Editorial

Psychiatric epidemiology and global mental health: joining forces

In our view, population mental health is integral to population health, or put more simply, there can be ‘no health without mental health’.\(^1\) It follows that there can be ‘no epidemiology of health without mental health.’\(^2\) One obvious reason for paying more attention to mental health is the large contribution of mental disorders to the burden of disease across the globe.\(^2\) Another reason is that people with severe mental disorders represent a vulnerable and socially excluded population.\(^3\) Their lives are more likely to be afflicted by poverty, discrimination, human rights violations and increased morbidity and mortality rates. If we wish to ameliorate social inequality, we need to find ways to improve the living conditions as well as the health of this especially disadvantaged group. There are also many other relationships between social inequality and mental health. For example, socially advantaged groups tend to have more access in early life to environments that stimulate social, emotional and cognitive development, and these early advantages are related to a range of better mental health and social outcomes across the life course. Taking the broadest view, one could argue that the most valuable resource of modern societies is ‘human capital’, that the benchmark of progress is ‘human development’ and that mental health is fundamental to both.\(^4\)–\(^7\)

The reviews in this issue portray a remarkably diverse range of contributions that epidemiologists and other researchers have made to understanding and improving the mental health of populations across the globe. The thread that connects them is an exploration of the interface between psychiatric epidemiology and global mental health, and how closer links might be forged to the mutual benefit of both fields. Our introduction and the three accompanying commentaries\(^8\)–\(^10\) focus on this theme from different angles.

Global mental health

In countries of all income levels, mental health research and services are hampered by the minimal resources allocated to them. The mental health proportion of health budgets is far lower than the proportion of the total burden of disease attributed to mental disorders. Until recently, in many low- and middle-income countries (LMIC), little or nothing was known about the mental health of the population, mental health services were scant at best and local capacity for mental health research was minimal or absent. Despite substantial variation among regions, and among countries within regions, as well as notable exceptions such as Chile, most or all of these inadequacies characterized the majority of LMIC.

The mission of the newly emergent academic field of ‘global mental health’ is to address these and other issues in population mental health worldwide.\(^11\)–\(^15\) This field has grown in tandem with a social movement that advocates for change in our understanding and treatment of people with mental disorders across the globe (www.globalmentalhealth.org). Our view is that its status as partly distinct from global health is required for global mental health to flourish at the present time. Otherwise the low priority given to mental health is likely to persist within global health.

Under one definition, global health (and hence global mental health) examines factors that affect health across national boundaries, promotes health equity both within and among nations, addresses both prevention and clinical care, is highly interdisciplinary and values reciprocal exchange of knowledge in mutual partnerships among countries of different income levels.\(^16\) Thus, global health has a broader remit than ‘tropical’ medicine and ‘international health’ which are traditionally targeted to particular health conditions (typically infectious diseases and maternal and child health conditions) or countries (typically low-income countries). It also differs in practice from ‘public health’ which tends to be focused on one community or population.

An important goal of global mental health has been to identify and address the most glaring unmet needs for mental health care in LMIC.\(^10\)–\(^15\) The immediacy of this goal naturally gives it some primacy. In meeting this goal, guiding principles include the further development and use of
evidence-based practices and respect for human rights. A variety of strategies are being used. One is the integration of mental health into high priority health care platforms such as maternal and child health where mental health needs are great and interventions have proved beneficial. Another is the development of community-based care for people with severe mental disorders. Where mental health specialists are scarce, these strategies often require ‘task sharing’ in which services are delivered by non-specialists (ranging from general doctors to community workers, depending on context) who are supervised by mental health professionals.

A range of other goals are widely shared in the field of global mental health.\textsuperscript{10,14,17} These include promoting social inclusion and civil rights of people with mental disorders, combating stigma and discrimination, involving service users in shaping the care they receive and building regional and local capacity for mental health research. Global mental health is also concerned with improving equity, access and quality of mental health services in high-income countries. The Mental Health Action Plan developed by the Mental Health Division of the World Health Organization (WHO) articulates guiding principles relevant to all countries, as well as targets and timelines that are appropriate for specific countries depending upon resources and other factors. The WHO Assembly endorsed the implementation of this plan in May 2013.\textsuperscript{18}

**Overview and commentary on the reviews**

We gave priority to epidemiological questions that have been brought to the fore by the rapidly growing field of global mental health.\textsuperscript{1} Thus, the reviews extend to topics that are not central in psychiatric epidemiology, but that could or should be. Conversely, we also gave priority to questions at the heart of psychiatric epidemiology,\textsuperscript{19} that have not been prominent in global mental health but that could or should be. This approach has the advantage of stimulating new ways of thinking about both fields and about the relationships between them.

The 12 reviews are organized into four sections with three papers in each. We consider the four sections in turn: measurement, burden and impact, aetiology, and prevention and services evaluation.

**Measurement**

The three reviews in this section each consider a central concept in global mental health: social inclusion, stigma and cross-cultural measurement of distress. They all find a scarcity of instruments designed to measure the concept, as well as a dearth of evidence on cross-cultural use and validity for any instrument. They all make thoughtful suggestions as to how to overcome these limitations in future research.

Baumgartner and Burns\textsuperscript{20} synthesize what we know about the concept and measurement of social inclusion (and the related construct of social integration). Since social inclusion of people with mental disorders is a broad goal for global mental health and a specific goal for many interventions, we must aim to precisely define and measure it. The review shows that we have not fully achieved conceptual clarity and that few instruments are specifically directed toward measurement of an explicit construct of social inclusion. Moreover, none of the existing measures were developed for use in LMIC. It also highlights the problem of making valid comparisons across different cultural contexts, which is a theme of all three papers on measurement. The authors conclude that an instrument needs to be developed that is designed for cross-cultural use and for the contexts of LMIC but that, in the meantime, adaptations and/or additions could be made to existing measures that would enhance their contextual validity.

The review by Yang et al.\textsuperscript{21} pertains to the stigma associated with mental disorder. Stigma facilitates the neglect of mental health compared with other kinds of health, as well as discrimination toward people with mental disorder and violation of their human rights. It also impedes recovery from mental disorder. Therefore the field of global mental health needs measures of stigma that can both take into account cross-cultural differences and yield reasonably comparable measures across the globe. The authors comprehensively review existing studies of stigma done in LMIC or in minority cultures in high-income countries. They find that there are few stigma measures that have been derived from these groups. The available evidence supports starting from a theoretical framework in which ‘what matters most’ within a particular culture is considered as a key determinant of stigma, and is identified for that group and incorporated into quantitative measurement. For example, in some Asian populations, ‘face loss’ to the family matters a great deal in everyday life, and might affect family marriages and employment and, more broadly, the reputation of the family lineage.

Kohrt et al.\textsuperscript{22} review the literature on comparisons of ‘cultural concepts of distress’ and psychiatric nosology. This term was introduced into the Diagnostic and Statistical Manual 5 (DSM-5)\textsuperscript{23} and defined as ‘ways that cultural groups experience, understand, and communicate suffering, behavioral problems, or troubling thoughts and emotions’. The authors make a cogent argument for the usefulness of such comparisons in global mental health, including validation of psychiatric diagnoses, identifying socially vulnerable groups and identifying distress not captured by standard nosology. They find that most of the
extant literature is of poor quality, impeding conclusions that can be drawn at this time. They suggest that launching rigorous epidemiological studies of this question could advance understanding of mental disorder as well as improve services in global mental health.

**Aetiology**

The papers on aetiology help us to imagine ways in which the interface between psychiatric epidemiology and global mental health might be strengthened or even transformed. Jorm and Ryan\(^1\) review what is known about differences in subjective well-being among nations and across time. After a lucid synthesis of a complex topic, they suggest that subjective well-being may increase with national income up to a point, after which other determinants may become more prominent, such as the social and political context and the opportunity for personal autonomy and job creativity. Subjective well-being is not simply the converse of mental disorder and might be seen as a natural domain for studies of population mental health, at both societal and individual levels. Psychiatric epidemiology has evolved, however, into a field that primarily studies mental disorders, and subjective well-being has been mainly taken up by other fields, notably psychology, economics and political science, exemplified by the authors of the annual World Happiness Reports.\(^2\) Thus, the review offers new ways of thinking about the outcomes we should investigate. Should subjective well-being be considered as a key component of global mental health, and should psychiatric epidemiology expand its horizons to explicitly encompass subjective well-being?

Based on recent progress in genetics reviewed by Kim and State,\(^3\) neurodevelopmental disorders (NDDs) previously thought to be aetiologically and clinically distinct from one another now have to be reconceptualized as do other mental disorders. To illustrate, the authors describe instances in which a particular copy number variant (CNV) has been related to a wide range of NDDs (e.g. intellectual disability, autism, schizophrenia, language impairment and others). After discussing the findings that threw up this conundrum, the authors suggest useful ways in which psychiatric nosology and genetic discoveries might be made more compatible. They also emphasize that population-based samples will capture a wider range of phenotypes than clinic-based studies and illustrate this from their own work. We agree and further suggest that genomic studies in populations across the globe will capture a wider range of genetic causes for NDDs. Sub-Saharan African populations are particularly understudied, and because they tend to have more ancient lineages than populations in other regions, may be particularly revealing.

To achieve this requires building capacity for genomic research and psychiatric epidemiology on NDDs in Africa, alongside opportunities to strengthen research on changes in mental health services, which are the primary focus of global mental health. One of us (E.S.) is involved in a genomics study of schizophrenia in South Africa where these elements are present.

Lyell et al\(^4\) focus primarily on the evidence base for prenatal/preconceptional nutrition, substance use and exposure to environmental agents as risk factors for autism spectrum disorders (ASDs). Among these candidates, the strongest evidence thus far is for a protective effect of periconceptional folic acid supplements and an increased risk after prenatal exposure to air pollution. Especially for environmental agents, the authors review the strengths and weaknesses of published work, identify plausible but understudied agents and suggest future directions for this kind of epidemiological research. With respect to the theme of our commentary, ASDs provide another example of an effort to move in the direction we propose. In the USA, powerful advocacy groups have succeeded in raising awareness about autism and catalyzing government investment in autism-related services as well as science. One of these groups, Autism Speaks (www.autismspeaks.org), launched a Global Autism Public Health (GAPH) initiative which has helped to spawn autism research groups (as well as advocacy) across the globe, particularly in LMIC, where the broader remit of ‘autism and other neurodevelopmental disorders’ is sometimes more appropriate due to scarce resources. GAPH has had remarkable success in putting autism on the agenda of global mental health. Moreover, it has funded signal examples of epidemiological, genomic and service-related research in LMIC. Such global mental health research platforms provide opportunities to launch aetiological research on ASDs as well as other child mental disorders.

**Burden and impact**

The proliferation of community surveys of mental disorders across the globe provides the foundation for these three papers. The data that have been collected are reviewed and integrated to answer questions about overall prevalence, time trends, regional variation and emerging problems in population mental health. Generally, community surveys rely upon structured diagnostic interviews administered by non-clinicians. This method is best suited to common mental disorders and in particular to estimates of their period prevalence (e.g. 1 month, 1 year)\(^5\) as reflected in the focus of the reviews in this section. A modification of design\(^6\) makes it possible to obtain reliable data on disorders with lower prevalence and that are
difficult to diagnose by lay interview, such as ASDs and schizophrenia, but also increases cost and is rarely applied in large-scale community surveys.

The identification and treatment of attention deficit / hyperactivity disorder (ADHD) has increased over recent decades, especially in the USA and some other high-income countries. This raises a question that has attracted a great deal of public attention: is there a variation in prevalence between countries and has the ‘true prevalence’ of ADHD increased in some countries? The comprehensive review of ADHD prevalence studies by Polanczyk et al. is the first to directly address this question, drawing on 135 studies conducted during 1985–2012 in a wide range of countries. They find no evidence for any marked historical trend or regional variation, once the differences in methods used by studies are taken into account. The authors call for more standardization of methods across studies, and for more studies in some regions such as Africa, to strengthen future exploration of historical and regional variation.

Wu and Blazer review studies that report data on substance use disorders—alcohol, illicit drugs or nonmedical prescription drugs—in midlife (age 50–64 years) and late life (age 65+) from 2005 onwards. This topic has received little attention, despite the growth of the 65+ age group in almost all countries due to rapid demographic transition, and the increased risk of substance-related consequences among affected older individuals. The available data, much of which comes from the USA (an indicator of an important knowledge gap in global mental health), suggest that substance use disorders as a whole are common in midlife and somewhat less common in late life (if nicotine dependence is added to the substance use disorders reviewed, they are also common in late life). Especially in late life, these disorders tend to be under-recognized and under-treated. The authors predict an increase in illicit drug use disorders among older persons in the coming decades, underscoring the need to improve surveillance and treatment of all substance use disorders in late life. This prediction is based on current data showing illicit drug use disorders to be rare in late life, but much more common in midlife (50–64 years), which they interpret as partly a cohort effect.

In the 2010 Global Burden of Disease initiative, systematic reviews and meta-analyses were used in the effort to integrate results for specific mental disorders derived from many independent community surveys. The review by Steel et al. builds upon and extends this work. One of their original contributions is to estimate the combined prevalence of ‘common mental disorders’, primarily mood, anxiety (excluding simple phobia) and substance use (excluding nicotine) disorders. These disorders frequently co-exist and are most typically encountered in primary care settings and thus the combined prevalence is relevant to global mental health policy and practice. Their analysis includes 175 population studies in 63 countries published 1980–2013 for the age range 16–65 years. Pooling across all studies that reported period prevalence, nearly one in five persons met criteria for a common mental disorder in the past 12 months. Translated to the current global population, this suggests that nearly a billion people aged 16 to 65 years suffer from a common mental disorder in any given year. The authors considered the influence of historical time, region, country income and study method. Although prevalence was high in all time periods and regions, there were some intriguing regional differences which merit further exploration.

Prevention and services evaluation

Preventive interventions and the evaluation of the benefits of mental health care programmes are essential components of global mental health and also fall within the scope of psychiatric epidemiology. The reviews in this section challenge us to broaden our perspective on how epidemiological thinking could be applied in global mental health.

A key goal of global mental health is to scale up services for people with mental health problems. Thus, in order to assess the impact of such initiatives, we need to evaluate the degree to which a mental health programme provides effective care to the people at whom it is targeted. In this context, De Silva et al. review evaluations of routine mental health programmes delivered at scale to the general population. Only seven studies estimated population coverage through reporting both a denominator (those targeted by the programme) and a numerator (those who use and benefit from the programme); five of these studies were from high-income and two from upper-middle-income countries. No study assessed the programme’s health benefit of those who used it. Thus, they identify a major gap in the evidence in the global mental health field, and suggest feasible methods to collect such evidence.

High-quality early childhood education (ECE) interventions for disadvantaged children are a promising strategy to promote child development and benefit adult health and achievement. These ECE interventions are designed for the period before routine education begins at around age 6 years. The potential for such early interventions to contribute to preventing child and adult mental health problems is not yet widely recognized in global mental health. Baker-Henningham contributes the first review to explicitly focus on the effects of ECE interventions in LMIC on child behaviour and mental health. Given the heterogeneity of interventions and outcome measures, among other factors, meta-analysis was not appropriate. Her review
thoughtfully evaluates the strength of the evidence for short- and long-term effects on children and their caregivers, proposes pathways by which ECE may exert effects and discusses design and implementation. One pragmatic observation is that ECE interventions may be most effective when they address caregivers’ practices and mental health as well as the children themselves. She emphasizes that ECE needs to be accompanied by ongoing investment in child development after the early years. In this regard, it is worth noting that access to even a routine education is still not a guaranteed entitlement for many children around the world, especially girls, and would be a wise investment from a global health perspective.

Van Zoonen et al. conduct a meta-analysis of 32 trials of psychological preventive interventions for depression, a major contributor to the global burden of disease. Almost all were directed to people at high risk (selective prevention) or with prodromal symptoms (indicated prevention). Most were done in the USA or Europe. Overall they estimate that these interventions reduced incidence of depression by on average 21%. This result provides the strongest evidence to date that prevention of depression can be effective, and should stimulate further research on it.

Global mental health epidemiology

Psychiatric epidemiology and global mental health are inherently dependent upon one another and could each reap enormous benefits by extending collaboration at their interface. ‘Global mental health epidemiology’ is an apt term to refer to research at this interface. Building upon our comments on the reviews in this issue, we offer preliminary thoughts about some promising avenues for expanding such research. We call for an ongoing and more comprehensive dialogue that will help to shape and characterize the uses of epidemiology in global mental health. The scientific programme of the upcoming World Congress of Epidemiology (www.epidemiology2014.com) will include forums for this dialogue to take place.

The development of assessments that both capture cross-cultural differences and enable meaningful comparisons across cultures is a priority for global mental health epidemiology. The three reviews on measurement illustrate that, in key areas, such assessments are not yet available, but also that it should be feasible to develop them. This work can draw upon a tradition of cross-cultural research in psychiatric epidemiology as well as new approaches that have emerged in the global mental health field. The study of cross-cultural differences is important in its own right. Advances in cross-cultural assessments are needed for much more than that, however, as they provide the foundation for rigorous research on a very wide range of questions, including all the areas covered in these reviews. For example, the review by Steel et al. found intriguing regional differences in the prevalence of common mental disorders, but it is not clear to what degree these are best explained by cross-cultural differences in the manifestation or measurement of these disorders, or by true differences in prevalence.

Another priority is building capacity for aetiological research in LMIC. This has unlimited potential for improving our understanding of the causes and prevention of mental disorders globally. Discoveries often follow from relating variation in disease to variation in social, cultural, genetic and other factors. The variation in all these domains is much greater across the globe than it is within the relatively small proportion of the population of high-income countries where most research is conducted. The yield from the large investments being made in genomic and neuroscience research to discover the aetiology of mental disorders could be dramatically increased if this research enterprise took on a truly global dimension. Also, from the perspective of social justice, results should be widely relevant to populations across the globe, and not just to the most wealthy ones who form a minority. As global mental health initiatives extend the infrastructure of services and operational research in LMIC, they also lay groundwork for research on causes. We suggest that the importance of and capacity for causal research could be given more attention in these initiatives.

A third priority is to apply epidemiology within operational research on prevention and care. The recent advent of implementation science has given more impetus to this kind of research and, in particular, to the methods that are appropriate for scaling up interventions to reach large populations where health resources are limited. The mhGAP intervention guide published by WHO provides an evidence-based starting point for frontline mental health care. However, the bulk of that evidence still comes from high-income countries, and the delivery of mhGAP needs to be elaborated and tested as it is fielded in a much wider range of countries and contexts. This process is under way and has been accelerated by increased funding for global mental health; an online database has been established to document promising innovations and the evidence that supports them. Epidemiology could make a key contribution to this interdisciplinary work.

Conclusion

The scope of global mental health epidemiology goes far beyond the points we have raised here based on these reviews. Many other questions need to be addressed in an ongoing dialogue. We propose at least three areas which
can be part of this dialogue. The first is the investigation of pathways that might connect ongoing globalization to mental health of populations. These include: urbanization and migration; climate change; global trade regulations and corporate markets; demographic changes with increasing life expectancy; new forms of communication including mobile phones and social media; environmental toxins; and civil conflicts. As we consider how these pathways could be investigated, both psychiatric epidemiology and global mental health are likely to come into play.

The second area is the interrelationship between mental disorders and other non-communicable diseases. For example, we are faced with global epidemics of tobacco use and unintentional injury and metabolic disease. A better understanding of the mechanisms that connect mental disorders to these conditions would have implications for design and delivery of prevention and treatment.

The third area was touched upon in this issue but merits far more attention than we could give it here. Since the 1970s, psychiatric epidemiology has increasingly defined itself as the study of mental disorders. As reviewed by Jorm and Ryan, the study of ‘good mental health’ or subjective well-being was taken up instead by others, such as economists and psychologists. It could be argued that an effective way to reduce the global burden of mental disorders would be to identify and augment the determinants of good mental health, including social and economic and political conditions that promote subjective well-being of populations. The premises and the evidence for this standpoint need to be spelled out and fully debated. We have therefore left open the question of whether psychiatric epidemiology and global mental health should join together and take a major role in this endeavour.

We can find inspiration for this dialogue in the classic work of Jerry Morris who, in the aftermath of World War II, articulated uses of epidemiology that remain relevant and compelling today.° Morris took a pragmatic and engaging approach and focused on emerging questions about population health in that time period. His approach may provide a good model for considering the uses of epidemiology in the changing panorama of global mental health.

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References
Mental health looms large for those of us concerned with health of populations. As the paper by Steel et al. in this issue shows, based on 175 surveys across 63 countries, we can say that just under 30% of us will have a mental disorder at some time in our lives.1 Questions have been raised as to whether we should think of this as an epidemic of mental illness, or an overactive psychiatric profession, and the extent to which it is driven by the availability and marketing of pharmaceutical remedies.2 Even allowing for debates as to whether misery or distress should receive a medical diagnosis, this represents a great deal of human suffering.

Further, like so much else, mental disorder does not strike randomly, but with greater frequency the lower