

Neurocognitive and Executive Function in Cocaine Addicted Females

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Abstract : Cocaine ranks as one of the world's most addictive and commonly abused stimulant drugs. Recent evidence indicates that the abuse of cocaine has risen so quickly among females that this group now accounts for about 40 percent of all users in the United States. Neuropsychological studies have demonstrated that specific neural activation patterns carry higher risks for neurocognitive and executive function in cocaine addicted females thereby increasing their vulnerability for poorer treatment outcomes and more frequent post-treatment relapse when compared to males. This study examined secondary data with a convenience sample of 164 cocaine addicted male and females to assess neurocognitive and executive function. The principal objective of this study was to assess whether individual performance on the Stroop Word Color Task is predictive of treatment success by gender. A second objective of the study evaluated whether individual performance employing neurocognitive measures including the Stroop Word-Color task, the Rey Auditory Verbal Learning Test (RALVT), the Iowa Gambling Task, the Wisconsin Card Sorting Task (WISCT), the total score from the Barratte Impulsiveness Scale (Version 11) (BIS-11) and the total score from the Frontal Systems Behavioral Scale (FrSBE) test demonstrated differences in neurocognitive and executive function performance by gender. Logistic regression models were employed utilizing a covariate adjusted model application. Initial analyses of the Stroop Word color tasks indicated significant differences in the performance of males and females, with females experiencing more challenges in derived interference reaction time and associate recall ability. In early testing including the Rey Auditory Verbal Learning Test (RALVT), the number of advantageous vs disadvantageous cards from the Iowa Gambling Task, the number of perseverance errors from the Wisconsin Card Sorting Task (WISCT), the total score from the Barratte Impulsiveness Scale (Version 11) (BIS-11) and the total score from the Frontal Systems Behavioral Scale, results were mixed with women scoring lower in multiple indicators in both neurocognitive and executive function.

Keywords : cocaine addiction, gender, neuropsychology, neurocognitive, executive function

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