REVIEW ARTICLE

Nosology of the substance use disorders: How deep is the ICD – DSM dichotomy?

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Abstract *The two main nosological systems followed for classification of substance related disorders are International Classification of Diseases (ICD), which is supported by the World Health Organization (WHO) and The Diagnostic and Statistical Manual of Mental Disorders (DSM), a publication of the American Psychiatric Association. The categories in both systems of classification are similar and the substances covered are almost identical. The concept of dependence is similar in both, with fair reliability and validity but diagnostic criteria for dependence are more stringent in ICD-10 compared to DSM-IV. The concepts of harmful use (ICD-10) and abuse (DSM-IV) are markedly different with poor concordance. The ICD-DSM dichotomy regarding classification of substance related disorders is expected to reduce in subsequent editions of these nosological systems.*

INTRODUCTION

Mental disorders are manifested by the quantitative deviation in behavior, ideation and emotion from a normative concept. The diagnosis of mental disorders is inherently difficult due to the problems in defining "the norm" and quantifying the degree of deviance that would invite the label of a diagnosis. The problems that arise during the diagnosis of other psychiatric illness also apply to substance use. This has been addressed by the systematic classification of mental disorders, which also includes the substance use disorders.

Nosology or systematic classification is the process by which the complexity of phenomena is reduced by arranging them into categories according to some established criteria for one or more purpose.[1] Classification of mental disorders are useful in developing a system of comparable diagnosis enabling the communication of scientific and research work done in this clinical discipline. This leads to better comprehension of the problem across the scientific community, and helps in control of the disorder. This also paves the way for transcultural comparisons, and generates data for planning, policy – making and service allocation.

At present, two systems of classifications of mental disorders are widely followed- The International Classification of Diseases (ICD), which is supported by the World Health Organization (WHO) and The Diagnostic and Statistical Manual of Mental Disorders (DSM), proposed by American Psychiatric Association (APA). The aim of the present paper is to review the evolution of nosology of substance use disorders and to compare and contrast the nosology of substance abuse disorders as defined by ICD-10 and DSM-IV.

WHO NOMENCLATURE AND DEFINITIONS OF REPETITIVE SUBSTANCE USE[2]

Unsanctioned use

This is defined as the use of a substance that is

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not approved by a society or by a group within that society. The term implies that this disapproval is accepted as a fact in its own right, without the need to determine or justify the basis of the disapproval

Dysfunctional use

Substance use that is leading to impaired psychological or social functioning, for example loss of employment or marital problems.

Hazardous use

It is a pattern of substance use that increases the risk of harmful consequences to the user. Some would limit the consequences to physical and mental health (as in harmful use); some would also include social consequences. In contrast to harmful use, hazardous use refers to patterns of use that are of public health significance despite the absence of any current disorder in the individual user. The term is used currently by WHO but is not a diagnostic term in ICD-10

Harmful use

It is a pattern of psychoactive substance use that is causing damage to health. The damage may be physical (e.g. hepatitis following injection of drugs) or mental (e.g. depressive episodes secondary to heavy alcohol intake). Harmful use commonly, but not invariably, has adverse social consequences; which in themselves, however, are not sufficient to justify a diagnosis of harmful use.

Substance Abuse

A maladaptive pattern of substance use manifested by recurrent and significant and adverse consequences related to the repeated use of substances in one or more areas like fulfillment of role obligations, physically hazardous use, legal problems and interpersonal problems. These problems must occur repeatedly during the same 12 month period.[3]

For the diagnosis of both harmful use and substance abuse, substance dependence must be ruled out.

Substance Dependence

A widely accepted definition given by WHO is: "A syndrome manifested by a behavioral pattern in which the use of a given psychoactive drug or class of drugs, is given a much higher priority than other behavior that once had higher value. The term syndrome is taken to mean no more than clustering of phenomenon so that not all the components need always be present or not always present with the same intensity. The dependence syndrome is not absolute, but is a quantitative phenomenon that exists in different degrees. The intensity of the syndromes is measured by the behaviors that are elicited in relation to using the drug and by the other behavior that are secondary to drug use. No sharp cut-off point can be identified for distinguishing drug dependence from non-dependent but recurrent drug use. At the extreme the dependence syndrome is associated with compulsive drug using."[4]

The central notion of this definition is continued in both DSM-IV and ICD-10.

Evolution of ICD & DSM & Substance Use Nosology

International classification of disease (ICD)

The first edition of international classification of disease was modification of the Bertillon Classification of Causes of Death and was adopted in 1900. It has been named as international List of Causes of Death.[5] The sixth revision contained a critical expansion of the scope of the international classification by covering morbidity in addition to mortality and was renamed the "Manual of International Classification of Diseases, injuries and Causes of Death" (ICD-6).[5] It for the first time contained,

a classification of mental disorders, entitled "mental, psychoneurotic, and personality disorders."[1]. The first ICD classification of substance-related problems was published in 1967 in ICD-8.[5] It was classified as alcoholism with personality disorders and neuroses. In ICD-9, alcoholism and substance abuse has been classified under "neurotic disorders, personality disorders, and other non-psychotic mental disorders (300-316)". 303- Alcohol dependence syndrome; 304- drug dependence; 304-non dependent abuse of drugs.[6-7]

Diagnostic and Statistical Manual of Mental Disorders (DSM)

The first edition of DSM (DSM-I) was published in 1952. Substance use disorders were grouped under personality disorders, and alcoholism was defined as 'well established addiction to alcohol without recognized underlying disorder'. Drug addiction was not defined separately but there was a statement that 'Addiction is usually symptomatic of a personality disorder.[8] The proper personality classification is to be made as an additional diagnosis.' Alcohol intoxication was called a 'non-diagnostic term', similar to being a boarder in an institution or a malingerer. In DSM-II (1968)[9], drug dependence and alcohol use disorders were still part of broad rubric of "Personality Disorders and certain other non-psychotic disorders"; separate diagnosis of alcohol use was encouraged. Categories of drug dependence were added for drugs like opioids, barbiturates, hypnotics, cocaine, cannabis, hallucinogens and stimulants.

DSM – III was published in 1980, and substance use disorders were, for the first time, classified separately.[10] Distinction was made between substance abuse and dependence. Substance abuse had three criteria: a pattern of pathological use, impairment in social or occupational functioning, and duration of one month or more. Dependence for most substances had only one criterion, namely evidence of tolerance or withdrawal. However, the criteria for alcohol and cannabis dependence also included impairment in social or occupational functioning and a pattern of pathological use.

In a seminal article, Edwards and Gross[11] gave a set of essential elements, for the provisional description of a clinical syndrome of alcohol dependence. They mentioned that all must not always be present and not always be present in the same intensity. The essential elements included

1. A narrowing in the repertoire of drinking behavior.
2. Salience of drink seeking behavior.
3. Increase tolerance to alcohol.
4. Repeated withdrawal symptoms.
5. Repeated relief or avoidance of withdrawal symptoms by further drinking.
6. Subjective awareness of a compulsion to drink.
7. Reinstatement of the syndrome after drinking.

This article made major change in the classification of substance dependence in the subsequent editions of DSM (DSM-III) and ICD (ICD-9). The major deviation in their conceptualization from the previous classification was that it was based on the behavioral manifestations rather than etiological classification.

DSM-IV & ICD-10: CURRENT NOSOLOGY

DSM-IV

It categorizes Psychoactive Substance Use under Substance related disorder:-

This broad category has been into

1. *Substance use disorder:* Substance dependence and substance abuse are covered under this heading.

2. *Substance induced disorder:* Under this heading there are the condition which result as a consequence of the substance dependence (e.g. psychosis, affective disorder etc.).

In DSM-IV substance dependence, abuse and intoxication, is common to all the categories while the substance induced disorders vary with respect to the drug of abuse in question.

ICD – 10[12]

It categorizes Psychoactive Substance Use under Mental and Behavioral Disorders due to Psychoactive Substance Use. It does not divide into Substance use disorder, Substance induced disorder.

COMPARISON BETWEEN ICD-10 AND DSM-IV

Different categories

1. Acute intoxication

DSM-IV criteria for acute intoxication are nearly equivalent to ICD-10.[13]

2. Harmful use (ICD-10) and Abuse (DSM-IV)

Harmful use and abuse are considered equivalent, in the sense that they represent dysfunctional patterns of drug use without fulfilling the criteria for drug dependence in the two classifications. ICD-10 defines only one criterion that the person should have suffered physical or mental damage to health. In comparison, according to DSM-IV one of the four criteria (hazardous use, continued use despite social and interpersonal problems, recurrent use resulting in failure to fulfill the major role obligation at work, school, home, recurrent substance-related legal problem) is to be present. Hence, they are conceptually different, and abuse encompasses a much broader spectrum of dysfunction, which includes social, personal and functional domains.

The test-retest reliability of abuse as well as harmful use is lower than dependence , in both diagnostic classifications. The reliability range for abuse and harmful use range between chance agreement to excellent, with most studies showing poor to low-fair values.[14,15]

In one study, the criteria for abuse or harmful use resulted in rather disparate proportions labeled across the three systems, with kappas that rarely exceeded 0.10. These findings suggest that the dependence criteria may be more stable than those chosen to represent abuse and harmful use.[16]

In several concordance studies examining the concordance of DSM-IV & ICD-10 criteria for substance use disorders, abuse and harmful use diagnoses showed poor concordance.[17-20]

3. Dependence

Both systems use polythetic syndrome definition i.e. both systems need any of the three criteria out of six or out of seven in ICD-10 and DSM-IV respectively to be met. ICD-10 criteria incorporates all seven of the DSM-IV items but condenses them into five criteria and adds a sixth item tapping drug craving and related behavior.[13] Since both systems need a minimum of three criteria to be satisfied for diagnosis of dependence, ICD-10 criteria is more stringent than DSM-IV criteria. This is also reflected in studies comparing systems, which show that the pattern of diagnosis of dependence highest numbers (prevalence of dependence) is observed for DSM-III-R, the lowest for ICD-10 and the figures for DSM-IV between the two.[16,21]

DSM-IV further qualifies dependence as with and without physiological dependence (presence of tolerance or withdrawal) while this is not specified in ICD-10.

Severity/ Dimensional criteria

DSM-IV mentions about severity of dependence. There is no reliable criteria for the same but it

offers the clinician the option of incorporating the relatively imprecise divisions of mild (with few symptoms), moderate (with functional impairment between mild and severe), and severe (with many symptoms) for degree of dependence. ICD-10 has no formal notation of severity.

Reliability

Test-retest reliability results for DSM-IV consistently show good to excellent reliability for dependence. In fact, this is one of the most reliable diagnoses in DSM-IV. The limited exceptions occur for cannabis, hallucinogen, and nicotine or for substances that were rare in the samples. Results for ICD-10 were similar to those for DSM-IV, with reliability of alcohol and drug dependence or a combined abuse/ dependence diagnosis ranging from good to excellent. In fact, only two drugs (sedatives and cocaine) were below the good range in any time frame.[22]

In a study of concordance between DSM-IV & ICD-10 in alcohol, cannabis and any drug by Grant DSM-IV/ICD-10 concordance for dependence was very good to excellent across substances, time-frames and demographic groups.[17]

In another study of comparisons of DSM-III, III-R and ICD-10 substance use diagnoses among alcohol, substance users indicate considerable agreement for dependence With regard to diagnoses of substance dependence; the analyses revealed that the proportions of individuals diagnosed in the three systems were similar. The kappas for dependence diagnoses ranged from 0.54 to 0.83, with the majority at 0.7 and higher, indicating a high level of concordance.[16]

Withdrawal State with Delirium

DSM-IV mentions substance intoxication & substance withdrawal delirium under substance induced delirium. ICD-10 mentions substance intoxication delirium under acute intoxication while substance withdrawal delirium is a separate entity.

Substance Induced Disorder

ICD-10 requires that full criteria for the original disorder (e.g. depression) must be met in terms of numbers of symptoms and duration, while this is not the case with DSM-IV. ICD-10 recognizes a substance induced personality disorder as a category while DSM does not. In case of substance induced psychotic disorder as defined in ICD-10, the onset of the symptoms must be during or within 2 weeks of use and symptoms must last for at least 48 hours and must recover in 6 months.[13]

Remission Criteria

DSM-IV classifies early (less than 12 months) versus (12 months or longer) and full (no abuse or dependence criteria) versus partial (one or more abuse or dependence criteria) remission. Thus according to it dependence can be in early full remission, early partial remission, sustained full remission or sustained partial remission. ICD-10 gives undefined remission categories (early, partial or full remission). Both DSM-IV and ICD-10 also offer categories for those in a controlled environment such as treatment, prison or a hospital.

Critical analysis

The questions which presently remain to be answered are:

There exist a substantial proportion of people in the general community who have some dependence symptoms but who are not captured by harmful use/abuse or dependence, termed as “diagnostic orphans”. They may have significant dysfunction in association with drug use being outside the ambit of caseness they often fail to receive medical attention.[22] The classifications should be constantly reviewed so as to include

as many of these users as possible.

Under the current systems, all substances of abuse have been clubbed under umbrella terms like dependence or withdrawal syndromes. However, can the same set of criteria apply for all substances, for all age groups, for users from all cultures? For example, cannabis is not associated with as clear a withdrawal syndrome as with alcohol and opioids. Use of certain drugs may be culturally sanctioned under some circumstances. One needs to ponder whether criteria should account for such variations.

Another conceptual dilemma concerns the relationship between the well validated and reliable diagnosis of dependence vis-à-vis the less severe diagnoses of harmful use and abuse. Are dependence and abuse two distinct concepts, or do abuse and dependence represent one spectrum with abuse being the milder form of dependence? As of now, enough evidence does not exist to answer this key question confidently.

There is a perennial debate whether a dichotomous approach (categorical approach) is more suitable for diagnosis of substance abuse disorders and personality disorders, milder representations of which are recognized to be present in normal populations (e.g. occasional use of alcohol). There is a case for a severity subtyping (dimensional approach), using number of criteria/ degree of use as a diagnostic approach.

Whereas ICD-10 and DSM-IV are moving closer, the low concordance between abuse and harmful use is a problematic situation.[23] One solution may be to combine these two categories and then test for reliability and validity.

Conclusion

Although there are minor differences between DSM-IV and ICD-10 in the dependence criteria, the central notion is same in both of them, i.e., it is a cluster of cognitive, behavioral and physiological symptoms where the used substance is given a much higher priority than other behaviors that once had a higher value. However, criteria for substance abuse in DSM-IV and harmful use in ICD-10 are markedly different with poor concordance. Both DSM-IV and ICD-10 covers almost similar substance categories, though ICD-10 clubs some of the substance categories together. As is the case with other mental disorders, it is expected that the dichotomy between ICD and DSM systems will gradually diminish and perhaps eventually disappear.

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