

Addiction as a Sui Generis Force

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Opinion

Addiction tends to be misunderstood, including by clinicians. Practicing clinicians are often in the position of having to decide whether certain potentially addictive medications can be prescribed to a patient — thinking that either it is simply not a problem, especially with this, particular patient — or it is a very serious problem with any patient. Their hesitance to prescribe tends to be a result of multiple factors. But one tends to be an identification with the patient. This is clearly a generally important aspect of relating to a patient, but it is probably misguided in the case of a patient's addiction. Clinicians, in their thinking, then seek to resolve the motivation for addictive drug use into other motivations, motivations known and understood, experienced by all: for example, the pleasure of being high, the escape from unpleasant reality experiences, the feelings of satisfaction and pride in one's self, the sense of social connection with others, the sense of comfort for an emotionally wounded feeling, etc. And while these are common concomitants of addiction, they are not a part of addiction itself. And this makes the matter complex.

The American Psychiatric Association says, "People with addiction (severe substance use disorder) have an intense focus on using a certain substance(s), such as alcohol or drugs, to the point that it takes over their life." Addiction refers to a tendency of a drug to promote motivation and action to additionally use the drug. This functions as a matter of motivational salience, cognition, conation, and compulsion

Addictive craving carries salience as an incentive ("incentive salience"), becoming a superordinate desire to use the drug, irrespective of consequence, often oddly rationalized by the addict. Indeed, addictive craving, is the hallmark of addiction. Addictive craving is a major unpleasant experience, specifically relieved only by using the craved drug.

There is a similarity to the subjective experience of pain: both craving and pain involve a pressure to take action, intended to relieve the current intolerably unpleasant symptom. In the case of craving, reduction or elimination of the unpleasant experiences lies only in using the drug. Only using can stop the craving.

Addictive craving is not reducible to other motivations. (But the addict, rationalizing, says otherwise.) Addiction per se is a unique, powerful motivation in itself, promoting actions which override ordinary, unaffected, reasonable judgment. It is common for the addict to make choices to use the drug, choosing use over the effects on family, employment, routine activities of daily life, and even basic survival. And continued use leads to extremely negative consequences. Addiction involves a singularly powerful, unique motivation, but is often very complex. The motivation behind addiction is typically acquired through other, non-addictive, motivations, which prompt the patient to use an addictive drug. Desire to use, when addicted, is ultimately independent of actual effect, such as pleasure or high functioning on its own. Consider the addict who gets high, anticipating pleasure, but becomes combative or just passes out and then craves the same thing and uses all over again. And, to be more specific, consider now in more detail some other motivations. To be clear, these are not

the motivation of addiction itself, but are common predecessors or concomitants to addictive craving:

- a. Pleasure seeking, "liking" (as opposed to "wanting" or "needing") the experience, as occasional use. Before true addiction, if the use is repeated, this can be viewed as a kind of "gluttony," that is, pleasure-seeking with an absence of lack of self-restraint or impulse control.
- b. Facilitation of social connections, by participation in peer practices of drug use.
- c. Emotional dependence on the addictive substance. This would point to psychological difficulties. Some examples: fantasies, while being high, as escape from a difficult reality or from challenging internal emotions; coping with personality stresses and vulnerabilities, such as low self-esteem, dependent self-esteem, and other narcissistic issues. Someone eager to know what they believe that don't know, and this including what to do, how to act, what to feel — eager for help, guidance.
- d. Treatment for the symptoms of mood disorders or anxiety disorders. This can be in the form of medically prescribed and supervised treatment — e.g. for pain or anxiety, or in the form of "self-medication."

But addictive drugs affect cognition. "Wanting" turns a set of neutral sensory stimuli (a face, a scent) into a stimulus that is relevant, or has "incentive salience." All addictive drugs activate the reward system by directly raising the levels of dopamine. This motivates us to repeat those behaviors, even though they may be harmful. With every use, the enabling circuits become stronger and more compelling. And the stimulus affects the ventral tegmental area of the nucleus accumbens link in the brain's reward circuitry, part of the mesolimbic pathway, the circuit most associated with pleasure and reward in the brainstem. This circuit is primarily concerned with basic survival. The reward system has the ability to encode cues to help repeat the experience. A positive, pleasurable outcome from an action or event results in the release of dopamine and other chemicals, altering the brain circuitry, providing tools and encouragement to repeat the event. The physical space, the people involved, the smells—in fact, all of the sensory experience, cues that normally would have no particular importance to survival or pleasure — such as a line of white powder,

a cigarette, or a bottle of brown liquid — activate this same reward system. Brain is alerted and activated.

Addictive craving, then controls aspects of cognition, subordinating thoughts to finding ways to use, that is, drug-seeking. Attention is the first of the reward system tools, giving the patient the ability to recognize a potentially rewarding possibility. The dopamine system, active, helps us ignore peripheral stimuli and focus more on whatever we perceive as our task. For example, addictive craving sets a goal of using a drug, portraying to the addict a pleasant, harmless, justified experience, which the addict absolutely “needs” to attain. And of course this is “ego-syntonic” to the patient. Preoccupation, obsession, or compulsiveness tends to be the result, depending on the patient’s stage. Note this overtaking of cognition.

In an established addiction, the brain’s executive centers have become programmed to take all action necessary to acquire the drug, including spending money, robbing a mini-market, stealing from parents— as is necessary to get the drug and the high levels of dopamine that come with it. After awhile, seeking out the drug can become an automatic behavior that the addict does not even enjoy.

Action has become necessary. The executive center of the brain is engaged. It provides motivation, rationalization, and the activation of other brain areas necessary to have the experience again, including memory, the actions used to achieve the reward, and it creates the capacity to repeat the experience. Thus, the executive center of the brain provides motivation, rationalization, and the activation of other brain areas necessary to have the experience again. These planning centers are an important target of dopamine action.

Some problems may develop with the use of the word, “dependence.” It is useful to use the word “dependence” to limit the use of the word to refer to a phenomenon that is different from “addiction.” Dependence — more precisely “physical dependence” — involves motivations for use of a drug that are distinct from addiction. This is true even though physical dependence is virtually always present when addiction is present, and the motivations of physical dependence and addiction function synchronously. But physical dependence can be present without addiction, and is common. A drug enhances the activity of a receptor, with the brain adapting to its over-stimulation, while withdrawing the drug quickly leaves the brain with an imbalance because the brain is now dependent on the drug. Physical dependence refers to the body and brain’s adjustment to the effects of the medicine, such that a sudden discontinuation of the drug or medicine will result in “withdrawal” — a negative physiological reaction to the absence of the drug, with characteristic features for any given drug, and a reaction above and beyond the loss of the potential benefit of the medicine.

An addict, of course, will tend to use in a manner that avoids withdrawal. But this is distinct from addiction itself, even though though concurrent with addiction. And dependence can present

as a “pseudo-addiction” for example, in the case of a non-addicted patient reluctant to risk a withdrawal reaction. In terms of the patient progression in usage, regular Use is something of a fork in the road for many. The occasional drink or drug may turn into a common occurrence. Then the line between regular use and high-risk use is a very thin one, but usually can be defined as the continued use of drugs or alcohol in spite of severe social or legal consequences. The patient becomes either unafraid or unaware of the consequences of the behavior. Usually cravings become unbearable. Problem, or risky use, indicates that there is increased frequency, and disregard for the negative impacts, such as hangovers or financial burden. Some of the common changes

- a. Borrowing or stealing money
- b. Neglecting responsibilities such as work or family
- c. Attempting to hide their drug use
- d. Hiding drugs in easily accessible places (like mint tins)
- e. Changing peer groups
- f. Visiting multiple doctors or rapidly changing doctors (if using a prescription drug)
- g. Losing interest in old hobbies
- h. arrested for a DUI

Eventually, body and mind become dependent on the substance. This can be due to higher tolerance from prolonged use, or from, psychological relief or even just ignoring the red flags leading up. Physical dependence has developed. If use abruptly stops, the body will react by entering withdrawal. This is characterized by a negative rebound filled with uncomfortable and sometimes dangerous symptoms. The patient now typically believes that they need it in some way to continue through life. It is indeed hoped that an understanding of the illness of addiction, with its effects on the patient’s cognition and motivation, will illuminate efforts toward treatment. But having said this, it is worth reiterating that addiction reduces capacity to control actions, but does not eliminate it. This means that an addict can still control actions, is still responsible for actions, is not legally insane. And this can additionally offer hope.

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Conflicts of interest

The authors declared no have conflict interest for the study.