



EMCDDA PAPERS

Co-morbid substance use and mental disorders in Europe: a review of the data

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Abstract: This paper reviews information on the co-morbidity of mental disorders among individuals with psychoactive drug or alcohol use problems. Findings from key European and non-European studies are presented, along with an overview of the information on co-morbidity reported to the EMCDDA by EU Member States and Norway in the last six years. Substance use and mental disorders may interact in a number of ways, and they may be influenced by overlapping factors, such as early exposure to stress. Diagnosing co-morbidity in substance users is often complicated by methodological issues. Clinical and epidemiological studies have shown that the occurrence of co-morbid mental disorders can be high among individuals with psychoactive substance use problems. Co-morbidity particularly affects vulnerable groups, such as prisoners. While studies on the prevalence of co-morbidity have been carried out in other parts of the world, few have been conducted in Europe. The European studies

presented here show a wide variation in prevalence levels, which may reflect methodological limitations, including the lack of harmonised European reporting on co-morbidity. Suggestions are made to stimulate the accumulation of knowledge and the comparability of information in this area in order to improve the evidence base available to policymakers.

Keywords drug use
mental health disorders
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Introduction

Clinical and epidemiological studies have shown that the frequency of occurrence of co-morbid mental disorders in individuals who use alcohol or other psychoactive substances can be high (Baldacchino et al., 2009; Kessler et al., 2005). While mental disorders are risk factors for substance use disorders, the presence of a substance use disorder may affect the occurrence of mental disorders. However, diagnosing co-morbidity in substance users is often complicated by symptom overlap, symptom fluctuations, and the limitations of the assessment methods, among other methodological issues. Among those with a mental health disorder, data from clinical samples indicate that between a third and a half will meet the criteria for another mental or substance use disorder at some point in their lives (Hall et al., 2009). Among substance users, the most common mental disorders are personality disorders, anxiety and mood disorders. While statistics exist for some countries in Europe and elsewhere, assessing the overall prevalence of psychiatric co-morbidity in the European Union is hampered by the lack of agreed criteria to define co-morbid disorders and by the scarcity of national studies. This points to a need to develop European harmonised research and monitoring instruments on the co-occurrence of mental disorders among those with substance use problems as a first step towards being able to describe this phenomenon at European level.

This paper aims to stimulate discussion and interest at European level on psychiatric co-morbidity. It contains a brief description of the co-occurrence of substance use and mental health disorders in European countries, without claiming to provide a complete and comprehensive overview of existing information. The paper presents an overview of the information on psychiatric co-morbidity, as it is reported in the Reitox National reports submitted to the EMCDDA in the last six years, together with the main findings from selected European and non-European studies.

What is co-morbidity?

At a general level, the term co-morbidity means the presence or coexistence of additional diseases with reference to an initial diagnosis or to the index condition that is being examined (Baldacchino and Corkery, 2006).

In the field of psychiatry, despite the lack of a full consensus on terminology, co-morbidity commonly refers to the co-occurrence of two or more different mental disorders during a period of time; this usually includes substance use and another mental health disorder (Evans and Sullivan, 2001). Another term extensively used to indicate the co-occurrence of mental health and substance use disorders is 'dual diagnosis'. The World Health Organization defines dual

diagnosis as the 'co-occurrence in the same individual of a psychoactive substance use disorder and another psychiatric disorder' (WHO, 2010). Less commonly, the term refers to the co-occurrence of two psychiatric disorders not involving psychoactive substance use, or the co-occurrence of two diagnosable substance use disorders (WHO, 2008).

Information on psychiatric co-morbidity and its prevalence in Europe, although limited, is now increasing as several countries have started to study the topic. As a result, some information on psychiatric co-morbidity is now available for all EU Member States. However, large-scale epidemiological studies on the prevalence of psychiatric co-morbidity, such as those that have been conducted in Australia and the United States, are rare in Europe. Two European studies deserve special mention. The first is a large-scale study published in 2009 by Baldacchino and colleagues, which will be discussed in the current paper. The other notable body of European research is that currently being pursued by Torrens and colleagues in Barcelona (see Torrens, 2013). Despite the growing amount of information available, our understanding of co-morbidity is restricted by the lack of harmonisation between countries in data collection and reporting (Baldacchino et al., 2009; Torrens et al., 2012).

The EMCDDA wishes to stimulate the collection and exchange of information on psychiatric co-morbidity across Europe for several reasons, including: the likely high prevalence of co-morbidity in drug using populations; the apparent increasing trend in co-morbidity among drug users; and the lack of adequate treatment options targeting those affected by co-morbid disorders.

What is the relationship between substance use and mental health disorders?

The term 'psychiatric co-morbidity' does not have any implication for the existence of, or the nature of the relationship between, substance use and mental health disorders, or for the aetiological relationship between the two conditions (Hall et al., 2009). Psychiatric co-morbidity, or co-morbid mental and substance use disorders, may occur concurrently (two disorders are present at the same time) or successively (two disorders occur at different times in a person's life); in both cases, the two disorders may or may not be causally related (Frisher et al., 2009; Langas et al., 2011).

Research studies show that substance use, withdrawal symptoms and dependence may lead to or exacerbate psychiatric or psychological symptoms or syndromes. Conversely, psychiatric disorders may lead to substance use and addiction (Crome, 2006; Torrens et al., 2011). Three possible scenarios can be considered:

- Drug use may cause users to experience one or more symptoms of a mental health disorder, either short-lived (e.g. amphetamine-induced psychosis) or triggering an underlying long-term mental disorder (e.g. cannabis and schizophrenia).
- Mental disorders may lead to drug use to alleviate the symptoms of a mental disorder (e.g. amphetamines used to alleviate symptoms of depression).
- Both the substance use problem and the mental health disorder may be caused by overlapping factors: brain deficits, genetic vulnerability and early exposure to stress or trauma.

It is often difficult to make a clear diagnosis of psychiatric co-morbidity. First, the symptoms of drug use and of mental health disorders can be hard to distinguish, as some drugs may produce the same effects as a mental disorder. Secondly, it is often difficult to assess the time span of the two disorders: drug use is more often observed in people with mental disorders, who may use drugs as a sort of self-medication (Hall et al., 2009); alternatively, drug use may trigger a latent mental health problem. However, when a professional makes a diagnosis of psychiatric co-morbidity, it is important to identify (or try to identify) when the first symptoms appeared, what are those symptoms and what is their developing process. The diagnostic instruments should give more attention to the temporal appearance of the symptoms (Torrens, 2008). Thirdly, there is lack of validated instruments for the clinical diagnosis of psychiatric co-morbidity, and usually the same international standard instruments used in the field of mental health are used for the diagnosis of psychiatric co-morbidity, even if new instruments specifically devised for psychiatric co-morbidity are available (Mestre-Pintó et al., 2013; Torrens, 2006). In addition, the primary area of expertise of the professionals who are working with people with psychiatric co-morbidity, may influence the main diagnosis (i.e. whether they have mainly worked in mental health, or in the drugs field) (Baldacchino and Corkery, 2006).

Despite the difficulties in defining and diagnosing psychiatric co-morbidity, the following issues are widely accepted in research and clinical practice, and should be highlighted when discussing the topic (Crome, 2006):

- The combination of substance use and mental health disorders often results in serious social, psychological and physical complications.
- Psychiatric co-morbidity makes a substantial contribution to the burden of diseases worldwide, especially among vulnerable population groups.
- People with co-morbid disorders have poorer diagnosis, lower access to care and poorer compliance with treatment.
- The occurrence of a substance use or a mental health disorder is often reciprocally interlinked, with one condition leading to or exacerbating the other.

- Psychiatric co-morbidity may have serious consequences for morbidity (e.g. infectious diseases) and mortality (e.g. suicide).

Sources of information

This paper reviews the information available in the literature on the prevalence of psychiatric co-morbidity in the general population and in specific population groups. In addition, it presents some epidemiological data from European countries, although these are based on a variety of study methods and are not intercomparable.

The information presented in this paper is derived primarily from two sources: studies from the literature (from Australia, Europe and the United States); and data reported by European countries to the EMCDDA. The EMCDDA is the European Union agency responsible for providing 'factual, objective, reliable and comparable information at European level concerning drugs and drug addiction and their consequences' (EC, 2006). To this end, the EMCDDA collects qualitative and quantitative data from the 28 EU Member States as well as from Norway and Turkey, primarily through yearly Reitox National reports on the drug situation.

The National reports include information on health correlates of substance use and a specific section on psychiatric co-morbidity. This paper's analysis includes all the Reitox National reports on the drug situation in the 28 EU Member States (see [Table A1](#) in the Annex), Norway and Turkey from 2006 to 2011; some of the most recent information from the literature on psychiatric co-morbidity is also analysed. However, the data are often limited and, because of differences in methodology, type of mental health or substance use disorder or focus of analysis, are not comparable between countries. For these reasons, it has not been possible to perform any statistical analysis on the available data; information is simply summarised from the studies and National reports. Furthermore, it should be borne in mind that the National reports are a secondary source of information, derived from original research studies that may not be readily accessible, and as such do not allow a comprehensive picture of co-morbidity among drug users to be constructed.

In this paper, the analysis is limited to the co-occurrence of a single substance use disorder and a mental health disorder; polydrug use is not discussed, as it would require specific analysis. The co-occurrence of two mental health problems, excluding a substance use disorder, is also not discussed. The paper's scope is influenced by the EMCDDA's mandate, which centres on illicit drugs, and for that reason, the focus is primarily on psychiatric co-morbidity when it involves illicit

drugs, rather than alcohol–mental health co-morbidity. Tobacco use is not included among the substance use patterns. The paper’s focus is on epidemiological data, and not on the consequences for public health interventions.

Prevalence and nature of co-morbidity

Studies from Australia and the US

Australian and US epidemiological studies have analysed the prevalence of psychiatric co-morbidity in different population groups. Non-trivial prevalence levels are reported in the general population: according to the last US survey on drug use and health, 9.2 million adults in the United States (4 % of the adult population) met criteria for both a mental illness and substance use disorder in the past year (SAMHSA, 2012). Studies conducted among substance users and people with mental health problems reported higher prevalence levels of co-morbidity. The data varied substantially due to differences in clinical assessment and study methodologies. The following reports from US and Australian studies include both the general population and patients admitted to mental health and substance use treatment.

The American Epidemiologic Catchment Area Survey found that 35 % of the respondents (a sample of around 21 000 persons aged 18 and older) who reported having ever had a mental health disorder, including drug use disorders, had one or more additional disorder at some time in their life. Among people with a drug use disorder (other than alcohol use) at any time in their life, 53 % also reported ever having had another mental disorder, and among those with an alcohol disorder, 37 % had also had another mental disorder (Bourdon et al., 1992).

An Australian study among people with mental health problems found that co-morbidity between anxiety, depressive and substance use disorders was very common, with 30–50 % of those with any mental disorder meeting the criteria for another mental or substance use disorder at some point in their lives (Hall et al., 2009).

Looking at the type of disorder, results from a US nationally representative face-to-face household survey found that the disorders with the highest lifetime prevalence among the general population were anxiety (29 %), impulse control (25 %), mood (21 %) and substance use disorders (15 %) (Kessler et al., 2005).

An Australian retrospective cohort study interviewed a total of 8 841 Australian adults to collect information on mental disorders and to investigate whether affective, anxiety and

alcohol use disorders increase the risk of subsequently developing drug dependence, harmful drug use or both. Participants with affective disorders and anxiety disorders were found to be at higher risk of harmful drug use and drug dependence, and the effects did not vary by the length of time the respondents had been exposed to mental disorders (Liang et al., 2011).

According to other studies among people using drugs and alcohol, the most common mental health disorders are depression, anxiety and schizophrenia, but eating disorders, post-traumatic stress disorders, attention deficit and hyperactivity disorders and memory disorders may also occur. Alcohol problems often appear in association with bipolar disorders, schizophrenia and personality disorders (Advisory Council on the Misuse of Drugs, 2008; Arendt, 2005; Cantwell and Scottish Comorbidity Study Group, 2003).

Studies have also explored the most common combinations of mental health disorder and type of drug consumed. The results of these studies vary, though this may be related to differences in methodology, such as in the instruments used for the classification of mental health disorders. One study found that the most common combinations are between anxiety or mood disorders, and alcohol or illicit drug use disorders; these are followed by the combinations of conduct disorders, antisocial personality disorder and illicit drug use disorders (Hall et al., 2009). Studies have found that alcohol disorders increase the risk of major depression; ecstasy and heroin users present more substance-induced disorders, and in particular mood disorders (Torrens, 2011). Differences are reported in the prevalence of psychiatric co-morbidity according to personal and social characteristics, particularly in relation to gender and vulnerable social groups (homeless, unemployed, ethnic minorities) (e.g. SAMHSA, 2012).

Studies on psychiatric co-morbidity in Europe

An overview of the prevalence of psychiatric co-morbidity and on the types of mental health and substance use disorders is presented below, based on findings of a selection of European projects published in the literature and from the Reitox National reports provided to the EMCDDA. Data are presented here for 28 of the 30 countries reporting to the EMCDDA. It should be noted that considerable national variation in the nature and quality of the information available makes it inadvisable to draw comparisons between countries.

Few studies carried out in Europe have analysed the prevalence levels of psychiatric co-morbidity in the general population. A recent European project estimated that 43 to 120 individuals per 100 000 population meet the criteria for a diagnosis of psychiatric co-morbidity (alcohol misuse, substance misuse, serious — psychotic — mental health

problems) in Denmark, Finland, Poland, England and Scotland (Baldacchino et al., 2009).

Other studies on the co-occurrence of substance use and mental health problems have focused primarily on populations that are easily accessible, and in particular either people entering treatment for drug use problems or people with mental health disorders.

Available information on drug users entering treatment indicates that in 14 European countries prevalence levels of psychiatric co-morbidity range from 14 % to 54 %, with a further three countries reporting that up to 90 % of drug treatment entrants present with a co-morbid psychiatric disorder (EMCDDA, 2011; Table A1). The wide range may depend on variations in the studies' methods (e.g. population sample, settings, type of disorders or substance use disorder studied, reference period), differences in diagnostic instruments used for clinical assessment, or on actual differences in the prevalence of psychiatric co-morbidity across countries and populations. In addition, it must be borne in mind that the studies reported in this paper represent only a sub-set of all existing European studies: essentially those selected by the reporting countries augmented by recent studies from the literature.

The severity and type of disorders vary depending on the individual and the type of drug problem presented; again, studies that have looked at those dimensions come from different sources and use different methodologies, and are therefore not comparable at the European level. Belgium has reported that about 54 % of clients entering drug treatment had a dual diagnosis, and of these, four-fifths were assessed as having a moderate dual diagnosis and the remaining fifth a severe dual diagnosis.

The type of co-morbid mental disorder also varies according to drug use patterns and individual characteristics. Despite methodological differences across countries and studies, some commonalities have been found concerning the types of mental health disorders among problematic drug users. The most frequent disorders reported in European studies (EMCDDA, 2011), grouped according to the ICD-10 classification (ICD-10, 2010), and mainly referring to AXIS I and II of the DSM-IV (2010), are:

- disorders of adult personality and behaviour disorders (including antisocial personality disorder);
- neurotic, stress-related and somatoform disorders (including anxiety and panic attacks);
- mood (affective) disorders (including depression, dysthymia);
- behavioural and emotional disorders with onset usually occurring in childhood and adolescence (including attention deficit hyperactivity disorder);
- schizophrenia, schizotypal and delusional disorders.

Among those with a mental health disorder, the prevalence of psychiatric co-morbidity is high, ranging from 8 % to 52 % (Table A1). In a Norwegian study among patients with psychotic disorders, lifetime illicit drug use was 44 % higher than in the general population, and lifetime use of amphetamines and cocaine was reported to be 160 % higher than in the general population (Ringen et al., 2008).

When describing prevalence of substance use among people with mental health disorders, the substances most frequently reported are alcohol, opioids, amphetamines, hypnotics and sedatives, and cannabis. However, these findings may be influenced by the greater attention paid to those substances compared to others when studying mental health disorders.

A number of European studies have been carried out on combinations of mental and substance use disorders, but caution should be exercised in interpreting the data since the studies cannot be directly compared, and different instruments have been used for clinical assessment. The most common combinations reported in Europe include:

- alcohol use and depression or anxiety;
- opioid use and personality or behavioural disorders;
- cannabis use and schizophrenia;
- amphetamines use and psychotic disorders.

In studies that have looked at trends in psychiatric co-morbidity, increases have been reported in the prevalence levels over the last 10 years. This might be related to several factors, such as more awareness of the co-occurrence of substance use and mental health problems, higher prevalence of drug use and mental health disorders in the population, higher treatment availability, targeting people with a dual diagnosis or de-institutionalisation of patients with mental health problems (Daly et al., 2007; Crome, 2006).

Prisoners: an example of a vulnerable group

Psychiatric co-morbidity particularly affects vulnerable groups, such as young people, people from ethnic minorities, prisoners and sex workers. Psychiatric co-morbidity in prison settings is a problem affecting a large part of the prison population.

A large number of studies have estimated the prevalence of mental disorders as well as substance use in prisons, with prevalence estimates varying widely. In general, studies on the prevalence of mental illnesses in prison show large differences between the prison population and the general population in severe pathologies such as psychosis and

personality disorders, as well as problems such as anxiety and depression (Fazel and Baillargeon, 2011; Fazel and Danesh, 2002).

A systematic review and meta-analysis of 62 surveys of approximately 23 000 prisoners from 12 countries found that around 4 % of prisoners had an identified psychotic illness (including schizophrenia, schizophreniform disorder, manic episodes, and delusional disorder), 10–12 % had major depression (unipolar affective disorder), and 42–65 % had a personality disorder (mostly antisocial personality disorder) (Fazel and Danesh, 2002). The study suggested that typically about one in seven prisoners in 'western countries' have a psychotic illness or major depression (disorders that might be risk factors for suicide), and about one in two male prisoners and one in five female prisoners were identified as having antisocial personality disorders. These results are supported by studies carried out in European countries.

A Spanish study found that 30 % of prisoners had a personality disorder, including 12 % with antisocial disorders and borderline personality disorder, 3 % with paranoid disorders and 2 % narcissistic and schizoid disorders (Arroyo and Ortega, 2009). The finding that personality disorders are more prevalent among prison populations is in agreement with other studies (Rotter et al., 2002). It should be noted that this study suggests that all the individuals diagnosed with personality disorders were also drug users. Differences between male and female prisoners are reported in the type and prevalence of psychiatric co-morbidity (Zlotnick et al., 2008).

In the United Kingdom, the Bradley Report found high levels of mental health problems among prisoners and suggested that dual diagnosis should be considered as the norm (Bradley, 2009).

In Estonia, 25 % of all prisoners were diagnosed with a dual diagnosis.

Studies from France suggested that 55 % of incoming inmates suffer from psychiatric co-morbidity, including drug use and a mental disorder, such as anxiety-depressive and addictive disorders, psychoses (Table A1). Rouillon et al. (2011) reported that 80 % of male inmates and 70 % of female inmates had at least one psychiatric disorder in 2003–04. The most common problems were: depressive syndromes (40 %), generalised anxiety (33 %), traumatic neuroses (20 %), agoraphobia (17 %), schizophrenia (7 %), and paranoia or chronic hallucinatory psychoses (7 %). Multiple disorders were also frequent, primarily mood and anxiety disorders (three to four in every ten inmates); anxiety disorders and drug or alcohol dependence; mood disorders and addiction; anxiety and psychotic disorders (one in every five inmates).

Limitations

A number of methodological limitations should be considered when reading this paper. The first limitation concerns the subject of the study — psychiatric co-morbidity — which is difficult to diagnose because of symptom overlaps and fluctuations.

The symptoms related to drug taking or mental health disorders may combine and reinforce each other when they appear, making it difficult to distinguish between the two disorders (Langas et al., 2011). Furthermore, the symptoms related to drug use and those related to a mental health disorder can be confused. For example, an opioid user who stops using the drug may, in an initial phase, report symptoms similar to those of depression, while in fact they are suffering from opioid withdrawal; in that case it would be necessary to wait between four and eight weeks to make a clear psychiatric diagnosis (Havassy et al., 2004).

Methodological limitations also arise due to the clinical instruments used for assessment (Crome, 2006). There is a lack of validated diagnostic instruments, and different international instruments are often used (the most common are DSM-IV and ICD-10). DSM-IV distinguishes between substance use disorders and substance induced disorders, where substance induced disorders refer only to mental health disorders that are temporarily caused by substance use and must be in excess of the expected effects of the substance (Langas et al., 2011). However, it is often difficult to make this distinction because of the concurrent use of several substances, which may cause different effects, and the co-occurrence of several mental health disorders. Another difficulty may be related to the fact that in clinical practice more attention may be paid to one symptom or to another, depending on the main interest or expertise of the professional who treats the patient (Baldacchino and Corkery, 2006).

Methodological limitations must also be borne in mind when considering epidemiological data from different countries (Langas et al., 2011). Generally, studies on co-morbidity are not comparable, and this is especially so for studies carried out in different countries. The lack of comparability is due to variations in the following factors (see also Table A1):

- Study samples: the general population is rarely the studied population; more often study samples are patients attending drug or mental health services. Between and within the two different settings (drug and mental health treatment services), there may be differences in the number and characteristics of people and treatment services included in the studies. Also, studies may vary in focus, with some giving more attention to specific population groups (for example, prisoners, males or females).

- Subjects of study: the study's subject may vary; for instance, it could be about generic mental health or drug use disorders, or specific mental health problems and substance use. The level of specificity may also differ greatly, depending on the main focus of the study.
- Study instruments: this might relate to the survey itself (e.g. questionnaires, interviews) or to the instruments used for clinical assessment (e.g. ICD-10, DSM-IV).
- Terminology: there may be variations due to cultural or linguistic differences, when the original language is not English and it is translated, or due to different theoretical approaches.
- Epidemiological measures: different epidemiological measures may be applied.
- Time references: different measures may have been used for the epidemiological study (lifetime, last year or last month prevalence) or for the time span considered when the prevalence of psychiatric co-morbidity is analysed (co-occurrence or sequential occurrence of mental health and drug use disorder) (Crome, 2006).

The collection of data on psychiatric co-morbidity is not harmonised between countries in Europe, and in some

countries only qualitative information is available (literature or Reitox National reports). This only allows a general review of individual studies to be presented, and it is therefore not possible to provide harmonised information on psychiatric co-morbidity at the European level.

The EMCDDA therefore aims to stimulate the accumulation of knowledge and comparability of information in the area of co-morbidity of mental health and substance use disorders. This would allow a European level description to be drawn up and would provide a better evidence base for European policymakers. To achieve this, it is necessary to gather harmonised information at country level. It would be also beneficial to compare data from different epidemiological indicators (e.g. treatment demand and drug-related deaths, psychiatric hospital admissions) and to extend the study of psychiatric co-morbidity to different time windows (e.g. in a lifetime, in the last month) and specific population groups (e.g. prisoners, sex workers, travellers, ethnic minorities). Finally, the use of large databases that include information on substance use and mental health problems, where available at national level, would enable a broader and more accurate assessment of the extent of psychiatric co-morbidity.

Annex

TABLE A1

Summary of the most recent data reported to the EMCDDA on the co-morbidity of drug use and mental health problems in EU Member States and Norway

| Country | Prevalence of psychiatric co-morbidity (year of data collection) | Reference population | Type of disorder/notes |
|----------------|--|---|--|
| Austria | 51 % (2010) | Drug users in treatment | n.a. |
| Belgium | 54 % (2010) | Drug users in treatment | Type of disorder – n.a. 41 % moderate; 13 % severe |
| Bulgaria | 2–10 % (2008) | Drug users in treatment from different types of facilities | n.a. |
| Croatia | 21 % (2010) | Drug users in treatment | Mainly opioid users: 86 % of whom have a co-morbid disorder Personality disorders, 20 % Behavioural disorders, 23 % Schizophrenia, 16 % |
| Cyprus | 5–43 % (2009) | Drug users in treatment | Depression Difficulties in concentration Stress |
| Czech Republic | 7 % (2001–05) | Methamphetamine users admitted to hospitals | Psychotic disorder |
| Denmark | 11–29 % (2002) | Psychiatric patients | Schizophrenia Affective disorders Stress-related disorders Personality disorders |
| Estonia | 25 % | Prisoners | n.a. |
| Finland | >50 % (2010) | Drug users in treatment (especially misusers of buprenorphine) | Depression |
| France | 55 % (2009) | Prisoners (incoming inmates) | Anxiety Depression |
| Germany | 28–52 % (2010) | Psychiatric patients | Anxiety disorders, 23 % Affective disorders, 19 % Somatoform disorders, 9 % Attention deficit hyperactivity disorders, 9 % |
| Greece | 17 % (2010) | Drug users in treatment | n.a. |
| Hungary | 57 % (2007) | Drug users in treatment | Boredom Sadness or slight depression Anxiety or intensive worrying |
| Ireland | 6 per 100 000 general population (2006) | Data recorded at psychiatric first admission in psychiatric hospitals | Type of disorder – n.a. Increasing trend from 3 per 100 000 in 1990 to 6 per 100 000 in 2006 |
| Italy | 22 % (2007) | Drug users in treatment | Mainly males Mean age: 36 years Opioids and polydrug users Affective psychoses, 18 % Neurotic somatic disturbances, 10 % Schizophrenic psychoses, 7 % Other disturbances, 7 % Paranoid state, 1 % |
| Latvia | 18 % (2009) | Drug users in treatment | Organic mental disorders, 25 % Behavioural and emotional disorders, 21 % Neurotic/stress-related disorders, 17 % |
| Lithuania | 9 % (2009) | Psychiatric patients | n.a. |
| Luxembourg | 83 % had previous contacts with psychiatric services (2009) | Drug users in treatment | Anxiety Depression Neurosis/psychosis Borderline behaviour |
| Malta | n.a. | Patients of dual diagnosis clinic | Depression Paranoid personality disorder Borderline personality disorder Narcissistic personality disorder |
| Netherlands | 84 % (2007) | Opioid users in methadone treatment (202) | Major depression and generalised anxiety disorders, 34 % Psychotic disorder, 39 % Current psychotic disorder, 9 % |

| Country | Prevalence of psychiatric co-morbidity (year of data collection) | Reference population | Type of disorder/notes |
|---------------------------|--|---|---|
| Norway | 23 % (2010) 20–47 % (2010) | Psychiatric patients Psychiatric emergency patients | n.a. |
| Poland | 8 % (2005) | Patients admitted to inpatient psychiatric hospitals | n.a. |
| Portugal | 53 % (2005) | Long-term street addicts undergoing treatment | Depression |
| Romania | 14 % (2009) | Drug users in treatment | Behavioural and emotional disorder |
| Slovakia | 14 % (2004) | Patients of psychiatric hospitals | Schizophrenia (in the last years with positive correlation with cannabis treatment demand) |
| Slovenia | 3 045 (2009) | Hospitalisations related to drug, alcohol and mental health disorders | n.a. |
| Spain | 13 % (2007) | Drug users in treatment | Personality disorders Antisocial disorder and borderline disorder, 12 % Paranoid disorder, 3 % Narcissistic and schizoid disorders, 2 % |
| Sweden | 47 % (2002–04) | Drug users in treatment | Borderline, 18 % Schizotypal, 12 % |
| United Kingdom (England) | 60–90 % (2002) | Substance misusers in treatment | Anxiety (32 % female; 17 % male) Depression (30 % female; 15 % male) Paranoia (27 % female; 17 % male) Psychoticism (33 % female; 20 % male) |
| United Kingdom (Scotland) | 21 % female; 32 % male 42 % female; 40 % male | Psychiatric patients Drug treatment patients | Alcohol and depression Alcohol and anxiety Diazepam and anxiety |

n.a., information not available.

NB: Because of differences among the studies listed here, such as target populations, subjects, and time references, their results are not intercomparable.

Sources: Data from 2006, 2007, 2008, 2009, 2010, 2011 Reitox National reports and the literature.

References

- | Advisory Council on the Misuse of Drugs (2008), *Cannabis: classification and public health*, Home Office, London.
- | Arendt, M. (2005), 'Cannabis-induced psychosis and subsequent schizophrenia-spectrum disorders: follow-up study of 535 incident cases', *British Journal of Psychiatry* 18 (6), pp. 510–15.
- | Arroyo, J. M. and Ortega, E. (2009), 'Personality disorders amongst inmates as a distorting factor in the prison social climate', *Revista Espanola Sanidad Penitenciaria* 11, pp. 11–5.
- | Baldacchino, A. and Corkery, J. (2006), *Comorbidity: perspective across Europe*, ECCAS Monograph No. 4, European Collaborating Centres in Addiction Studies, London.
- | Baldacchino, A., Groussard-Escaffre, N., Clancy, C., Lack, C., Sieroslavska, K. et al. (2009), 'Epidemiological issues in comorbidity: lessons learnt from a pan-European ISADORA project', *Mental Health and Substance Use: Dual Diagnosis* 2 (2), pp. 88–100.
- | Bourdon, K. H., Rae, D. S., Locke, B. Z. et al. (1992), 'Estimating the prevalence of mental disorders in U.S. adults from the Epidemiologic Catchment Area Survey', *Public Health Reports* 107, pp. 663–8.
- | Bradley, K. (2009), 'The Bradley report: Lord Bradley's review of people with mental health problems or learning disabilities in the criminal justice system' (available at: www.dh.gov.uk).
- | Cantwell, R. and Scottish Comorbidity Study Group (2003), 'Substance use and schizophrenia: effects on symptoms, social functioning and service use', *British Journal of Psychiatry* 182, pp. 324–29.
- | Crome, I. B. (2006), 'An epidemiological perspective of psychiatry comorbidity and substance misuse: the UK experience/example', in Baldacchino, A. and Corkery, J. (editors), *Comorbidity: perspective across Europe*, ECCAS Monograph No. 4, European Collaborating Centres in Addiction Studies, London, pp. 45–60.
- | Daly, A., Walsh, D. and Moran, R. (2007), *Activities of Irish psychiatric units and hospitals 2006*, Health Research Board, Dublin.
- | DSM-IV (2010), *Diagnostic and statistical manual of mental disorder*, American Psychiatric Association, Arlington, VA.
- | EC (European Commission) (2006), 'Regulation (EC) No. 1920/2006 of the European Parliament and of the Council of 12 December 2006 on the European Monitoring Centre for Drugs and Drug Addiction (recast)', *Official Journal of the European Union* L 371/6, pp. 1–13 (available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006R1920:EN:NOT>).
- | EMCDDA (European Monitoring Centre for Drugs and Drug Addiction) (2011), *Reitox National reports 2010* (available at: www.emcdda.europa.eu/publications/national-reports).
- | Evans, K. and Sullivan, M. J. (2001), *Dual diagnosis: counseling the mentally ill substance abuser*, 2nd edition, Guilford Press, New York.
- | Fazel, S. and Baillargeon, J. (2011), 'The health of prisoners', *The Lancet* 377, pp. 956–65.
- | Fazel, S. and Danesh, J. (2002), 'Serious mental disorder in 23,000 prisoners: a systematic review of 62 surveys', *The Lancet* 359, pp. 545–50.
- | Frisher, M., Crome, I., Martino, O. and Croft, P. (2009), 'Assessing the impact of cannabis use on trends in diagnosed schizophrenia in the United Kingdom from 1996 to 2005', *Schizophrenia Research* 113 (2–3), pp. 123–8.
- | Hall, W., Degenhardt, L. and Teesson, M. (2009), 'Understanding comorbidity between substance use, anxiety and affective disorders: broadening the research base', *Addictive Behaviors* 34, pp. 526–30.
- | Havassy, B. E., Alvidrez, J. and Owen, K. K. (2004), 'Comparison of patients with comorbid psychiatric and substance use disorders: implications for treatment and service delivery', *American Journal of Psychiatry* 161, pp. 139–45.

- | ICD-10 (2010), *International statistical classification of diseases and related health problems, 10th revision*, apps.who.int/classifications/icd10/browse/2010/en (accessed on 20 November 2013).
- | Kessler, R. C., Berglund, R., Demler, O. et al. (2005) 'Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication', *Archives of General Psychiatry* 62, pp. 593–602.
- | Langas, A.-M., Malt, U. and Opjordsmoen, S. (2011), 'Comorbid mental disorder in substance users from a single catchment area: a clinical study', *BMC Psychiatry* 11, p. 25.
- | Liang, W., Chikritzhs, T. and Lenton, S. (2011), 'Affective disorders and anxiety disorders predict the risk of drug harmful use and dependence', *Addiction* 106, pp. 1126–34.
- | Mestre-Pintó, J. I., Domingo-Salvany, A., Martín-Santos, R., Torrens, M. et al. (2013), Dual diagnosis screening interview to identify psychiatric comorbidity in substance users: development and validation of a brief instrument, *European Addiction Research* (published ahead of print 1 August 2013, doi:10.1159/000351519).
- | Ringen, P. A., Melle, I., Birkenaes, A. B., Engh, J. A., Faerden, A. et al. (2008), 'Illicit drug use in patients with psychotic disorders compared with that in the general population: a cross-sectional study', *Acta Psychiatrica Scandinavica* 117, pp. 133–38.
- | Rotter, M., Way, B., Steinbacher, M., Sawyer, D. and Smith, H. (2002) 'Personality disorders in prison: aren't they all antisocial?', *Psychiatric Quarterly* 73 (4), pp. 337–49.
- | Rouillon, F., Gasquet, I., Garay, R. P. and Lancrenon, S. (2011), 'Screening for bipolar disorder in patients consulting general practitioners in France', *Journal of Affective Disorders* 130 (3), pp. 492–95.
- | SAMHSA (Substance Abuse and Mental Health Services Administration) (2012), *Results from the 2010 National Survey on drug use and health: mental health findings*, www.samhsa.gov/data/nsduh/2k10MH_Findings/2k10MHResults.htm (accessed on 20 November 2013).
- | Torrens, M. (2008), 'Patología dual: situación actual y retos de futuro', *Addiciones* 20 (4), pp. 315–20.
- | Torrens, M. (2013), *Dual pathology, psychiatric comorbidity in addictive disorders*, www.imim.es/programesrecerca/neurociencies/en_manifestacionspsiquiatricues.html (accessed on 20 November 2013).
- | Torrens, M., Santos, R.-M. and Samet, S. (2006), 'Importance of clinical diagnosis for comorbidity studies in substance use disorders', *Neurotoxicity Research* 10 (3–4), pp. 253–61.
- | Torrens, M., Gilchrist, G. and Domingo-Salvany, A. (2011), 'Psychiatric comorbidity in illicit drug users: substance-induced versus independent disorders', *Drug & Alcohol Dependence* 113, pp. 147–56.
- | Torrens, M., Rossi, P., Martínez-Riera, R., Martínez-Sanvisens, D. and Bulbena, A. (2012), 'Psychiatric co-morbidity and substance use disorders: treatment in parallel systems or in one integrated system?', *Substance Use & Misuse* 47, pp. 1005–14.
- | WHO (World Health Organization) (2008), *The global burden of disease: 2004 update*, World Health Organization, Geneva.
- | WHO (2010), *Lexicon of alcohol and drug terms published by the World Health Organization*, www.who.int/substance_abuse/terminology/who_lexicon/en/ (accessed on 20 November 2013).
- | Zlotnick, C., Clarke, J. G., Friedmann, P. D. et al. (2008), 'Gender differences in comorbid disorders among offenders in prison substance abuse treatment programs', *Behavioral Sciences and the Law* 26, pp. 403–12.

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