NEUROCHEMISTRY AND TREATMENT OF DEVIANT SEXUAL INTEREST AND OFFERING

The Neurochemistry of Pedophilia:
Monoamines, Executive Function, and Offense Status

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Motivation: Research shows executive function neuropathology in pedophilic sexual offenders against children (Eastvold, Suchy, & Strassberg, 2011; Kruger & Schiffer, 2011; Schiffer & Vonlaufen, 2011; Suchy, Eastvold, Strassberg, & Franchow, 2014; Suchy, Whittaker, Strassberg, & Eastvold, 2009), but the exact scope of impairment has yet to be elucidated. These suggest differences are attributable to a general deficit in cognitive speed rather than a distinct response pattern. Whether these differences hold for other tests of executive functioning and whether these findings are also observed in specific subgroups of pedophilic men, such as those with contact offense histories and those without, as compared to non-offending controls, remain open questions. Further, how executive functioning differences in pedophilic men relate to serotonin and dopamine transporter neurotransmission in the brain is unexplored. This research explored executive functioning and monoamine transporter density differences among the groups of pedophilic men with histories of contact sexual offenses against children and pedophilic men with no such histories to a non-offending control group to determine how neurochemistry is related to executive function and offense status in pedophilia.

Methodology: 10 pedophilic men with a history of contact sexual offenses against children (P+CSA) and 16 pedophilic men without a history of contact sexual offenses against children (P-CSA) were recruited and matched to 17 control participants (Con) for age, IQ, and handedness. SCID I/II diagnoses, self-reported impulsivity, self-reported hypersexuality/paraphilia, trauma experience, and alcohol and drug consumption were included as covariates to control for confounding effects. Executive function was assessed through the error rates and reaction times of the Intra/Extradimensional Set Shift Task.
(IED), Information Sampling Task (IST), Spatial Working Memory Task (SWM), Stop Signal Task (SST), and Stockings of Cambridge Task (SOC) from the Cambridge Cognition Neuropsychological Test Battery (CANTAB). All participants were injected with 200 MBq I-123-ß-CIT and scanned after 4 and 24 hours for 40 min using a Discovery 670 NM/CT (GE Healthcare) to assess monoamine transporter binding ratios.

Results: Pedophiles without contact offenses committed greater Direction Errors on the Stop Signal Task (SST) and both groups displayed longer median ‘GO’ and ‘Last Half’ reaction times compared to controls. Serotonin transporter densities were lower in pedophiles than controls, reaching statistical significance only for pedophiles without contact offenses in the hypothalamus (1.32 vs. 1.73, p= 0.05). Dopamine transporter densities were higher in pedophiles than controls, again reaching statistical significance only for pedophiles without contact offenses in the caudate nucleus bilaterally (right: 6.7 vs. 5.8, p= 0.02; left: 6.7 vs. 5.8, p= 0.03).

Conclusion: Initial findings suggest fewer executive functioning differences in community dwelling pedophilic men compared with matched controls. Weaknesses were generally greater for pedophiles with contact offenses, suggesting a stronger role for offense status in driving the differences between pedophiles and healthy controls. Monoaminergic binding ratios suggest a role of neurochemistry in pedophilia, with lower serotonin transporter and greater dopamine transporter densities in pedophiles without contact offenses. This may explain the commission of pure non-contact offenses as a compensatory mechanism preventing contact sexual offenses. Future research should focus on recruiting larger pedophilic samples and correlating monoaminergic findings with structural and functional MRI findings to clarify why some pedophilic men commit contact sexual offenses against children and why others do not.

Goals of the Paper:

- Elucidate the differences in executive functioning in pedophilic men with and without histories of contact child sexual abuse offenses
- Expand current understanding of the neurobiological correlates of pedophilia and child sexual offending through neurochemistry
- Contribute to current theory by classifying pedophilic and control participants based on executive functioning and neurochemical differences

References


The Use of Leuprolide Acetate in the Management of High-Risk Sex Offenders

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The use of pharmacological interventions in the management of adult sexual offenders in the community is often in conjunction with psychological approaches. Leuprolide acetate (Lupron) is a luteinizing hormone-releasing hormone (LHRH) used as a sex drive reducing medication to treat moderate-high risk sex offenders. Previous research has shown evidence for the effectiveness of Lupron in reducing sexual arousal and behavior (Briken, Nika and Berner, 2001; Schober et al., 2005), though many studies suffer from limitations including small sample size, short duration of follow-up, and high dropout rates. The present study addresses several of these limitations and investigates whether Lupron adds to the efficacy of traditional sex offender treatment programming. Sex offenders receiving both Lupron and cognitive-behavioral treatment (CBT) were compared to sex offenders receiving only CBT as well as a sample of untreated, non-sexual violent offenders. Results indicated that sex offenders receiving both Lupron and CBT were at a significantly higher risk for sexual recidivism (as measured by the Static-99R) and were significantly more likely to be diagnosed with a paraphilia as compared to sex offenders in the CBT only group. Sex offenders receiving both Lupron and CBT treatment were significantly less likely to reoffend. These results and the implications for the use of Lupron in the management of high-risk sex offenders are discussed.

Goals of the Paper:
1. Present the relevant background information on high-risk sex offenders residing in the community.
a. Provide the audience with information regarding the criminal histories, risk to reoffend, and psychiatric state of a group of high-risk sex offenders released to the community, offering a clear picture of the types of sex offenders being treated in community settings and an idea of their needs upon release from incarceration.

2. Present the current data on the use of Lupron with high-risk sex offenders residing in the community.
   a. Provide the audience with detailed information about the current study (i.e. the types of treatment that high-risk sex offenders receive in community settings, methodology, results, etc.).

3. Discuss findings and implications.
   a. Discuss in detail the results of this study in the context of the clinical implications for the use of Lupron as an adjunct to traditional sex offender treatment. In addition, provide the audience with practical management considerations when working with high-risk sex offenders in the community.