Pedophilia is defined as the permanent attraction or sexual interest towards prepubescent children. However, prior studies suggested that pedophilia is not necessary and moreover not sufficient to solely account for committing sexual offenses against children, but constitutes a significant risk factor (Seto, 2008). Up to now, there is a dearth of studies concerning the neural basis of a) pedophilia and/or b) sexual child abuse, thus structural and functional brain differences between both groups still remained unclear. In healthy controls, the amygdala (AM) and the orbitofrontal cortex (OFC) have been shown to play a crucial role in the neural processing of sexual experiences, whereby the former is thought to correspond to the emotional- and the latter to the cognitive component of sexual arousal (Stoléru et al., 1999; Stoléru, Fontelle, Cornélis, Joyal, & Moulier, 2012). In the present study, it is hypothesized that offending compared to non offending pedophiles will differ in the functional connectivity within brain networks involved in the processing of sexual experiences. This was assessed by means of resting state fMRI based functional connectivity analysis, which has been pointed out to be a powerful research tool for the determination of the temporal correlation of a neurophysiological index, measured in different brain areas. In particular, we defined associated brain structures (such as the amygdala) as seed regions to calculate the correlation to any other voxel in the brain and compared the resulting statistical maps between groups. In line with our hypothesis, pedophile offenders (N=15) showed diminished functional connectivity between the left AM and the left OFC, compared to pedophilic non offenders (N=15). An impaired connectivity between both brain structures may point to a dysfunctional integration of cognitive and emotional components in the neural network underlying sexual experiences. This was corroborated by prior studies reporting structural abnormalities in the OFC in pedophilic perpetrators (Schiffer et al., 2007). Subsequently, it is conceivable that such disturbances may contribute to a disinhibition of sexual behavior towards the preferred sexual object in pedophilic offenders. However, the specificity of the present results remains unclear and has to be validated in an extensive four group design including non pedophilic child molesters and a healthy control group.
References


