Neural Substrate for Emotional Memory Schemas in Individuals with Early Life Adversity

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We aim to illustrate the relationship between early-life-adversity and emotional memory performance, and whether schema related neural activity during encoding and retrieval will contribute to the negative memory biases.

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

Summary

ID

NL-OMON51804

Source
ToetsingOnline

Brief title
Neural substrate for emotional schemas

Condition

- Other condition
- Mood disorders and disturbances NEC

Synonym
emotional memory, emotional schemas due to childhood experiences

Health condition

early life adversity

Research involving
Human

Sponsors and support

Primary sponsor: Radboud Universiteit Nijmegen
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: depressive symptoms, early life adversity, emotional memory, emotional schema

Outcome measures

Primary outcome

The main study parameter is neural mechanism underlying the relationship between early-life-adversity and emotional schema memory effect. Therefore, a within-subject design with an fMRI measurement is conducted to investigate emotional schema memory effect and its neural correlates. Here we define emotional schema memory effect as: when a negative schema is activated by music mood induction procedures, the participants will have enhanced memory performance for negative stimuli at the behavioural level. At the neural level, we will analyze the encoding related activity particularly subsequent memory effect (SME) and spatial pattern (representational similarity) in the medial prefrontal cortex (mPFC) and hippocampus.

Secondary outcome

Secondary study parameters are the measurements for attention and emotion bias (skin conductance recodings, self reports and eye-tracking data), which will control the specificity of the bias. It might be possible that memory bias effects are caused by biases in attention and emotion, therefore it is important for future use of the results to properly control by these parameters.

Study description

Background summary

Negative memory bias (the selective enhancement of negative memory) plays an important role in the onset and maintenance of depression. Early-life-adversity is one of the main risk factors of negative memory bias formation on the one hand and depression on the other hand. In this study, we will focus on the neural mechanism of negative memory bias from the perspective of early-life-adversity and depression. Based on previous research showing the facilitation of prior knowledge (schema) to new information acquisition and the potential effect of emotional schema, we will test whether higher early-life-adversity and subclinical affective symptoms will be related to higher negative memory bias especially when a negative schema is activated.

Study objective

We aim to illustrate the relationship between early-life-adversity and emotional memory performance, and whether schema related neural activity during encoding and retrieval will contribute to the negative memory biases.

Study design

Observational study

Study burden and risks

Participants anonymously fill in the online questionnaires for a general screening of early-life-adversity and depression. Based on this, eligible participants are provided with study information and invited anonymously over the survey system to Donders Center. After sufficient consideration and explanation, they will sign the informed consent form if they choose to participant in based on fully understanding. Then a detailed evaluation by the Maltreatment and Abuse Chronology of Exposure (MACE) Scale and Beck Depression lnventory-II (BDI-II) will be administrated. After this first questionnaire screening session, participants are invited to take part in the MRI session, where they will firstly view emotional pictures with and without schema activation and do the recognition memory tests later.
Filling in the MACE and BDI-II in an unsupervised manner is not known to create any risks to the participant. This data will be strictly protected in accordance with the Dutch Personal Data Protection Act (WBP). Participants will indicate on the consent form whether they agree with the later use of this data, and hold the right of revoking at any time they want. MRI is a non-invasive imaging technique. Participation in an MRI investigation is not associated with any risks or long-term consequences for the participant. The

threatening context applied during MRI scanning and MRI investigation itself might cause discomfort for the participant. Viewing pictures and making the judgements on old/new may cause participants* tiredness. Participants are informed about their right to stop the experiment at any time if they feel too burdened. Since we want to explore the relationship between early-life-adversity, depression and negative schema effect, a broader range early-life-adversity and depression level is necessary for data analysis. It is important to note that we will only include healthy individuals with sub-clinical levels of depression. We will check for clinically relevant signs of mental disorders when participant present strongly elevated self-ratings of depression (BDI-II score > 20) and also childhood adversity (MACE>51).

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)

Inclusion criteria

Normal or corrected-to-normal vision
Normal uncorrected or corrected-to-normal hearing
Willingness and ability to understand nature and content of the study
Ability to participate and comply with study requirements
Fluent in Dutch (>= B1 level)

Exclusion criteria

History of or current or previous neurological or psychiatric disorders (except depression), or other relevant medical history, cognitive impairments
History of or current brain surgery or epilepsy
Pregnancy
MRI incompatibility (unremovable metal parts in upper body [plates, screws, serre-fines, dental plates (pontics), metal splinters, piercings or medicinal plasters), active implant [e.g. Pacemaker, neuro stimulator, insulin pump and/or hearing aid], head operation, epilepsy, claustrophobia).

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:	Recruiting
Start date (anticipated):	22-11-2022
Enrollment:	115
Type:	Actual

Ethics review

Approved WMO Date:	21-09-2022
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	30-07-2024
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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	NL81194.091.22