The oxytocin receptor gene in social belonging processes in adolescents; an exploratory study

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

Summary

ID

NL-OMON40884

Source
ToetsingOnline

Brief title
OXTR gene and social belonging in adolescents

Condition

- Other condition
- Age related factors

Synonym
emotion recognition, social emotional processes

Health condition

niet op aandoening, maar op sociaal emotionele uitkomsten (geen stoornissen)

Research involving
Human

Sponsors and support

Primary sponsor: Radboud Universiteit Nijmegen
Source(s) of monetary or material Support: NWO: VENI subsidie

Intervention

Keyword: Adolescents, Need to Belong, Oxytocin Receptor Gene, Social Belonging

Outcome measures

Primary outcome

The main study parameter of the computer task on micro-expression is emotion recognition (the amount of correctly identified emotions within each emotion; anger, fear, sadness and happiness). This will be a proportion measure (i.e., the amount of correctly identified emotions divided by the total amount of that specific emotion).

The main study parameters of the eye tracking experiment are total gazing times and gazing time per event to different areas of interest (AOI). A gaze fixation will be defined as gazing at a specific region for 100 ms or longer. More specific, total gazing time (total fixation duration) is the total time a participant gazes at a specific AOI stimulus in ms. Gazing time per event (mean fixation duration) is the average duration of each fixation within a specific AOI of a single stimulus.

Other endpoints are loneliness, depression, social anxiety, and satisfaction with relationships (based on questionnaire data).

Secondary outcome

Genetic Material. To assess the role of variation in the OXTR gene, saliva samples will be collected by means of saliva containers following standardized procedures (Oragene, DNA Genotek Inc). Several polymorphisms (a.o. rs53576, rs2254298, rs237885) within the OXTR gene will be genotyped at the reserachlab. These will be dummy-coded into 1 (carrier of one or two minor alleles) and 2 (homozygote for the major allele).

Study description

Background summary

Close friendships and romantic relationships are primarily established in adolescence. A sense of social inclusion is essential for this. According to the model of belonging regulation, people need a minimum of social relationships to feel socially included. Therefore, regulatory processes such as the processing of social cues and the ability to use them to display convenient social behaviours are needed. Deficits in these processes could lead to social exclusion. We hypothesize that genetic variation within the OXTR gene could lead to individual differences in various social behaviours, ultimately explaining interindividual differences in social belongingness levels. If belonginess levels are not met, individuals may experience an unmet need to belong. An unmet need to belong has been associated with higher loneliness and may as well be associated with other social emotional adjustment problems. It is hypothesized that the higher the unmet need to belong, the higher the social emotional problems.

Study objective

Based on the theoretical framework of belonging regulation and the absence of knowledge on gene processes related to mechanisms that could enhance social inclusion in adolescence, the aim of the present study is to examine interindividual differences in social (micro)behaviours of adolescents. More specifically, the aim is to test oxytocin receptor gene variants (OXTR) in processes related to the belonging regulation model, such as emotion recognition. Another objective is to study differences between adolescents with an unmet need to belong and adolescents that are satisfied with their belongingness levels on several measures, such as loneliness, depression, social anxiety, satisfaction with relationships and the capability of emotion recognition. A further objective is to examine how adolescents attend to social

information from their environment. With an eye-tracking experiment, it will be investigated how the OXTR markers and an unmet need to belong influence time gazed at emotional faces. In sum, the overall aim is studying the OXTR gene in relation to adolescents* sensitivity to emotional information underlying social inclusion and to gain more insight in the model of belonging regulation in adolescents.

It is hypothesized that OXTR genetic variants are associated with:
• The ability to recognise very shortly presented emotions on a computer screen
• The gaze duration to different social cues (longer gazing times) to enhance their belongingness level
• A higher unmet need to belong

Further, it is hypothesized that adolescents with a strong unmet need to belong:
• Perform better on a micro expression emotion recognition task
• Show longer gaze duration to different social cues in order to enhance their belongingness level
• Have higher loneliness, depression and social anxiety measures.

Following this, it is hypothesized that the interaction term between an unmet need to belong and the specific genetic variants will strengthen the associations described above.

Study design

Adolescents will be recruited through high schools (N~1,400). They will fill in questionnaires, conduct an emotion micro expression task on the computer and DNA will be collected to genotype multiple OXTR genetic markers. Based on the OXTR markers, a subsample (N~100) will be invited to participate in an eye-tracking experiment with several emotional face paradigms.

Study burden and risks

Participants are only asked to fill out questionnaires, to conduct a computer task (showing micro-expressions of emotions) and to provide a saliva sample once. This might be considered as no risk and a very limited burden. The manner in which DNA will be collected is non-invasive. Moreover, we have used this non-invasive method successfully in adolescent school samples before, with approval of the Central Committee on Research Involving Human Subjects (CCMO). For the subsample (n=100) that will participate in the eyetracking study, there also is a very limited burden (one school hour). Eyetracking studies do not yield any risk.

Contacts

Public
Radboud Universiteit Nijmegen

Montessorilaan 3
Nijmegen 6525 HR
NL
Scientific
Radboud Universiteit Nijmegen

Montessorilaan 3
Nijmegen 6525 HR
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adolescents (12-15 years)
Adolescents (16-17 years)

Inclusion criteria

In order to be eligible to participate in this study, a subject must meet the following criteria:
- Being in 2nd grade of high school,
- Being of white European descent (subjects of other ethnic origins are able to participate, but do not have to provide saliva for DNA analyses).

Exclusion criteria

There are no exclusion criteria other than having impaired vision or blindness. In this case, adolescents cannot conduct the (micro-expression) computer task.

Study design

Design

Study type: Observational non invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-02-2014
Enrollment:	1000
Type:	Anticipated

Ethics review

Approved WMO

Date:	25-02-2014
Application type:	First submission
Review commission:	IRB Nijmegen: Independent Review Board Nijmegen (Wijchen)

Approved WMO

Date:	23-01-2015
Application type:	Amendment
Review commission:	IRB Nijmegen: Independent Review Board Nijmegen (Wijchen)

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	NL47719.072.14