

Sex-differences in cognition and behaviors in children with family history of substance use disorders



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Aims: Substance use disorder (SUD) is highly heritable, but it is unclear whether SUD-related cognitive and behavioral deficits are inherited and if they are sexually dimorphic. Polymorphisms in catechol-O-methyltransferase (COMT) genes have been associated with sex-specific deficits associated with SUD. The aim is to determine the association between two COMT genotype variants, sex, and family history of SUD (FSUD) on behavioral measures and cognition in typically developing children.

Methods: FSUD, externalizing behavior and total ADHD scores were reported by parents of 226 children ages 3–20 years (85 SUD: 10.1 ± 0.5 years, 48 boys; 141 CON: 10.0 ± 0.4 years, 74 boys). Cognitive performance was assessed by full scale IQ (FSIQ) and the NIH Toolbox[®]. Saliva samples were genotyped for two functional COMT single nucleotide polymorphisms (SNPs): rs4680 (Val158Met) and rs165599 (near the 3'UTR region).

Results: On 3-way (SNP, sex, FSUD) ANOVAs, rs165599 tended to have negative effects on ADHD scores ($p=0.08$) and externalizing behaviors ($p=0.06$), with male AA-carriers with FSUD having higher ADHD scores ($p=0.10$) and externalizing behaviors ($p=0.03$). COMT rs165599 variant tended to have a negative effect on FSIQ ($p=0.08$) and IQ processing speed ($p=0.07$), with male AA-carriers with FSUD having the lowest scores. Regardless of FSUD, males with the rs4680 variant tended to have lower FSIQ ($p=0.06$), but significantly lower processing speed scores ($p=0.003$).

Conclusions: The COMT genetic variants appear to have a greater negative influence on boys. FSUD boys with the rs165599 AA-genotype had greater ADHD symptoms and externalizing behaviors as well as lower FSIQ and slower processing speed. Both behaviors and cognitive function may be influenced by these genes involved in dopamine metabolism in a sex-specific manner.

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Implementation of drug and HIV risk counseling in MMT programs in Taiwan



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Aims: Few methadone maintenance treatment (MMT) programs in Taiwan offer drug counseling and data on program

implementation have rarely been reported. This study aims to examine the feasibility of Behavioral Drug and Risk Counseling (BDRC) as a component of MMT and documents its implementation in Taiwan.

Methods: 90 MMT patients were randomly assigned to treatment as usual ($n=45$, MMT only) or MMT + BDRC ($n=45$). Patients in the BDRC group receive weekly counseling in the first month, bi-weekly in months 2 and 3, and monthly in months 4 to 7 after enrollment. BDRC sessions offer education on biological and pharmacological mechanisms of heroin and methadone, skills to reduce/avoid HIV risk behaviors, maintaining or improving medication adherence, and establishing non-drug related activities supporting recovery. BDRC utilizes health education, setting small and achievable goals, positive feedback, and developing plans and skills to improve treatment participation and prolonged drug recovery. BDRC counselors ($n=4$) received a 5-day training workshop at the program onset. Clinical supervision, including case discussions, is conducted monthly and lead by an experienced psychotherapist. Counselors maintain content checklists and notes from each session.

Results: Content analysis of the checklists and counseling notes showed that counselors were able to deliver the BDRC but fidelity of counseling intervention varies between sites and counselors. Factors influencing intervention fidelity include: counselor's professional background and past training, and site/organizational characteristics (e.g., availability of separate and confidential counseling space, coordination between case managers and counselors) and frequency of clinical supervision.

Conclusions: Our preliminary findings support the potential of integrating behavioral counseling into regular MMT as a component of a comprehensive treatment in Taiwan.

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What predicts continued substance use among probationers?



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Aims: Probation supervision is designed to motivate drug users to suppress illicit substance use during supervision. The probation suppression effect has not been adequately tested. This study examines predictors of continued illicit substance use among probationers in two urban areas.

Methods: 142 substance-using probationers participating in an ongoing randomized control trial. Probationers completed baseline and 2-month follow-up (2MFU) interviews. Probationers averaged 37 years old and were predominately male (72.5%) and African-American (68.9%). The measures examined include age, criminal justice (e.g., lifetime arrests), treatment/use (e.g., recent hard drug use), and psychosocial (e.g., problem recognition) factors. Hard drug use includes opiates, cocaine, barbiturates, amphetamines, hallucinogens, and inhalants, which are statistically significant independent predictors of criminal behavior. Bivariate correlations and logistic regression models examined the relationship between individual factors and continued drug use (any) and hard drug use.

Results: Bivariate analysis revealed homelessness, recent poly-substance use, recent hard drug use, substance use with family members, and peer substance use were associated with 2MFU overall drug use. Prior substance abuse treatment, age of first drug