



Using brief measures to identify depression and other mental disorders: A challenge for research and clinical practice

Descriptions of symptoms of mental illnesses, such as major depressive disorder (MDD), anxiety disorders and psychoses are poignantly captured in some of the world's earliest literature, medical tomes and religious canons (Porter, 2002). Many of these descriptions are accompanied by observations about treatment, demonstrating that humanity has sought to diagnose and treat symptoms of mental illness for millennia.

In more recent decades our understanding of depression and related conditions have been codified into formal diagnostic classification systems. The International Classification of Diseases (World Health Organization, 2020) and the Diagnostic and Statistical Manuals (DSM; American Psychiatric Association, 2013) are the most widely used classification systems in the Western world and have been standardised into diagnostic tools and measures (Kessler and Üstün, 2004). These tools are administered in epidemiological surveys to generate estimates of prevalence of mental disorder, service utilization and disability (WHO World Mental Health Survey Consortium, 2004), but their utility in clinical practice and research is limited due to the considerable amount of time required for their administration.

In parallel, brief versions of diagnostic questionnaires have been designed to quickly and accurately identify people who would likely meet diagnostic criteria for a disorder and benefit from treatment, that is, 'cases'. Examples of these include the Patient Health Questionnaire-9 Item (PHQ-9) and the Generalized Anxiety Disorder-7 Item (GAD-7), which were designed to screen for DSM-IV congruent MDD and generalized anxiety disorder, respectively (Spitzer et al., 1999). These and other brief measures are simple to administer, easily interpreted, sensitive to change, and consequently, have been widely adopted as routine outcome measures in clinical practice in mental health services across several countries (Baigent et al., 2020; Department of Health, 2021).

Recently, such brief measures have played an important role in measuring distress and disorder in populations across the world, who have understandably experienced increased distress in response to the broad health and societal impacts of COVID-19. A desktop review of recent and highly cited papers indicate that studies using brief measures such as the PHQ-9 have identified high rates of depression in representative samples across several countries (Hyland et al., 2020; Li et al., 2020; Bueno-Notivol et al., 2021; Kaiser Permanente National, 2018; Choi et al., 2020). These and other reports have been disseminated via mainstream media and have influenced decisions by Governments across the world to increase funding to, and availability of, mental health services.

This editorial seeks to remind our field that although brief measures are useful tools, when used inappropriately, they may lead to high false

positive rates of cases, unnecessary treatment, and may pathologise normal human distress. This is not to say that people are not distressed by the impacts of COVID-19. To the contrary, it is important to acknowledge the significant emotional toll, loss and distress experienced by literally billions of people around the world, and at the time of writing this editorial, shows little sign of abating. However, we warn that inappropriate use of brief measures and particularly their current cut-offs may lead to inflated estimates of psychological disorder, which may result in potentially harmful consequences, as noted below.

An example is the use of the PHQ-9 which comprises 9 items corresponding to symptoms of MDD, each scored on a 4 point-scale. The PHQ-9 has a total score range of 0–27, with a score of ≥ 10 considered consistent with DSM-IV MDD (Gilbody et al., 2007; Kroenke et al., 2010). Unfortunately, this simple method of identifying cases, in addition to being based on self-report and not capturing the clinical impression and details obtained when talking to a patient, fails to consider important diagnostic criteria used to differentiate people with and without MDD. Two of these additional criteria are described below, followed by an example.

First, to meet DSM-IV criteria for MDD, a person must have experienced key symptoms of depression, that is, "loss of pleasure or interest" (item 1) or "feeling depressed or hopeless" (item 2) for more than half the days in the previous two weeks, equivalent to a score of 2 or more on at least one of those items. Second, a person must rate the overall impact of their symptoms as moderately impairing. Neither of these criteria are considered in the calculations of the PHQ-9 total score, in fact the second criterion is omitted in most versions of the PHQ-9. However, they significantly affect estimates of cases, as shown in Table 1, from the Australian MindSpot Clinic (Titov et al., 2020), which uses the PHQ-9 during screening assessments. These and other data will be provided in more detail in a subsequent publication, but this example will suffice.

As shown in Table 1, the estimates of cases of MDD vary dramatically based on criteria. That is, using a cut off of ≥ 10 , 72.5% of a sample of 10,055 people who completed an assessment at MindSpot would be identified as cases, that is, considered likely to meet diagnostic criteria for MDD. However, if the first additional criterion noted above is applied, the proportion of cases of MDD reduces to 49.2%. And, if the second additional criterion is applied, the proportion of cases drops to 39.1%. Thus, applying these two important criteria reduces the number of cases by close to 50%, and this number will drop further if other DSM-IV criteria are correctly applied.

Why does this matter? Misidentifying a person or population as being likely of having a mental disorder is not without risk or consequence. Those who are misidentified may seek unnecessary, expensive, and

<https://doi.org/10.1016/j.invent.2021.100450>

Received 23 August 2021; Accepted 24 August 2021

Available online 1 September 2021

2214-7829/© 2021 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Table 1

Estimates of cases of major depressive disorder based on several criteria using a sample from the MindSpot Clinic.

N = 10,055	Cases (%)
Total score PHQ-9 \geq 10	7291 (72.5%)
Total score PHQ-9 \geq 10 AND Score \geq 2 on PHQ-9 items 1 or 2	4946 (49.2%)
Total score PHQ-9 \geq 10 AND Score \geq 2 on PHQ-9 items 1 or 2 AND Significant functional interference	3935 (39.1%)

potentially dangerous pharmacological and or psychological treatment. They may also experience increased fear, hopelessness, and a loss of confidence in their own ability to manage their symptoms. At a community level, the additional fear and distress triggered by media reports based on inflated estimates of depression, at a time when people are already concerned about physical health, the economy, the environment and other major issues, may contribute to and exacerbate feelings of hopelessness and helplessness. Finally, misidentifying people as cases may deter them from taking personal actions to change cognitive and behavioral habits and routines which can improve their psychological health.

Our point is not to criticise current or previous work that has used or relied on brief measures and convenient cut-offs. There is little doubt that brief measures play an important role in helping identify people who would benefit from further assessment and possible interventions. We also recognise that simple cut-offs and scoring methods facilitate tracking and reporting of progress during treatment and provide metrics for communicating and benchmarking service quality and safety. However, our point is that inappropriate use of brief measures and cut-offs can cause distress and harm.

These observations raise questions about our understanding and definitions of depression. Perhaps the strict diagnostic criteria as codified in formal diagnostic systems are no longer relevant or helpful in today's world? Alternatively, perhaps we have gone too far in trying to identify cases and are now pathologizing normal human experience of distress as pathological and needing treatment (Horwitz and Wakefield, 2007; Frances, 2013)? Our field has accepted that the binary of depressed vs. non-depressed is convenient, but inadequate and that symptoms and distress exist on a continuum (Haslam, 2003). However, our field has not yet systematically sought to differentiate between people with clinically significant symptoms and distress and people who are bored, experiencing lassitude, ennui, angst, Weltschmerz, funk, or are just feeling fed up with a life that can sometimes feel unpleasant. And not surprisingly, there is no consensus about how best to manage these other states.

How do we best address these issues and risks? First, it is clear is that when using brief measures, we need to carefully consider our criteria for identifying cases of depression. Second, we should consider whether these issues also apply to brief measures designed for other mental health conditions. In parallel, it is important to explore other data sets to test whether the data presented here are replicated. We also believe it is important that mental health researchers attempt to systematically and reliably differentiate between conditions such as MDD, sadness, lassitude, Weltschmerz, and others, and also, how best to support patients to manage these experiences. But at a minimum, we recommend that researchers consider the additional criteria noted above when reporting

prevalence rates, to ensure that reports are accurate and valid and to ensure that they do not contribute to pathologising normal human distress.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders: DSM-5.
- Baigent, M., Smith, D., Battersby, M., et al., 2020. In: The Australian Version of IAPT: Clinical Outcomes of the Multi-site Cohort Study of NewAccess, pp. 1–10.
- Bueno-Notivol, J., Gracia-García, P., Olaya, B., et al., 2021. Prevalence of Depression During the COVID-19 Outbreak: A Meta-analysis of Community-based Studies, 21.
- Choi, E.P.H., Hui, B.P.H., Wan, E.Y.F., 2020. Depression and anxiety in Hong Kong during COVID-19. *Int. J. Environ. Res. Public Health* 17, 3740.
- Department of Health, 2021. Psychological Therapies: A Guide to IAPT Data and Publications. Available at: file:///C:/Users/mq20111500/Downloads/Guide+to+IAPT+data+and+publications.pdf.
- Frances, A., 2013. Saving Normal: An Insider's Revolt Against Out-of-control Psychiatric Diagnosis, DSM-5, Big Pharma and the Medicalization of Ordinary Life. Harper-Collins Publishers, US.
- Gilbody, S., Richards, D., Brealey, S., et al., 2007. In: Screening for Depression in Medical Settings With the Patient Health Questionnaire (PHQ): A Diagnostic Meta-analysis, 22, pp. 1596–1602.
- Haslam, N., 2003. Categorical versus dimensional models of mental disorder: the taxometric evidence. *Aust. N. Z. J. Psychiatry* 37, 696–704.
- Horwitz, A.V., Wakefield, J.C., 2007. The Loss of Sadness: How Psychiatry Transformed Normal Sorrow Into Depressive Disorder. Oxford University Press.
- Hyland, P., Shevlin, M., McBride, O., et al., 2020. Anxiety and depression in the Republic of Ireland during the COVID-19 pandemic. *Acta Psychiatr. Scand.* 142, 249–256.
- Kaiser Permanente National, 2018. Clinical practice guideline: diagnosis and treatment of adult depression. http://providers.kaiserpermanente.org/info_assets/cpp_cod/cod_depression_full_17_12_21.pdf.
- Kessler, R.C., Üstün, T.B., 2004. The world mental health (WMH) survey initiative version of the World Health Organization (WHO) composite international diagnostic interview (CIDI). *Int. J. Methods Psychiatr. Res.* 13, 93–121.
- Kroenke, K., Spitzer, R.L., Williams, J.B., et al., 2010. The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. *Gen. Hosp. Psychiatry* 32, 345–359.
- Li, J., Yang, Z., Qiu, H., et al., 2020. Anxiety and depression among general population in China at the peak of the COVID-19 epidemic. *World Psychiatry* 19, 249–250.
- Porter, R., 2002. Madness: A Brief History. Oxford University Press.
- Spitzer, R.L., Kroenke, K., Williams, J.B., et al., 1999. In: Validation and Utility of a Self-report Version of PRIME-MD: The PHQ Primary Care Study, 282, pp. 1737–1744.
- Titov, N., Dear, B.F., Nielsen, O., et al., 2020. User characteristics and outcomes from a national digital mental health service: an observational study of registrants of the Australian MindSpot clinic. *Lancet Digital Health* 2, e582–e593.
- WHO World Mental Health Survey Consortium, 2004. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization world mental health surveys. *J. Am. Med. Assoc.* 291, 2581–2590.
- World Health Organization, 2020. International Statistical Classification of Diseases and Related Health Problems, 11th ed. World Health Organization. ICD-11.

Nickolai Titov^{a,*}, Gerhard Andersson^{b,c}

^a Department of Psychology, Macquarie University, Sydney, Australia

^b Department of Behavioral Sciences and Learning, Department of Biomedical and Clinical Sciences, Linköping University, Linköping, Sweden

^c Department of Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

* Corresponding author.

E-mail address: nick.titov@mq.edu.au (N. Titov).