Global burden of depressive disorders:

the issue of duration[†]

T. BEDIRHAN ÜSTÜN and RON C. KESSLER

The Global Burden of Disease (GBD) study examined the impact of 107 major diseases in a comparative framework including both mortality and disability. When 'disability' was taken into account, the formerly un-recognised burden of mental disorders became undeniably evident. Mental disorders ranked as high as cardiovascular and respiratory diseases, surpassing all cancers combined and even HIV infection. Depressive disorders, as a single diagnostic category, were the leading cause of disability worldwide. These results have provided the most powerful scientific support and advocacy for mental health care, because they highlighted loss of human productivity due to mental disorders (Üstün, 1999).

From a scientific point of view, the GBD study is a 'meta-synthesis' of epidemiological information concerning incidence, prevalence, duration, severity, associated disability, age of onset, course and treatment rates of major diseases as well as mortality due to these conditions. These epidemiological indicators are built into an internally consistent model of the disease, adjusting for disability (i.e. health levels) throughout the life span. In calculating the burden of disease, 'duration' is a key driver – like the length of mortgage that drives your monthly payments. We therefore need to study duration in terms of onset, length and end of an episode with stopwatch precision, and determine the distribution of each element in the general population.

SCIENTIFIC STUDIES OF DURATION

This issue of the *British Journal of Psychiatry* publishes an important article that scientifically explores the duration of depressive episodes in a general population sample. Spijker *et al* (2002, this issue)

report that the median duration of depressive episode in new cases in the general population was 3 months in half of the cases, and that a fifth of patients remained depressed after 2 years. This article is important because it brings further evidence for the natural history of depressive disorders, by studying new cases of depression in a prospective design with a detailed examination of life course. Focusing on duration is indeed the right point to start to desegregate and refine the epidemiological information on one of the most burdensome diseases in the world.

Two-wave prospective studies are most suitable for calculating the duration of depressive episodes in the community. Eaton *et al* (1997) showed in the 12-year follow-up of the Baltimore Epidemiologic Catchment Area (ECA) study that the median duration of episodes was 12 weeks and the mean duration was 27 weeks for both genders (males 26, female 27 weeks) and that 22% remained chronically ill. Eaton *et al*'s data were obtained using an additional Life Chart Interview (LCI) with cognitive anchors, which indicated the psychopathology across the life span. Although this method yields the best information available, the 12-year lag may create attrition and discordance between the two sets of evaluation at year 1 and year 12 (e.g. owing to state-dependent recall bias). Spijker and colleagues also used the LCI retrospectively on a prospective sample assessed by the Composite International Diagnostic Interview (CIDI), but over a 2-year period.

The National Comorbidity Survey (NCS) did not include a longitudinal follow-up of cases identified in the community, but the diagnostic interview included questions related to the duration of lifetime episodes of depression (Kessler *et al*, 1994). For the purpose of this analysis, 3% of the participants who had had very long episodes were excluded. For the remaining 97% of the sample with episodes

of depression, the overall mean duration was 22.6 weeks (further details available from the author upon request). Kendler *et al* (1997), however, found that the mean time to recovery in 235 women was 13 weeks.

So we now have 'duration' data from a handful of studies to incorporate in the new wave of GBD calculations, which was not the case when the original GBD study was done: mean durations of 27 weeks (Eaton *et al*, 1997), 23 weeks (Kessler *et al*, 1994), 30 weeks (Spijker *et al*, 2002, this issue) and 13 weeks (Kendler *et al*, 1997). Median values were all around 12 weeks, except for Kendler *et al*'s study (6 weeks). The results provide input to create better models of the burden of depressive disorders, enabling us to tease out duration, severity and age at onset. The GBD 1996 results were generally accepted, but calculations for depressive disorders remained debatable: episode incidence was modelled for women as 0.29% and for men 0.16%; episode average age at onset was 37.1 years, with an average episode duration of 6 months (Murray & Lopez, 1996: pp. 601–606). How plausible are these estimates?

The GBD incidence and prevalence estimates for depressive episodes are low in comparison with modern psychiatric epidemiological findings: the annual prevalence of unipolar depression was 12.9% for women in the NCS (Kessler *et al*, 1994), compared with the 1.7% prevalence estimate used in the GBD calculations. Similarly, the age of onset of 37.1 years is far beyond the common finding of 20–25 years (Burke *et al*, 1991). Finally, the duration figure of 6 months was based mainly on clinical textbook knowledge. In the absence of epidemiological data, Kraepelin's clinical hunch was 6–8 months on average episodes lasting between 8 days and several years (Angst, 1988). Clinical impressions are known to include chronic duration as a requirement (Rousseau, 2000). Clinical cases are also presumed to be more severe and longer-lasting than community cases (Costello, 1990), which is possibly due to the filtering effect of care-seeking and severity. Indeed, in the World Health Organization (WHO) Primary Care study we found that among the primary care attenders with depression 33.5% were still depressed at the end of a year and first episodes lasted longer (Üstün & Sartorius, 1995; also further details available from the author upon request).

[†]See pp. 208–212, this issue.

These discrepancies between the newly available epidemiological evidence and the GBD modelling are noteworthy for future research and the next wave of GBD calculations. The GBD approach logically assumes a linear relation between incidence, duration and prevalence. The modelling was, however, done with average duration and single (uniform) severity for all depressive episodes. The good news is that it is now possible to do more detailed modelling with the data from these empirical studies, including depression severity, duration and access to care, as Spijker et al have teased out. It may also be possible to extend these studies to young adults and children to explore these parameters in earlier life (e.g. Kaminski & Garber, 2002), for example 'college depression' is usually moderate and of short duration, mainly associated with social adjustment and grades (Oswalt & Finkelberg, 1995).

FUTURE RESEARCH RECOMMENDATIONS

In epidemiological modelling, the devil is always in the methodological detail.

(a) Mental health epidemiology has largely relied on 'lifetime' prevalence estimates. Lifetime prevalence is not used in other speciality areas, and hence is not useful for making comparisons between mental health and other fields. The GBD study used 1-month prevalence rates, which took into account the 'duration criteria' built into the diagnostic definition of mental disorders. It will therefore be more useful to focus on 1-month prevalence and decompose information about duration.

(b) The duration of episodes has a lognormal distribution. The best way to report this variable is through the use of medians, quartiles or logarithmic values. However, in the GBD project, the arithmetic mean was used for the estimation of years of life with disability across all the conditions. So-called dysthymia and 'double depression' cases have extreme duration values (i.e. longer than 2 years) and these may drive the mean higher. On the other hand, putting all long-term cases into a dysthymia category or excluding them is not appropriate: irrespective of the diagnostic validity of dysthymia this manipulation creates a bias, because the burden for depression is inappropriately lowered owing to the lower disability weight for dysthymia. A better way of modelling is needed in the next wave of GBD.

(c) It may be important to treat first episodes separately because it has been consistently shown that first episodes last longer. This may be due to delay in seeking help, which shows a learning curve enhancement for recurrent episodes.

(d) The analytical approach to duration needs some methodological innovations in measurement and in charting the course of episodes (e.g. Denicoff et al, 2002). We also need to define sub-threshold states, because dichotomisation as case v. no case is a crude way to analyse the course of illness. To depict the temporal development of illness we need symptom profiles, functioning data and adjustment factors as well as response to therapy.

The GBD study indicates that depression is the most disabling and burdensome condition in the world. Paradoxically, we know little about the epidemiology of this condition: age at first onset, duration and recurrence risk. Studying duration is the key to understanding how we can best intervene during an episode; similarly, age at onset may be a guide for primary prevention and recurrence risk for secondary prevention. Already we know the basic associations between gender and duration of depressive episodes. There is no difference between women and men in terms of duration or recurrence: the gender difference lies in the first occurrence of depression. Women are more likely to become depressed earlier in their lifetime.

However, we know little about the predictors of duration. We are ignorant of even basic information such as whether the poor have longer episodes than do the rich. By knowing the predictors of duration, we can possibly modify the recovery process and interventions. Few studies on predictors of duration exist; yet huge resources are spent on treatment. As noted by Spijker et al, we do not even have good epidemiological data on how and for how long depressive episodes persist. It is necessary to have prospective studies on the distribution and predictors of duration both in community and in clinical samples.

THE GLOBAL PICTURE

These findings on the duration and epidemiology of depressive disorders mainly relate to North America and Europe. To understand the global burden of depressive disorders, taking into account the variations in service provision and diffent populations' mental health literacy, we still have a long way to go. The data are scarce or fragmented for many parts of the world. To address this issue, the WHO has initiated a series of world mental health surveys, focusing on the epidemiology of mental disorders within a general health framework (Kessler & Üstün, 2000). These surveys will provide evidence for duration and other epidemiological indicators, enabling us to build better intervention strategies to deal with the global burden of depression.

DECLARATION OF INTEREST

None. The views expressed in this editorial are those of the authors and do not necessarily reflect the views of the World Health Organization.

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T. BEDIRHAN ÜSTÜN, MD, PD, Classification Assessment and Epidemiology Group, World Health Organization, Geneva, Switzerland; RON C. KESSLER, PhD, Deparment of Health Care Policy, Harvard Medical School, Boston, Massachusetts, USA

Correspondence: Dr T. Bedirhan Üstün, Classification Assessment and Surveys, World Health Organization, Avenue Appia 20, Ch-1211, Geneva 27, Switzerland. E-mail: ustunb@who.int

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