

# Addiction, Impulsivity and Obsessive-Compulsive Disorder: New Formulation Revealing Ancient Wisdom

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When examining substance addiction and behavioral addiction from the phenomenologic perspective, the similarity is quite impressive: both behaviors (substance addiction and behavioral addiction) are characterized by developing tolerance, experiencing withdrawal effects, and the urge (which is quite irresistible) to perform this behavior despite the negative consequences [1,2].

The word "addiction" comes from the Greek and means to be enslaved, bound to. Only later did addiction become identified with substance abuse. If we adhere to the original concept of addiction, then we refer to behavior that one feels bound to perform, which is not necessarily related to substance. This would include pathological gambling, compulsive shopping, kleptomania, sex addiction, internet addiction, as well as trichotillomania, nail biting and other more classical compulsive behaviors like list-making, repeated checking, reassurance questions, touching, and others.

Indeed, in the workshops that were carried out in preparation for DSM-V (Diagnostic and Statistical Manual of Mental Disorders), the striking similarity between pathological gambling and OCD was a focus of intensive discussion [3].

As it stands now, the current proposal (as of early 2010) for DSM V is to move some non-substance related conditions (e.g., pathological gambling) to addic-

tion disorders. The reasons for doing so are manifold, and include the cognitive data that are so elegantly covered by Dr. Dannon and fellow researchers in this issue of *IMAJ* [4]. Among the factors that influenced the committee were data emerging from brain imaging studies, including the finding related to the ventral striatum (decreased activity in the anterior cingulate cortex).

The similarities are not limited to cognition and to functional brain imaging, but extend to basic clinical phenomena. As in substance addiction, there is development of tolerance; that is, the affected individual needs to increase the dose to reach the same effect. He or she (there are interesting gender aspects to be further explored; namely the strong male predominance) also experiences, much like in any substance addiction, multiple attempts to stop, without much success. Both disorders (pathological gambling and substance use disorder) are associated with a severe impact on life (it has been estimated that about 40% of all bankruptcies brought to court are related to pathological gambling), and lastly but no less importantly, the attempts to stop are associated – for both disorders – with clear patterns of withdrawal phenomena. Moreover, many pathological gamblers themselves experience gambling as an addiction.

Another factor that led to the DSM committee's rather dramatic conclusion is related to treatment. To date, there are no Food and Drug Administration-approved treatments for pathological gambling. For both disorders, the results of serotonergic medications (SSRIs) were mixed. However, medication such as opioid antagonists (naltrexone), which were found to reduce cravings, seemed to be effective in patho-

logical gamblers as well. Other potential medications that are currently being explored are glutaminergic agents (for example n-acetylcysteine) and COMT Inh (like tolcapone), which increase dopamine specifically in the prefrontal cortex (but not in the accumbens). Will the shift that occurred regarding pathological gambling be replicated in other disorders characterized by "behavioral addiction"? Will this approach also be applied to compulsive shopping, internet addiction, sex addiction, compulsive jogging, among others? The data are not sufficiently substantial to support such dramatic changes, but the door has been opened and the science is now connecting with the ancient wisdom – that "being enslaved by" is the primary phenomenon, and whether the "addiction" is related to substance or not becomes a secondary phenomenon.

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COMT Inh = catechol-O-methyl transferase inhibitor

OCD = obsessive compulsive disorder