

APPENDIX 1: Terms Relating to Abuse, Dependence, Withdrawal and Tolerance

Appendix 1 contains the terms of addiction, abuse, physical dependence, tolerance as defined by a consensus document from the American Academy of Pain Medicine, the American Pain Society, and the American Society of Addiction Medicine representing current practice in the US. The WHO definitions are also presented (WHO ECDD 1993, WHO 2000, ICD-10TM, DSM IVTM) for a global perspective of these terms.

It should be noted that drug dependence, withdrawal syndrome and tolerance are discrete and different phenomena. Drug dependence must be characterized by maladaptive behaviour; withdrawal syndrome and tolerance are physiological adaptations and are not by themselves sufficient to define dependence.

The American Academy of Pain Medicine, the American Pain Society, and the American Society of Addiction Medicine recognize the following definitions and recommend their use.

Addiction

Addiction is a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

Physical Dependence

Physical dependence is a state of adaptation that is manifested by a drug class specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist.

Tolerance

Tolerance is a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug's effects over time.

Terminology for mental and behavioural disorders due to psychoactive substance use varies and is often used inconsistently. The WHO has attempted to clarify terms used in this context in several publications (WHO ECDD 1993, WHO 2000, ICD-10TM, DSM IVTM).

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Accurate use of terminology is necessary for a scientific analysis of the abuse risk of a psychoactive drug. The terms drug abuse (harmful use), dependence, withdrawal syndrome and tolerance are for example defined by the WHO Expert Committee on Drug Dependence (WHO ECDD 1993) as stated below.

Abuse (harmful use)

“persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice” (p. 6)

“pattern of psychoactive drug use that causes damage to health, either mental or physical” (p. 6)

Drug dependence

“A cluster of physiological, behavioural and cognitive phenomena of variable intensity, in which the use of a psychoactive drug (or drugs) takes on a high priority. The necessary descriptive characteristics are preoccupation with a desire to obtain and take the drug and persistent drug-seeking behaviour. Determinants and the problematic consequences of drug dependence may be biological or social, and usually interact.” (p. 5)

The core concept of the WHO definition of drug dependence requires the presence of a strong desire or sense of compulsion to take the drug (drug-seeking behaviour). The WHO Expert Committee on Drug Dependence notes in their 28th report that

“withdrawal syndromes (or physical dependence) and tolerance are merely consequences of drug exposure which, alone, are not sufficient for a positive diagnosis of drug dependence.” (p. 4)

Withdrawal syndrome

“After repeated administration of certain dependence-producing drugs, e.g. opioids, barbiturates and alcohol, abstinence can increase the intensity of drug-seeking behaviour because of the need to avoid or relieve withdrawal discomfort and / or produce physiological changes of sufficient severity to require medical treatment.” (p. 5)

Tolerance

“a reduction in the sensitivity to a drug following its repeated administration, in which increased doses are required to produce the same magnitude of effect previously produced by a smaller dose.”

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This increase in dose may be necessitated by changes in the metabolism of the drug, or a cellular, physiological or behavioural adaptation to the effects of the drug.” (p. 5)

The ICD-10TM defines three disorders due to psychoactive substance use (1) Harmful Use, (2) Dependence Syndrome and (3) Withdrawal State. These three disorders are defined below.

Harmful Use/Abuse

The term "harmful use" is used in the ICD-10TM and is similar to the more commonly used term of "abuse" in DSM-IVTM. The two are similar in that both refer to psychological and social harm resulting from drug use; however, the two differ in that the ICD-10TM definition of harmful use includes health problems due to drug use whereas the DSM-IVTM definition of abuse does not. The ICD-10TM definition of harmful use is as follows:

A pattern of psychoactive substance use that is causing damage to health. The damage may be physical (as in cases of hepatitis from the self-administration of injected psychoactive substances) or mental (e.g., episodes of depressive disorder secondary to heavy consumption of alcohol.)

There must be clear evidence that the substance use was responsible for (or substantially contributed to) physical or psychological harm including impaired judgment or dysfunctional behavior.

The nature of the harm should be clearly identifiable (and specified).

The pattern of use has persisted for at least one-month or has occurred repeatedly within a 12-month period.

The disorder does not meet the criteria for any other mental or behavioral disorder related to the same drug in the same time period (except for acute intoxication).

Dependence

The term “dependence” in the ICD-10TM/DSM-IVTM definitions refers both to what others have called physical or physiological dependence (withdrawal/tolerance) and to psychological dependence (impaired control over drug use).

The DSM-IVTM definition is as follows:

Dependence is manifested by the occurrence of three or more of the following symptoms in the same 12 month period:

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- 1) Tolerance, as defined by either of the following:
 - (a) A need for markedly increased amounts of the substance to achieve intoxication or desired effect.
 - (b) Markedly diminished effect with continued use of the same amount of the substance;
- 2) Withdrawal which can occur upon either cessation of use or reduction in dose. Characteristic symptoms include: dysphoria or depression; insomnia; irritability; frustration or anger; anxiety; difficulty concentrating; restlessness; decreased heart rate; and increased appetite and weight gain. These symptoms must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning;
- 3) The substance is often taken in larger amounts over a longer period than was intended;
- 4) There is a persistent desire or unsuccessful efforts to cut down or control abuse;
- 5) There is a great deal of time spent in activities necessary to obtain the substance, use the substance or recover from its effects;
- 6) Important social, occupational, or recreational activities are given up or reduced because of substance use and/or;
- 7) The substance use is continued despite knowledge of having persistent or recurrent physical or psychological problems that are likely to have been caused or exacerbated by the substance.

Since the above DSM-IVTM definition of dependence overlaps to a great extent with the ICD-10TM definition, the former was used in both our classification of dependence cases and in our definition of withdrawal symptoms (see below).

Withdrawal State

In DSM-IVTM, the criteria for substance withdrawal are:

The development of a substance-specific syndrome due to the cessation of (or reduction in) substance use that has been heavy or prolonged;

The substance-specific syndrome causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

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The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

In ICD-10TM, withdrawal is based upon symptoms while in DSM-IVTM a diagnosis of withdrawal must also include clinically significant distress or impaired functioning.

Applying Misuse, Harmful Use, and Dependence Criteria to Therapeutic Drugs

One issue is interpretation of those instances when the dose is increased or a medication is taken for a longer period than was originally intended. The appropriate interpretation of, for example, an increase in dosage or difficulty stopping medication use should involve consideration of the motivation underlying the behavior.