



## Knowledge Exchange Seminar Series (KESS)

### MENTAL HEALTH, BEREAVEMENT AND SUICIDE

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

Dr Aideen Maguire<sup>1</sup>, Dr Mark McCann<sup>2</sup>, Dr John Moriarty<sup>3</sup> and Dr Dermot O'Reilly<sup>1</sup>

<sup>1</sup>UKCRC Centre of Excellence for Public Health, Queen's University Belfast

<sup>2</sup>MRC/CSO Social and Public Health Sciences Unit, University of Glasgow

<sup>3</sup>Administrative Data Research Centre, Queen's University Belfast

#### Summary

- **Mental health is unevenly distributed in the Northern Ireland population**
- **Administrative data on psychotropic medication prescribing is increasingly being used in research into population mental health**
- **This paper illustrates these data indicate concentrations of poor mental health in Northern Ireland, e.g. within deprived neighbourhoods, at interfaces, among older persons admitted to care homes and among persons bereaved through sudden death or suicide.**
- **This briefing also aims to widen the debate about mental health from a disorder/service paradigm to a whole population approach**

#### Introduction

Mental illness is one of the major causes of ill health and disability in Northern Ireland (NI). Household surveys carried out routinely in the UK show that NI consistently scores worse on general mental health.

# Knowledge Exchange Seminar Series 2014-15

- Approximately 20% of the adult Northern Irish population have a possible psychiatric disorder (Health Survey for Northern Ireland 2010/11), compared to just 15% of the adult Scottish population (Scottish Health Survey 2010) and only 14% of the adult English population (English Health Survey 2011).
- Mental ill-health is more common in women (23%) than in men (17%).
- The annual cost of mental ill-health in NI is estimated to be approximately £2.7 billion- more than the total spends on all health and social care for all health conditions (NIAMH, 2004).
- Direct health and social care costs of mental health amount to around £372 million, 9.3% of the total health care bill. Yet only 4% of the research budget is spent on mental health research (DHSSPS, 2012a).
- Physical health and mental health are inextricably linked, with each impacting upon the other. In addition, mental health has a bidirectional relationship with unemployment, health inequalities, deprivation and financial hardship.
- Suicide and mental health are inextricably linked and a study by Foster et al. (1997) found that 90% of individuals who had completed suicide in NI had a DSM-III psychological disorder, the most common being depression.

## Tackling Poor Mental Health

NI has a number of policies in place with the aim of improving population health.

**The Bamford Review** (2005) called for a register of all services and alternative therapies available to the NI population. The resulting Bamford Action Plan included plans to map available services and provide this information to service users, but progress has been slow in this regard (DHSSPS, 2012b).

**Protect Life: A Shared Vision** (DHSSPS, 2012c) calls for an increase in research into the causes of suicide and self-harm. It also acknowledges socioeconomic inequalities in mental health and aims to reduce the differential in the suicide rate between deprived and non-deprived areas.

**Fit and Well**, the new Public Health Strategic Framework for NI, refers prolifically to mental health and well-being as one of the fundamental determinants of good health and acknowledges the link between physical and mental health (DHSSPS, 2012d). This theme aligns with concerns expressed by the UK government. Nick Clegg recently made the case that further mental health research is needed and that “we should understand mental health just as well as we understand physical health” (BBC, August 2014).

The question underpinning much current Health and Social Care policy is “What works?” However, to understand what works in treating or preventing poor mental health, we first need to ask “What causes?” This can be explored by considering where relative levels of poor mental health reside within the population, understanding those with a mental illness and picking apart the associations. This in turn informs how healthcare professionals or government can help to improve individual health and eventually prevent poor mental health in future populations. Furthermore, the effectiveness and scope of existing policies needs also to be audited effectively and their impact considered on a population-wide level.

## Getting a handle on Mental Health: the Role of Research

A major hurdle to examining mental health is the problem of disease definition and descriptive epidemiology. Accurate definition of the incidence and prevalence of the common mental disorders is necessary for the

purposes of planning, organising and delivering appropriate services. This is a major gap in current knowledge, as there is no register of all individuals with a mental health disorder in Northern Ireland (or in most countries). Understanding the burden of depression and anxiety is hindered by a number of obstacles including; time constraints, inaccurate measures and the stigma of self-identification (Oliver et al. 2005).

Surveys can provide a reasonably cost-effective way of gaining insight into the mental health of the population, but are labour intensive and subject to a variety of biases. The most important of these is responder bias. The evidence suggests that females, older respondents, those from higher socioeconomic backgrounds, those who are employed and those who are married are more likely to consent<sup>1</sup>. These characteristics are also associated with better mental health, with the result that surveys are likely to underestimate true prevalence.

Identified rates of common psychological disorder in the NI community dwelling population vary greatly depending on the source and range from:

- 20% in the adult population in the Health Survey for Northern Ireland (2010/11)
- 26% in the under 16 year olds in the Young Life and Times Survey (Schubotz & McMullan, 2010)
- 5% in the adult population in the NI Survey of Activity Limitation and Disability (NISRA, 2007)
- 5.8% in the entire population in the 2011 Census (NISRA 2014).

These disparities point to a need for better ways of measuring population mental health. Arguably, one of the most accurate, population wide tools for identifying significant psychological disorder is data relating to the uptake of prescription medications.

## **Administrative Data: Using What We Already Have**

Administrative data refers to information collected primarily for administrative (not research) purposes. This type of data is collected by government departments and other organisations for the purposes of registration, transaction and record keeping, usually during the delivery of a service. One such example is the Enhanced Prescribing Database, which is a collation of data on dispensed medications from prescription receipts processed by the Business Services Organisation. With data from 2008 onward this resource, mainly used for the reimbursement of pharmacies, can give a quick, accurate picture of population health based on the medications the population is receiving.

Other such data sources include hospital admissions and discharge data, SOS CARE social services data, primary care records, the cancer registry, Department of Education data, benefits data and the Census. These data are collected routinely and hold a wealth of information on the health and well-being of the population but are currently not being used to their full potential. Utilising these data is cost-effective and efficient as the data already exist. It is non-intrusive with diminished risk of responder burden or bias. These data can capture the whole population and are usually collected in real time, rendering them useful to the formation of policy. The data can be longitudinal in nature, such as the healthcare records, and have the potential to be linked to each other to enhance the datasets and gain a rich, accurate picture of individual circumstance and health.

These data are not without limitations. They are usually large and complex, require knowledge of the system, and are sensitive and protected and often difficult to access. The new Administrative Data Research Network

---

<sup>1</sup> For further reference, see Eagan et al. 2002; Dunn et al. 2004; and Sharhar et al. (1996)

(ADRN) with centres across the UK is aiming to improve access to these resources for research purposes. The ADRN is a partnership between universities, government, statistics authorities, funders and researchers providing a service for researchers so they can carry out social and economic research using administrative data which has the potential to benefit society.

Previously research on administrative data has been extremely difficult to do. However, NI has been an innovative region already linking administrative data such as the EPD, breast screening data and death records to Census returns available via the Northern Ireland Longitudinal Study (NILS). Two examples of utilising administrative data for research into population mental health are illustrated below, highlighting a small subset of potential research projects utilising these datasets which already exist to answer pertinent questions regarding the health and well-being of the population.

## **Project 1: Measuring Mental Health: a Pharmacoepidemiological Approach**

This project aimed to determine the individual, household and area level factors associated with poor mental health in NI utilising antidepressant and anxiolytic medication prescriptions as indicators of depression and anxiety. Data on all psychotropic medications dispensed in community pharmacies in NI from 2008-2010 were extracted from the EPD to gain an insight into the mental health of the population.

- Approximately 17% of the entire NI population received at least one antidepressant prescription in 2009/10 and 8.1% at least one prescription for an anxiolytic
- Approximately one in five (20%) individuals received at least one prescription for either drug
- Women consistently had twice the proportionate uptake as men, 12% of men received an antidepressant compared to 22% of women
- Medication uptake was highest in deprived areas, with 31.5% of those individuals resident in the most deprived areas in NI receiving at least one prescription for an antidepressant over the study period.
- Almost half of women (45%) aged 50-59 years living in these deprived areas received at least one prescription for an antidepressant over the study period
- Individuals living in non-rural areas more likely to receive medication compared to those living in rural areas
- Living at a peaceline too was associated with an increased likelihood of poor mental health compared to similar populations not living at an interface

Prescribing rates between GP practices varied widely, ranging from the lowest prescribing practice where only 4.1% of their patients received either an antidepressant or anxiolytic during the study period through to the highest prescribing practice where 31.2% of their patients received either drug. However, this could mostly be explained by the practice population composition and the level of deprivation in the GP's area.

Medication uptake was also measured over the two year period amongst older people, identifying those individuals who moved from the community, i.e. their own home address, into a care home for older people, i.e. an address identified as a care home using the Regulation and Quality Improvement Authority (RQIA) list of registered homes.

- Psychotropic medication uptake was much higher in care homes compared to the community

- When individuals were followed longitudinally it was evident that psychotropic medication use increased two-fold upon entry to a care home

Analysis of administrative data such as this is cost-effective, non-intrusive and as it is routine data it obviates the caveats and shortcomings associated with survey designs. An additional advantage of the NI prescribing data is that the prescription information includes individual health and care number which allows for the linkage to other datasets exploring other factors that are associated with or influence the uptake of antidepressant and anxiolytic medication. This is a novel method of identifying possible mental health disorder in NI and an excellent opportunity to improve the understanding of mental disorders and their possible prevention.

### **Project 2: The Grief Study**

This project utilised data from the EPD, NILS and death records to examine:

- the mental health consequences of being bereaved of a member of your household
- which groups within the population are most at risk following bereavement
- which bereavement circumstances are most aversive to mental health

It is important to identify the people who are in greatest need after bereavement, so that policies and service designs reflect how professionals, family and friends can most effectively ensure that necessary support is offered and provided to bereaved individuals.

The Grief Study found that:

- over the study period bereaved persons were 40% more likely to experience poor mental health compared to people who had not been bereaved
- likelihood of poor mental health is further increased in the case of sudden bereavements, including following accidents and suicide
- In the group bereaved through suicide poor mental health was experienced twice as frequently as in the general population<sup>2</sup>
- analysis suggested that losing either a spouse or child had the greatest negative impact on mental health

Though the above findings are highly intuitive, few previous studies have explored these effects on a population level. The data available through linkage of the EPD to NILS enabled the researchers to investigate these effects without recruiting research participants at the point of bereavement. Comparisons of particular population groups differently affected by bereavement yielded further findings of interest, some less intuitive than the aforementioned. For example:

- young people below working age (under 25) were more likely to have poor mental health following bereavement in any circumstance than those bereaved aged between 25 and 64
- men were more likely to experience poor mental health after being bereaved through illness, whereas women suffered more often following bereavement through suicide

---

<sup>2</sup> Note that these estimates account for patterning in both bereavement and mental ill-health by Socioeconomic Status, by age and by General Health. These factors account for *some* of the association between bereavement and mental health, but do not explain all the variation.

- while poor mental health is more common in more deprived areas, mental health impacts of bereavement were no more common in deprived than affluent areas

Further analysis on the complex interplay between bereavement and education and bereavement and history as an informal carer is ongoing. Taken together, the above findings support the idea that an individual's family ties and community networks greatly influence their psychological wellbeing and can continue to play a protective role following bereavement. Bereavement represents a major life transition and a key question in designing supportive services is how well transitions are managed, e.g. is the support offered to families of palliative care maintained after their relative dies?; are staff across social services trained to respond appropriately to individuals bereaved in a variety of circumstances?

### **Conclusions**

#### **How can we improve mental health research?**

With the increasing burden of mental ill health there is an urgent need for more accurate measures of mental ill health in the population in order to gain a greater understanding of the factors that affect the onset, development and recovery from psychological disorder. Utilising prescribing data has the potential to bridge the gap. It has use beyond observational studies with the potential to be utilised both in longitudinal studies and as a surveillance tool. With the proposed mapping of alternative services from the Bamford Action Plan also underway, this additional data could help to explain the variation in prescribing between areas, individuals and GP Practices and highlight the potential need for additional or reduced service provision.

The EPD data provide an exciting and unique opportunity to observe the uptake of psychotropic medication throughout the NI population over time. As the EPD data contain a number of individual level identifiers, including unique HCN, this dataset poses potential for linkage to other datasets. Utilising data from EPD and the RQIA has proved effective in monitoring medication uptake in the older population both in the community and in care. These linked datasets have the potential of being a low-cost, effective, pharmacovigilance tool, with the possibility of further linkage to other data such as primary care data (including GP diagnostic information) or secondary care data (such as hospital admissions). Access to this information, would greatly improve analysis of adverse events in older people and aid in the study of preventing these outcomes.

The EPD data has also provided an unobtrusive way of measuring population mental health post-bereavement identifying groups of individuals who may be most at risk of poor mental health post bereavement and therefore most in need of help and support.

#### **Accessing administrative data**

Administrative data is an invaluable tool for understanding mental health in NI, and the studies above highlight the wealth of information that already exists and is already collected routinely in NI that could help shape policy and practice if utilised effectively. NI is slow moving on the data linkage front. It has the resources and opportunities for data linkage given that the majority of health related administrative records contain individual unique HCN and given the small population size it is in the unique position to be able to capture an entire population to give a highly accurate picture of population health.

FOR MORE INFORMATION AND SOURCES RELATING TO THE ABOVE, PLEASE CONTACT THE AUTHOR

---

*The authors would like to thank the staff of the Business Services Organisation (BSO). The help provided by the staff of the Northern Ireland Longitudinal Study (NILS), the Northern Ireland Mortality Study (NIMS) and the NILS Research Support Unit is also acknowledged. The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of NISRA/NILS/BSO.*

## References

Bamford D. The Review Of Mental Health And Learning Disability (Northern Ireland): A Strategic Framework for Adult Mental Health Services. June 2005

Clegg N. Clegg: Mental health research 'needs boost'. BBC August 2014 retrieved from <http://www.bbc.co.uk/news/health-28689956>

Department of Health Social Services and Public Safety (DHSSPS) Evaluation of the Impact of HSC R&D Funding in Northern Ireland, Including Benchmarking with other Countries. June 2012a retrieved from <http://www.dhsspsni.gov.uk/evaluation-hsc-rd-final-report-june-2012.pdf>

Department of Health Social Services and Public Safety (DHSSPS) Protect Life: A Shared Vision. The Northern Ireland Suicide Prevention Strategy 2012 - March 2014. June 2012c

Department of Health Social Services and Public Safety (DHSSPS) Fit and Well Changing Lives: 2012-2022. July 2012d retrieved from <http://www.dhsspsni.gov.uk/fit-and-well-consultation-document.pdf>

Department of Health Social Services and Public Safety (DHSSPS) Delivering The Bamford Vision: The Response of the Northern Ireland Executive to the Bamford Review of Mental Health and Learning Disability. Action Plan 2012-2015. Integrated Projects Unit. November 2012b retrieved from <http://www.dhsspsni.gov.uk/2012-2015-bamford-action-plan.pdf>

Foster T, Gillespie K & McClelland R. Mental disorders and suicide in Northern Ireland. *BJPsych*. 1997;170:447-52

Northern Ireland Association for Mental Health (NIAMH) Counting the cost: The economic and social costs of mental illness in Northern Ireland. 2004. Belfast: NIAMH Publications/Sainsbury Centre for Mental Health

Northern Ireland Statistics and Research Agency (NISRA) The Prevalence of Disability and Activity Limitations amongst adults and children living in private households in Northern Ireland: First Report from the Northern Ireland Survey of people with Activity Limitations and Disabilities. July 2007.

Northern Ireland Statistics and Research Agency (NISRA) Northern Ireland Census 2011 Key Statistics Summary Report. September 2014

## Knowledge Exchange Seminar Series 2014-15

Oliver MI, Pearson N, Coe N & Gunnell D. Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. *BJPsych*. 2005;186:297-301

Schubotz D & McMullan G. Mental and emotional health of 16-year olds. ARK Research Update 67. Belfast: ARK. <http://www.ark.ac.uk/publications/updates/update67.pdf>

