MENTAL HEALTH, BEREAVEMENT AND SUICIDE

Using administrative data to understand mental health in Northern Ireland:
Results from two exemplar projects

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INTRODUCTION

• Northern Ireland consistently has worse mental health than the rest of the UK

• Growing burden of disease – individual, family, society, government budget

• Need to understand what causes poor mental health – who is most affected, who is resilient
MENTAL HEALTH IN NORTHERN IRELAND

Currently measured by survey responses:

1 in 5

- 20% of adult population have potential psychological disorder - Health Survey for Northern Ireland (2010/11)

1 in 20

- 5.8% of entire population - 2011 Census (NISRA 2014)

- 5% of adult population have poor mental health – NI Survey of Activity Limitation and Disability (NISRA, 2007)
PROBLEMS WITH SURVEYS

- Expensive
- Labour intensive
- Bias – researcher bias / responder bias
- Stigma
- Non-representative – married, females, high SES, older people
- Attrition
ADMINISTRATIVE DATA

• Prescribing Data
  - identify poor mental health by accessing information on all psychotropic medications dispensed to the entire Northern Ireland population

• Enhanced Prescribing Database (EPD)
  - electronic data on all medicines dispensed in community pharmacies NI from 2008 onwards
MEASURING MENTAL HEALTH: A Pharmacoepidemiological Approach

Psychototropic prescribing data from the EPD (2008-2010) linked to 2001 Census data from the NILS

• Who suffers poor mental health in Northern Ireland? - *how much medication is utilised?*

• Is mental health related to where people live?

• How does poor mental health vary by **gender**, **age**, **marital status**, **education**, **socio-economic status**, **GP Practice**?
Percentage of the population receiving at least one prescription for either an antidepressant or an anxiolytic or either drug over the study period stratified by sex

- One in five (20%) received at least one prescription for either drug
• Likelihood of medication peaks ~55 years then falls

• **Married 16%** more likely to receive either drug than those never married  
  \((OR=1.16, 95\% \, CI \, 1.13, \, 1.20)\)

• **Re-married 65%** more likely, **separated/divorced 48%** more likely

• **No qualifications 61%** more likely to receive either an antidepressant or an anxiolytic compared to those who had a degree or higher  
  \((OR=1.61, 95\% \, CI \, 1.55, \, 1.67)\)

• **Never worked/long-term unemployed 33%** more likely to receive either an antidepressant or an anxiolytic compared to those employed in higher professional jobs  
  \((OR=1.33, 95\% \, CI \, 1.25, \, 1.42)\)

• **Living in rented accommodation 30%** more likely compared to those in own home  
  \((OR=1.30, 95\% \, CI \, 1.26, \, 1.34)\)

• % individuals in a GP Practice being prescribed an Antidepressant ranges from **3.5% to 22.4%** (~7-fold increase)

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*MLM regression models fully adjusted for age, sex, education, NSSEC, housing tenure and car access*
Antidepressants Distribution by Area

Percentage of people on anti-depressants:
- 0.155 to 0.236 (177)
- 0.133 to 0.155 (184)
- 0.117 to 0.133 (157)
- 0.102 to 0.117 (187)
- 0 to 0.102 (185)
CURRENT RESEARCH PROJECTS

STUDY 1: Honest Broker Service

Child Health Data – Enhanced Prescribing Database - GRO Death Data

Early life exposures (birth weight/gestational age/birth order) and likelihood of poor mental health as measured by receipt of psychotropic medication or death by suicide

STUDY 2: Northern Ireland Longitudinal Study

NILS 2001 Census - NILS 2011 Census

Address change in early childhood and Mental Health in young people

STUDY 3: Northern Ireland Longitudinal Study

NILS 2001 Census Data – GRO Death Data 2001-2011

Familial Influence on Suicide
The Grief Study: Research Questions

1. Does bereavement lead to an increased risk of poor mental health – as measured by use of hypnotic, anxiolytic and antidepressant medication?

2. Which groups most commonly suffer mental ill-health following bereavement?

**Bereavement Circumstance:**
- Illness/
- Sudden Death/
- Suicide
- Spouse/
- Parent/
- Child/
- Sibling

**Socio-demographic characteristics:**
- Men/Women
- Affluent/Deprived
- Old/Young/Working Age
Northern Ireland Longitudinal Study
Northern Ireland healthcard data for c.28% population- linked to Census and vital events data (inc: Census ID, Household ID, HCN)

Northern Ireland Mortality Study
Census data
100% NI population
Contains: Census ID, Household ID

NISRA Data
- Census data for NILS members and members of their household
- Deaths of NILS members and members of their household
- Info on relationship of NILS member to others in their household
- HCN number of NILS members only

Linkage & Anonymisation
Enhanced Prescribing Database (EPD)
Prescription Drug data
100% NI population
Contains: HCN

BSO Data
Prescription Drug data for 100% NI pop. and HCN

Grief Study
- 2001 Census data for NILS members and members of their household
- Deaths 2001-2010 of NILS members and members of their household
- Psychotropic drug uptake NILS members 2009-2011
ESTIMATING BEREAVEMENT EFFECTS

Mental Health Outcome Measure:
• Received an antidepressant prescription in January or February 2010: Yes / No

Bereavement exposure (Apr 2001 - Dec 2009)
• No deaths within household
• Bereaved through illness
• Bereaved through sudden death
• Bereaved through suicide

Multilevel models accounting for variation between GP practices
THE MAJOR CHALLENGE

• Factors such as deprivation and general health may contribute both to the likelihood of bereavement and to the likelihood of poor mental health
THE MAJOR CHALLENGE

DAG: Working Age (25-64 in 2009)
(17 – 57 years at 2001 Census)

- Area Deprivation
- House Value
- General Health Status
- SES
- Living arrangements
- Bereavement
- Mental Health Problems
- Carer Status
- Education
- Male
- Female
- Age
- Urban/Rural
- Religion

Not used

GP Practice

blogs.qub.ac.uk/griefstudy/files/2013/12/Working-Age.png
SOME EXPECTED FINDINGS

• Bereaved persons had greater risk of poor mental health (additional risk ≈ 40%) and also of dying themselves

• The risk was greater following sudden or traumatic bereavements

• Persons who lost spouse or child had further elevated risk of poor mental health

• Risk was also higher for older people compared to those bereaved during working age
SOME UNEXPECTED FINDINGS

• As well as those over 65, persons under 25 also experienced greater impact than working-age people

• Men were more likely to experience poor mental health after being bereaved through illness, whereas women suffered more often following bereavement through suicide

• There was no observable excess risk to people bereaved in deprived areas, after adjusting for the overall risk to people who experience greater deprivation

• The differential risk of suicidal bereavement compared to other sudden bereavement circumstances is complex
GRAPH SHOWING RISK OF ANTIDEPRESSANT Rx AFTER A BEREAVEMENT BY BEREAVEMENT TYPE: OR(95% CI) – Fully Adjusted

Illustration with data points indicating the likelihood of receiving AD Rx in Jan 2010 for different bereavement categories. The categories include:
- Not bereaved
- Other illness
- Parent illness
- Parent suicide
- Spouse illness
- Spouse suicide
- Child illness
- Child suicide

The graph shows the risk associated with each category, with reference categories indicated as not bereaved and other illness. The likelihood of receiving AD Rx is plotted against a scale from 0 to 4.
LIMITATIONS OF ADMINISTRATIVE DATA

• Collected for other purposes
• Lack detail
• Large, complex and messy
• Biases
• Focus on users rather than need
• Require knowledge of system and databases
• Sensitive and protected
• Often difficult to access
CONCLUSION

Administrative data can be used to address questions regarding mental health which are of interest:

- to policy makers
- to bodies planning and providing targeted services
- to various scientific communities
- to the general public

Looking to the future, similar data, infrastructure and resources can be used to monitor targeted and population-level interventions.
ACCESSING ADMINISTRATIVE DATA

• Directly from data custodian

• Via ‘access centres’

Example:
• UK Data Archive
  http://www.data-archive.ac.uk

• Honest Broker Service (HBS)
  http://www.hscbusiness.hscni.net/services/2454.htm

• Northern Ireland Longitudinal Study (NILS)
  http://www.qub.ac.uk/research-centres/NILSResearchSupportUnit/

• Administrative Data Research Network (ADRN)
  http://www.adrn.ac.uk/
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Knowledge Exchange Seminar Series (KESS)

...is a forum that encourages debate on a wide range of research findings, with the overall aim of promoting evidence-based policy and law-making within Northern Ireland.