LINKING ADMINISTRATIVE DATA FOR BETTER RESEARCH AND POLICY: REPORTED CRIME AND MENTAL HEALTH IN SCOTLAND

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Administrative data in public health research

Administrative data is usually collected for the purpose of registration or record keeping through the daily operation of administrative systems.

- Large, complex, messy but cost-effective data source.
- As not collected for research, additional legal and ethical issues have to be considered (e.g. GDPR).

Linking administrative data presents a valuable opportunity for research and policy, but the entire research process has to comply with regulations to **ensure individual privacy** (https://sls.lscs.ac.uk/):

1. Public benefits should overweigh possible risks.
2. Access can be given only to anonymized data in a secure and constantly monitored environment (e.g. stand-alone network).
3. All outputs have to be checked by the data owners to ensure privacy and confidentiality.

Background

Exposure to crime in the residential area might be associated with mental health problems:

- Direct way: witnessing or becoming victim of violence
- Indirect way: increased distress and fear of crime, avoiding social and recreational activities in high crime neighbourhoods

Research question: Do higher neighbourhood level crime increases the risk of mental health problems?
-> longitudinal data is required to assess causal relationship

Data sources and research design

Three different sources of administrative data has been linked together (figure 1):

- **Scottish Longitudinal Study (SLS)**: a 5.3% representative sample of the population, derived from census and other statistical data.
- **Prescription** for antidepressants, anxiolytics and antipsychotic medication for SLS members, collected by NHS Scotland.
- **Police reported crime** in 6505 neighbourhoods (approx. 500-1000 people), derived from the Scottish Index of Multiple Deprivation (SIMD 2012) and aggregated into 5 equal groups (figure 2).

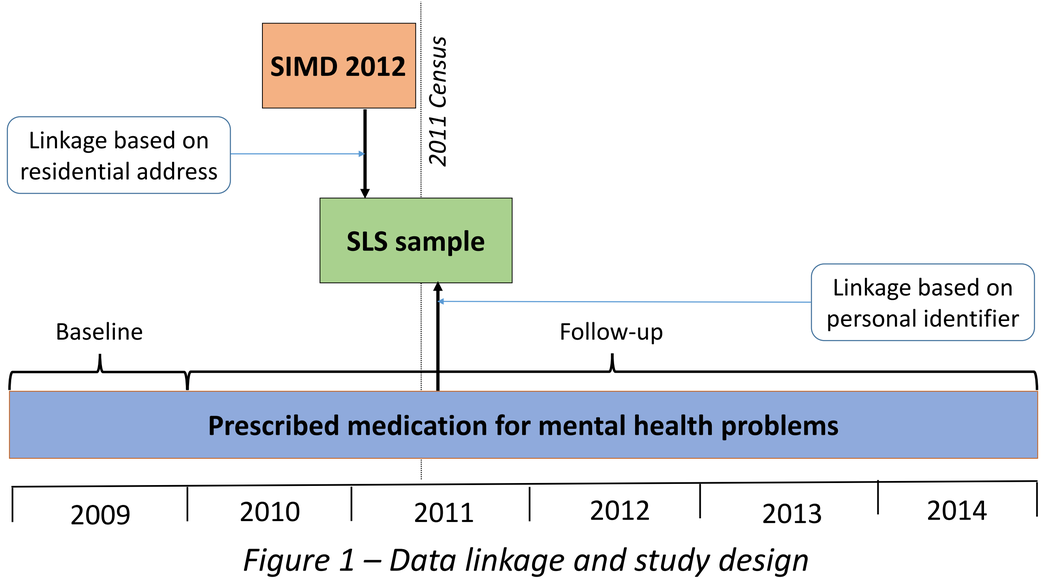

Figure 1 – Data linkage and study design

We excluded individuals with any medication during 2009 and followed-up the remaining "medication free" sample until 2015 (n=126,058) (see figure 1). Cox proportional hazards models were conducted to examine whether higher levels of crime are associated with new medication.

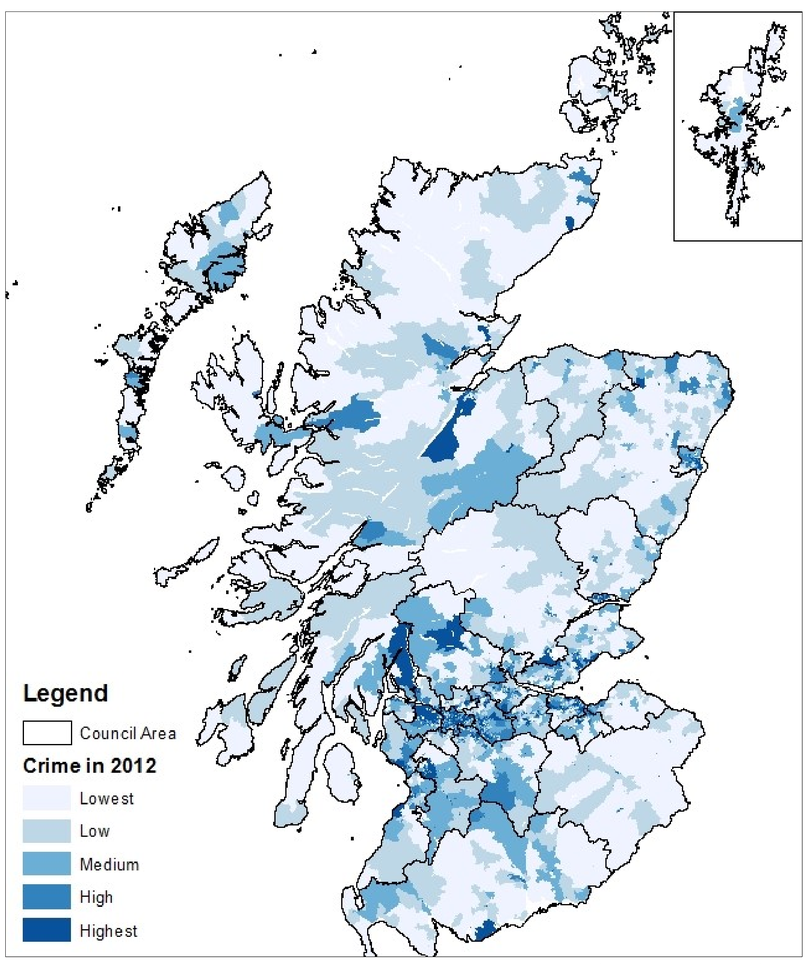

Figure 2 – Crime levels across Scotland (SIMD 2012)

Key findings

1. During the follow-up, we found more new prescriptions for mental health problems in areas with higher crime levels (Figure 3).

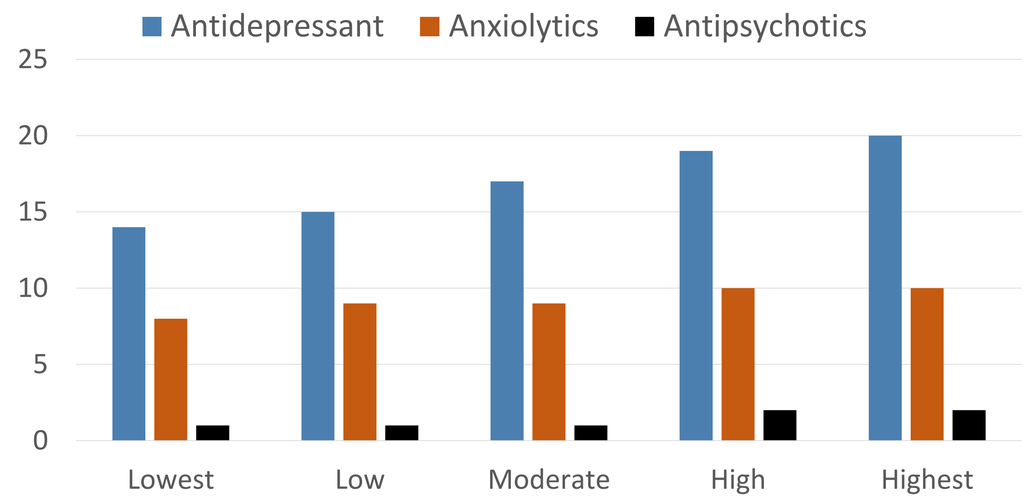

Figure 3: Prescribed medication per crime deprivation (in %) (Source: SLS)

2. After adjustment for individual factors *(age, sex, social grade, education, marital status, living alone, employment status, physical health),* results indicated higher risk of antidepressant, anxiolytic and antipsychotic medications in the high/highest crime areas.

Conclusions

Living in residential areas with high crime may be detrimental for mental health and well-being. Violence prevention policies and neighbourhood renewal programs may help to build **healthy and sustainable communities** and reduce social inequalities.

Acknowledgements: The LONGPOP project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 676060. The help provided by the staff of the Longitudinal Studies Centre–Scotland (LSCS) is acknowledged. The LSCS is supported by the ESRC/JISC, the Scottish Funding Council, the Chief Scientist's Office and the Scottish Government. The authors are responsible for the interpretation of the data. Census output is Crown copyright and is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland. Ethical approval was granted at Durham University (Z5704339).

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 676060

SLS-DSU Scottish Longitudinal Study Development & Support Unit