The Concept of Substance Use Disorders. A Commentary on ‘Defining Substance Use Disorders: Do We Really Need More than Heavy Use’ by Rehm et al.

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Abstract — Substance use disorders reflect more than just substance use. At one level they are patterns of behaviour, at another level they are clusters of experiences and physiological features. Substance use disorders are strongly correlated with the level of substance use, but the importance of defining them as disorders is because this determines the need for treatment (including detoxification, agonist maintenance treatment and other pharmacotherapies). The severity of a substance disorder also strongly influences the individual’s prognosis. Quantification of substance use is valuable for both clinical and epidemiological purposes, but it should be as precise as possible and notions such as “heavy use over time” are not fit for purpose.

There has been considerable debate in recent years as to whether the concept of substance use disorders is a useful one. Are there simply substance-related symptoms, behaviours and problems that are best measured individually on dimensional scales? Or do these experiences have some interconnectedness with each other and are (or become) syndromal in nature?

The position paper by Rehm et al. (2013) (this issue) is an interesting and provocative one. It promotes the notion that ‘substance use disorder’ is a redundant concept and is best replaced not just by symptom counts but by a statement of the amount and duration of substance use. In doing so, it highlights the gulf between epidemiological thinking and clinical thinking. More broadly, it illustrates the difference between reductive scientific thinking, necessary for the advancement of knowledge, and the need for communicating what is actually happening to human beings, this being the essence of clinical practice.

The paper, which is in the form of a political manifesto, promotes the viewpoint that ‘heavy use over time’ is suitable diagnostic entity and of more value than any definition of substance use disorder or dependence/addiction. Several pieces of evidence are adduced—but I have to say selectively—to support the view that the latter terms are no longer necessary.

The debate about the essential nature of substance use disorders has been partly fuelled by the DSM-5 process (American Psychiatric Association, 2013). A new diagnostic term ‘substance use disorder’ has been introduced. This is a disaggregated condition that does not require clustering of features and is further from the psychobiological and neurobiological evidence base than its DSM-IV predecessors (American Psychiatric Association, 1994; Koob and Volkow, 2010). Comments on DSM-5 indicate concern that it misunderstands the nature of psychiatric disorders and promotes the notion of a disconnected list of symptoms, no more than that. Witness the remarks of the Director of the US National Institute on Mental Health (NIMH), Dr. Thomas Insell: ‘Patients with mental disorders deserve better’ (Insell, 2013). The proposal by Rehm and colleagues discounts the legitimacy of the concept of substance use disorders even more.

We need to examine whether substance use disorders exist as meaningful entities. Do some symptoms, behaviours and experiences have interconnectedness with each other? Do boundaries exist which enable us to state that a person has a particular disorder as opposed to not—or having a different disorder? To answer these questions it is necessary to examine the descriptions of substance use disorders and identify whether they have coherence. Arguably the best description of what became known as the dependence syndrome was written by Edwards and Gross a generation ago (Edwards and Gross, 1976). This paper argued (and cited empirical studies to demonstrate) that alcohol dependence was a syndrome in which certain central features occurred together and repeatedly. These features spanned cognitive, behavioural and physiological domains.

Since that time alcohol dependence has been shown to be a psychometrically robust condition. The notion of a dependence syndrome is applicable, with little or no modification, to all major groups of psychoactive substances (Feingold and Rounsaville, 1995; Nelson et al., 1999, Saunders, 2006). In most studies psychometric assessment shows high internal consistency of the dependence items and various forms of factor analysis identify a single main factor. Conceptually, it is readily understood as an ‘internal driving force’ to continued substance use (Saunders, 2006). The alternative central diagnosis in DSM-IV is substance abuse. Although its psychometric performance is less than that of dependence, there is evidence that its course over time differs from that of substance dependence (Hasin et al., 1997). Much has been made of the lack of distinction in various hybrid statistical analyses between the features of dependence and substance abuse (Saha et al., 2006). But one could argue that the course of a disorder (i.e. its predictive validity) is more important than its internal reliability.

‘Heavy substance use over time’ is essentially a lay term. It may be useful in casual conversation, but it is impossible to define because of its vagueness. Even as a summary measure of intake of a psychoactive substance, it fails for a large range of substances. For alcohol and tobacco, quantification can be achieved with some precision. Commercially produced alcoholic drinks are of known concentration and the amount of alcohol can be expressed in fundamental units of mass, namely grams. However, underreporting is a problem and probably more in everyday clinical practice than in epidemiological studies. On the other hand, impaired control, withdrawal symptoms and continued use despite harm (features of the dependence syndrome) can be readily communicated. Indeed, these and other features of substance dependence can often be observed by others.
With regard to illicit substances, the problem is much greater. Given the absence of quality control, the amount of the drug being taken is uncertain and can vary >10-fold depending on the extent to which it is diluted. Indeed, the supposed substance may not be actually present. How precisely can cannabis (marijuana) use be measured? On the other hand, cannabis withdrawal can be measured with some precision and recognized by clinicians. How are synthetic cannabinoids and the new generation of synthetic stimulants supposed to be quantified?

With the concept of ‘heavy substance use over time’, one would struggle to understand (a) why medicated detoxification is necessary, (b) why medications have been developed to suppress the driving force of dependence and (c) why medications that actually perpetuate dependence (such as methadone, buprenorphine and also psychostimulant agonists) could be ethically acceptable. Opioid agonist treatment is the most evidence-based treatment for patients with opioid dependence (World Health Organization, 2010). It also performs a valuable population-level role in the minimization of opioid-related harm, including blood-borne virus infection. The point about these latter treatments is that if the patient is not dependent on them before the start of treatment, they certainly will when they are on this treatment.

Much is made in the paper of Rehm et al. about the lack of correlation between measures of use and levels of dependence. Table 1 in their paper examining numbers of cigarettes smoked and nicotine dependence shows radically different results from country to country, with some results identifying a dose-response relationship (which makes sense), but two studies showing a plateau for dependence prevalence. Is measurement error (from various sources) a more likely explanation for this? I would not accept the contention that only half of those smoking 30 cigarettes per day or more have nicotine dependence, without powerful and consistent evidence. The paper also contains several throwaway remarks such as ‘... cultural specificity of loss of control.’ Where is the evidence for this? The central features of dependence are highly replicable in different cultures (Hall et al., 1993; Nelson et al., 1999).

In summary, although quantification of substance use is possible for some substances and has value epidemiologically and clinically, quantification does not and cannot have universal application across the range of psychoactive substances. ‘Heavy substance use over time’ suffers from its inherent lack of precision. It also fails to describe the essential nature of substance use disorders, especially at the dependence and addiction end of the spectrum. In addition, one might assume, incorrectly, that ‘heavy substance use over time’ is simply a voluntary activity that the person engages in knowingly and thoughtfully. There is no understanding implicit in this term of an internal drive to use the substance—and often in the face of harmful consequences. What is distressing to patients is their lack of control over their substance use and over many aspects of their life in general. A term such as dependence or addiction conveys the central truth of the driving force where substance use becomes increasingly centre stage in the person’s life and other interests, activities and responsibilities are relegated to the periphery.

Clinical needs are best met by definitions that describe what people actually experience—their cognitions, behaviours, actions and physiological responses. This is achieved by entities such as dependence, addiction, and to an extent DSM-5 substance use disorder, but not by vague notions of ‘heavy substance use over time.’

REFERENCES


