

Adolescent Substance Use and Psychiatric Comorbidity: What Factors Predict First Use and PTSD?

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INTRODUCTION & HYPOTHESIS

Adolescents begin experimenting with illegal substances at earlier ages than ever before, and prepubescent exposure to illegal substances has been linked to greater psychosocial impairment, suicide, and legal problems in adolescence. Research investigations are exploring pre-existing mental health conditions that can lead to early substance use and eventual substance use disorders (SUDs), such as posttraumatic stress disorder (PTSD). However, prior work has been limited by non-clinical samples, samples with insufficient number of substance dependent girls, and non-representative samples selected for clinical trial investigations. Using the largest sample to date of a clinical population of substance dependent youth with equal gender proportions, we hypothesized the following:

- 1) Youth who used illicit substances before age 13 are more likely to develop a SUD with greater impairment across clinical variables
- 2) Substance dependent adolescents with PTSD are more likely than adolescents without PTSD to use illicit substances before age 13.

MATERIALS & METHODS

◆ Data were collected via rater-administered, semi-structured interviews; medical chart review; and youth, parent and clinician reports. Demographic characteristics, SUDs, age of first use, psychiatric comorbidities and clinical variables were assessed at baseline.

◆ Depending on the type of variables (continuous or discrete), the Fisher's exact Test for binary variables or Kruskal-Wallis Chi-Square Test for continuous variables was performed to evaluate differences between subjects.

◆ Demographic characteristics shown in Table 1 included subject age, gender, race, ethnicity, single parent household status, youth education attainment, and learning disability.

		Total 195 (100%)	Age of First Use	
			<13 yrs 67 (34%)	13+ years 128 (66%)
Gender	M	93 (48%)	58 (26%)	35 (38%)
	F	102 (52%)	70 (69%)	32 (31%)
Age	Mean (SD)	16.2 (1.1)	15.9 (1.2)	16.2 (0.9)
Minority	Yes	60 (31%)	21 (31%)	39 (31%)
Single Parent Household	Yes	98 (50%)	30 (45%)	68 (53%)
Grade	≤ 8 years	11 (6%)	9 (13%)	2 (2%)
	Middle School	108 (55%)	41 (61%)	67 (52%)
	Partial High School	50 (26%)	11 (16%)	39 (30%)
	High School	26 (13%)	6 (9%)	20 (16%)
Learning Disability	Yes	28 (14%)	5 (7%)	23 (18%)

◆ Four variables relating to Axis 1 diagnoses were assessed: existence of SUD and type of SUD (Table 2), age of first use and diagnosis of anxiety disorder (Table 3). These variables were measured using the rater-administered MINI International Neuropsychiatric Interview Plus. The MINI-Plus is a comprehensive diagnostic semi-structured interview that covers a wide range of diagnoses, both current and lifetime. Included among the diagnoses are abuse and dependence (by substance) and PTSD.

◆ Four clinical variables were assessed: suicide attempt history, deliberate self-harm, history of sexual abuse, and history of physical abuse. (Table 4) Two items from the Schedule for Nonadaptive and Adaptive Personality were used to measure youth history of attempted suicide and deliberate self-harm. Sexual abuse history and physical abuse history were assessed by a trained chemical dependency counselor.

TABLE 2. SUD Disorders Among Youth

	Total 195 (100%)	Age of First Use ^a	
		<13 yrs 67 (34%)	13+ years 128 (66%)
AUD = Alcohol Dependency	118 (61%)	45 (67%)	73 (57%)
SUD = Substance Dependency	193 (99%)	67 (100%)	126 (98%)
SUD Type			
Stimulants	49 (25%)	17 (25%)	32 (25%)
Cocaine	50 (26%)	20 (30%)	30 (23%)
Narcotics	58 (30%)	22 (33%)	36 (28%)
Hallucinogens	57 (29%)	26 (39%)*	31 (24%)*
Inhalants	11 (6%)	5 (7%)	6 (5%)
Marijuana	179 (92%)	63 (94%)	116 (91%)
Tranquilizers	39 (20%)	19 (28%)*	20 (16%)*

NOTES:

^aAge of first use of the drug youths were dependent upon at intake

*p<.05.

RESULTS

◆ Substance dependent youth with comorbid PTSD were significantly more likely to have begun using before age 13, with the majority of youth demonstrating PTSD symptoms before first use.

◆ PTSD symptomatology predating first use significantly correlated with history of sexual abuse ($X^2 = 5.88, p < 0.05$) and self-harm ($X^2 = 3.5, p < 0.05$).

◆ Youths who began experimenting with illicit substances during school-aged years were more likely to enter treatment at a younger age with hallucinogen dependency, tranquilizer dependency, and comorbid PTSD.

◆ Sixty percent of youths with comorbid PTSD first experienced PTSD symptoms before they began experimenting with substance(s).

TABLE 3. Psychosocial problems associated with early-age substance use among youth in treatment for substance dependency disorders

Psychosocial Variable ^a		Total 195 (100%)	Age of First Use	
			<13 yrs 67 (34%)	13+ years 128 (66%)
Anxiety History ^a				
Posttraumatic Stress Disorder	Yes	37 (19%)	21 (31%)**	16 (12.5%)**
Social Anxiety Disorder	Yes	28 (14%)	8 (12%)	20 (16%)
Panic Disorder	Yes	14 (7%)	6 (9%)	8 (6%)
Attempted Suicide	Yes	35 (18%)	13 (19%)	22 (17%)
Self-Harm History	Yes	69 (35%)	22 (33%)	47 (37%)
Physical Abuse History	Yes	45 (26%)	16 (36%)*	29 (64%)*
Sexual Abuse History	Yes	50 (23%)	19 (28%)	31 (24%)

NOTES: *p<.05. **p<.005

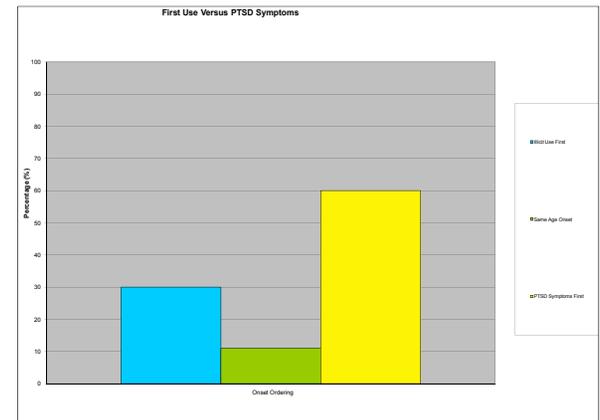
^aHistory includes past and/or current disorder status

TABLE 4. Psychosocial problems associated with PTSD versus illicit drug use onset ordering

Psychosocial Variable ^a		Total 37 (100%)	PTSD: First Use Onset Ordering		
			Illicit Use First 11 (30%)	Same Age 4 (11%)	PTSD Symptoms First 22 (59%)*
Anxiety History ^a					
Social Anxiety Disorder	Yes	11 (30%)	5 (45%)	0 (0%)	6 (27%)
Panic Disorder	Yes	7 (19%)	3 (27%)	1 (25%)	3 (14%)
Attempted Suicide	Yes	11 (30%)	3 (27%)	1 (9%)	7 (32%)
Self-Harm History	Yes	19 (51%)	4 (36%)	1 (25%)	14 (64%)*
Physical Abuse History	Yes	16 (43%)	4 (36%)	0 (0%)	12 (55%)*
Sexual Abuse History	Yes	19 (51%)	5 (45%)	2 (50%)	12 (55%)*

NOTES: *p<.05.

^aHistory includes past and/or current disorder status



CONCLUSIONS

◆ Our data presents the following pattern: those with PTSD were more likely to have begun using before age 13 before becoming substance dependent.

◆ Pre-existing PTSD symptoms before illicit substance use was significantly associated with a history of sexual abuse and self-harm

◆ Early recognition and intervention in youth with psychiatric diagnoses could prevent early first use and eventual substance dependency.

◆ Recognition of psychiatric risk among youth could prove valuable indicators of increased risk for PTSD which preceded first use in the majority of cases in this substance dependent youth population. Our findings support the need to evaluate youth with SUDs for comorbid psychiatric illnesses.

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