



UNIVERSITÀ DEGLI STUDI DI CATANIA  
Azienda ospedaliero universitaria  
«Policlinico- Vittorio Emanuele»

SCUOLA DI MEDICINA E CHIRURGIA  
CATTEDRA DI PSICHIATRIA

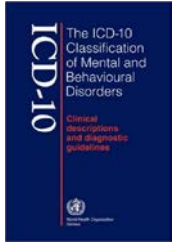
# GIOCO D'AZZARDO PATOLOGICO E COMORBIDITÀ PSICHIATRICHE

**Cagliari, 26 marzo 2019**

*Eugenio Aguglia  
Ludovico Mineo*



# Disturbo da gioco d'azzardo/ "pathological gambling"



## ICD-10 (1990):

### Pathological gambling

Habit and impulse disorders (along with pyromania, kleptomania, trichotillomania)



## DSM 5 (2013):

### Gambling disorder

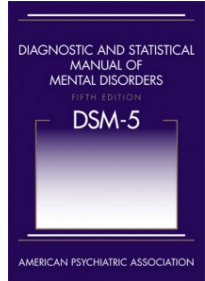
Substance related and addictive disorder



## ICD-11 (stable version for implementation release June 2018)

### Gambling disorder: predominantly online / predominantly offline

Disorders due to substance use or addictive behaviour



# Disturbo da gioco d'azzardo

**A. Comportamento problematico persistente o ricorrente legato al gioco d'azzardo che porta a disagio o compromissione clinicamente significativi, come indicato dall'individuo che presenta quattro (o più) delle seguenti condizioni entro un periodo di 12 mesi:**

1. Ha bisogno, per giocare d'azzardo, di quantità crescenti di denaro per ottenere l'eccitazione desiderata.
2. È irrequieto/a o irritabile se tenta di ridurre o di smettere di giocare d'azzardo.
3. Ha fatto ripetuti sforzi infruttuosi per controllare, ridurre o smettere di giocare d'azzardo.
4. È spesso preoccupato/a dal gioco d'azzardo (per es., ha pensieri persistenti che gli/le fanno rivivere passate esperienze di gioco d'azzardo, analizzare gli ostacoli e pianificare la prossima avventura, pensare ai modi di ottenere denaro con cui giocare d'azzardo).
5. Spesso gioca d'azzardo quando si sente a disagio (per es., indifeso/a, colpevole, ansioso/a, depresso/a).
6. Dopo aver perduto denaro al gioco d'azzardo, spesso torna un'altra volta per ritentare ("rincorrere" le proprie perdite).
7. Mente per occultare l'entità del coinvolgimento nel gioco d'azzardo.
8. Ha messo in pericolo o perduto una relazione significativa, il lavoro, opportunità di studio e di carriera a causa del gioco d'azzardo.
9. Conta sugli altri per procurare il denaro necessario a risollevare situazioni finanziarie disperate causate dal gioco d'azzardo.

**B. Il comportamento legato al gioco d'azzardo non è meglio spiegato da un episodio maniacale.**

## Specificatori:

### Decorso:

**Episodico  
Persistente**

### Gravità:

**Lieve (4-5 crit.)  
Moderato (6-7)  
Grave (8-9)**

### Esito:

**Remissione precoce  
(*sintomi assenti per almeno 3 mesi*)**


**Remissione protratta  
(*sintomi assenti per almeno 12 mesi*)**



## Addictive Disorders


The chapter also includes gambling disorder as the sole condition in a new category on behavioural addictions. DSM-IV listed pathological gambling but in a different chapter. This new term and its location in the new manual reflect research findings that gambling disorder is similar to substance-related disorders in clinical expression, brain origin, comorbidity, physiology, and treatment.

Recognition of these commonalities will help people with gambling disorder get the treatment and services they need, and others may better understand the challenges that individuals face in overcoming this disorder.



## ASAM

The Voice of Addiction Medicine  
American Society of Addiction Medicine



### A new definition of ADDICTION

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunctions in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death

American Society of Addiction Medicine, 2011

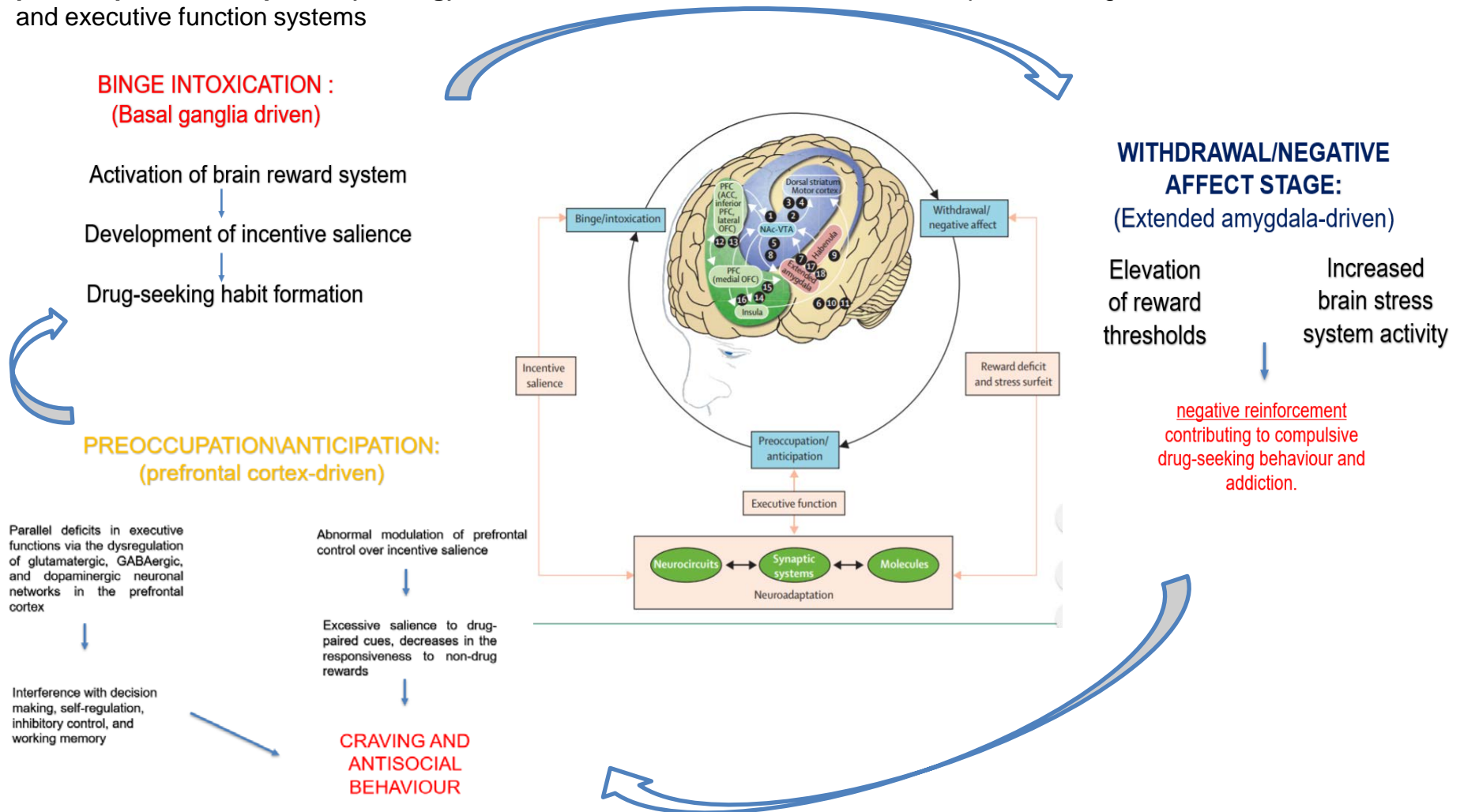




# Neurobiology of addiction: a neurocircuitry analysis

George F Koob, Nora D Volkow

Addiction can be conceptualised as a three-stage, recurring cycle—**binge/intoxication, withdrawal/negative affect, and preoccupation/anticipation (craving)**—that worsens over time and involves neuroplastic changes in the brain reward, stress, and executive function systems





# Similarities and Differences between Pathological Gambling and Substance Use Disorders: A Focus on Impulsivity and Compulsivity

Robert F. Leeman<sup>\*,1</sup> and Marc N. Potenza<sup>1,2</sup>

<sup>1</sup>Department of Psychiatry, Yale University School of Medicine

<sup>2</sup>Departments of Psychiatry, Neurobiology and Child Study Center, Yale University School of Medicine

Psychopharmacology (2012) 219:469–490

Primary construct	PG results	SUD results: similarities/differences with PG
Response impulsivity	PG groups exhibit more commission errors than do controls on go/no-go tasks. PG groups demonstrate longer stop-signal reaction times on stop-signal task than do controls but also negative and qualified findings.	SUD groups also exhibit more commission errors than do controls. SUD groups also demonstrate longer stop-signal reaction times on stop-signal task than do controls.
Choice impulsivity (delay discounting)	PG groups discount delayed rewards to a greater extent than do controls. PD patients with ICDs discount delayed rewards to a greater extent than patients without ICDs.	SUD groups also discount delayed rewards to a greater extent than do controls.
Reflection impulsivity	PG groups demonstrate greater difficulty with reflection than do controls.	SUD groups also demonstrate greater difficulty with reflection than do controls.
Attention and working memory	Lack of strong evidence that attention and working memory are compromised in PG.	SUD groups demonstrate greater difficulties with attention and working memory than do controls.
Response perseveration compulsivity	Most findings suggest greater response perseveration in PG groups compared with controls.	Some findings also suggest greater response perseveration in SUD groups than in controls but several negative findings as well.
Risk/reward decision-making	PG groups draw from disadvantageous decks more frequently than do controls on IGT and bet more and lose more money than do controls on CGT.	SUD groups also draw from disadvantageous decks more frequently than do controls on IGT, but evidence of some differences from PG. SUD and substance-using groups bet more and lose more than do controls on CGT, but negative findings as well.



# Similarities and Differences between Pathological Gambling and Substance Use Disorders: A Focus on Impulsivity and Compulsivity

Robert F. Leeman<sup>\*,1</sup> and Marc N. Potenza<sup>1,2</sup>

<sup>1</sup>Department of Psychiatry, Yale University School of Medicine

<sup>2</sup>Departments of Psychiatry, Neurobiology and Child Study Center, Yale University School of Medicine

Psychopharmacology (2012) 219:469–490

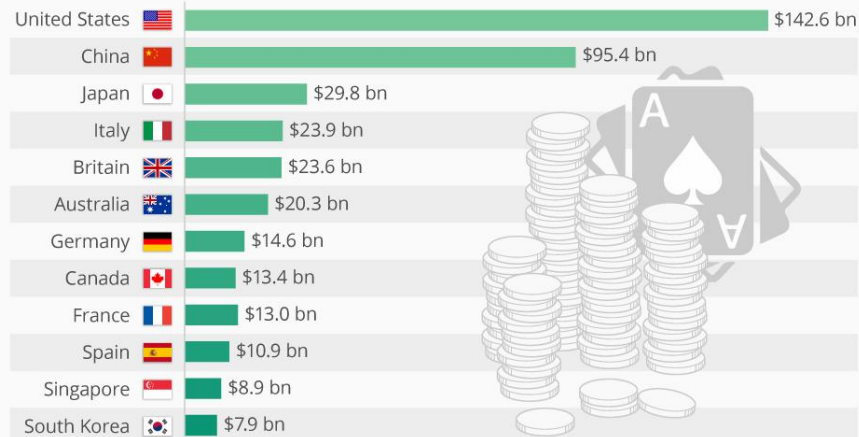
Brain region/structure	PG results	SUD: similarities/differences with PG
Frontal cortical regions	<p><i>Response impulsivity tasks:</i> PG/problem gamblers demonstrate less activity than do controls.</p> <p><i>Compulsivity tasks:</i> PG/problem gamblers demonstrate less activity than do controls. Lesion studies suggest vmPFC and dlPFC are important for task performance.</p> <p><i>Risk/reward tasks:</i> PG/problem gamblers demonstrate less activity than do controls. In PD, less activity among those with ICDs, greater activity in those without ICDs.</p>	<p>SUD/substance users also demonstrate less activity than controls.</p> <p>Smokers also demonstrate less activity than do controls.</p> <p>Most findings also suggest less activity in SUD groups than in controls.</p>
Striatum	<p><i>Baseline:</i> Limited results have been variable regarding D2-like receptor availability in PG. Limited evidence suggests dorsal hyperactivity.</p> <p><i>Impulsivity and compulsivity tasks:</i> Limited findings suggest no differences between PG and controls.</p> <p><i>Risk/reward tasks:</i> In PG, less ventral activity than in controls and association with impulsivity. Some evidence of elevated dorsal activity in PG. Findings more variable in PD studies.</p>	<p>Reduced D2-like receptor availability in SUD/substance users. Dorsal hyperactivity in SUD also.</p> <p>Limited findings suggest no differences between substance users and controls.</p> <p>Some similar findings of diminished ventral activity in SUD/substance users with similar associations with impulsivity (particularly in alcoholism), but opposing findings of elevated activity as well.</p>
Anterior cingulate cortex (ACC)	<p>Findings that “loss chasing” is associated with elevated activity in healthy adults suggest a role in gambling.</p>	<p>Associated with risky decision-making in SUDs.</p>
Insula	<p>Activated by healthy adults and occasional gamblers during gambling tasks and by healthy adults in response to “near misses” during gambling tasks.</p>	<p>Activated in response to reward by substance users.</p>
White matter integrity	<p>PG reduced FA values in the corpus callosum.</p>	<p>Poor white matter integrity observed diffusely both in heavy substance users and in SUDs</p>

# Gambling: prevalenza e fattori di rischio



## The Countries With The Biggest Annual Gambling Losses

Largest gambling losses by country in 2014 (in billion U.S. dollars)



Sources: The Economist, H2 Gambling Capital, Thomson Reuters

Forbes statista

## Problem gambling worldwide: An update and systematic review of empirical research (2000–2015)

FILIPA CALADO\* and MARK D. GRIFFITHS

Europe: 0,12 – 3,4 %

US: 0,42 – 5,42 %

Worldwide: 0,12 – 5,8%

**Fonte:** The Economist, Sep. 2nd 2015, *digital editions*.

- 60 – 90% della popolazione generale ha sperimentato almeno una volta nella vita un gioco d'azzardo
- Meno del 10% sviluppa un Problem gambling
- Una piccola percentuale un Gambling disorder



## RAPPORTI ISTISAN 18|5

**18 milioni d'italiani hanno giocato una somma di denaro almeno negli ultimi 12 mesi; di questi oltre 5 milioni sono adolescenti e giovani adulti (15-34 anni)**

**Il 26,5% (pari a circa 13.435.000) si è dedicata al gioco d'azzardo in modo "sociale", con differenze significative tra maschi e femmine (rispettivamente 30,2% vs 23,1%).**

**Meno del 5% dei giocatori ha un comportamento definibile "a basso rischio" (circa 2 milioni di residenti), il 2,8% "a rischio moderato" (1.400.000 residenti) e per il 3 % è "problematico" (circa 1 milione e mezzo di abitanti);**

**Tra gli uomini è maggiore la prevalenza di giocatori problematici o a rischio moderato rispetto alle donne (6% vs 4%)**

**Tra i giocatori problematici la fascia di età 50 – 64 anni è la più rappresentata (35,5%).**



Il giocatore patologico italiano è prevalentemente maschio (86,4%), di mezza età, vive nelle regioni centro-meridionali, ha un diploma di scuola media superiore, status socio-economico medio basso. Fa spesso abbondante uso di alcol (56,4% a rischio di alcolismo) e di tabacco (34,6% forti fumatori). Gioca prevalentemente alle slot machine o video lottery o al gratta e vinci.

il 29,2%(si stimano 670.144 soggetti) della popolazione minorile studentesca (14-17) dichiara di aver praticato gioco d'azzardo almeno una volta nei 12 mesi antecedenti l'intervista

I giocatori a rischio sono 3,5% (stimati in 80.326 studenti), i giocatori problematici sono il 3% (stimati in 68.850 studenti).

La prevalenza maggiore di giocatori problematici è al sud (4,4% vs 3% di media nazionale), a seguire le Isole (3% in linea con la media nazionale), il Centro (2,9% di poco inferiore alla media nazionale), il Nord Ovest (2,1%) e il Nord Est (1,8%)



Full length article

### Impact of Internet gambling on problem gambling among adolescents in Italy: Findings from a large-scale nationally representative survey

Natale Canale <sup>a</sup>, Mark D. Griffiths <sup>b</sup>, Alessio Vieno <sup>a</sup>, Valeria Siciliano <sup>c</sup>,  
Sabrina Molinaro <sup>c,\*</sup>

Computers in Human Behavior 57 (2016) 99–106

**Aims:** The primary aim of the present study was to understand the impact of online gambling on gambling problems in a large-scale nationally representative sample of Italian youth, and to identify and then further examine a subgroup of online gamblers who reported higher rates of gambling problems.

**Design:** Data from the ESPAD<sup>®</sup>Italia2013 (European School Survey Project on Alcohol and Other Drugs) Study were used for analyses of adolescent Internet gambling.

**Setting:** Self-administered questionnaires were completed by a representative sample of high school students, aged 15–19 years.

**Participants:** A total of 14,778 adolescent students.

## Online gambling as risk factor for Problem Gambling

Of the 14,778 participants who completed the survey, 82.9% were classified as non-problem gamblers, 10.6% were classified as at-risk gamblers, and 6.5% were classified as problem gamblers.

The overall problem gambling prevalence rate among Italian non-online gamblers was 4.0%. **In comparison, the rate among online gamblers was five times higher at 21.9%**



# Risk Factors for Problematic Gambling: A Critical Literature Review

Agneta Johansson · Jon E. Grant · Suck Won Kim ·  
Brian L. Odlaug · K. Gunnar Götestam



Domain	Risk factor	No. studies	Level <sup>a</sup>
<b>1. Demographics</b>			
1.1 Age	Low age	4	1
1.2 Gender	Male	4	1
1.3 Education	Low education	1	3
1.4 Marital status	Married/unmarried	2	
1.5 Income	Low income	2	
1.6 Employment	Unemployed	2	2
1.7 Social welfare status	On social welfare	1	2
1.8 Residence	Large city	1	2
1.9 Acad achievement	Low achievement	2	2
1.10 Immigrant, ethnic grp	Immigrant, foreign	3	2
<b>2. Physiological/biological fact</b>			
2.1 Heart rate and arousal	Increased during play	2	2
2.2 Transmitter activity	Increased	3	2
2.3 Genetic studies	DA rec increased	4	2
<b>3. Cognitive distortions</b>			
3.1 Erroneous perceptions	Bias	4	2
3.2 Illusion of control	Illusion	9	1
<b>4. Varia</b>			
4.1 Availability of plays	High	3	1
4.2 Sensory characteristics	Yes	7	1
4.3 Schedules of reinforcement	Type	–	1
4.4 Age of onset	Early	2	2
4.6 Rapid onset	Short latency	1	2
<b>5. Comorbidity &amp; concurrent symptoms</b>			
5.1 Depression	Yes	3	2
5.3 Anxiety	Yes	1	2
5.4 OCD	Yes	6	1
5.5 Alcohol	Yes	3	1
5.6 Other drugs	Yes	5	1
5.7 Personality disorders	Yes	2	2
<b>6. Personality symptoms and characteristics</b>			
6.1 Coping styles	Low	1	2
6.2 Impulsivity	High	1	2
6.3 Hyperactivity (ADHD)	0	0	
6.4 Sensation seeking	High	2	2
6.5 Delinquency & illegal acts	Yes	5	1

Well established risk factors included:

- demographic variables (age, gender)
- cognitive distortions (erroneous perceptions, illusion of control)
- sensory characteristics
- schedules of reinforcement
- comorbid disorders (OCD, drug abuse)
- delinquency/ illegal acts.

Review

## Early risk and protective factors for problem gambling: A systematic review and meta-analysis of longitudinal studies

N.A. Dowling<sup>a,b,c,\*</sup>, S.S. Merkouris<sup>a</sup>, C.J. Greenwood<sup>a</sup>, E. Oldenhof<sup>a</sup>, J.W. Toumbourou<sup>a</sup>, G.J. Youssef<sup>a</sup>

Early risk and protective factors (in childhood, adolescence or young adulthood) longitudinally associated with the subsequent development of gambling problems.



**Frequency of alcohol use, antisocial behaviours** (including deviancy and theft), **cannabis use, depressive symptoms, illicit drug use, impulsivity, male gender, number of gambling activities in the previous 12 months, peer antisocial behaviours** (including deviancy), **poor academic performance, sensation seeking, tobacco use, and violence** reported at the first evaluation were significantly positively associated with subsequent problem gambling

Parent supervision and socio-economic status reported at the first evaluation were significantly negatively associated with subsequent problem gambling







# Tipologie di giocatore patologico

## Sottotipi di Dannon



### Sottotipo ossessivo-compulsivo:

sembra che vi ricadano in preponderanza di donne che tendono a presentare l'insorgenza dei sintomi ad età avanzata. Queste pazienti possono sviluppare comportamenti patologici di gioco in risposta a un trauma psicologico legato alla separazione e/o perdita (divorzio, o la "sindrome del nido vuoto"), tendono a preferire slot machine, lotterie e gratta e vinci. Frequente la comorbidità con disturbi affettivi e ansiosi

### Sottotipo impulsivo:

giovani uomini adulti che con elevati livelli di comportamento a rischio e scarsa capacità di pianificare in anticipo. Questi individui tendono ad avere sintomi più severi rispetto ad altri sottotipi e tendono a perdere ingenti somme di denaro in un'unica sessione di gioco. Frequente comorbidità con ADHD, disturbi da discontrollo degli impulsi, disturbo da uso di sostanze.

### Sottotipo addictive:

Comprenderebbe il gruppo più numeroso di giocatori patologici. Si caratterizza generalmente per un quadro di moderata gravità. Diversamente dal sottotipo ossessivo compulsivo, il gambler addictive tende a giocare ripetutamente piccole somme. Si differenzia altresì dal sottotipo ossessivo compulsivo per una maggior rappresentanza di individui di sesso maschile, maggiore comorbidità con disturbi da uso di alcool



## Sottotipi di Blaszczynski e Nower



### Behaviorally conditioned problem gamblers:

giocatori che non presentano o presentano minimi livelli di psicopatologia preesistente che sviluppano la dipendenza in virtù degli effetti del condizionamento classico o operante. Una volta che la dipendenza si è instaurata, possono comparire sintomi depressivi o di ansia ma come conseguenza degli effetti negativi del gioco (perdite consistenti di denaro, rapporti amicali e familiari problematici, ecc.).

### Emotionally vulnerable problem gamblers:

giocatori per cui il gioco d'azzardo rappresenta una forma di fuga emozionale in grado di modulare l'umore e soddisfare specifici bisogni psicologici. Questo sottogruppo manifesta alti livelli di psicopatologia pregressa, come depressione, ansia, dipendenza da sostanze e strategie di *coping* disadattive, oltre che esperienze di sviluppo negative, eventi di vita avversi e familiarità con il gioco d'azzardo

### Antisocial impulsivist problem gamblers:

quelli per cui il gioco d'azzardo rappresenta una forma di fuga emozionale in grado di modulare l'umore e soddisfare specifici bisogni psicologici. Questo sottogruppo manifesta alti livelli di psicopatologia pregressa, come depressione, ansia, dipendenza da sostanze e strategie di *coping* disadattive, oltre che esperienze di sviluppo negative, eventi di vita avversi e familiarità con il gioco d'azzardo

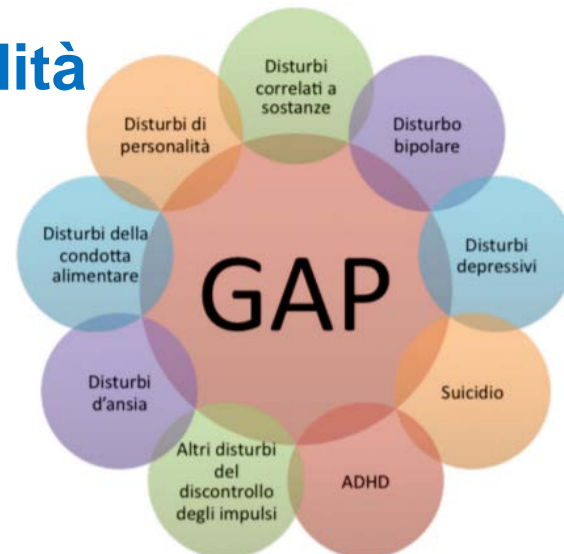
# Gioco d'azzardo patologico e comorbidità psichiatrica: una stima del fenomeno

## Addiction

© 2011 The Authors, Addiction © 2011 Society for the Study of Addiction

### Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys

Felicity K. Lorains, Sean Cowlshaw & Shane A. Thomas

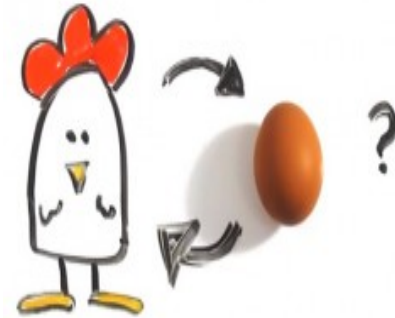


Comorbid disorder	Past year/life time prevalence (Summary effect)
Alcohol Use Disorder	28.1 %
Major Depression	23.1%
Bipolar Disorder	9.8%
Any Mood disorder	37.9%
Substance Use Disorder	57,5%
Nicotine Addiction	60.1%
Any anxiety disorder	37,4%
Antisocial personality disorder	28.8%
Any personality disorder	35.2%

# Modelli interpretativi della comorbidità psichiatrica nel Gioco d'azzardo patologico



**GAP come fattore favorente l'insorgenza di quadri psicopatologici**



**GAP come quadro psicopatologico favorito da disturbi psichiatrici pre-esistenti**



**GAP e disturbi in comorbidità quale distinta manifestazione di un comune substrato psicobiologico di vulnerabilità**







## The prevalence and correlates of DSM-IV Pathological Gambling in the National Comorbidity Survey Replication

Ronald C. Kessler, PhD, Irving Hwang, MA, Richard LaBrie, EdD, Maria Petukhova, PhD, Nancy A. Sampson, BA, Ken C. Winters, PhD, and Howard J. Shaffer, PhD

	Prevalence <sup>1</sup>				Temporal priority in onset					
	%	(se)	OR <sup>2</sup>	(95% CI)	PG first		Other first		Same year	
					%	(se)	%	(se)	%	(se)
<b>I. Mood disorders</b>										
Major depressive disorder or dysthymia	38.6	(9.1)	2.5*	(1.1–5.7)	20.5	(10.6)	73.5	(11.1)	6.1	(5.8)
Bipolar disorder <sup>3</sup>	17.0	(7.1)	4.6*	(1.5–14.2)	29.2	(16.4)	46.3	(21.5)	24.5	(14.4)
Any mood disorder	55.6	(9.7)	3.7*	(1.5–9.0)	23.1	(9.0)	65.1	(11.7)	11.7	(6.9)
<b>II. Anxiety disorders</b>										
Panic disorder	21.9	(6.7)	4.9*	(2.2–10.8)	10.7	(9.5)	81.8	(16.1)	7.5	(6.6)
Generalized anxiety disorder	16.6	(7.0)	2.8*	(1.0–7.9)	9.3	(9.4)	79.8	(14.3)	10.9	(10.8)
Phobia	52.2	(8.8)	3.2*	(1.4–7.2)	0.0	(-)	100.0	(0.0)	0.0	(-)
PTSD	14.8	(7.8)	2.3	(0.6–8.4)	49.5	(27.3)	50.5	(27.3)	0.0	(-)
Any anxiety disorder <sup>4</sup>	60.3	(9.1)	3.1*	(1.4–7.0)	13.4	(7.3)	82.1	(7.9)	4.5	(4.3)
<b>III. Impulse-control disorders</b>										
ADHD	13.4	(8.1)	1.8	(0.4–7.3)	0.0	(-)	100.0	(0.0)	0.0	(-)
Oppositional-defiant disorder	15.4	(6.8)	1.9	(0.7–5.7)	0.0	(-)	100.0	(0.0)	0.0	(-)
Conduct disorder	24.9	(8.2)	3.1*	(1.2–7.8)	0.0	(-)	100.0	(0.0)	0.0	(-)
Intermittent explosive disorder	27.0	(9.0)	3.1*	(1.1–8.3)	0.0	(-)	100.0	(0.0)	0.0	(-)
Any impulse control disorder	42.3	(10.5)	2.2	(0.9–5.3)	0.0	(-)	100.0	(0.0)	0.0	(-)
<b>IV. Substance use disorders</b>										
Alcohol or drug abuse	46.2	(10.7)	4.5*	(1.8–11.0)	18.7	(10.0)	70.9	(11.3)	10.4	(7.0)
Alcohol or drug dependence	31.8	(9.4)	5.8*	(2.4–14.4)	44.3	(16.7)	55.7	(16.7)	-	(-)
Nicotine dependence	63.0	(9.0)	3.9*	(1.7–8.5)	61.3	(11.5)	33.0	(10.8)	5.7	(4.2)
Any substance use disorder	76.3	(7.9)	5.5*	(2.3–13.5)	36.2	(12.2)	57.4	(11.6)	6.4	(4.5)

Prevalence <sup>1</sup>	Temporal priority in onset									
	%	(se)	OR <sup>2</sup>	(95% CI)	PG first		Other first		Same year	
					%	(se)	%	(se)	%	(se)
<b>V. Number of disorders</b>										
Any disorder	96.3	(2.6)	17.4 <sup>‡</sup>	(4.2–73.0)	23.5	(10.7)	74.3	(10.5)	2.2	(2.2)

**In most of cases onset of Pathological Gambling is preceded by the comorbid disorder**



# Gambling and the Onset of Comorbid Mental Disorders: A Longitudinal Study Evaluating Severity and Specific Symptoms

Journal of Psychiatric Practice Vol. 20, No. 3 May 2014

Graded or dose-response relationship between different levels of gambling and the onset of comorbid psychopathology

**Table 4.** Association between gambling-related symptoms and the onset of mood, anxiety, or substance use disorders (adjusted odds ratio and 95% confidence interval) in participants of the NESARC

<i>Gambling-related symptoms</i>	<i>Any mood, anxiety, or substance use disorder</i>	<i>Any mood disorder</i>	<i>Any anxiety disorder</i>	<i>Any substance use disorder</i>
Escape	1.82 (1.46–2.27) ***	1.98 (1.58–2.47) ***	2.05 (1.68–2.49) ***	1.87 (1.66–2.11) ***
Control	2.24 (1.74–2.88) ***	3.86 (3.00–4.97) ***	3.36 (2.33–4.85) ***	2.01 (1.71–2.36) ***
Tolerance	1.74 (1.45–2.08) ***	1.90 (1.49–2.41) ***	2.21 (1.85–2.64) ***	1.99 (1.62–2.44) ***
Preoccupation	1.62 (1.43–1.82) ***	1.64 (1.38–1.95) ***	1.83 (1.63–2.05) ***	1.56 (1.31–1.87) ***
Chase	1.36 (1.12–1.66) **	1.86 (1.51–2.29) ***	1.56 (1.30–1.87) ***	1.46 (1.19–1.79) ***
Relationship	2.75 (2.64–2.87) ***	1.69 (1.23–2.33) **	2.69 (2.03–3.58) ***	1.61 (1.42–1.84) ***
Withdrawal	3.16 (2.07–4.83) ***	4.34 (3.24–5.95) ***	2.74 (1.54–4.86) ***	1.90 (1.22–2.95) **
Lies	1.84 (1.55–2.17) ***	2.46 (1.93–3.13) ***	1.27 (0.84–1.94)	2.09 (1.78–2.46) ***
Bailout	1.05 (0.45–2.47)	3.85 (2.04–7.26) ***	1.25 (0.34–4.58)	1.68 (1.06–2.67) *

The top three criteria associated with the onset of any mood, anxiety, or substance-related disorder were: **the withdrawal, relationship and control-related criteria.**

The **withdrawal and control criteria** were among the top two criteria associated with any mood disorder and any anxiety disorder



# Problem Gambling and Alcohol Use disorder



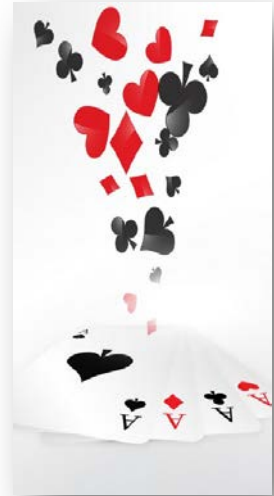
1) **Alcohol problems may contribute to PG:** when gambling under the influence of alcohol people are generally less inhibited, and display greater risk-taking and persistence; drinking may increase the risk of the likelihood of people spending more than they intended.



2) **PG causes alcohol problems:** gambling exposes people to environments where alcohol is readily available, and that stress associated with gambling-related losses might encourage excessive drinking as a coping mechanism.



3) **PG and Alcohol problems share common underlying neurobiological and psychobiological factors.**



# Possibili dinamiche d'interazione nella comorbidità tra GAP e dipendenza da sostanze

«Questa complessa interazione tra modalità di abuso si può presentare attraverso due differenti fenomeni: la **sostituzione o la sovrapposizione**. La sostituzione è tipica di “ex tossicodipendenti o ex alcolisti” i quali, a seguito di un percorso di trattamento “sintomatico” o di una remissione spontanea (Self Recovery), pur astenendosi dall'uso di sostanze hanno il forte rischio di intraprendere condotte legati ad altre addiction come il gioco d'azzardo patologico. Possibile è anche ritrovare nella anamnesi di tossicomani o alcolisti il percorso inverso che vede un esordio di gioco problematico ed il successivo passaggio all'uso di sostanze. Non raramente si presentano poi momenti diversi in cui è prevalente l'uno o l'altro comportamento, mentre in altri casi, oppure in fasi differenti per lo stesso soggetto, non si tratta di una migrazione tra una o l'altra forma di dipendenza, ma di un incrocio o una sovrapposizione.



In tal caso l'uso di sostanze e il gioco appaiono contemporaneamente innescando meccanismi di reciproca interazione e di escalation. In questo senso il setting del gioco costituisce un terreno molto favorevole: prima della giocata l'alcol, la cocaina, la nicotina possono avere un effetto disinibitorio; nella sessione di gioco la sostanza può, invece, svolgere una funzione defaticante, oppure ridurre i freni inibitori o i sensi di colpa; anche quando il gioco finisce la sostanza si trova a svolgere una importante funzione di modulazione dello stato d'animo, amplificando l'euforia della vincita o lenendo l'angoscia della perdita»



## Psychiatric co-morbidity in problem and pathological gamblers: Investigating the confounding influence of alcohol use disorder

Reza Abdollahnejad, Paul Delfabbro \*, Linley Denson



## Alcohol use disorder as confounding factor accounting for comorbidity?

A sample of 140 community-recruited regular gamblers completed a number of measures including the Mini International Neuropsychiatric Interview, the Personality Diagnostic Questionnaire, NORC DSM-IV Screen Self-Administered and the Alcohol Use Disorders Identification Test.

Comparisons showed that most psychiatric conditions (and in particular personality disorders) were significantly more prevalent in those with a dual diagnosis, followed by problem gamblers and then by those with neither disorder

Regular gamblers with dual diagnosis were particularly likely to have experienced Cluster B personality disorders. Those who met the criteria for PG but not AUD were generally more similar in relation to symptomatology consistent with depressive, avoidant or obsessive personality traits ( Cluster C)

# Impact of comorbid AUD\SUD on gambling treatment.

- ✓ Comorbid Alcohol\Substance Use disorder impacts gambling outcomes such that those with no lifetime history of DUD are 2.6 times more likely to achieve a 3-month period of gambling abstinence compared to those with lifetime DUD
- ✓ Even among those with lifetime AUD/DUD, a majority (58%) of those seeking gambling treatment are actively using alcohol or illicit substances in the year prior to admission for gambling treatment.
- ✓ At-risk alcohol use (more than 14 standard drinks/week or 4/day for males; more than 7 drinks/week or 3 drinks/day for females) does appear to decrease during gambling treatment
- ✓ A current alcohol\substance use disorder diagnosis is associated with a significant higher rate of relapse compared to gamblers without comorbid SUD



Rash CJ, Weinstock J, Van Patten R. A review of gambling disorder and substance use disorders. *Subst Abuse Rehabil.* 2016;7:3-13. Published 2016 Mar 17. doi:10.2147/SAR.S83460

Hodgins DC, el-Guebaly N. The influence of substance dependence and mood disorders on outcome from pathological gambling: five-year follow-up. *J Gambli Stud.* 2010;26(1):117-127

# Depression and problem gambling



## Lifetime comorbidity GD – MDD

38,6 % (Community sample survey)

Kessler RC, Hwang I, LaBrie R, et al. DSM-IV pathological gambling in the National Comorbidity Survey Replication. *Psychol Med.* 2008;38(9):1351-60.

23,1 % (Systematic review and meta-analysis of population surveys)

Lorains FK et al., Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys. *Addiction.* 2011 Mar;

54,3 % (Treatment – seeking problem gamblers)

Dowling NA et al., Prevalence of psychiatric co-morbidity in treatment-seeking problem gamblers: A systematic review and meta-analysis. *Aust N Z J Psychiatry.* 2015

## PROBLEM GAMBLING AND MDD SHARE COMMON BASIS

Reasons for high rates of depressive symptoms among those with gambling disorders may include a shared genetic predisposition for both a gambling disorder and major depression (e.g., Potenza et al. 2005), dysfunctional coping styles involving avoidance/escapism, impulsiveness, and reactive negative emotional states which are depleting (Getty et al. 2000) and the associated impact of negative consequences commonly linked to problem gambling

(Potenza et al., 2005, Getty et al., 2000)

**Etiological  
model of  
comorbidity**



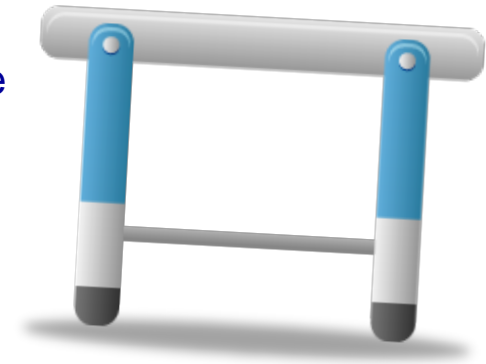
# Impact of comorbid depression on pathological gamblers

Severity of gambling disorder is significantly related to severity of comorbid depressive symptoms.

(Thomsen et al., 2010)

Depression severity has been associated with the persistence of gambling symptoms both during and post residential treatment

(Morefield, 2013)



Comorbid depressive symptoms increase the use of maladaptive coping strategies, are associated with longer time to achieve remission from gambling and are associated with higher risk of relapse

(Morefield, 2013, Hodgins et al. 2015)



# Bipolar disorder and problem gambling: a complex relationship



17,0 % (Community sample survey)

Kessler RC, Hwang I, LaBrie R, et al. DSM-IV pathological gambling in the National Comorbidity Survey Replication. *Psychol Med*. 2008;38(9):1351-60.

9,8 % (Systematic review and meta-analysis of population surveys)

Lorains FK, Cowlishaw S, Thomas SA. Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys. *Addiction*. 2011 Mar;106

8,8 % (Treatment – seeking problem gamblers)

Dowling NA, Cowlishaw S, Jackson AC, Merkouris SS, Francis KL, Christensen DR. Prevalence of psychiatric co-morbidity in treatment-seeking problem gamblers: A systematic review and meta-analysis. *Aust N Z J Psychiatry*. 2015;49(6):519-39.

**Significant difference in comorbidity prevalence rate between males and females (2:1)**

## Overlapping domains

Impulsivity  
Reward and behavioral sensitization  
Attentional deficits  
Impaired decision making skill  
Decreased judgement



Low hedonic capacity could represent an enduring trait of BD, also present during euthymic phase. Anhedonia plays an important role in substance dependence, both as part of withdrawal syndromes and as a relevant factor involved in relapse and appears to be relevant in GD

## Gambling problems in bipolar disorder in the UK: prevalence and distribution

Lisa Jones, Alice Metcalf, Katherine Gordon-Smith, Liz Forty, Amy Perry, Joanne Lloyd, John R. Geddes, Guy M. Goodwin, Ian Jones, Nick Craddock, and Robert D. Rogers

Br J Psychiatry. 2015 Oct;

Lifetime-ever clinical features of participants with bipolar disorder categorised according to risk of problem gambling

	Risk of problem gambling		U or $\chi^2$	P
	Moderate or severe (n = 67)	No or low risk (n = 568)		
Clinical features, n (%)				
DSM-IV diagnosis				
Bipolar disorder type 1	40 (60)	409 (72)	$\chi^2 = 4.382$	0.036*
Bipolar disorder type 2	27 (40)	159 (28)		
Polarity of first affective episode				
Depression	48 (84)	328 (76)	$\chi^2 = 1.945$	0.184
(Hypo)mania	9 (16)	104 (24)		
History of rapid cycling	20 (56)	125 (33)	$\chi^2 = 7.038$	0.010*
History of psychotic features	33 (62)	298 (62)	$\chi^2 = 0.000$	1.000
History of suicidal ideation or attempt	59 (94)	433 (79)	$\chi^2 = 7.604$	0.004**
History of alcohol misuse	35 (61)	225 (47)	$\chi^2 = 4.012$	0.050*
History of smoking	43 (72)	263 (52)	$\chi^2 = 8.029$	0.006**
History of non-prescription drug misuse	21 (32)	138 (26)	$\chi^2 = 1.262$	0.297
Clinical features: median (IQR, range)				
Age at onset of illness, years	17 (7, 8–43)	21 (11, 5–68)	U = 12192.0	<0.001***
Number of episodes of (hypo)mania	10 (16, 1–100)	6 (9, 1–100)	U = 14348.5	0.044*
Number of episodes of depression	8 (15, 1–100)	8 (16, 0–100)	U = 14922.0	0.335
GAS score				
Worst episode of mood elevation	45 (20, 10–60)	33 (30, 9–65)	U = 13758.0	0.004**
Worst episode of depression	40 (15, 18–55)	40 (12, 3–71)	U = 15308.5	0.663

635 BD patients

Stratification on the basis of problem gambling

Moderate or severe risk of problem gambling was associated with:

**BD TYPE 2 vs BD TYPE 1**

Younger age at onset of BD

History of rapid cycling

History of alcohol misuse

History of smoking

Suicidal attempts



## Suicidal events among pathological gamblers: The role of comorbidity of axis I and axis II disorders

Anja Bischof<sup>a,\*</sup>, Christian Meyer<sup>b</sup>, Gallus Bischof<sup>a</sup>, Ulrich John<sup>b</sup>, Friedrich Martin Wurst<sup>c</sup>, Natasha Thon<sup>c</sup>, Michael Lucht<sup>d</sup>, Hans Joergen Grabe<sup>d</sup>, Hans-Juergen Rumpf<sup>a</sup>

### Problem gambling severity as independent risk factor for suicidal ideation and suicidal attempts

FACTORS SIGNIFICANTLY INCREASING THE RISK FOR SUICIDAL IDEATION AND/OR ATTEMPTS AFTER MULTIVARIATE MULTINOMIAL REGRESSION:

- ✓ **GENDER FEMALE (Suicidal attempts)**
- ✓ **EARLIER ONSET OF GAMBLING ADDICTION (Suicidal ideation)**
- ✓ **ANY COMORBID MOOD DISORDER (Suicidal ideation and attempts)**
- ✓ **ANY COMORBID SUBSTANCE USE DISORDER (Suicidal ideation)**
- ✓ **CLUSTER B PERSONALITY DISORDER (Suicidal attempts)**



Multivariate multinomial regression analysis of risk factors for suicidal ideation and suicide attempts .

	No event vs. suicidal ideation <sup>1</sup>			No event vs. suicide attempt <sup>1</sup>			Suicidal ideation vs. suicide attempt <sup>1</sup>		
	RRR <sup>2</sup>	95%-CI	p <sup>3</sup>	RRR <sup>2</sup>	95%-CI	p <sup>3</sup>	RRR <sup>2</sup>	95%-CI	p <sup>3</sup>
Number of lifetime DSM-IV criteria	1.20	0.98–1.48	0.078	0.93	0.72–1.19	0.548	0.77	0.59–1.00	<b>0.050<sup>4</sup></b>
Age onset of first symptom	0.96	0.93–0.99	0.009	0.97	0.93–1.00	0.056	1.01	0.97–1.04	0.752
Substance use disorders exc. tobacco	1.73	1.02–2.94	0.042	1.29	0.68–2.47	0.437	0.75	0.39–1.42	0.372
Mood disorders	5.14	2.91–9.07	< 0.001	11.92	4.70–30.26	< 0.001	2.32	0.86–6.25	0.096
Anxiety disorders	1.33	0.77–2.30	0.309	2.24	1.16–4.34	0.017	1.69	0.89–3.19	0.108
Cluster B personality disorders	0.78	0.39–1.55	0.479	2.40	1.13–5.10	0.023	3.08	1.48–6.40	0.003
Cluster C personality disorders	1.52	0.79–2.93	0.212	1.20	0.56–2.58	0.641	0.79	0.39–1.60	0.514
Intense treatment utilization	1.46	0.79–2.72	0.229	6.44	2.56–16.17	< 0.001	4.40	1.76–11.02	0.002
Gender female	1.79	0.84–3.80	0.130	3.58	1.56–8.19	0.003	2.00	0.92–4.36	0.082

\* n = 430 due to missing data.

<sup>1</sup> First category is reference category.

<sup>2</sup> Exp (B) is interpreted in terms of relative risk ratios (RRRs). RRRs are adjusted for age, gender, and recruitment channels.

<sup>3</sup> P-value indicates if the single comparison is significant.

<sup>4</sup> P = 0.049543.

# Problem Gambling and personality disorders

Despite the heterogeneity of the results of the prevalence studies, Cluster b personality disorder are those most frequently comorbid with Gambling disorder, followed by Cluster C personality disorder

Prevalence of any Personality disorder in comorbidity: 35 - 43%

## CLUSTER B PERSONALITY DISORDER

ANTISOCIAL PERSONALITY DISORDER

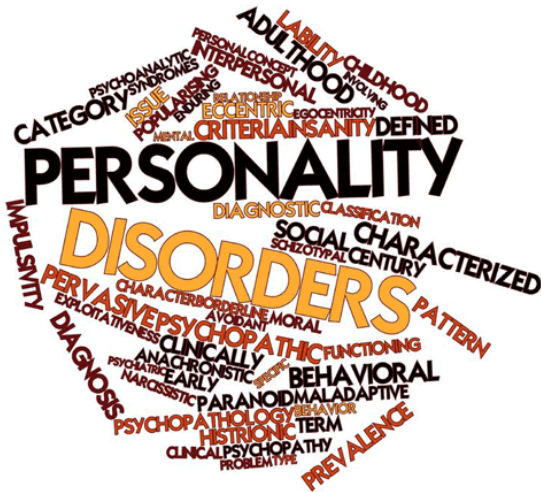
BORDERLINE PERSONALITY DISORDER

NARCISISTIC PERSONALITY DISORDER

## CLUSTER C PERSONALITY DISORDER

OBSESSIVE COMPULSIVE DISORDER

EVITANT DISORDER



Pathological gamblers with a personality disorder present with more clinically severe symptoms of gambling



# Personality and character dimensions in problem gamblers



*Addiction*. 2016 Aug;111(8):1428-35.

## Problem gambling and the five-factor model of personality: a large population-based study

Geir Scott Brunborg<sup>1,2</sup>, Daniel Hanss<sup>1,3</sup>, Rune Aune Mentzoni<sup>1,5</sup>, Helge Molde<sup>4</sup> & Ståle Pallesen<sup>1</sup>



Problem gamblers compared to recreational gamblers:  
significant higher score on Neuroticism, **lower score on  
Conscientiousness and Agreeableness**

- Pathological Gamblers show significant higher **Novelty Seeking (NS)** values and lower **Self-directedness and Cooperativeness** score compared to non problem gamblers and controls

Janiri L, Martinotti G, Dario T, Schifano F, Bria P. The Gamblers' Temperament and Character Inventory (TCI) personality profile. *Subst Use Misuse*. 2007;42(6):975-84

- PG and their first degree relatives have significant higher levels of **Impulsiveness** and significant higher score for **Novelty Seeking** along with a higher rate of comorbid personality disorder (especially cluster B)

Black DW, Coryell WH, Crowe RR, Shaw M, McCormick B, Allen J. Personality Disorders, Impulsiveness, and Novelty Seeking in Persons with DSM-IV Pathological Gambling and Their First-Degree Relatives. *J Gambl Stud*. 2015 Dec

- Higher **Novelty seeking** and lower **Self-directedness** are related to greater severity of pathological gambling and earlier onset of PG

Jimenez-Murcia S, A´lvarez-Moya EM, Stinchfield R, et al. Age of onset in pathological gambling: clinical, therapeutic and personality correlates. *J Gambl Stud* 2010; 26:235–248



# Antisocial personality disorders and problem gambling



Behaviorally conditioned gamblers

**Antisocial impulsivity personality gamblers**

Marked risk-acceptance personality traits: sensation-seeking, low behavioral self-control, and **impulsivity**

Emotionally vulnerable gamblers

Problem gamblers with co-morbid antisocial personality disorder have an earlier onset of gambling behaviours, greater problem gambling severity, medical and substance use difficulties, higher levels of offending behaviour, and higher levels of paranoid ideation, somatisation, phobic anxiety and psychological distress than problem gamblers without antisocial personality disorder



## Gambling and violence in a nationally representative sample of UK men

Amanda Roberts , Jeremy Coid, Robert King, Raegan Murphy, John Turner, Henrietta Bowden-Jones, Katie Palmer Du Preez, Jason Landon

Volume 111, Issue 12  
December 2016

### Cross sectional survey on a total of 3025 men aged 18-65



Problem gambling and probable pathological gambling were associated with **increased odds of the perpetration of violence** [adjusted odd ratios (AOR) = 3.09, confidence interval (CI) = 1.90–5.00 and 4.09, CI = 2.76–6.30, respectively] and a range of other behaviours, **such as using a weapon** (AORs = 4.93, CI = 2.52–9.63 and 6.33, CI = 3.52–11.38) and **the perpetration of intimate partner violence (AOR = 9.80, CI = 2.45–39.04)**. The results were attenuated when adjusted for comorbid mental illness and impulsivity, but remained statistically significant.



*Journal of Behavioral Addictions* 7(3), pp. 806–813 (2018)

## Problem gambling and family violence: Findings from a population-representative study

NICKI A. DOWLING<sup>1,2\*</sup>, CARRIE EWING<sup>1</sup>, GEORGE J. YOUSSEF<sup>1</sup>, STEPHANIE S. MERKOURIS<sup>1</sup>, AINO SUOMI<sup>3</sup>, SHANE A. THOMAS<sup>4,5</sup> and ALUN C. JACKSON<sup>2</sup>

### Population-representative sample of 4,153 Australian adults

Moderate-risk (MR)/problem gamblers had a **2.73-fold increase in the odds of experiencing FV victimization** (21.3%; 95% CI: 13.1–29.4) **relative to nonproblem gamblers** (9.4%; 95% CI: 8.5–10.4). **They also had a 2.56-fold increase in the odds of experiencing FV perpetration** (19.7%; 95% CI: 11.8–27.7) relative to non-problem gamblers (9.0%; 95% CI: 8.0–10.0). **Low-risk gamblers also had over a twofold increase in the odds of experiencing FV victimization** (20.0%; 95% CI: 14.0–26.0) **and perpetration** (19.3%; 95% CI: 13.5–25.1). These relationships remained robust for low-risk gamblers, but were attenuated for MR/problem gamblers, after adjustment for substance use and psychological distress





# Adult ADHD e Problem Gambling: a hidden comorbidity

Few prevalence studies plus underrecognition of Adult ADHD:

- the prevalence of adult ADHD in problem gamblers is estimated ~ 10 – 25%
- higher prevalence rates in problem gamblers treatment seeking
- Onset of Problem gambling generally in late adolescence
- Higher prevalence of hyperactivity/impulsivity subtype in adolescent with gambling behaviours compared to inattention subtype

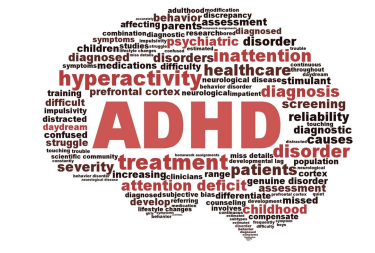


## Gambling Disorders

Preoccupation  
Escape  
Lying  
Loss of Control  
Risking Relationships  
Chasing Behaviors  
Bailouts

## ADHD

Hyperfocusing  
Distractibility / Daydreaming  
Lying  
Impulse Control Problems  
Lack of Future Directed Thinking; Risk-Taking, Excitement-Seeking  
Being Rescued





## Gambling behaviors and psychopathology related to Attention-Deficit/Hyperactivity Disorder (ADHD) in problem and non-problem adult gamblers

Melina Fatseas<sup>a,b,\*</sup>, Jean-Marc Alexandre<sup>a,b</sup>, Jean-Luc Vénisse<sup>c,d</sup>, Lucia Romo<sup>e,f,g,1</sup>, Marc Valleur<sup>h</sup>, David Magalon<sup>i</sup>, Isabelle Chéreau-Boudet<sup>j</sup>, Amandine Luquiens<sup>k</sup>, Alice Guilleux<sup>d</sup>, Groupe JEU<sup>a,2</sup>, Gaëlle Challet-Bouju<sup>c,d</sup>, Marie Grall-Bronnec<sup>c,d</sup>

Is a comorbid ADHD associated with specific severity patterns in terms of gambling behavior, psychopathology and personality traits in problem gamblers?



Low socio-economic status

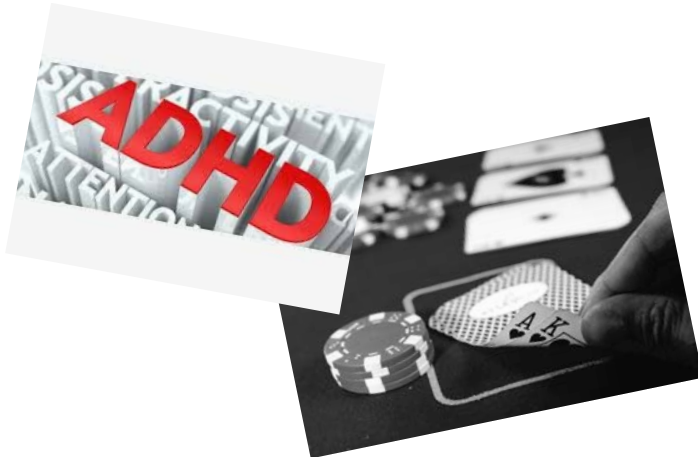
Higher prevalence of unemployment status

Younger age at PG onset

Higher severity of gambling behaviours

Higher rate of psychiatric comorbidities

Higher score on scale assessing cognitive distortions



# Gambling behaviour in Parkinson's Disease

European Journal of Neuroscience, 45, 67–72

---

Pathological gambling in Parkinson's disease: what are the risk factors and what is the role of impulsivity?

---

Petra Heiden, Andreas Heinz and Nina Romanczuk-Seiferth  
Department of Psychiatry and Psychotherapy, Charité – Universitätsmedizin Berlin, Charité Campus Mitte, Charitéplatz 1, 10117 Berlin, Germany

Pathological gambling occurs more frequently (3.4–6.1%) than in the general population (0.25–2%), alongside with other behavioural addictions, such as binge eating, so called hypersexuality and compulsive shopping

**Association with Parkinson's disease pharmacotherapy:**

**DOPAMINE >LEVODOPA THERAPY**

Controversial role of subthalamic nucleus deep brain stimulation (STN DBS)

**Interplay between pharmacotherapy and other vulnerability factors:**



Genetic predisposition  
Earlier onset of PD  
Higher Novelty seeking score  
Higher premorbid impulsivity  
Alcohol use disorder history  
Onset of manic/hypomanic episode after initiation of therapy

EJN

European Journal  
of Neuroscience





# Risk of Gambling Disorder and Impulse Control Disorder With Aripiprazole, Pramipexole, and Ropinirole

## A Pharmacoepidemiologic Study

Mahyar Etminan, PharmD, MSc,\* Mohit Sodhi, BSc,† Ali Samii, MD,‡ Ric M. Procyshyn, PharmD, PhD,§  
Michael Guo, BSc,\* and Bruce C. Carleton, PharmD||¶#

**Background:** Recently, the US Food and Drug Administration issued a warning regarding the potential risk of gambling disorder, but large epidemiologic studies are lacking.

**Methods:** We used a large health claims database from the United States and conducted a nested case-control study. Cases were defined as subjects newly diagnosed with gambling disorder or impulse control disorder. For each case, 10 controls were selected and matched to cases by age and follow-up time and calendar time. Adjusted rate ratios were computed with conditional logistic regression.

**Results:** There are 355 cases of gambling disorder and 3550 controls along with 4341 cases of impulse control disorder and 43,410 corresponding controls. After adjusting for confounders, users of aripiprazole demonstrated an increased risk of pathologic gambling (rate ratio [RR], 5.23; 95% confidence interval [CI], 1.78–15.38) and impulse control disorder (RR, 7.71; 95% CI, 5.81–10.34). The risk was also elevated for pramipexole or ropinirole for both gambling disorder and impulse control disorder (RR, 7.61; 95% CI, 2.75–21.07; RR, 3.28; 95% CI, 2.31–4.66, respectively).

**Conclusions:** Our study confirms an association between aripiprazole, pramipexole, or ropinirole and impulse control disorder and gambling disorder.

**Key Words:** aripiprazole, pathologic gambling, impulse control disorder, pharmacoepidemiology

(*J Clin Psychopharmacol* 2017;37: 102–104)

- Bipolar patients taking aripiprazole have a higher risk of developing gambling compared to non BD patients

- Putative involvement of D3 receptors agonism



Hyperdopaminergic state  
within the mesolimbic system

- Potential risk also for Cariprazine and Brexpiprazole





# THE TAKE-HOME MESSAGE

- Consolidate evidenze identificano nel GAP un disturbo d'addiction con caratteristiche cliniche e substrati neurobiologici sovrapponibili a quelli dei Disturbi da uso di sostanze
- L'incremento continuo della prevalenza del GAP appare sicuramente incentivato dalla diffusione di modalità di gioco online, più discrete ma con maggiore potenziale additivo presso le fasce più giovani
- La comorbidità tra GAP e altri disturbi costituisce la regola piuttosto che l'eccezione con un maggior tasso di comorbidità con i disturbi da uso di sostanze, disturbi dell'umore, disturbi d'ansia e disturbi di personalità
- Il GAP e i disturbi in comorbidità interagiscono con effetti patoplastici reciproci condizionando mutualmente l'outcome del singolo disturbo
- Lo screening per eventuali condotte di gioco d'azzardo a rischio dovrebbe assumere carattere routinario nei servizi di psichiatria generale
- Necessario un aggiornamento della formazione specialistica dei giovani psichiatri nella gestione e trattamento delle comorbidità



*Cinque giocatori di carte, P. Cézanne*