A Functional Neuroimaging Study of Selfrelated Cognitive-Emotional Processing in Psychometric Schizotypy

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Ethical review	Approved WMO
Status	Pending
Health condition type	Psychiatric and behavioural symptoms NEC
Study type	Observational non invasive

Summary

ID

NL-OMON31011

Source ToetsingOnline

Brief title Self-related Cognitive-Emotional Processing in Schizotypy

Condition

• Psychiatric and behavioural symptoms NEC

Synonym psychotic proneness, schizotypy

Research involving Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen **Source(s) of monetary or material Support:** NWO

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Intervention

Keyword: Emotion regulation, Schizotypy, Self-evaluation

Outcome measures

Primary outcome

In the present study, by using fMRI, we would like to investigate the activation of distinct brain areas engaged during self-evaluation, emotion regulation, self-perspective inhibition, affective and cognitive mentalizing, and reality monitoring, all being crucial cognitive-emotional processes involved in insight. fMRI has the best spatial resolution amongst the other non-invasive techniques which allow one to have the closest look at the neuronal activity available with imaging. Furthermore, current studies which have been investigating cognitive processes related to self-awareness and emotion regulation are mostly behavioral. Additionally, the few available studies on the use of fMRI paradigms has been indeed promising toward an effective delineation of the neural correlates subserving these functions by this technique. In light of this, the proposed study would be an innovative research that, besides elucidating the cognitive and neural basis of subclinical psychotic symptoms, will also inform our future studies of self-processing in relation to poor insight (illness awareness) in psychosis.

Secondary outcome

Not applicable

Study description

Background summary

Psychosis-like experiences (or *schizotypal* signs) without reaching a clinical threshold of pathology can be explored in non-clinical populations. Psychosis proneness can be considered as a dimensional trait ranging from *normality* to clinical cases of psychosis. When a pathological level of psychosis is reached, lack of insight (unawareness of illness) is a common and clinically relevant feature (Amador & David, 2004). Insight can be subdivided into three components: (1) awareness of having an illness, (2) recognizing psychotic symptoms as abnormal, and (3) acceptance of prescribed treatment (David, 1990). If a diagnosed patient lacks insight in his or her illness, this can lead to poor treatment compliance and medical adherence, poorer global functioning, severity of psychopathology, recurrence and poorer outcome (David, 2004). This is not only harmful to the patient, it can also lead to great frustration in family members, friends and treating clinicians since it hampers their attempt to help. The cognitive and neural bases of insight in psychosis remain unclear, however, rendering it a scientific mystery. In light of the modest magnitude of the associations that have been established between poor insight in psychosis and reduced cognitive functioning, especially with regard to cognitive set-shifting thought to be mediated by the frontal cortex, it is feasible that cognitive factors can not sufficiently explain impaired insight (Aleman et al., 2006).

Study objective

The aim of the proposed research is to test the hypothesis that psychometric schizotypy (or psychosis-proneness, i.e. subclinical hallucinations and delusions in healthy people) is associated with reduced activation of brain circuits subserving self-evaluation and emotion regulation.

Study design

In this study, right-handed subjects will undertake five fMRI tasks, to be completed in two different sessions. By the use of fMRI, we would like to investigate the activation of distinct brain areas engaged during self-evaluation, emotion regulation, self-perspective inhibition, affective and cognitive mentalizing, and reality monitoring, all being crucial cognitive-emotional processes involved in insight. In order to assess emotion regulation, subjects will be presented with a set of pictures containing either a neutral or a negative emotional valence (International Affective Picture System, IAPS; Lang et al 1997). In one condition, they will be required to let themselves experience naturally the emotional experience that the picture elicits in them (Attend condition), whereas in the other they will have to reinterpret the content of the photograph so that it no longer elicits a negative state (Reappraise condition). The self-perspective inhibition task will require subjects to watch a video and to perform two different types of perspective taking: to inhibit one*s own perspective (self-perspective inhibition), and the ability to infer someone else*s perspective as such (other-perspective taking).

For the reality monitoring task, participants will have to recollect whether information had previously been perceived or imagined, or whether information had been presented on the left or right of a monitor screen. Subjects will be presented with a set of common word-pairs (i.e., rock and roll, bacon and eggs) and it will comprise a learning phase and then a test phase, in which they will have to recall either if the information was self-generated or perceived (internal vs external source), or its position on the screen.

To assess the ability to perform a conscious reflection on one*s sense of self, we will adapt a task applied by Johnson et al. (2002) as a functional MRI paradigm. Participants will be asked to make decisions about themselves on specific statements requiring self-evaluation in the domains of mood, social interactions, cognitive and physical abilities (Self-reflection condition). In the control condition (used to control for visual processing, attention, language comprehension, decision making, the motor response and memory retrieval), participants will be instructed to make decisions about statements of semantic knowledge. For the present study, a third condition will be added, in which participants will be asked to reflect about a familiar person, that is, a good acquaintance of the subject (Familiar other-reflection condition). Finally, for the affective/cognitive mentalizing task, subjects will have to judge first (A thinks that*) and second order (A thinks that B thinks that*) affective vs. cognitive mental state attribution, based on eye gaze. For the tasks, we will use a custom-made MRI-compatible device (button box) which will be placed on the lower abdomen of the subject who is lying on the scanner table. The subject can touch the button box with both hands and, through a mirror, see the box and his/her own fingers to ensure pressing the desired button.

Aside from the fMRI experiments, a behavioral assessment battery will be administered to complement and extend the data obtained through scanning, with instruments that have been proved to be effective in the detection of deficits in those brain regions of interest that will also be tested through fMRI. Therefore, subjects will be tested for theory of mind (through pictures and stories), automatic-response inhibition, and perspective taking abilities.

Study burden and risks

Subjects will be exposed to a magnetic field of 3 Tesla and rapidly alternating magnet gradients and radio frequency fields. This field strength is used on a routinely basis in fMRI and MRI research. So far, no side effects have been described. On rare occasions, a peripheral nerve (abdomen) is stimulated by the changing magnet gradients. This will cause an itching feeling, but it is not harmful.

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

psychotic proneness, depression proneness

Exclusion criteria

Subjects with history of psychiatric or relevant neurologic disease, for which they have been treated will be excluded from the study. Subjects who have not been treated for or diagnosed with a psychiatric disorder, but for who the screening questions of the CIDI give an indication of having a psychiatric disorder, will be excluded from the study.

Study design

Design

Study type:	Observational non invasive
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	Active
Primary purpose:	Other

Recruitment

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NL	
Recruitment status:	Pending
Start date (anticipated):	15-05-2007
Enrollment:	60
Туре:	Anticipated

Ethics review

Approved WMO	
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

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.

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In other registers

Register

ССМО

ID NL17646.042.07