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What do we know about the extent of illicit meth/amphetamine use and dependence? Results of a global systematic review

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WHAT DO WE KNOW ABOUT THE EXTENT OF ILLICIT METH/AMPHETAMINE USE AND DEPENDENCE? RESULTS OF A GLOBAL SYSTEMATIC REVIEW

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TABLE OF CONTENTS

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EXECUTIVE SUMMARY

Aims: Systematically review existing data on the prevalence of meth/amphetamine use and dependence. The aims of this paper are to: (1) describe the available international data on meth/amphetamine use and dependence; and (2) identify priorities for improving the quality and coverage of such estimates.

Methods: Multiple search strategies: a) peer-reviewed literature searches (1990-2008) using methods recommended by the Meta-analysis of Observational Studies in Epidemiology (MOOSE) group; b) systematic searches of online databases; c) Internet searches to find any other evidence of use; d) repeated consultation and feedback from experts around the globe; e) a viral email sent to lists in the HIV and illicit drug fields. Culling and data extraction followed manualised protocols, with in-built systems of cross-checking and internal consistency. Data were extracted and graded according to predefined variables and quality scored. This paper reports the most recent and highest graded prevalence estimate for the general population and school population and reports the proportion of coverage of the world's population for use and dependence estimates, general population and school surveys, age and sex specific estimates, and most recent year of estimates.

Results: There was some evidence of meth/amphetamine use or dependence in 181 countries/territories, comprising 99% of the world's population aged 15-64 years but there were no prevalence estimates in 104 of these countries. This was common in Asia, Oceania and Africa. School surveys were the most common method used (74 countries); general population surveys of meth/amphetamine use had been conducted in 48 countries. Nine countries had estimated the prevalence of dependence since 1990 (8% of the world's population 15-64 years). Estimates of past-year use varied extremely widely; past-year dependence estimates were all less than 1% (0.10-0.74%). Age ranges, methodologies and definitions of "amphetamines" differed widely.

Conclusions: There is a global imperative to improve data on the extent of meth/amphetamine use and dependence. There were large gaps in dependence estimates even in high income countries that have the resources and infrastructure to carry out such studies. Public and policy concern about this issue has been increasing largely in the absence of any data on the extent of this "problem". Any policies or other responses requiring some notion of "scale" are likely to be poorly targeted until this situation changes.

1. INTRODUCTION

In the past two decades, there has been a global increase in the illicit production and use of amphetamine type stimulants (ATS) (1, 2). Amphetamines are central nervous system (CNS) stimulants that were first synthesised more than a century ago for medical use. Multiple forms of amphetamines exist, including diverted pharmaceutical amphetamines: methamphetamine and amphetamine are thought to be the most commonly used types (1, 2). They can come in pill, powder or crystalline forms that vary in purity; they can be taken via different routes: pills are most typically swallowed, whereas the crystalline form can be smoked, injected, or heated and its vapours inhaled.

There is good evidence for a meth/amphetamine dependence syndrome (e.g. (3-5). Dependence involves a cluster of symptoms that include tolerance to a drug's effects and impaired control over drug use, with continued use in the face of recurrent problems that the user knows (or believes) to be caused by their drug use(6). Meth/amphetamine dependence typically develops after a period of sustained regular use (7, 8). Meth/amphetamine dependence is increasingly recognised by international and national organisations as a significant public health and public order issue (2, 9).

Meth/amphetamine use and dependence have been documented across the world (10, 11). In the 2009 *World Drug Report*, the United Nations Office on Drugs and Crime (UNODC) estimated that ATS were the second most commonly used illicit drug type worldwide, after cannabis. Its users outnumbered opioid users in all regions except Europe and South Asia(2). UNODC reviews rely upon Member State reporting because UNODC has limited capacity to systematically review both peer-reviewed and grey literature on this topic. To our knowledge there has never been a systematic review of published data on the global prevalence of meth/amphetamine *dependence*.

This article aims to fill both of these gaps by presenting a systematic review of existing data on the prevalence of meth/amphetamine use and dependence. The aims of this paper are to: (1) describe the available international data on meth/amphetamine use and dependence; and (2) identify priorities for improving the quality and coverage of such estimates.

2. METHOD

According to an approach being used across searches undertaken for the 2005 Global Burden of Disease project (GBD), a systematic review was undertaken for meth/amphetamine dependence and use. Standardised approaches to literature searches, search terms, data collection, data extraction, consistency and error checking, and expert consultation and review were taken. These are mentioned below and are all documented in further detail on the methodology page of the GBD expert group's website: http://www.gbd.unsw.edu.au/gbdweb.nsf/page/Methodology.

2.1. Peer reviewed literature

The search was conducted through numerous stages (see **Text Box 1**). First, searches in the peer-reviewed literature were conducted using a strategy consistent with the methodology

recommended by the Meta-analysis of Observational Studies in Epidemiology (MOOSE) group (12) using a broad search string to interrogate three electronic databases: Medline, EMBASE and PsycINFO. These databases were chosen after consultation with a qualified archivist. Searches focused on studies of human subjects published between 1990 and 2008 inclusive. No limitations were set on language of publication. Search strings, tailored to each database (including keywords, MeSH terms, EMTREE terms and explode terms) were devised for different subjects areas (see **Appendix A** for search strings and **Appendix B** for search string combinations).

Researchers searched LILACS, an online multilingual database, so that articles were not limited to English. Other means to overcome the language limitation were; consulting with experts who spoke languages other than English and conduct research in non-English speaking countries; and asking experts from non-English speaking countries to translate their data or reports into English when data could not be located for that country.

Text Box 1: STAGES OF WORK

Systematic Search

1. Three electronic databases were searched (Medline, EMBASE,PsycINFO)
2. Hand searching of reference lists of review articles and articles of importance
3. Initial cull of peer reviewed literature
4. Short list of peer reviewed studies reviewed
5. Grey literature web-based searches
6. Short list of grey literature studies reviewed
7. *Expert comment* (including members of the Mental Disorders and Illicit Drug Use Expert Group) on completeness of included studies from electronic database search and grey literature search.

Data Extraction

8. Data extraction into Microsoft Access Database®
9. Cross-checking of extracted data
10. Web-wide searches for any evidence of use for countries without available prevalence estimates
11. De-duplication of studies reported in multiple publications

Expert consultation

12. Data requests sent to UNODC and WHO
13. List of included studies sent to other researchers with expertise in the area
14. Coverage of data reviewed by ATS experts at UNODC
15. Email sent to email lists and posted on drug research information websites requesting additional data for countries where no estimates were located

Second, lists of review articles and recommended articles from experts were individually screened for studies that may not have been identified by the electronic database search. Third, abstracts of the identified articles were read and excluded if they did not: focus on meth/amphetamine or prevalence or incidence, include raw data (review articles), include general population samples (school studies were included), included data before 1990 or comprised multiple articles reporting from the same cohort (in which case only the most recent or relevant article was included). Nationally representative studies were preferred over sub-national studies: sub-national studies were conducted in cities which were nationally unrepresentative (typically the largest or capital city).

2.2. Grey Literature

The second stage of the systematic search, conducted during 2008, covered the grey literature. A systematic approach (described in (13)) was used to search databases and websites of government agencies and non-government organisations to identify reports and statistics. Data were collected by one research team member and cross checked by another member of the research team.

2.3. Data Extraction

In the data extraction stage we obtained information about study design and participants as recommend by the Strengthening the Reporting if Observational Studies in Epidemiology (STROBE) guidelines (14, 15), parallel to the CONSORT guidelines for reporting of randomised trials (16).

A Quality Index (see **Appendix C**) was modelled on one developed by John McGrath and Sukanta Saha (17, 18) and modified via the 'Delphi method' following consultation with, and consensus agreement by, the Expert Group (see Acknowledgements) and central GBD project personnel. Quality variable responses were assigned scores that were summed to create a Quality Index score that ranged from 0 to 15, for each study. Highest scores were achieved by general population based cohort studies that provided age and sex disaggregated prevalence estimates. Additional text was also included in the extraction process to capture the diversity of reported methodology. This was used to determine if any studies with a low numeric quality index score should also be included.

A tri-level Microsoft Access© database was designed to accommodate the illicit drugs data, which allowed computerised cross-checking of data entered; in addition, a random sample of 10% of data sources was cross-checked by another research team member to check consistency and accuracy of data extraction. Quality assurance was also built into the database by using drop down boxes and restricted entry of characters. Data entry was manualised (see **Appendix D** for database manual including data entry rules). Queries were written to export complete datasets from the database into Microsoft Excel©.

2.4. Searching for evidence of use in countries without prevalence estimates

Searches for "any evidence of meth/amphetamine use" were conducted using several major approaches. First, reports and surveys that were referenced in the 2008 World Drug Report (19) were sourced. Second, reports and peer-reviewed articles that did not meet inclusion criteria as sources of prevalence estimates, but which include data on the use of amphetamines, were used.

Finally, the Internet was used to search databases and search engines. Searches were also conducted using the following databases: WorldCat, PsychINFO and PubMed; and the following search engines: Google and GoogleScholar, with searches targeted at drug use in specific countries (see **Appendix E** for search strings used). These databases and search engines allowed for the inclusion of a broad range of information sources. Evidence of meth/amphetamine use was identified in a number of grey literature sources, including UNODC reports, government reports, surveys, news reports and journal articles (See Supplementary Table); this "evidence" included data on treatment, seizures, registered drug users and reports of meth/amphetamine use occurring.

2.5. Expert consultation

Experts were consulted at every stage during this process. Lists of articles were emailed to check for completeness on several occasions during the review. Summary tables of country coverage of dependence, use and any evidence of use were emailed to meth/amphetamine experts and contacts at the UNDOC, asking them to identify additional studies to fill gaps. Updated summary tables were emailed on several occasions to the expert group, core GBD personnel and other personnel to confirm data coverage and accuracy.

In May 2009, a "viral email" was sent out to known email lists, experts and interest groups in the area of illicit drug or HIV research, advocacy, or policy, listing the countries for which we had no data on the prevalence of amphetamine use and/or dependence, with invitations for comment or submission of additional data for a final check of data coverage. This resulted in a number of additional recent reports (largely from low and middle income countries) that had recently been completed.

2.6. Data grading

Data were hierarchically graded according to study source/methodology (adapted from (20); see **Text Box 2**). Data were displayed for each country, grouped according to GBD study-defined regions (see **Appendix F** for countries/regions). We categorised estimates of use imputed by UNODC and reported in the 2008 World Drug Report with no details as "evidence of use" (graded "E" estimates), because they did not meet the primary inclusion criteria requiring details of methods used (or data sources and methodology used to impute estimates; see Supplementary Table).

Text box 2: HIERARCHICAL GRADING SYSTEM	
A1	Multiple and varied methods of indirect prevalence estimation
A2	Three sample capture-recapture, multivariate indicator or back projection method of prevalence estimation. Multiple but similar methods of indirect prevalence estimation.
A3	Two sample capture-recapture or multiplier method of prevalence estimation
B1	General population survey
B2	School survey
B3	University sample
B4	Convenience sample
C1	Expert consensus (including Delphi)
C2	Rapid assessment or other documented 'expert' judgement
D1	Government registration of drug users
D2	Official government estimate with no methodology reported not including government registration of drug users
E	Estimate with methodology unknown

2.7. Searches

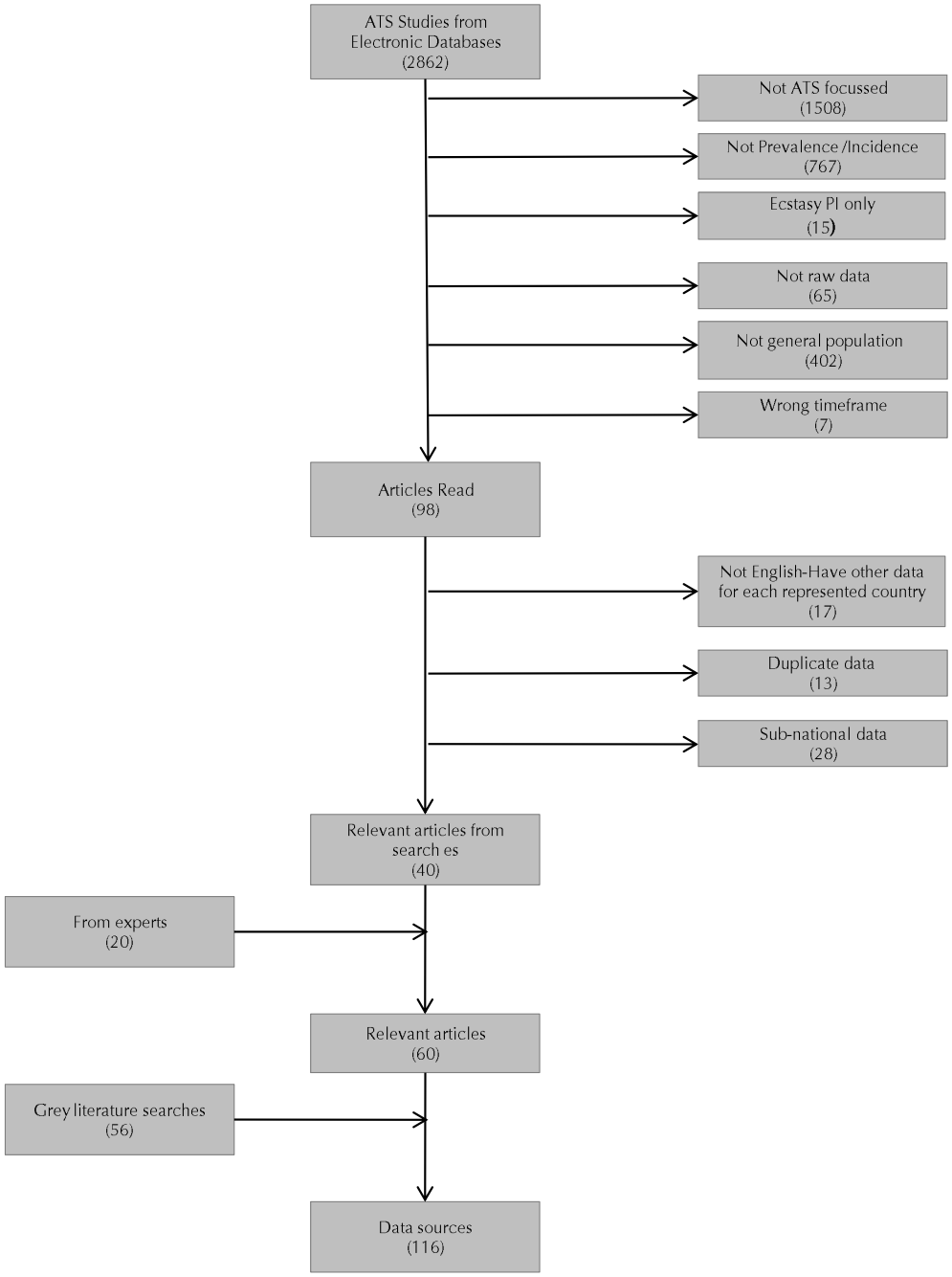
Figure 1 shows the overall search/cull process. Using these processes, 2862 studies were found for amphetamine use and dependence estimates. Of these; 1508 were not ATS focused, 767 were not prevalence/incidence estimates, 15 were ecstasy estimates only, 65 had no raw data, 402 were not from a general population, 7 were from the wrong time frame, 13 were duplicate data, 28 were sub-national (and national estimates were available for that country) and 17 were not in English. An additional 20 articles were identified by experts and 56 articles were found from grey

literature searches, leading to 116 data sources (including grey literature and articles with prevalence estimates). See (21) for a flowchart of the culling process.

In this paper, we report the most recent and highest graded prevalence estimate for the general population and school population: country-level meta-analysis of estimates over time were not conducted because of the possibility that differences reflected real population-level changes. In any case, such trends would only be available in a few (high income) countries.

This paper reports the proportion of coverage of the total world's population and also the world's population aged between 15-64 years were calculated for use and dependence estimates, general population and school surveys, age and sex specific estimates, and most recent year of estimates. Population numbers were provided by the United Nations population division of Urban/Rural data for the Global Burden of Disease project.

Figure 1: Flowchart of search strategy for prevalence of amphetamine use and dependence



Note. This flowchart show all articles identified for the GBD study. Included in this manuscript is the most recent indirect prevalence, general population and /or school survey for each country.

3. RESULTS

3.1. Evidence of meth/amphetamine use and dependence

There was some evidence of meth/amphetamine use or dependence in 181 countries/territories of the world, comprising 99% of the world's population aged 15-64 years (**Table 1**). In 104 of these countries, however, there were no numerical estimates available on the extent of such use. These countries included 39% of the world's population aged 15-64 years and included countries in Central Asia, East Asia, South Asia and Southeast Asian regions; in Oceania and most countries in Africa (**Table 3**).

Table 1: Summary characteristics of data on the prevalence of amphetamine use or dependence

	Number of countries	World population covered	Population years covered 15-64
Evidence of use and dependence			
Prevalence estimate of use or dependence (incl. school survey)	77	57.6%	59.8%
Evidence of use but no prevalence estimates	104	41.0%	39.3%
Total*	181	98.6%	99.1%
Coverage of the world's population by differing study samples and estimate types			
Amphetamine dependence estimate			
National	5	5.2 %	5.4%
Sub-national	4	2.5 %	2.6%
Amphetamine use estimate – all studies			
National	70	33.5%	34.2%
Sub-national	7	24.0%	25.6%
Amphetamine use estimate – general population	45	26.5%	27.0%
National	3	23.6%	25.2%
Sub-national			
Amphetamine use estimate - school children	64	--	**Percentage years covered 15-19**
National	10	--	23.5%
Sub-national			22.4%
Amphetamine dependence sex specific estimates	1	4.6%	4.7%
National	1	0.9%	0.9%
Sub-national			
Amphetamine use sex specific estimates			
National	55	23.4%	24.1%
Sub-national	6	25.5%	26.9%
Amphetamine dependence age group estimates (excl. school surveys)	1	4.6%	4.6%
National	0	0.0%	0.0%
Sub-national			
Amphetamine use age group estimates (excl. school surveys)	31	15.9%	16.5%
National	1	0.2%	0.2%
Sub-national			
Most recent prevalence estimates			
2005-2007	36	23.7%	24.4%
2000-2004	34	12.4%	12.2%
Before 2000	7	22.4%	24.3%

Note. Estimates may be past year, point or lifetime estimates. Sub-national studies are **only** counted in this table for countries when there is no available national data. The "Evidence of use and dependence" section is additive, but the "Coverage of the world's population" section is not – each country can be counted more than down the rows.
*Totals found across 229 countries or territories.

In the 77 countries with some estimate of meth/amphetamine use or dependence many estimates were dated: seven studies were conducted in 1999 or earlier, 34 between 2000 and 2004, and only 36 in 2005 or later. Estimates of use were most likely to be based on surveys of school-aged children: 74 countries with 46% of the world's population aged 15-19 years of age had conducted national (n = 64) or sub-national (n = 10) school surveys. Forty eight countries had produced either a national (n = 45) or sub-national (n = 3) estimate of meth/amphetamine use in the general population. These countries comprised 52% of the world's population aged 15 to 64 years.

Age and sex specific estimates were rarely reported. Two studies of dependence reported sex specific estimates; one dependence study reported age group-specific estimates. Among the studies of meth/amphetamine use (general population or school surveys), 61 reported sex-specific estimates and 32, age group-specific estimates.

3.2. Meth/amphetamine dependence estimates

In the past twenty years, nine countries have estimated the prevalence of meth/amphetamine dependence (**Table 2**). These comprised five national and four sub-national estimates, in countries that accounted for 8% of the world's population aged 15-64 years.

Table2. Identified studies estimating the prevalence of meth/amphetamine dependence

Region/Country	Dependence: Point or past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source	Dependence: "Lifetime Prevalence"**	Year of estimate	Age (yrs)	Grade	Quality score	Source
Australia	0.73+ (NR)	2002-2003	15-49	A1	10	(22)	--	--	--	--	--	--
Czech Republic	0.28 (0.25,0.32)	2005	15-64	A1	6	(23)	--	--	--	--	--	--
Finland	0.42 (NR)	2002	15-54	A1	12	(23)	--	--	--	--	--	--
Germany	--	--	--	--	--	--	0.5* (NR)	1995	14-25	B1	13	(24)
New Zealand	--	--	--	--	--	--	3.1* (NR)	2003	25	B1	12	(25)
Slovakia	0.22 (0.16,0.40)	2006	15-64	A1	13	(23)	--		--	--		
Taiwan	--	--	--	--	--	--	0.4* (NR)	2002	M=15	B2	13	(26)
United Kingdom	0.38* (0.22,0.55)	2000	15-74	B1	12	(27)	--	--	--	--	--	--
USA*****	0.2 (NR)	2007	15-64	B1	13	(28)	0.6 (NR)	2001-2002	18+	B1	10	(29)

Note. All estimates are reported as percentages, NR=Not reported, + median prevalence estimate, * sub-national data available in the absence of national data, **We have used the term "Lifetime prevalence" of dependence or use to indicate cumulative probability for that parameter to aid in communication as this is the most commonly used nomenclature in the reviewed data.

***** Note that this estimate refers to "stimulant dependence", namely pharmaceutical amphetamines. Methamphetamine users who did not report the use of any pharmaceutical amphetamines would not be included in this assessment of dependence.

Age ranges for the estimates varied widely across studies: from only 15-49 years for the Australian estimate (22), to 12 years and older for the US estimate (30), making it difficult to compare estimates. Half of studies used an indirect approach to estimation rather than direct survey methods. Estimates of meth/amphetamine dependence prevalence were below 1% in all studies (past year range 0.1-0.73%) despite varying age ranges and methodologies (with the exception of an estimate of 3.1% lifetime dependence among 25 year olds in New Zealand (25)). The US estimate of "stimulant dependence", the lowest of the estimates located (0.2%), was a direct prevalence estimate derived from a household survey (30) (the nature of the NSDUH questionnaire structure means that this estimate would not include methamphetamine users who had not also used pharmaceutical stimulants).

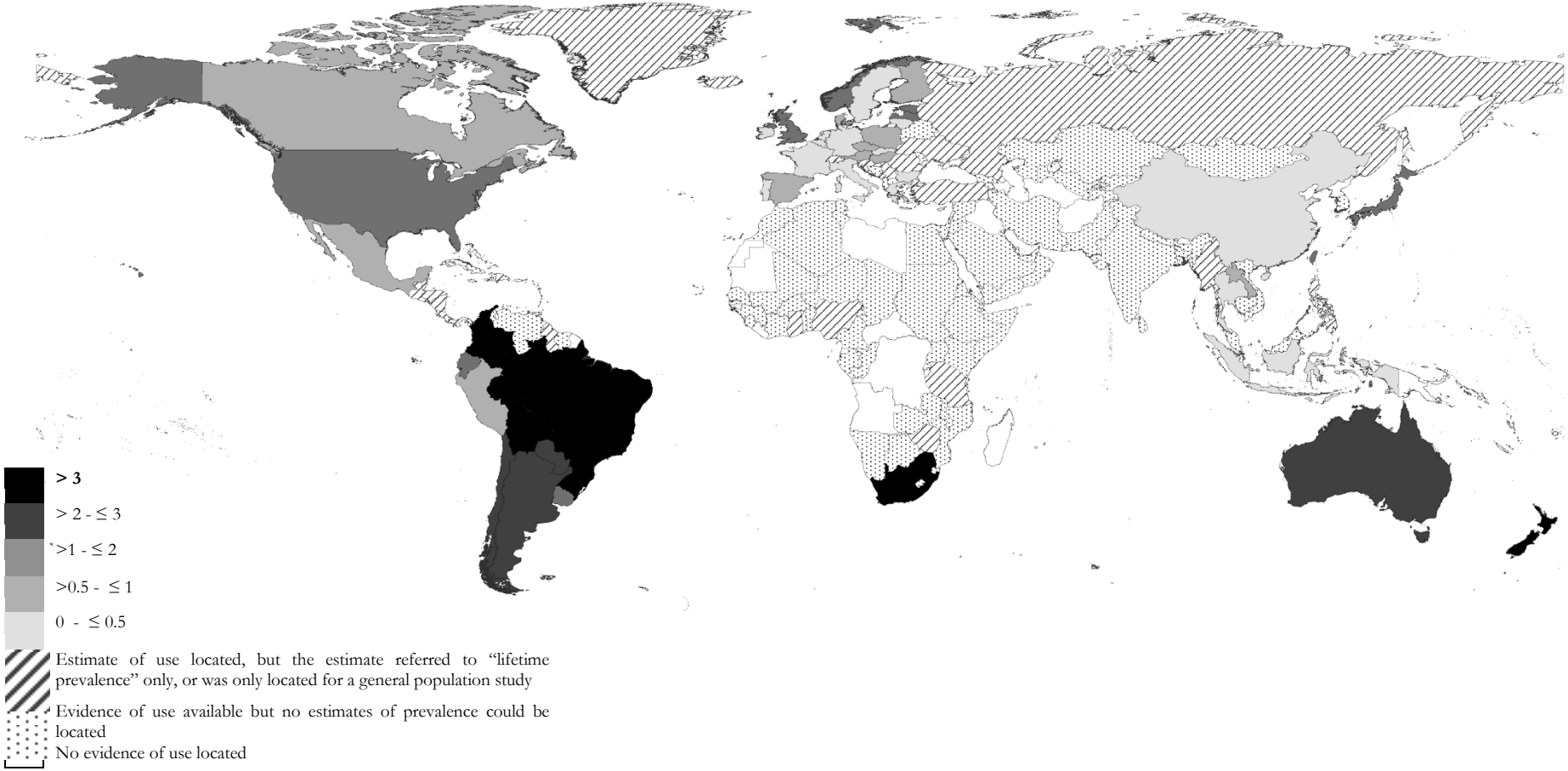
3.3. Meth/amphetamine use estimates

Estimates of use were grouped according to "lifetime" or past year use; past month use was less commonly assessed (European countries were a notable exception) and were only included when a past year prevalence estimate was not available for a given country**. Figure 2** pictorially represents the available estimates of meth/amphetamine use in the past year among the general population. This is intended to give an impression of the levels documented across countries; important details about the age ranges (which differed across studies), study methodology, year of study and the quality score should be reviewed (**Table 3**).

As can be seen **(Table 3)**, there was notable geographic variation in the estimated levels of meth/amphetamine use. Among surveys of young people, the existing past-year use estimates were extremely low in the Caribbean, intermediate in Southeast Asia, Australia and Western Europe, and higher in Latin America and North America (by far the highest national-level estimate identified was in the United States (US) (7.8%; (31)).

A different picture emerged in surveys of the general population : although Latin American estimates were in the higher range of past year meth/amphetamine use, the US estimate (1.2%; (30)) was not high in comparison to other countries. Levels in Australia and New Zealand were higher (2.7% and 4% respectively). There were very few general population-level use estimates in Asia, a region where significant concern from government, UN and other agencies has been voiced over meth/amphetamine use and problems **(see Table 3 and Figure 2).**

Figure 2: Available estimates of the prevalence of meth/amphetamine use in the past year among the general population



Note: Prevalence estimates are presented from nationally representative general population studies. If no national general population study was available for a given country a national school survey or sub-national study may be represented in the map. This is for illustrative purposes and details should be examined in Table 3. It is important to note that age ranges differ across studies included in this map, and the types of amphetamines included in assessment may have differed. Study details including age ranges may be found in Table 3. Unfortunately, due to limited reporting of such detail across countries, details on the types of amphetamines included in questions could not be comprehensively assessed.

Table 3: Identified studies of the prevalence of meth/amphetamine use and dependence

Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Prevalence of meth/amphetamine dependence##															
Australia	0.73+ (NR)	2002-2003	15-49	A1	10	(22)	--	--	--	--	--	--			
Czech Republic	0.28 (0.25,0.32)	2005	15-64	A1	6	(23)	--	--	--	--	--	--			
Finland	0.42 (NR)	2002	15-54	A1	12	(23)	--	--	--	--	--	--			
Germany	--	--	--	--	--	--	0.5* (NR)	1995	14-25	B1	13	(24)			
New Zealand	--	--	--	--	--	--	3.1* (NR)	2003	25	B1	12	(25)			
Slovakia	0.22 (0.16,0.40)	2006	15-64	A1	13	(23)	--		--	--					
Taiwan	--	--	--	--	--	--	0.4* (NR)	2002	M=15	B2	13	(26)			
United Kingdom	0.38* (0.22,0.55)	2000	15-74	B1	12	(27)	--	--	--	--	--	--			
USA****	0.2 (NR)	2007	15-64	B1	13	(28)	0.6 (NR)	2001-2002	18+	B1	10	(29)			
Prevalence of meth/amphetamine use															
ASIA PACIFIC, HIGH INCOME															
Brunei	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Japan	1.4	2003	NR	B1	5	(32)	0.8*	1997	NR	B2	5	(33)			
Republic of Korea	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Singapore	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
ASIA, CENTRAL															
Armenia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)

A1: Multiple and varied methods of indirect prevalence estimation; **A2:** Three sample capture-recapture, multivariate indicator or back projection method of prevalence estimation. Multiple but similar methods of indirect prevalence estimation; **A3:** Two sample capture-recapture or multiplier method of prevalence estimation; **B1:** General population survey; **B2:** School survey; **B3:** University sample; **B4:** Convenience sample; **C1:** Expert consensus (including Delphi); **C2:** Rapid assessment or other documented 'expert' judgement; **D1:** Government registration of drug users; **D2:** Official government estimate with no methodology reported not including government registration of drug users; **E:** Estimate with methodology unknown

Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Azerbaijan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Georgia	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(10)
Kazakhstan	--	--	--	--	--	--	--	--	--	--	--	--	Registered drug users	D1	(34)
Kyrgyzstan	--	--	--	--	--	--	--	--	--	--	--	--	Registered drug users	D1	(34)
Mongolia	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Tajikistan	--	--	--	--	--	--	--	--	--	--	--	--	Registered drug users	D1	(34)
Turkmenistan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uzbekistan	--	--	--	--	--	--	--	--	--	--	--	--	Registered drug users	D1	(34)
ASIA, EAST															
China	0.15*	1998	NR	B1	9	(36)	0.1*	1996	16-18	B2	7	(37)			
Democratic People's Republic of Korea	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hong Kong	--	--	--	--	--	--	--	--	--	--	--	--	Registered drug users	D1	(38)
Taiwan	1.24#* (0.79-1.97)	2002	15-64	A1	14	(39)	0.35*	2003	13-18	B2	11	(40)			
ASIA, SOUTH															
Afghanistan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bangladesh	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(41)
Bhutan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
India	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Nepal	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Pakistan	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(42)

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
ASIA, SOUTHEAST															
Cambodia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Indonesia	0.07	2005	10-60	B1	11	(43)	0.69	2005	10-60	B1	11	(43)			
Lao People's Democratic Republic	0.64	2005-2006	15+	A1	5	(44)	5.2*	2008	12-24	B2	8	(45)			
Malaysia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Maldives	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(42)
Mauritius	0	2004	15-18	B2	7	(46)	0	2004	15-18	B2	7	(46)			
Mayotte	--	--		--	--	--	--	--		--	--	--	--	--	--
Myanmar	2.96*	2004	15-21	B2	12	(47)	5.97*	2004	15-21	B2	12	(47)			
Philippines	--	--	--	--	--	--	5.5	2003	10-44	B1	12	(48)			
Seychelles	--	--	--	--	--	--	--	--		--	--	--	Treatment admissions	D1	(49)
Sri Lanka	--	--	--	--	--	--	--	--		--	--	--	Drug seizures	D2	(35)
Thailand	0.14	2007	12-65	B1	9	(50)	1.7	2007	12-65	B1	9	(50)			
	0.9*	2004-2005	15-19	B2	11	(51)	4.4*	2004-2005	15-19	B2	11	(51)			
Timor Leste	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Viet Nam	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
AUSTRALASIA															
Australia	2.7	2007	15-64	B1	12	(10, 52, 53)	6.3	2007	14+	B1	12	(52, 53)	**--**	--	--
	0.6	2007	12-17	B2	12	(10, 52, 53)	1	2007	12-17	B2	12	(10, 52, 53)			
New Zealand	4	2003	13-65	B1	10	(54)	9	2006	13-65	B1	13	(54)			
CARIBBEAN															
Anguilla	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antigua and Barbuda	--	--	--	--	--	--	--	--	--	--	--	--	Evidence of use	D2	(55)

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Aruba	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bahamas	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODCˆ	C2	(10)
Barbados	0.2	2005	NR	B1	11	(56)	0.5	2005	NR	B1	11	(57)			
							3.1	2001	12+	B2	11	(56)			
Belize	--	--	--	--	--	--	4.7	2001	12+	B2	11	(57)			
Bermuda	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
British Virgin Islands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cayman Islands	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Cuba	--	--	--	--	--	--	--	--	--	--	--	--	Treatment admissions	D1	(58)
Dominica	--	--	--	--	--	--	--	--		--	--	--	Evidence of use	D2	(59)
Dominican Republic	5.4	2003	12-17	B2	7	(60)	0.01 (0.02,0.03)	1999	12-31	B2	11	(61)			
French Guiana	--	--		--	--	--	--	--		--	--	--	--	--	--
Grenada	--	--	--	--	--	--	--	--	--	--	--	--	Evidence of use within a specific population		(62)
Guadaloupe	--	--		--	--	--	--	--		--	--	--	--	--	--
Guyana	0.8	2002	NR	B2	9	(63)	1.5	2002	11-23	B2	9	(63)			
Haiti	--	--		--	--	--	--	--		--	--	--	Evidence of use	D2	(59)
Jamaica	--	--		--	--	--	--	--		--	--	--	Treatment admissions	D1	(49)
Martinique	--	--		--	--	--	--	--		--	--	--	--	--	--
Montserrat	--	--		--	--	--	--	--		--	--	--	--	--	--
Netherlands Antilles	--	--		--	--	--	--	--		--	--	--	Drug seizures	D2	(64)
Saint Kitts and Nevis	--	--		--	--	--	--	--		--	--	--	Evidence of use	D2	(59)
St. Lucia	--	--		--	--	--	--	--		--	--	--	Evidence of use	D2	(59)
St. Vincent	--			--			--			--			Evidence of use	D2	(59)
Suriname	--	--		--	--	--	--	--		--	--	--	Evidence of use	D2	(59)
Trinidad and	--	--		--	--	--	--	--		--	--	--	Imputed by	C2	(10)

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Tobago													UNODC^		
Turks and Caicos Islands	--	--		--	--	--	--	--		--	--	--	Imputed by UNODC^	C2	(10)
EUROPE, CENTRAL															
Albania	--	--		--	--	--	--	--		--	--	--	Imputed by UNODC^	C2	(10)
Bosnia and Herzegovina	--	--		--	--	--	--	--		--	--	--	Drug seizures	D2	(64)
Bulgaria	0.4	2005	18-60	B1	13	(65)	1.4	2005	18-60	B1	13	(65)			
	1.0	2003	15-16	B2	13	(66)	2	2003	15-16	B2	13	(66)			
Croatia	--	--	--	--	--	--	2	2003	15-16	B2	13	(66)			
Czech Republic	0.7	2005	18-64	B1	10	(65)	2.5	2004	15-64	B1	10	(65)			
	2.0	2003	15-16	B2	13	(66)	2	2006	15-16	B2	8	(67)			
Hungary	1.0	2003	18-54	B1	10	(65)	2.5	2003	18-54	B1	10	(65)			
	2.0	2003	15-16	B2	13	(66)	3	2003	15-16	B2	8	(66)			
Poland	0.7	2006	15-64	B1	10	(65)	1.9	2002	16-64	B1	9+	(65)			
	2.1	2005	15-16	B2	7	(68)	4	2005	15-16	B2	8	(67)			
Romania	--	--	--	--	--	--	0.2	2004	15-64	B1	10	(65)			
							0	2003	15-16	B2	13	(66)			
Serbia and Montenegro	--	--	--	--	--	--	1.7	2005	16	B2	9	(69)			
Slovakia	0.3	2006	15-64	B1	10	(65)	1.2	2006	15-64	B1	10	(65)			
	1.0	2003	15-16	B2	13	(66)	1	2006	15-16	B2	8	(67)			
Slovenia	1.0	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
The Former Yugoslav Republic of Macedonia	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)
EUROPE, EASTERN															
Belarus	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Estonia	1.3	2003	NR	B1	10	(65)	1	1998	18-64	B1	9+	(65)			

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
	3.0	2003	15-16	B2	13	(67)	7	2003	15-16	B2	13	(66)			
Latvia	1.1	2003	15-64	B1	10	(65)	2.6	2003	15-64	B1	10	(65)			
	2.0	2003	15-16	B2	13	(66)	3	2003	15-16	B2	13	(66)			
Lithuania	0.3	2004	15-64	B1	10	(65)	1.1	2004	15-64	B1	10	(65)			
	3	2003	15-16	B2	13	(66)	5	2003	15-16	B2	13	(66)			
Republic of Moldova	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Russian Federation	0	2003	15-16	B2	13	(66)	1	2007	15-16	B2	13	(70)			
Ukraine	1	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
EUROPE, WESTERN															
Andorra	--	--		--	--	--	--	--		--	--	--	Drug seizures	D2	(64)
Austria	0.8	2004	15-64	B1	10	(65)	2.4	2004	15-64	B1	10	(65)			
	4.0	2003	15-16	B2	8	(66)	4	2003	15-16	B2	8	(66)			
Belgium	0.3*	1994	18-64	B1	9	(65)	2.1	2001	15-64	B1	9+	(65)			
	1.0	2003	15-16	B2	13	(66)	2	2003	15-16	B2	12	(66)			
Channel Islands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyprus	0.3	2006	15-64	B1	10	(65)	0.8	2006	15-64	B1	10	(65)			
	0.0	2003	15-16	B2	13	(66)	0	2003	15-16	B2	13	(66)			
Denmark	0.7	2005	15-64	B1	10	(65)	6.9	2005	15-64	B1	10	(65)			
	3.0	2003	15-16	B2	13	(66)	4	2003	15-16	B2	13	(66)			
Faeroe Islands	1	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
Finland	0.6	2006	15-64	B1	10	(65)	2.2	2006	15-64	B1	10	(65)			
	0.0	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
France	0.1	2005	15-64	B1	10	(65)	1.4; 2	2005; 1999	15-64; 15-16	B1; B2	10; 11+	(65); (71)			
Germany	0.5	2006	18-64	B1	10	(65)	2.5	2006	18-64	B1	10	(65)			
	3.0	2003	15-16	B2	13	(66)	5	2003	15-16	B2	13	(66)			
Gibraltar	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Greece	0	2004	15-64	B1	10	(65)	0.1	2004	15-64	B1	10	(65)			
	0	2003	15-16	B2	13	(66)	0	2003	15-16	B2	13	(66)			
Greenland	0	2003	15-16	B2	13	(66)	0	2003	15-16	B2	13	(66)			
Holy See	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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Iceland	3	2003	15-16	B2	13	(66)	5	2003	15-16	B2	13	(66)			
Ireland	0.4	2006-2007	15-64	B1	10	(65, 72)	3.5	2006-2007	15-64	B1	12	(65, 72)			
	0	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
Isle of Man	1	2003	15-16	B2	13	(66)	3	2003	15-16	B2	13	(66)			
Israel	--	--	--	--	--	--	--	---	--	--	--	--	Imputed by UNODC^	C2	(10)
Italy	0.4	2005	15-64	B1	10	(65)	2.4	2005	15-64	B1	10	(65)			
	2	2003	15-16	B2	13	(66)	1	2005	15-16	B2	8	(67)			
Liechtenstein	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Luxembourg	--	--	--	--	--	--	3	2002	15-16	B2	8	(67)			
Malta	0	2001	18-64	B1	10	(65)	0.4	2001	18-64	B1	10	(65)			
	1	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
Monaco	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Netherlands	0.3	2005	15-64	B1	10	(65)	2.1	2005	15-64	B1	10	(65)			
	1	2003	15-16	B2	13	(66)	1	2003	15-16	B2	13	(66)			
Norway	1.1	2004	15-64	B1	10	(65)	3.6	2004	15-64	B1	10	(65)			
	1	2003	15-16	B2	13	(66)	2	2003	15-16	B2	13	(66)			
Portugal	0.2	2007	15-64	B1	10	(65)	0.9	2007	15-64	B1	10	(65)			
	2	2003	15-16	B2	9	(66)	3	2003	15-16	B2	9	(66)			
Saint Pierre et Miquelon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Marino	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)
Spain	0.7	2005-2006	15-64	B1	10	(65)	3.4	2005-2006	15-64	B1	10	(65)			
	3	2006	15-16	B2	8	(71)	3	2006	15-16	B2	8	(67)			
Sweden	0.2	2000	16-64	B1	9+	(65)	1.9	2000	16-64	B1	9+	(65)			
	1	2003	15-16	B2	13	(66)	1	2005	15-16	B2	8	(67)			
Switzerland	2	2003	15-16	B2	13	(66)	3	2003	15-16	B2	13	(66)			
United Kingdom	1.5	2004	16+	B1	10	(65)	12.3	2004	16+	B1	10; 13	(65)			
	2	2003	15-16	B2	13	(66)	3	2003	15-16	B2		(66)			
LATIN AMERICA, ANDEAN															
Bolivia	3.07	2006-2007	15-64	B1	--	(73)	6.69	2006-2007	15-64	B1	--	(73)			

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	3.63	2006-2007	15-16	B2	--	(73)	7.08	2006-2007	15-16	B2	--	(73)			
Ecuador	1.32	2006-2007	15-64	B1	--	(73)	2.73	2006-2007	15-64	B1	--	(73)			
	1.58	2006-2007	15-16	B2	--	(73)	3.03	2006-2007	15-16	B2	--	(73)			
Peru	0.65	2006-2007	15-64	B1	--	(73)	1.11	2006-2007	15-64	B1	--	(73)			
	0.59	2006-2007	15-16	B2	--	(73)	1.2	2006-2007	15-16	B2	--	(73)			
LATIN AMERICA, CENTRAL															
Colombia	3.48	2006-2007	15-64	B1	--	(73)	5.78	2006-2007	15-64	B1	--	(73)			
	3.69	2006-2007	15-16	B2	--	(73)	6.36	2006-2007	15-16	B2	--	(73)			
Costa Rica	--	--	--	--	--	--	0.02	1999	12-20	B2	11	(61)			
El Salvador	3.4	2003	12-17	B2	9	(60)	0.02	2000	13-20	B2	11	(61)			
Guatemala	5.6	2003	12-17	B2	9	(60)	0.01	1999	11-23	B2	11	(61)			
Honduras	--	--	--	--	--	--	0.03	1999	11-20	B2	11	(61)			
Mexico	1*	1993-1994	NR	B1	11	(74)	--	--	--	--	--	--			
	1.4	1991-1993	NR	B2	11	(74)									
Nicaragua	4.0	2003	12-17	B2	9	(60)	0.04	1999	10-23	B2	9	(61)			
Panama	2.8	2003	12-17	B2	7	(60)	2.4	1996	11-20	B2	10	(75)			
Venezuela	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
LATIN AMERICA, SOUTHERN															
Argentina	2.79	2006-2007	15-64	B1	--	(73)	4.07	2006-2007	15-64	B1	--	(73)			
	3	2006-2007	15-16	B2	--	(73)	4.54	2006-2007	15-16	B2	--	(73)			
Chile	2.15	2006-2007	15-64	B1	--	(73)	3.95	2006-2007	15-64	B1	--	(73)			
	2.57	2006-2007	15-16	B2	--	(73)	3.2*	1991	12-20	B2	10	(76)			
Falkland Islands (Malvinas)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uruguay	1.61	2006-2007	15-64	B1	--	(73)	2.87	2006-2007	15-64	B1	--	(73)			
	2.19	2006-2007	15-16	B2	--	(73)	3.53	2006-2007	15-16	B2	--	(73)			
LATIN AMERICA, TROPICAL															

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Brazil	3.38	2006-2007	15-64	B1	--	(73)	3.93	2006-2007	15-64	B1	--	(73)			
	4.33	2006-2007	15-16	B2	--	(73)	4.86	2006-2007	15-16	B2	--	(73)			
Paraguay	2.18	2006-2007	15-64	B1	--	(73)	3.53	2006-2007	15-64	B1	--	(73)			
	2.56	2006-2007	15-16	B2	--	(73)	4.07	2006-2007	15-16	B2	--	(73)			
NORTH AFRICA / MIDDLE EAST															
Algeria	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Bahrain	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Egypt	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Iran (Islamic Republic of)	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Iraq	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jordan	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Kuwait	--	--	--	--	--	--	--	--	--	--	--	--	Evidence of use	D2	(77)
Lebanon	0.5*	1999	NR	B2	11	(78)	1.2*	1999	NR	B2	7	(78)			
Libyan Arab Jamahiriya	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morocco	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Occupied Palestinian Territory	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(79)
Oman	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Qatar	--	--	--	--	--	--	--	--	--	--	--	--	Treatment admissions	D2	(10)
Saudi Arabia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Syrian Arab	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Republic Tunisia	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)
Turkey	1	2003	15-16	B2	13	(66)	2	2003	15-16	B2	13	(66)			
United Arab Emirates	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(80)
Western Sahara	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yemen	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
NORTH AMERICA, HIGH INCOME															
Canada	0.8	2004	15+	B1	11	(81, 82)	6.4	2004	15+	B1	11	(81, 82)			
	2	2005	12-18	B2	13	(83)	2	2002	12-14	B2	9	(82)			
USA	1.2	2007	12+	B1	13	(28)	8.7	2007	12+	B1	13	(28)			
	7.8	2005	15-16	B2	9	(31)	15.7	2006	15-16	B2	14	(84)			
OCEANIA															
American Samoa	--	--		--	--	--	--	--	--	--	--	--	Drug seizures	D2	(85)
Cook Islands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fiji	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(86)
French Polynesia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Guam	--	--	--	--	--	--	--	--	--	--	--	--	Treatment admissions	D1	(86)
Kiribati	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Marshall Islands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Micronesia (Federated States of)	--	--	--	--	--	--	--	--	--	--	--	--	Reports of use	E	(87)
Nauru	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
New Caledonia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Niue	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern Mariana Islands	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(86)
Palau	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(86)
Papua New	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Guinea Pitcairn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Samoa	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Solomon Islands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tokelau	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tonga	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tuvalu	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanuatu	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wallis and Futuna Islands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUB-SAHARAN AFRICA, CENTRAL															
Angola	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Central African Republic	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Congo	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Democratic Republic of the Congo	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Equatorial Guinea	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gabon	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
SUB-SAHARAN AFRICA, EAST															
Burundi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Comoros	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Djibouti	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Eritrea	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Ethiopia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Kenya	--	--	--	--	--	--	--	--	--	--	--	--	Number of users	C3	(88)
Madagascar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Malawi	--	--	--	--	--	--	--	--	--	--	--	--	Khat widely used	E	(89)
Mozambique	--	--	--	--	--	--	--	--	--	--	--	--	Reports of use	E	(90)
Rwanda	--	--	--	--	--	--	--	--	--	--	--	--	Khat widely used	E	(89)
Somalia	--	--	--	--	--	--	--	--	--	--	--	--	Khat used in militia	E	(91)
Sudan	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Uganda	--	--	--	--	--	--	--	--	--	--	--	--	Khat widely used	E	(92)
United Republic of Tanzania	--	--	--	--	--	--	16.73*	1990	13-26	B2	12	(93)			
Zambia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
SUB-SAHARAN AFRICA, SOUTHERN															
Botswana	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)
Lesotho	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures and drug-related arrests	D2	(94)
Namibia	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
South Africa	8.62*	2004	NR	B1	7	(95)	0.2	2005	12+	B1	13	(96)			
	--	--	--	--	--	--	5.15*	2005	NR	B2	7	(97)			
Swaziland	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Zimbabwe	--	--	--	--	--	--	8.2	1990	12-21	B2	11	(98)			
SUB-SAHARAN AFRICA, WEST															
Benin	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)
Burkina Faso	--	--	--	--	--	--	--	--	--	--	--	--	Numbers of users	D1	(99)
Cameroon	--	--	--	--	--	--	--	--	--	--	--	--	Number of users	D1	(100)
Cape Verde	--	--	--	--	--	--	—	—	—	—	—	—	Number of users	D1	(101)

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Region/Country	Past year Prevalence (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	"Lifetime Prevalence"** (95% CI)	Year of estimate	Age (yrs)	Grade	Quality score	Source(s)	Evidence of any use (if no prevalence estimate available)	Grade	Evidence of Use Source
Chad	--	--	--	--	--	--	--	--	--	--	--	--	Imputed by UNODC^	C2	(10)
Cote d'Ivoire	--	--	--	--	--	--	--	--	--	--	--	--	Number of users	D1	(102)
Gambia	--	--	--	--	--	--	--		--	--			Drug seizures	D2	(64)
Ghana	--	--	--	--	--	--	0.2	2003	15-24	B2	10	(103)			
Guinea	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Guinea-Bissau	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Liberia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mali	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(35)
Mauritania	--	--		--	--	--	--	--		--	--	--	--	--	--
Niger	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)
Nigeria	16.6*	1997	15-21	B2	10	(104)	1.4*	2006	NR	B1	8	(105)			
							1	2003	15-16	B2	13	(66)			
Saint Helena	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sao Tome and Principe	--	--		--	--	--	--	--		--	--	--	--	--	--
Senegal	--	--	--	--	--	--	--	--	--	--	--	--	Treatment admissions	D1	(49)
Sierra Leone	--	--	--	--	--	--	—	—	—	—	—	—	Number of users	D1	(64)
Togo	--	--	--	--	--	--	--	--	--	--	--	--	Drug seizures	D2	(64)

Note. All estimates are reported as percentages. NR=Not reported, ^ no further information available, * sub-national data available in the absence of national data **We have used the term "Lifetime prevalence" of dependence or use to indicate cumulative probability for that parameter to aid in communication as this is the most commonly used nomenclature in the reviewed data. #Amphetamine user group. # Estimate population is males only. + median prevalence estimate, ***** Note that this estimate refers to "stimulant dependence", namely pharmaceutical amphetamines. Methamphetamine users who did not report the use of any pharmaceutical amphetamines would not be included in this assessment of dependence. ##Past year dependence estimates are point or past year prevalence

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4. DISCUSSION

Meth/amphetamine use and dependence are increasingly the focus of government policy, community debate and research. The current review, however, found that the global picture of the extent of use and dependence is patchy, and data are variable in quality. Systematic searches identified some evidence that meth/amphetamine was used in 80% of countries that included 99% of the world's population aged 15-64 years. Credible prevalence estimates were only available for meth/amphetamine use/dependence in around 30% of countries, comprising 60% of the world's population aged 15-64 years. There was therefore evidence of meth/amphetamine use or trafficking in countries/territories comprising an additional 39% of the global population aged 15-64 years, without any estimate at all of the number of young people or adults using this drug class.

Arguably the most important indicator – the extent of dependent use – has only rarely been measured. Only nine countries have estimated the prevalence of meth/amphetamine dependence in the past twenty years. This amounted to 5% of the 181 countries where meth/amphetamine use (and presumably dependence) occurs. Their populations account for 8% of the world's population aged 15-64 years. Half of these estimates were sub-national rather than national. All past year dependence estimates were well below 1%, but differences in methodologies and age ranges and even types of amphetamines included in definitions limit our capacity to make direct comparisons of the levels across countries.

Surveys of school students were the most common method of assessing meth/amphetamine use in a country (74 countries). This reflects the ease of access, simplicity, limited cost and time entailed in undertaking such surveys. But such surveys fail to capture patterns of use in the young adult population or among young people who have already left school, a group repeatedly documented to have higher levels of illicit drug use than those in school. This can be a significant proportion of young people in countries in which there are low rates of high school retention.

4.1. Limitations due to measurement differences across existing studies

A notable limitation of many general population surveys is a lack of assessment of specific types of drug dependence. In some cases there was only assessment of "stimulant use disorders" (for example the Australian National Survey of Mental Health and Well-Being, conducted in 1997 (106)), which included both cocaine and amphetamines. There are similar problems with the World Mental Health Surveys (WMHS), which have surveyed representative samples of the general adult population in over twenty countries (Australia, Belgium, Brazil, Bulgaria, Colombia, Costa Rica, France, Germany, India, Iraq, Israel, Italy, Japan, Lebanon, Mexico, Netherlands, New Zealand, Nigeria, Northern Ireland, Peru, Portugal, People's Republic of China, Romania, South Africa, Spain, Turkey, Ukraine and the USA). Unfortunately, the assessment of drug dependence in these surveys only refers to *any* illicit drug dependence; there is no specific assessment of either meth/amphetamine use or dependence.

There was a lack of consistency in definitions of "amphetamines". Some countries refer to methamphetamine only, while others refer to "amphetamines" or "stimulants". Some countries may have included pharmaceutical amphetamines or ecstasy, which may have been the case in the Republic of Tanzania (93) and some Latin American countries. Poor reporting of questions

used creates uncertainty about the prevalence estimates in other countries. There is clearly a need for some consensus definitions of this drug group to be used by all countries conducting surveys if comparability is to be increased.

Other limitations preclude meaningful comparisons across studies and countries. These include variations in: population survey methodology (varying from census to random digit dialling); response rates; reported age ranges; and use of national vs. sub-national samples where there are probable geographic variations in meth/amphetamine use or dependence; and lack on consistent time periods for measurement ("lifetime" vs. past year vs. past month).

Future research needs to increase the coverage of estimates for different populations and ensure that these estimates are valid. The two regions that have put the greatest effort into cross-nationally comparable studies have been Europe, under the guidance of the European Monitoring Centre on Drugs and Drug Addiction (107-110), and the Americas (e.g. (111)). The absence of high quality prevalence data was especially evident in Asian countries that are believed to have the largest problems related to meth/amphetamine use. There is a clear imperative for prevalence estimates in these countries.

There is a need to look critically at estimates derived from surveys of drug use relying on self-reports. These estimates will only be accurate if representative samples are obtained, if people honestly disclose their drug use, and if drug users are spread evenly around the country. These conditions are often not met. Marginalised groups who have higher levels of drug use, are typically excluded (e.g. those who are homeless, imprisoned or in treatment facilities). People may also feel uncomfortable disclosing illegal behaviours (in ways that probably vary across countries and cultures), particularly in societies where participants fear adverse consequences for admitting to an illegal behaviour. This will particularly be the case when anonymity and confidentiality are not assured. It may also be affected by the type of interviewer, particularly if they are a law enforcement or government official, (an approach still used in surveys conducted some countries). The use of computer-assisted interview techniques might be one strategy to reduce underreporting of drug use by participants.

Finally, drug use is often geographically concentrated, and random sample surveys may not be able to take this into account. There is a need to develop better methods of estimating meth/amphetamine dependence in countries that are unable to conduct national community surveys. Indirect methods have more often been used to estimates the prevalence of opioid dependence or injecting drug use; they should also be considered in future studies of amphetamine dependence.

4.2. Limitations of this review

Our review was subject to limitations (see a longer discussion of these in (112)). One was the lag between when research is conducted and published in peer-reviewed journals. We addressed this by using multiple methods of sourcing and locating "grey" literature and by surveying experts in the field about unpublished studies. The latter was a very important source for this review, with a majority of the estimates sourced from the grey literature. Grey literature reports are, however, difficult to access and many not available in English. Concerted efforts are needed to make this source of information more readily available electronically (see (13)). English language documents were primarily reviewed but the abstracts of many non-English language peer-

reviewed articles were also reviewed when available in English; translation was undertaken where papers appeared relevant. Furthermore, estimates were also reviewed by UN staff with access to non-English language material.

4.3. Conclusions

There is an imperative to improve data on the global extent of meth/amphetamine use and dependence. The quality and amount of data on this issue – particularly in Asia where use is thought to be increasing – are exceedingly poor. The gaps were even larger for dependence, and documented across countries of all income categories, including those with the resources and infrastructure to carry out national prevalence estimation studies. It would seem that despite increasing concern among policymakers, researchers and the community about the growing problem related to amphetamine use and dependence, little systematic effort has been devoted to understanding the extent and social distribution of this "problem" . This lack of data must be addressed if policy and treatment responses are to be appropriately targeted and scaled to address the harms caused by this type of illicit drug use.

5. REFERENCES

1. United Nations Office on Drugs and Crime (2007) World Drug Report 2006 (Vienna, United Nations).
2. United Nations Office on Drugs and Crime (2009) World Drug Report 2009 (Vienna, United Nations).
3. Topp, L. & Mattick, R. (1997) Choosing a cut-off on the Severity of Dependence Scale (SDS) for amphetamine users, *Addiction*, 92, 839-845.
4. Topp, L. & Mattick, R. (1997) Validation of the amphetamine dependence syndrome and the SamDQ, *Addiction*, 92, 157-167.
5. Topp, L. & Darke, S. (1997) The applicability of the dependence syndrome to amphetamine, *Drug & Alcohol Dependence*, 48, 113-8.
6. American Psychiatric Association (1994) *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition)* (Washington, DC, American Psychiatric Association).
7. Hall, W., & Hando, J. (1994) Route of administration and adverse effects of amphetamine use among young adults in Sydney, Australia, *Drug and Alcohol Review,*, 13, 277-284.
8. Gossop, M., Griffiths, P., Powis, B. & Strang, J. (1992) Severity of dependence and route of administration of heroin, cocaine and amphetamines, *British Journal of Addiction*, 87, 1527-1536.
9. United Nations Office on Drugs and Crime (2008) 2008 Global ATS assessment: amphetamines and ecstasy (Vienna, United Nations).
10. United Nations Office on Drugs and Crime (2008) World Drug Report.
11. United Nations Office Drugs and Crime (2008) 2008 Global ATS assessment: amphetamines and ecsatsy (Vienna, United Nations).
12. Stroup, D. F., Berlin, J. A., Morton, S. C. et al. (2000) Meta-analysis of observational studies in epidemiology: A proposal for reporting, *JAMA*, 293, 2008-12.
13. Calabria, B., Phillips, B., Singleton, J. et al. (2008) Searching the grey literature to access information on drug and alcohol research: A resource to identify drug related databases and websites *National Drug and Alcohol Research Centre Technical Report Number 293* (Sydney).
14. Vandenbroucke, J. P., von Elm, E., Altman, D. G. et al. (2007) Strengthinging the Reporting of Observational Studies in Epidemiology (STROBE): Explanation and elaboration, *PLOS Medicine*, 4, 1628-1654.
15. von Elm, E., Altman, D. G., Egger, M. et al. (2007) The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies, *The Lancet*, 370, 1453-1457.
16. Mohler, D. M., Schulz, K. F., Altman, D. G. & for the CONSORT Group (2001) The CONSORT statement: Revisisted recomendations for improving the quality of reports of parallel-group randomised trials, *The Lancet*, 357, 1191-1194.
17. Saha, S., Barendregt, J. J., Vos, T., Whiteford, H. & McGrath, J. (2008) Modelling disease frequency measures in schizophrenia epidemiology, *Schizophrenia Research*, 104, 246-254.
18. McGrath, J., Saha, S., Welham, J. et al. (2004) A systematic review of the incidence of schizophrenia: The distribution of rates and the influence of sex, urbanicity, migrant staus and methodology, *BMC Medicine*, 2, 1741.
19. United Nations Office on Drugs and Crime (2008) World Drug Report 2008 (Vienna, United Nations).

20. MATHERS, B. M., ET AL. (2008) GLOBAL EPIDEMIOLOGY OF INJECTING DRUG USE AND HIV AMONG PEOPLE WHO INJECT DRUGS: A SYSTEMATIC REVIEW, *THE LANCET*, 372, 1733-1745.
21. DEGENHARDT, L., CALABRIA, B., NELSON, P., BUCELLO, C., ROBERTS, A., THOMAS, J. & HALL, W. (2009) METHODOLOGY USED IN A SYSTEMATIC REVIEW OF EVIDENCE ON THE PREVALENCE OF AMPHETAMINE USE AND DEPENDENCE. GLOBAL BURDEN OF DISEASE MENTAL DISORDERS AND ILLICIT DRUG USE EXPERT GROUP. ILLICIT DRUGS DISCUSSION PAPER NO. 13 (SYDNEY, NATIONAL DRUG AND ALCOHOL RESEARCH CENTRE, UNIVERSITY OF NSW).
22. MCKETIN, R., MCLAREN, J., KELLY, E., HALL, W. & HICKMAN, M. (2005) ESTIMATING THE NUMBER OF REGULAR AND DEPENDENT METHAMPHETAMINE USERS IN AUSTRALIA. NDARC TECHNICAL REPORT NO. 230. (SYDNEY, NATIONAL DRUG AND ALCOHOL RESEARCH CENTRE).
23. EMCDDA (2008) STATISTICAL BULLETIN: PROBLEM DRUG USE INDICATOR (LISBON, EUROPEAN MONITORING CENTRE FOR DRUGS AND DRUG ADDICTION).
24. PERKONIGG, A., LIEB, R. & WITTCHEN, H. U. (1998) PREVALENCE OF USE, ABUSE AND DEPENDENCE OF ILLICIT DRUGS AMONG ADOLESCENTS AND YOUNG ADULTS IN A COMMUNITY SAMPLE, *EUROPEAN ADDICTION RESEARCH*, 4, 58-66.
25. BODEN, J. M., FERGUSSON, D. M. & HORWOOD, L. J. (2006) ILLICIT DRUG USE AND DEPENDENCE IN A NEW ZEALAND BIRTH COHORT.[SEE COMMENT], *AUSTRALIAN & NEW ZEALAND JOURNAL OF PSYCHIATRY*, 40, 156-63.
26. YEN, C. F., HSU, C. C., LIU, S. C. & HUANG, C. F. (2007) COMPARISONS OF SUBSTANCE USE DISORDERS AND CORRELATES BETWEEN ABORIGINAL AND NON-ABORIGINAL ADOLESCENTS LIVING IN A MOUNTAIN REGION IN SOUTHERN TAIWAN, *ADDICTIVE BEHAVIORS*, 32, 358-364.
27. SINGLETON, N., BUMPSTEAD, R., O'BRIEN, M., LEE, A. & MELTZER, H. (2001) PSYCHIATRIC MORBIDITY AMONG ADULTS LIVING IN PRIVATE HOUSEHOLDS, 2000 (LONDON, OFFICE FOR NATIONAL STATISTICS - SOCIAL SURVEY DIVISION).
28. SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION (2007) THE NATIONAL SURVEY ON DRUG USE AND HEALTH 2007.
29. COMPTON, W. M., THOMAS, Y. F., STINSON, F. S. & GRANT, B. F. (2007) PREVALENCE, CORRELATES, DISABILITY, AND COMORBIDITY OF DSM-IV DRUG ABUSE AND DEPENDENCE IN THE UNITED STATES, *ARCHIVES OF GENERAL PSYCHIATRY*, 64, 566-576.
30. SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION (2005) THE NATIONAL SURVEY ON DRUG USE AND HEALTH.
31. JOHNSTON, L. D., O'MALLEY, P. M., BACHMAN, J. G. & SCHULENBERG, J. E. (2006) DEMOGRAPHIC SUBGROUP TRENDS FOR VARIOUS LICIT AND ILLICIT DRUGS, 1975-2005 (MONITORING THE FUTURE OCCASIONAL PAPER 63) (ANN ARBOR, MICHIGAN, INSTITUTE FOR SOCIAL RESEARCH).
32. SOCIAL SECURITY RESEARCH FOUNDATION JAPAN ( ) RESEARCH FOR THE NUMBER OF USERS OF STIMULANT DRUGS.
33. SUZUKI, K., MURAKAMI, S., YUZURIHA, T. ET AL. (1999) PRELIMINARY SURVEY OF ILLEGAL DRUG MISUSE AMONG JAPANESE HIGH SCHOOL STUDENTS. [JAPANESE], *JAPANESE JOURNAL OF ALCOHOL STUDIES AND DRUG DEPENDENCE*, 34, 465-474.
34. UNITED NATIONS OFFICE ON DRUGS AND CRIME (2008) ILLICIT DRUG TRENDS IN CENTRAL ASIA.
35. UNITED NATIONS OFFICE DRUGS AND CRIME RAS ONLINE DATABASE OF ILLICIT DRUG SEIZURE REPORTS.

36. HAO, W., YOUNG, D., LI, L. & XIAO, S. (1998) PSYCHOACTIVE SUBSTANCE USE IN THREE SITES IN CHINA: GENDER DIFFERENCES AND RELATED FACTORS, *PSYCHIATRY AND CLINICAL NEUROSCIENCES*, 52, S324-S328.
37. ZHIMIN, L., WEIHUA, Z., ZHI, L. ET AL. (2001) THE USE OF PSYCHOACTIVE SUBSTANCES AMONG ADOLESCENT STUDENTS IN AN AREA IN THE SOUTH-WEST OF CHINA, *ADDICTION*, 96, 247-250.
38. CENTRAL REGISTRY OF DRUG ABUSE FIFTY-SIXTH REPORT (1997-2006).
39. CHIANG, S. C., CHEN, C. Y., CHANG, Y. Y., SUN, H. J. & CHEN, W. J. (2007) PREVALENCE OF HEROIN AND METHAMPHETAMINE MALE USERS IN THE NORTHERN TAIWAN, 1999-2002: CAPTURE-RECAPTURE ESTIMATES, *BMC PUBLIC HEALTH*, 7.
40. WANG, Y. C., LEE, C. M., LEW-TING, C. Y. ET AL. (2005) SURVEY OF SUBSTANCE USE AMONG HIGH SCHOOL STUDENTS IN TAIPEI: WEB-BASED QUESTIONNAIRE VERSUS PAPER-AND-PENCIL QUESTIONNAIRE, *JOURNAL OF ADOLESCENT HEALTH*, 37, 289-295.
41. THE DAILY STAR (2007) HUGE YABA HAUL IN CITY (THE DAILY STAR).
42. UNITED NATIONS OFFICE ON DRUGS AND CRIME (2006) WORLD DRUG REPORT.
43. PADMOHOEDOJO, P. G. (2005) NATIONAL SURVEY OF ILLICIT DRUG USE AND TRAFFICKING AMONG HOUSEHOLD GROUPS IN INDONESIA (INDONESIA, NATIONAL NARCOTICS BOARD).
44. DORAN, C. (IN PREPARATION) AN ANALYSIS OF, AND PROPOSED METHODOLOGY FOR, MEASURING THE SOCIOECONOMIC IMPACT OF DRUGS CRIME AND CORRUPTION IN THE LAO PDR.
45. UNITED NATIONS OFFICE ON DRUGS AND CRIME (2008) "THE FIRST TIME IS FREE": RESEARCH ON DRUGS USE AND PATTERNS AMONG YOUNG PEOPLE IN VIENTIANE, LAO PDR (VIENTIANE, UNODC).
46. SULLIMAN, AMEERBEG & ET AL. (2004) MAURITIUS RSA REPORT.
47. PHYU, T. T., WIN, S. S., OO, T. & OO, S. S. (2004) STUDY ON PREVALENCE OF AMPHETAMINE TYPE SUBSTANCE USE AMONG HIGH SCHOOL STUDENTS IN YANGON (UNPUBLISHED MANUSCRIPT).
48. DANGEROUS DRUGS BOARD (2003) DANGEROUS DRUGS BOARD ANNUAL REPORT 2003 (OFFICE OF THE PRESIDENT OF THE DANGEROUS DRUGS BOARD).
49. UNITED NATIONS OFFICE ON DRUGS AND CRIME (2007) WORLD DRUG REPORT (VIENNA, UNODC).
50. OFFICE OF NARCOTICS CONTROL BOARD (ONCB), M. O. J. (2007) THE NATIONAL HOUSEHOLD SURVEY FOR SUBSTANCE AND ALCOHOL USE (NHSSA).
51. DAOSODSAI, P., BELLIS, M. A., HUGHES, K. ET AL. (2007) THAI WAR ON DRUGS: MEASURING CHANGES IN METHAMPHETAMINE AND OTHER SUBSTANCE USE BY SCHOOL STUDENTS THROUGH MATCHED CROSS SECTIONAL SURVEYS, *ADDICTIVE BEHAVIORS*, 32, 1733-1739.
52. (2008) 2007 NATIONAL DRUG STRATEGY HOUSEHOLD SURVEY - FIRST FINDINGS *DRUG STATISTICS SERIES NUMBER 20.CAT. NO. PHE 98* (CANBERRA, AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE).
53. (2008) 2007 NATIONAL DRUG STRATEGY HOUSEHOLD SURVEY - DETAILED FINDINGS *DRUG STATISTICS SERIES NO. 22. CAT. NO. PHE 107* (CANBERRA, AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE).
54. WILKINS, C., SWEETSUR, P. & CASSWELL, S. (2006) RECENT POPULATION TRENDS IN AMPHETAMINE USE IN NEW ZEALAND: COMPARISONS OF FINDINGS FROM NATIONAL HOUSEHOLD DRUG SURVEYING IN 1998, 2001, AND 2003, *THE NEW ZEALAND MEDICAL JOURNAL*, 119, U2285.
55. (2007) ANTIGUA & BARBUDA: NATIONAL DRUG SURVEY OF HIGH SCHOOL STUDENTS.
56. YEARWOOD, J. (2007) NATIONAL HOUSEHOLD SURVEY REPORT (BARBADOS), PAPER PRESENTED AT THE *CARICOM/CICAD DEMAND REDUCTION TRAINING WORKSHOP AND*

MEETING OF CARIBBEAN NATIONAL OBSERVATORIES ON DRUGS, ST. GEORGE'S, GRENADA.

57. (2003) DRUG PREVALENCE SURVEY OF SECONDARY SCHOOOL STUDENTS: A COMPARISON REPORT OF THREE CARIBBEAN COUNTRIES: BARBADOS, BELIZE AND GUYANA (INTER-AMERICAN UNIFORM DRUG USE DATA SYSTEM (SIDUC) INTER-AMERICAN DRUG ABUSE CONTROL COMISSION (CICAD) ORGANISATION OF AMERICAN STATES (OAS)).
58. LEE, R. W. (1998) DRUG ABUSE IN CUBA, *JOURNAL OF SUBSTANCE ABUSE TREATMENT*, 15, 131-134.
59. CLARKE, P. (2007) COMPARATIVE STUDY OF DRUG USE AMONG SECONDARY SCHOOL STUDENTS IN THE CARIBBEAN (ST. GEORGE'S, GRENADA, INTER-AMERICAN OBSERVATORY ON DRUGS).
60. ORGANISATION OF AMERICAN STATES (2003) COMPARATIVE REPORT ON NATIONWIDE SCHOOL SURVEYS IN SEVEN COUNTRIES: EL SALVADOR, GUATEMALA, NICARAGUA, PANAMA, PARAGUAY, DOMINICAN REBUBLIC, URUGUAY (ORGANISATION OF AMERICAN STATES (OAS) INTER AMERICAN DRUG ABUSE CONTROL COMISSION (CICAD)).
61. DORMITZER, C. M., GONZALEZ, G. B., PENNA, M. ET AL. (2004) THE PACARDO RESEARCH PROJECT: YOUTHFUL DRUG INVOLVEMENT IN CENTRAL AMERICA AND THE DOMINICAN REPUBLIC, *REVISTA PANAMERICANA DE SALUD PUBLICA/PAN AMERICAN JOURNAL OF PUBLIC HEALTH*, 15, 400-416.
62. ROBERTS, D. A. (2007) GRENADA PUBLIC SECTOR DRUG PREVALENCE SURVEY (THE INTER-AMERICAN OBSERVATORY ON DRUGS SECTION (OID) OF THE INTER-AMERICAN DRUG ABUSE CONTROL COMMISSION (CICAD)).
63. ORGANIZATION OF AMERICAN STATES (2006) GUYANA: EVALUATION OF PROGRESS IN DRUG CONTROL 2005-2006 (ORGANIZATION OF AMERICAN STATES, INTER-AMERICAN DRUG ABUSE CONROL COMMISSION).
64. UNITED NATIONS OFFICE ON DRUGS AND CRIME (2006) ASSESSMENT OF THE TRENDS AND PATTERNS OF THE DRUG ABUSE AND HIV/AIDS SITUATION IN THE COMMUNITIES AND PRISONS OF SIERRA LEONE (UNITED NATIONS OFFICE ON DRUGS AND CRIME, NATIONAL DRUGS CONTROL AGENCY).
65. EMCDDA (2008) STATISTICAL BULLETIN 2008: GENERAL POPULATION SURVEYS (LISBON, EUROPEAN MONITORING CENTRE FOR DRUGS AND DRUG ADDICTION).
66. HIBELL B, A. B., BJARNASON T, AHLSTRÖM S, BALAKIREVA O, KOKKEVI A, MORGAN M (2004) THE ESPAD REPORT 2003. ALCOHOL AND OTHER DRUG USE AMONG STUDENTS IN 35 EUROPEAN COUNTRIES.
67. EMCDDA (2008) STATISTICAL BULLETIN 2008: STUDIES OF YOUTH AND THE SCHOOLS POPULATION, TABLE EYE-3 (LIFETIME PSYCHOACTIVE SUBSTANCE USE AMONG STUDENTS AGED 15 TO 16 YEARS) (LISBON, EUROPEAN MONITORING CENTRE FOR DRUGS AND DRUG ADDICTION).
68. BUKOWSKA, B., CHOJECKI, D., JABŁONSKI, P. ET AL. (2006) THE 2006 NATIONAL REPORT (2005 DATA) TO THE EMCDDA. POLAND: NEW DEVELOPMENT, TRENDS AND IN-DEPTH INFORMATION ON SELECTED ISSUES (POLAND, REITOX NATIONAL FOCAL POINT).
69. MANZONI, J. M., BJEGOVIC, V., CIRIC-JANKOVIC, S. & PREPELICZAY, S. (2005) SCHOOL SURVEY OF PSYCHOACTIVE SUBSTANCE ABUSE AMONG ADOLESCENTS IN SERBIA 2005 (SIBERIA).
70. HIBELL, B., GUTTORMSSON, U., AHLSTRÖM, S. ET AL. (2009) THE 2007 ESPAD REPORT - SUBSTANCE USE AMONG STUDENTS IN 35 EUROPEAN COUNTRIES. THE SWEDISH COUNCIL FOR INFORMATION ON ALCOHOL AND OTHER DRUGS (CAN). (STOCKHOLM: SWEDEN, THE SWEDISH COUNCIL FOR INFORMATION ON ALCOHOL AND OTHER DRUGS (CAN) AND THE POMPIDOU GROUP AT THE COUNCIL OF EUROPE).

71. EMCDDA (2008) Statistical Bulletin 2008: Studies of youth and the schools population, Tables EYE-6 and EYE-7 (All ESPAD school surveys: lifetime psychoactive substnace use and patterns of cannabis use among students aged 15 to 16 years) (Lisbon, European Monitoring Centre for Drugs and Drug Addiction).
72. National Advisory Committee on Drugs (NACD) & Drug and Alcohol Information and Research Unit (DAIRU) (2008) Drug Use in Ireland and Northern Ireland 2006/2007: First Results from the 2006/2007 Drug Prevalence Survey *Bulletin 1*.
73. CICAD (2008) Guidelines for Public Policies on Drugs in the Subregion: First Comparative Study on Drug Consumption and Associated Factors among the General Population (15-64 Years Old).
74. United Nations Drug Control Programme (1996) Amphetamine type stimulants: A Global Review.
75. Gonzalez, G. B., Cedeno, M. A., Penna, M. et al. (1999) Estimated occurrence of tobacco, alcohol, and other drug use among 12- to 18-year-old students in Panama: Results of Panama's 1996 national youth survey on alcohol and drug use, *Revista Panamericana de Salud Publica/Pan American Journal of Public Health*, 5, 9-16.
76. Florenzano, R., Pino, P. & Marchandon, A. (1993) [Risk behavior in adolescent students in Santiago de Chile], *Revista Medica de Chile*, 121, 462-9.
77. Radovanovic, Z., Pilcher, C.W.T., Al-Nakib, T. & Shihab-Eldeen, A. (2000) On substance abuse in Kuwait (1992-1997(: Evidence from toxicological screening of patients, *Journal of Substance Abuse* 12, 363-371.
78. (2003) Substance use and misuse in Lebanon (The Regional Office for the Middle East and North Africa of the United Nations Office on Drugs and Crime (UNODC), IDRAC (Institute for Development, Research and Applied Care)).
79. United Nations Office Drugs and Crime Palestinian Authority Country Profile.
80. Reinl, J. (2008) Amphetamine use rises in the region *The National Newspaper*.
81. Adlaf, E. M., Begin, P. & Sawka, E. (2005) Canadian Addiction Survey(CAS): A national survey of Canadians' use of alcohol and other drugs: Prevalance of Use and Related Harms.
82. Organization of American States (2006) Canada: Evaluation of Progress in Drug Control 2005-2006 (Organization of American States, Inter-American Drug Abuse Conrol Commission).
83. Adlaf, E. M. & Paglia-Boak, A. (2007) Drug use among Ontario students 1977-2007: Detailed OSDUHS Findings *CAMH Research Document Series* (Centre for Addiction and Mental Health).
84. Johnston, L. D., O'Malley, P. M., Bachman, J. G. & Schulenberg, J. E. (2007) Monitoring the Future: National Survey Results on Drug Use, 1975-2006, vII College Students & Adults 2006 (NIH).
85. US Office of National Drug Control Policy (2003) Drug Policy Informations Clearinghouse: American Samoa.
86. United Nations Office Drugs and Crime (2003) Regional Profile on Drugs and Crime in the Pacific Islands.
87. Devaney, M., Reid, G. and Baldwin, S. (2006) Situational Analysis of Illicit Drug Issues and Responses in the Asia-Pacific Region. Canberra: Australian National Council on Drugs.

88. MWENESI, H. A. (1996) RAPID ASSESSMENT OF DRUG ABUSE IN KENYA, *BULLETIN ON NARCOTICS*, 48, 65-78.
89. DHAIFALAH, I., ŠANTAVÝ, J. (2004) KHAT HABIT AND ITS HEALTH EFFECT: A NATURAL AMPHETAMINE, *BIOMEDICAL PAPERS*, 148, 11-15.
90. INTERNATIONAL NARCOTICS CONTROL BOARD (2007) ANNUAL REPORT (UNITED NATIONS).
91. ODENWALD, M., HINKEL, H. & SCHAUER, E. (2007) CHALLENGES FOR A FUTURE REINTEGRATION PROGRAM IN SOMALIA: OUTCOMES OF AN ASSESSMENT ON DRUG ABUSE, PSYCHOLOGICAL DISTRESS AND PREFERENCES FOR REINTEGRATION ASSISTANCE., *INTERVENTION*, 5, 109-123.
92. IHUNWO, A. O., KAYANJA, F.I.B. & AMADI-IHUNWO, U.B. (2004) USE AND PERCEPTION OF THE PSYCHOSTIMULANT, KHAT (CATHA EDULIS) AMONG THREE OCCUPATIONAL GROUPS IN SOUTH WESTERN UGANDA *EAST AFRICAN MEDICAL JOURNAL* 81, 468-473.
93. KAAYA, S., KILONZO, GP, SEMBOJA, A & MATOWO, A (1992) PREVALENCE OF SUBSTANCE ABUSE AMONG SECONDARY STUDENTS IN DAR ES SALAAM, *TANZANIA MEDICAL JOURNAL*, 7, 21-24.
94. PARRY, C. P., A (2004) SADC EDIDEMIOLOGICAL NETWORK ON DRUG USE (SENDU) UPDATE, VOL 8.
95. SIMBAYI, L. C., KALICHMAN, S. C., CAIN, D. ET AL. (2006) METHAMPHETAMINE USE AND SEXUAL RISKS FOR HIV INFECTION IN CAPE TOWN, SOUTH AFRICA, *JOURNAL OF SUBSTANCE USE*, 11, 291-300.
96. SHISANA O, R. T., SIMBAYI, LC, PARKER W, ZUMA K, BHANA A, CONNOLLY C, JOOSTE S, & PILLAY V ET AL. (2005) SOUTH AFRICAN NATIONAL HIV PREVALENCE, HIV INCIDENCE, BEHAVIOUR AND COMMUNICATION SURVEY, 2005. (CAPE TOWN, HSRC).
97. PLÜDDEMANN, A., FLISHER, A. J., MATHEWS, C., CARNEY, T. & LOMBARD, C. (2008) ADOLESCENT METHAMPHETAMINE USE AND SEXUAL RISK BEHAVIOUR IN SECONDARY SCHOOL STUDENTS IN CAPE TOWN, SOUTH AFRICA, *DRUG ALCOHOL REVIEW*, 1-6.
98. ACUDA, S. W. & EIDE, A. H. (1994) EPIDEMIOLOGICAL STUDY OF DRUG USE IN URBAN AND RURAL SECONDARY SCHOOLS IN ZIMBABWE, *CENTRAL AFRICAN JOURNAL OF MEDICINE*, 40, 207-212.
99. GUISSOOU, I. P. (2003) BASELINE SURVEY ON LINKS BETWEEN HIV/AIDS AND DRUG ABUSE IN BURKINA FASO.
100. WANSI, E., SAM-ABBENYI, A., BEFIDI-MENGUE, R., ENYME, F.N. & NTONE, F.N. (1996) RAPID ASSESSMENT OF DRUG ABUSE IN CAMEROON, *BULLETIN ON NARCOTICS*, 48, 79-88.
101. UNITED NATIONS OFFICE ON DRUGS AND CRIME (2008) STUDY ON THE SITUATION OF DRUG ABUSE AND DRUG RELATED HIV/AIDS IN CAPE VERDE (RAPID SITUATION ASSESSMENT).
102. CILAD, U. N. O. O. D. A. C. (2003) DRUG AND HIV/AIDS IN IVORY COAST.
103. DENNIS-ANTWI, J. (2003) A NATIONAL SURVEY ON PREVALENCE AND SOCIAL CONSEQUENCES OF SUBSTANCE(DRUG) USE AMONG SECOND CYCLE AND OUT OF SCHOOL YOUTH IN GHANA (MINISTRY OF HEALTH, GHANA).
104. FATOYE, F. O. & MORAKINYO, O. (2002) SUBSTANCE USE AMONGST SECONDARY SCHOOL STUDENTS IN RURAL AND URBAN COMMUNITIES IN SOUTH WESTERN NIGERIA, *EAST AFRICAN MEDICAL JOURNAL*, 79, 299-305.
105. LAWAL, R. A. (2006) A RAPIDE SITUATION ASSESSMENT AND RESPONSE OF DRUG BY USE, INJECTION DRUG USE, HIV?AIDS AND OTHER RISK BEHAIVORS AMONG DRUG USERS TARGETING FIVE NIGERIAN CITIES.
106. HALL, W., TEESSON, M., LYNSKEY, M. & DEGENHARDT, L. (1999) THE 12-MONTH PREVALENCE OF SUBSTANCE USE AND ICD-10 SUBSTANCE USE DISORDERS IN

AUSTRALIAN ADULTS: FINDINGS FROM THE NATIONAL SURVEY OF MENTAL HEALTH AND WELL-BEING, *ADDICTION*, 94, 1541-1550.

107. AHLSTRÖM, S., BLOOMFIELD, K. & KNIBBE, R. (2001) GENDER DIFFERENCES IN DRINKING PATTERNS IN NINE EUROPEAN COUNTRIES: DESCRIPTIVE FINDINGS., *SUBSTANCE ABUSE*, 22, 69-85.
108. OBOT, I. S. & ROOM, R. (2003) ALCOHOL, GENDER AND DRINKING PROBLEMS: PERSPECTIVES FROM LOW AND MIDDLE INCOME COUNTRIES (GENEVA, WORLD HEALTH ORGANIZATION).
109. LEIFMAN, H. (2002) A COMPARATIVE ANALYSIS OF DRINKING PATTERNS IN SIX EU COUNTRIES IN THE YEAR 2000, *CONTEMPORARY DRUG PROBLEMS*, 2002.
110. BLOOMFIELD, K., GMEL, G., NEVE, R. & MUSTONEN, H. (2001) INVESTIGATING GENDER CONVERGENCE IN ALCOHOL CONSUMPTION IN FINLAND, GERMANY, THE NETHERLANDS AND SWITZERLAND: A REPEATED SURVEY ANALYSIS, *SUBSTANCE ABUSE*, 22, 39-53.
111. DORMITZER, C. M., GONZALEZ, G. B., PENNA, M. ET AL. (2004) THE PACARDO RESEARCH PROJECT: YOUTHFUL DRUG INVOLVEMENT IN CENTRAL AMERICA AND THE DOMINICAN REPUBLIC, *REV PANAM SALUD PUBLICA*, 15, 400-16.
112. MATHERS, B., DEGENHARDT, L., PHILLIPS, B. ET AL. (2008) GLOBAL EPIDEMIOLOGY OF INJECTING DRUG USE AND HIV AMONG PEOPLE WHO INJECT DRUGS: A SYSTEMATIC REVIEW, *THE LANCET*, 372, 1733-1745.

APPENDIX A: SEARCH STRINGS FOR PEER REVIEWED SEARCHES

Database	Search group	Search terms
Medline*	ATS	ATS OR amphetamine type stimulant$ OR amphetamine$ OR methamphetamine OR deoxyephedrine OR desoxyephedrine OR Desoxyn OR madrine OR metamfetamine OR methamphetamine hydrochloride OR methylamphetamine OR n-methylamphetamine OR d-amphetamine OR dextroamphetamine sulphate OR dexamphetamine OR dexedrine OR dextro-amphetamine sulphate OR dextroamphetamine sulphate OR d-amphetamine sulphate OR stimulant$
		exp amphetamines/ or exp amphetamine/ or exp dextroamphetamine/ or exp p-chloroamphetamine/ or exp 2,5-dimethoxy-4-methylamphetamine/ or exp p-hydroxyamphetamine/ or exp iofetamine/ or exp methamphetamine/ or exp benzphetamine/ or exp phentermine/ or exp chlorphentermine/ or exp mephentermine/ or exp amphetamine-related disorders/
	Gold standard Epidemiology	"prevalence" OR "inciden$" OR "epidemiolog$" OR "history" or "patterns" OR "survey$" OR "data collection$" OR "screening" OR "cohort" OR "population study" OR "population sample" OR "surveillance" OR "community sample" OR "statistics" OR "duration" OR "severity" OR "chronic" OR "long-term" OR "prolonged"
		exp Epidemiology/ or Exp prevalence/ or exp Incidence/ or exp sex distribution/ or exp age distribution/ or exp epidemiologic methods/ or exp ethnology/ or exp Statistics/ or exp data collection/ or exp health surveys/ or exp health care surveys/ or exp interviews/ or exp narration/ or exp questionnaires/ or exp records/ or exp registries/ or exp disease notification/ or exp epidemiologic studies/ or exp cohort studies/ or exp longitudinal studies/ or exp follow-up studies/ or exp prospective studies/ or exp cross-sectional studies/ or exp sampling studies/ or exp focus groups/
	Basic epidemiology	(inciden$ or prevalen$ or epidemiolog$)
		Exp Epidemiology/ or exp prevalence/ or exp Incidence/
	Cohort	"cohort" OR "longitudinal" OR "incidence" OR "prospective" OR "follow-up"
		exp cohort studies/ or exp longitudinal studies/ or exp follow-up studies/ or exp prospective studies/
	Drug Use	drug abuse$ OR drug use$ OR drug misuse$ OR drug dependenc$ OR substance abuse$ OR substance use$ OR substance misuse$ OR substance dependenc$ OR addict$

Database	Search group	Search terms
		Exp Substance-related disorders/
EMBASE#	ATS	ATS or amphetamine type stimulant$ or amphetamine$ or methamphetamine or deoxyephedrine or desoxyephedrine or Desoxyn or madrine or metamfetamine or methamphetamine hydrochloride or methylamphetamine or n-methylamphetamine or d-amphetamine or dextroamphetamine sulphate or dexamphetamine or dexedrine or dextro-amphetamine sulphate or dextroamphetamine sulphate or d-amphetamine sulphate or stimulant$
		exp CHLORPHENTERMINE/ or exp CHLORAMPHETAMINE/ or exp BENZPHETAMINE/ or exp PHENTERMINE/ or exp MEPHENTERMINE/ or exp HYDROXYAMPHETAMINE/ or exp 4 Methoxyamphetamine/ or exp IOFETAMINE/ or exp IOFETAMINE I 123/ or exp IOFETAMINE I 125/ or exp DEXAMPHETAMINE/ or exp METHAMPHETAMINE/ or AMPHETAMINE DERIVATIVE/ or exp AMPHETAMINE/
	Gold standard Epidemiology	"prevalence" OR "incidence" OR "epidemiolog$" OR "data collection" Or "Survey" OR "surveillance" OR "screening" OR "population study" OR "population sample" OR "population survey" OR "population surveillance" OR "community sample" OR "RAR" OR "rapid assessment" OR "situation$ assessment" OR "statistics"
		exp PREVALENCE/ or exp INCIDENCE/ or exp EPIDEMIOLOGY/ or exp Age Distribution/ or exp Sex Difference/ or exp biostatistics/ or exp health statistics/ or exp epidemiological data/ or exp geographic distribution/ or exp field study/ or exp observational study/ or exp panel study/ or exp pilot study/ or exp prevention study/ or exp trend study/ or exp case finding/ or exp exploratory research/ or exp multimethod study/ or exp naturalistic inquiry/ or exp qualitative research/ or exp quantitative study/ or exp sample size/ or exp secondary analysis/ or exp technique/ or exp triangulation/ or exp "medical record review"/ or exp semi structured interview/ or exp structured interview/ or exp unstructured interview/ or exp observational method/ or exp questionnaire/ or exp open ended questionnaire/ or exp structured questionnaire/ or exp model/
	Basic Epidemiology	(inciden$ or prevalen$ or epidemiolog$)
		Exp Epidemiology/ or exp prevalence/ or exp Incidence/
	Cohort	"cohort" OR "longitudinal" OR "incidence" OR

Database	Search group	Search terms
		"prospective" OR "follow-up" exp COHORT ANALYSIS/ or exp LONGITUDINAL STUDY/ or exp PROSPECTIVE STUDY/ or exp Follow Up/
	Drug Use	Drug abuse OR drug use$ OR drug misuse OR drug dependenc$ OR substance abuse OR substance use$ OR substance misuse OR substance dependenc$ OR addict$ exp substance abuse/ or exp drug abuse/ or exp analgesic agent abuse/ or exp drug abuse pattern/ or exp drug misuse/ or exp drug traffic/ or exp multiple drug abuse/ or exp addiction/ or exp drug dependence/ or narcotic dependence/
PsychINFO^	ATS	ATS or amphetamine type stimulant$ or amphetamine$ or methamphetamine or deoxyephedrine or desoxyephedrine or Desoxyn or madrine or metamfetamine or methamphetamine hydrochloride or methylamphetamine or n-methylamphetamine or d-amphetamine or dextroamphetamine sulphate or dexamphetamine or dexedrine or dextro-amphetamine sulphate or dextroamphetamine sulphate or d-amphetamine sulphate or stimulant$ exp DEXAMPHETAMINE/ or exp METHAMPHETAMINE/ or AMPHETAMINE DERIVATIVE/ or exp AMPHETAMINE/
	Gold standard epidemiology	"prevalence" OR "incidence" OR "epidemiolog$" OR "data collection" Or "Survey" OR "surveillance" OR "screening" OR "population study" OR "population sample" OR "population survey" OR "population surveillance" OR "community sample" OR "RAR" OR "rapid assessment" OR "situation$ assessment" OR "statistics" Exp epidemiology/ or exp STATISTICS/ or exp "POPULATION (STATISTICS)"/ or exp disease course/ or exp statistical analysis/
	Basic epidemiology	Prevalen$ or inciden$ or epidemiolog$ Exp epidemiology/
	Cohort	"cohort" OR "longitudinal" OR "incidence" OR "prospective" OR "follow-up" Exp age differences/ or exp cohort analysis/ or exp human sex differences
	Drug Use	Drug abuse OR drug use$ OR drug misuse OR drug dependenc$ OR substance abuse OR substance use$ OR substance misuse OR substance dependenc$ OR addict$

Database	Search group	Search terms
		Exp drug abuse/ or exp drug addiction/ or exp addiction/ or exp drug usage

* 'key-words' in lowercase, 'MeSH' terms in **bold**
# 'key-words' in lowercase, 'EMTREE' terms in bold
^ 'key words' in lowercase, explode terms in bold

APPENDIX B: SEARCH STRING COMBINATIONS

	Search terms		Database		
			Medline	EMBASE	PsycINFO
1.	ATS	+ Gold epidemiology + drug use	3149	3060	1316
2.	ATS	+ Gold epidemiology + cohort + drug use	644	513	267
3.	ATS	+ Basic epidemiology + drug use	906	1900	476
4.	ATS	+ Basic epidemiology + cohort + drug use	324	296	111

APPENDIX C: ILLICIT DRUGS QUALITY INDEX

1. Case ascertainment

2	• Nationwide survey/register/database (not for a specific population) • Multiple institutions/centres
1	• Regional • Case/death registers • One treatment institution/hospital etc.
0	• Not specified

2. Measurement instrument

3	• Interview/self-reported drug use (comment about reporting type, eg. self-report or standardised interview) • In treatment for drug dependence
2	• Systematic case note/database/reports review • Blood and/or urine toxicology screen
1	• Chart diagnosis
0	• Not specified

3. Diagnostic criteria

1	• Any diagnostic system reported for drug dependence or abuse (not use) e.g., DSM, ICD, RDC (comment, eg. DSM) • Dependence inferred from type of sample population (comment, e.g. treatment centre)
0	• Drug use • Own system • Symptoms described • No system • Not specified

4. Estimate

1	• Yes (comment on what type of estimate, eg. relative risk, SMR, prevalence, incidence)
0	• No

5. Numerator and denominator presented?

1	• Yes
0	• No

6. Numerator and denominator based on identical epochs and identical catchment areas?

1	• Yes
0	• No

7. Completeness of follow-up in cohort studies and response for cross-section studies

2	• High response rate/inclusion of defined sample population (>80%)
1	• Moderate response rate (60% - 79%) • Exclusions made
0	• Poor response rate (<60%)

8. Representative of the catchment area?

2	• Well represented • National registers • Multiple institutions across states
1	• Small area • Not representative of nation • One treatment centre • Registers of specific populations, eg. pilots
0	• Convenient sampling • Other (comment)

9. Age/sex specific values presented?

2	• Yes
1	• Some (e.g. sex and 2 broad age ranges only)
0	• No

10. Quality of methods of reporting

Text	• E.g. translation of tools, interviewer's quality, quality control monitoring, limitations of data, high quality methods used etc

11. Duration of follow-up

Text	• E.g. Number of years at follow-up – small sample size over a number of years etc.

APPENDIX D: ACCESS DATABASE MANUAL AND DATA ENTRY RULES

Global Burden of Disease study: Overview

We are collecting data to generate regional estimates of:
Prevalence;
Incidence;
Remission;
Duration; and
mortality,
for 5 different types of drug dependence:
amphetamine-type stimulants (ATS);
benzodiazepine;
cannabis;
cocaine; and
heroin and other opioids.

Estimates need to be made for 1990 and 2005, reflecting the general population.

Ideally raw data should be used, however in cases where the study is a comparison against a survey that we cannot otherwise access, then it is appropriate to enter the reported (not raw) data but make sure that a comment is added in the estimates comment box (eg. "data from 2006 report") to note that this data is not raw and that it was used to avoid missing out on the data completely. Please keep note (on paper) of the years of data extracted from the report and give to XX.

Data extraction

- Endnote libraries contain the data sources that need to be extracted for each parameter (PDFs are attached to each reference).
- Prevalence and Incidence data sources will be in the same library
- Remission and duration sources will be in the same library
- Mortality sources are in their own library

Interns: please enter data into the **1st entry windows only**

Estimates will be entered as 1st Entry by the first person that looks at the data, then a second time in the 2nd Entry by the person who is looking at the data. The Final Entry will function to cross-check the data entered for a source. Make sure that the second entry of an estimate is matched with second entry of the same estimate.
Only enter raw data.
Do not process any calculations; only enter what is presented in the publication.
Once you start entering information from a data source, you must extract ALL the data from the data source (please do not partially enter data from a source).
Data must be entered in ALL fields. If a field is not applicable or data is missing, please enter "999" (see General GBD Database Rules).

If an article reports on data from more than one country – an entirely new entry needs to be created from the Studies Summary window
Once extracted, please make a note in the endnote library under Research Notes "extracted by *insert name here*, *insert date here dd month year*", eg. "extracted by Bianca Calabria, 16 June 2008".

If you start creating the final entries for a data source (automatically cross-checking the 2 previous entries or copying the first entry to the final entry), you must complete all the final entries of each estimate for that data source.

Prevalence and Incidence specifics:

RAW DATA ONLY

Many articles will report older data for comparisons. Please only extract the data which were the product of the **current** study or survey. However, at present (due to time constraints), when a report displays estimates from previous years of the same survey please extract all years of data. For previous survey year data enter a comment in the estimate comments box, "data from the 2006 report", for example. Please keep note (on paper) of the years of data extracted from the report and give to Bianca.

ALL PREVALENCE ESTIMATES

Drug use prevalence can be measured in several ways:
Lifetime Prevalence (LT) (ie: has the person ever tried the drug, even once)
Past year prevalence (PYP): has the person used the drug in the previous 12 months
Past month prevalence (PMP): also Past 30 day Prevalence (has the person used the drug in the last month/30 days)
For the GBD we are most interested in PMP, however, **we need to collect data on all three types of prevalence**, whenever they are reported. So, if an article reports on all three – please extract them ALL.

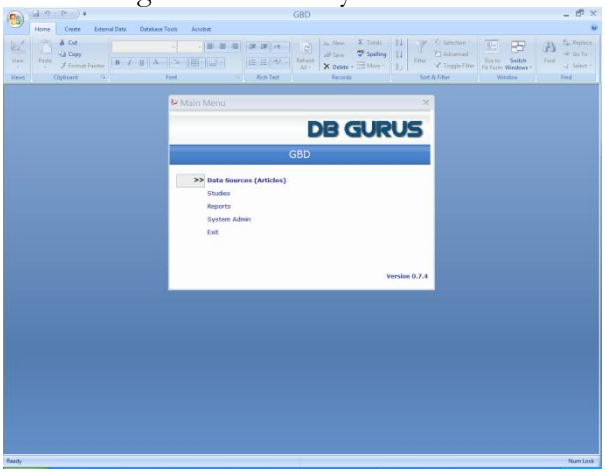
WEIGHTED AND UNWEIGHTED ESTIMATES

Some papers will report both weighted and unweighted estimates. Weighted estimates have been adjusted so that the sample is representative of the general population.
Please extract BOTH WEIGHTED and UNWEIGHTED.
Weighted estimates should have the Standardised box ticked, with a comment about how and why the statistics were weighted (if possible)

GBD Database Instructions

DO NOT USE ROLLER ON MOUSE

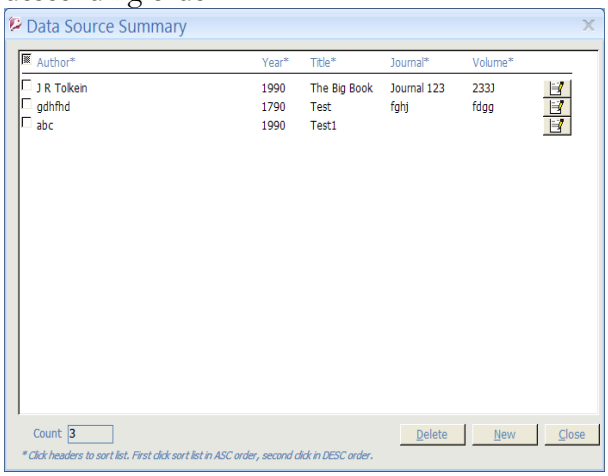
Open the GBD database (front end) file, to the main menu.
Clicking once is enough, double clicking is not necessary.



Data Source (Articles)

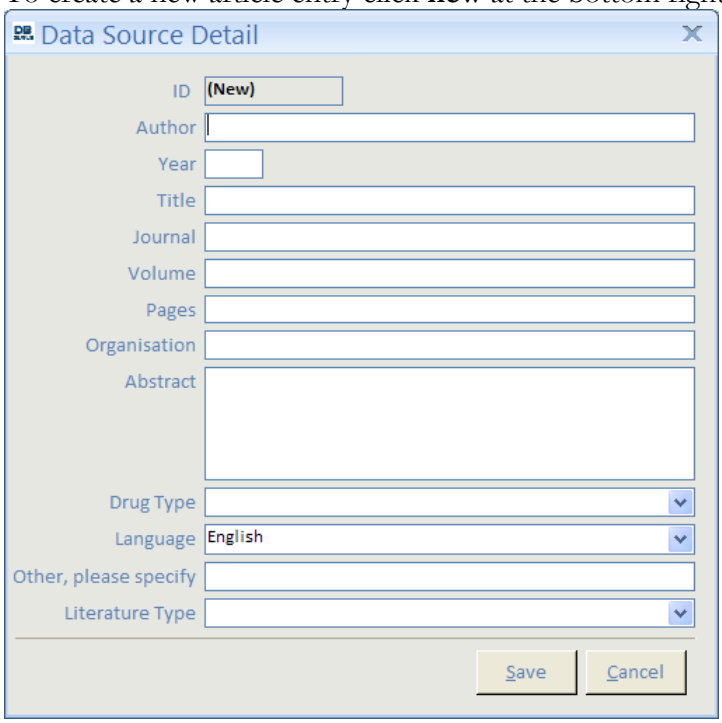
Click once on ***Data Sources (Articles)*** to view the ***Data Source Summary***.

Headers can be clicked once to sort lists in ascending order, a second click will sort in descending order.



Create a new article entry

To create a new article entry click **new** at the bottom right of the screen.

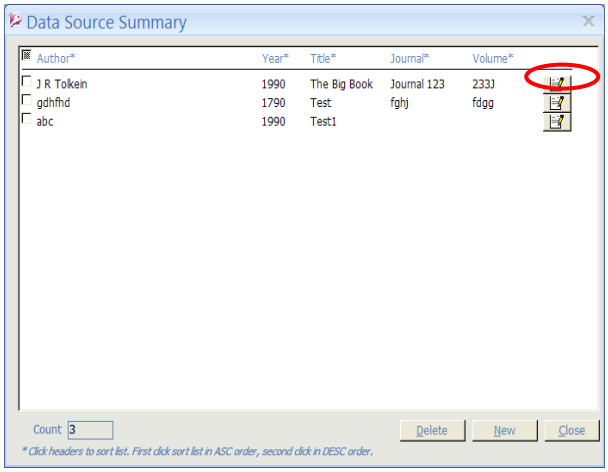


Enter data in ALL fields, then click **save** and **close** (abstract field can be left blank).

Click **close** in the ***Data Source Summary*** screen to return to the main menu.

Edit an existing article entry

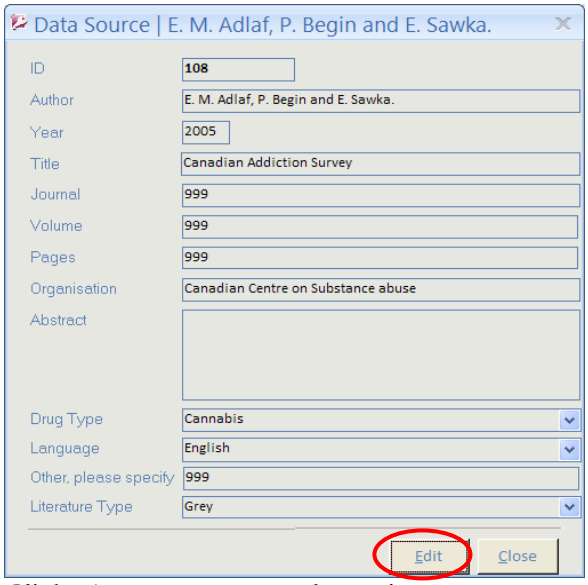
To edit an existing article entry click on the icon on the far right of the screen that is associated with the entry you wish to edit.



Then

Click **edit** on the bottom of the ***Data Source*** screen to edit existing information.

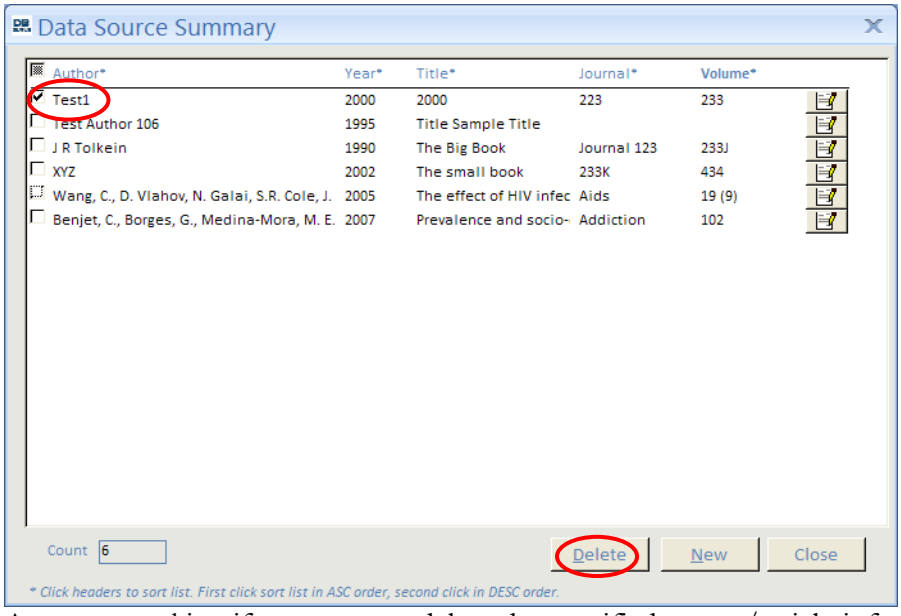
Click **save** and **close**.



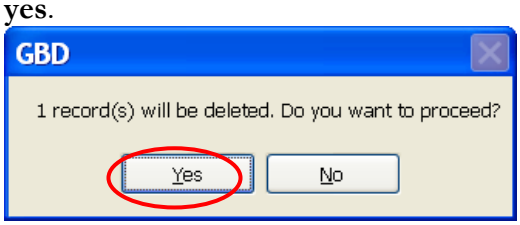
Click **close** to return to the main menu.

<u>Deleting report/article information</u>

In the ***Data Source Summary*** screen select the report/article you wish to delete by ticking the box to the left of the report/article information. Then click **delete** at the bottom right of the screen.



A message asking if you want to delete the specified report/article information will appear, click **yes**.

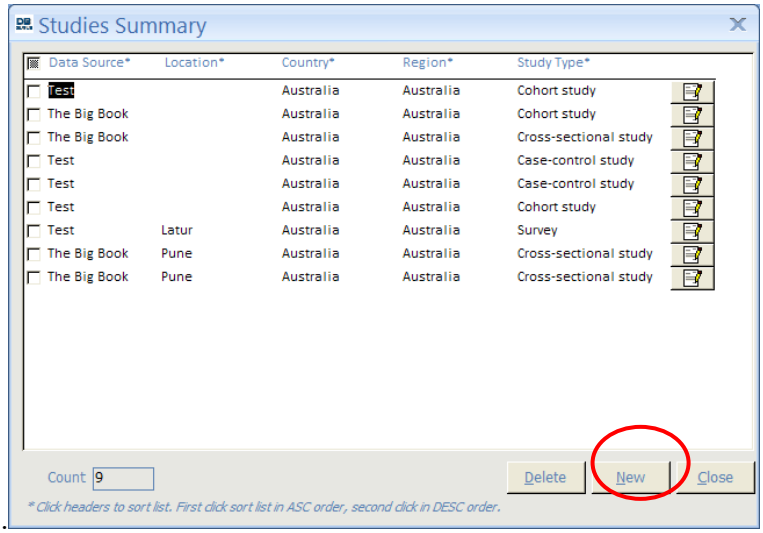


Studies

From the Main Menu click once on ***Studies*** to view the ***Studies Summary***.

Creating new study information (following on from creating new article entry)

To create a new study entry, that is new study information following on from entering the new article information, click **new** at the bottom right of the screen.



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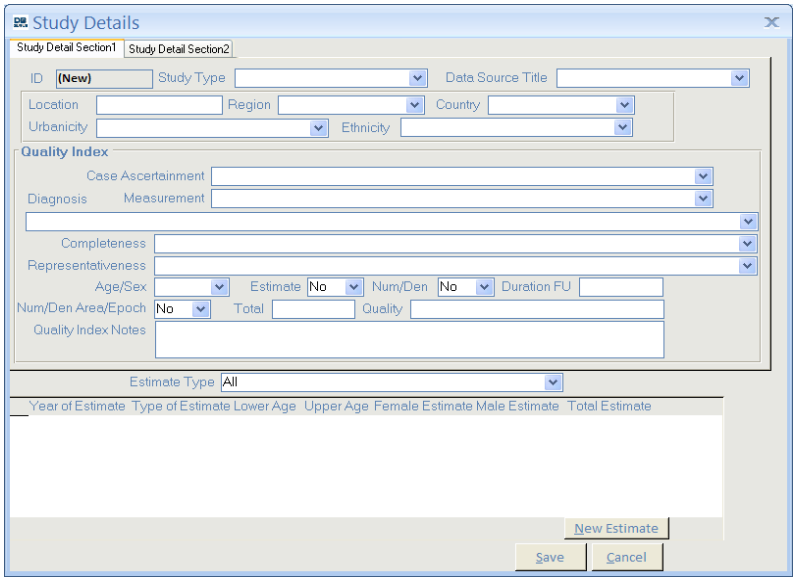
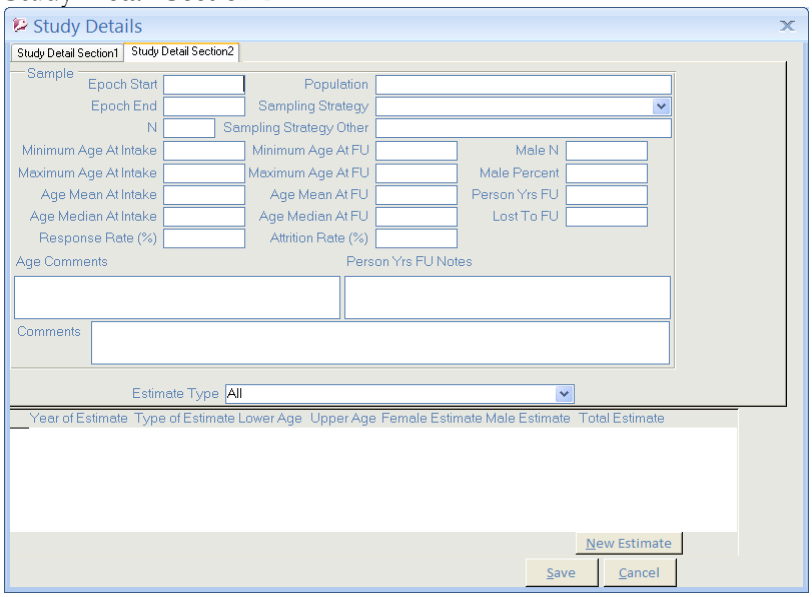
Study Detail Section 1

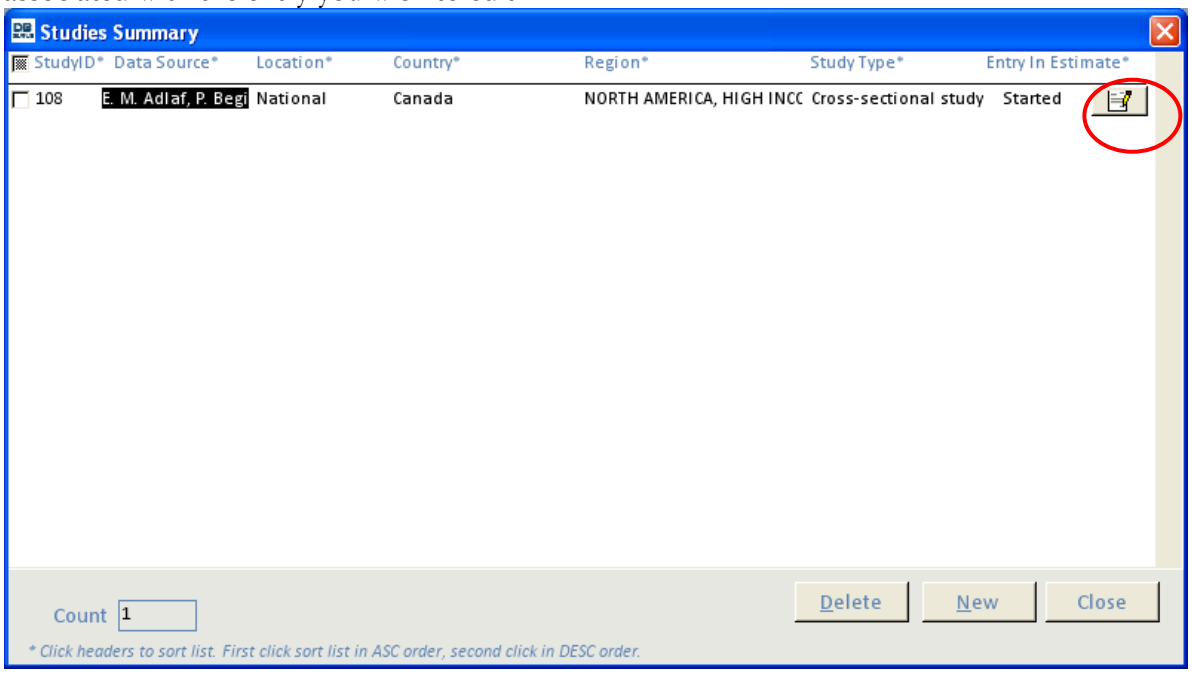


First select the authors of the particular article from the *Data Source Title* drop down box.
Enter data in ALL remaining fields on the ***Study Detail Section 1*** screen.
Select the ***Study Detail Section 2*** screen by clicking on the labelled tab at the top left of the screen.
Study Detail Section 2



Enter data in ALL fields on the ***Study Detail Section 2*** screen (including *Estimate Type*).
Click **save.**
<u>Reports/articles that present data on more than one country.</u>
Click **new** at the bottom right of the ***Studies Summary*** screen. Select the appropriate author/date from the ***Study Detail Section 1*** screen and enter data for one of the countries reported on. Click **save** and **close**.
To enter the data for a different country presented in the same report/article, need to make a new record. Click **new** from the Studies Summary screen, select the appropriate author/date in the ***Study Details Section 1*** screen and input data. Click **save** and **close**.
In the ***Studies Summary*** screen the data source will be displayed twice, with the different country shown for each display.
<u>Editing existing study information</u>

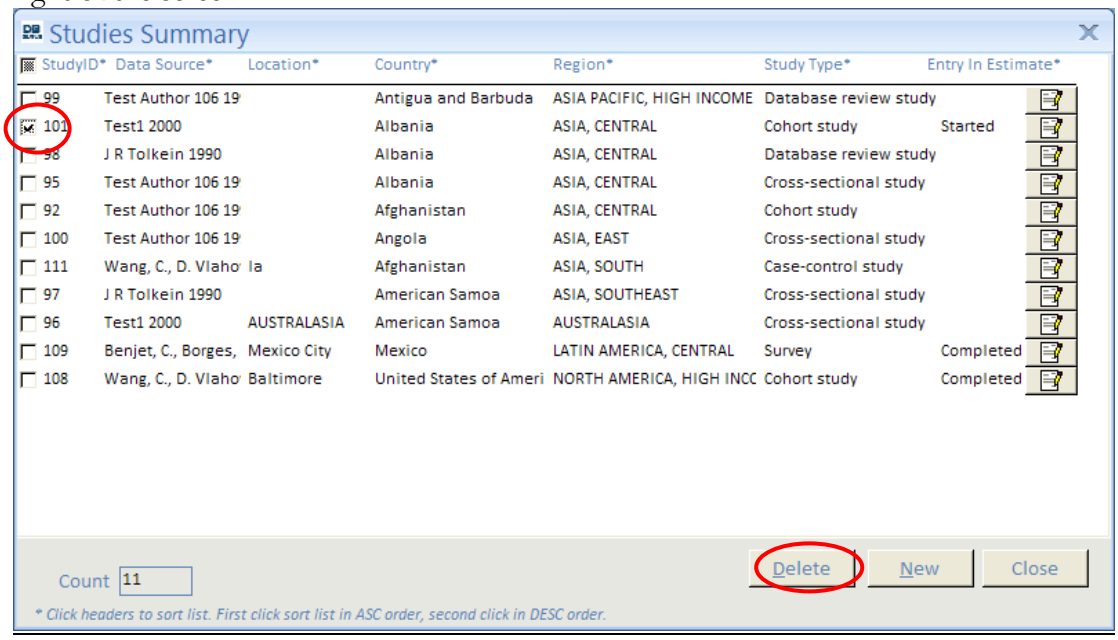
To edit existing study information click on the icon on the far right of the screen that is associated with the entry you wish to edit.



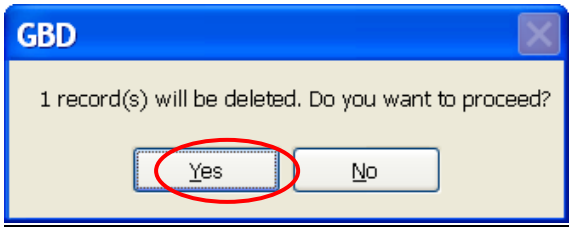
Click **edit** on the bottom of the ***Study Details*** screen to edit existing information (***Study Detail Section 1*** and ***Study Detail Section 2*** may both be edited, change between screens by clicking on the appropriately labelled tab at the top left of the screen).
Click **save** and **close**.

Deleting study information

In the ***Study Summary*** screen select the report/article you wish to delete study information for by ticking the box to the left of the report/article information. Then click **delete** at the bottom right of the screen.



A message asking if you want to delete the specified report/article information will appear, click **yes**.



Estimate Details

Creating a new estimate entry (following on from creating new study information)

In the Studies Summary screen, click on the icon on the far right of the screen that is associated with the entry you wish to add an estimate.

Click **edit**, at the bottom right of the ***Study Details*** screen.

Click **New Estimate**, at the bottom right of the ***Study Details*** screen.

The ***1st Entry*** radio button should be selected if this is the first time data has been extracted from an article/report, ***2nd Entry*** radio button should be selected if this is the second time data has been extracted from the same article/report (not by the same person that entered the 1st entry), the final entry functions to compare the 1st and 2nd entries.

Only estimate information is entered into the database in the second entry, however, article/report and study information should be visually checked for errors by the second person entering estimate information.

Once data has been entered in ALL the fields click save and close.

In the ***Study Details*** screen click **save** and **close** to return to the ***Studies Summary*** screen.

Deleting estimate information

To delete an estimate, open up the estimate and click the delete button situated at the bottom right of the box.

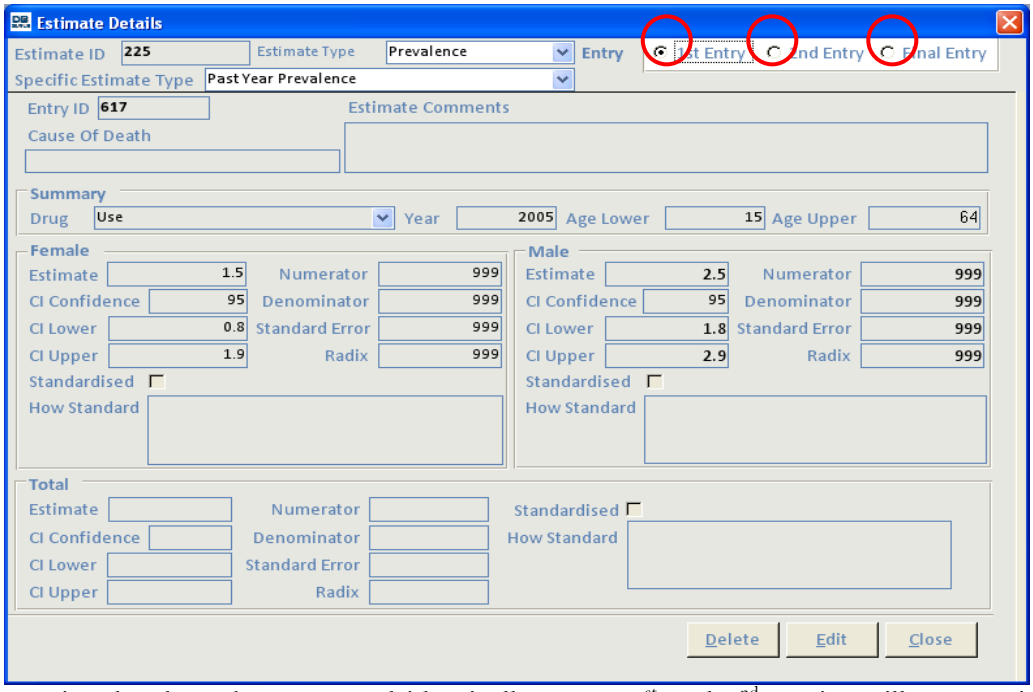
Comparing the 1st Entry and the 2nd Entry

In the ***Studies Summary*** screen, click on the icon on the far right of the screen that is associated with the entry for which estimates you would like to compare.

In the ***Study Details*** screen click **edit** at the bottom right of the screen.

In the estimate summary section at the bottom of the screen, click on the icon on the far right of the screen that is associated with the estimate that comparison of entries is required.

Check that both the 1st and 2nd entries have been completed by clicking the radio buttons at the top right of the screen. If both are complete click on the radio button for the ***Final Entry***, then click **edit**.



Entries that have been entered identically across 1st and 2nd entries will automatically appear in the final entry. Fields highlighted in pink do not match across 1st and 2nd entries and must be checked and correct responses entered manually.

Click **save** and **close**.

Queries

Linking tables from the Access database that holds the data to the new Access database that holds the queries:

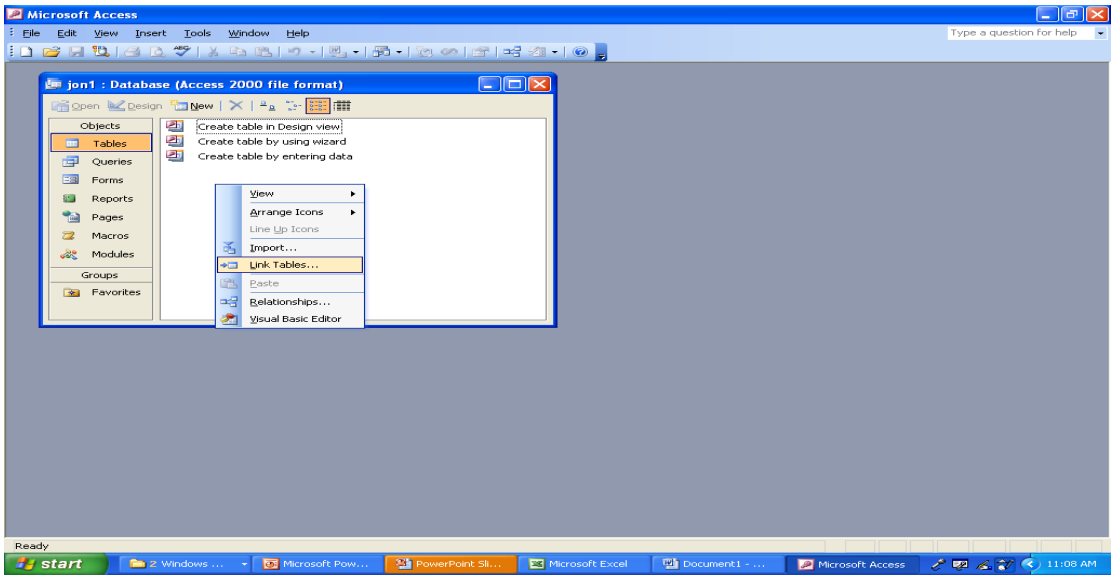
Open a new Access file

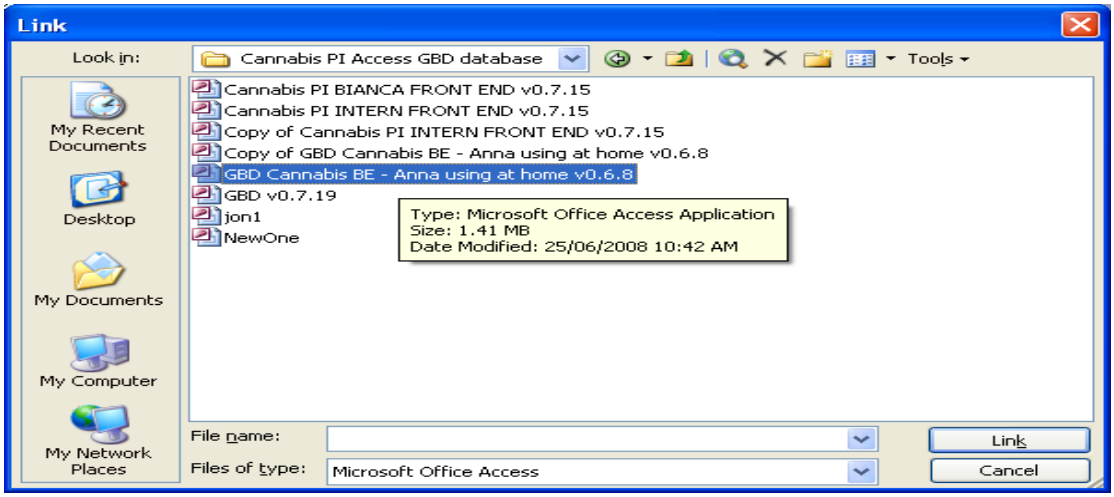
Highlight Tables in the left hand list

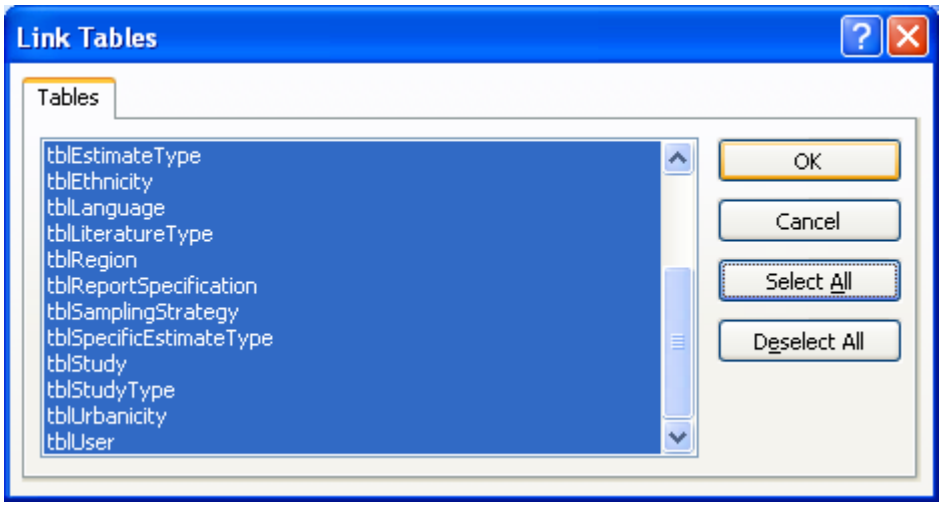
Right click and select: "Link tables"

Choose folder containing the Back End

Double click on the back end file

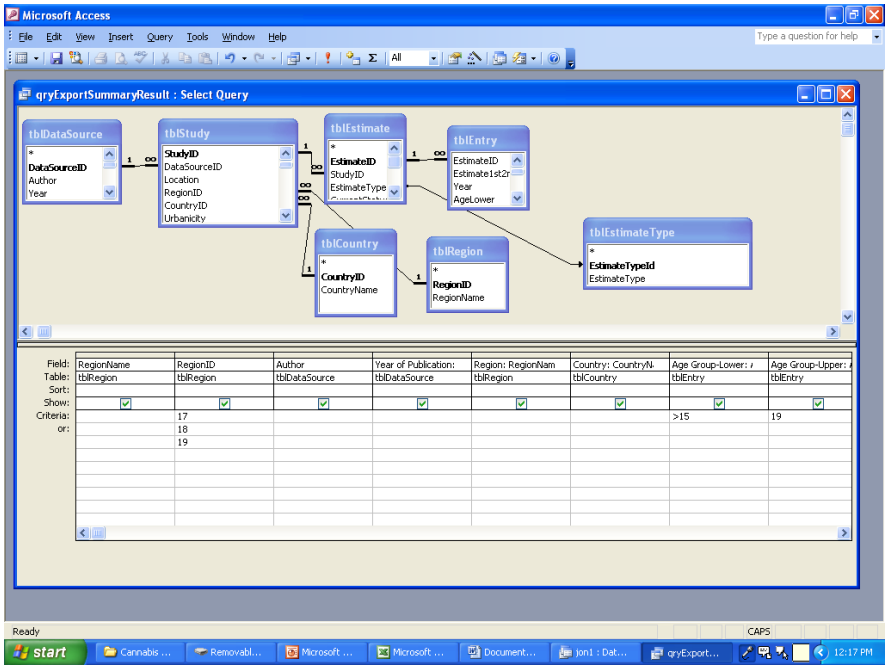






Choose "Select all"
Click "OK"

To make a query:
choose Queries from the left hand list
Select "New"
Select "Design view"
Right click over the blank area and choose "Show Table"
Choose the table that contains the data you want to run reports from
Continue doing this until you have selected all the tables containing the data you want to pull



Use the drop down box in the Table row to select the relevant Table
Use the drop down box in the Field Row to choose the specific information
Press the red exclamation mark on the toolbar to run the report

GBD Database - Data Entry Rules

Data Source (Articles)

Variable	Database Rules
*****All relevant text can (and should!) be copied and pasted directly from Endnote*****	
Author/s	First author surname, 1st initial., second author surname, 1st initial., & final author surname, 1st initial. 2nd initial. Eg. Singleton, J., Calabria, B., & Roberts, A. S. Insert editors if no authors are stated with "eds." after their names For EMCDDA reports without authors or editors, type EMCDDA – *country of report.* If there is no Author, enter the Data Source ID (which is the top field in the Data Source Detail window) and the Country. Eg. "131 Australia" When multiple entries have the same authors (eg. Monitoring the Future) enter 1st author name, volume of report (if applicable) and year of publication, followed by list a all authors (as would usually be entered).
Year	Year of Publication Year of Publication can be copied and pasted from Endnote
Title	Title of article/report
Journal	Name of Journal (if applicable) For non-journal sources enter 999
Volume	Journal Volume(Issue) [if applicable] Eg. 118(4) Journal Volume: Issue can be copied and pasted from Endnote For non-journal sources enter 999

Variable	Database Rules
Pages	Start page – end page (if applicable) Eg. 115-118 Start and end page can be copied and pasted from Endnote For non-journal sources enter 999
Organisation	For grey literature publications indicate the organisation that is
Abstract	Article abstract (if applicable)
Drug Type	Chose from drop down box NB: If cocaine powder and crack are reported separately, you will need to type this into the "Estimate Comments" box on the Estimate Details window
Language	Determines which language the article/report is written in. Select from drop down box English Other (specify other language in *Other, please specify* field)
Other, please specify	For languages other than English specify which language the article/report is written in (Other should have been selected from the *Language* drop down box)
Literature type	Indicate whether the literature type is white (peer reviewed) or grey (material that is not formally published by commercial publishers). Select from drop down box Grey White

Studies

Study Detail Section 1

Variable	Database Rules
Data Source Title	Select correct authors from drop down box
Study Type	Select study type from drop down box: Cohort study Cross-sectional study Case-control study Database review study Survey Indirect prev est (e.g., capture-recapture, multiplier)
Location	Type specific location of the study. If countrywide, type "National"
Region	Select appropriate GBD region from drop down box
Country	Select country were study took place from drop down box
Urbanicity	Select from drop down box Urban/metropolitan Rural Mixed/Other – suburban, etc. Only select an option if specifically reported in data source. Otherwise leave blank.
Ethnicity	Leave blank
QUALITY INDEX **NOTE: For mortality extraction, there is a different quality index**	

Variable	Database Rules
Case ascertainment	Ascertainment of cases nationwide or regionally? Select from drop down box Community/nationwide survey/register/database Case registers/Regional death registers/One treatment institution/hospital Not specified **NOTE:** For studies using indirect prevalence estimation (e.g., capture-recapture), choose 'Community/nationwide survey/register/database'
Measurement	Measurement instrument to determine cannabis use or dependence. Select from drop down box Interview/self-reported drug use/In treatment for drug dependence Systematic case note/database/reports review/blood and/or urine toxicology screen Chart diagnosis Not specified **NOTE:** For studies using indirect prevalence estimation (e.g., capture-recapture), choose 'Interview/self-reported drug use/In treatment for drug dependence'
Diagnosis	Indicates whether cannabis dependence was diagnosed. Select from drop down box Any diagnostic system reported for drug dependence or abuse/Dependence inferred from type of sample population Drug use/Own system/Symptoms described If not reported, leave blank and make note in quality index comments that "Diagnosis" not reported. **NOTE:** For studies using indirect prevalence estimation (e.g., capture-recapture), choose 'Any diagnostic system reported for drug dependence or abuse/Dependence inferred from type of sample population'
Estimate	Estimate presented (e.g. prevalence, incidence, mortality, relative risk, etc.) Select from drop down box Yes No
Num/Den	Was the numerator and denominator presented for **ALL** the estimates of interest? Select from drop down box Yes No

Variable	Database Rules
Num/Den Area/Epoch	Were the numerator and denominator based on identical epochs and identical catchment areas for estimate of interest? That is, was the estimate (prevalence for example) calculated based on the sample (YES) or by use of population numbers for the denominator from the same year and area (YES)? Choose NO if the denominator is from a different year or area from the sample. Select from drop down box Yes No
Completeness	Captures response rates and attrition rates. Select from drop down box High response rate/inclusion of defined sample population (>80%) Moderate response rate (60% - 79%) Exclusions Poor response rate (<60%)made If response rate is not reported, please select "Exclusions Poor response rate (<60%) made" as this option is scored as 0 and make a comment in the quality index comments box that completeness was not reported. **NOTE:** For studies using indirect prevalence estimation (e.g., capture-recapture), choose 'High response rate/inclusion of defined sample population (>80%)'
Representativeness	Determines generalisability of the sample to the population Select from drop down box Well represented/National registers/Multiple institutions across states Small area/Not representative of nation/One treatment centre/Registers of specific populations Convenient sampling/Other If not reported, leave blank and make note in quality index comments that "Representativeness" not reported. **NOTE:** For studies using indirect prevalence estimation (e.g., capture-recapture), choose 'Well represented/National registers/Multiple institutions across states'
Age/sex	Identifies whether age and/or sex specific values were reported. Select from drop down box Yes (estimates dived by age and sex) Some (eg. sex and 2 broad age ranges only) No
Quality	To capture methods that were not reported on by other variables (free text)

Variable	Database Rules
Duration FU	To obtain more information about follow-up periods and sample sizes when doing so (free text)
Total	Automatically calculates the total Quality Index Score
Quality Index Notes	Insert any other quality information that has not been captured by other variables. For example, note whether the study is one that uses indirect prevalence methods, and state which data sources were used for this.
Estimate type	No need to choose an option here.

Study Detail Section 2

Variable	Database Rules
Epoch start	Year that the study started. If the study only extends over one year enter the same year in Epoch start and Epoch end.
Epoch end	Year that the study ended. If the study only extends over one year enter the same year in Epoch start and Epoch end.
N	Total number of people in the sample. If the number of people who responded to the drug use questions is reported, and this is different to the overall N, put in the drug response N here and make a note in the comments. Enter the total N in the Comments. Otherwise enter total sample N here.
Population	Specific information about the type of population. For a representative sample enter "general population".
Sampling strategy	Select from drop down box Simple random sampling Stratified random sampling Cluster sampling Systematic sampling Other Other (Matching Other (Snowballing) Other (Convenience) Other (please specify) Census If sampling strategy is not reported, select "Other" and enter "Not reported" in the Sampling strategy Other box.
Sampling strategy Other	If *Other* is selected from *Sampling Strategy*, indicate sampling strategy used here If Sampling Strategy was not reported enter "Not reported" here
Minimum Age at Intake	The minimum age of the total sample at intake. Enter section/survey data into intake fields. If the study does not report the youngest age, enter "0" and make a comment in the *age comments* box indicating no minimum age reported. See end of manual for ages of U.S high school and college students.

Variable	Database Rules
Maximum Age at Intake	The maximum age of the total sample at intake. Enter section/survey data into intake fields. If no maximum age is reported, enter "99" and make a comment in the *age comments box* indicating no maximum age reported. See end of manual for ages of U.S high school and college students.
Age Mean at Intake	The mean age of the total sample at intake. Enter section/survey data into intake fields.
Age Median At Intake	The median age of the total sample at intake. Enter section/survey data into intake fields.
Response Rate (%)	Response rate, reported as a percent. If reported for different age groups enter highest reported, then make comment in *studies comment* box indicating all response rates reported.
Minimum Age at FU	The minimum age of the total sample at follow-up. See end of manual for ages of U.S high school and college students.
Maximum Age at FU	The maximum age of the total sample at follow-up. If no maximum age is reported, enter "99" and make a comment in the *age comments box* indicating no maximum age reported. See end of manual for ages of U.S high school and college students.
Age Mean at FU	The mean age of the total sample at follow-up.
Age Median FU	The median age of the total sample at follow-up.
Attrition Rate (%)	The attrition rate, reported as a percent.
Male N	Number of males in the sample.
Male Percent	Percent of males in the sample.
Person Yrs FU	Total person years follow up (this is mainly relevant for cohort studies) If person years of follow up are reported by age and/or sex, please record this in the Person Yrs FU Notes box
Lost To FU	What % of the sample is lost to follow up?
Age Comments	Additional comments about age.
Person Yrs FU Notes	If person years of follow up are reported by age and/or sex, please record this here.
Comments	If a peer reviewed article reports on an aspect of a larger survey, note which survey the data comes from in the comments box. Must enter text or alternatively "999" if no comments are required.
Estimate Type	Select type of estimate from drop down box Duration Incidence Mortality Prevalence Remission

Estimate Details

Variable	Database Rules

Variable	Database Rules
Entry	Click the radio button for 1st Entry for the first time the data is entered for and article, 2nd entry for the second time the data is entered for the same article and final entry when you want to compare the 1st and 2nd entries.
Estimate Type	Select estimate type from drop down box Duration Incidence Mortality Prevalence Remission
Specific Estimate Type	Select specific estimate type from drop down box Duration Incidence Cumulative incidence Past Year Incidence Mortality CMR (Crude Mortality Rate) SMR (Standardised Mortality Ratio) RR (Relative Risk) OR (Odds Ratio) HR (Hazard Ratio) CFR (Case Fatality Ratio) Other, please specify (specify in *Estimate Comments*) Prevalence Lifetime Prevalence Past Year Prevalence Past Month Prevalence Remission Abstinent Still using, not dependent Still met criteria for dependence Relapsed
Cause of Death	For mortality estimates only. If mortality, "other, please specify" put details in *Estimates Comments*
Estimate Comments	Add extra information that is not captured by other variables. If cocaine powder and crack cocaine are reported separately, type "Crack cocaine" or "Cocaine powder" here
SUMMARY	
Drug	Indicates use or dependence, select from drop down box Use Dependence Other (eg. abuse – specify in *Estimate Comments*)
Year	Year of estimate If data were collected across 2 years (eg: July 2004 until May 2005) enter "0405" (this includes mortality cohorts). If no year of estimate is stated then insert the publication year minus 2 years

Variable	Database Rules
Age Lower	Minimum age of age group for which estimate is reported. If only reporting for one age, put the same age in *Age Lower* and *Age Upper*. If estimate applies to entire sample, enter the youngest age from the age range If the study does not report the youngest age, enter "0" and make a comment in the *age comments* box indicating no minimum age reported. See end of manual for ages of U.S high school and college students.
Age Upper	Maximum age of age group for which estimate is reported. If only reporting for one age, put the same age in *Age Lower* and *Age Upper*. If estimate applies to entire sample, enter the oldest age from the age range If no maximum age is reported, enter "99" and make a comment in the *age comments box* indicating no maximum age reported. See end of manual for ages of U.S high school and college students.
FEMALE	
Estimate	Estimate reported for females (eg. past year prevalence)
CI Confidence	Type of confidence interval used, as a percent. Eg. For a 95% CI, 95 would be entered
CI Lower	Lower limit of the confidence interval
CI Upper	Upper limit of the confidence interval
Numerator	Numerator of the estimate, if reported.
Denominator	Denominator **of the estimate**, if reported.
Standard error	Standard error of the estimate.
Radix	Indicate how estimates are given, uniformly per 10* of population. e.g. per 100000 or 100
Standardised	Tick box if the estimate standardised. Leave the box blank if the estimate is not standardised.
How Standard	If the estimate is standardised, indicate how/ by what.
MALE	
Estimate	Estimate reported for males (eg. past year prevalence)
CI Confidence	Type of confidence interval used, as a percent. Eg. For a 95% CI, 95 would be entered
CI Lower	Lower limit of the confidence interval
CI Upper	Upper limit of the confidence interval
Numerator	Numerator of the estimate, if reported.
Denominator	Denominator of the estimate, if reported.
Standard error	Standard error of the estimate.
Radix	Indicate how estimates are given, uniformly per 10* of population. e.g. per 100000 or 100
Standardised	Tick box if the estimate standardised. Leave the box blank if the estimate is not standardised.
How Standard	If the estimate is standardised, indicate how/ by what.
TOTAL	

Variable	Database Rules
Estimate	Estimate reported for both males and females combined (eg. past year prevalence)
CI Confidence	Type of confidence interval used, as a percent. Eg. For a 95% CI, 95 would be entered
CI Lower	Lower limit of the confidence interval
CI Upper	Upper limit of the confidence interval
Numerator	Numerator of the estimate, if reported.
Denominator	Denominator of the estimate, if reported.
Standard error	Standard error of the estimate.
Radix	Indicate how estimates are given, uniformly per 10* of population. e.g. per 100000 or 100
Standardised	Tick box if the estimate standardised. Leave the box blank if the estimate is not standardised.
How Standard	If the estimate is standardised, indicate how/ by what.

General GBD Database Rules

Situation	Entry	Comments
Missing data/not applicable	999	All fields in the database must be completed. Enter the missing data code if field is not applicable or study does not report on a particular variable
For EMCDDA Data; These are the standardised rules for entering EMCDDA		
Location	"National" unless otherwise specified	
Urbanicity	"Mixed/other" unless otherwise specified	
Ethnicity	Left blank as no general rule is applicable	
Case Ascertainment	"Community/Nationwide survey/Register/Database"	
Measurement	"Interview/Self-reported Drug Use/In treatment for Drug Dependence	
Diagnosis	"Drug use/own system/ symptoms described"	
Completeness	Left blank unless specified	
Representativeness	"Well represented/ national registers/ multiple institutions across states"	

Ages for U.S High School and College Students

	High school students		College students
	8th grade	13-14 years	
Freshman	**9th grade**	14-15 years	18-19 years
Sophomores	**10th grade**	15-16 years	19-20 years
Juniors	**11th grade**	16-17 years	20-21 years
Seniors	**12th grade**	17-18 years	21-22 years

For further information data extraction and the Access database see also:
http://www.gbd.unsw.edu.au/gbdweb.nsf/resources/Methodology_pt3c_Drugs/$file/GBD_Methodology_pt3b_IllicitDrugs_08Oct08.pdf

APPENDIX E: SEARCH STRINGS FOR ANY EVIDENCE OF USE IN SPECIFIC COUNTRIES

Databases/Search Engine	Search Group	Search terms
GoogleScholar	ATS	ATS OR amphetamine OR methamphetamine OR stimulants
	Drug use	"drug use" OR "drug abuse" OR "substance use" OR "substance abuse"
	Country	*"country name"*
WorldCat/ PubMed/ PsychINFO	ATS	ATS OR amphetamine OR methamphetamine OR stimulants
	Drug use	"drug use" OR "drug abuse" OR "substance use" OR "substance abuse"
	Country	"*country name*"

APPENDIX F: GLOBAL BURDEN OF DISEASE COUNTRY AND REGION LIST

ASIA PACIFIC, HIGH INCOME
~
Brunei
Japan
Republic of Korea
Singapore

ASIA, CENTRAL
~
Armenia
Azerbaijan
Georgia
Kazakhstan
Kyrgyzstan
Mongolia
Tajikistan
Turkmenistan
Uzbekistan

ASIA, EAST
~
China
Democratic People's Republic of Korea
Hong Kong
Taiwan

ASIA, SOUTH
~
Afghanistan
Bangladesh
Bhutan
India
Nepal
Pakistan

ASIA, SOUTHEAST
~
Cambodia
Indonesia
Lao People's Democratic Republic
Malaysia
Maldives
Mauritius
Mayotte
Myanmar
Philippines
Seychelles
Sri Lanka
Thailand
Timore Leste
Viet Nam

AUSTRALASIA
~
Australia
New Zealand

CARIBBEAN
~
Anguilla
Antigua and Barbuda
Aruba
Bahamas
Barbados
Belize
Bermuda
British Virgin Islands
Cayman Islands
Cuba
Dominica
Dominican Republic
French Guiana
Grenada
Guadaloupe
Guyana
Haiti
Jamaica
Martinique
Montserrat
Netherlands Antilles
Saint Kitts and Nevis
St. Lucia
St. Vincent
Suriname
Trinidad and Tobago
Turks and Caicos Islands

EUROPE, CENTRAL
~
Albania
Bosnia and Herzegovina
Bulgaria
Croatia
Czech Republic
Hungary
Poland
Romania

Serbia and Montenegro
Slovakia
Slovenia
The Former Yugoslav Republic of Macedonia

EUROPE, EASTERN
~
Belarus
Estonia
Latvia
Lithuania
Republic of Moldova
Russian Federation
Ukraine

EUROPE, WESTERN
~
Andorra
Austria
Belgium
Channel Islands
Cyprus
Denmark
Faeroe Islands
Finland
France
Germany
Gibraltar
Greece
Greenland
Holy See
Iceland
Ireland
Isle of Man
Israel
Italy
Liechtenstein
Luxembourg
Malta
Monaco
Netherlands
Norway
Portugal
Saint Pierre et Miquelon
San Marino
Spain
Sweden
Switzerland
United Kingdom

LATIN AMERICA, ANDEAN
~
Bolivia
Ecuador
Peru

LATIN AMERICA, CENTRAL
~
Colombia
Costa Rica
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama
Venezuela

LATIN AMERICA, SOUTHERN
~
Argentina
Chile
Falkland Islands (Malvinas)
Uruguay

LATIN AMERICA, TROPICAL
~
Brazil
Paraguay

NORTH AFRICA / MIDDLE EAST
~
Algeria
Bahrain
Egypt
Iran (Islamic Republic of)
Iraq
Jordan
Kuwait
Lebanon
Libyan Arab Jamahiriya
Morocco
Occupied Palestinian Territory
Oman
Qatar
Saudi Arabia
Syrian Arab Republic
Tunisia
Turkey
United Arab Emirates

Western Sahara
Yemen

NORTH AMERICA, HIGH INCOME
~
Canada
United States of America

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
Tuvalu
Vanuatu
Wallis and Futuna Islands

SUB-SAHARAN AFRICA, CENTRAL
~
Angola
Central African Republic
Congo
Democratic Republic of the Congo
Equatorial Guinea
Gabon

SUB-SAHARAN AFRICA, EAST
~
Burundi
Comoros
Djibouti
Eritrea
Ethiopia
Kenya
Madagascar
Malawi
Mozambique
Rwanda
Somalia
Sudan
Uganda
United Republic of Tanzania
Zambia

SUB-SAHARAN AFRICA, SOUTHERN
~
Botswana
Lesotho
Namibia
South Africa
Swaziland
Zimbabwe

NATIONAL DRUG AND ALCOHOL RESEARCH CENTRE

The National Drug and Alcohol Research Centre (NDARC) is a premier research institution in Australia and is recognised internationally as a Research Centre of Excellence. The Centre is multidisciplinary and collaborates with medicine, psychology, social science and other schools of the University of NSW, as well as with a range of other institutions and individuals in Australia and overseas.

The overall mission of NDARC is to conduct high quality research and related activities that increases the effectiveness of Australian and International treatment and other intervention responses to alcohol and other drug related harm.

In addition to the research conducted at the Centre, other NDARC activities include an Annual Symposium and a range of special conferences and educational workshops. As well as contributing to scientific journals and other publications, NDARC produces its own Research Monographs and Technical Report Series. In conjunction with the National Drug Research Institute in Perth, NDARC also produces a free quarterly newsletter, CentreLines, to increase communication between the national research centres, other researchers and workers in the alcohol and other drug field.

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