Global Burden of Disease

Mental Disorders and
Illicit Drug Use Expert Group

Summary of data collected and decision rules used in making regional and global estimates:

Eating Disorders

Allison Ventura, Amanda Baxter, An Pham, Adele Somerville, Roman Scheurer, Bianca Calabria, Jen McLaren, Anna Roberts, Louisa Degenhardt and Harvey Whiteford *for the Mental Disorders and Illicit Drug Use Expert Group*

Summary of data collected and decision rules used in making regional and global estimates:

Eating Disorders

Allison Ventura, Amanda Baxter, An Pham, Adele Somerville, Roman Scheurer, Bianca Calabria, Jen McLaren, Anna Roberts, Louisa Degenhardt and Harvey Whiteford *for the Mental Disorders and Illicit Drug Use Expert Group*

Working Paper

Acknowledgments:

Table of Contents

Glossary

AN	Anorexia nervosa
ARR	Annualised remission rate
BN	Bulimia nervosa
CIDI	Composite International Diagnostic Interview
DALY	Disability-adjusted life year
DSM	Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association)
GBD	Global Burden of Disease Project
ICD	International Classification of Diseases (World Health Organisation)
LP	Lifetime Prevalence
PMP	Past Month Prevalence
PYP	Past Year Prevalence
SDS	Sheehan Disability Scale
WHO	World Health Organisation
WMHS	World Mental Health Survey
YLD	Years of life lived with disability
YLL	Years of life lost

Preliminary data coverage identified for: Eating Disorders

Figure 1. Past month, past year and lifetime prevalence estimates for eating disorders, including WMHS data.
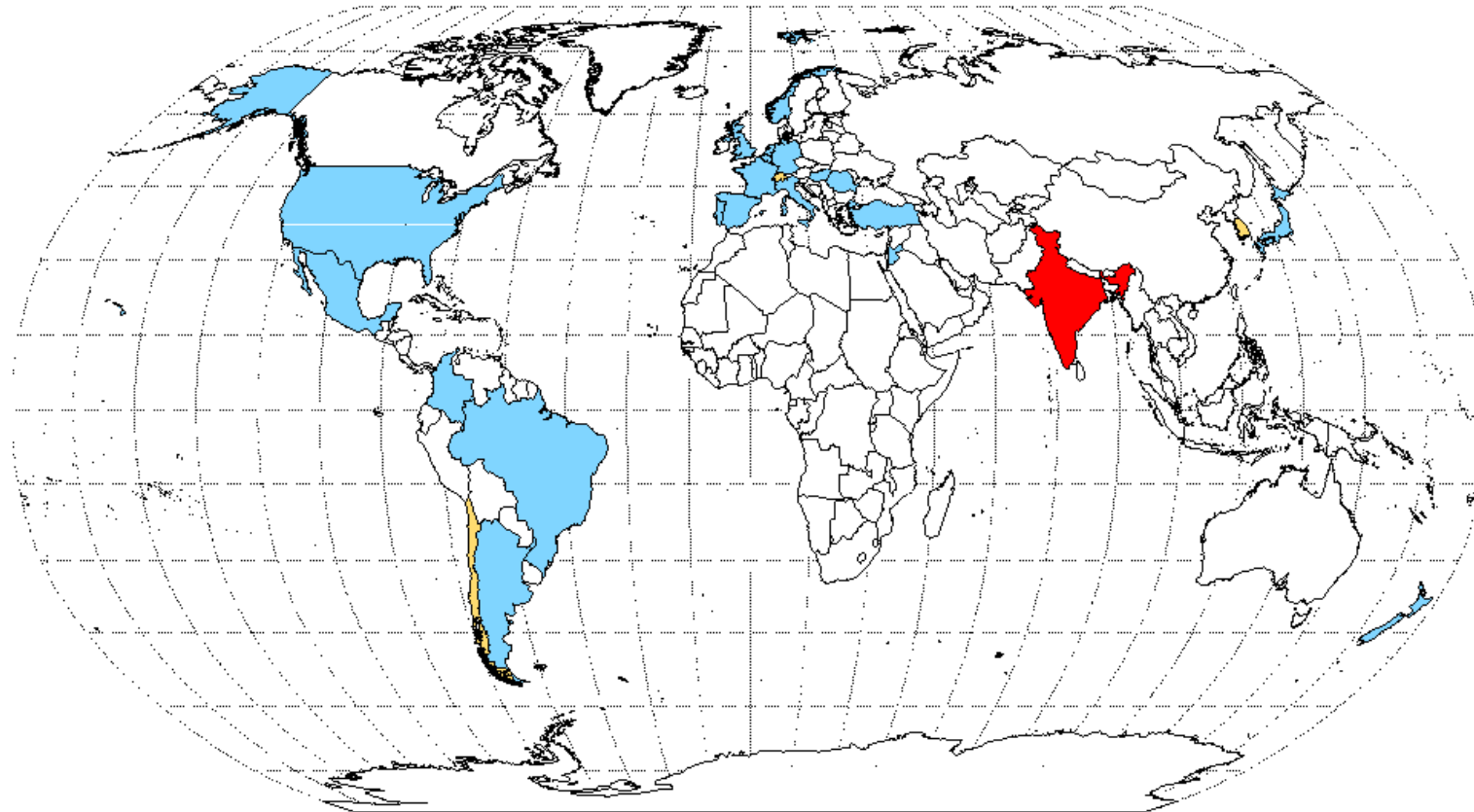
Prevalence Type
- Past Month
- Past Year
- Lifetime
- No Data

Figure 2. Past month, past year and lifetime prevalence estimates for specific diagnoses of autism or Asperger's disorder.
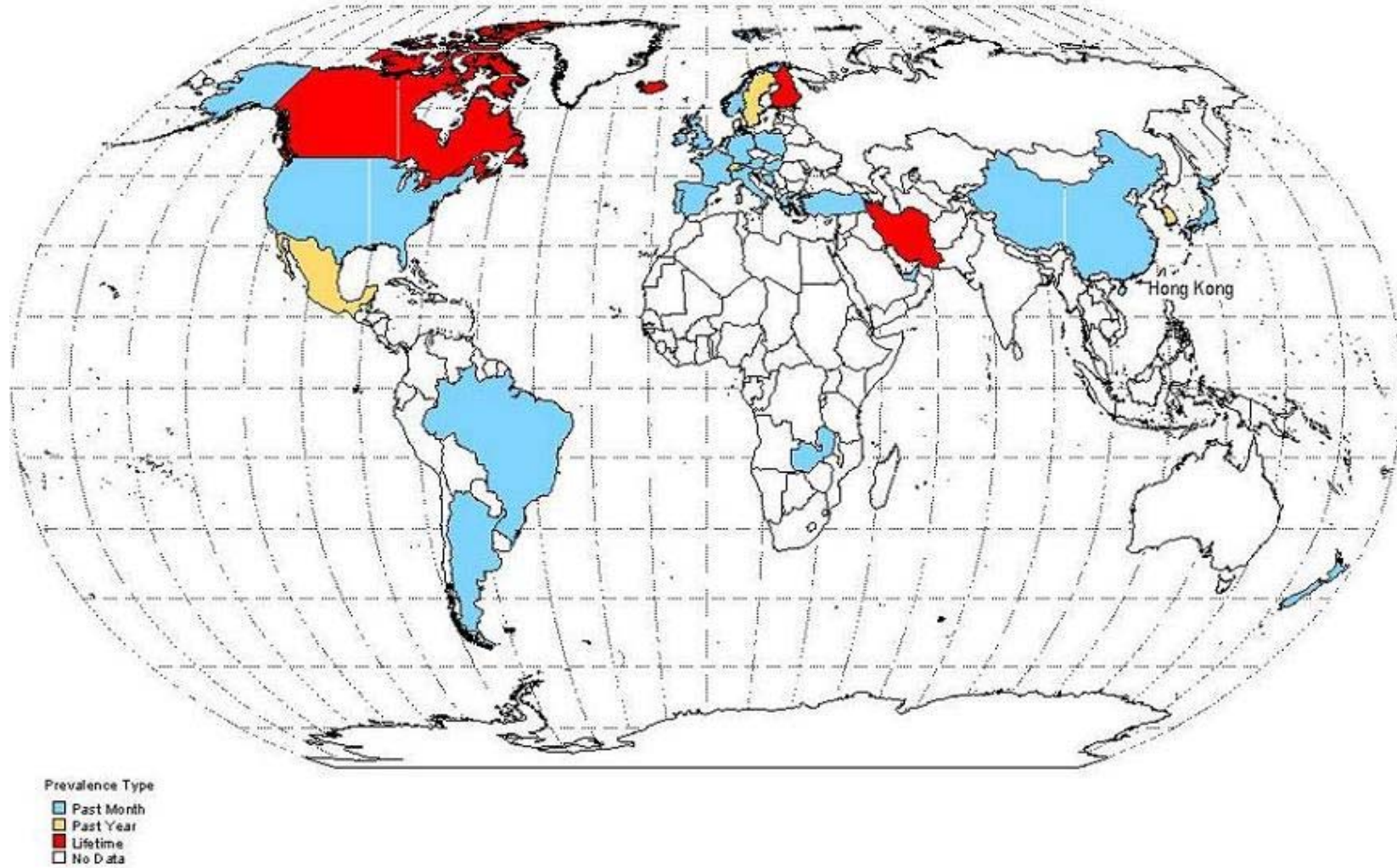
1.0 Data summary and decision rules overview

The new Global Burden of Disease study commenced in 2007 and is the first major effort since the original 1996 GBD study to produce systematic and comprehensive estimates of the burden of diseases and injuries. It will also update the comparative estimates of the burden of risk factors. While the original 1996 GBD study produced 1990 estimates for 107 diseases and injuries and ten risk factors for eight world regions, the new study will produce 1990 and 2005 estimates for 150 diseases and injuries and more than 40 risk factors for 21 regions of the world.

Important changes will be made to the scope and nature of the estimates for mental disorders and illicit drug use. More disorders are being considered because of significant advances in epidemiological research. The original study contained estimates for unipolar depression, bipolar disorder, panic disorder, obsessive compulsive disorder, post traumatic stress disorder and illicit drug use. The new estimates will include the mental disorders covered in the original study plus eating disorders (both anorexia and bulimia), dysthymia (as well as major depression), generalised anxiety disorder, agoraphobia, social phobia, specific phobia, separation anxiety disorder, pervasive developmental disorders (autism and Asperger's disorder), attention deficit hyperactivity disorder and conduct disorders.

In the 2005 update, eating disorders are defined as any diagnosis of anorexia nervosa or bulimia nervosa.

1.1 Data sources

A systematic review was undertaken to identify sources of data containing epidemiologic parameters for eating disorders. Papers identified in the search were sought and data containing these parameters were extracted, recorded and standardised.

Standardised approaches to literature searches, data collection, data extraction, consistency and error checking, and expert consultation and review were taken across mental disorders. These methodologies are documented and detailed on the expert group's website: www.gbd.unsw.edu.au., but briefly can be summarised as follows:

Stages of the systematic review :

1. Search of peer-reviewed literature. The search strategy is consistent with the methodology recommended by the Meta-analysis of Observational Studies in Epidemiology (MOOSE) Group[1]. Three electronic databases were included in the search (Medline, PsychInfo and Embase) with searches limited to human subjects. Search strings are available for review at http://www.gbd.unsw.edu.au/gbdweb.nsf/page/Methodology.

2. Identifying articles from peer-review literature that met inclusion criteria. An extensive list of articles was found by the search string. Each of the several thousand articles was briefly reviewed for inclusion criteria:

-   Must include the specific disorder under review
-   Must present primary data
-   Must be an epidemiologic study (pharmacological treatment samples and case studies excluded)
-   Presented data for the period 1980 onward
-   When general population data at a national level were available sub-national data was excluded.
-   Samples must be representative of the general population

3. Obtaining full-text copies of articles. The references of articles identified from the systematic review were compiled in Endnote. PDFs were sourced from on-line open access journals and through The Park, Centre for Mental Health, Library and the University of Queensland Library.

4. Data extraction. A three level Access database was designed to accommodate the data from the mental disorders systematic search. Random samples of articles were double-checked for accuracy and consistency of data extraction and entry. In-built quality assurance was a feature of the Access database through the use of drop-down boxes and coding protocols.

A Quality Index Score was developed based on a range of variables extracted from each identified source of data so that representativeness of studies can be quantified and used for comparison. The Quality Index Score is available for review at http://www.gbd.unsw.edu.au/gbdweb.nsf/resources/MD_Pt2_Appendicies/$file/GBD2005+Mental+Disorders+Quality+Index.pdf.

In this document we present an initial summary of the prevalence data identified for eating disorders.

We present the decision rules relating to:

- inclusion criteria for data sources,
- methodology of data extraction, and
- reporting of study characteristics and epidemiologic parameters.

Also presented here are some preliminary decision rules for:

- manipulating data,
- imputing missing data,
- pooling data within countries,
- pooling data for some parameters (for example remission and mortality), and
- our approach to production of regional prevalence estimates for mental disorders as a whole.

Further work is currently underway to identify peer-reviewed and grey literature sources that may assist with missing age-, sex- and country-specific estimates. The process of applying the rules outlined below has begun, with the first steps presented in this document.

2.0 Principles for inclusion of data sources and reporting of data.

Presented here are general rules for the inclusion of articles and data identified through the peer-review literature and through expert review. We also present the general protocol and rules for reporting of data.

2.1 Inclusion of Data Sources (including Peer-review papers)

Peer-review literature versus grey literature

A preliminary search for epidemiologic data for mental disorders identified a range of sources, including grey literature (government reports, unpublished findings, dissertations), peer-review publications and non-government organisation (NGO) data collection. Due to the wealth of data available (including data from the World Mental Health Survey) and the available time frame, the decision was taken to focus the first stage of the data search on peer-reviewed literature. Grey literature sources will be reviewed in the second stage of the project, as data sources to address the gaps in the preliminary dataset.

Justification: A large body of data is available through the peer-review literature, of sufficient quality to meet the group's criteria, to provide a preliminary dataset for the first round of estimates. It is anticipated that the circulation of these preliminary findings to experts in the field will yield a range of very useful suggestions for other data sources, including grey literature, to address the gaps in the data. In this way it is anticipated that maximum coverage will be achieved.

Representativeness

Where a large body of data is available for a country (e.g. for the US, Western Europe, Great Britain, New Zealand and Australia), only the nationally representative studies will be included.

Justification: Excluding studies that have small samples that are likely NOT representative of the national population will be a more time-efficient process. Studies with unrepresentative samples are unlikely to be used for this GBD Project.

Diagnostic Criteria

A broad rule was adopted for all mental disorders that initial data collection for prevalence, incidence and remission would be limited to data sources reporting rates based on DSM and ICD diagnostic criteria only. Papers that report use of a survey that could not demonstrate validity against either DSM or ICD criteria were excluded (e.g. the Hospital Anxiety and Depression Scale). If the validity of a survey was uncertain, the opinion of an expert in the field was sought.

Justification: Inclusion of estimates based on alternative definitions may skew the final estimates for some countries, as narrower or broader definitions would result in lower or higher estimates being reported.

Definition of Remission

For the Global Burden of Disease project, remission from a mental disorder is defined as no longer fulfilling the diagnostic criteria for this disorder. Partial remission is therefore considered as being no longer a "case". Follow-up period for the sample must be a minimum of two years.

Remission estimates were obtained from observational studies. Studies that reported samples from randomised controlled trials or treatment other than "as usual" will be excluded as not being representative of the average case. Remission among cases of mental disorders *in treatment* (that is, treatment "as usual") will not be considered separately from out-of-treatment cases as so little data is available from community (non-treated) samples. If several papers have been published for the same study (i.e. same cohort) at different time points, only the paper reporting the longest follow-up period will be included in the dataset.

2.2 Data Extraction and Reporting

Prevalence rate

If prevalence type was unspecified, the diagnostic tool was sought in order to determine whether prevalence was point, past month, 12-month, lifetime or another period. If the diagnostic tool was unable to be accessed or unclear, prevalence was taken as point. An exception to this rule was for samples ascertained through case registries. As these were diagnosed with the disorder AT SOME PERIOD in their lives, but possibly some time ago, prevalence was taken as lifetime. As this was most frequently the case for disorders with zero remission in studies that used birth cohorts (e.g. autism), it is assumed that this will not make a significant difference to the rate.

Cohort

Cohort size was defined in different ways according to the methods used in the studies. Typically, cohort size was defined as the sample size, specifically the number of individuals for whom useable data was collected.

However, if the sample was derived from a case register or from medical records for a geographically defined area:

- the degree of coverage is difficult to ascertain due to inadequate reporting, or
- coverage appears to be poor (e.g. those who seek treatment in countries where a state-funded health system is not cheaply and easily accessible), or

- coverage is reliant on an individual actively seeking treatment for a disorder which is known to have a low level of treated prevalence (e.g. depression)

then the cohort size was recorded as the number of cases identified.

Alternatively, where health checks are legislated for infants and children at regular intervals (e.g. Norway and Japan) and coverage is close to 100% (95% or higher), cohort is taken as the number of children in that age group who fall within the defined area, as we can reasonably expect that data has been obtained for that number of people.

Time period (Epoch)

- Epoch not reported

Where epoch (the year to which the estimate refers) is NOT reported within a paper, a note will be made of the fact and epoch recorded as the year two years prior to publication.

Justification: The GBD Project requires the year of the estimate in order to establish a time trend for calculation of burden. However the research team found that it is relatively common for authors to not report details such as epoch, response rate, etc. Rather than leave a gap in the data where epoch is not reported, an overall decision was taken to estimate the epoch as two years prior to publication, on the basis that it will generally take at least two years to clean data, carry out analysis and publish results.

- Longitudinal studies

Where data collection is carried out over a period of time, the midpoint of the data collection period was taken as epoch start and midpoint of final follow-up period as epoch end. For example, if baseline data collection is 1980–1982 and final follow-up period is 2000–2004, epoch start is recorded as 1981 and epoch end as 2002. Greater detail of different time periods is recorded as text in the comments field.

- Studies that give estimates for different time periods

Where a longitudinal study gives year-specific estimates, the years that those estimates relate to are recorded as epoch start and epoch end. Again, greater detail is recorded as text in the comments field of the database. For example, if a longitudinal study reports 12-month prevalence for two samples, one ascertained 1980–1981 and the other 1990–1991, epoch is recorded as 1980–1981 for the prevalence rate specific to that particular time period and 1990–1991 for the relevant prevalence estimate.

Age Range

Where an age range is not reported in the paper, 'dummy' variables of 0 (minimum) and 99 (maximum) are inserted. If the sample is reported as 'adult' the age range was recorded as 18-99.

Remission and Mortality - Secondary Data Sources

In all cases, the primary source of data was used for all surveys for data extraction purposes. However, due to time restrictions, when a study reported data from previous years this data was included with a note that it did not come from the primary data source. Similarly, where a good quality systematic review or meta-analysis was identified, the data reported was included and clearly identified as coming from a secondary data source.

Classification of specific diagnoses

Where an estimate is given for an ICD or DSM disorder subtype (e.g. Eating disorder not otherwise specified (EDNOS)) that confers a degree of disability but is not a stand-alone GBD "Health State", the prevalence for that disorder subtype will be included in the health state category that confers the most similar degree of disability (In this example, additional prevalence for EDNOS will be added to that of bulimia nervosa).

Justification: The purpose of having several nominated health states under a disorder is so that varying levels of disability can be accounted for in YLD calculations. To exclude the prevalence of disorder subtypes such as "– not otherwise specified" will result in a lower prevalence estimate for the overall disorder and underestimation of the burden of disease.

3.0 Data sources for eating disorders

The prevalence estimates provided in the preliminary dataset do <u>NOT</u> include data from the WMHS dataset, although coverage is reflected in the table below. The WMHS data provides prevalence of eating disorders as an estimate of eating disorders (anorexia and bulimia inclusive). These estimates will be disaggregated into separate estimates for anorexia and bulimia for the final dataset.

This preliminary eating disorder dataset contains prevalence data identified in the literature review for anorexia and bulimia. All eating disorder estimates sourced from the literature review and the WMHS dataset will be pooled to produce an overall burden of eating disorders.

3.1 Prevalence data

Table 1 presents the available data identified from an extensive search of the peer review literature (see www.gbd.unsw.edu.au for methodology). All data sources can be obtained from the reference list at the end of this report. The last two columns indicate whether ANY sex- and age- specific estimates were reported for that country.

Table 1. Summary of data sources available by country available for prevalence of eating disorders and diagnoses-specific estimates.

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Asia Pacific, High Income										
Brunei	-	-	-			-	-	-		
Japan	[2]	-	-	Y	N	[3] [2]	-	-	Y	Y
Republic of Korea (South Korea)	-	[4]	[4]	N	Y	-	[4]	[4]	N	Y
Singapore	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Asia, Central										
Armenia	-	-	-			-	-	-		
Azerbaijan	-	-	-			-	-	-		
Georgia	-	-	-			-	-	-		
Kazakhstan	-	-	-			-	-	-		
Kyrgyzstan	-	-	-			-	-	-		
Mongolia	-	-	-			-	-	-		
Tajikistan	-	-	-			-	-	-		
Turkmenistan	-	-	-			-	-	-		
Uzbekistan	-	-	-			-	-	-		
Asia, East										
China	-	-	-			[5] [6]	-	-	N	N
Hong Kong	-	-	-			-	-	[7]	Y	Y
Democratic People's Republic of Korea (North Korea)	-	-	-			-	-	-		
Taiwan	-	-	-			-	-	-		
Asia, South										
Afghanistan	-	-	-			-	-	-		
Bangladesh	-	-	-			-	-	-		
Bhutan	-	-	-			-	-	-		
India	-	-	[8]	N	N	-	-	-		
Nepal	-	-	-			-	-	-		
Pakistan	-	-	-			-	-	-		
Asia, Southeast										
Cambodia	-	-	-			-	-	-		
Indonesia	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Laos People's Democratic Republic	-	-	-			-	-	-		
Malaysia	-	-	-			-	-	-		
Maldives	-	-	-			-	-	-		
Mauritius	-	-	-			-	-	-		
Mayotte	-	-	-			-	-	-		
Myanmar	-	-	-			-	-	-		
Philippines	-	-	-			-	-	-		
Reunion Island	-	-	-			-	-	-		
Seychelles	-	-	-			-	-	-		
Sri Lanka	-	-	-			-	-	-		
Thailand	-	-	-			-	-	-		
Timore Leste	-	-	-			-	-	-		
Viet Nam	-	-	-			-	-	-		
Australiasia										
Australia	-	-	-			-	-	-		
New Zealand	[9] [10]	[9] [11] [10]	[12] [9]	Y	Y	-	[12] [9] [11]	[9] [12]	Y	Y
Caribbean										
Anguilla	-	-	-			-	-	-		
Antigua and Barbuda	-	-	-			-	-	-		
Aruba	-	-	-			-	-	-		
Bahamas	-	-	-			-	-	-		
Barbados	-	-	-			-	-	-		
Belize	-	-	-			-	-	-		
Bermuda	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
British Virgin Islands	-	-	-			-	-	-		
Cayman Islands	-	-	-			-	-	-		
Cuba	-	-	-			-	-	-		
Dominica	-	-	-			-	-	-		
Dominican Republic	-	-	-			-	-	-		
French Guiana	-	-	-			-	-	-		
Grenada	-	-	-			-	-	-		
Guadaloupe	-	-	-			-	-	-		
Guyana	-	-	-			-	-	-		
Haiti	-	-	-			-	-	-		
Jamaica	-	-	-			-	-	-		
Martinique	-	-	-			-	-	-		
Montserrat	-	-	-			-	-	-		
Netherlands Antilles	-	-	-			-	-	-		
Puerto Rico	-	-	-			-	-	-		
Saint Kitts and Nevis	-	-	-			-	-	-		
St. Lucia	-	-	-			-	-	-		
St. Vincent	-	-	-			-	-	-		
Suriname	-	-	-			-	-	-		
Trinidad and Tobago	-	-	-			-	-	-		
Turks and Caicos Islands	-	-	-			-	-	-		
Europe, Central										
Albania	-	-	-			-	-	-		
Bosnia and Herzegovina	-	-	-			[13]	-	-	N	N
Bulgaria	-	-	-			-	-	-		
Croatia	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Czech Republic	-	-	-			-	-	-		
Hungary	[14]	-	-	N	N	[14]	[15]	-	N	Y
Kosovo	-	-	-			-	-	-		
Poland	-	-	-			[16]	-	-	N	N
Romania	[10]	[10]	-	Y	Y	-	-	-		
Serbia and Montenegro	-	-	-			-	-	-		
Slovakia	-	-	-			-	-	-		
Slovenia	-	-	-			-	-	-		
The Former Yugoslav Republic of Macedonia	-	-	-			-	-	-		
Yugoslavia	-	-	-			-	-	-		
Europe, Eastern										
Belarus	-	-	-			-	-	-		
Estonia	-	-	-			-	-	-		
Latvia	-	-	-			-	-	-		
Lithuania	-	-	-			-	-	-		
Republic of Moldova	-	-	-			-	-	-		
Russian Federation	-	-	-			-	-	-		
Ukraine	-	-	-			-	-	-		
Europe, Western										
Andorra	-	-	-			-	-	-		
Austria	-	-	-			[17]	-	-	N	N
Belgium	[10]	[10]	-	Y	Y	-	-	-		
Channel Islands	-	-	-			-	-	-		
Cyprus	-	-	-			-	-	-		
Denmark	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Faeroe Islands	-	-	-			-	-	-		
Finland	-	-	-			-	-	[18]	N	N
France	[10]	[10]	-	Y	Y	[19]	-	-	N	Y
Germany	[10]	[20] [10]	[20] [21]	Y	Y	[22]	[20]	[20] [21]	N	Y
Gibraltar	-	-	-			-	-	-		
Greece	-	-	-			[23]	-	-	N	Y
Greenland	-	-	-			-	-	-		
Holy See	-	-	-			-	-	-		
Iceland	-	-	-			-	-	[24]	N	Y
Ireland	-	-	-			[25]	-	-	N	Y
Isle of Man	-	-	-			-	-	-		
Israel	-	-	-			-	-	-		
Italy	[26] [27] [10]	[10]	-	Y	Y	[26] [27] [28] [29]	-	-	N	N
Liechtenstein	-	-	-			-	-	-		
Luxembourg	-	-	-			-	-	-		
Malta	[26]	-	-			[26]	-	-	N	N
Monaco	-	-	-			-	-	-		
Netherlands	[30] [10]	[30] [31] [10]	[30]	Y	Y	[30]	[30]	[30] [32]	N	Y
Norway	[33]	[34] [35]	[34] [35]	N	Y	[33] [36]	-	-	Y	N
Portugal	[37]	-	-	N	N	[37] [38] [39]	-	-	N	N
Saint Pierre et Miquelon	-	-	-			-	-	-		
San Marino	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Spain	[37] [40] [41] [42] [10]	[10]	-	Y	Y	[37] [43] [40] [41] [44] [42] [45]	-	-	Y	Y
Sweden	-	-	-			-	[46]	[46] [47]	N	Y
Switzerland	-	[48]	-	N	N	-	[48]	-	N	Y
United Kingdom	[49]	-	-	N	Y	[49]	[50]	-	Y	Y
Latin America, Andean										
Bolivia	-	-	-			-	-	-		
Ecuador	-	-	-			-	-	-		
Peru	-	-	-			-	-	-		
Latin America, Central										
Colombia	[10]	[10]	-	Y	Y	-	-	-		
Costa Rica	-	-	-			-	-	-		
El Salvador	-	-	-			-	-	-		
Guatemala	-	-	-			-	-	-		
Honduras	-	-	-			-	-	-		
Mexico	[10]	[51] [10]	-	Y	Y	-	[51]	-	N	N
Nicaragua	-	-	-			-	-	-		
Panama	-	-	-			-	-	-		
Venezuela	-	-	-			-	-	-		
Latin America, Southern										
Argentina	[52]	-	-	N	N	[52]	-	-	N	N
Chile	-	[53]	[53]	N	Y	-	-	-		
Falkland Islands (Malvinas)	-	-	-			-	-	-		
Uruguay	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Latin America, Tropical										
Brazil	[10]	[10]	-	Y	Y	[54]	[54]	[54]	N	Y
Paraguay	-	-	-			-	-	-		
North Africa/Middle East										
Algeria	-	-	-			-	-	-		
Bahrain	-	-	-			-	-	-		
Egypt	-	-	-			-	-	-		
Iran (Islamic Republic of)	-	-	-			-	-	[55]	N	N
Iraq	-	-	-			-	-	-		
Jordan	[56]	-	-	N	N	-	-	-		
Kuwait	-	-	-			-	-	-		
Lebanon	-	-	-			-	-	-		
Libyan Arab Jamahiriya	-	-	-			-	-	-		
Morocco	-	-	-			-	-	-		
Occupied Palestinian Territory	-	-	-			-	-	-		
Oman	-	-	-			-	-	-		
Qatar	-	-	-			-	-	-		
Saudi Arabia	-	-	-			-	-	-		
Syrian Arab Republic	-	-	-			-	-	-		
Tunisia	-	-	-			-	-	-		
Turkey	[57] [58]	-	-	N	Y	[57] [58]	-	-	N	Y
United Arab Emirates	-	-	-			[59]	-	-	N	N
Western Sahara	-	-	-			-	-	-		
Yemen	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
North America, High Income										
Canada	-	-	-			-	-	[60]	N	Y
United States of America	[61] [62] [10]	[10]	-	Y	Y	[63] [61] [64] [62] [65] [66] [67]	[68] [69]	[70] [53] [60] [69] [62]	Y	Y
Oceania										
American Samoa	-	-	-			-	-	-		
Cook Islands	-	-	-			-	-	-		
Fiji	-	-	-			-	-	-		
French Polynesia	-	-	-			-	-	-		
Guam	-	-	-			-	-	-		
Kiribati	-	-	-			-	-	-		
Marshall Islands	-	-	-			-	-	-		
Micronesia (Federated States of)	-	-	-			-	-	-		
Nauru	-	-	-			-	-	-		
New Caledonia	-	-	-			-	-	-		
Niue	-	-	-			-	-	-		
Northern Mariana Islands	-	-	-			-	-	-		
Palau	-	-	-			-	-	-		
Papua New Guinea	-	-	-			-	-	-		
Pitcairn	-	-	-			-	-	-		
Samoa	-	-	-			-	-	-		
Solomon Islands	-	-	-			-	-	-		
Tokelau	-	-	-			-	-	-		
Tonga	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Tuvalu	-	-	-			-	-	-		
Vanuatu	-	-	-			-	-	-		
Wallis and Futuna Islands	-	-	-			-	-	-		
Sub-Saharan Africa, Central										
Angola	-	-	-			-	-	-		
Central African Republic	-	-	-			-	-	-		
Congo	-	-	-			-	-	-		
Congo (Democratic Republic of)	-	-	-			-	-	-		
Equatorial Guinea	-	-	-			-	-	-		
Gabon	-	-	-			-	-	-		
Sub-Saharan Africa, East										
Burundi	-	-	-			-	-	-		
Comoros	-	-	-			-	-	-		
Djibouti	-	-	-			-	-	-		
Eritrea	-	-	-			-	-	-		
Ethiopia	-	-	-			-	-	-		
Kenya	-	-	-			-	-	-		
Madagascar	-	-	-			-	-	-		
Malawi	-	-	-			-	-	-		
Mozambique	-	-	-			-	-	-		
Rwanda	-	-	-			-	-	-		
Somalia	-	-	-			-	-	-		
Sudan	-	-	-			-	-	-		
Tanzania (United Republic of)	-	-	-			-	-	-		
Uganda	-	-	-			-	-	-		
Zambia	-	-				[71]	-	-	N	N

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Sub-Saharan Africa, Southern										
Botswana	-	-	-			-	-	-		
Lesotho	-	-	-			-	-	-		
Namibia	-	-	-			-	-	-		
South Africa	-	-	-			-	-	-		
Swaziland	-	-	-			-	-	-		
Zimbabwe	-	-	-			-	-	-		
Sub-Saharan Africa, West										
Benin	-	-	-			-	-	-		
Burkina Faso	-	-	-			-	-	-		
Cameroon	-	-	-			-	-	-		
Cape Verde	-	-	-			-	-	-		
Chad	-	-	-			-	-	-		
Cote d'Ivoire	-	-	-			-	-	-		
Gambia	-	-	-			-	-	-		
Ghana	-	-	-			-	-	-		
Guinea	-	-	-			-	-	-		
Guinea-Bissau	-	-	-			-	-	-		
Liberia	-	-	-			-	-	-		
Mali	-	-	-			-	-	-		
Mauritania	-	-	-			-	-	-		
Niger	-	-	-			-	-	-		
Nigeria	-	-	-			-	-	-		
Saint Helena	-	-	-			-	-	-		
Sao Tome and Principe	-	-	-			-	-	-		
Senegal	-	-	-			-	-	-		

Region /Country	ED Past Month Prev (PMP)	ED Past Year Prev (PYP)	ED Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate	AN or BN Past Month Prev (PMP)	AN or BN Past Year Prev (PYP)	AN or BN Lifetime Prev (LP)	Age – specific estimate	Sex – specific estimate
Sierra Leone	-	-	-			-	-	-		
Togo	-	-	-			-	-	-		

3.2 Remission data

Data pertaining to remission of eating disorders were derived from general population cohort studies, and naturalistic longitudinal studies of outpatient samples or samples identified through case registers. Remission was defined as no longer meeting diagnostic criteria for the eating disorder. Studies that reported a follow-up of less than one year were excluded, as were those reporting on the same cohort.

Work is continuing on sourcing and extracting data for remission of eating disorders. Preliminary estimates and calculations will be available in January 2009.

3.3 Mortality data

Estimates of excess mortality are sought for each disorder. Where a high quality meta-analysis of excess mortality has been carried out, the derived mortality measurement will be used, with clear documentation of the source of data and authors of the study.

The data is currently being collated and estimates will be available in January 2009.

4.0　Principles for data manipulation and imputation

4.1　Prevalence estimates - data manipulation and imputation

Missing past month prevalence estimates.

Many studies report the prevalence of lifetime risk of mental disorders but not past month prevalence. A decision was made to apply the observed proportions, derived from studies that reported prevalence of lifetime, 12-month and past month mental disorders, to countries that only reported lifetime or 12-month cases. Where possible, and based upon studies rated as being of sufficiently high quality, region-specific proportions of past year cases among lifetime cases were applied (population-weighted if estimates were available from more than one country).

Prevalence estimates for specific diagnoses

Studies have been identified that report an overall estimate for the broad group of disorders (in this case eating disorders) but not the specific diagnoses within the group. For some disorders the decision was taken to disaggregate into specific diagnoses for the GBD purpose of capturing different levels of disability and duration of illness. Eating disorders comprises anorexia nervosa and bulimia nervosa. A decision was made to apply the observed proportion of prevalence for the specific diagnoses (in this case anorexia and bulimia) from studies that reported prevalence of both the group (eating disorders) and specific diagnoses. Where possible, and based upon studies rated as being of sufficiently high quality, region-specific rate ratios will be applied.

Missing age-specific estimates

Many studies only report an estimate for one overall age range, whereas the GBD study requires more age-specific estimates. A decision was made to apply the observed age pattern from countries that reported age-specific prevalence to countries where that data is not available. Where possible, and based upon studies rated as being of sufficiently high quality, region-specific rate ratios will be applied.

Missing sex-specific estimates

Some studies do not report a male/female specific estimate. A decision was made to apply the observed sex ratios from countries that reported male and female estimates to countries that reported only an overall prevalence estimate. Where possible and based on studies rated as being of sufficiently high quality, region-specific sex ratios will be applied (population-weighted if estimates were available from more than one country).

No direct country-specific estimates of prevalence of any sort

Further attempts will be made to source any prevalence data for that country through all available routes (grey literature, contacting experts, national and NGO websites). Where no direct estimates of any sort are available, the weighted region-specific estimate, derived from studies in other countries within the region, will be applied (population-weighted if estimates were available from more than one country).

No direct region-specific estimates of prevalence of any sort

Further attempts will be made to source prevalence data for countries for which no data has yet been found through searching all available sources (grey literature, contacting experts, national and NGO websites). Where no direct estimates of any sort are available, the region will be matched to other regions (based on population characteristics identified through sensitivity analysis), and the weighted region-specific estimate will be applied (population-weighted if estimates were available from more than one country).

Data for 1990 or 2005 are not available.

If no direct estimates are available for 1990 or 2005, but data is available for other years, attempts will be made to estimate any trend across time. If only one estimate is available and no direct estimates of trend could be made, data on trends from other countries within the same region will be used.

Multiple data sources are available for the same country and time period.

Where multiple studies have been reported for the same country in the same time period, those of low quality or not considered representative will be excluded after careful consideration, and the estimates from the remaining countries will be pooled and the median value calculated. Statistical advice will be sought on the calculation of confidence intervals around the derived median value.

Implausible estimates

Where estimates reported are thought to be implausible, based on expert opinion, possibly due to cultural differences within the survey instrument, case ascertainment or sample selection, researchers will use indirect sources to compile estimates of what the prevalence might look like if imputations are required. This can then be used as a baseline comparison for the reported estimates.

4.2   First steps of data manipulation and imputation

The first steps of data manipulation, using decision rules agreed upon by the Expert group, have begun. Each study reporting prevalence for overall eating disorders, was reviewed to determine whether multiple prevalence types (LP, PYP, PMP) were reported. Where a study was identified as reporting a past month **and** past year prevalence estimate, both prevalence types from that study were collected. These estimates, which were assumed to have been calculated from the same sample using the same methodology, were used to calculate a ratio relative to the past month prevalence.

Table 2 presents the ratios calculated for lifetime to past year to past month prevalence. Further investigations will be carried out to determine if region-specific ratios can be calculated. The median of these ratios will be used to impute data from surveys that only report on past year prevalence of eating disorders. Median rather than mean will be used to minimise the influence of extreme ratios. Sex specific ratios will be used for studies that report prevalence of eating disorders disaggregated by sex.

Table 2. Ratios of lifetime, past year and past month prevalence of eating disorders

	Females			Males			Total		
	LP	PYP	PMP	LP	PYP	PMP	LP	PYP	PMP
ANOREXIA									
Community sample in Norway (Gotestam, 1995) [33]	1.6	-	1	-	-	-	-	-	-
the Early Developmental Stages of Psychopathology (EDSP) study in Germany (Wittchen, 1998) [20]	3.3	1	-	0	0	-	6	1	-
The national Latino and Asian American Study (NLAAS) (Alegria, 2007) [69]	4	1	-	1	1	-	2.7	1	-
the National Comorbidity Survey Replication (Hudson, 2007) [72]	0.9	0	-	0.3	0	-	0.6	0	-
BULIMIA									
Netherlands Mental Health Survey and Incidence Study (NEMESIS) (Bijl, 1998) [30]	2.8	1.5	1	2.0	2.0	1	2.0	1.3	1
International Consortium in Psychiatric Epidemiology (ICPE) in Sao Paulo, Brazil (Andrade, 2002) [54]	1.9	1.3	1	-	-	-	2.1	1.4	1
Community sample in Norway (Gotestam, 1995) [33]	2.3	-	1	-		-	-	-	-
The New Zealand Mental Health Survey (Baxter, 2006) [9]	-	-	-	-	-	-	2.4	1	-
the Early Developmental Stages of Psychopathology (EDSP) study in Germany (Wittchen, 1998) [20]	2.4	1	-	0	0	-	3	1	-
The National Latino and Asian American Study (NLAAS) (Alegria, 2007) [69]	2.1	1	-	1.9	1	-	1.9	1	-
the National Comorbidity Survey Replication (Hudson, 2007) [72]	3	1	-	5	1	-	3.3	1	-

	Females			Males			Total		
	LP	PYP	PMP	LP	PYP	PMP	LP	PYP	PMP
EATING DISORDERS									
Netherlands Mental Health Survey and Incidence Study (NEMESIS) (Bijl, 1998) [30]	3.3	1.5	1	2	2	1	2.3	1.3	1
World Mental Health Survey (WMHS) in Romania [73]	0	0	-	0	0	-	0	0	-
World Mental Health Survey (WMHS) in Italy [73]	0	0	-	0	0	-	0	0	-
World Mental Health Survey (WMHS) in the Netherlands [73]	1	1	-	1	1	-	1	1	-
World Mental Health Survey (WMHS) in Spain [73]	2	1	-	0	0	-	0.1	0	-
World Mental Health Survey (WMHS) in Colombia [73]	2	1	-	0	0	-	2	1	-
World Mental Health Survey (WMHS) in Mexico [73]	1.3	1	-	0.1	0	-	1.5	1	-
World Mental Health Survey (WMHS) in France [73]	1	1	-	0	0	-	1	1	-
World Mental Health Survey (WMHS) in Germany [73]	1.7	1	-	0	0	-	1	1	-
World Mental Health Survey (WMHS) in USA [73]	1.3	1	-	0.1	0	-	1.5	1	-
World Mental Health Survey (WMHS) in New Zealand [73]	2	1	-	1.5	1	-	2	1	-
World Mental Health Survey (WMHS) in Belgium [73]	1	1	-	0	0	-	1	1	-
World Mental Health Survey (WMHS) in Brazil [73]	1.9	1	-	6	1	-	2.3	1	-
The Chile Psychiatric Prevalence study (Vincente, 2006) [53]	1	1	-	-	-	-	1	1	-

4.3   Remission estimates - data manipulation and imputation

Remission rates

Where several remission data sources are available across different follow-up periods, the annualised remission rates (ARR) will be calculated and pooled as per methodology described by Mathers and colleagues [74] and Saha and colleagues[75].

$$\text{ARR weighted (\%)}$$
$$d = \sum[a*\{(-\ln(1 - b))/c\}]/\sum a$$

The pooled annualised remission rate will be used across all countries. While it is acknowledged that remission may differ in countries where treated prevalence differs, insufficient data (country-specific treated prevalence and difference in remission rate by country) are available to estimate country- or region-specific remission rates.

4.4   Mortality estimates - data manipulation and imputation

Mortality rates

The derived estimate for excess mortality will be used across all countries. While it is acknowledged that mortality may differ in countries where treated prevalence differs, insufficient data (country-specific treated prevalence and country-specific excess mortality estimates) are available to estimate country- or region-specific remission rates.

Reference List

1.   Stroup, D.F., Berlin, J.A., Morton, S.C., Olkin, I., Williamson, G.D., Rennie, D., et al., *Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis of Observational Studies in Epidemiology (MOOSE) group. .* JAMA, 2000. **283**(15): p. 2008-12.

2.   Nakamura, K., Yamamoto, M., Yamazaki, O., Kawashima, Y., Muto, K., Someya, T., et al., *Prevalence of anorexia and bulimia nervosa in a geographically defined area in Japan.* International Journal of Eating Disorders. , 2000. **28**(2): p. 173-180.

3.   Kuboki, T., Nomura, S., Ide, M., Suematsu, H., and et al., *Epidemiological data on anorexia nervosa in Japan.* Psychiatry Research. , 1996. **62**(1): p. 11-16.

4.   Cho, M.J., Kim, J.K., Jeon, H.J., Suh, T., Chung, I.W., Hong, J.P., et al., *Lifetime and 12-month prevalence of DSM-IV psychiatric disorders among Korean adults.* Journal of Nervous and Mental Disease, 2007. **195**(3): p. 203-210.

5.   Chun, Z.F., Mitchell, J.E., Li, K., Yu, W.M., and et al., *The prevalence of anorexia nervosa and bulimia nervosa among freshman medical college students in China.* International Journal of Eating Disorders. , 1992. **12**(2): p. 209-214.

6.   Huon, G.F., Mingyi, Q., Oliver, K., and Xiao, G., *A large-scale survey of eating disorder symptomatology among female adolescents in the people's Republic of China.* International Journal of Eating Disorders. , 2002. **32**(2): p. 192-205.

7.   Chen, C., Wong, J., Lee, N., Chan-Lo, M., Lau, J.T., and Fung, M., *The Shatin Community Mental Health Survey in Hong Kong: II. Major Findings.* Archives of General Psychiatry, 1993. **50**(2): p. 125-133.

8.   Mammen, P., Russell, S., and Russell, P.S., *Prevalence of eating disorders and psychiatric comorbidity among children and adolescents.* Indian Pediatrics, 2007. **44**(5): p. 357-359.

9.   Baxter, J., Kingi, T.K., Tapsell, R., Durie, M., and McGee, M.A., *Prevalence of mental disorders among Maori in Te Rau Hinengaro: The New Zealand Mental Health Survey.* Australian and New Zealand Journal of Psychiatry, 2006. **40**(10): p. 914-923.

10.   *World Mental Health Survey.* 2008, WHO.

11.   Wells, J.E., Browne, M.A.O., Scott, K.M., McGee, M.A., Baxter, J., and Kokaua, J., *Prevalence, interference with life and severity of 12 month DSM-IV disorders in Te Rau Hinengaro: The New Zealand Mental Health Survey.* Australian and New Zealand Journal of Psychiatry. Vol 40(10), Oct 2006, pp. 845-854, 2006.

12.   Oakley Browne, M.A., Wells, J.E., Scott, K.M., and McGee, M.A., *Lifetime prevalence and projected lifetime risk of DSM-IV disorders in Te Rau Hinengaro: The New Zealand Mental Health Survey.* Australian and New Zealand Journal of Psychiatry. , 2006. **40**(10): p. 865-874.

13.   Broers, T., Hodgetts, G., Batic-Mujanovic, O., Petrovic, V., Hasanagic, M., and Godwin, M., *Prevalence of mental and social disorders in adults attending primary care centers in Bosnia and Herzegovina.* Croatian Medical Journal, 2006. **47**(3): p. 478-484.

14.   Szumska, I., Tury, F., Csoboth, C.T., Rethelyi, J., Purebl, G., and Hajnal, Ã., *The Prevalence of Eating Disorders and Weight-Control Methods among Young Women: A Hungarian Representative Study.* European Eating Disorders Review, 2005. **13**(4): p. 278-284.

15.   Tolgyes, T. and Nemessury, J., *Epidemiological studies on adverse dieting behaviours and eating disorders among young people in Hungary.* Social Psychiatry and Psychiatric Epidemiology. Vol 39(8), Aug 2004, pp. 647-654, 2004.

16.   Wlodarczyk-Bisaga, K. and Dolan, B., *A two-stage epidemiological study of abnormal eating attitudes and their prospective risk factors in Polish schoolgirls.* Psychological Medicine, 1996. **26**(5): p. 1021-1032.

17. Mangweth-Matzek, B., Rupp, C.I., Hausmann, A., Assmayr, K., Mariacher, E., Kemmler, G., et al., *Never too old for eating disorders or body dissatisfaction: a community study of elderly women.* The International Journal of Eating Disorders, 2006. **39**(7): p. 583-586.

18. Keski-Rahkonen, A., Hoek, H.W., Susser, E.S., Linna, M.S., Sihvola, E., Raevuori, A., et al., *Epidemiology and course of anorexia nervosa in the community.* The American Journal of Psychiatry, 2007. **164**(8): p. 1259-1265.

19. Ledoux, S., Choquet, M., and Flament, M., *Eating disorders among adolescents in an unselected French population.* International Journal of Eating Disorders., 1991. **10**(1): p. 81-89.

20. Wittchen, H.-U., Nelson, C.B., and Lachner, G., *Prevalence of mental disorders and psychosocial impairments in adolescents and young adults.* Psychological Medicine. Vol 28(1), Jan 1998, pp. 109-126, 1998.

21. John, U., Meyer, C., Rumpf, H.J., and Hapke, U., *Psychiatric comorbidity including nicotine dependence among individuals with eating disorder criteria in an adult general population sample. .* Psychiatry Research 2006. **141**: p. 71-79.

22. Westenhoefer, J., *Prevalence of eating disorders and weight control practices in Germany in 1990 and 1997.* International Journal of Eating Disorders. , 2001. **29**(4): p. 477-481.

23. Fichter, M.M., Quadflieg, N., Georgopoulou, E., Xepapadakos, F., and Fthenakis, E.W., *Time Trends in Eating Disturbances in Young Greek Migrants.* International Journal of Eating Disorders. , 2005. **38**(4): p. 310-322.

24. Stefansson, J.G., Lindal, E., Bjoernsson, J.K., and Gudmundsdottir, A., *Lifetime prevalence of specific mental disorders among people born in Iceland in 1931.* Acta Psychiatrica Scandinavica., 1991. **84**(2): p. 142-149.

25. Healy, K., Conroy, R.M., and Walsh, N., *The prevalence of binge-eating and bulimia in 1063 college students.* Journal of Psychiatric Research, 1985. **19**(2-3): p. 161-166.

26. Santonastaso, P., Scicluna, D., Colombo, G., Zanetti, T., and Favaro, A., *Eating Disorders and Attitudes in Maltese and Italian Female Students.* Psychopathology. , 2006. **39**(3): p. 153-157.

27. Favaro, A., Ferrara, S., and Santonastaso, P., *The spectrum of eating disorders in young women: A prevalence study in a general population sample.* Psychosomatic Medicine. , 2003. **65**(4): p. 701-708.

28. Cotrufo, P., Barretta, V., Monteleone, P., and Maj, M., *Full-syndrome, partial-syndrome and subclinical eating disorders: an epidemiological study of female students in Southern Italy.* Acta Psychiatrica Scandinavica., 1998. **98**(2): p. 112-115.

29. Boschi, V., Siervo, M., D'Orsi, P., Margiotta, N., Trapanese, E., Basile, F., et al., *Body composition, eating behavior, food-body concerns and eating disorders in adolescent girls.* Annals of nutrition & metabolism, 2003, 47(6):284-93, 2003.

30. Bijl, R.V., Ravelli, A., and van Zessen, G., *Prevalence of psychiatric disorder in the general population: Results of the Netherlands Mental Health Survey and Incidence Study (NEMESIS).* Social Psychiatry and Psychiatric Epidemiology. , 1998. **33**(12): p. 587-595.

31. Bijl, R.V. and Ravelli, A., *Psychiatric morbidity, service use, and need for care in the general population: Results of the Netherlands Mental Health Survey and Incidence Study.* American Journal of Public Health. , 2000. **90**(4): p. 602-607.

32. Verhulst, F.C., Van der Ende, J., Ferdinand, R.F., and Kasius, M.C., *The prevalence of DSM-III-R diagnoses in a national sample of dutch adolescents.* Archives of General Psychiatry, 1997. **54**(4): p. 329-336.

33. Gotestam, K.G. and Agras, W.S., *General population-based epidemiological study of eating disorders in Norway.* International Journal of Eating Disorders. , 1995. **18**(2): p. 119-126.

34. Kringlen, E., Torgersen, S., and Cramer, V., *A Norwegian psychiatric epidemiological study.* American Journal of Psychiatry. , 2001. **158**(7): p. 1091-1098.

35. Kringlen, E., Torgersen, S., and Cramer, V., *Mental illness in a rural area: A Norwegian psychiatric epidemiological study.* Social Psychiatry and Psychiatric Epidemiology. , 2006. **41**(9): p. 173-179.
36. Heiervang, E., Stormark, K.M., Lundervold, A.J., Heimann, M., Goodman, R., Posserud, M.-B., et al., *Psychiatric disorders in Norwegian 8- to 10-year-olds: An epidemiological survey of prevalence, risk factors, and service use.* Journal of the American Academy of Child & Adolescent Psychiatry. , 2007. **46**(4): p. 438-447.
37. Machado, P.P.P., Fernandez, M.L., Goncalves, S., Martins, C., Otero, M.C., Machado, B., et al., *Eating related problems amongst Iberian female college students.* International Journal of Clinical and Health Psychology. , 2004. **4**(3): p. 495-504.
38. Machado, P.P.P., Machado, B.C., GonÃ§alves, S.n., and Hoek, H.W., *The prevalence of Eating Disorders Not Otherwise Specified.* International Journal of Eating Disorders. Vol 40(3), Apr 2007, pp. 212-217, 2007.
39. Do Carmo, I., Reis, D., Varandas, P., Bouca, D., Padre Santo, D., Neves, S.A., et al., *Prevalence of anorexia nervosa: A Portuguese population study.* European Eating Disorders Review, 1996. **4**(3): p. 157-170.
40. Gual, P., Perez-Gaspar, M., Martinez-Gonzalez, M.A., Lahortiga, F., de Irala-Estevez, J., and Cervera-Enguix, S., *Self-esteem, personality, and eating disorders: Baseline assessment of a prospective population-based cohort.* International Journal of Eating Disorders. , 2002. **31**(3): p. 261-273.
41. Fernandez, M.A.P., Labrador, F.J., and Raich, R.M., *Prevalence of eating disorders among adolescent and young adult scholastic population in the region of Madrid (Spain).* Journal of Psychosomatic Research, 2007. **62**(6): p. 681-690.
42. Canals, J., Domanech, E., Carbajo, G., and Blade, J., *Prevalence of DSM-III-R and ICD-10 psychiatric disorders in a Spanish population of 18-year-olds.* Acta Psychiatrica Scandinavica., 1997. **96**(4): p. 287-294.
43. Rojo, L., Livianos, L., Conesa, L., Garcia, A., Dominguez, A., Rodrigo, G., et al., *Epidemiology and Risk Factors of Eating Disorders: A Two-Stage Epidemiologic Study in a Spanish Population Aged 12-18 Years.* International Journal of Eating Disorders. Vol 34(3), Nov 2003, pp. 281-291, 2003.
44. Beato-Fernandez, L., Rodriguez-Cano, T., Belmonte-Llario, A., and Martinez-Delgado, C., *Risk factors for eating disorders in adolescents: A Spanish community-based longitudinal study.* European Child & Adolescent Psychiatry. , 2004. **13**(5): p. 287-294.
45. Ruiz-Lazaro, P.M., Alonso, J.P., Comet, P., Lobo, A., and Velilla, M., *Prevalence of Eating Disorders in Spain: A Survey on a Representative Sample of Adolescents.* 2005, Swain, Pamela I. (2005). Trends in eating disorders research. (pp. 85-108). Hauppauge, NY, US: Nova Biomedical Books. x, 146 pp.
46. Cullberg, J. and Engstrom-Lindberg, M., *Prevalence and incidence of eating disorders in a suburban area.* Acta Psychiatrica Scandinavica. , 1988. **78**(3): p. 314-319.
47. Bulik, C.M., Sullivan, P.F., Tozzi, F., Furberg, H., Lichtenstein, P., and Pedersen, N.L., *Prevalence, heritability, and prospective risk factors for anorexia nervosa.* Archives of General Psychiatry, 2006. **63**(3): p. 305-312.
48. Steinhausen, H.C., Winkler, C., and Meier, M., *Eating disorders in adolescence in a swiss epidemiological study.* International Journal of Eating Disorders, 1997. **22**(2): p. 147-151.
49. West, P., Sweeting, H., Der, G., Barton, J., and Lucas, C., *Voice-DISC Identified DSM-IV Disorders Among 15-Year-Olds in the West of Scotland.* Journal of the American Academy of Child & Adolescent Psychiatry., 2003. **42**(8): p. 941-949.
50. Rooney, B., McClelland, L., Crisp, A.H., and Sedgwick, P.M., *The incidence and prevalence of anorexia nervosa in three suburban health districts in south west London, U.K.* International Journal of Eating Disorders. , 1995. **18**(4): p. 299-307.

51.   Mancilla-Diaz, J.M., Franco-Paredes, K., Vazquez-Arevalo, R., Lopez-Aguilar, X., Alvarez-Rayon, G.L., and Tellez-Giron, M.T.O., *A two-stage epidemiologic study on prevalence of eating disorders in female university students in Mexico.* European Eating Disorders Review, 2007. **15**(6): p. 463-470.

52.   Herscovici, C.R., Bay, L., and Kovalskys, I., *Prevalence of eating disorders in Argentine boys and girls, aged 10 to 19, who are in primary care. A two-stage community-based survey.* Eating Disorders: The Journal of Treatment & Prevention. , 2005. **13**(5): p. 467-478.

53.   Vicente, B., Kohn, R., Rioseco, P., Saldivia, S., Levav, I., and Torres, S., *Lifetime and 12-month prevelance of DSM-IIIR disorders in the Chile Psychiatric Prevalence Study.* American journal of Psychiatry 2006, 2006. **163**(8): p. 1362-1370.

54.   Andrade, L., Walters, E.E., Gentil, V., and Laurenti, R., *Prevalence of ICD-10 mental disorders in a catchment area in the city of SÃ£o Paolo, Brazil.* Social Psychiatry and Psychiatric Epidemiology. , 2002. **37**(7): p. 316-325.

55.   Nobakht, M. and Dezhkam, M., *An epidemiological study of eating disorders in Iran.* International Journal of Eating Disorders, 2000. **28**(3): p. 265-271.

56.   Daradkeh, T.K., Alawan, A., Al Ma'aitah, R., and Otoom, S.A., *Psychiatric morbidity and its sociodemographic correlates among women in Irbid, Jordan.* Eastern Mediterranean Health Journal, 2006. **12**(SUPPL. 2): p. S107-S117.

57.   Kugu, N., Akyuz, G., Dogan, O., Ersan, E., and Izgic, F., *The prevalence of eating disorders among university students and the relationship with some individual characteristics. .* Australian and New Zealand Journal of Psychiatry 2006. **40**(2): p. 129-135.

58.   Uzun, O., Gulec, N., Ozsahin, A., Doruk, A., Ozdemir, B., and Caliskan, U., *Screening disordered eating attitudes and eating disorders in a sample of turkish female college students.* Comprehensive Psychiatry. , 2006. **47**(2): p. 123-126.

59.   Eapen, V., Mabrouk, A.A., and Bin-Othman, S., *Disordered eating attitudes and symptomatology among adolescent girls in the United Arab Emirates.* Eating Behaviors., 2006. **7**(1): p. 53-60.

60.   Garfinkel, P.E., Lin, E., Goering, P., Spegg, C., Goldbloom, D.S., Kennedy, S., et al., *Bulimia nervosa in a Canadian community sample: Prevalence and comparison of subgroups.* American Journal of Psychiatry, 1995. **152**(7): p. 1052-1058.

61.   Pyle, R.L., Neuman, P.A., Halvorson, P.A., and Mitchell, J.E., *An ongoing cross-sectional study of the prevalence of eating disorders in freshman college students.* International Journal of Eating Disorders. , 1991. **10**(6): p. 667-677.

62.   Lewinsohn, P.M., Striegel-Moore, R.H., and Seeley, J.R., *Epidemiology and natural course of eating disorders in young women from adolescence to young adulthood.* Journal of the American Academy of Child and Adolescent Psychiatry, 2000. **39**(10): p. 1284-1292.

63.   Lucas, A.R., Beard, C.M., O'Fallon, W.M., and Kurland, L.T., *50-year trends in the incidence of anorexia nervosa in Rochester, Minn.: A population-based study.* American Journal of Psychiatry, 1991. **148**(7): p. 917-922.

64.   Mulholland, A.M. and Mintz, L.B., *Prevalence of eating disorders among African American women.* Journal of Counseling Psychology. , 2001. **48**(1): p. 111-116.

65.   Drewnowski, A., Yee, D.K., and Krahn, D.D., *Bulimia in college women: Incidence and recovery rates.* American Journal of Psychiatry, 1988. **145**(6): p. 753-755.

66.   Pyle, R.L., Mitchell, J.E., Eckert, E.D., Halvorson, P.A., and et al., *The incidence of bulimia in freshman college students.* International Journal of Eating Disorders. , 1983. **2**(3): p. 75-85.

67.   Keel, P.K., Heatherton, T.F., Dorer, D.J., Joiner, T.E., and Zalta, A.K., *Point prevalence of bulimia nervosa in 1982, 1992, and 2002.* Psychological Medicine, 2006. **36**(1): p. 119-127.

68.   Nicdao, E.G., Hong, S., and Takeuchi, D.T., *Prevalence and correlates of eating disorders among Asian Americans: Results from the National Latino and Asian*

American Study. International Journal of Eating Disorders. Special issue on diagnosis and classification. , 2007. **40**(Supl): p. s22-s26.

69.   Alegria, M., Woo, M., Cao, Z., Torres, M., Meng, X.L., and Striegel-Moore, R., *Prevalence and correlates of eating disorders in Latinos in the United States.* International Journal of Eating Disorders, 2007. **40**(7 SUPPL.): p. S15-S21.

70.   Zhang, A.Y. and Snowden, L.R., *Ethnic characteristics of mental disorders in five U.S. communities.* Cultural Diversity & Ethnic Minority Psychology. Vol 5(2), May 1999, pp. 134-146, 1999.

71.   Eddy, K.T., Hennessey, M., and Thompson-Brenner, H., *Eating pathology in East African women: The role of media exposure and globalization.* Journal of Nervous and Mental Disease. , 2007. **195**(3): p. 196-202.

72.   Hudson, J.I., Hiripi, E., Pope, H.G., and Kessler, R.C., *The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication.* Biological Psychiatry, 2007. **61**: p. 348-358.

73.   WHO, *The World Mental Health Survey (WMHS).* 2008, WHO.

74.   Mathers, C.D., Vos, T., Lopez, A.D., Solomon, J., and Ezzati, M., eds. *National burden of disease studies: a practical guide. Global program on evidence for health policy.* 2001, World Health Organisation: Geneva.

75.   Saha, S., Barendregt, J.J., Vos, T., Whiteford, H., and McGrath, J., *Modelling disease frequency measures in schizophrenia epidemiology.* Schizophrenia Research, 2008. **104**(1-3): p. 246-254.

Appendix

Flowchart of systematic data search for Mental Disorders

Phase 1.   2008
Systematic review of the peer-reviewed literature and Expert Group review

Electronic database search (Embase, Medline and Psychinfo)

1st screening of papers
(Not epi, Not disorder of interest)

Total potential papers

2nd screening of papers
(Not parameter required, Not ICD or DSM criteria, Sample not representative)

Remaining papers sourced from databases for full review

Additional papers identified from reference lists

Nationally representative papers and reports extracted

Review by Expert Group

Additional data sources provided by Expert Group review

Phase 2.   2009
Review of grey literature and External review

Additional data sourced from grey literature and translated papers

External Review

Additional data sources provided by External review

Final number of data sources

Phase 3.   2009
Imputation of missing data.