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COMMENTARY

Addiction: definition and implications

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Abstract

Integration of addiction into the theory and practice of psychiatry has been hampered by the lack of a definition of addiction which is scientifically useful. A definition is proposed, with diagnostic criteria specified in a format similar to that of DSM-III-R. Essentially, addiction designates a process whereby a behavior, that can function both to produce pleasure and to provide escape from internal discomfort, is employed in a pattern characterized by (1) recurrent failure to control the behaviour (powerlessness) and (2) continuation of the behaviour despite significant negative consequences (unmanageability). Some practical and theoretical implications of this definition are then explored.

Introduction

The prevalence of alcohol dependence is estimated at 13%,[1] and that of dependence on other psychoactive substances is probably around 5–7%. Pathological gambling has an estimated prevalence of 2–3%, and there are other behavioral syndromes not specifically identified in *The Diagnostic and Statistical Manual of Mental Disorders*[1] (DSM-III-R) that have a prominent addictive component. It is clear that this group of disorders with addictive features affects a large segment of our population. Unfortunately, psychiatrists and psychologists have had less to do with these disorders than with other mental/behavioral disorders, in terms of both theory and therapy.

The concept of addiction has been criticized both within and outside the mental health disciplines on a number of grounds: often it is used without an attempt to define it; many proposed definitions are vague or imprecise, some being so all-inclusive as to leave the term devoid of pragmatic value; it has moralistic connotations which are inappropriate to scientific inquiry; it represents a way of understanding people, behaviour and the mind that is incompatible with a scientific approach; it adds no information that is not already conveyed by a term or concept already accepted in the field. In the DSM-III-R, the word 'addiction' appears only once, in an example of Sexual Disorder Not Otherwise Specified, and it is not defined at all.

Meanwhile, the past 30 years have witnessed the development of a new field, with various definitions and manifestations, the central concern of which is addiction. Originating and evolving largely outside of the mental health establishment, addictionology and the related '12-step' programs have fostered significant changes in the lives of many, and virtually constitute a major cultural movement. The traditional distruct, lack of communication, and lack of cooperation between the psychiatry/psychology systems and the addictionology/12-step system have seriously impeded the development of more comprehensive, effective approaches to the understanding and treatment of addictive disorders and those who experience them. It is with the intention of providing a basis for the integration of these systems that this paper proceeds. The fulcrum of this integration is a definition of addiction which is scientifically useful.

Definition of addiction

A term, or the concept which it represents, may be said to have scientific utility when it meets the following criteria: it has a definition which can be specified by reference to terms or concepts generally accepted as valid within a given scientific discipline; and it designates information (or a level of information) that is not already represented in that discipline by some other term or concept. A new term is useful in science to the extent that it is both meaningful and non-redundant.

The purpose of this paper is to propose a definition of addiction that is both meaningful and non-redundant, that is clearly grounded in the conceptual network of scientific psychiatry and is more than merely synonymous with some other psychiatric term.

Diagnostic criteria for Addictive Disorder

The DSM-III-R will serve as a guide for organizing the components of this definition of addiction. It may be expected that a definition which represents an extension of the currently accepted classification schema is more likely to be accepted than one which represents a departure from it. The intention is to formulate in general terms (not restricted by reference to a particular behaviour) a set of diagnostic criteria for the heirarchically superordinate category, Addictive Disorder, which will subsume the individual addictive disorders (specified according to the behavior that is addictively manifested). This set of criteria will then also constitute a touchstone for determining whether a given behavioral syndrome is an addictive disorder (i.e. an addiction).

The following is the proposed set of diagnostic criteria for Addictive Disorder, presented in a format similar to DSM-III-R:

Addictive Disorder (or Addiction)

(A) Recurrent failure to resist impulses to engage in a specified behavior.

(B) Increasing sense of tension immediately prior to initiating the behavior.

(C) Pleasure or relief at the time of engaging in the behavior.

(D) A feeling of lack of control while engaging in the behavior.

(E) At least five of the following:

(1) frequent preoccupation with the behavior or with activity that is preparatory to the behavior

(2) frequent engaging in the behavior to a greater extent or over a longer period than intended

(3) repeated efforts to reduce, control or stop the behavior

(4) a great deal of time spent in activities necessary for the behavior, engaging in the behavior or recovering from its effects

(5) frequent engaging in the behavior when expected to fulfill occupational, academic, domestic or social obligations

(6) important social, occupational or recreational activities given up or reduced because of the behavior

(7) continuation of the behavior despite knowledge of having a persistent or recurrent social, financial, psychological or physical problem that is caused or exacerbated by the behavior

(8) tolerance: need to increase the intensity or frequency of the behavior in order to achieve the desired effect or diminished effect with continued behavior of the same intensity

(9) restlessness or irritability if unable to engage in the behavior

(F) Some symptoms of the disturbance have persisted for at least 1 month, or have occurred repeatedly over a longer period of time.

Less formally, addiction may be defined as a process whereby a behavior, that can function both to produce pleasure and to provide relief from internal discomfort, is employed in a pattern characterized by (1) recurrent failure to control the behavior (powerlessness) and (2) continuation of the behavior despite significant negative consequences (unmanageability). This informal definition is comparable to the initial statement in DSM-III-R regarding Psychoactive Substance Dependence: "The essential feature of this disorder is a cluster of cognitive, behavioral, and physiologic symptoms that indicate that the person has impaired control of psychoactive substance use and continues use of the substance despite adverse consequences."[2]

Comparison with DSM-III-R disorders

It is instructive to explore the relationship between the proposed diagnostic criteria for Addictive Disorder and the diagnostic criteria for disorders listed in DSM-III-R which have prominent addictive features. The DSM-III-R disorders most commonly

identified as addictive disorders are Psychoactive Substance Dependence and Pathological Gambling. As the sets of criteria for these disorders (see Appendix) are compared to the set of criteria for Addictive Disorder, it is evident that the latter essentially includes both of the former (described in behaviorally non-specific terms), yet is more restrictive (less all-inclusive) than either of them.

Section B of the Psychoactive Substance Dependence criteria list is identical to Section F of the Addictive Disorder list. The first seven items of Substance Dependence Section A each correspond to an item of Addictive Disorder Section E: (1) of Substance Dependence Section A corresponds to (2) of Addictive Disorder Section E, (2) to (3), (3) to (4), (4) to (5), (5) to (6), (6) to (7) and (7) to (8). While only three of these seven criteria from Section A (about 43%) need be met for Substance Dependence, five of nine from Section E (about 56%) must be met for Addictive Disorder. (The remaining two Substance Dependence criteria, concerning withdrawal symptoms, may not apply for some psychoactive substances, and do not need to be met if three of the first seven criteria are met.) The set of criteria for Addictive Disorder also includes four mandatory items, A–D, which are absent from the Substance Dependence list. Although the Addictive Disorder criteria are hence more restrictive, it is difficult to imagine a case of Substance Dependence that would not also meet the criteria for Addictive Disorder.

Of the list of criteria for Pathological Gambling, all but item (5) correspond to some item of Addictive Disorder Section E: (1) of Pathological Gambling corresponds to (1) of Addictive Disorder, (2) to (2), (3) to (8), (4) to (9), (6) to (3), (7) to (5), (8) to (6) and (9) to (7). Again, the Addictive Disorder criteria are more restrictive, requiring the four mandatory items and five of nine items from Section E (56%), compared to four of nine (44%) 'menu' items and no mandatory items for Pathological Gambling. Yet it would similarly be difficult to imagine a case of Pathological Gambling that would not also meet the criteria for Addictive Disorder.

This provisional list of diagnostic criteria for Addictive Disorder accomplishes the first of the objectives delineated above. It proposes a definition of addiction that is specific, meaningful, grounded in the conceptual network of scientific psychiatry and presented in a format similar to that in which other psychiatric disorders are described. It is significant that this list of criteria is more restrictive than those of the DSM-III-R disorders most commonly identified as addictive disorders, providing prophylaxis against criticism that the definition of addiction is too loose or all-inclusive. It is not unlikely that further modifications will be required in the organization of the criteria (i.e. which of the items should be on the mandatory list and which on the menu list [section E], and what should be the minimum number of menu list criteria that must be met) and in the wording of the criteria (e.g. omitting 'immediately' from criterion B). These issues remain to be determined empirically.

Comparison with other terms

The second objective noted earlier related to the need for a new scientific term or concept to be non-redundant: for addiction to be more than merely synonymous with some other psychiatric term, to designate a concept with informational content different from that of any concept designated by some other psychiatric term. The terms that have been used most frequently to denote a disorder referred to here as an addictive disorder or an addiction are dependence (or dependency, as in 'Chemical Dependency') and compulsion (or compulsive disorder, as in 'Compulsive Gambling' or 'Compulsive Overeating'). While the concepts of dependence and compulsion merit more attention than will be devoted to them here; for the purpose of this discussion, it is sufficient to observe that addiction equals dependence plus compulsion. Dependence involves an attempt to achieve a pleasurable internal state via gratification of needs, basic or derived. In the terminology of learning and behaviour theory, the process by which dependence gratification motivates behavior would be described as positive reinforcement. Compulsion involves an attempt to evade or avoid an unpleasurable/aversive internal state (e.g. anxiety, grief, guilt, shame, rage). This corresponds to a negative reinforcement paradigm. Among the distinguishing features of addictive disorders is this combination of gratification and escape from internal discomfort (as implied by items C, B and E(9) in the diagnostic criteria list). Hence, the concept of addiction represents a synthesis of dependence and compulsion. While all addictions involve both dependence and compulsion; there are dependences and compulsions that are not addictions. The term addiction is thus more than merely synonymous with dependence or compulsion, and contains information which neither of these terms alone provides.

Implications

A new scientific term or concept is preferably not only meaningful and non-redundant, but also of some practical value. The concept of addiction, as described above, entails theoretical issues which may have practical implications of considerable significance. Some of these will be briefly surveyed.

Treatment

At a fairly concrete level. the statement that addiction equals dependence plus compulsion, that it entails both positive and negative reinforcement, may help explain the tenacity of addictions and the resistance of addictive behavior to modification. An understanding of addictive disorders based on this principle has important connotations for treatment, in that optimal treatment would require that both positive and negative reinforcement processes be addressed. It would be necessary to treat the internal discomforts from which the addictive behavior had provided escape, by means of pharmacotherapy (antidepressants, lithium, more rarely antipsychotics or anxiolytics) or psychotherapy (resolution of internal conflicts, enhanced ego integration associated with improvement in affect regulation, and so on) or some combination. It would also be necessary to foster the individual's development of healthier, more adaptive means for meeting the needs which the addictive behavior had served to gratify (12-step groups and other supportive or therapeutic groups may be particularly valuable in this regard). A further corollary is that treatments which do not address these processes, including punishment and aversive conditioning, are unlikely to be very effective.

Theoretical

At a more theoretical level, the definition of addiction proposed here entails a shift in emphasis from the customary tendency to focus on a particular behavior or the object of that behavior. Addiction here represents a set of relationships between a behavioral pattern and certain other processes or aspects of a person's life. Essentially, it is defined as a process whereby a behavior, that can function both to produce gratification and to provide escape from internal discomfort, is employed in a pattern characterised by loss of control and continuation despite significant negative consequences. It is not the type of behavior, its frequency or its social acceptability that determines whether a behavior pattern qualifies as an addiction: it is how this behavior pattern relates to and affects the individual's life, as specified according to the diagnostic criteria.

Continuing in this theoretical vein, it may be noted that what is being proposed here is not only a formalized definition of addiction, but also a modification in the way some psychiatric disorders are conceptually organised. A new category of psychiatric disorders—Addictive Disorders—is being suggested, which will subsume Psychoactive Substance Use Disorders and will include most of the Impulse Control Disorders, some Eating Disorders, and a number of other behavioral syndromes which meet the criteria described above but are not represented in the current diagnostic nomenclature.

The implications of this proposed shift in conceptual organization extend beyond the logical structure of psychiatry's diagnostic classification system. A hypothesis may be submitted, the gist of which is that similar patterns in behavioral manifestations of the various addictive disorders (as indicated by the fact that they all meet the same set of general diagnostic criteria) reflect similarities in some set of personality and/or biological variables, which may or may not be measurable by instruments currently available. In other words, addictive disorders would be more accurately described, not as a variety of addictions, but as a basic underlying addictive process, which may be expressed in one or more of various behavioral manifestations. An important preliminary step in the investigation of such a hypothesis would entail statistical analysis of whether two or more addictive disorders tend to occur in the same individual with a frequency greater than would be predicted were they not related. Studies examining the (lifetime) prevalence rates of other addictive disorders in the relatives of probands with a given addictive disorder would also be valuable in this regard. If significant correlations are discerned, more specific hypotheses to account for them may then be formulated (in either biological or psychodynamic language) and subjected to standard procedures for validation.

An integrative approach

This hypothesis, concerning an underlying addictive process, is continuous with an integrative approach to etiology and treatment of addictive disorders. In the course of healthy growth, people develop effective, adaptive means of managing their feelings and of getting their needs met. When some combination of genetic and environmental factors interferes with this process, people learn to avoid being

overwhelmed by feelings and unmet needs, by taking in a substance (food, alcohol, other drugs) or by engaging in some rewarding activity (sex, gambling, stealing, etc). The essential process, the addictive process, is the compulsive dependence on an (apparently self-initiated and self-controlled) external action in order to regulate the internal state. Once this process has been developed, the intelligent human organism has the flexibility to shift among various actions, or to combine them, according to the requirements and limitations of the situation. It follows that an effective program for the treatment of an addicted person should address not only the addictive behavior but also the underlying addictive process. This is particularly important when the behavior which has been used addictively also has a role in healthy functioning, e.g. eating or sexual behavior. Lifeling abstinence from all forms of the behavior is then not a realistic or desirable goal. The all-or-nothing orientation typical of addicted people is then inapplicable, and it is necessary for the individual to undergo the changes in personality that enable healthy moderation.

Progress in recovery from addiction is a function of development of healthy, adaptive means for handling feelings, getting needs met, and resolving inner conflicts. This in turn depends on awareness of inner feelings, needs and conflicts, as well as the identification and challenging of maladaptive core beliefs. Treatment thus first of all requires abstinence from addictive behavior, which would otherwise function to prevent or distort this inner awareness. Treatment itself may then be conceptualized as three inter-related processes: (1) fostering awareness of inner feelings, needs, conflicts and core beliefs, particularly as they arise in the context of interpersonal relationships; (2) encouraging development of more healthy, adaptive means of handling feelings, getting needs met and resolving inner conflicts; and (3) a more directive, cognitive-behavioral teaching of effective strategies for promoting abstinence from addictive behavior (what constitutes abstinence for a given person depends on which behaviors are being used addictively, and on how addictive use of behavior may be distinguished from healthy behavior in that individual).

Conclusion

This paper began with the search for a scientifically useful definition of addiction. A formal delineation of diagnostic criteria for Addictive Disorder was presented, specified in a format similar to that of DSM-III-R. Less formally, addiction was defined as a process whereby a behavior, that can function both to produce pleasure and to provide escape from internal discomfort, is employed in a pattern characterized by (1) recurrent failure to control the behavior (powerlessness) and (2) continuation of the behavior despite significant negative consequences (unmanageability). The criteria for Addictive Disorder were determined to essentially subsume those of DSM-III-R disorders with prominent addictive features, yet to be more restrictive (less all-inclusive). The concept of addiction was found to be a synthesis of dependence (gratification of needs; i.e. positive reinforcement motivation) and compulsion (evasion or avoidance of internal discomfort; i.e. negative reinforcement motivation), and hence to contain information which neither of these other terms alone provides. Some practical and theoretical implications of this definition were then explored: (1) the necessity for treatment of addictive disorders to address both the negative and the positive reinforcement processes; (2) a shift in emphasis from a particular behavior or its object, to a set of relationships between a behavior pattern and certain other processes or aspects of a person's life; (3) consideration of a hypothesis that the set of addictive disorders is most accurately described, not as a multiplicity of addictions, but as a basic underlying addictive process, which may be expressed in one or more of various behavioral manifestations; and (4) an approach to the etiology and treatment of addictive disorders that constitutes a true actualization of the biopsychosocial model of illness and health, indicating a practical as well as conceptual integration of psychodynamic theory and therapy, biological psychiatry, family systems theory, addictionology, cognitive-behavioral psychology, and group dynamics.

It is hoped that this integration of addictive disorders into the conceptual network of scientific psychiatry and psychology will provide the basis for a more comprehensive and effective approach to the understanding and treatment of people experiencing these disorders, and for an enrichment of the mental health field as a whole.

References

1 American Psychiatric Association (1987) *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edn (R), (Washington, D.C., American Psychiatric Association Press).
2 *Ibid.*, p. 166

Appendix: DSM-III-R Criteria for Selected Disorders

Psychoactive Substance Dependence

(A) At least three of the following:
  (1) substance often taken in larger amounts or over a longer period than the person intended
  (2) persistent desire or one or more unsuccessful efforts to cut down or control substance use
  (3) a great deal of time spent in activities necessary to get the substance (e.g. theft), taking the substance (e.g. chain smoking) or recovering from its effects
  (4) frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations at work, school or home (e.g. does not go to work because hung over, goes to school or work 'high', intoxicated while taking care of his or her children), or when the substance use is physically hazardous (e.g. drives when intoxicated)
  (5) important social, occupational, or recreational activities given up or reduced because of substance use
  (6) continued substance use despite knowledge of having a persistent or recurrent social, psychological or physical problem that is caused or exacerbated by the use of the substance (e.g., keeps using heroin despite family arguments about it, cocaine-induced depression, or having an ulcer made worse by drinking)
  (7) marked tolerance: need for markedly increased amounts of the substance (i.e., at least a 50% increase) in order to achieve intoxication or desired effect, or markedly diminished effect with continued use of the same amount

Note: The following items may not apply to cannabis, hallucinogens, or phencyclidine (PCP]:

  (8) characteristic withdrawal symptoms (see specific withdrawal syndromes under Psychoactive Substance-induced Organic Mental Disorders)
  (9) substance often taken to relieve or avoid withdrawal symptoms

(B) Some symptoms of the disturbance have persisted for at least 1 month, or have occurred repeatedly over a longer period of time.

312.31 Pathological Gambling

Maladaptive gambling behavior, as indicated by at least four of the following:

(1) frequent preoccupation with gambling or with obtaining money to gamble
(2) frequent gambling of larger amounts of money or over a longer period of time than intended
(3) a need to increase the size or frequency of bets to achieve the desired excitement
(4) restlessness or irritability if unable to gamble
(5) repeated loss of money by gambling and returning another day to win back losses ('chasing')
(6) repeated efforts to reduce or stop gambling
(7) frequent gambling when expected to meet social or occupational obligations
(8) sacrifice of some important social, occupational, or recreational activity in order to gamble
(9) continuation of gambling despite inability to pay mounting debts, or despite other significant social, occupational, or legal problems that the person knows to be exacerbated by gambling