atmosphere

Supplementary Materials: Heat-Related Mortality in Two Regions of Poland: Focus on Urban and Rural Areas during the Most Severe and Long-Lasting Heatwaves

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The Supplementray Material presents relation between daily maximum temperature and relative mortality risk for three analyzed causes of mortality: all non-accidental causes, cardiovascular diseases and age 65 and older during warm months (June – September). Left columns concern Wielkopolska region (a and c) and right columns – Małopolska region (b and d). Upper rows present results for the first period 1989-1998 (a and b), bottom rows for the second 2001–2016 (c and d).

Figures S1–S3 show results for the largest city above 500 thousand of inhibitants (Poznań and Kraków).

Figures S4–S6 show results for the towns with population of 50-150 thousand.

Figures S7–S9 show results for the towns with population of 25-50 thousand.

Figures S10–S12 show results for the towns with population of 10-25 thousand.

Figures S13–S15 show results for the towns with population below 10 thousand.

Figures S16-S18 show results for the villages.

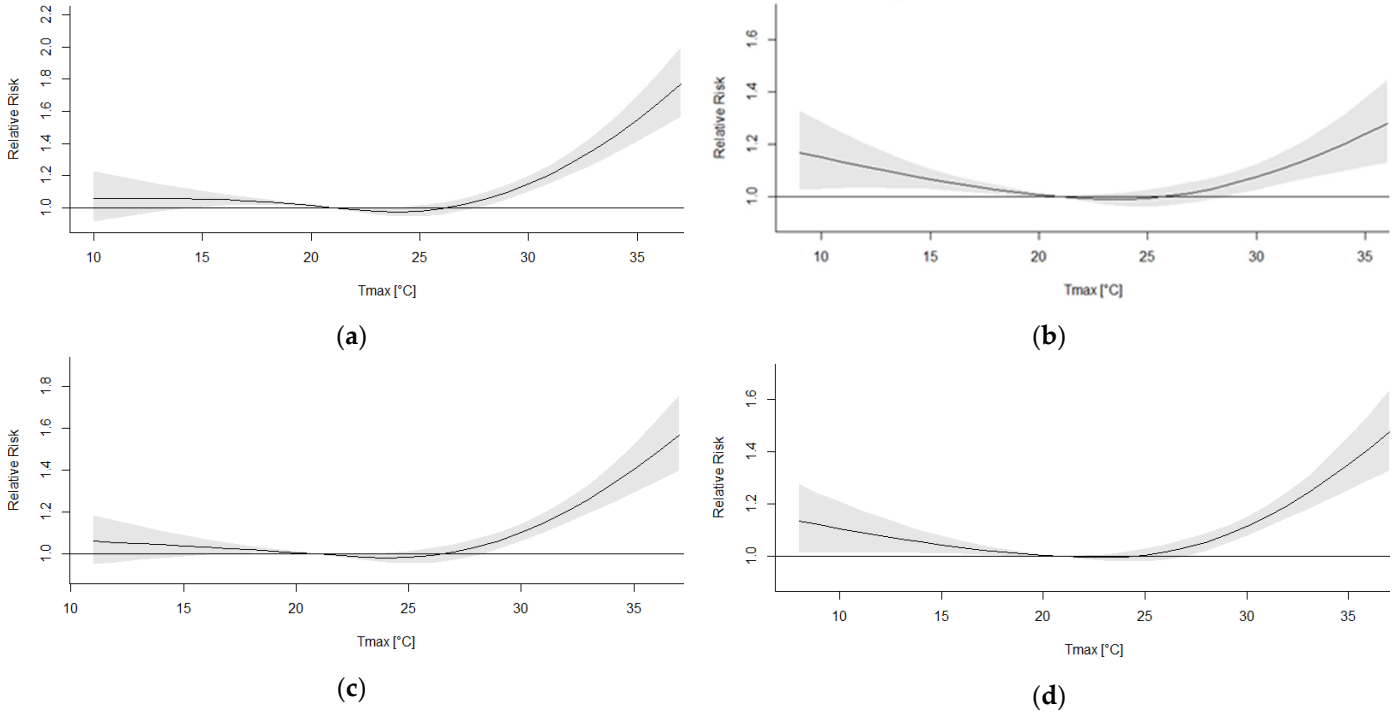

Figure S1. Relation between daily maximum temperature and relative mortality risk (all non-accidental causes) in warm months (June–September) for: (**a**) Poznań 1989–1998; (**b**) Kraków 1989–1998; (**c**) Poznań 2001-2016; (**d**) Kraków 2001–2016.

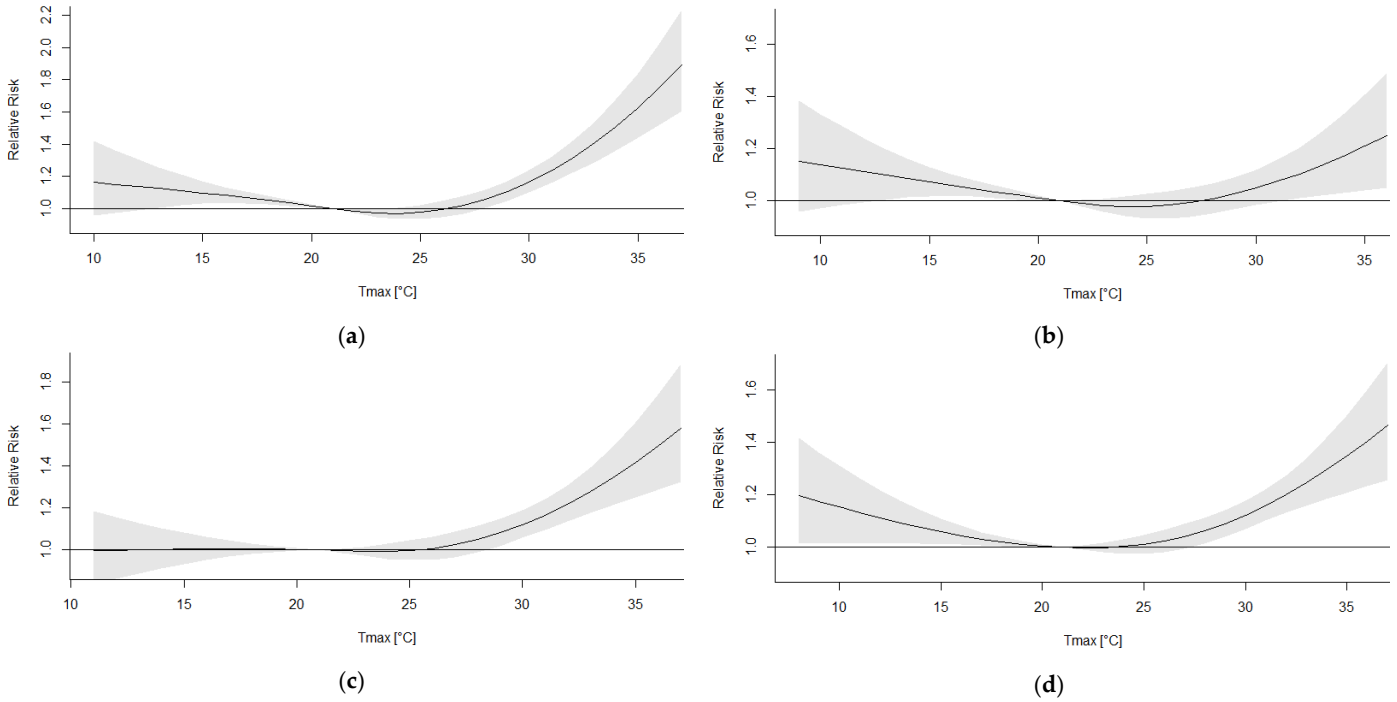

Figure S2. Relation between daily maximum temperature and relative mortality risk (cardiovascular diseases) in warm months (June–September) for: (**a**) Poznań 1989–1998; (**b**) Kraków 1989–1998; (**c**) Poznań 2001–2016; (**d**) Kraków 2001–2016.

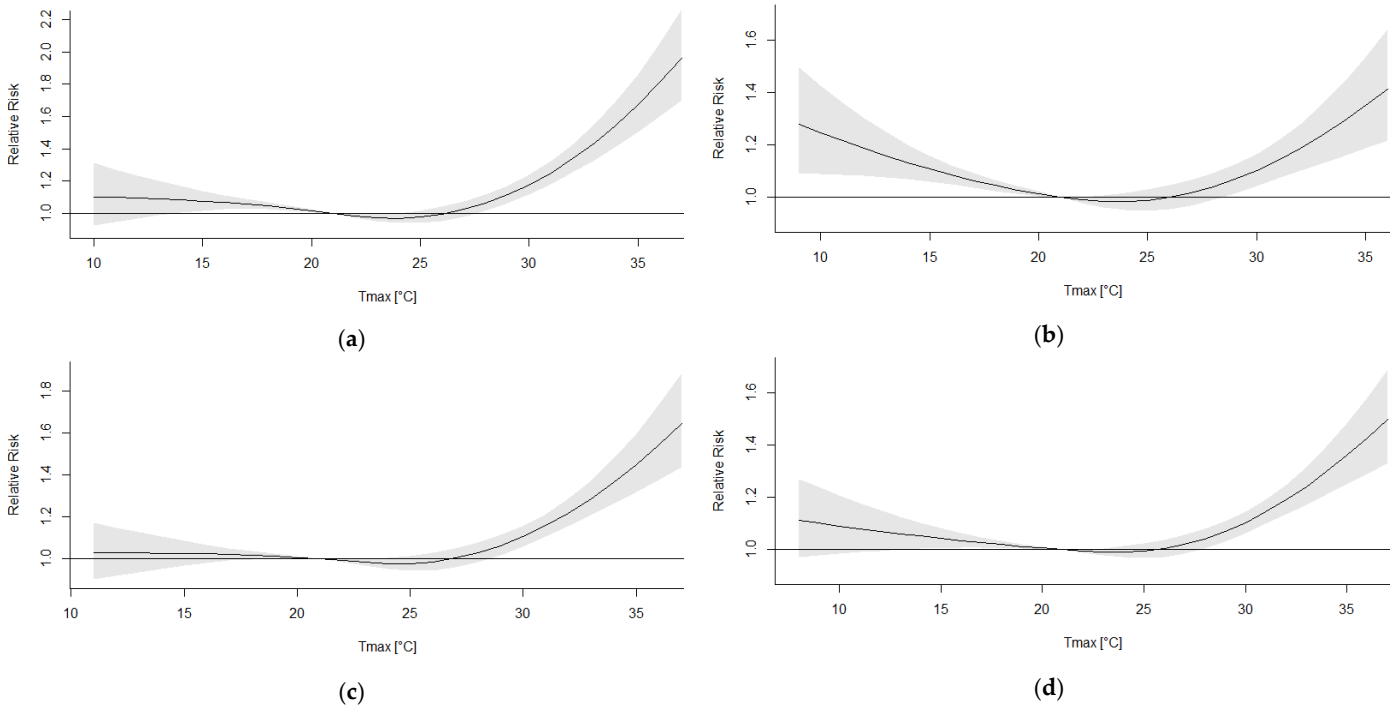

Figure S3. Relation between daily maximum temperature and relative mortality risk (age 65 and older) in warm months (June–September) for: (**a**) Poznań 1989–1998; (**b**) Kraków 1989–1998; (**c**) Poznań 2001–2016; (**d**) Kraków 2001–2016.

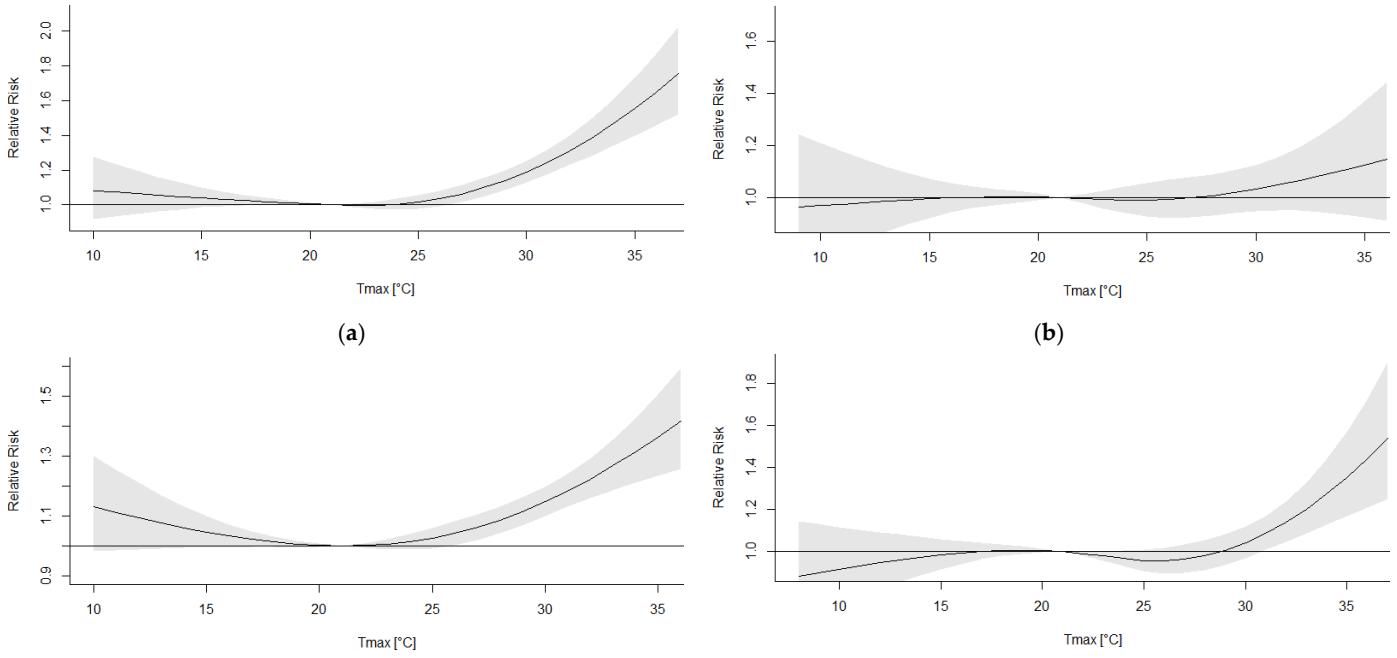

Figure S4. Relation between daily maximum temperature and relative mortality risk (all non-accidental causes) in warm months (June–September) for towns with population of 50–150 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

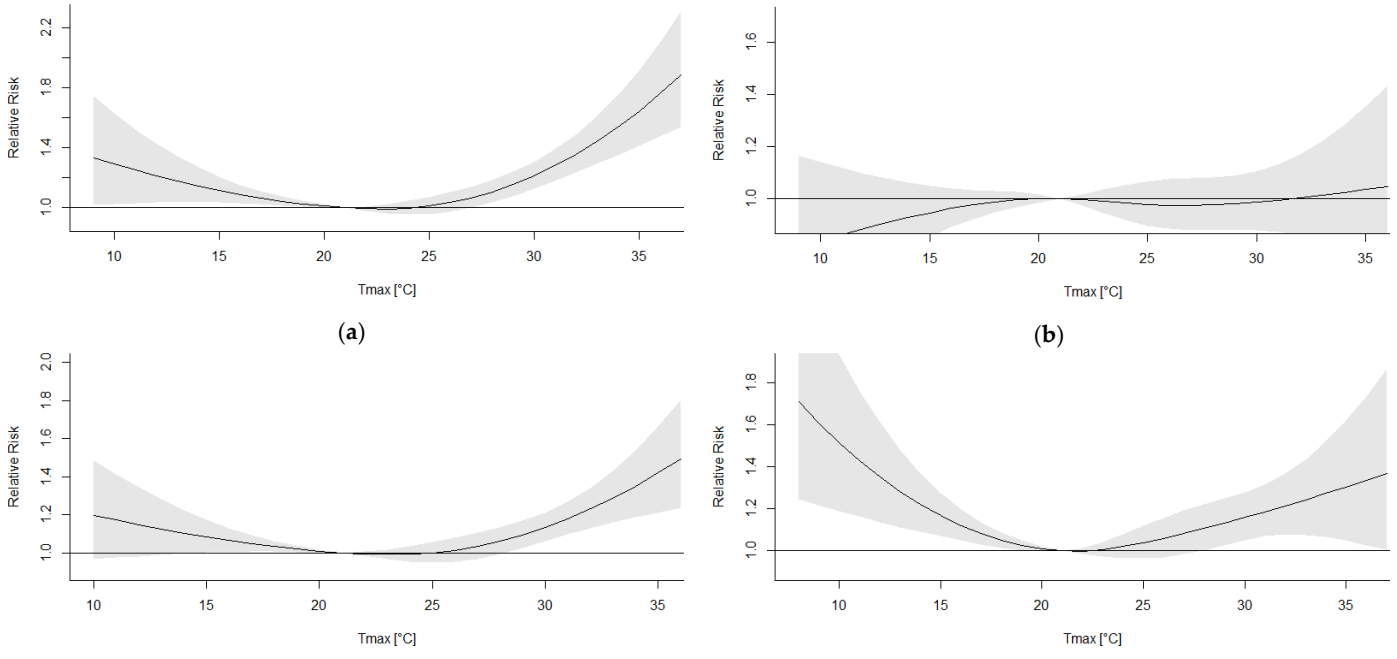

Figure S5. Relation between daily maximum temperature and relative mortality risk (cardiovascular diseases) in warm months (June–September) for towns with population of 50–150 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

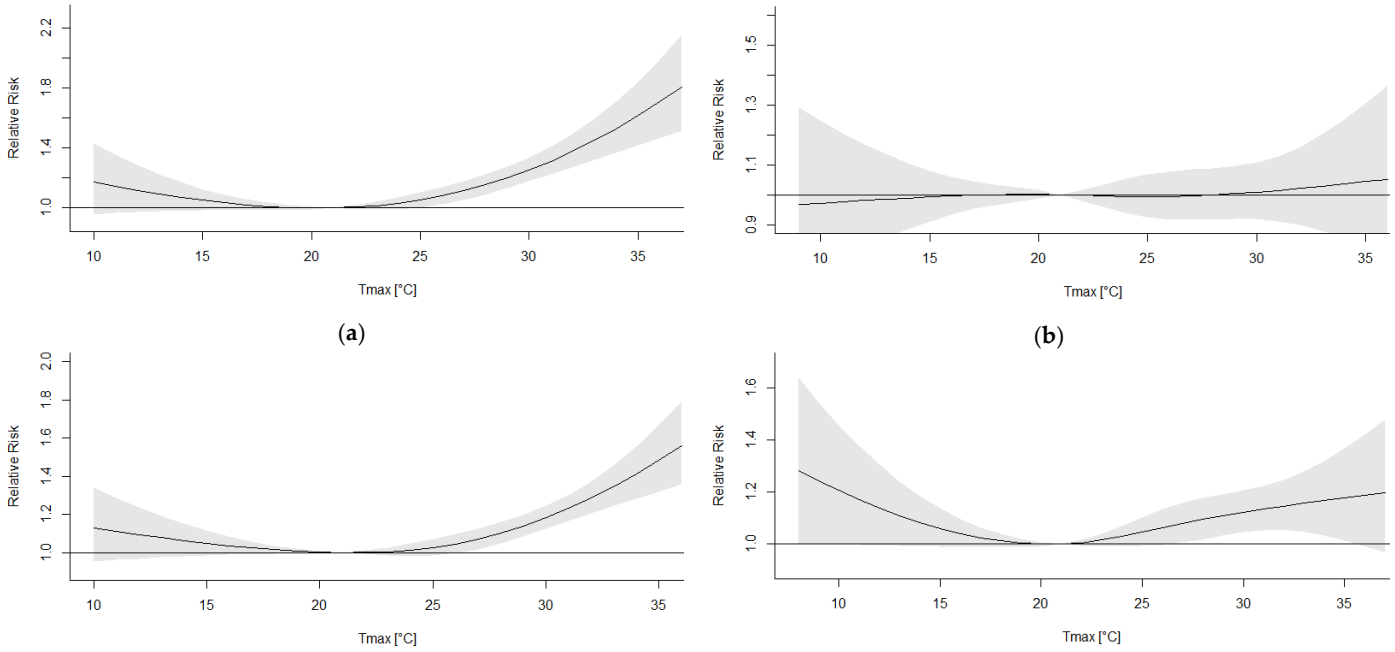

Figure S6. Relation between daily maximum temperature and relative mortality risk (age 65 and older) in warm months (June–September) for towns with population of 50–150 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

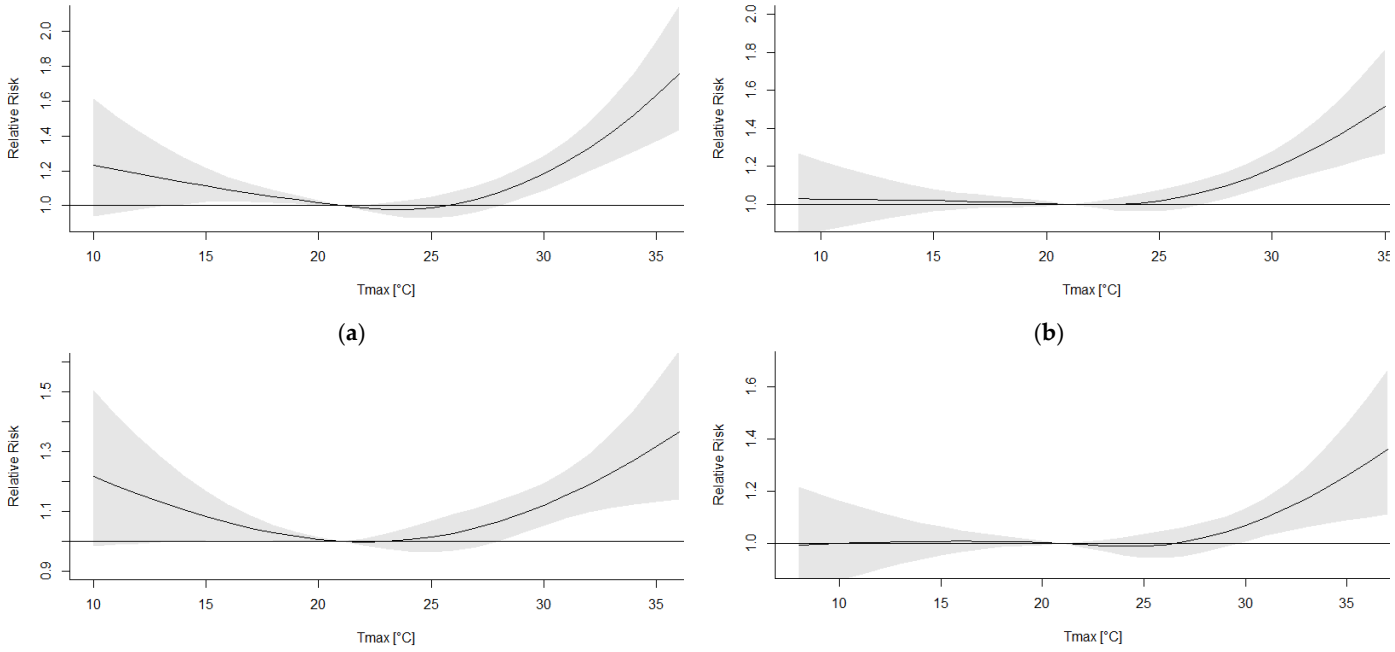

Figure S7. Relation between daily maximum temperature and relative mortality risk (all non-accidental causes) in warm months (June–September) for towns with population of 25–50 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

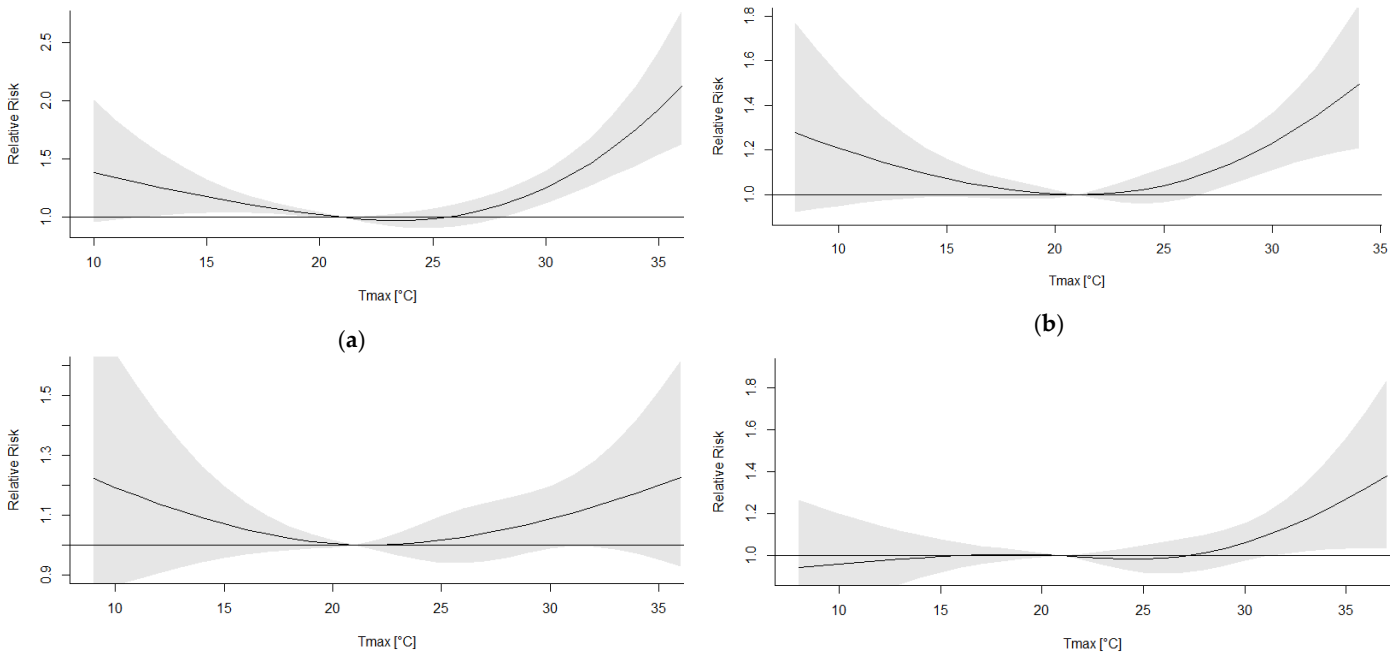

Figure S8. Relation between daily maximum temperature and relative mortality risk (cardiovascular diseases) in warm months (June–September) for towns with population of 25–50 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

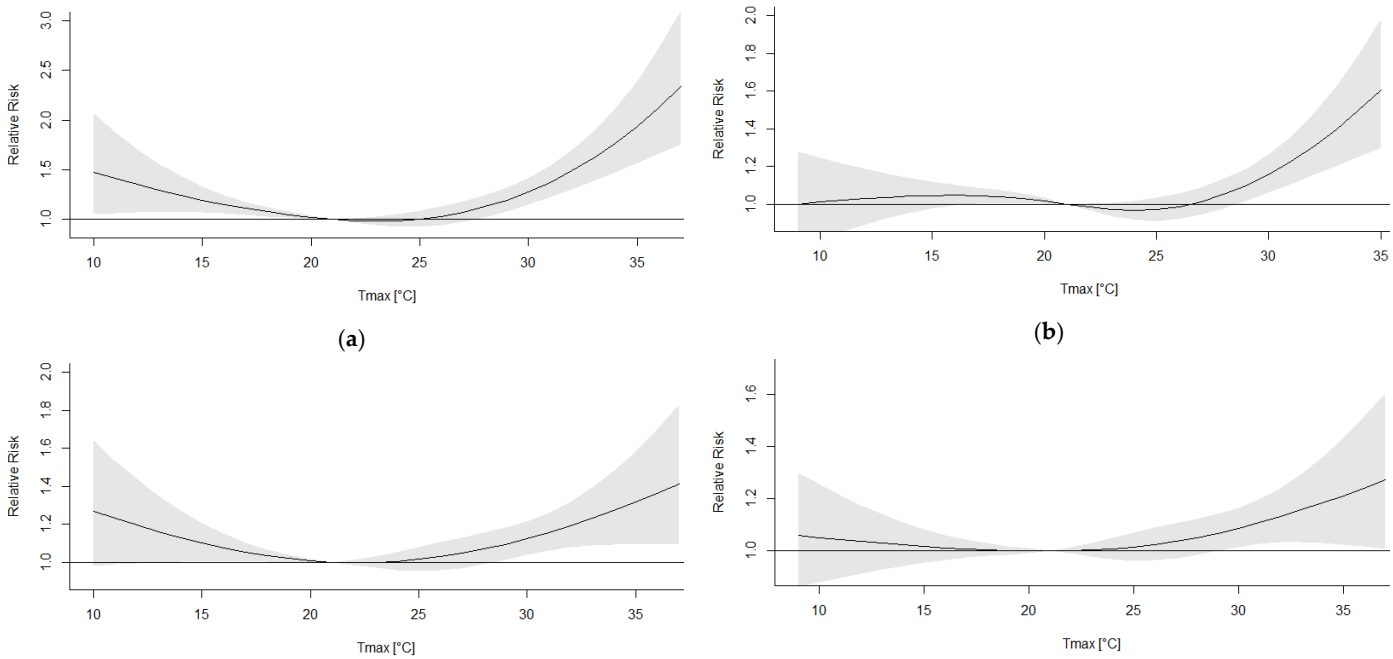

Figure S9. Relation between daily maximum temperature and relative mortality risk (age 65 and older) in warm months (June–September) for towns with population of 25–50 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

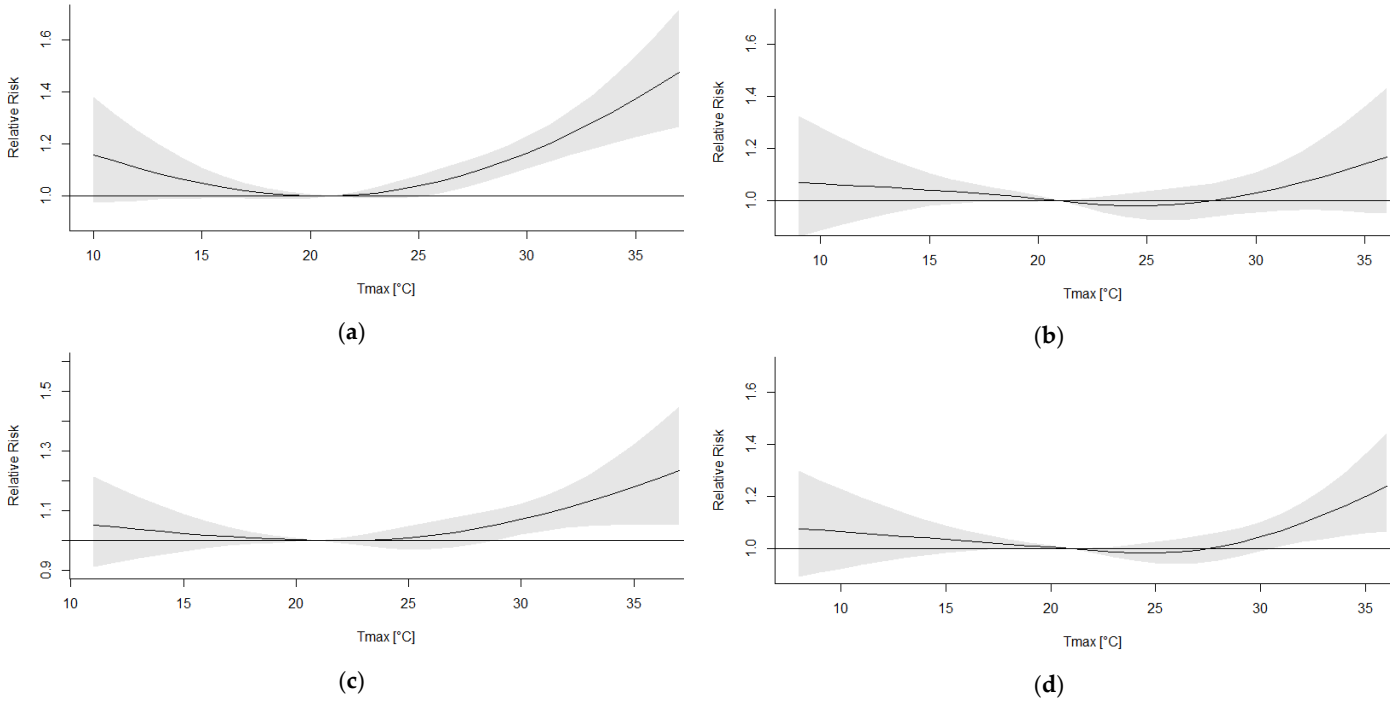

Figure S10. Relation between daily maximum temperature and relative mortality risk (all non-accidental causes) in warm months (June–September) for towns with population of 10–25 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

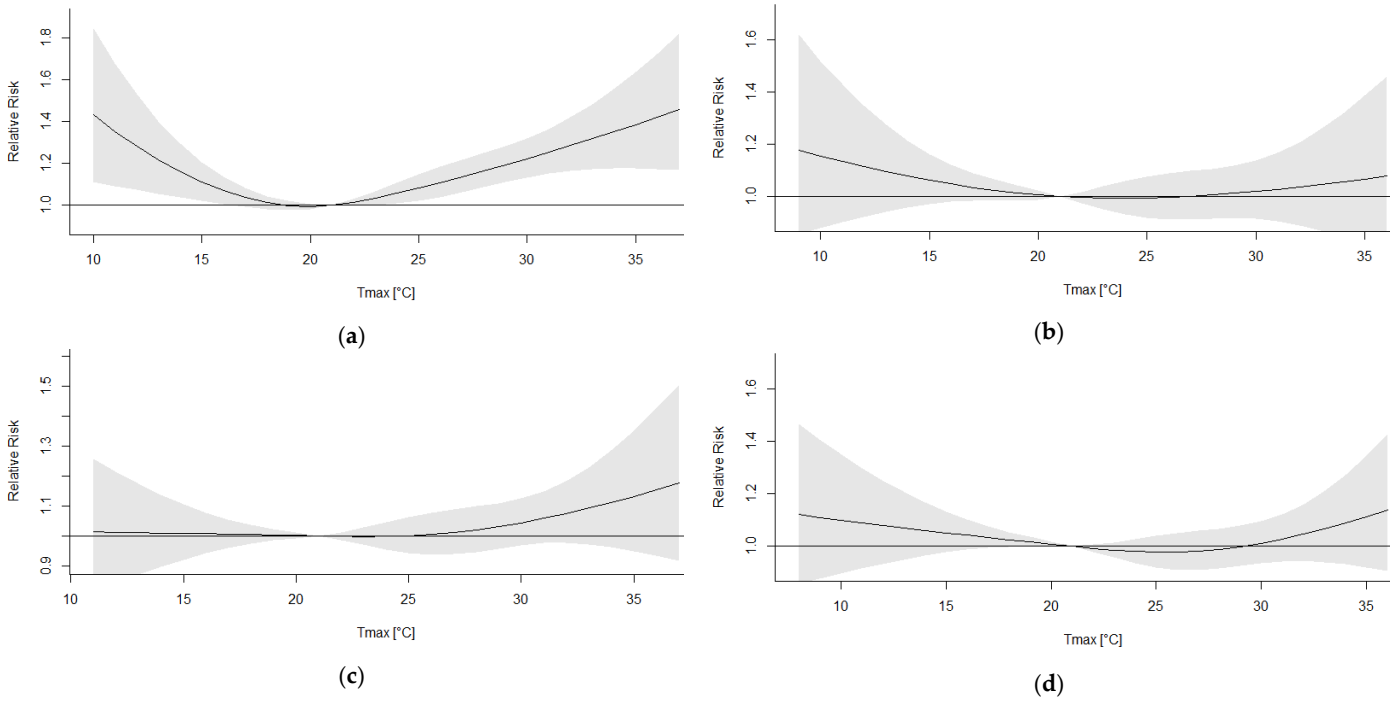

Figure S11. Relation between daily maximum temperature and relative mortality risk (cardiovascular diseases) in warm months (June–September) for towns with population of 10–25 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

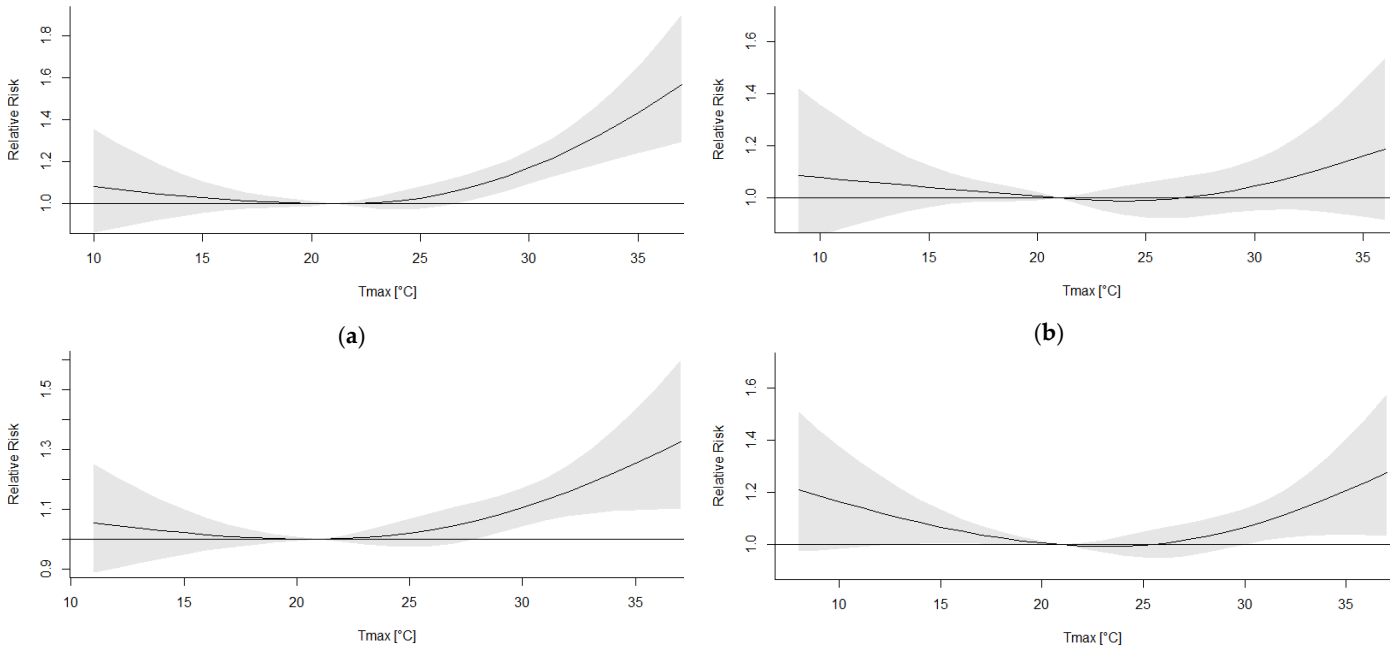

Figure S12. Relation between daily maximum temperature and relative mortality risk (age 65 and older) in warm months (June–September) for towns with population of 10–25 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

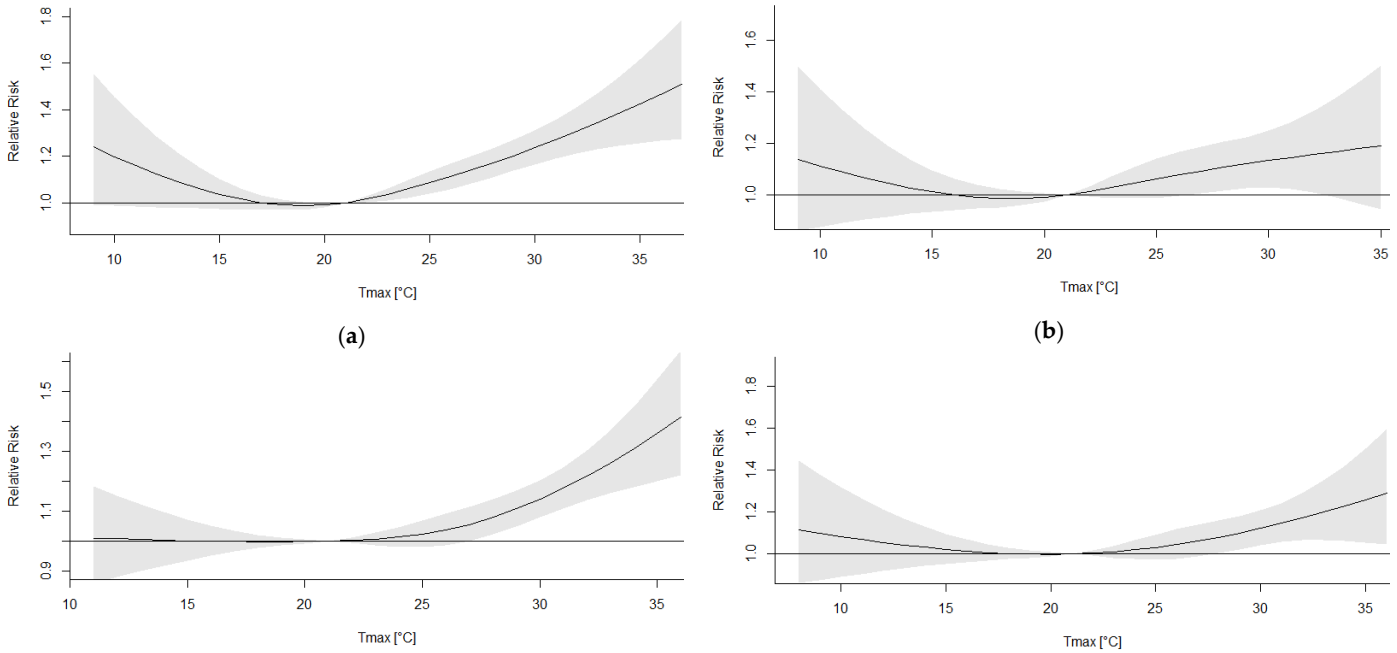

Figure S13. Relation between daily maximum temperature and relative mortality risk (all non-accidental causes) in warm months (June–September) for towns with population of below 10 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

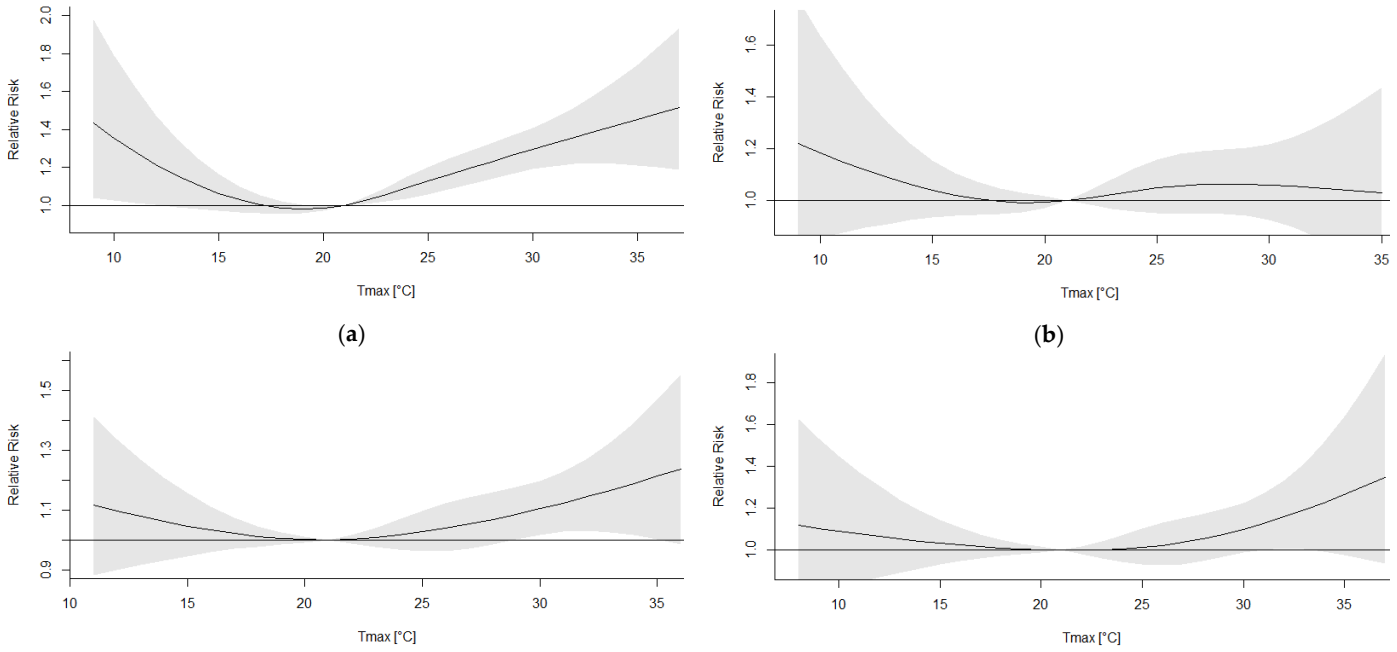

Figure S14. Relation between daily maximum temperature and relative mortality risk (cardiovascular diseases) in warm months (June–September) for towns with population of below 10 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

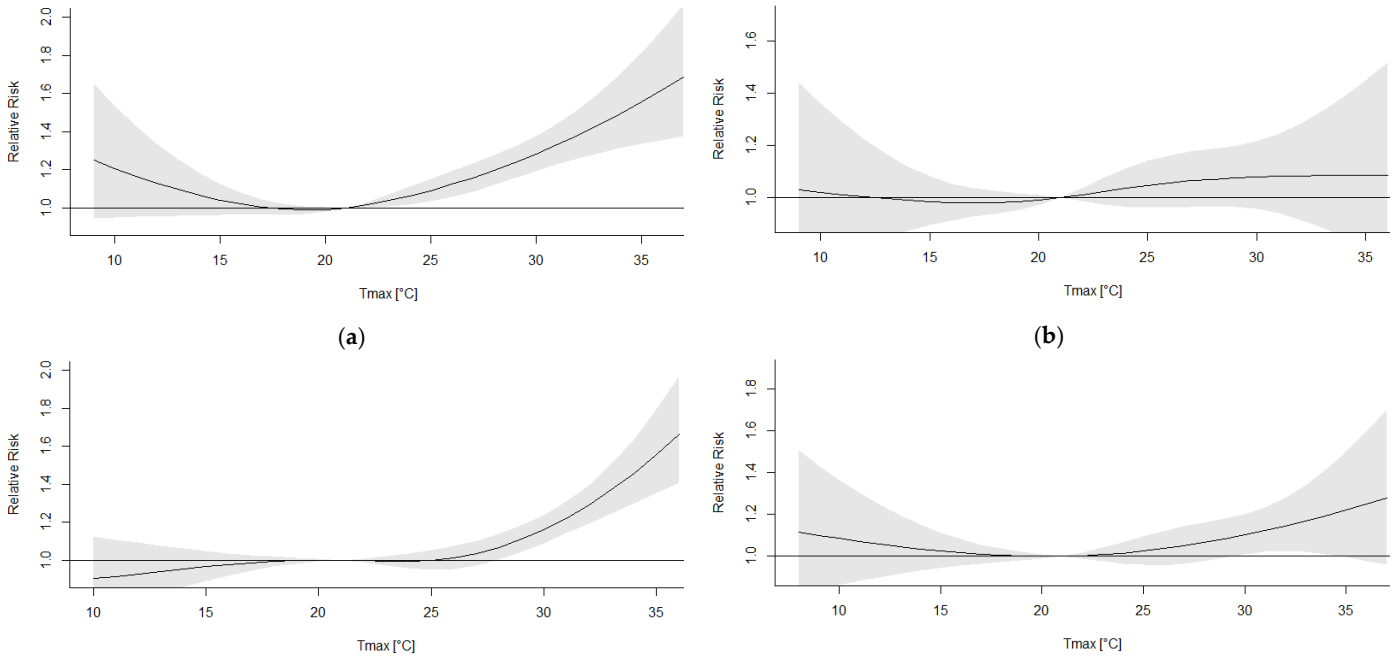

Figure S15. Relation between daily maximum temperature and relative mortality risk (age 65 and older) in warm months (June–September) for towns with population of below 10 thousand: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

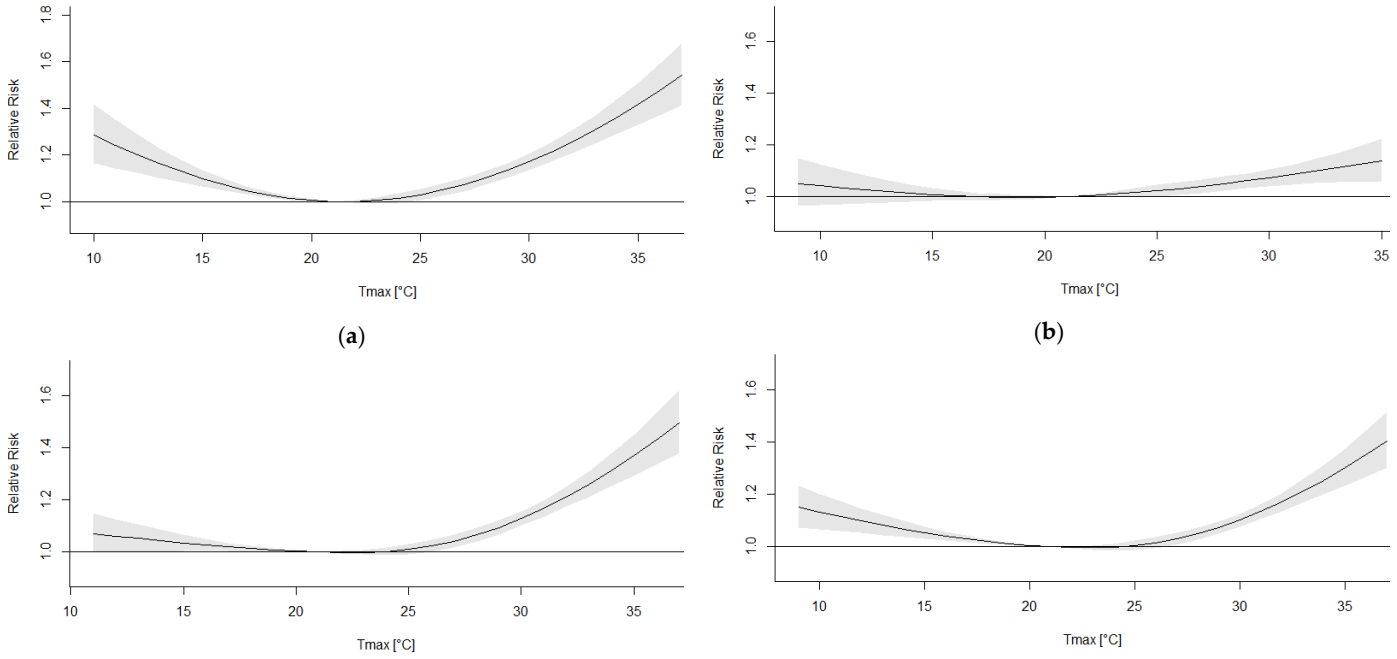

Figure S16. Relation between daily maximum temperature and relative mortality risk (all non-accidental causes) in warm months (June–September) for villages: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

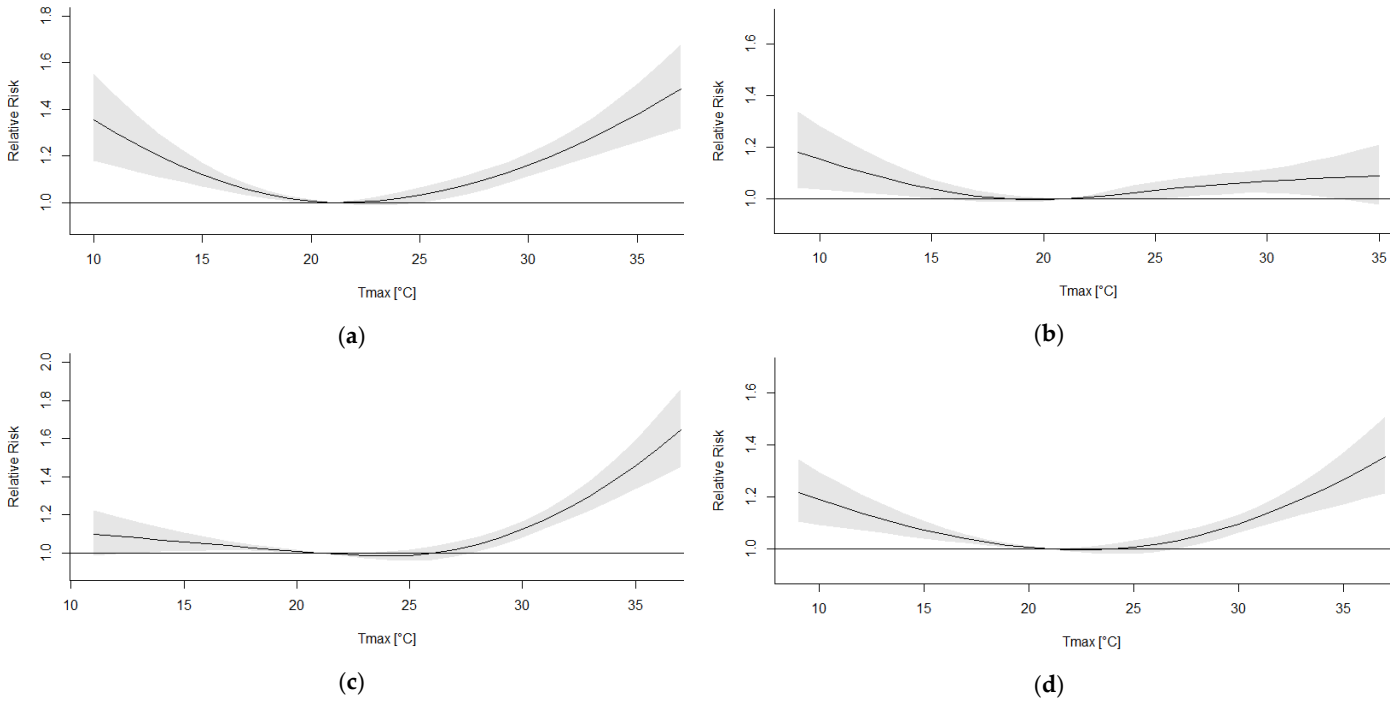

Figure S17. Relation between daily maximum temperature and relative mortality risk (cardiovascular diseases) in warm months (June–September) for villages: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.

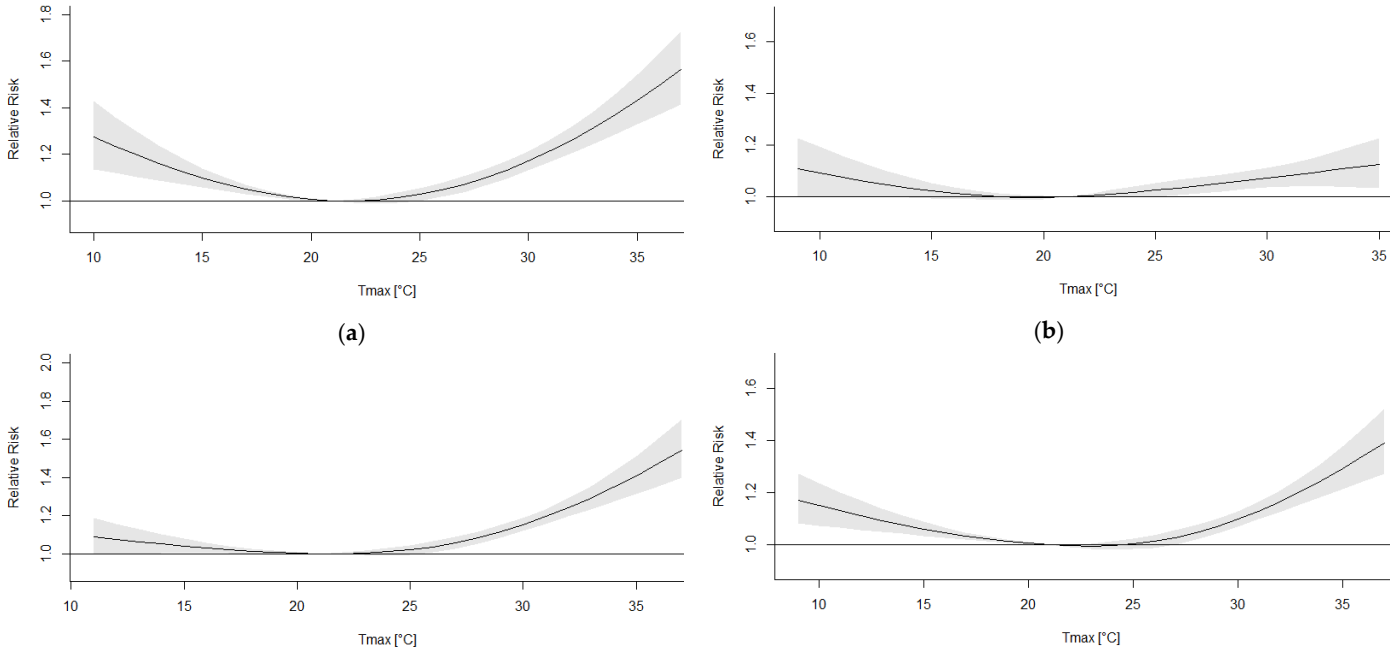

Figure S18. Relation between daily maximum temperature and relative mortality risk (age 65 and older) in warm months (June–September) for villages: (**a**) Wielkopolska 1989–1998; (**b**) Małopolska 1989–1998; (**c**) Wielkopolska 2001–2016; (**d**) Małopolska 2001–2016.