

pre

Good morning, everyone! Today, I'm excited to present a research project titled "Characterising Cocaine and Opioid Polydrug Use Trends and Drug-Related Harms in Scotland 2015–2022." My name is Fan Zhang, my supervisors are Andreas , Hayley , Matthew , Jaroslaw , and Lee .

Research Background

First, Let's take a look at the background. In recent years, we've witnessed a concerning rise in the concurrent use of cocaine and opioids, often referred to as C&O polydrug use. This trend shows significant public health challenges. In Scotland, the situation is particularly worrying. From 2015 to 2022, the prevalence of opioid dependence remained high. In 2022/23, 1.23% of individuals

aged 15 to 64 in Scotland were opioid-dependent. Moreover, Scotland has Europe's highest drug-related death rate, with C&O use being a major contributing factor. Homelessness and economic hardship further affect the vulnerability of these groups.

Aim and Objectives

Given this context, our project aims to investigate the evolving dynamics of C&O polydrug use in Scotland. We plan to achieve this through 2 main objectives:

1. **Trend Analysis:** We aim to quantify changes in C&O polydrug use from 2015 to 2022 and identify high-growth groups based on age, gender, region, and accommodation situation. This will help inform targeted interventions.
2. **Health Harm Assessment:** We will examine the links between C&O polydrug use and drug-related harms, including overdose deaths.

Study Design

This retrospective cohort study will utilize Scotland's system for linking health data, integrating multiple datasets to provide a comprehensive view.

Data Sources

These include:

- **OAT Prescription Records:** Data on opioid agonist therapy prescriptions from the Scottish Public Health Drug Linkage Programme, which includes details on age, gender, and region.
- **Drug Misuse Data:** Detailed records on cocaine and opioid use from the Scottish Drug Misuse Database (SDMD) and Drug and Alcohol Information System (DAISy).
- **Hospital Admissions:** Records of hospitalizations related to drug use.
- **Mortality Data:** Information on drug-related deaths and all-cause deaths.

Measures

Our study population consists of Scotland residents aged 15–64 with at least one OAT prescription between 2015 and 2022. We extended the follow-up period to two years after the last OAT prescription to account for persistent opioid dependence post-treatment.

Our exposure is concurrent use of cocaine and opioids, indicating C&O dependence. We compared this group with individuals dependent on opioids without concurrent cocaine dependence. Our primary outcomes include non-fatal and fatal drug-related overdoses, as well as all-cause mortality.

Preliminary Results

The progress now is that we have completed the above data fetching and cleaning

Our preliminary analysis shows a concerning trend among those observed in the cohort . C&O dependence shows a growth trend with an average annual increase of 1.4%, peaking at a 6.2% growth in 2016. This highlights the urgency of this issue.

Analysis Plan

Our analysis plan involves several steps:

1. **Descriptive Trends:** We will analyse the data by age, gender, region, and accommodation to identify specific trends.

2. **Health-harm Modelling:** Using Cox and Poisson models, we will assess mortality and hospitalizations.
3. **High-Risk Profiling:** We will include interaction terms to identify high-risk groups and choose the optimal model.
4. **Sensitivity Analysis:** This will ensure the robustness of our findings.

Conclusion

In conclusion, our study aims to provide a comprehensive understanding of C&O polydrug use trends and associated harms in Scotland.

Thank you for your attention, and I'm happy to answer any questions you may have!