

Neuroimaging, Mental Disorder Classification, and the Law: The Case of Gambling Disorder

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May 29, 2014

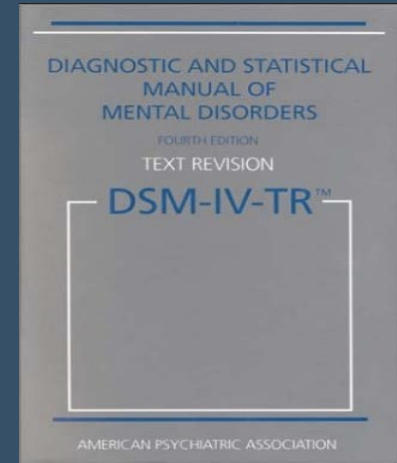
Roadmap

- Overview of gambling disorder
- Legal treatment of individuals with gambling disorder
 - Health insurance laws and plans
 - Disability discrimination laws
- Neuroimaging studies involving individuals with gambling disorder
- My thoughts regarding the proper relationship between neuroimaging, mental disorder classification, and health and disability law

Classification in the DSM-III through DSM-5

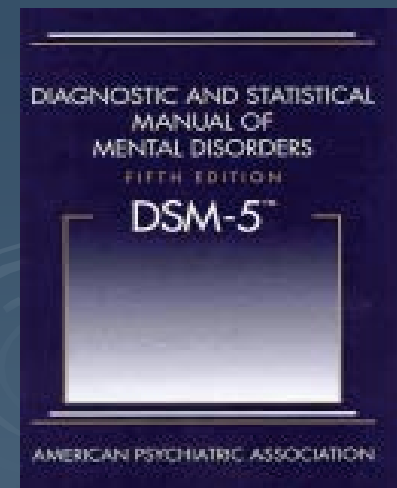
➤ DSM-III (1980) through IV-TR (2000)

- Impulse control disorders
 - Pathological gambling



➤ DSM-5 (2013)

- Substance-related and addictive disorders
 - Gambling disorder



Gambling Disorder (DSM-V, p. 585)

- Persistent and recurring problematic gambling behavior leading to clinically significant impairment or distress, as indicated by the individual exhibiting **four (or more)** of the following in a 12-month period:
 - Needs to gambling with increasing amounts of money ...
 - Is restless or irritable when attempting to cut down or stop gambling.
 - Has made repeated unsuccessful efforts to control, but back, or stop gambling.
 - Often gambles when feeling distressed...

DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS

FIFTH EDITION

DSM-5



DSM-5 Table of Contents



Substance-Related and Addictive Disorders

Substance-Related Disorders

Non-Substance-Related Disorders

Gambling Disorder

Illustrative Gambling Disorder Exclusion

Mental health and chemical dependency

Blue Priority HSA plans exclude coverage for:

- Bereavement counseling or services
- Certain developmental and learning disorders
- Certain disorders of academic underachievement
- Chemical dependency inpatient treatment
- Communication disorders and stuttering
- Impulse-control disorders (such as pathological gambling)
- Marriage and family counseling
- Nicotine dependence
- Outpatient treatment for alcoholism
- Residential treatment of mental health conditions or chemical dependency except those services received in a Residential Treatment Facility as described in the benefits policy
- Sensitivity, shyness and social withdrawal disorder
- Sexual identification or gender disorders (including sex-change surgery)

Wellmark®
South Dakota



Illustrative Gambling Disorder Exclusion

2013-2014 Student Injury & Sickness Insurance Plan Highlights

For students attending

EMBRY-RIDDLE
Aeronautical University

No benefits will be paid for: a) loss or expense caused by, contributed to, or resulting from

1. Acupuncture;
2. Addiction, such as: nicotine addiction, except as specifically provided in the policy; and caffeine addiction; non-chemical addiction, such as: gambling, sexual, spending, shopping, working and religious; codependency;

Illustrative Gambling Disorder Exclusion

UPMC HEALTH PLAN

Exclusions

Unless otherwise set forth in a Rider, the following is a list of services that are not typically covered under UPMC Health Plan commercial employer group benefit plans.

3. Behavioral Health Services:

or addictive gambling.



An Act

Entitled The Patient Protection and Affordable Care Act.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Patient Protection and Affordable Care Act”.

Establishment of Mandatory MH&SUD Benefits

ACA 1302(b)(1)(E); 45 C.F.R. 156.110(a)(5)

SEC. 1302. ESSENTIAL HEALTH BENEFITS REQUIREMENTS.

(a) **ESSENTIAL HEALTH BENEFITS PACKAGE.**—In this title, the term “essential health benefits package” means, with respect to any health plan, coverage that—

(1) provides for the essential health benefits defined by the Secretary under subsection (b);

(2) limits cost-sharing for such coverage in accordance with subsection (c); and

(3) subject to subsection (e), provides either the bronze, silver, gold, or platinum level of coverage described in subsection (d).

(b) ESSENTIAL HEALTH BENEFITS.—

(1) **IN GENERAL.**—Subject to paragraph (2), the Secretary shall define the essential health benefits, except that such benefits shall include at least the following general categories and the items and services covered within the categories:

(A) Ambulatory patient services.

(B) Emergency services.

(C) Hospitalization.

(D) Maternity and newborn care.

(E) Mental health and substance use disorder services, including behavioral health treatment.

(F) Prescription drugs.

(G) Rehabilitative and habilitative services and devices.

(H) Laboratory services.

(I) Preventive and wellness services and chronic disease management.

(J) Pediatric services, including oral and vision care.

State Benchmark Plans (Nevada's Selection)



HEALTH PLAN OF NEVADA
A UnitedHealthcare Company

Group 1 POS C-XV-500 – HCR

Attachment A Benefit Schedule

Included in Nevada's Benchmark Plan (as of March 31, 2012)

	Services for Maternity Care		
24	Mental/Behavioral Health Outpatient Services	Covered	Mental health services
25	Mental/Behavioral Health Inpatient Services	Covered	Mental health services
26	Substance Abuse Disorder Outpatient Services	Covered	Substance abuse disorder
27	Substance Abuse Disorder Inpatient Services	Covered	Substance abuse disorder
28	Genetics Services	Covered	Genetics

Result: Non-grandfathered individual and small group plans issued or renewed on or after 1/1/2014 in Nevada are **required** to provide coverage for substance use disorders (e.g., alcohol and drug abuse disorders) under federal EHB rules.

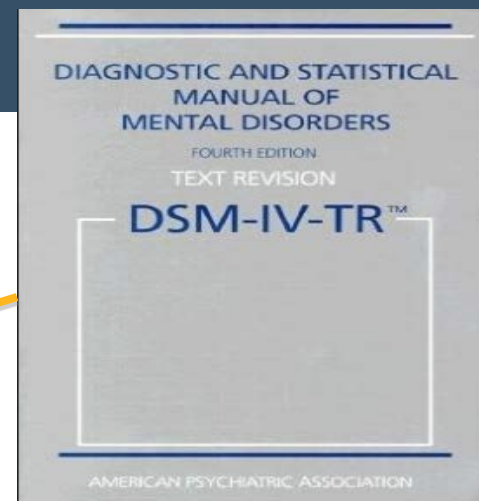
Exclusions from Nevada's Benchmark Plan (as of March 31, 2012)

Exclusion 8.18 Treatment of:

- Marital or family problems;
- Occupational, religious, or other social maladjustments;
- Chronic behavior disorders;
- Codependency;
- Impulse control disorders;
- Organic disorders;
- Learning disabilities or mental retardation or any Severe Mental Illness as defined in the AOC and o Mental Illness Covered Services section.

For purposes of this Exclusion "chronic" means any condition existing for more than six (6) months.

Gambling Disorder

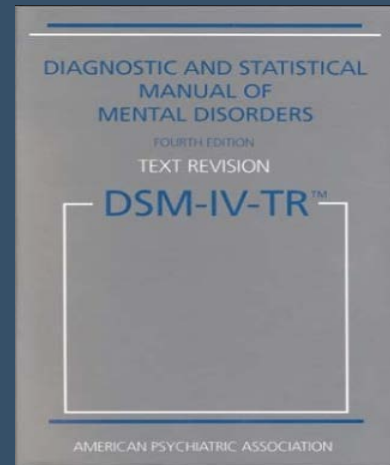


Result: Non-grandfathered individual and small group plans issued or renewed on or after 1/1/2014 in Nevada are **not** required to provide coverage for gambling disorder under federal EHB rules.

DSM Changes Could Affect Future (2016 and forward) Benchmark Coverage

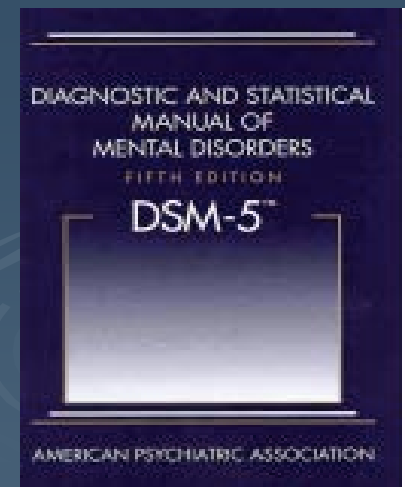
➤ DSM-IV

- Impulse control disorders
 - Pathological gambling



➤ DSM-5

- Substance-related and addictive disorders
 - Gambling disorder



Americans with Disabilities Act of 1990 (ADA)

SEC. 4. DISABILITY DEFINED AND RULES OF CONSTRUCTION.

(a) DEFINITION OF DISABILITY.—Section 3 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102) is amended to read as follows:

"SEC. 3. DEFINITION OF DISABILITY.

"As used in this Act:

"(1) DISABILITY.—The term 'disability' means, with respect to an individual—

"(A) a physical or mental impairment that substantially limits one or more major life activities of such individual;

"(B) a record of such an impairment; or

"(C) being regarded as having such an impairment (as described in paragraph (3)).

ADA Disability Exclusions (1990)

42 U.S.C. 12211(b)

(b) Certain conditions

Under this chapter, the term "disability" shall not include

- (1) transvestism, transsexualism, pedophilia, exhibitionism, voyeurism, gender identity disorders not resulting from physical impairments, or other sexual behavior disorders;
- (2) compulsive gambling, kleptomania, or pyromania; or
- (3) psychoactive substance use disorders resulting from current illegal use of drugs.

Joseph F. LABIT and Lorraine
F. LABIT, Plaintiffs-Appellants,
v.
AKZO-NOBEL SALT, INC., Harry H. Anderson
and Jimmy L. Firth, Defendants-Appellees.

No. 99-30047. | Feb. 7, 2000.

First, we agree that the only condition described by Labit that constitutes a “disability” within the meaning of the statute¹² is the absence of one arm, the result of amputation that preceded his employment with Akzo. Congress specifically excluded compulsive gambling as a disability under the Act.¹³ Other than those conditions, Labit describes only

ADAAA Disability Exclusions (2008)

42 U.S.C. 12211(b)(2)

DEFINITIONS

SEC. 12211. *[Section 512]*

(a) Homosexuality and bisexuality. - For purposes of the definition of "disability" in section 12101, homosexuality and bisexuality are not impairments and as such are not disabilities under this chapter.

(b) Certain conditions. - Under this chapter, the term "disability" shall not include-

(1) transvestism, transsexualism, pedophilia, exhibitionism, voyeurism, gender identity disorders, or gender identity behavior disorders;

(2) compulsive gambling, kleptomania, or pyromania; or

(3) psychoactive substance use disorders resulting from current illegal use of drugs.

Final Regulations Implementing the ADAAA

29 C.F.R. 1630.3(d)(2)

(d) *Disability* does not include:

- (1) Transvestism, transsexualism, pedophilia, exhibitionism, voyeurism, gender identity disorders not resulting from physical impairment that may be ameliorable by hormonal, medical, or surgical treatment;
 - (2) Compulsive **gambling**, kleptomania, or pyromania; or
 - (3) Psychoactive substance use disorders resulting from current illegal use of drugs.
- (e) *Homosexuality and bisexuality* are not impairments and so are not disabilities as defined in this part.

721 F.Supp.2d 876
United States District Court,
D. Arizona.

John E. TRAMMELL, an individual, Plaintiff,
v.
RAYTHEON MISSILE SYSTEMS, Defendant.

No. CV 08-338 TUC DCB. | June 24, 2010.

this manifestation, the Court rejects this approach given
the ADA's express exclusion of compulsive gambling as a
disability. In other words, Plaintiff's proof that his compulsive

Neuroimaging Studies Impacted DSM Classification

Research indicates that gambling and substance-related and addictive disorders share a common reward-system neurocircuitry and behavioral patterns.



Gambling disorder will take its place among substance-related and addictive disorders in *DSM-5*, which will be published next month.

The new disorder replaces what was previously called pathological gambling in the "Impulse-Control Disorders Not Elsewhere Classified" section of earlier editions. While the criteria are nearly identical, the inclusion of the disorder with substance-related disorders reflects evidence showing the similarity of reward-related neurocircuitry and behavior patterns of addictive gambling to those of other substance-related addictions.

"The idea of a non-substance-related addiction may be new to some people, but those of us who are studying the mechanisms of addiction find strong evidence from animal and human research that addiction is a disorder of the brain reward system, and it doesn't matter whether the system is repeatedly activated by gambling or alcohol or another substance," said Charles O'Brien, M.D., chair of the *DSM-5* Work Group on Substance-Related and Addictive Disorders. "In functional brain imaging—whether with gamblers or drug addicts—when they are showed video or photograph cues associated with their addiction, the same brain areas are activated," he explained.

Gambling Urges in Pathological Gambling

A Functional Magnetic Resonance Imaging Study

Marc N. Potenza, MD, PhD; Marvin A. Steinberg, PhD; Pawel Skudlarski, PhD; Robert K. Fulbright, MD; Cheryl M. Lacadie, BS; Mary K. Wilber, BA; Bruce J. Rounsaville, MD; John C. Gore, PhD; Bruce E. Wexler, MD

Background: Gambling urges in pathological gambling (PG) often immediately precede engagement in self-destructive gambling behavior. An improved understanding of the neural correlates of gambling urges in advance our understanding of the brain mechanisms underlying PG and would help direct research into treatments.

Methods: Echoplanar functional magnetic resonance imaging was used to assess brain function during videotaped scenarios with gambling, happy, neutral, and sad. Participants rated the quality and magnitude of emotional and motivational responses.

Results: Men with PG ($n=10$) reported mean gambling urges after viewing gambling scenarios compared with control subjects ($n=11$) (5.20 ± 3.43 vs 0.71 ± 1.19 ; $P<.001$). The groups did not differ in their subjective responses to the happy or sad ($P=.81$) videotapes. The most pronounced between-group differences in neural activity were observed during the initial period of viewing c

bling scenarios: PG subjects displayed relatively decreased activity in frontal and orbitofrontal cortex, caudate/

Neuron, Vol. 30, 619–639, May, 2001, Copyright ©2001 by Cell Press

Functional Imaging of Neural Responses to Expectancy and Experience of Monetary Gains and Losses

Hans C. Breiter,^{1,2,3,6} Itzhak Aharon,^{1,2} Daniel Kahneman,⁵ Anders Dale,² and Peter Shizgal⁴

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and International Affairs
Princeton University
Princeton, New Jersey 08544

tasks with monetary payoffs (Breiter et al., 1996b; Elliott et al., 2000; Knutson et al., 2000; O'Doherty et al., 2001; Thut et al., 1997).

Emotions have figured prominently in recent empirical and theoretical work on evaluation and choice. For example, Mellers and coworkers have shown that the emotional response to the outcome of a gamble depends on the perceived value and likelihood of both the obtained outcome and its alternatives (Mellers et al., 1997). Thus, it feels better to receive \$0 from a gamble when the unobtained alternative is a gain of \$10 than when the alternative is a gain of \$90; winning \$50 feels better when the odds of doing so are 10% than when the odds are 90%. The influence of what might have been on the response to an outcome is said to be "counterfactual." Mellers et al. (1999) have shown that counterfactual influences also affect anticipated feelings. Their subjects expect to feel worse upon winning \$0 when the alternative is \$90 than when the alternative is only \$10.

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