Compulsivity in gambling disorder and obsessive-compulsive disorder: a functional magnetic resonance imaging (fMRI) study

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Investigating and comparing two disorders (i.e., OCD and GD) with phenomenological different types of compulsive behaviors central to their pathology can elucidate common mechanisms of compulsivity in psychiatry * core features- as well as specific...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Observational invasive

Summary

ID

NL-OMON47769

Source
ToetsingOnline

Brief title
Compulsivity in gambling and OCD

Condition

- Other condition
- Psychiatric and behavioural symptoms NEC

Synonym
gambling disorder, obessive compulsive disorders, repetitive behaviour

Health condition

gokverslaving

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: ABC- talent grants

Intervention

Keyword: Compulsivity, gambling disorder, Magnetic Resonance Imaging, obsessive-compulsive disorder

Outcome measures

Primary outcome

Comparing patients with compulsive disorders (GD + OCD) with heathy controls to assess pathological processes. Comparing GD patients and OCD patients to test similarities and differences in: 1) The relationship between preferences of risky and ambiguous behavior, confidence and compulsive behavior. 2) Confidence coding in VMPFC. 3) The effect of negative outcome anticipation on compulsive behavior and associated brain regions.

Secondary outcome

* Functional connectivity as measured with fMRI during the resting-state condition

* Self-reports of development and experience of compulsions.

Study description

Background summary

In recent years there is an increasing interest in psychiatry to investigate behavioral dimensions that cross traditional diagnostic boundaries. Current DSM-categories of mental disorders are based on a broad set of heterogeneous

symptoms that overlap between different disorders. This heterogeneity of symptoms within disorders as well as respective overlap of symptoms between disorders hinders investigation into biological factors of psychiatric disorders. Examining behavioral dimensions with a closer correlation to brain processes is thought to be a more promising avenue. The U.S. National Institute of Mental Health Strategic Plan supports this change in research approach and has developed the Research Domain Criteria (RDoC) project that promotes investigation into these dimensions and aims to provide a new framework for psychiatric disorders based on neurocognitive research instead of clinical observations. Compulsivity is such a behavioral dimension that is associated with several psychiatric disorders including substance use disorders, pathological gambling disorder, obsessive-compulsive disorder and eating disorders. Patients suffering from these disorders compulsively engage in behavior that leads to serious life impairments and suffering. These compulsive behaviors may differ in many aspects between disorders but they have in common that they are experienced as *out of control* and seem driven by an internal urge that goes beyond simple explanations. This common phenomenology across different disorders has led to the hypothesis of shared mechanisms connecting these different compulsive behaviors. Understanding these mechanisms may have promising implications for treatment and prevention: new interventions may target these behaviors and their associated brain circuits directly and across disorders. Two psychiatric disorders with compulsive behaviors at the core of their pathology are obsessive-compulsive disorder (OCD) and gambling disorder (GD). Compulsions in OCD are the prototypical compulsive behaviors; they are fixed behavioral patterns or mental acts (e.g., counting, washing or checking). These compulsions are typically performed to regain a sense of control or order but paradoxically spiral out of control to such an extent that they cause severe suffering and debilitation. Gambling on the other hand typically starts out as exciting or pleasurable behavior. However, over time patients can find it increasingly difficult to stop and gambling can turn compulsive where the loss of control and dire consequences on their lives overshadow the pleasurable aspects. Because these compulsive behaviors are so differently in content and developmental trajectory they are specifically suitable to investigate overlap and differences in compulsive behaviors across psychiatric disorders.

Study objective

Investigating and comparing two disorders (i.e., OCD and GD) with phenomenological different types of compulsive behaviors central to their pathology can elucidate common mechanisms of compulsivity in psychiatry * core features- as well as specific aspects resulting in a diverse display of compulsive behaviors across disorders. In the present study we will investigate behavioral and neural mechanisms contributing to these behaviors. We will explore different aspects that have been related to compulsivity in previous studies: risky and ambiguous behavior, confidence and (negative) outcome anticipation. With fMRI imaging we will investigate the neurobiological correlates of these compulsive behaviors in both GD and OCD. Results from OCD

and GD patients will be compared to healthy controls (HC) to assess disorder specific abnormalities.

Study design

Behavioural and neurobiological outcome measures will be used to test similarities and differences in compulsive behaviours in OCD and GD. We will measure 3 important aspects that have been associated with compulsive behaviour. 1) We will investigate the respective roles of risk and ambiguety preference in compulsive behaviour by two computer tasks. This makes it possible to measure the tendency of OCD and GD patients to risky or ambugity releated decision and compare this to HC. 2) distortion of judgment and choice, as seen in compulsive behaviors, are suggested to arise from abnormal confidence coding in the ventral medial prefrontal cortex (VMPFC). Here we will use a fMRI paradigm to investigate abnormalities in confidence coding in OCD and GD patients in comparison to healthy controls.3) We will examine the role of negative outcome anticipation in compulsive behaviour and brain responses in all three groups (OCD, GD and HC) with the use of an in-house developed fMRI paradigm. Additionally we can investigate whether negative outcome anticipation affects compulsive behaviour differently between groups.

Study burden and risks

The risk associated with participation can be considered negligible and the burden can be considered minimal. Total participation time is approximately 4 hours, including a fMRI scan of 1 hour. In addition, structured diagnostic interviews for psychiatric disorders and clinical and personality questionnaires will be administered and two computer tasks will be performed.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Inclusion process: Potential participants are informed about the study and receive an information letter. After this, they are contacted by telephone. If interested to participate, screening for inclusion and exclusion criteria is performed, using structured diagnostic interviews, e.g. Composite International Diagnostic Interview (World Health Organisation, 1997).
OCD group:
* DSM-5 diagnosis of OCD
* No other psychiatric disorder
* Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) score cut-off of 20
* 18-65 years of age
* Willingness and ability to give written informed consent and willingness and ability to understand, to participate and to comply with the study requirements ;GD group:
* DSM- 5 diagnosis for Gambling Disorder
* No other psychiatric disorders.
* Willingness and ability to give written informed consent and willingness and ability to understand, to participate and to comply with the study requirements
* 18-65 years of age ;HC group:
* No current psychiatric diagnosis no history of OCD or GD.
* Willingness and ability to give written informed consent and willingness and ability to understand, to participate and to comply with the study requirements
* 18-65 years of age

Exclusion criteria

All groups:
* Current major depressive disorder, bipolar disorder, psychotic disorder, alcohol or substance dependence, or any cognitive disorder as assessed with the MINI neurological

disorders section
* IQ below 80
* insufficient command of the Dutch language
* MRI contraindications such as metal implants, claustrophobia, pregnancy
* recent (<2 weeks) use of psychotropic medication other than naltrexone (smoking and nicotine dependence is allowed in all groups).
* Endocrinological disorders or regular use of corticosteroids
* Current treatment with tricyclic antidepressant or antipsychotic medication
* Use of other psychotropic medication (apart from SSRI's), or of recreational drugs over a period of 72 hours prior to each test session, and use of alcohol within the last 24 hours before each measurement
* Irregular sleep/wake rhythm (e.g., regular nightshifts or cross timeline travel).
* Pregnancy
- Left-handedness
OCD group and HC group: scoring lower than 5 on SOGS (gambling severity) questionnaire; hence not suffering from gambling problems.
GD and HC group: scoring lower than 5 Y-BOCS; hence not suffering from OCD symptoms.

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	22-02-2017
Enrollment:	90
Type:	Actual

Ethics review

Approved WMO Date:	17-02-2017
Application type:	First submission
Review commission:	METC Amsterdam UMC

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL60297.018.16