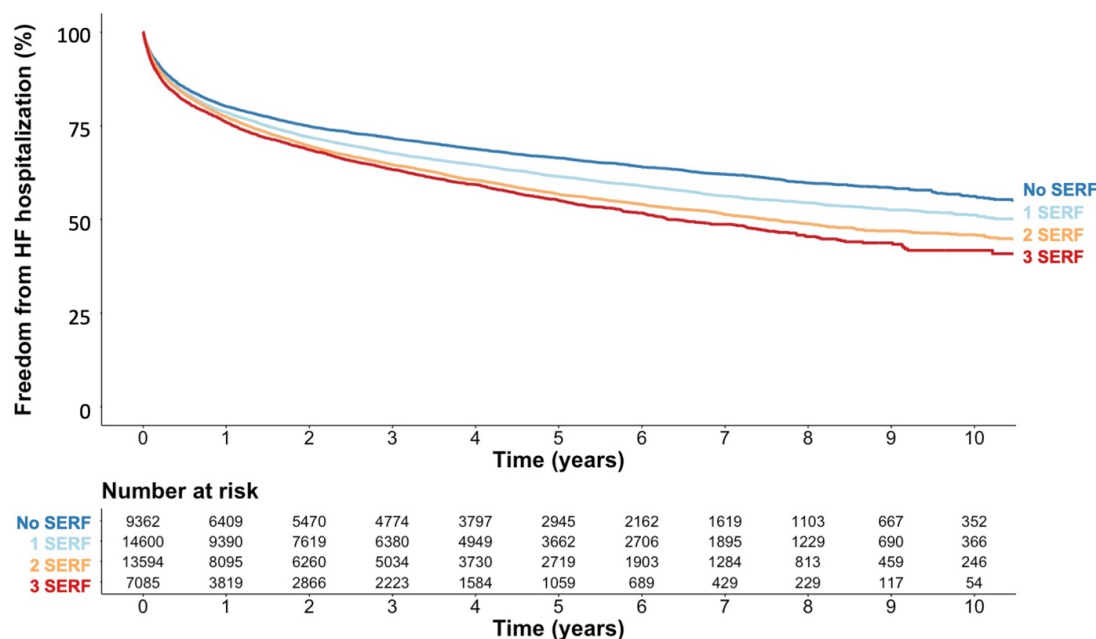
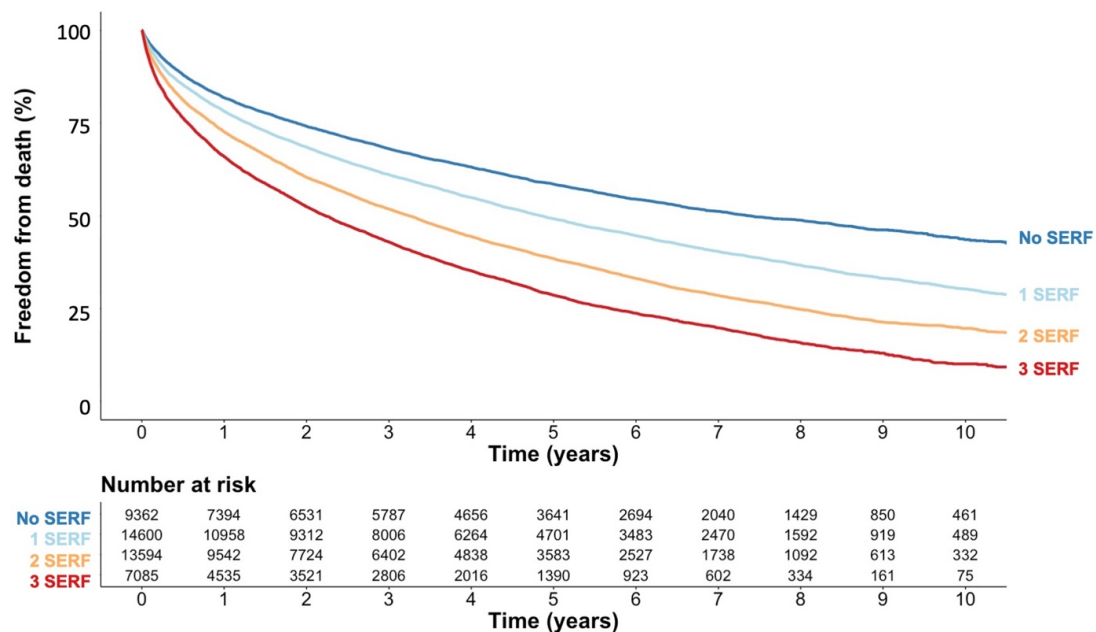
Adjustments in the Cox regression model were made for the interaction between sex and the total number of socioeconomic risk factors. Additional variables used for the adjustment are shown in *Figure 4*. HR: hazard ratio; CI: confidence interval.

Supplementary Figure 7: Association between socioeconomic status and cardiovascular/non-cardiovascular events



Kaplan Meier curves for cardiovascular/non-cardiovascular events are shown per number of socioeconomic risk factors (SERF). In the fully adjusted Cox regression model (see Figure 4), higher number of SERF was associated with a similarly increased risk of cardiovascular vs. non-cardiovascular events: hazard ratio 1.07 (95%CI 1.03-1.10) vs. 1.07 (95% CI 1.03-1.10, $p=0.48$) for 1 vs. 0 SERF; 1.08 (95% CI 1.04-1.12) vs. 1.11 (95% CI 1.07-1.15, $p=0.13$) for 2 vs. 0 SERF; 1.10 (95% CI 1.06-1.15) vs. 1.12 (95% CI 1.07-1.16, $p=0.32$) for 3 vs. 0 SERF. CI: confidence interval.

Supplementary Figure 8: Association between socioeconomic status and heart failure hospitalization/all-cause death



Kaplan Meier curves for heart failure hospitalisation and all-cause death are shown per number of socioeconomic risk factors (SERF). In the fully adjusted Cox regression model (see Figure 4), higher number of SERF was associated with an increased risk of all-cause death but not with heart failure hospitalization: hazard ratio 1.12 (95% CI 1.08-1.16) vs. 1.05 (95% CI 1.00-1.10, p=0.01) for 1 vs. 0 SERF; 1.24 (95% CI 1.19-1.29) vs. 1.04 (95% CI 0.99-1.09, p<0.01) for 2 vs. 0 SERF; 1.36 (95% CI 1.30-1.42) vs. 1.02 (95% CI 0.96-1.08, p1<0.01) for 3 vs. 0 SERF. CI: confidence interval.