



Psychiatry and Behavioral Sciences Section - 2014

I25 Structural and Functional Brain Imaging Findings in Adult Psychopaths: A Literature Review

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After attending this presentation, attendees will have a detailed knowledge about structural and functional abnormalities in the brains of psychopaths. Attendees will also gain a general understanding of controversies in this field and critiques about reviewed studies. Findings will be presented in correlation to major areas of the brain which are affected in this condition.

This presentation will impact the forensic science community by providing neurological findings in psychopaths' brains which have been more consistently replicated in different studies and might be more reliably used in legal settings. It will also help to design future studies in areas where findings are inconsistent or not convincing, which include the caudate nucleus, hippocampus, and cingulate gyrus.

Less than one percent of people are psychopaths, yet psychopaths commit a disproportionate percentage of violent crimes (according to some studies, more than 30%). With advances of neuroimaging in recent decades, defense attorneys have begun to use neurological findings from the psychopathic brain in court. This strategy has generated controversy regarding the consistency and legal value of these findings. Some of these findings include structural abnormalities in the orbitofrontal cortex, ventromedial prefrontal cortex, amygdala, uncinate fasciculus, caudate nucleus, and hippocampus as well as functional abnormalities in the cingulate gyrus. Despite these findings, there have been very limited studies comparing these findings in psychopaths with findings from people who score low on the psychopathy check list. Furthermore, there is no consensus about the etiology of psychopathy and none of these structural or functional abnormalities have been considered to be diagnostic findings for psychopathy.

This literature review of the brain of the adult psychopath, as defined by Psychopathy Check List-Revised (PCL-R), focuses on structural, functional, and neurological findings. Excluded are studies on children and adolescents with conduct disorder. Also excluded are studies on galvanic skin response and neuropsychological findings. PubMed[®] was used to search for articles published in the period from 1993 to 2013. Studies were reviewed critically to identify potential reasons for different and/or inconsistent findings.

Most studies in this review used control groups comprised of people without mental illness. Only a few studies assigned patients with diagnoses of schizophrenia, borderline personality disorder, and autism to their control groups. This discrepancy illustrates another area that has been criticized in psychopathy research, and this should be considered in future research projects.

Psychopathy, Neuroimaging, Neurological Finding