

SUPPLEMENTAL MATERIAL

Supplemental table 1. Differences in characteristics between people excluded and included in this study.

	Excluded*	Study population after exclusion	Study population before exclusion
N	15658	1688285	1703943
Sex			
Female	6593 (42.1)	866834 (51.3)	873427 (51.3)
Male	9065 (57.9)	821451 (48.7)	830516 (48.7)
Age in years, median [IQR]	38.8 [30.9, 48.8]	48.8 [37.8, 61.9]	48.7 [37.7, 61.8]
Ethnicity			
Dutch	4371 (27.9)	1255275 (74.4)	1259646 (73.9)
Western	6173 (39.4)	193631 (11.5)	199804 (11.7)
Antillian	203 (1.3)	13412 (0.8)	13615 (0.8)
Moroccan	428 (2.7)	44791 (2.7)	45219 (2.7)
Surinamese	787 (5.0)	62124 (3.7)	62911 (3.7)
Turkish	450 (2.9)	40794 (2.4)	41244 (2.4)
Miscellaneous non-Western	3246 (20.7)	78258 (4.6)	81504 (4.8)

Results are presented as n (%) unless indicated otherwise. IQR = interquartile range

*These cases are excluded because of missing income data

Supplemental table 2. Associations between gender-related factors and OHCA incidence in women and men.

OHCA*		Women		Men		P interaction
		Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	
Employment status	Employed	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Unemployed	2.33 (1.98, 2.74)	1.98 (1.67, 2.35)	1.73 (1.56, 1.91)	1.60 (1.44, 1.79)	0.062420
	Pensioner	2.21 (1.79, 2.74)	1.88 (1.51, 2.34)	1.03 (0.91, 1.16)	0.97 (0.86, 1.10)	0.000690
Primary earner status	Primary earner	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Equal earning	1.40 (1.19, 1.65)	1.59 (1.31, 1.92)	1.08 (1.01, 1.17)	1.09 (1.01, 1.17)	0.029324
	Not primary earner	1.42 (1.27, 1.58)	1.67 (1.40, 2.00)	1.13 (1.03, 1.24)	1.17 (1.06, 1.29)	0.168780
Living with children	Yes	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	No	1.38 (1.14, 1.67)	1.47 (1.22, 1.78)	1.21 (1.09, 1.36)	1.20 (1.08, 1.33)	0.88701
Marital status	Not married	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Married	1.21 (1.02, 1.42)	1.30 (1.10, 1.54)	1.12 (1.01, 1.24)	1.23 (1.11, 1.36)	0.55120
	Divorced	1.25 (1.03, 1.52)	1.17 (0.96, 1.43)	1.29 (1.13, 1.47)	1.33 (1.17, 1.52)	0.40520
	Widowed	0.78 (0.64, 0.95)	0.78 (0.64, 0.96)	0.76 (0.64, 0.91)	0.83 (0.70, 0.99)	0.76358
Living situation	Alone	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Together	1.11 (1.00, 1.23)	1.17 (1.05, 1.29)	1.02 (0.96, 1.09)	1.04 (0.98, 1.11)	0.06738
OHCA + SCD*		Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	
Employment status	Employed	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Unemployed	2.08 (1.79, 2.43)	1.78 (1.52, 2.09)	1.75 (1.59, 1.93)	1.59 (1.44, 1.76)	
	Pensioner	1.83 (1.52, 2.20)	1.57 (1.30, 1.90)	1.06 (0.95, 1.18)	0.99 (0.88, 1.11)	
Primary earner status	Primary earner	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Equal earning	1.19 (1.04, 1.36)	1.42 (1.22, 1.66)	1.06 (0.99, 1.13)	1.09 (1.01, 1.16)	
	Not primary earner	1.12 (1.03, 1.23)	1.45 (1.26, 1.67)	1.12 (1.03, 1.22)	1.18 (1.08, 1.28)	

Living with children	Yes	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	No	1.16 (0.97, 1.39)	1.25 (1.04, 1.49)	1.15 (1.04, 1.28)	1.15 (1.04, 1.27)	
Marital status	Not married	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Married	1.08 (0.93, 1.24)	1.15 (0.99, 1.32)	1.00 (0.91, 1.10)	1.09 (0.99, 1.20)	
	Divorced	1.24 (1.04, 1.46)	1.14 (0.97, 1.36)	1.21 (1.08, 1.37)	1.25 (1.11, 1.40)	
	Widowed	0.98 (0.84, 1.15)	0.97 (0.83, 1.14)	0.86 (0.75, 0.99)	0.94 (0.82, 1.08)	
Living situation	Alone	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Together	1.03 (0.94, 1.12)	1.08 (0.99, 1.17)	1.01 (0.95, 1.07)	1.03 (0.97, 1.09)	
<65†		Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	
Employment status	Employed	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Unemployed	2.10 (1.78, 2.49)	1.84 (1.53, 2.22)	1.56 (1.40, 1.73)	1.35 (1.21, 1.52)	
	Pensioner	NA	NA	NA	NA	
Primary earner status	Primary earner	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Equal earning	1.07 (0.81, 1.40)	1.47 (1.09, 1.98)	1.00 (0.90, 1.11)	1.16 (1.04, 1.30)	
	Not primary earner	1.13 (0.94, 1.35)	1.46 (1.13, 1.89)	1.10 (0.97, 1.24)	1.20 (1.06, 1.37)	
Living with children	Yes	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	No	1.22 (0.98, 1.51)	1.29 (1.03, 1.61)	1.09 (0.97, 1.23)	1.08 (0.96, 1.21)	
Marital status	Not married	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Married	0.98 (0.79, 1.23)	1.14 (0.90, 1.43)	0.91 (0.81, 1.03)	1.03 (0.91, 1.16)	
	Divorced	1.06 (0.80, 1.39)	0.99 (0.75, 1.30)	1.15 (0.99, 1.35)	1.18 (1.01, 1.38)	
	Widowed	1.01 (0.66, 1.54)	1.02 (0.67, 1.55)	0.97 (0.67, 1.41)	1.08 (0.75, 1.57)	
Living situation	Alone	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Together	1.12 (0.96, 1.31)	1.25 (1.06, 1.46)	1.03 (0.94, 1.13)	1.08 (0.99, 1.19)	
Living together‡		Age-adjusted HR (95%CI)	Adjusted HR (95% CI)	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	
Employment status	Employed	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Unemployed	2.36 (1.82, 3.04)	2.13 (1.62, 2.79)	1.73 (1.47, 2.03)	1.59 (1.34, 1.88)	
	Pensioner	2.41 (1.70, 3.40)	1.98 (1.37, 2.85)	0.93 (0.77, 1.12)	0.87 (0.72, 1.05)	

Primary earner status	Primary earner	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Equal earning	1.78 (1.27, 2.48)	1.65 (1.14, 2.39)	1.02 (0.91, 1.15)	1.04 (0.93, 1.17)	
	Not primary earner	1.69 (1.27, 2.24)	1.54 (1.07, 2.20)	1.12 (0.97, 1.28)	1.17 (1.02, 1.34)	
Living with children	Yes	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	No	1.56 (1.17, 2.08)	1.66 (1.24, 2.23)	1.27 (1.08, 1.48)	1.30 (1.11, 1.53)	
First year excluded (landmark)§		Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	
Employment status	Employed	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Unemployed	2.38 (2.00, 2.83)	2.04 (1.70, 2.45)	1.67 (1.49, 1.86)	1.55 (1.38, 1.74)	
	Pensioner	2.19 (1.74, 2.76)	1.89 (1.49, 2.40)	0.98 (0.86, 1.12)	0.93 (0.81, 1.06)	
Primary earner status	Primary earner	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Equal earning	1.41 (1.19, 1.69)	1.60 (1.31, 1.96)	1.08 (0.99, 1.17)	1.08 (0.99, 1.17)	
	Not primary earner	1.42 (1.26, 1.60)	1.66 (1.38, 2.01)	1.15 (1.04, 1.28)	1.19 (1.08, 1.33)	
Living with children	Yes	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	No	1.39 (1.13, 1.69)	1.47 (1.20, 1.81)	1.20 (1.07, 1.35)	1.19 (1.06, 1.33)	
Marital status	Not married	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Married	1.23 (1.03, 1.47)	1.33 (1.11, 1.60)	1.12 (1.00, 1.25)	1.23 (1.09, 1.37)	
	Divorced	1.30 (1.05, 1.61)	1.22 (0.99, 1.51)	1.28 (1.11, 1.47)	1.32 (1.15, 1.52)	
	Widowed	0.79 (0.64, 0.99)	0.80 (0.64, 1.00)	0.78 (0.65, 0.94)	0.85 (0.70, 1.03)	
Living situation	Alone	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	
	Together	1.10 (0.98, 1.23)	1.16 (1.03, 1.29)	1.01 (0.94, 1.08)	1.03 (0.96, 1.11)	

OHCA = out-of-hospital cardiac arrest, HR = hazard ratio, CI = confidence interval

* For women N=866834 and for men N=821451; marital status has 26 (women) and 22 (men) missing values

† For women N= 676125 and for men N=675510; marital status: 23 (women) and 17 (men) missing values

‡ For women n=849710 and for men N=804640

§ For women N=314867 and for men N=325420

Supplemental table 3. Associations between dichotomised gender-related factors and OHCA incidence in women and men.

OHCA		Crude	Age-adjusted	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)	Crude	Age-adjusted	Age-adjusted HR (95% CI)	Adjusted HR (95% CI)
Marital status*	Not married	29.4	11.5	1.00 (ref)	1.00 (ref)	48.8	36.6	1.00 (ref)	1.00 (ref)
	Married	28.9	35.5	1.26 (1.14, 1.39)	1.39 (1.26, 1.54)	89.8	87.8	1.10 (1.02, 1.17)	1.16 (1.08, 1.25)
Employment status†	Employed	8.5	7.9	1.00 (ref)	1.00 (ref)	33.4	30.1	1.00 (ref)	1.00 (ref)
	Unemployed	60.6	36.6	2.31 (1.97, 2.71)	1.96 (1.66, 2.32)	177.0	109.6	1.41 (1.28, 1.55)	1.31 (1.18, 1.45)
Employment status‡	Employed	8.5	7.9	1.00 (ref)	1.00 (ref)	33.4	30.1	1.00 (ref)	1.00 (ref)
	Unemployed	30.0	17.0	2.10 (1.78, 2.49)	1.84 (1.53, 2.23)	99.8	56.4	1.56 (1.40, 1.73)	1.35 (1.21, 1.52)

OHCA = out-of-hospital cardiac arrest, HR = hazard ratio, CI = confidence interval

* Marital status was dichotomized: not married/partnership, divorced and widowed were joined in one category.

† Employment status was dichotomized: unemployed and pensioner were joined in one category.

‡ Pensioners are excluded from this analysis. Women: n=676125 and men n=675510

Supplemental table 4. Beta change after adding metabolic risk factors to the full models.

		Women (n=866834)				Men (n=821451)			
		β model 2	β model 3	β change	% change	β model 2	β model 3	β change	% change
Employment status	Employed	Ref.	Ref.			Ref.	Ref.		
	Unemployed	0.69	0.61	-0.07	-10.6	0.47	0.38	-0.09	-18.5
	Pensioner	0.63	0.51	-0.12	-19.2	-0.03	-0.12	-0.09	362.7
Primary earner status	Primary earner	Ref.	Ref.			Ref.	Ref.		
	Equal	0.46	0.44	-0.02	-4.9	0.08	0.08	-0.01	-8.1
	Not primary	0.51	0.50	-0.01	-2.9	0.16	0.17	0.01	7.3
Living with children	Yes	Ref.	Ref.			Ref.	Ref.		
	No	0.39	0.31	-0.08	-20.0	0.18	0.12	-0.07	-36.0
Marital status	Not married	Ref.	Ref.			Ref.	Ref.		
	Married	0.26	0.19	-0.07	-26.9	0.21	0.16	-0.05	-24.8
	Divorced	0.16	0.12	-0.04	-22.5	0.29	0.26	-0.03	-11.0
	Widowed	-0.24	-0.30	-0.06	23.1	-0.18	-0.20	-0.02	11.5
Living situation	Living alone	Ref.	Ref.			Ref.	Ref.		
	Living together	0.15	0.16	0.003	2.4	0.04	0.04	-0.003	-7.0

Model 2: Adjusted for age, ethnicity, and household income. Additionally, employment status adjusted for primary earner status, primary earner status adjusted for employment status and marital status. Model 3: model 2 adjusted for medication hypertension, diabetes mellitus or dyslipidaemia.

Supplemental Box 1 - Data linkage

We identified all records of OHCA cases in the ARREST registry from the reference date until 31st of December 2015 (end date of follow-up). These cases were linked to Statistics Netherlands records with algorithmic deterministic linkage carried out by Statistics Netherlands (Figure 1). This was based on 1) date of birth and sex, and 2) postal code, house number, and date at which the individual lived at the address. Some cases could not be matched to the source population based on these characteristics; linkage was successful for 96% of OHCA cases. After linkage, the cases were anonymized by Statistics Netherlands.

Supplemental Box 2 - Additional analyses

To examine the potential effects of differences in inclusion rates of OHCA in the registry by sex or by marital status (because of differences in EMS attendance, e.g., to OHCA not being witnessed or recognised), (1) the main analyses were repeated with the outcome 'incident OHCA or SCD'. Then, we explored whether results were affected by inclusion of people from older age groups (e.g., the primary earner status being more strongly associated in those of employment age) and by living situation (e.g., children living at home being more strongly associated in those living together), by repeating the main analyses in a subgroup of participants that were <65 years, and participants that were living together. Furthermore, we determined whether findings were explained by a selection effect before baseline. For instance, not being the primary earner may reflect an already poorer health state at baseline, if the presence of disease has led to a reduction in working hours and, thus, income. Because this effect is strongest at the start of follow-up, we verified the consistency of our results in an analysis excluding the first year of follow-up.

References

1. Blom MT, Oving I, Berdowski J, et al. Women have lower chances than men to be resuscitated and survive out-of-hospital cardiac arrest. *European Heart Journal*. 2019;40(47):3824-34.