

NATIONAL MENTAL HEALTH RESEARCH STRATEGY

BACKGROUND PAPER: Epidemiological and population health research (Session 2B)

Associate Professor Tim Slade

Director of Epidemiology and Biostatistics

Matilda Centre for Research in Mental Health and Substance Use

The University of Sydney

Introduction

The discipline of psychiatric epidemiology is, at its most basic level, the study of the patterns of mental disorders, including how frequently disorders occur, how they are distributed in populations, and what the associated risk factors are. Psychiatric epidemiology also defines the time course of mental disorders, including their onset, duration, and recurrence. This basic information is fundamental to the understanding of mental disorders and the development of effective intervention and prevention programs. Recently, the scope of the field has greatly expanded and now includes detailed examinations of the natural history of psychiatric disorders, genetic and epigenetic risk factors, the relationships between physical and mental disorders, the psychological impact of traumatic events, and studies of the use and outcomes of mental health treatments.

Nationally representative surveys of the general population are a vital source of data to improve our understanding of the distribution and impact of mental disorders. Surveys of this kind are crucial because they provide data among the whole population, not just those who are seen by mental health professionals. For this reason, they allow us to determine which subgroups of the population are not receiving the mental health services they might need.

Background

Back in the early 1990's there was a commitment by the then Australian government to improve the lives of people with mental illness. This was embodied in a National Mental Health Strategy, which recognised the need for population data on the prevalence and distribution of mental disorders in the Australian general population. This led to the 1997 National Survey of Mental Health and Wellbeing, a general population survey among 10,641 Australian adults that demonstrated that one in five adult Australians experienced a mental disorder at some stage in the past 12 months. Ten years later a repeat survey was carried out to determine the *lifetime* prevalence of mental disorders and gain a more detailed understanding of the rates and predictors of service utilisation for people experiencing mental disorders.

This most recent Australian mental health survey, known as the 2007 National Survey of Mental Health and Wellbeing (2007 NSMHWB), was carried out nearly 13 years ago. Using data from this survey it was demonstrated that close to one half of all Australian adults meet the criteria for a common mental disorder (anxiety, mood or substance use disorder) in their lifetime, with 3.2 million Australians experiencing symptoms of a mental disorder in the past 12 months. Females are more likely than males to experience

anxiety disorders (17.9% compared with 10.8% for any ICD-10 anxiety disorder) and affective/mood disorders (7.1% compared with 5.3% for any ICD-10 affective disorder). However, males were more than twice as likely as females to experience substance use disorder (7.0% compared with 3.3% for any ICD-10 alcohol or drug use disorder). Other key findings included:

1. The prevalence of mental disorders was highest in the young adult age group (16-24 years) and declined with age.
2. Co-occurrence of individual mental disorders is common – one quarter of all people who experienced a mental disorder experienced more than one mental disorder.
3. Mental disorders are more common amongst people with chronic physical conditions such as asthma and diabetes (28%) when compared to people who did not have a chronic physical condition.

Critically, this survey showed that two thirds of people experiencing a mental disorder in the past 12 months or 2.2 million Australians did *not* seek help from any health professional for their mental health problems. In addition, not all people who had used services were assessed as having a mental disorder. People with affective/mood disorders (like major depression) were more likely to seek help for their mental health problems than were people with anxiety or substance use disorders. Among those with 12-month mental disorders who used services, general practitioners were the most commonly consulted group of health care professionals (70.8%), followed by psychologists (37.7%). These findings demonstrate a clear and pressing need to improve treatment rates for the common mental disorders.

A recent [media release](#) by federal Health Minister Greg Hunt announced the next generation of health surveys to be carried out in Australia in the coming years. First cab off the rank is the National Study of Mental Health and Wellbeing. Plans are in place to use similar methodology to the 2007 NSMHWB. This is a very welcome announcement because not only will it provide contemporary data on the prevalence and impact of mental disorders among community dwelling Australians, it will also allow us to evaluate the longer-term impacts of mental healthcare reforms such as the Better Access to Psychiatrists, Psychologists and General Practitioners through the Medicare Benefits Schedule (Better Access) initiative.

National mental health surveys have also been carried out in child and adolescent samples drawn from the general population. The first of these was carried out in 1998-99 and repeated again in 2014. The findings showed that overall the prevalence of mental disorders appeared to remain relatively stable across the two time periods, with one in seven children and adolescents experiencing a mental disorder in the previous 12-month period. The rates of depression, self-harm and thoughts of suicide, particularly among females, were worryingly high and point to the need to determine individual and societal changes that might be contributing to increases in mental health problems among adolescents and young adults. Representative surveys have also been carried out to determine the morbidity and mortality among Australians living with a psychotic disorder. The most recent survey, known as the Survey of High Impact Psychosis (SHIP), demonstrated that people with psychosis experience significant employment problems, social isolation and high rates of co-occurring mental and physical ill-health.

Additional national or state-based cross-sectional and/or repeated cross-section surveys that have been carried out determine the prevalence and distribution not of mental disorders themselves but of factors strongly associated with mental disorders. For example, the National Drug Strategy Household Survey is carried out every three years to estimate the prevalence of alcohol and other drug use in the community. These include basic assessment of mental health-related variables and thus provide important contextual information about changes in risk factors associated with mental disorders at the general population level.

Nationally representative population surveys are a critical source of data to understand the prevalence and distribution of mental disorders. However, they are not the only form of epidemiological investigation. Case-control, cohort (both retrospective and prospective) and other cross-sectional study designs provide important information to build a picture of the epidemiology of mental disorders. Longitudinal cohort studies are vital for providing information about the course of illness, including the typical age of onset, duration of illness and rates of remission from disorder. The most powerful type of longitudinal cohort is the birth cohort drawn from the general population. These are rare but have provided a wealth of information regarding the natural history of and interplay between a range of physical and mental health-related conditions. In Australia, there exist a range of longitudinal cohort studies, many of which include measurement of mental illness in one form or another.

Challenges

A number of significant challenges face the field of psychiatric epidemiology, many of which have existed for a long time and represent core challenges in the broader discipline of psychiatry. One of the most fundamental challenges is the ongoing refinement of our conceptualisation of mental disorders. Important questions have been raised by the high rates of mental disorders observed in population-based surveys, including whether there may have been over-diagnosis among individuals with clinically insignificant symptoms. Indeed, data from national epidemiological surveys have contributed significantly to refinements in the diagnosis of mental disorders, refinements which have been adopted by the most recent iterations of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and the International Classification of Diseases (ICD-11). More recently, the National Institute of Mental Health has been spearheading a project (known as the Research Domain Criteria project), which is designed specifically to augment clinical diagnostic signs and symptoms with biomarker data derived from genetics and clinical neuroscience with the goal of improving treatment outcomes. The ultimate aim of this project is to achieve a neuroscience-based psychiatric classification system. While there is recent criticism of the RDoC project a continued appreciation of neuroscience in the diagnosis and assessment of mental disorders is important.

Results of future psychiatric epidemiologic studies will only be as good as the instruments that are used for the assessment, the memories of the respondents who are asked to recall their internal states throughout their lifetimes, and the willingness of subjects to divulge sensitive and potentially stigmatizing symptoms. Until we have a means of verifying self-reports against a gold standard, or against reliable biomarkers, improvements in measurement will be needed. In addition to developing new instruments and establishing their psychometric properties, the advantages and limitations of several low-cost modes of identifying large groups of respondents and administering surveys (e.g., via interactive voice-response telephone technology, computerized self-assessments, and the Internet) should also be explored.

Data from future longitudinal studies will be especially important. Only longitudinal studies can shed light on both the natural history of disorders and the extent to which early treatment can mitigate the course and avert long-term disabilities. Longitudinal studies within particularly high-risk sub-groups of the population (e.g. those exposed to trauma, indigenous people, etc.) will be informative to identify factors associated with both the risk of, and resilience to, the development of mental disorders. Longitudinal studies can also help answer questions concerning the temporal relationships between disorders, such as which disorders are primary in patients with comorbidity (e.g., both mood and substance disorders) or how transitions can occur between disorders. Such studies are also critically needed to identify early signs and symptoms that predict the subsequent onset of disorders, which can then be used in future primary prevention efforts. Longitudinal studies are also critical to improve the adequacy of treatment.

Understanding the treatment needs of individuals in the general population who are found to have diagnosable mental disorders and characterising the treatment experiences of the chronically mentally ill should also remain a high priority. Whereas earlier surveys have revealed enormous unmet needs for treatment, information on the pathways into and through formal and non-traditional sources of care (e.g. digital interventions), and the extent to which individuals with mental disorders take steps on these pathways, is very limited. Mental health services research will need to identify actionable barriers that prevent access to care. Because effective treatment also requires adequate treatment intensity and duration, investigators will need to understand and improve adherence to treatments that are initiated.

Most psychiatric epidemiologic studies of risk factors have investigated psychosocial and demographic risk factors and failed to consider potential familial and biological variables as well as broader societal, economic and climate-related risk factors. Progress has been made to integrate some of these understudied variables, although the sources of information on familial mental disorders have often been meagre and inadequate. Meanwhile, biological research has often relied on small, clinically diagnosed samples. It seems timely to consider the complex interplay between psychosocial, environmental and biological variables and integrate better the multiple types of risk factors' research under a single umbrella.

Opportunities

With the above summary in mind, following are a list of 20 research priorities, in no particular order, which could address some of the unresolved issues in the field of psychiatric epidemiology:

1. Continual monitoring of the prevalence of mental disorders in the general community – achieved through large-scale representative population surveys carried out once every ten years as well as smaller scale state-based or regional surveys of psychological distress and impairment carried out yearly.
2. Further understanding of the longitudinal course of mental disorders obtained from prospective follow-up – achieved through follow-up of large-scale representative population surveys to examine incidence, duration and fluctuations in severity of disorders.
3. Better awareness of the longitudinal and lifecourse trajectories of different mental disorder from no symptoms, to sub-threshold disorder to clinical disorder.
4. Further understanding of the distribution of mental disorders in sub-groups in the population – continued surveillance of disorders in children/adolescence and the elderly, in males and females.
5. Exploration into methods of survey respondent engagement to increase the declining response rates observed in epidemiological surveys across the world.
6. Investigation into newer modes of data collection beyond standard surveys – e.g. passive data collection from smartphones and wearable sensors.
7. Exploration of the contemporary changing trends in mental disorders, particularly in more recently born cohorts of the general population.
8. Continued work on the measurement of mental disorders to arrive at an agreed upon standard measurement battery to be used across multiple studies.
9. Exploration of modern methods of data harmonisation to capitalise on the power of multiple existing data sources to triangulate on important outcomes. Related to this is the need to build in consistent measurement across multiple large-scale surveys.

10. Continued exploration of existing administrative data sets (e.g. hospital admissions) to track trends in mental health and associated risk factors over time.
11. Understanding of the prevalence of mental disorders in disadvantaged and vulnerable populations, e.g. indigenous populations.
12. Better understanding of the link between risk factors, particularly interpersonal trauma and violence, and the development of mental disorders.
13. Better understanding of the links between health risk factors (e.g. physical inactivity, poor diet, sleep, smoking, alcohol use etc.) and the development and persistence of mental disorders.
14. Better understanding of the social determinants of mental disorders.
15. Closer focus on estimating the causal relationship between risk factors and the development of mental disorders – achieved through application of modern causal inference methods and techniques.
16. Better understanding of the comorbidity among mental disorders and between mental and physical disorders – including the temporal sequence of comorbidity and the implications of comorbidity for the classification of mental disorders.
17. Better grasp on the treatment gap – the difference between reported prevalence and reported use of services for mental disorders including an awareness of how the severity of mental disorders relates to treatment.
18. Continued efforts to build models that link need for services to availability of services and ways of efficiently modelling treatment services to enhance treatment coverage.
19. Continued efforts to address stigma, not necessarily about the awareness of mental illness itself but about accessing appropriate treatment for mental disorders.
20. Further understanding of how digital/online treatment services fit into the treatment landscape and how online and face-to-face treatment options can work in concert with each to address all levels of the spectrum of severity and need for services for people with mental disorders.