

The global distribution of mental and substance use disorders: research gains and challenges

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Commentary on: Ishikawa H, Kawakami N, Kessler R (2015). Lifetime and 12-month prevalence, severity, and unmet need for treatment of common mental disorders in Japan: results from the final dataset of World Mental Health Japan Survey. *Epidemiology and Psychiatric Sciences*. (doi:10.1017/S2045796015000566).

Ishikawa and collaborators presented the 12-month prevalence, severity and unmet treatment needs of common mental disorders in Japan, drawing on findings from the World Mental Health Japan Survey conducted between 2002 and 2006. Findings showed that mental and substance use disorders are highly prevalent in the population, with 7.6% of participants meeting clinical thresholds for a diagnosable mental or substance use disorder in the past year. These findings are in line with our understanding of mental and substance use disorders as significant causes of disease burden, in Japan and globally. The recently published Global Burden of Disease Study 2013 (GBD 2013) estimated mental and substance use disorders as the fourth leading cause of disease burden (measured using disability-adjusted life years) in Japan, and the fifth globally in 2013 (GBD DALYs Hale Collaborators, 2015).

It is reassuring to see that we have now reached a point in the field of psychiatric epidemiology where sufficient data exists for 20 mental and substance use disorders to be featured in GBD 2013's estimation of disease burden (GBD DALYs Hale Collaborators, 2015; Global Burden of Disease Study Collaborators, 2015). Surveys such as the World Mental Health Japan Survey are valuable contributors. They form the basis for burden of disease analyses which require representative and high-quality estimates of prevalence, incidence, remission, mortality and severity for the estimation of years lived with disability, the non-fatal component of the disability-adjusted life year

(Global Burden of Disease Study Collaborators, 2015). That said, the data available are not complete and much can be done to improve the coverage and quality of research into the global distribution of mental and substance use disorders.

There remains a large discrepancy between the significant proportion of disease burden attributable to mental and substance use disorders and the resources available to: (1) produce reliable estimates of burden for all countries; and (2) ultimately reduce this burden (Whiteford *et al.* 2013a). High-quality population surveys investigating the distribution of mental and substance use disorders are a necessary, albeit often costly, part of these efforts. In addition to providing data for burden of disease analyses, they identify the proportion of the population who may need intervention, therefore providing a critical input when estimating service requirements. They provide policy-makers with information that can, along with considerations of cost-effectiveness and equity, be used in resource allocation within the health sector. Finally, they allow us to monitor changes in the distribution of mental and substance use disorders over time which is important when evaluating what has been successful at reducing burden (Chisholm *et al.* 2004).

For the purposes of quantifying the global burden of mental and substance use disorders, the current gold standard is data derived from nationally-representative samples using definitions of mental and substance use disorders proposed by the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychiatric Association, 2000) or the International Classification of Diseases (ICD) (World Health Organization, 1992). The former component ensures that data are representative of the entire country rather than select population groups who may be at disproportionately higher or lower risk for mental and substance use disorders. The latter ensures that mental and substance use disorders are defined consistently between surveys, hence facilitating the comparison of output. Reviews of the availability of data meeting these criteria found that of the 100 000 data sources available on the

Address for correspondence: A. J. Ferrari, University of Queensland, School of Public Health, Herston, Queensland, Australia.
(Email: alife_ferrari@qcmhr.uq.edu.au)

topic in 2010, less than 1% were of sufficient quality to reliably quantify the global epidemiology of mental and substance use disorders (Whiteford *et al.* 2013b). Data availability for GBD 2013, drawing on epidemiological data up to the end of 2013 was similar (Global Burden of Disease Study Collaborators, 2015). Countries most lacking epidemiological data are from low- and middle-income regions such as Central and Eastern Asia, sub-Saharan Africa, Andean Latin America and Oceania. Australia, North America and Western European countries provide the majority of data. There is also a paucity of data for epidemiological parameters other than prevalence with such parameters typically requiring longitudinal surveying methods which are more costly to administer (Whiteford *et al.* 2013b).

Usability of data on the global distribution of mental and substance use disorders is further limited by the case definition used and large variations in the choice of instruments to identify individuals with these disorders. Usability is also impacted by sampling methodology and the reliance on samples that are not representative of the general population. Epidemiological research into subpopulations can be useful in its own right but cannot be used for generating nationally-representative estimates. Incomplete reporting makes the synthesis of data at the global level difficult, for instance where estimates generated from different surveys are unequally distributed between disorders, age groups and countries (Ferrari *et al.* 2013; Whiteford *et al.* 2013b). In most cases, national epidemiological studies are designed to inform local priority setting and evaluations rather than to ensure comparability with surveys conducted elsewhere. Consequently, it remains unclear the extent to which differences between studies are 'real' or are driven by differences in methodology and design.

A solution to this would be to conduct a cross-national survey using consistent methodology for data collection and assessment. The closest we have to this gold standard is the World Health Organization's World Mental Health Survey (WMHS) Initiative (Kessler & Ustun, 2008), which also encompasses the work presented by Ishikawa and collaborators. The WMHS initiative has conducted regional- or nationally-representative surveys of mental and substance use disorders in 28 countries. In each country, standardised methodology (similar to that presented by Ishikawa and collaborators) is used to administer the World Health Organization Composite International Diagnostic Interview (WMH-CIDI). The WMH-CIDI is a fully structured lay administered diagnostic interview used to facilitate cross-national comparisons of the prevalence of disorders, risk factors and patterns of service use in the general population (Kessler & Ustun, 2008).

Although the WMHS approach deals with the reliability and comparability of data between surveys to some extent, other challenges around data validity and interpretation exist. For instance, Ishikawa and collaborators found that the 12-month prevalence of mental disorders was lower in Japan compared with other participating WMHS countries. This may be partly explained by the reliance on the WMH-CIDI and DSM or ICD criteria to identify cases. The DSM and ICD are the two established but predominantly Western-based classificatory systems (World Health Organization, 1992; American Psychiatric Association, 2000). There has been much debate around the generalisability of both of these diagnostic systems to non-Western cultures (Jorm, 2006), creating further challenges in accumulating data on global epidemiology. For example, some languages do not have words to describe concepts such as 'sadness' or 'depression' in a manner consistent with how they are described in DSM and ICD. The presence of mental and substance use disorder symptoms may also be seen as the result of spirits or curses, rather than as medical disorders. In such settings, individuals can present with somatic manifestations of disorders which are not detected as symptoms of mental disorders in surveys using DSM and ICD classifications (Cheng, 2001). The ideal solution here would be to have cross-culturally comparable case definitions and case-finding methods for mental and substance use disorders. Unfortunately, this has not yet been accomplished. Until then, the use of clinically-trained interviewers (such as psychiatrists and psychologists as opposed to lay interviewers) where it is unclear whether DSM and ICD criteria are sensitive to all disorder presentations has been useful (Phillips *et al.* 2009).

There has been an influx of research into the field of psychiatric epidemiology in recent decades. As researchers continue to improve on methods for quantifying the distribution, severity and outcomes of mental and substance use disorders, work can also expand to identifying modifiable risk factors and formulating preventative intervention strategies (Kessler, 2000; Insel & Fenton, 2005). For instance, various forms of abuse, violence and childhood adversity have been linked to common but disabling disorders such as major depression and anxiety disorders. There have also been investigations into potential protective factors of mental and substance use disorders such as social support and active coping, and their integration into preventative intervention strategies (Kessler, 2000). Despite the fact that linkage studies have yet to identify a gene marker for mental or substance use disorders, the addition of genetics research to psychiatric epidemiology is another area of increasing

interest (Moffitt, 2005). Ultimately, all of this work can serve as key inputs for efforts in reducing the ubiquitous burden of mental and substance use disorders.

A. J. Ferrari^{1,2,3}

¹University of Queensland, School of Public Health, Herston, Queensland, Australia

²Queensland Centre for Mental Health Research, Wacol, Queensland, Australia

³University of Washington, Institute for Health Metrics and Evaluation, Seattle, USA

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