

IMPULSE-CONTROL DISORDERS IN FORENSIC PSYCHIATRY

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Summary

Based on the analysis of the literature, the paper discusses problems of impulse control disorder diagnoses, coded in ICD-10 as the F63, and the results of epidemiological studies on the prevalence of these disorders. In 2009, 169 patients diagnosed with F63 were hospitalized in Poland, including 143 pathological gambling, 5 kleptomania and 3 trichotillomania cases. Shoplifting, which causes serious economic losses, may be triggered in some cases by psychopathology. Studies of people suffering from pathological gambling using fMRI brain mapping and conflicting approaches to expert's opinions on such people's sanity are described. The following are used for treatment of impulse-control disorders: antidepressants, opiate antagonists, mood stabilizers and Cognitive Behavior Psychotherapy. In 2009, 4,572 people were killed in road accidents in Poland, more than in France or Germany. Occurrence of intermittent explosive disorder among court-referred and self-referred aggressive drivers is discussed. Awareness of diagnosis and possibilities of treatment of impulse control disorders will reduce health problems, as well as social and legal issues these people face.

The history of the diagnostic category of impulse control disorders has less than 200 years. Mathey, a Swiss doctor was first to describe a patient who suffered from kleptomania in 1816, without actually using the term itself. Mathey described a unique inclination to steal characterized by a lack of apparent motivation or necessity (28). Esquirol, a French psychiatrist, described a patient with kleptomania, which gave rise to research on impulse control disorders (19). Kleptomania must have been of interest to the public in those times. For example, Theodore Gericault, a French painter portrayed a woman hospitalized at Salpetriere Hospital suffering from monomania, and a man suffering from kleptomania. In the 19th century monomania diagnoses were so common that "kleptomania and homicidal mania [were] listed in the class of moral insanities" (7). Kleptomania became a subject of some monographs and books (1,

19, 26). Kleptomania is sometimes the object of satirical drawings such as "a hobby called bibliokleptomania out of control," "kleptomaniac or a collector?" Goldman cites a description of a typical kleptomania patient:

...a 35-year-old woman who began to steal when she was 20 years old. Her thefts bring both relief and guilt. She probably has not sought treatment on her own but suffers from a necessary, pervasive, repetitive, and self-destructive act. She may have a history of sexual dysfunction or sexual preoccupation and may be unhappily married to an emotionally unsupportive husband. She has been labile and dysphoric for many years and may have a personality disorder. She has probably had a tumultuous, stressful childhood and may dissociate (17).

Diagnostic criteria for kleptomania are listed in ICD-10 and DSM-IV-TR (12). In the USA, 6 out of 1000 adult Americans (ie 1.2 million out of 200 million) exhibit kleptomania symptoms while the total cost shoplifting in the USA amounts to about \$ 500 million per year (1,11). In Poland, kleptomania is rarely diagnosed. The dark number is due to fears of disclosing such tendencies. In the spectrum of psychopathology, kleptomania is placed along with impulsivity, psychopathy, mood disorders, and obsessive-compulsive spectrum disorders (19,25,34).

In ICD-10 classification the following are listed among the habit and impulse disorders: pathological gambling, pathological fire-setting (pyromania), pathological stealing (kleptomania), trichotillomania, other and habit disorders, and unspecified habit and impulse disorders (17, 19) while the American classification DSM-IV-TR also lists a periodic explosive disorder (code 312.34) (5, 12, 25). A special structured clinical interview is used to diagnose kleptomania (21).

Epidemiological studies using the International Diagnostic Interview in accordance with the ICD-10 and DSM-IV diagnostic criteria show that impulse control disorders occurred in 20.8% in the group of 9282 respondents (29). While impaired impulse control disorders such as oppositional defiant disorder, conduct disorder, attention deficit, and intermittent explosive disorder are found in 9.5% of the aforementioned group of respondents in a period of more

than 12 months (30, 31).

Research on kleptomania suggests that this disorder is associated with several domains of psychopathology, including impulsivity, psychopathy, mood disorders, and obsessive-compulsive spectrum disorders (33, 35).

Out of 101 adult subjects with DSM-IV kleptomania 73.3% were female, mean age of shoplifting onset is 19.4+/-12.0, 8.2 +/- 11.0. From this group 68.3 % were arrested, 36.6 % were arrested but not convicted, 20.8 % were convicted and incarcerated after conviction, and 10.9 % were convicted and not incarcerated after conviction (18).

Authors emphasize the need for rigorous treatment approaches to target kleptomania symptoms and prevent re-offending.

Adolescents represent 40-50 % of all store-apprehended shoplifters. These juvenile offenders' clinical condition should be taken into if it is to contribute to appropriate sentencing, treatment, as well as prevention (39).

The problem of shoplifting has enormous economic dimension (1, 6, 39). For some people just being in a shop creates a "temptation situation." In the USA losses caused by shoplifting amount to about \$13 billion a year. It is estimated that statistically every eleventh customer steals from shops. A unique research was done to investigate what mental disorders occur in people who shoplift. This research has proven that thefts are most often committed by people with antisocial personality disorders, drug addicts, alcohol and gambling addicts, those with hysterical personality traits or suffering from psychosis. Still, epidemiology of kleptomania is the "dark number." Individuals with kleptomania are thought to seek treatment only rarely because of social stigma attached to it (3, 19), although they may seek treatment for other reasons (22). In the USA, a special association called the National Association for Shoplifting Prevention has been established.

The number of patients hospitalized in Poland with the F63 diagnosis in 2009 is shown in figure 1.

The data come from the Institute of Psychiatry and Neurology in Warsaw.

Impulse control disorders fall within the spectrum of obsessive-compulsive disorders. They may also be classified on the dimensions of compulsivity and impulsivity on the one hand, and on bipolarity and unipolarity or depressive disorders on the other. The diagnostic criteria for kleptomania presented in the DSM-IV suggest – just as the ICD-10 criteria – that such a person usually steals things of low value and experiences an intense tension prior to such an act. The disorder affects mostly women who constitute 80 percent of all cases. In Poland, kleptomania goes practi-

cally undiagnosed and is not recorded. For example, in my private practice, with 5350 registered patients, I have not recorded a single case of kleptomania.

Impulsivity as a symptom cuts across a number of psychiatric disorders. The treatment of impulsivity is related to the social, biological, and psychological problems (36). It is defined as a predisposition to rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individual or to others (36). Sometimes they are several discrete episodes of failure to resist aggressive impulses that result in serious assaultive acts or destruction of property. The degree of aggressiveness expressed during such episodes is grossly out of proportion to any precipitating psychosocial stressors. Such aggressive episodes are not better accounted for by other mental disorders (e.g., antisocial personality disorder, borderline personality disorder, a psychotic disorder, a manic episode, conduct disorder, or attention deficit/hyperactivity disorder) and are not due to the direct physiological effects of a substance (e.g., a drug or medication) or a general medical condition (e.g., head trauma or Alzheimer's disease) (12).

Impulse control disorders also include: pathological gambling, kleptomania, trichotillomania, pyromania, intermittent explosive disorder, pathological skin picking, compulsive buying, compulsive sexual behavior, Internet addiction, self-injurious behavior, and binge eating disorder (20).

Pathological gambling (PG) is a psychiatric, economic and legal problem. It increases the risk of suicide (32). Pathological gambling is associated with violence in couples and dysfunctional families. Inversely, violence is also an antecedent promoting vulnerability toward pathological gambling. Impulsiveness shows diverse relationships with pathological gambling and violence as well (13). A pathological gambler's involvement in crime is rarely considered as an exculpatory factor, but it may be an indicator of the severity of the disorder and thus indicate a need for special therapeutic tactics (13).

Grant does not address the moral conundrums that surround these disorders, which are a quintessential exam-

Figure 1.

No	Diagnosis	Number of Patients
	Total F63 including:	169
1	Pathological gambling F63.0	143
2	Pyromania F63.1	1
3	Kleptomania F63.2	5
4	Trichotillomania F63.3	3
5	Other impulse control disorders F63.8	6
6	Habit and impulse disorder, unspecified F63.9	11

ple of the "mad versus bad" debate in psychiatry and law (20).

Yet, in forensic psychiatry, there are two opposing concepts related to PG:

1. Presentation of pathological gambling as a potentially exculpatory condition in criminal trials.
2. Public interest will be served by statutorily making disturbances of behavioral control insufficient to raise a defense of insanity (37).

Pharmacotherapy and/or cognitive-behavioral psychotherapy are used to treat impulse control disorders. No differences between pharmacological interventions: antidepressants, opiate antagonists, mood stabilizers have been observed (27, 40). Empirical evidence suggests that training in interpersonal problem solving improves general problem solving skills and, in some cases, may also have other positive effects such as limiting hospital recidivism, arrest rates, and enhancing general interpersonal adjustment.

In treating pathological gambling, cognitive behavioral therapy as well as pharmacotherapy appear to be effective. A review and meta-analysis using Databases PsychINFO and MEDLINE in the period from 1996 to 2006; 130 studies, 597 subjects; mean age 43.3 years, 62.8% men indicates that pharmacotherapy was more effective than no treatment/placebo, in confidence interval: 0.64-0.92. No differences between pharmacological interventions: antidepressants, opiate antagonists, mood stabilizers have been detected (40).

The roles of dopaminergic transmission in addictive disorders were analyzed. Since dopaminergic transmission in the ventral striatal reward system is suggested to play the key role in the development of addictive disorders and craving (14, 24). Reduced activation of this system has been shown in alcohol dependence (14), cocaine dependence (2), and non-substance-related addictions such as pathological gambling (38). Disulfiram could be hypothesized as a common treatment option for these disorders.

Disulfiram has been used for more than 50 years as an aversion therapeutic agent in the treatment of alcohol dependence (41). Its mechanism of action consists in aldehyde dehydrogenase inhibition. Disulfiram also inhibits dopamine beta-hydroxylase, leading to an increase of dopamine concentrations while decreasing concentrations of norepinephrine in the brain (42). Beside its aversive effects, Disulfiram influences the reward system and thus it has proven effective in the treatment of pathological gambling.

In Poland, a number of road accidents in which pedestrians and drivers are killed is a serious problem. In years 2001-2008 the number of people killed in road accidents ranged from 5,243 to 5,827. The decrease of road accident

mortality occurred only in 2009, when the number of casualties fell to 4,572, and then to 3,907 in 2010. The number of casualties per 100 road accidents depends on the region. It is at its lowest in Małopolska – 5.9, and at its highest in Podlasie, which shares a border with Lithuania, – 17.2. In 2009 the death rate per 100 road accidents amounted to 10.3 in Poland and to 9.9 in Lithuania. In 2009, of all the EU member states, the greatest number of people killed in road accident was recorded in Poland, 4,572 casualties. The respective numbers are 4,273 for France, 4,152 for Germany, and 4,050 for Italy, despite the fact that these countries have much larger populations than Poland. In 2010, 442 foreigners were perpetrators of road accidents in Poland, including: Germans 17.2%, Ukrainians 14.3%, and Lithuanians 9.2%. The most frequent causes of road accidents include alcohol intoxication, but also speeding and reckless driving.

Aggressive driving in its extreme form and popularly known as "road rage," is not a mental disorder, but a serious risk factor for motor vehicle accidents. It can be assumed to be one of the causes of road accidents in Poland. Driving Anger Scale is used to identify potentially aggressive drivers (10).

A research was done on 20 court-referred aggressive drivers; 10 self-referred aggressive drivers, and 30 non-aggressive driving controls. The goal of this research was to investigate the occurrence of Intermittent Explosive Disorder (IED, 15).

Two groups of aggressive drivers were compared: the first (n=10) who met criteria for IED, the second (n=20) who did not meet IED criteria, and the control group (n=20) of non-aggressive drivers. All the aggressive drivers were compared to controls. Differences emerged on anxiety, hostility, and anger as well as on measures specific to aggressive driving and driving anger (16).

Another similar research involving a group of 30 aggressive drivers and 30 non aggressive drivers controls was done. It was found that aggressive drivers were more likely than controls to be positive for any Axis I and Axis II disorder in the DSM-IV-TR criteria.

Also, they were more likely to meet the criteria for Intermittent Explosive Disorder (IED), and had a history of alcohol or substance abuse or Dependence and Antisocial PD and Borderline PD (15).

Studies of PG personality proved that PG patients have traits similar to those exhibited by people suffering from addiction. Using functional magnetic resonance imaging allows to detect the differences in brain functioning between people suffering from pathological gambling. PG is linked to reduced activation to the mesolimbic reward system

(8). By analogy to drug dependence, it has been speculated that the underlying pathology in pathological gambling is a reduction in the sensitivity of the reward system. Studying pathological gamblers and controls during a guessing game using functional magnetic resonance imaging, Reuter observed a reduction of ventral striatal and ventromedial prefrontal activation in the pathological gamblers that was negatively correlated with gambling severity, linking hypoactivation of these areas to disease severity (38).

Cue-induced brain activity research method was used along with fMRI in studying pathological gamblers. Talarach group maps (horizontal slice orientation) of fMRI data showing significantly increased brain activity ($p < .05$) predominantly in the right hemisphere (RH) versus the left hemisphere (LH) of the dorsolateral prefrontal cortex (Brodmann areas [BA] 9 and 44) in pathological gamblers, compared to control subjects (9).

In a study of behavioral and brain activity in pathological and nonpathological gamblers using Near-Miss test the differences in brain activity in the left midbrain, near the substantia nigra and ventral tegmental area were detected (23).

CONCLUSIONS

1. In Poland impulse control disorders are diagnosed too rarely.
2. In determining the causes of shoplifting, arson, and violence a diagnosis of impulse control disorders should be considered.
3. Awareness of diagnosis and possibilities of treatment of impulse control disorders will reduce health, social and legal problems these people have.

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IMPULSŲ KONTROLĖS SUTRIKIMAI TEISMO PSICHIATRIJOJE
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Santrauka

Remiantis literatūros analize aptariamos problemos, susijusios su impulsų kontrolės sutrikimais (kodas F63 pagal TLK-10) bei epidemiologinių tyrimų rezultatai (tų sutrikimų paplitimas). 2009 Lenkijoje dėl diagnozės F63 hospitalizuota 169 pacientai, iš jų 143 dėl pataloginio lošimo, 5 dėl kleptomanijos ir 3 dėl trichotilomanijos. Vagystės iš parduotuvių, sudarančios nemažą ekonominę žalą, kai kuriais atvejais gali prasidėti dėl psichopatologijos. Patologinių lošėjų smegenų vaizdinimas funkcinio magnetinio rezonanso metodu ne visada sutampa su ekspertinėmis išvadomis dėl jų pakaltinamumo. Impulsų kontrolės sutrikimui gydyti taikomi antidepressantai, opioantagonistai, nuotaikos stabilizatoriai ir kognityvinė elgesio psichoterapija. Lenkijos eismo nelaimėse 2009 žuvo 4 572 žmonės – daugiau nei Prancūzijoje ir Vokietijoje. Palyginamas vairuotojų agresijos dėl intermituojančio dirglumo dažnumas tarp teismo atsiųstų ekspertizei ir tų, kurie patys kreipiasi pagalbos. Impulsų kontrolės sutrikimo ir gydymo galimybės žinojimas palengvins sveikatos, socialines ir teisines problemas, kurios kyla šiems asmenims

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