

Behavioral problems in youths are associated with differences in the brain

December 9 2015



Credit: public domain

Young people with behavioural problems, such as antisocial and aggressive behaviour, show reduced grey matter volume in a number of areas of the brain, according to a new study published in *JAMA Psychiatry*.

The researchers from the University of Birmingham found that, compared to typically developing youths, those with [behavioural problems](#) show [grey matter](#) reductions specifically within the amygdala,

the insula, and the prefrontal cortex.

These brain areas are important for decision-making, empathic responses, reading facial expressions and emotion regulation; key cognitive and affective processes that are shown to be deficient in youths with behavioural problems.

The article combined brain imaging data from 13 existing studies including 394 youths with behavioural problems and 350 typically developing youths, making it the largest study on this topic.

Dr Stephane De Brito, lead author of the paper, explained, "We know that severe behavioural problems in youths are not only predictive of antisocial and [aggressive behaviour](#) in adulthood, but also substance misuse, [mental health problems](#) and poor physical health."

"For that reason, behavioural problems are an essential target for prevention efforts and our study advances understanding of the brain regions associated with aggressive and antisocial behaviour in youths."

However, a number of unanswered questions still remain in the field. For example, the extent to which these structural differences in the brain are associated with environmental factors (such as smoking/substance abuse during pregnancy and maltreatment in early childhood) is still poorly understood.

Dr Jack Rogers, Research Fellow at the University of Birmingham, said, "There are a lot of questions still outstanding. For instance, prospective longitudinal studies are needed to assess if these structural differences are present early in life and if they persist over a longer period of time."

"In future research, it will also be important to examine if these [brain](#) differences, and the affective and cognitive processes they are involved

in, can be influenced by therapeutic interventions to promote a good outcome in adult life."

Dr De Brito noted, "Some of those important questions will be addressed in the context of a large multisite study we are involved in. This research will be carried out on children and adolescents from seven European countries to examine the environmental and neurobiological factors implicated in the development of behavioural problems in male and female youths."

More information: *JAMA Psychiatry*,
[dx.doi.org/10.1001/jamapsychiatry.2015.2423](https://doi.org/10.1001/jamapsychiatry.2015.2423)

Provided by University of Birmingham

Citation: Behavioral problems in youths are associated with differences in the brain (2015, December 9) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-12-behavioral-problems-youths-differences-brain.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.