

Supplementary for

Projections of Temperature-Attributable Deaths in Portuguese Metropolitan Areas: A Time-Series Modelling Approach

Mónica Rodrigues ^{1,*}, Paula Santana ¹ and Alfredo Rocha ²

¹ Department of Geography and Tourism, University of Coimbra, Centre of Studies on Geography and Spatial Planning, 3004-530 Coimbra, Portugal; paulasantana.coimbra@gmail.com

² Department of Physics and Centre for Environmental and Marine Studies (CESAM), University of Aveiro, Campus Universitário de Santiago, 3810-093 Aveiro, Portugal; alfredo.rocha@ua.pt

* Correspondence: monica.a.rodrigues@hotmail.com

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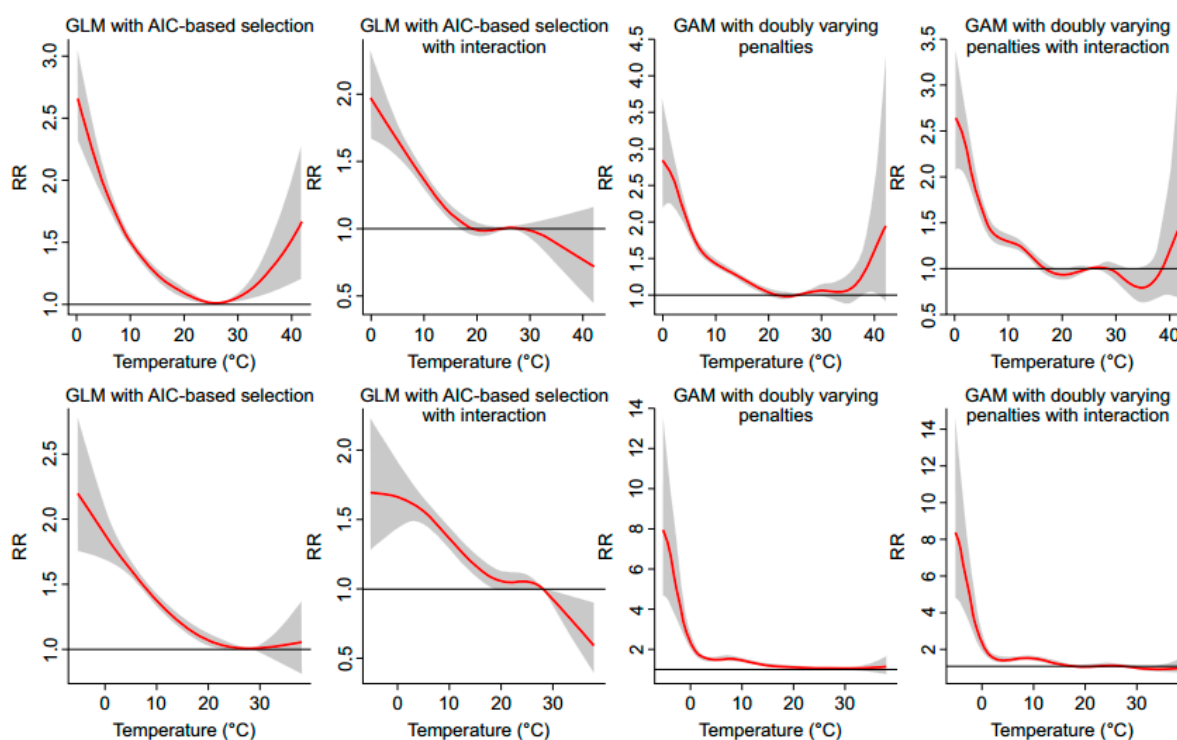


Figure S1. Individual overall cumulative exposure-response curve: LMA (Lisbon metropolitan area)—Full year (Top) and Porto metropolitan area (PMA)—Full year (Bottom).

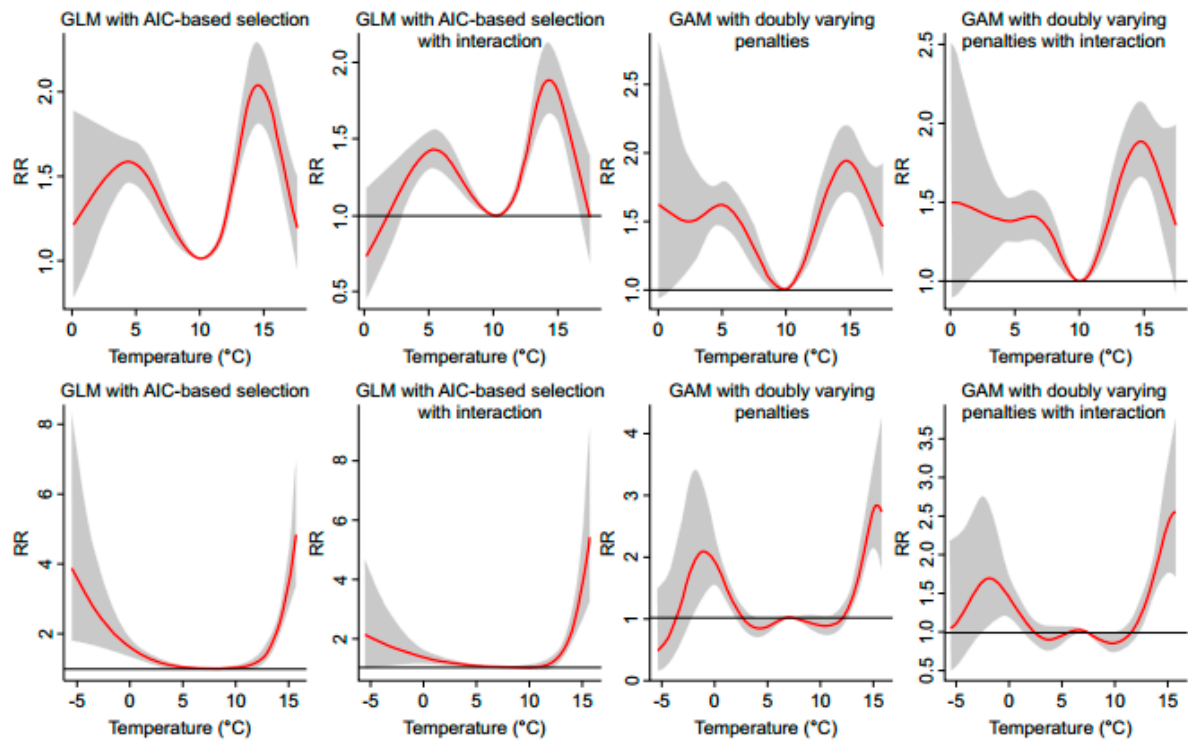


Figure S2. Individual overall cumulative exposure-response curve: LMA (Lisbon metropolitan area)—WINTER (Top) and PMA (Porto metropolitan area)—WINTER (Bottom).

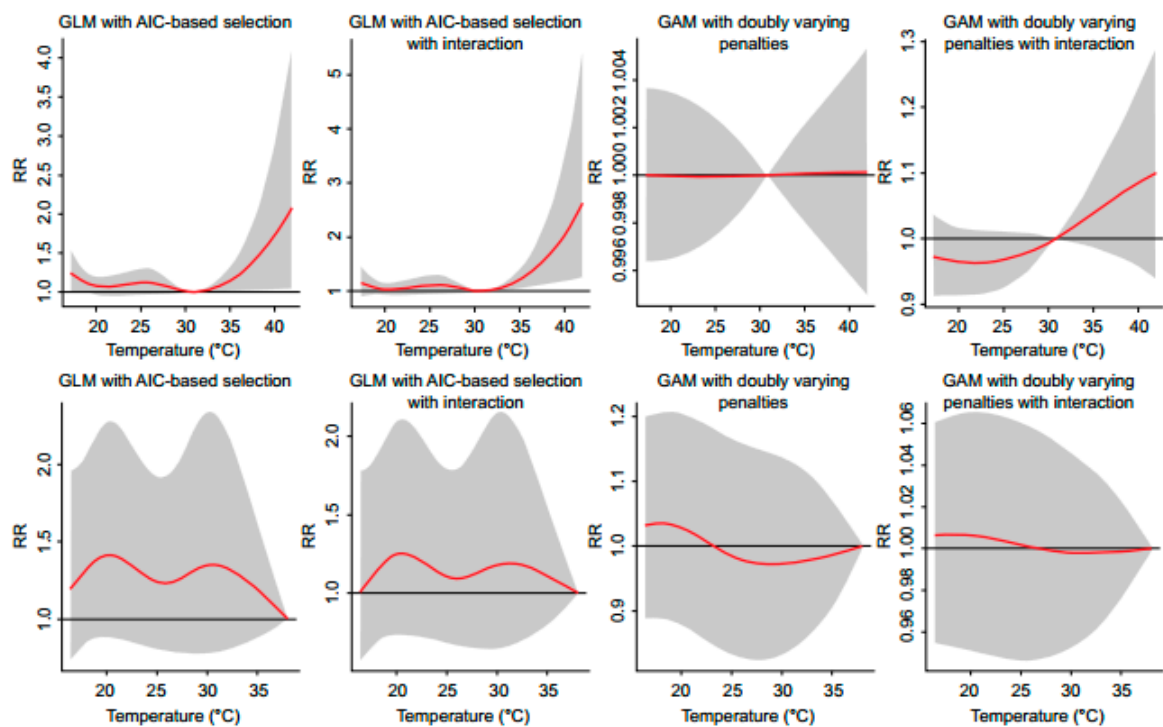


Figure S3. Individual overall cumulative exposure-response curve: LMA (Lisbon metropolitan area)—SUMMER (Top) and PMA (Porto metropolitan area)—SUMMER (Bottom).

Table S1. Attributable mortality (%) with 95% empirical confidence interval evaluated for the recent past (1986–2005)—using minimum mortality temperature (MMT) as a reference—for Lisbon and Porto metropolitan areas—Portugal.

Metropolitan Area/ Season	MMT [‡]	Temperature	1986–2005	2046–2065	2080–2099
Lisbon/Full year	35.1/(21.3–42.0)	Total	30.21/(12.63–42.62)	27.67/(9.83–40.41)	26.01/(7.82–38.84)
		Cold ^a	30.16/(12.56–42.58)	27.53/(9.60–40.28)	25.50/(7.55–38.23)
		Hot ^b	0.04/(–0.03–0.09)	0.13/(–0.07–0.28)	0.50/(–0.26–0.93)
Lisbon/Winter	10.1/(0.2–17.7)	Total	6.49/(4.92–7.87)	6.39/(4.86–7.63)	6.98/(5.26–8.28)
		Cold ^a	3.18/(2.21–3.98)	1.64/(0.98–2.21)	0.53/(0.27–0.76)
		Hot ^b	3.31/(2.56–3.95)	4.75/(3.75–5.58)	6.45/(4.91–7.61)
Lisbon/Summer	21.6/(17.1–42.0)	Total	0.36/(–0.15–0.83)	0.65/(–0.21–1.41)	1.03/(–0.15–2.07)
		Cold ^a	0.02/(–0.15–0.20)	0.01/(–0.05–0.06)	0.00/(–0.01–0.01)
		Hot ^b	0.34/(–0.18–0.83)	0.64/(–0.21–1.42)	1.03/(–0.15–2.07)
Porto/Full year	34.1/(29.5–38.1)	Total	28.26/(12.77–41.98)	26.32/(10.82–40.06)	24.38/(9.08–38.02)
		Cold ^a	22.83/(13.72–30.92)	20.17/(11.84–27.63)	17.89/(10.28–24.63)
		Hot ^b	5.43/(–1.15–11.13)	6.14/(–1.11–12.45)	6.48/(–1.19–13.30)
Porto/Winter	9.8/(–5.5–10.4)	Total	5.27/(3.15–7.08)	6.48/(4.66–8.02)	8.35/(6.29–10.02)
		Cold ^a	1.42/(0.05–2.56)	0.71/(0.00–1.33)	0.19/(–0.02–0.40)
		Hot ^b	3.84/(2.79–4.80)	5.77/(4.39–6.97)	8.15/(6.23–9.75)
Porto/Summer	31.5/(16.3–38.1)	Total	0.18/(–0.80–1.06)	0.12/(–0.62–0.80)	0.07/(–0.46–0.55)
		Cold ^a	0.18/(–0.82–1.06)	0.11/(–0.65–0.84)	0.06/(–0.51–0.60)
		Hot ^b	0.01/(–0.03–0.04)	0.01/(–0.09–0.09)	0.01/(–0.16–0.18)

[‡] Minimum mortality temperature (MMT): Temperature value at which the mortality risk is the minimum; ^a Cold temperature corresponds to temperature below mean temperature; ^b Hot temperatures corresponds to temperature above mean temperature.

Table S2. Excess mortality attributable to temperature in the future periods (2046-2065) and (2080-2099) relative to the historical period (1986-2005), together with their 95% empirical confidence interval.

Metropolitan Area/Season	Temperature	Excess Mortality (%)	
		2046-2065	2080-2099
Lisbon/Full year	Total	-2.53/(-3.03--2.15)	-4.20/(-5.24--3.42)
	Cold ^a	-2.63/(-3.12--2.24)	-4.66/(-5.46--3.96)
	Hot ^b	0.09/(-0.05-0.19)	0.45/(-0.22-0.84)
Lisbon/Winter	Total	-0.09/(-0.35-0.16)	0.493/(-0.22-1.08)
	Cold ^a	1.44/(1.15-1.66)	3.14/(2.25-3.76)
	Hot ^b	-1.54/(-1.87--1.17)	-2.65/(-3.29--1.92)
Lisbon/Summer	Total	0.28/(-0.07-0.61)	0.66/(-0.08-1.29)
	Cold ^a	-0.02/(-0.15-0.11)	-0.02/(-0.19-0.14)
	Hot ^b	0.30/(-0.03-0.61)	0.68/(-0.03-1.33)
Porto/Full year	Total	-1.93/(-2.32--1.59)	-3.88/(-5.34--2.89)
	Cold ^a	-2.64/(-3.31--1.87)	-4.92/(-6.22--3.39)
	Hot ^b	0.71/(-0.05-1.36)	1.05/(-0.68-2.27)
Porto/Winter	Total	1.22/(0.66-1.75)	3.08/(1.88-4.03)
	Cold ^a	-0.71/(-1.27--0.04)	-1.23/(-2.18--0.08)
	Hot ^b	1.93/(1.51-2.25)	4.3/(3.11-5.10)
Porto/Summer	Total	-0.06/(-0.29-0.20)	-0.10/(-0.55-0.36)
	Cold ^a	-0.06/(-0.28-0.19)	-0.11/(-0.53-0.37)
	Hot ^b	0.00/(-0.05-0.06)	0.01/(-0.12-0.14)

* Notes: Bold face represents significant effects; ^a Cold temperature corresponds to temperature below mean temperature; ^b Hot temperatures corresponds to temperature above mean temperature.