

The global burden of anxiety disorders in 2010

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Background. Despite their high prevalence, the global burden of anxiety disorders has never been calculated comprehensively. The new Global Burden of Disease (GBD) study has estimated burden due to morbidity and mortality caused by any anxiety disorder.

Method. Prevalence was estimated using Bayesian meta-regression informed by data identified in a systematic review. Years of life lived with disability (YLDs) were calculated by multiplying prevalent cases by an average disability weight based on severity proportions (mild, moderate and severe). Disability-adjusted life years (DALYs) were then calculated and age standardized using global standard population figures. Estimates were also made for additional suicide mortality attributable to anxiety disorders. Findings are presented for YLDs, DALYs and attributable burden due to suicide for 21 world regions in 1990 and 2010.

Results. Anxiety disorders were the sixth leading cause of disability, in terms of YLDs, in both high-income (HI) and low- and middle-income (LMI) countries. Globally, anxiety disorders accounted for 390 DALYs per 100 000 persons [95% uncertainty interval (UI) 191–371 DALYs per 100 000] in 2010, with no discernible change observed over time. Females accounted for about 65% of the DALYs caused by anxiety disorders, with the highest burden in both males and females experienced by those aged between 15 and 34 years. Although there was regional variation in prevalence, the overlap between uncertainty estimates means that substantive differences in burden between populations could not be identified.

Conclusions. Anxiety disorders are chronic, disabling conditions that are distributed across the globe. Future estimates of burden could be further improved by obtaining more representative data on severity state proportions.

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Introduction

Anxiety disorders are characterized by intense and prolonged feelings of fear and distress, often accompanied by physiological symptoms. They generally start early in life and follow a recurrent, intermittent course (Kessler *et al.* 2009), causing substantial disability in terms of health loss, role impairment (Mendlowicz & Stein, 2000) and disadvantage across the lifespan in areas such as income, education and interpersonal relationships (Lochner *et al.* 2003). Despite being one of the most common group of mental disorders worldwide (Kessler *et al.* 2009), the global burden of anxiety disorders as a group has never been comprehensively quantified.

The global burden of disease approach uses the disability-adjusted life year (DALY), a standardized

measure that captures time lived with health loss (years of life lived with disability, YLDs) in addition to mortality (years of life lost, YLLs) (Murray *et al.* 2012). This metric enables comparison of health loss across diseases and injuries, populations and time periods. The first Global Burden of Disease (GBD) study was commissioned in 1990 and published in 1996. This, and subsequent updates by the World Health Organization (WHO) between 1999 and 2004, produced separate burden estimates for panic disorder, obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD) (Murray & Lopez, 1996; Ayuso-Mateos, 2006; WHO, 2008).

Fundamental to estimating disease burden is an accurate epidemiological picture of the condition and its sequela. A deficiency in the mental disorder estimates from previous burden of disease studies was the exclusion of anxiety disorders with onset in childhood (such as separation anxiety disorder) and common conditions such as generalized anxiety disorder (GAD) and specific phobias. Their exclusion caused burden to be underestimated in these studies (Andrews *et al.* 2000; Kessler & Greenberg, 2002).

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This paper presents new estimates for the burden arising from anxiety disorders. To address the limitation identified from examining a limited number of anxiety disorders, we included any anxiety disorders, defining the disorder category as any anxiety disorder based on the ICD (WHO, 1993) or the DSM (APA, 2000), with graded severity levels to reflect variable degrees of disability. We report the global epidemiological distribution and disability associated with anxiety disorders, the YLDs and DALYs attributable in 1990 and 2010, and the relative contribution they make to the global burden of disease.

Method

Overview

In the 2010 GBD study (GBD 2010), we aimed to capture the distribution and burden for all cases that met the DSM or ICD threshold for an anxiety disorder, excluding substance-induced anxiety disorder and anxiety disorder due to a general medical condition. According to DSM-TR-IV (APA, 2000), anxiety disorders include at least 12 separate conditions that frequently co-occur with each other and with other mental disorders. They include GAD; panic disorder, phobic disorders (agoraphobia, social and specific phobias); obsessive-compulsive disorder (OCD); post-traumatic stress (PTSD) and acute stress disorders; and anxiety not otherwise specified (NOS) (APA, 2000). To more accurately capture burden of anxiety disorders, the disorder class was captured in GBD 2010 under a single comprehensive category defined as any anxiety disorder.

Anxiety disorders are characterized by an intermittent course of illness in which the presence and severity of symptoms remit and recur over time. To account for these variations, three separate disability weights were developed for time spent in differing severity states, apportioned into mild, moderate and severe levels of disability. Prevalent YLDs were then calculated by multiplying sex- and age-specific prevalence by the average of the disorder-specific disability weight.

Prevalence

Data collection

We conducted a systematic review conforming to Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines (Moher *et al.* 2009) to identify epidemiological studies reporting prevalence, incidence, remission and all-cause mortality for anxiety disorders. Details on the review methods and findings have been described in detail

in a previous publication (Baxter *et al.* 2014). A three-stage search strategy involved electronic database searches (Medline, EMBASE and PsycINFO), searches for unpublished data, and expert consultation. Where necessary, we contacted study authors for additional information or clarification of methods.

Studies were included if they used community-representative samples and identified cases that met the thresholds for DSM or ICD diagnostic criteria. The electronic search was limited to reports published between 1980 and 2009 but periodic reassessment of the literature and consultation with experts allowed us to capture additional studies before and after these dates.

Epidemiological estimates reporting an outcome as 'any' or 'total' anxiety disorders were used to calculate burden. Studies reporting current (point) prevalence and 12-month prevalence were accepted whereas lifetime prevalence was excluded because of concerns around recall bias (Moffitt *et al.* 2010). Annual incidence was included along with cumulative incidence where person-years were reported to permit estimates for annual onset. Remission studies were accepted where estimates were based on cases no longer meeting diagnostic criteria and where there was a 2-year minimum follow-up. We included mortality estimates for relative risk (RR), hazard ratios (HRs) and standardized mortality rates (SMRs). More detail on the systematic review has been reported previously (Whiteford *et al.* 2013; Baxter *et al.* 2014).

Disease modelling

Although our inclusion criteria ensured a minimum quality of the data, between-study variability remained an important issue. Data were also inequitably distributed across specific conditions, age groups, countries, regions and epidemiological parameters. These challenges were addressed using DisMod-MR (Vos *et al.* 2012), a Bayesian meta-regression tool that makes use of the generic relationship between incidence, prevalence, remission and mortality parameters to derive a consistent epidemiological picture for a given disorder. DisMod-MR applies a generalized negative binomial model to all epidemiological data for a disease using: (1) fixed effects for two sets of covariates; the first estimates variability in the distribution of a given disorder that is real and the second aims to minimize artificial variability due to measurement bias; (2) random effects for super-region, region and country; and (3) age-specific fixed effects. The countries that make up the GBD 2010 super-regions and regions are shown in the online Supplementary material (Appendix 1). Uncertainty [standard error or 95% confidence

intervals (CIs) around the epidemiological data and uncertainty introduced by the fixed and random effects were propagated to the final output, which, for the purposes of calculating prevalent YLDs, are point prevalence estimates stratified by age and sex for 187 countries and 21 regions in 1990 and 2010 (Vos *et al.* 2012; Flaxman *et al.* 2013).

Study-level covariates were used to adjust for differences in study methodology. This process has been described in more detail elsewhere (Baxter *et al.* 2014). Given the heterogeneity between specific anxiety disorders, we conducted a sensitivity analysis to test for differences that may be due to estimates that captured different combinations of specific anxiety disorders. We coded several covariates to test for the effect of including (or excluding) specific disorders (e.g. GAD, specific phobias and anxiety disorders NOS) along with the number of specific disorders represented within an estimate for 'total' anxiety disorders. These analyses suggested that different combinations of specific disorders had no significant effect on the model.

YLDs

For the purposes of GBD, disability is the condition-specific health loss independent of other domains of general welfare such as social or environmental factors. The derivation of disability weights, quantification of severity distributions and the correction for co-morbidity across all non-fatal disease estimates in GBD 2010 have been described in greater detail elsewhere (Salomon *et al.* 2012; Vos *et al.* 2012). In brief, we defined disability health states for anxiety disorders based on severity distributions: mild, moderate and severe. New disability weights were estimated for GBD 2010 to reflect these health states. In a series of community surveys in five countries and an open-access online survey, responses from approximately 31 000 participants were obtained. Lay vignettes were used in pair-wise comparisons between health states (Salomon *et al.* 2012). Responses were then anchored on a scale from 0 (complete health) to 1 (death) with population health equivalence questions for a subset of health states across the severity spectrum.

Prevalence, co-morbidity and disability data based on the 12-item Short Form Health Survey (SF-12) were obtained from three surveys: (1) the US Medical Expenditure Panel Survey (MEPS; AHRQ, 2009); (2) the US National Epidemiological Survey on Alcohol and Related Conditions (NESARC; NIAAA: NIH, 2001–2002 and 2004–2005); and (3) the Australian National Survey of Mental Health and Well-Being (SMHWB; ABS, 1997). These data were then used

to derive severity distributions while adjusting for any co-morbid conditions. This work has been described in detail by Vos *et al.* (2012). A mathematical cross-walk was developed between SF-12 scores and GBD 2010 disability weights. Regression analyses with dummies for each diagnosis reported for an individual in the US and Australian surveys were conducted to parse out the amount of disability for each individual health state, that is after taking out the potential effect of co-morbidity. Specific health states were then classified as either asymptomatic (no disability) or mild, moderate or severe (with corresponding disability weights).

A project-wide co-morbidity correction across estimates for all non-fatal health outcomes was carried out using microsimulation methods. For each country, year, age and sex category, a hypothetical population of 20 000 individuals was created who would have no, one, two or more co-morbid conditions using prevalence data as probabilities. Using a multiplicative function, a combined disability weight was calculated for all co-morbid health states and then reapportioned to each health state relative to the sum of co-morbid disability weights. The average 'corrected' disability for each health state was calculated in each age, sex, year and country stratum and the decrement compared to the original disability weight taken as the co-morbidity correction for YLDs. This method deals with independent co-morbidity, that is conditions that co-occur in an individual based on prevalence. Analyses of US survey data indicated that further addressing dependent co-morbidity (i.e. conditions that cluster in individuals with a greater probability than based on chance) added very little extra correction to YLDs and any attempt to do so would result in enormous data and computational requirements. In support of this approach, findings based on data linkage from the New Zealand Burden of Diseases study showed that, after accounting for independent co-morbidity, the inclusion of dependent co-morbidity had little additional effect (Schopflocher & Tobias, 2013).

DALYs

DALYs are the sum of YLLs and YLDs. The ICD does not consider anxiety disorders as a valid underlying cause of death. Therefore, no YLLs were estimated for the purposes of GBD 2010. As direct burden of anxiety is entirely due to disability, direct DALYs for anxiety disorders equate to the YLD rates. DALY estimates are presented here as numbers and age-standardized DALY rates per 100 000 population using direct standardization to the global standard population for 2001 (www.who.int/healthinfo/paper31.pdf).

Additional burden due to suicide

The sparse data available indicated no clear evidence for an increased risk of all-cause mortality. However, there is evidence that there may be an increased risk of suicide. Given that suicide deaths cannot be categorically attributed to anxiety disorders, the GBD ranking list therefore does not include these deaths as part of the burden of anxiety disorders. We account for the proportion of suicide deaths and YLLs attributable to anxiety disorders based on methods used for the GBD 2010 Comparative Risk Assessment (CRA) project (Lim *et al.* 2012).

Studies on RR for suicide were identified in a systematic review (Li *et al.* 2011) and pooled in a meta-regression (Ferrari *et al.* unpublished observations). The pooled RR was then applied to the prevalence estimates for anxiety disorders, to derive population attributable fractions (PAFs). More detail on the meta-analysis and calculating PAFs for suicide is available in a recent report (Ferrari *et al.* unpublished observations) with a brief summary in online Appendix 2. The proportion of suicide burden attributable to anxiety disorders was a product of the PAFs and suicide deaths and DALYs.

Results

Prevalence

There were 200 million cases of anxiety disorders globally in 1990 and 272 million cases in 2010. These equated to an overall pooled point prevalence of any anxiety disorder of 4.0% (95% CI 3.8–4.3) in both 1990 and 2010. Prevalence rose abruptly in the 10–19-year age group to peak between 20 and 24 years of age at 5.5% (95% CI 5.1–6.0).

In 2010, prevalence varied by more than threefold across regions, ranging from 2% in East Asia to 6% in North Africa and the Middle East. Most of the world regions showed considerable inter-country differences. The two regions that had the most empirical data (Western Europe and North America) showed the greatest variability in estimated prevalence between countries. In Western Europe, for instance, population prevalence ranged from 1.9% (95% CI 1.6–2.2) in Israel to 6.9% (95% CI 6.0–7.7) in France and 7.4% (95% CI 5.9–9.2) in Norway whereas in North America prevalence ranged from 3.6% (95% CI 3.1–4.7) in Canada to 6.0% (95% CI 5.4–6.7) in the USA.

YLDs

The estimated proportion of 12-month cases by severity state is shown in Table 1, along with the disability

weights used to calculate YLDs for anxiety disorders in GBD 2010, compared with previous GBD studies. The average disability weight for anxiety disorders in GBD 2010 was 0.23 (95% UI 0.18–0.30). When adjusted for co-morbidity, the overall weight was 0.11 (95% UI 0.07–0.14).

Anxiety disorders accounted for 27 million YLDs in 2010 (95% UI 19–37 million), 3.5% of the overall burden of all disease and injury due to disability. Standardized by age and sex, this equated to 390 YLDs per 100 000 population in 2010. Globally, anxiety disorders accounted for 272 YLDs per 100 000 males (95% UI 191–371 per 100 000) and 509 YLDs per 100 000 females (95% UI 355–703 per 100 000).

In terms of YLD rates, anxiety disorders were the sixth leading cause of all disability in both high-income (HI) and low-/middle-income (LMI) countries (see Table 2), accounting for more disability than severe mental disorders such as schizophrenia (ranked 18th at global level). Although other chronic conditions had much higher mortality rates, anxiety disorders incurred greater disability, in terms of YLDs, compared for instance with diabetes (globally ranked ninth) and stroke (ranked 38th). In 2010, YLD rates for anxiety disorders were six times higher than all cancers combined (65 YLDs per 100 000). Moreover, the global disability of anxiety disorders was more than 15-fold higher than the disability attributed to either HIV/AIDS or malaria.

YLD rates for males and females follow a similar trajectory; in both genders the majority of disability falls within the adolescent and young adult age groups. Table 3 presents the relative ranking of anxiety disorder YLDs for persons, along with absolute numbers and rates per 100 000 by broad age group in 2010. Overall, anxiety disorders were ranked the third leading cause of disability for females between 15 and 49 years of age and in males the seventh leading cause of disability. In the 5–14-year age group, anxiety was ranked the fourth leading cause of YLDs in females, and in males the seventh greatest cause of YLDs due to the higher burden of conduct disorder and lower back and neck pain in male children.

Regional variation

Marked variation was noted in YLDs across region, with a consistently lower rate of YLDs in East Asia for males (155/100 000 population) and females (292/100 000 population). In general, we found higher YLD rates for high-income regions (North America High Income, Australasia and Southern Latin America) and regions with populations exposed to conflict (North Africa/Middle East and Central Europe). YLD rates for males but not females were also relatively high

Table 1. Point prevalence, health state proportions and disability weights used for burden of anxiety disorders in previous GBD studies and in GBD 2010

Anxiety disorders in GBD 1990	Overall point prevalence ¹ , %	Health state	Range of regional health state proportions, %	Disability weight ¹
OCD	1.1 (15 studies)	Treated	0–15	0.08
		Untreated	85–100	0.13
Panic disorder	0.4 (24 studies)	Treated	3–25	0.09
		Untreated	75–97	0.17
PTSD	0.3 (7 studies)	Treated	Not reported	0.11
		Untreated		0.11

Anxiety disorders in GBD 2010	Overall point prevalence ² , % (95% CI)	Health state	Health state proportions ³ , % (95% UI)	Disability weight (95% UI) ⁴
'Any' anxiety disorder	4.0 (3.8–4.3) (91 studies)	Asymptomatic	30 (29–31)	0.000
		Mild	38 (32–44)	0.030 (0.017–0.048)
		Moderate	19 (15–23)	0.149 (0.101–0.210)
		Severe	12 (8–17)	0.523 (0.365–0.684)

GBD, Global Burden of Disease; OCD, obsessive-compulsive disorder; PTSD, post-traumatic stress disorder; UI, uncertainty interval.

¹Source: Murray *et al.* (1996).

²Source: Baxter *et al.* (2014).

³Based on 12-item Short Form Health Survey (SF-12) scores for individuals with diagnosis of anxiety over the past 12 months. Data from: the US National Epidemiological Survey on Alcohol and Related Conditions (NESARC; NIAAA: NIH, 2001–2002 and 2004–2005), the US Medical Expenditure Panel Survey (MEPS; AHRQ, 2009) and the Australian National Survey of Mental Health and Well-Being (SMHWB; ABS, 1997).

⁴Source: Salomon *et al.* (2012).

Table 2. Ten leading causes of YLDs for high-income and low-/middle-income countries in 2010

High-income countries		Low- and middle-income countries	
Ranking	Disorder	Ranking	Disorder
1	Low back pain	1	Low back pain
2	Major depressive disorder	2	Major depressive disorder
3	Other musculoskeletal	3	Iron-deficiency anaemia
4	Neck pain	4	Neck pain
5	Falls	5	COPD
6	Anxiety disorders	6	Anxiety disorders
7	Diabetes	7	Other musculoskeletal
8	COPD	8	Migraine
9	Migraine	9	Diabetes
10	Osteoarthritis	10	Falls

YLD, Years of life lived with disability; COPD, chronic obstructive pulmonary disease.

in Central Asia, the Caribbean and Andean Latin America compared with other regions. Nevertheless, it is important to note that there was considerable overlap between the uncertainty for regions and

uncertainty around the global mean. The highest YLD rates were found in populations from Rwanda, Serbia and Morocco (see Fig. 1). By contrast, YLDs were lowest for Israel, Vietnam and China.

Table 3. Ranking and level of non-fatal burden (years of life lived with disability, YLD) for anxiety disorders in 2010

Age group	Ranking within age group	YLDs (thousands)	95% UI (thousands)	YLD rate (/100 000 population)	95% UI (thousands)
<5 years	101	356	(143–782)	0	(0–0)
5–14 years	6	2741	(1921–3809)	226	(159–315)
15–49 years	4	18 491	(12 892–25 484)	511	(356–704)
50–69 years	10	4481	(3173–6167)	418	(296–576)
≥70 years	20	1134	(800–1540)	325	(229–442)
All ages	7	26 847	(18 791–36 889)	390	(273–535)

UI, Uncertainty interval.

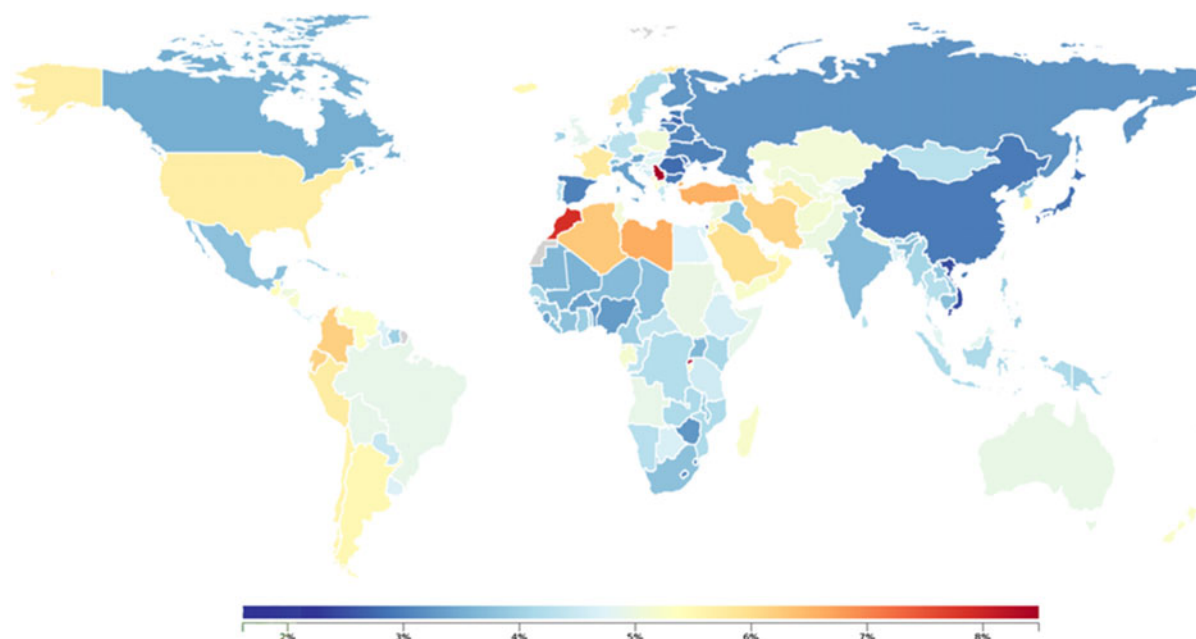


Fig. 1. Person-years of life lived with disability (YLDs) due to anxiety disorders as a proportion (%) of all YLDs.

DALYs

Between 1990 and 2010, crude DALYs from anxiety disorders increased by 36%. Decomposition of this figure suggests that 31% of change in DALYs can be explained by global population growth in this period and 7% by shifts in the age structure (i.e. population ageing), with no detectable change in the epidemiological rates.

Females accounted for 65% of the DALYs caused by anxiety disorders. The age pattern was similar for both sexes, with DALY rates peaking in the 15–34-year age groups: 387 DALYs per 100 000 males and 721 DALYs per 100 000 females (Fig. 2).

Anxiety disorders increased in ranking in developing countries, from the 34th cause of DALYs in 1990

to the 27th cause of DALYs in 2010. The change in rank was more noticeable for males, rising from the 47th rank in 1990 to the 39th rank in 2010 compared to a change from the 24th to the 22nd rank in women. There is considerable overlap in the uncertainty ranges for age-standardized DALY rates by GBD region and global mean DALY rates (Fig. 3). Values for DALYs and DALY rates per 100 000 population for GBD world regions are provided in online Appendix 3.

Suicide attributable to anxiety disorders

Globally in 2010, suicide was the third leading cause of death for all adults aged 15 to 49 years of age, and the single greatest cause of deaths in adults in this age

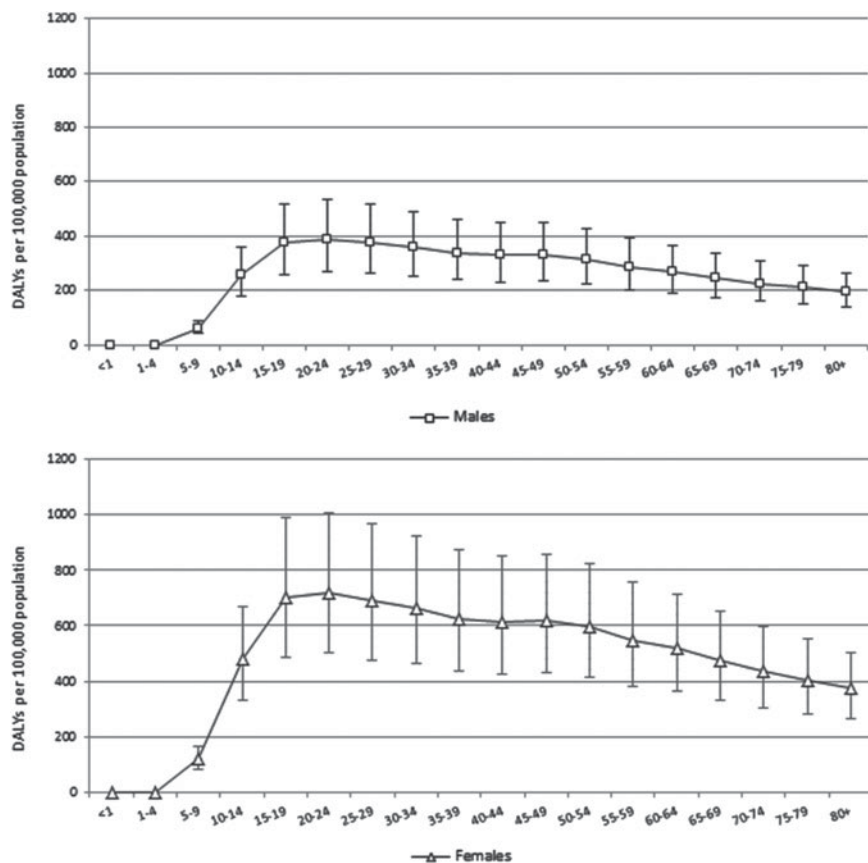


Fig. 2. Global anxiety disability-adjusted life years (DALYs) with 95% uncertainty intervals (UIs), by age and sex per 100000 population, 2010.

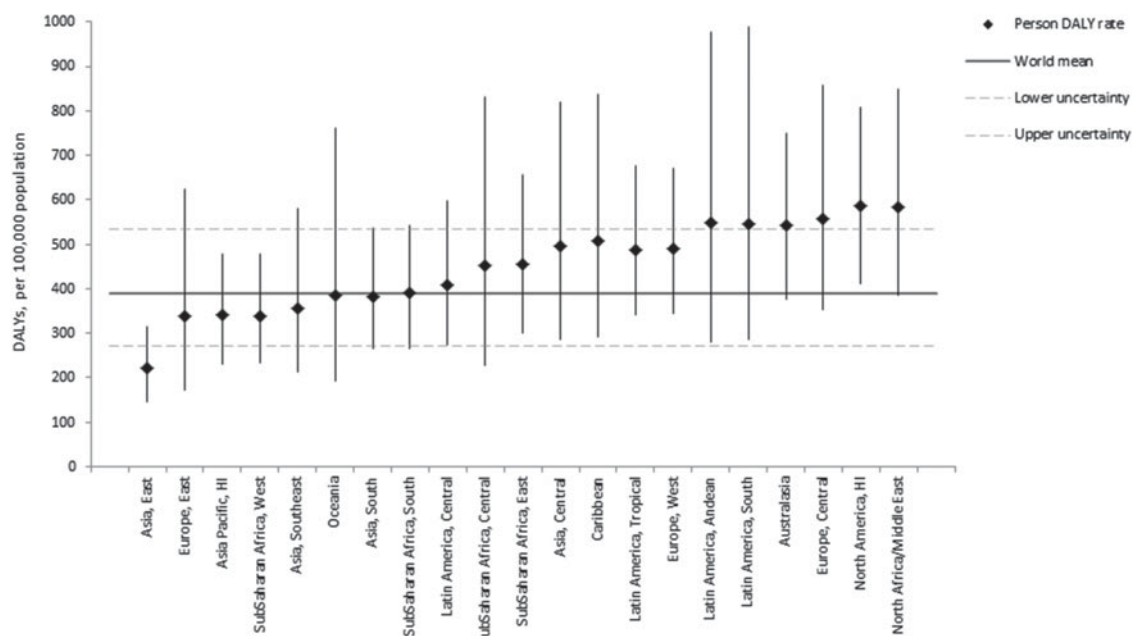


Fig. 3. Age-standardized disability-adjusted life years (DALYs) for anxiety disorders in 2010, by world region. HI, High income.

group in developed countries. In 2010, 7% of all suicide mortality was estimated to be attributable to anxiety disorders, resulting in 39 YLLs per 100 000 population (95% UI 15–69 YLLs per 100 000): 52 YLLs per 100 000 males and 26 YLLs per 100 000 females.

For males, there was a large difference in fatal burden due to suicide in Eastern (140/100 000) and Central Europe (100/100 000) compared with Western Sub-Saharan Africa (10/100 000). A similarly large difference was identified for females in South Asia at the higher end of the scale (60/100 000) and females in Western Sub-Saharan Africa at the lower end (4/100 000). The burden of suicide attributable to anxiety disorders was equivalent to 10% of the burden caused by anxiety disorders.

Discussion

This study demonstrates the high proportion of disease burden caused by anxiety disorders. By applying the GBD concept of disease burden to anxiety disorders, we found that burden was largely caused by time spent with disability. The outcome of this study supports previous findings that have suggested a high impact of anxiety disorders on public health. For example, analyses of data from 15 countries in the World Mental Health Survey (WMHS) Initiative found that anxiety disorders (with the exception of specific phobias) were significantly more disabling based on mean Sheehan Disability Scores (SDS), particularly within social life and personal relationship domains, relative to self-reported physical conditions including arthritis, asthma, back/neck pain and cancer (Ormel *et al.* 2008). Moreover, these findings were consistent across populations from LMI and HI countries.

The burden of anxiety disorders has been underestimated in past GBD studies because of the limited number of disorders captured (panic disorder, OCD, PTSD) and fewer available prevalence data sources (from primarily Western populations) (Andrews *et al.* 2000). In GBD 2010, anxiety disorders were considered a spectrum condition, which enabled us to capture not only the most disabling but also the more prevalent of the anxiety disorders.

It is important to note that, despite relatively stable prevalence rates between 1990 and 2010, crude DALYs increased due to population growth and shifting age structures of populations, which means that more people are now experiencing health loss caused by anxiety disorders. The considerable burden of disease due to these disorders is explained by their high prevalence, early age of onset, prolonged duration of illness and disabling nature. Although reducing incidence would be a desirable approach to averting burden, there is mixed evidence for the efficacy of

prevention programmes (Lau & Rapee, 2011). Thus, the most effective approach to burden reduction would be to reduce prevalence through early detection, especially in children and young people, which may help to reduce the severity and persistence of symptoms (McGorry *et al.* 2011), coupled with prompt access to evidence-based treatments (Andrews *et al.* 2007).

Several surveys have shown that most people experiencing an anxiety disorder do not seek treatment, particularly those with less severe symptoms (Demyttenaere *et al.* 2004). This is relevant to policy makers in terms of reducing population burden as current treatments are shown to be more cost-effective for mild and moderate cases than for severe cases (Issakidis *et al.* 2004). Moreover, these less severe cases make up the greatest proportion (57%) of past-year anxiety disorders, as shown in Table 1. Thus, despite the higher disability associated with severe cases, ensuring that mild/moderate cases access evidence-based care is important and will result in substantial burden averted.

Limitations

Despite our definition of anxiety disorders as a single category of health loss, specific anxiety disorders vary with regard to onset (Kessler *et al.* 2007), course of illness (Yonkers *et al.* 2003) and impairment (Sanderson & Andrews, 2002). Although our initial intention was to model each disorder separately, it was not possible at the time because of the limited information available to adjust for co-morbidity when more than one anxiety disorder was present, and calculate disorder-specific disability weights and suicide risk. Given changes in the new DSM-5 (APA, 2013) that remove OCD and PTSD from the anxiety disorder grouping, future GBD studies will need to consider making separate estimates for these categories. This is an intriguing area for further research, and data on the co-occurrence of anxiety disorders now being collected by the WMH Survey Initiative (www.hcp.med.harvard.edu/wmh) (Kessler *et al.* 2011) may provide valuable new information to inform these co-morbidity adjustment calculations.

Information available on severity proportions was limited as we had to rely on three surveys from only two countries. This means that the region and gender estimates did not reflect potential variations in severity. Moreover, any treatment effects on severity proportions would be obscured by lack of data on other populations, particularly those in LMI countries where treatment rates for anxiety disorders are substantially lower than in HI countries (Ormel *et al.* 2008). Given that effective treatments can lead to

reduced symptom severity, populations where treatment rates are low may have more severe cases leading to underestimates for regional burden. Comparative information on severity proportions is essential in future GBD studies to permit more accurate estimates for regional variations in health states.

Disability, within the GBD context, is defined as health loss rather than loss of general welfare or functional impairment (Vos *et al.* 2012). It should be noted that, outside the GBD focus on pure health loss, there are attendant costs to individuals, families and society that should be considered by decision makers when formulating public health policy. That said, the value of the GBD approach is that it provides a way in which health loss from diverse conditions can be compared regardless of where a person lives, although the overall outcome for a person with a disorder may be modified by treatment or socio-economic factors.

Conclusions

Anxiety disorders are chronic, highly prevalent, disabling conditions with onset usually in children and young people. Treatment rates are low despite the personal suffering and economic impact arising from these disorders (Kessler & Greenberg, 2002). Early access to cost-effective interventions will help to decrease the considerable global burden of anxiety disorders.

Supplementary material

For supplementary material accompanying this paper visit <http://dx.doi.org/10.1017/S0033291713003243>.

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Declaration of Interest

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