



Change in prescriptions for antidepressant drugs after flooding in England, 2011–14: a controlled, interrupted time-series study

Ai Milojevic, Ben Armstrong, Paul Wilkinson

Abstract

Background Floods are the most common type of natural disaster globally. Climate change and the pressures of development to accommodate increasing population sizes could increase the number of people at risk of flooding. Although the immediate risk of death and injury from flooding is small in high-income countries, reports suggest that flooding has prolonged adverse effects on mental wellbeing. However, evidence is scarce because most previous studies have used surveys or self-reports, without robust pre-flood records. This methodological limitation applies to other natural and man-made disasters.

Methods We investigated the mental health effects of floods in England using routine prescriptions data from pre-flood and post-flood periods in flooded and non-flooded populations. We examined prescription records for drugs used in the management of common mental disorders from 930 primary care practices located within 10 km of large flood events in England in 2011–14. We conducted a controlled, interrupted time-series analysis of the number of prescribing items for antidepressant drugs in the years before and after the flood. Pre–post changes were compared by distance of the practice from the flooded boundaries. Analyses were controlled for neighbourhood deprivation and population density or the number of prescriptions for non-antidepressant drugs.

Findings After controlling for neighbourhood deprivation and population density, prescriptions for antidepressant drugs among practices located within 1 km of a flood increased by 0.59% (95% CI 0.24–0.94) in the year after the flood compared with practices furthest (5–10 km) from the flood. The results did not change after controlling for non-antidepressant drugs. The increase in prescriptions was greater in more socioeconomically deprived than in less socioeconomically deprived areas.

Interpretation We found that the number of prescribing items for antidepressant drugs increased in the year after a flood in primary care practices close to major floods in England in 2011–14. This small percentage increase would, if caused by flooding, reflect a much larger increase in flooded households, which made up only a small proportion of the total number of households registered with these practices. Moreover, despite the increase being small in relative terms, it, together with the well-known high prevalence of mental disorders in the UK, suggests a substantial mental health burden after flooding, which has implications for public health practices. More detailed linkage studies are required to disentangle the effect of flood exposure on individual patients from the observed increase in prescriptions for antidepressant drugs at primary care practices. We are currently extending this study to include prescribing data for individual patients in primary care practices.

Funding Economic and Social Research Council (ES/L007517/1) and the National Institute for Health Research, Health Protection Research Unit in Environmental Change and Health.

Copyright © The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

Contributors

AM designed the study and did the analysis. BA assured the quality of the statistical methods used. PW helped to select antidepressants from British National Formulary codes. All authors contributed to the writing of the draft and reviewed the abstract.

Declaration of interests

We declare no competing interests.

Published Online

May 28, 2018

London School of Hygiene & Tropical Medicine, London, UK
(A Milojevic PhD,

Prof B Armstrong PhD,
Prof P Wilkinson FRCP)

Correspondence to:

Dr Ai Milojevic, London School of Hygiene & Tropical Medicine, London WC1H 9SH, UK
ai.milojevic@lshtm.ac.uk