

IMPULSE CONTROL DISORDERS : NOSOLOGY AND CONCEPT

MUKESH CHANGULANI & AJIT AVASTHI

ABSTRACT

Impulse control disorders have long been recognized. Although included in nosological systems since two decades, their diagnostic validity individually, as well as a category remains in question. Conceptually, these have been linked to variety of other psychiatric or medical disorder viz. OCD, affective disorders, addictive disorders, organic mental conditions etc, but systematic studies have not been done. The present review focuses on the nosological and conceptual evolution of these disorders and highlights the overlap and boundaries with other psychiatric disorders.

Key words : Impulse control disorder, kleptomania, pathological gambling, pyromania, trichotillomania, intermittent explosive disorder

Impulse control disorders are broadly defined as mental disorders characterized by irresistible impulses to perform harmful acts. There are three essential features : (i) Failure to resist an impulse, drive or temptation to perform some act which is harmful to the person or others. (ii) An increasing sense of tension or arousal before committing the act. (iii) An experience of pleasure, gratification or release at the time the act is committed. These disorders have long been recognized. In 1938, Esquirol coined the term "Monomanias Instinctives" to describe behaviours characterized by irresistible urges and without apparent motive. Monomanias included kleptomania, arson, alcoholism and impulsive homicide and were further described as conditions in which deplorable acts were performed unwillingly in response to irresistible impulse. Voluntary control was compromised and patient was constrained to perform acts which his conscience disapproved, dictated neither by reason nor emotions, over which he did not have any willful control. Kraepelin (1915) and Bleuler (1924) described "pathological or reactive impulse". These were not usually associated with other antisocial behaviour.

In diagnostic systems, DSM-I (APA, 1952) used 'Kleptomania' as a supplementary term. DSM-II had no mention of these disorders except category of 'explosive personality'. These disorders were first categorized in DSM-III (APA, 1980) as "disorders of impulse control". In DSM-III-R (APA, 1987) the rubric was changed to 'Impulse control disorders not elsewhere classified' which then carried over to DSM-IV (APA, 1994). The various disorders included in this category are : (i) Kleptomania (ii) Pathological gambling (iii) Trichotillomania (iv) Pyromania (v) Intermittent explosive disorder (vi) NOS category : repetitive self mutilation; compulsive buying; compulsive sexual behaviour; compulsive facial picking.

In ICD system of classification, ICD-9 (WHO, 1978) had categorized 'Explosive personality disorder' and 'Compulsive conduct disorder' (Kleptomania). In ICD-10 (WHO, 1992), these disorders are classified under rubric of 'Habit and impulse disorders' under broad category of 'Disorders of adult personality and behaviour'.

Nosological evolution of impulse control disorders :

Kleptomania : It was first recognized as a discrete disease entity by DSM-III. In DSM-I, it was

IMPULSE CONTROL DISORDERS : NOSOLOGY AND CONCEPT

included as a accessory term but excluded from DSM-II. Kleptomania is characterized by a recurrent impulse to steal objects that are not needed for personal use or monetary value. There is an increase in tension prior to act of stealing or pleasure, gratification or relief during the act. DSM-IV criteria stipulate that the stealing is not due to expression of anger or revenge and not associated with delusion/hallucination and not due to conduct disorder, antisocial personality disorder or manic episode. ICD-10 uses the term 'Pathological stealing' and emphasizes on repeated failures to resist the impulse, thus giving it a more operational definition. The rest of criteria remain the same as in DSM-IV.

Pathological gambling : Pathological gambling is characterized by an impulse or urge to gamble in a persistent and maladaptive manner disrupting vital relationship and activities of daily living. It was first officially recognized by DSM-III. The criteria emphasized consequences of gambling on legal, social, vocational and interpersonal issues. In DSM-III R the criteria were modified to reflect similarities between pathological gambling and psychoactive substance abuse and dependence. modified to reflect similarities between pathological gambling and psychoactive substance abuse and dependence. Included in DSM-III R criteria were items that emphasized physiological symptoms such as tolerance and withdrawal (Burt and Katzman, 2000). Nevertheless, a number of criticism were levelled at DSM-III R criteria. Some appeared too vague, while others overlapped one another. A new set of criteria that combined elements of DSM-III and III R were incorporated into revised criteria published in DSM-IV. Importantly DSM-IV has reinstated the essence of DSM-III description that detail the multilevel consequences of pathological gambling. ICD-10 emphasizes the detrimental effects on social, occupational, material and family values and commitment. Manic and dissocial personality disorders are excluded.

Trichotillomania : Trichotillomania was first recognised as a distinct entity by DSM-III R which classified it as a impulse control disorder largely

because like other impulse control disorders, it is characterized by heightened tension prior to the behaviour, inability to resist the impulse, and a feeling of gratification immediately after the act. DSM-IV added to exclusion criteria both a primary medical etiology and other mental disorder (delusional disorder). Additionally, DSM-IV includes severe distress or impairment as one of the criteria. The criteria in ICD-10 are essentially the same as in DSM-IV.

Pyromania : Pyromania is recurrent, deliberate, purposeful setting of fires. Pyromania was mentioned in DSM-I as accessory term but was excluded in DSM-II. The disorder was officially recognized in DSM-III where it was classified under impulse control disorders. Formal reference to pyromania was retained in DSM-III R with some modification of criteria to objectify the characterization.

To qualify as pyromania, fire setting must be a response to an irresistible urge and a rise in tension and be followed by relief, pleasure or gratification. DSM-III R incorporated the impulsive nature of act of setting fires operationally. Additionally, DSM-III R added criteria which characterized the disorder in terms of preoccupation or fascination with fires or associated effects. Criteria expanded the exclusionary character stipulating that fire setting cannot be response to a delusion/hallucination, may not act as part of conduct disorder, antisocial personality disorder or manic episode.

ICD-10 criteria for fire setting are similar. Diagnostic criteria include two or more acts of fire setting, lack of motive, feeling of tension before the act with subsequent relief, and preoccupation with fire and mental images of fire setting.

Intermittent explosive disorder : It is characterized by aggressive impulses out of proportion to any precipitating stressor. In the interval between episode there is no sign of impulsiveness or aggressiveness. Intermittent explosive disorder was not recognized as a mental disorder in DSM-I. In 1968 DSM-II described "Explosive personality", specifying character pathology associated with outbursts of aggression, perhaps

linked to ictal episodes. The first formal recognition of intermittent explosive disorder came with DSM-III, when with "Isolated explosive disorder", it was one of the two recognized disorders of impulse control. DSM-III R deleted isolated explosive disorder but retained intermittent explosive disorder. The category is retained in DSM-IV with criteria that exclude the diagnosis if symptoms occur during the course of other mental disorders, as part of antisocial or borderline personality disorder or as direct physiological effects of substance use or a general medical condition such as head trauma or Alzheimer's disease.

Impulse-control disorders not otherwise specified:

This diagnosis is reserved for disorders that involve the inability to resist an impulse but are not described by any other five categories. Examples include compulsive sexual behaviour, compulsive face-picking, and self-mutilation. Recently it was suggested that compulsive buying also falls in this category. ICD-10 provides two categories similar to the category of impulse-control disorder not otherwise specified in DSM-IV. The category of 'Other habit and impulsive disorders' includes kinds of "Persistently repeated maladaptive behaviour that are not secondary to a recognized psychiatric syndrome and in which it appears that the patient is repeatedly failing to resist impulses to carry out the behaviour". There is a prodromal period of tension with a feeling of release at the time of the act. Intermittent explosive disorder is included as one such potential entity. ICD-10 also provides a category of 'Habit and impulse disorder, unspecified' with no description of criteria for this category.

Conceptual issues :

Although long recognized, these disorders remain a mysterious group of conditions. Even their diagnostic validity individually and as category remains in question. Authors doubting the legitimacy of these disorders have argued that afflicted individuals do not really experience irresistible impulses but rather have voluntary control over their behaviour. Others have argued that impulsive behaviours are nonspecific symptoms secondary to other underlying psychiatric disorders. Nevertheless, consistency

of description of irresistible or morbid impulses makes it difficult to dismiss its validity as specific psychiatric symptom.

That the DSM-IV 'Impulse control disorder not elsewhere classified' share a core disturbance of impulsivity and compulsivity, they appear to be related and should be grouped together.

A number of studies suggest that impulse control disorders may be etiologically related to variety of other psychiatric or medical disorders viz. OCD, affective disorders, addictive disorders, other impulse control disorders in general and organic mental conditions.

Thus, various hypotheses have conceptualized impulse control disorders as variants of:

- 1) Obsessive compulsive spectrum disorders.
- 2) Addictive disorders.
- 3) Affective disorders.
- 4) Organic mental disorders.
- 5) Affective spectrum disorders.

Impulse control disorders as variant of obsessive compulsive spectrum disorders :

Based on overlap in clinical symptoms, family history, age at onset, modes of genetics transmission, clinical course, response to treatment, etiology and comorbidity, a number of disorders have been grouped under obsessive compulsive spectrum disorders (Hollander and Wong, 1995). This include disorders like OCD, hypochondriasis, body dysmorphic disorders, Tourette's syndrome etc. on compulsive end of spectrum and impulse control disorders, borderline and antisocial personality disorder, eating disorders etc. on impulsive end of spectrum. Conceptually, obsessive compulsive spectrum disorders can also be viewed along a continuum with risk avoidance on the compulsive end and risk seeking on the impulsive end. This dimension can be defined with a biological framework of hyperfrontality and increased serotonergic sensitivity within compulsive disorders and hypofrontalities and decreased presynaptic 5HT levels in impulsive disorders.

Symptomatically, compulsivity and impulsivity have in common, the inability to inhibit

IMPULSE CONTROL DISORDERS : NOSOLOGY AND CONCEPT

or delay repetitive behaviour. The difference between the two lies in driving loci for action. In compulsivity, it is the decrease of discomfort associated with rituals whereas in impulsivity, it is the maximization of pleasure.

Biologically, at compulsive end of spectrum, challenge with 5HT agonist mCPP leads to increase in obsessive compulsive disorder (OCD) severity and blunted prolactin response. Whereas towards the impulsive end, 5HT agonist does not produce obsessional symptoms but increase in depersonalisation and disinhibition which are core symptoms of border line personality disorder (BPD) and increase Neuroendocrine response in BPD, pathological gambling and trichotillomania.

Regarding the treatment approach, obsessive compulsive spectrum disorders respond to SSRI as do patients with OCD. However, there seem to be subtle differential response between compulsive disorders with regard to dosage, response lag time and maintenance of symptom remission. Patient with compulsive disorders have significant lag time before response to SSRI's but once they respond, they maintain their gain as long as they continue their medication. On other hand, patients with impulsive disorders have quick response which may diminish over time with treatment.

Thus impulse control disorders have been postulated to be variants of OCD or members of larger family of obsessive compulsive spectrum disorders. This hypothesis is based largely on phenomenological similarities between irresistible impulses and obsessions/compulsions of OCD. That these impulses are often experienced as senseless, intensive, irresistible, associated with anxiety and tension are similar to OCD. Like compulsions, stealing, buying, hair pulling, gambling are also tension relieving. Further supporting relationship between these conditions and OCD are the high rates of OCD and other anxiety disorders in these patients and in their first degree relatives.

However, this conceptualisation does not account for some apparent differences between OCD and impulse control disorders. The latter

conditions associated with impulsive behaviours respond to broader range of thymoleptic agents. Moreover, symptoms of impulse control disorders are more harmful, less senseless, more spontaneous, associated with pleasure and are ego syntonic.

Thus, these disorders and underlying behaviour reflects a chronic repetitive eruption of a impulse which gratifies instinctual needs in a way that is ego dystonic outside of impulse ridden episode but which is ego syntonic and highly pleasurable during episode itself.

McElroy and Wong (1995) have hypothesized that there may be a family of compulsive impulsive spectrum disorders that embrace the impulse control disorders, obsessive compulsive personality disorder and other obsessive compulsive spectrum disorders. More broadly, this spectrum may encompass all disorders characterized by irresistible impulse to perform senseless or harmful behaviours and/or which share a core disturbance of impulsivity and compulsivity. The variation, similarities among these related conditions could be explained by their variation along a dimension of impulsivity versus compulsivity with prototypic impulse control disorders or pure impulsivity at one extreme, classic OCD at other and mixed compulsive-impulsive conditions in between.

Impulse control disorders as variant of addictive disorders :

Some authors have conceptualized these disorders as addictive disorders. The irresistible urge to steal, buy, eat, pull hair, etc. resembles the craving to drink/use drugs. The high that may be experienced with stealing, buying etc. is similar to that induced by drugs. Indeed, gambling has been described as stimulating, tranquilizing and pain relieving response and self medication of benzodiazepine withdrawal through thrill of kleptomanic stealing has also been reported (Decaria et al, 1996). Further, pathological gamblers may develop tolerance and physiological withdrawal symptoms in form of tremulousness, headache, abdominal pain, diarrhea, nightmares and cold sweats after abrupt discontinuation of

gambling. Also, high rates of alcohol and substance abuse have been seen in these patients with impulse control disorders. On the other hand high rates of pathological gambling, fire setting, violent outbursts occur in patient with alcohol/drug abuse. Finally, self help groups like Gamblers Anonymous, Shoplifters Anonymous are helpful in treatment of these disorders (Brown, 1985).

Impulse control disorders as variant of mood disorders :

Given the frequent occurrence of affective symptoms or mood disorders with each of impulse control disorders, apparent relief of depressive symptoms in response to kleptomaniac stealing, compulsive buying, gambling and response of these disorders to thymoleptics, it has been speculated that these disorders may be related to mood disorders (Virkkunen, 1989; McElroy et al, 1991; McCormick et al, 1984).

McElroy et al (1991) have further hypothesized that these disorders may be related to bipolar disorders because of phenomenological similarities, (e.g. the rush associated with kleptomaniac stealing, hair pulling etc. resembles hypomania), their high comorbidity with BPAD and response to mood stabilizing drugs (McElroy et al, 1991).

Impulse control disorders as variant of other disorders with lack of impulse control :

Some authors have noted phenomenological similarities of alcohol and drug abuse, paraphillias, bulimia nervosa with impulse control disorders. The essential feature of failure to resist an impulse, drive or temptation to perform an act that is harmful to individual or others, is applicable in all the disorders. This observation plus high rates of other impulsive behaviours in persons with these disorders have prompted some authors to suggest that all these disorder should be viewed as sharing a fundamental problem in impulse control and thus should be classified as impulse control disorders. The impulsive behaviour is seen either as a failure of self soothing mechanism or as an attempt to relieve a variety of uncomfortable symptoms. Lacey and Evans (1986) reported that a substantial number of

patients with substance use disorders, eating disorder, 'classic' impulse disorders, self harm and personality disorders were characterized not just by presenting symptoms but by multiple impulsive behaviours. They termed such individuals as impulsivists. They suggested that they had 'multiimpulsive personality disorder'.

Impulse control disorders as variant of organic mental disorders :

Some authors postulated that impulse control disorders are caused by organic conditions that induce or increase impulsivity. Such conditions include hypoglycemia, narcolepsy, head trauma, dementia or epilepsy etc. Evidence in favour of this includes phenomenological similarities between impulse control disorders and complex partial seizures and reports of patients with intermittent explosive disorder or kleptomania who respond to antiepileptic treatment.

Affective spectrum disorders (ASD) :

None of above mentioned conceptualization seen to be sufficiently inclusive. The impulse control disorders share high co morbidity not only with OCD, substance use disorders, mood disorders and eating disorders but also with anxiety disorders.

To explain this overlap Hudson and Pope (1990) hypothesized that impulse control disorders, OCD, rather all compulsive impulsive spectrum disorders belong to larger family of "Affective Spectrum Disorders". Affective spectrum disorders is a hypothesized family of disorders including major depression, bulimia, OCD and panic disorder among others such as ADHD, cataplexy, irritable bowel syndrome etc. This hypothesis does not argue that impulse control disorders are caused by affective spectrum disorders but rather they may share the same underlying physiologic abnormality as other forms of ASD. This hypothesis derives support from number of major findings :

- i) They share phenomenological similarities, not only with OCD but with bulimia, panic and bipolar disorders.
- ii) High rate of mood, anxiety and eating disorders have been reported in these patients.

IMPULSE CONTROL DISORDERS : NOSOLOGY AND CONCEPT

iii) Abnormalities of 5HT and NE metabolism as reported in patients of episodic dyscontrol and impulsive firesetting, and response to thymoleptics are similar to other disorders of affective spectrum.

Viewing these disorders as a part of affective spectrum would also account for number of other observations like case reports of patients with concurrent pyromania and major mood disorders, high rates of ADHD and EEG abnormalities among pathological gamblers and patients of episodic dyscontrol (McElroy et al, 1992).

This hypothesis that impulse control disorder are a part of ASD has several methodological limitations. The most important limitation is the lack of systematic well controlled studies using operational diagnostic criteria. Moreover, this hypotheses does not explain phenomenological similarity of these disorders to complex partial seizures and apparently high rates of epilepsy, EEG abnormalities, and other neurological abnormalities in patient with episodic dyscontrol. Neither does it explain the withdrawal symptoms on discontinuation of impulsive behaviour.

Nevertheless, these disorders may share a biological abnormality with other forms of ASD, the nature of which is unknown. However, animal studies suggest an abnormal al serotonergic transmission in depression, mania, suicide, bulimia nervosa, OCD, panic and alcoholism as in impulse control disorders.

Despite recognition since 150 years and inclusion in nomenclature since 1980 these disorders remain little studied. Debate over their diagnostic validity lingers on but many have argued that these are legitimate mental disorders and are more common than realized. These disorders appear to be related to one another and should be grouped together and also related to mood and affective spectrum disorders. Systematic controlled studies are needed to clarify validity and nature of this relationship, as also the relationship with other disorders.

REFERENCES

American Psychiatric Association (1952)

Diagnostic and Statistical Manual of Mental Disorders, Edn.1st (DSM-I), Washington DC : American Psychiatric Association.

American Psychiatric Association (1980)

Diagnostic and Statistical Manual of Mental Disorders, Edn.3rd(DSM-III), Washington DC : American Psychiatric Association.

American Psychiatric Association (1987)

Diagnostic and Statistical Manual of Mental Disorders, Edn.3rd revised (DSM-III-R), Washington DC : American Psychiatric Association.

American Psychiatric Association (1994)

Diagnostic and Statistical Manual of Mental Disorders, Edn.4th (DSM-IV), Washington DC : American Psychiatric Association.

Bleuler, E. (1924) Textbook of Psychiatry, pp 538-540, New York, McMillan.

Brown, R.I.F. (1985) The effectiveness of

Gamblers Anonymous. In : Eadington WR ed. *The Gambling Studies : Proceedings of Sixth National Conference on Gambling and Risk taking*. Reno. Bureau of Business and Economic Research, University of Nevada.

Burt, V.K. & Katzman, J.W. (2000)

Impulse control disorders not elsewhere classified. In : Comprehensive Textbook of Psychiatry, Vol.II, Edn. 6th, (Eds.) Sadock, B.J. & Sadock, V.A., pp 1701-1713, Lippincott William & Wilkins; USA.

Christenson, G.A. & Qow, S.J. (1996) The

characterization and treatment of trichotillomania. *Journal of Clinical Psychiatry*, 37, (Suppl.8), 42-49.

Decaria, C.M., Hollander, E., Grossman,

R., Wong, C.M., Mosovich, S.A. & Cherkasky, S. (1996) Diagnosis, neuro-biology and treatment of pathological gambling. *Journal of Clinical Psychiatry*, 57, (Suppl.8), 80-84.

Esquirol, E. (1938) Des Maladies

Mentables. Paris. France. Baillier.

Psychological Medicine, 21, 93-108.

Hollander, E. & Wong, C.M. (1995) Body dysmorphic disorder, pathological gambling and sexual compulsions. *Journal of Clinical Psychiatry*, 56, (Suppl 4), 7-12.

McElroy, S.L., Pope, H.G., Hudson, J.I., Keck, P.E. & White, K.L. (1991b) Kleptomania : A report of 20 cases. *American Journal of Psychiatry*, 148, 652-657.

Hudson, J.I. & Pope, H.G. (1990) Affective spectrum disorder Does anti-depressant response identify a family of disorders with a common pathophysiology? *American Journal of Psychiatry*, 147, 552-564.

McElroy, S.L., Pope, H.G., Hudson, J.I., Keck, P.E. & Aizley, H.G. (1992) The DSM-III-R impulse control disorders not elsewhere classified: Clinical characteristics and relation to other psychiatric disorders. *American Journal of Psychiatry*, 149, 318-327.

Kraepelin, E. (1915) *Psychiatrie*, Edn.8th, pp 408-409, Germany : Leipzig.

Virkkunen, M., Jong, J.D., Bartko, J. & Linnoila, M. (1989) Psychobiological components of history of suicide attempts among violent offenders and impulsive fire setters. *Archives of General Psychiatry*, 46, 604-606.

Lacey, J.H. & Evans, C.D.H. (1986) The impulsivist : a multiimpulsive personality disorder. *British Journal of Addiction*, 81, 641-649.

World Health Organization (1992) ICD-10 Classification of mental and behavioural disorders. Clinical descriptions and diagnostic guidelines. Geneva : WHO.

McCormick, R.A., Russo, A.M., Ramirez, L.F. & Taber, J. (1984) Affective disorders among pathological gamblers seeking treatment. *American Journal of Psychiatry*, 141, 215-218.

World Health Organization (1978) ICD-9 Classification of mental and behavioural disorders. Glossary and guide to ninth revision. Geneva : WHO.

McElroy, S.L., Hudson, J.I., Pope, H.G. & Keck, P.E. (1991a) Kleptomania : clinical characteristics and associated psychopathology.

MUKESH CHANGULANI, MD, Senior Resident & AJIT AVASTHI*, MD, Additional Professor, Department of Psychiatry, Postgraduate Institute of Medical Education and Research, Chandigarh - 160012

* Correspondence