RESEARCH BRIEF

The Substance Use Recovery Evaluator: A Closer Look Among Adults Presenting to an Intensive Outpatient Program for Co-Occurring Disorders

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NUWAY®

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Abstract

Numerous measures have been proposed to best measure recovery from substance use. The present research brief sought to examine the Substance Use Recovery Evaluator (SURE)'s reliability, validity, and descriptive associations with participant characteristics among a sample of 6301 people receiving intensive outpatient services (IOP) for co-occurring substance use and mental health challenges. SURE reliability ranged from "poor" to "excellent," with the material resources subscale having the former and the total score the latter. SURE domains were significantly negatively correlated with measures of psychopathology, such as the PHQ-9 and GAD-7, and positively correlated with sobriety, a related construct addressed in the SURE. Housing status was associated with SURE total score and the material resources subscale, with people having unstable housing/being unhoused being less likely to have a higher score on the SURE scales. Adjusting for confounders, those who were Black only (relative to White only) and those who had been unhoused in the past six months (relative to those who hadn't) were less likely to score a 56 or above on the SURE total scale, and those who had been in a treatment setting prior to IOP intake (relative to those who hadn't) were more likely to score 56 or above. Understanding the SURE's limitations and strengths in the present setting and population is key to making informed decisions about its use for clinical and research purposes.

Background

Historically, recovery from substance use disorders has been thought of as abstinence from substance use, or from a clinical perspective, no longer meeting criteria for a substance use disorder. This has expanded beyond remission from use to encompass other areas including quality of life, coping ability, physical health, employment, environmental health, and social connectedness (Bjornestad et al., 2020), and there has been an emphasis on recovery as an ongoing process, rather than a discrete change.

Given that the recovery process is likely a complex and individualized one, the literature has raised concerns about how to best measure this process systematically. Okrant, Reif, & Horgan (2023) identified eight validated measures of recovery, and highlight questions about their generalizability, heterogeneity of domains across existing measures, and lack of comprehensiveness. One of these measures is the Substance Use Recovery Evaluator (SURE), a 21-item psychometrically-tested self-reported measure (Neale et al., 2016), developed with input from people in recovery. The SURE measure uses Likert style responses and requires participants to respond using their experiences over the last week. It measures several domains: drinking and drug use, self-care, relationships, material resources, outlook on life, and recovery importance. Although the SURE is credited for actively incorporating stakeholder voices into its development and has been used in various studies of people using substances (Lintzeris et al., 2021), the measure would likely benefit from further lessons learned through use with large and diverse samples.

The present brief sought to examine the SURE's reliability, validity, and descriptive associations with participant characteristics based on a large sample of adults receiving treatment for co-occurring disorders in an intensive outpatient program.

Methods

Clients receiving intensive outpatient (IOP) services at NUWAY® were given the option at intake to enroll in a study examining the impact of recovery housing on outcomes, such as depression, anxiety, and recovery. The present brief was generated from this dataset. Electronic surveys were completed at intake and discharge, and then at three, nine and sixteen months after discharge. Surveys included demographic questions and outcome-related questions. Identifying information was removed for analysis to protect the privacy of participants.

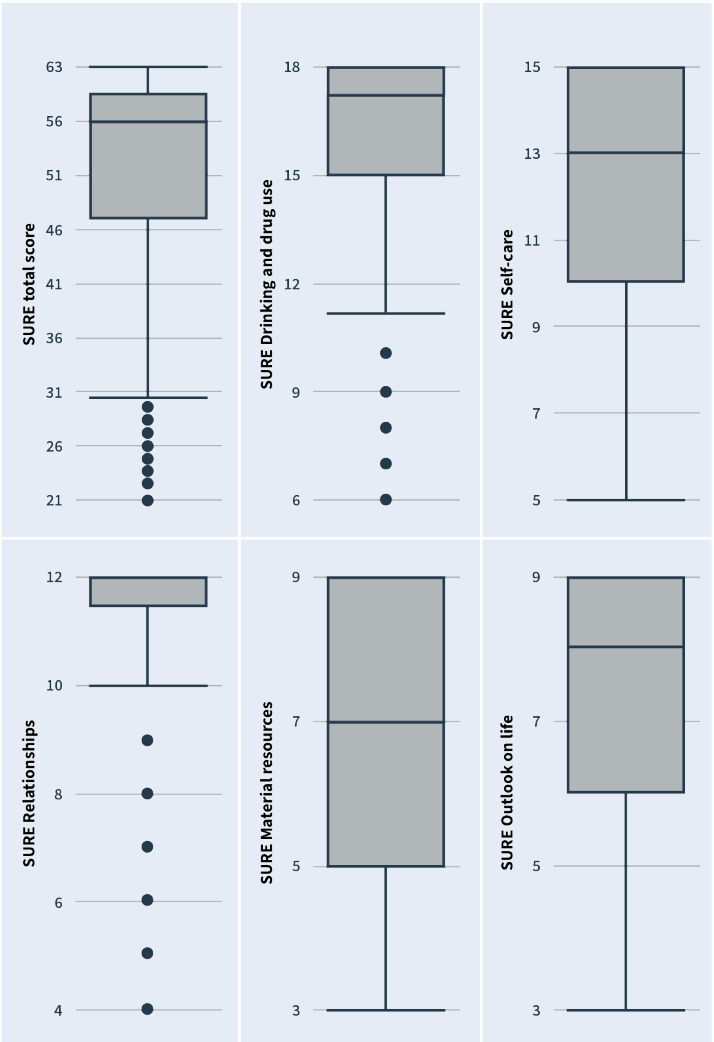
Statistical Analysis:

To examine associations between SURE scores and other potentially related measures, such as the PHQ-9 (Kroenke, Spitzer & Williams, 2001), GAD-7 (Spitzer at al., 2006), and days sober from substances, spearman correlations were calculated ($p<0.05$, Bonferroni corrected). Cronbach's alpha was used to examine SURE scale reliability. Logistic regression models were used to explore associations between SURE total score and participant characteristics (odds ratios and 95% confidence intervals, $p<0.05$). Due to violations in assumptions of normality and equal variance, SURE data was transformed into binary categorical form with cutoffs set at the median for each of the

Table 1. Spearman correlations between PHQ-9, GAD-7, SURE total, SURE subscales, and sober days at intake
(all correlations are significant at p<0.05, Bonferroni corrected)

Measure	Days sober	PHQ-9	GAD-7	SURE total	SURE drinking/ drugs	SURE self-care	SURE relationships	SURE material resources
Days sober								
PHQ-9	-0.25							
GAD-7	-0.19	0.80						
SURE total	0.37	-0.65	-0.54					
SURE drinking/drugs	0.40	-0.41	-0.33	0.70				
SURE self-care	0.29	-0.61	-0.49	0.83	0.49			
SURE relationships	0.25	-0.45	-0.37	0.67	0.40	0.55		
SURE material resources	0.17	-0.33	-0.28	0.64	0.29	0.39	0.35	
SURE outlook	0.30	-0.60	-0.51	0.78	0.44	0.61	0.55	0.41

Figure 1: SURE score summary information
(line indicates median score, upper and lower boundaries of gray region indicate interquartile range)



SURE total and subscales. For associations between SURE scores and participant characteristics, regression analyses were first unadjusted. Then, where there were statistically significant relationships in unadjusted models, adjusted multiple logistic regression models were used to examine the relationship between the participant characteristic and SURE score while accounting for possible confounding variables. For each characteristic that had a significant unadjusted association, confounding variables were selected if there was a significant association between the characteristic and the variable as measured by chi-square tests of independence (p<0.05). Unless otherwise specified, data presented and analyzed was collected at the time of participants' intake to the IOP program.

Results

Overall summary statistics

In the present sample, SURE scores tended to be skewed toward the upper boundaries of the scales (Figure 1): total score (median=56, IQR=12; mean=53.2, SD=8.8), drinking and drug use (median=17, IQR=3; mean=16.1, SD=2.7), self-care (median=13, IQR=5; mean=12.2, SD=3.1), relationships (median=12, IQR=1; mean=11.1, SD=1.8), material resources (median=7, IQR=4; mean=6.6, SD=1.9), and outlook on life (median=9, IQR=3; mean=7.3, SD=2.1).

Reliability

Cronbach's alpha coefficient was excellent for the SURE total score (alpha=0.90), acceptable for the drinking and drug use subscale (alpha=0.77), good for the self-care subscale (alpha=0.85), good for the relationships subscale (alpha=0.82), poor for the material resources subscale (alpha=0.57), and good for the outlook on life subscale (alpha=0.87).

Validity

The SURE total score was negatively correlated with both PHQ-9 (rho=-0.65) and GAD-7 (rho=-0.54) scores indicating that higher recovery scores are associated with lower levels of depression and anxiety severity (Table 1). Conceptually, this makes sense given that all the subscales of the SURE are likely impacted by depression and anxiety symptoms (e.g., worse self-care and outlook on life are associated

with more severe symptoms). Indeed, there are negative correlations between the PHQ-9 and GAD-7 scores and all the SURE subscales. Notably, days sober is not particularly strongly correlated with the SURE drinking and drug use subscale (rho=0.40), and its magnitude is about the same as that of the SURE total score (rho=0.37).

Relative to participants who reported having unstable housing/being unhoused at the time of intake, those who reported living in a recovery residence (OR, 2.60, 2.20-3.06), a permanent residence alone or with someone else (OR, 2.74, 2.29-3.28), or some other living situation (OR, 1.96, 1.43-2.68) were more likely to score a 7 (out of 9) or above on the material resources subscale. Of note, those living in a recovery residence (OR, 2.99, 2.53-3.54), a permanent residence (OR, 1.64, 1.37-1.97), or other living situation (OR, 2.04, 1.49-2.79) were also more likely to score 56 (out of 63) or above on the total scale. Moreover, upon discharge from the IOP, participants who reported working full-time (OR, 1.85, 1.07-3.20) were more likely to score a 7 (out of 9) or above on the material resources subscale compared to those who were not working.

Associations with sample characteristics

Adjusting for possible confounding characteristics, participants who were Black only were less likely to score 56 (out of 63) or above on the SURE total score compared to those who were White only (OR, 0.70, 0.52-0.96) (Supplemental Table 1), and those who had been unhoused in the past six months were less likely than those who had not (OR, 0.69, 0.56-0.85) (Supplemental Table 2). Moreover, those who had been in an inpatient/hospital/detox setting (OR, 3.05, 2.23-4.17) or other outpatient setting (OR, 1.73, 1.15-2.59) were more likely to score 56 or above relative to those who had not been in any treatment setting (Supplemental Table 3).

Conclusions

The present research brief had the benefit of examining the SURE with a large and robust sample of participants to consider its reliability, validity, and utility. In the present sample, SURE total scores and subscale scores tended to be relatively high. One might argue that these scores might seem to be higher than expected, for example, with the drinking and drug use subscale, given that participants were presenting to an IOP, an acute level of care, for issues related to substance use and mental health symptoms. On the other hand, perhaps many had scored high because they had already enrolled in recovery-oriented supports, including recovery housing, by the time they had presented to their IOP intake. Moreover, many had discharged from an inpatient/hospital setting, which may have stabilized participants significantly and accounted for higher scores. Centrally tending high scores on the SURE may present some challenges to statistical modeling in using it as a measure of outcome change (note: this may have more to do with the present sample, and not the SURE itself). More nuanced normative data at different levels of care (e.g., inpatient, outpatient, IOP) would be beneficial.

SURE reliability ranged from "poor" to "excellent," with the material resources subscale having the former and the total score, the latter. As one might expect if the SURE was accurately measuring some overall domain of recovery or well-being, its domains were significantly negatively correlated with measures of psychopathology, such as the PHQ-9 and GAD-7, and positively correlated with sobriety, a related construct addressed in the SURE. Of note, housing status was associated with SURE total score and the material resources subscale, with people having unstable housing/being unhoused being less likely to have a higher score on the SURE scales.

Adjusting for a range of possible participant characteristic confounders in the present sample, those who were Black only (relative to White only) and those who had been unhoused in the past six months (relative to those who hadn't) were less likely to score a 56 or above on the SURE total scale, and those who had been in a treatment setting prior to IOP intake (relative to those who hadn't) were more likely to score 56 or above. Given the available data on racial and ethnic inequities in health driven by systemic forces, such as racism, perhaps the difference in SURE score among Black and White participants in the present sample is not surprising, particularly since the SURE incorporates various social determinants of health and their impact in its questions. Similarly, one might expect people with less stable housing to score lower on the SURE, which asks directly about stable housing. Finally, the higher scores among those who had been in formal treatment prior to their intake might reflect the potential benefits of structured treatment to recovery.

A few limitations of the present brief should be acknowledged. First, it used observational data, and thus inferences about causality should be tempered. Secondly, median cutoff scores used in the present analyses to delineate "higher" and "lower" scores may be idiosyncratic to the present sample and may occlude possible associations between the SURE and various demographics that might exist at different cutoffs.

If you would like access to supplemental tables and figures, please e-mail cptresearch@umn.edu.

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SUGGESTED CITATION

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Research Brief - Supplemental Tables and Figures

The Substance Use Recovery Evaluator: A Closer Look Among Adults Presenting to an Intensive Outpatient Program for Co-Occurring Disorders

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Supplemental Table 1. Associations between demographic characteristics and SURE total score
(odds ratios, 95% CI)

Characteristic	Unadjusted			Adjusted		
	OR	95% CI	*p*[a]	OR	95% CI	*p*[a]
Sex						
Male	Ref					
Female	1.12	0.99-1.28	0.08			
Age						
35 years >	Ref					
35+ years	1.03	0.93-1.15	0.55			
Race						
White only	Ref					
Black only	0.77	0.64-0.92	**	[b]0.70	0.52-0.96	*
Amer. Indian/Alaska Native only	1.27	0.96-1.67	0.09	0.77	0.47-1.26	0.30
Asian only	1.27	0.72-2.24	0.41	0.72	0.31-1.70	0.45
Other only	0.94	0.70-1.26	0.67	1.41	0.78-2.57	0.26
Multiracial	0.95	0.74-1.22	0.78	1.24	0.80-1.91	0.33
Ethnicity						
Not Hispanic/Latinx	Ref					
Hispanic/Latinx	0.89	0.69-1.16	0.38			
Education						
Some H.S.	Ref					
H.S. diploma	1.12	0.96-1.30	0.14			
Some college	1.04	0.90-1.21	0.60			
Associate or technical degree	1.02	0.83-1.24	0.87			
Bachelors	0.91	0.73-1.15	0.44			
At least some graduate school	0.89	0.63-1.24	0.48			

[a] *<0.05, **<0.01,***<0.001

[b]Adjusted for sex, education, ethnicity, cannabis use, alcohol use, amphetamine use, cocaine use, sedative use, treatment setting prior to intake, anxiety dx, bipolar dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, unhoused in past 6 months, court ordered to treatment, felony history, age of first substance use, # of prior substance use treatment attempts, PHQ-9 score, and GAD-7 score.

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Supplemental Table 2. Associations between housing, legal, and psychiatric characteristics and SURE total score (odds ratios, 95% CI)

Characteristic	Unadjusted			Adjusted		
	OR	95% CI	*p*[a]	OR	95% CI	*p*[a]
Unhoused in past 6 months						
No	Ref					
Yes	0.76	0.69-0.84	***	[b]0.69	0.56-0.85	**
Court ordered to treatment						
No	Ref					
Yes	1.26	1.13-1.41	***	[c]1.12	0.88-1.44	0.36
Convicted of a felony						
No	Ref					
Yes	1.22	1.11-1.35	***	[d]1.14	0.90-1.45	0.28
Psychiatric diagnostic category						
Depressive disorder						
No	Ref					
Yes	0.69	0.62-0.77	***	[e]1.14	0.88-1.47	0.32
Anxiety disorder						
No	Ref					
Yes	0.82	0.73-0.92	**	[f]1.05	0.79-1.38	0.76
Bipolar disorder						
No	Ref					
Yes	0.77	0.67-0.88	***	[g]1.03	0.83-1.28	0.80
Posttraumatic stress disorder						
No	Ref					
Yes	0.81	0.73-0.90	***	[h]1.23	0.97-1.54	0.08
Schizophrenia/ Schizoaffective						
No	Ref					
Yes	1.01	0.81-2.27	0.91			
ADHD/ADD						
No	Ref					
Yes	0.89	0.79-0.99	*	[i]1.21	0.99-1.47	0.05
Eating disorder						
No	Ref					
Yes	0.58	0.44-0.77	***	[j]1.26	0.81-1.95	0.31
Personality disorder						
No	Ref					
Yes	0.71	0.59-0.84	***	[k]0.84	0.59-1.20	0.34

[a] *<0.05, **<0.01,***<0.001

[b]Adjusted for age, race, education, alcohol use, opioid use, amphetamine use, sedative use, treatment setting prior to intake, depression dx, anxiety dx, bipolar dx, PTSD dx, ADD/ADHD dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, personality dx, court ordered to treatment, felony hx, age of first substance use, # of prior substance use treatment attempts, PHQ-9 score, GAD-7 score, and sober days.

[c]Adjusted for age, sex, race, ethnicity, education, cannabis use, alcohol use, amphetamine use, cocaine use, sedative use, treatment setting prior to intake, depression dx, ADD/ADHD dx, schizophrenia/schizoaffective dx, unhoused in the last 6 months, felony hx, PHQ-9 score, GAD-7 score, and sober days.

[d]Adjusted for age, sex, race, education, alcohol use, opioid use, amphetamine use, sedative use, treatment setting prior to intake, depression dx, anxiety dx, PTSD dx, ADD/ADHD dx, schizophrenia/schizoaffective dx, eating dx, personality dx, unhoused in the last 6 months, court ordered to treatment, age of first substance use, # of prior substance use treatment attempts, PHQ-9 score, GAD-7 score, and sober days.

[e]Adjusted for sex, education, alcohol use, cocaine use, anxiety dx, bipolar dx, ADD/ADHD dx, PTSD dx, eating dx, personality dx, court ordered to treatment, treatment setting prior to intake, # of prior substance use treatment attempts, age of first substance use, unhoused in the past 6 months, PHQ-9 score, GAD-7 score, and sober days.

[f]Adjusted for sex, age, race, opioid use, sedative use, depression dx, bipolar dx, ADD/ADHD dx, PTSD dx, eating dx, personality dx, treatment setting prior to intake, # of prior substance use treatment attempts, age of first substance use, felony hx, unhoused in the past 6 months, PHQ-9 score, GAD-7 score, and sober days.

[g]Adjusted for sex, race, education, alcohol use, cannabis use, depression dx, anxiety dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, PTSD dx, eating dx, personality dx, # of prior substance use treatment attempts, age of first substance use, unhoused in the past 6 months, PHQ-9 score, and GAD-7 score.

[h]Adjusted for sex, race, education, cannabis use, alcohol use, opioid use, amphetamine use, cocaine use, sedative use, depression dx, anxiety dx, bipolar dx, ADD/ADHD dx, eating dx, personality dx, treatment setting prior to intake, # of prior substance use treatment attempts, age of first substance use, felony hx, unhoused in the past 6 months, PHQ-9 score, GAD-7 score, and sober days.

[i]Adjusted for age, sex, race, education, cannabis use, alcohol use, opioid use, amphetamine use, sedative use, depression dx, anxiety dx, bipolar dx, eating dx, personality dx, unhoused in the past 6 months, court ordered to treatment, felony hx, treatment setting prior to intake, age of first substance use, # of prior substance use treatment attempts, PHQ-9 score, and GAD-7 score.

[j]Adjusted for age, sex, amphetamine use, sedative use, depression dx, anxiety dx, bipolar dx, personality dx, treatment setting prior to intake, # of prior substance use treatment attempts, PHQ-9 score, and GAD-7 score.

[k]Adjusted for sex, cannabis use, alcohol use, amphetamine use, sedative use, depression dx, anxiety dx, bipolar dx, PTSD dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, eating dx, # of prior substance use treatment attempts, age of first substance use, unhoused in past 6 months, felony hx, PHQ-9 score, GAD-7 score, and sober days.

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Supplemental Table 3. Associations between substance use characteristics and SURE total score (odds ratios, 95% CI)

Characteristic	Unadjusted			Adjusted		
	OR	95% CI	*p*[a]	OR	95% CI	*p*[a]
Age of first substance use						
15>	Ref					
15+	1.13	1.02-1.25	*	[b]1.15	0.93-1.41	0.20
# of prior SUD treatment attempts						
0	Ref					
1-3	1.07	0.90-1.28	0.44			
4+	1.08	0.91-1.29	0.38			
Past year substances used						
Cannabis						
No	Ref					
Yes	0.82	0.74-0.91	***	[c]0.83	0.67-1.04	0.11
Alcohol						
No	Ref					
Yes	0.86	0.78-0.95	**	[d]1.10	0.86-1.42	0.46
Opioids						
No	Ref					
Yes	0.88	0.79-0.99	*	[e]0.90	0.74-1.10	0.32
Amphetamines						
No	Ref					
Yes	1.22	1.10-1.34	***	[f]1.17	0.96-1.42	0.13
Cocaine						
No	Ref					
Yes	0.74	0.63-0.86	***	[g]0.83	0.64-1.07	0.16
Sedatives						
No	Ref					
Yes	0.81	0.66-0.99	*	[b]1.10	0.78-1.56	0.58
Treatment setting prior to intake						
None	Ref					
Inpatient, hospital setting, detox	3.69	3.18-4.29	***	[i]3.05	2.23-4.17	***
Other outpatient	1.83	1.50-2.24	***	1.73	1.15-2.59	**
Other	1.52	1.16-1.99	**	1.07	0.60-1.89	0.82

[a] *<0.05, **<0.01,***<0.001

[b]Adjusted for age, sex, race, education, cannabis use, opioid use, amphetamine use, cocaine use, sedative use, depression dx, anxiety dx, bipolar dx, PTSD dx, ADD/ADHD dx, personality dx, unhoused in the past 6 months, felony hx, PHQ-9 score, GAD-7 score, and sober days.

[c]Adjusted for age, sex, race, ethnicity, education, opioid use, sedative use, bipolar dx, PTSD dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, personality dx, court ordered to treatment, treatment setting prior to intake, age of first substance use, # of prior substance use treatment attempts, PHQ-9 score, and sober days.

[d]Adjusted for age, race, education, opioid use, amphetamine use, sedative use, depression dx, bipolar dx, PTSD dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, personality dx, unhoused in the past 6 months, court ordered to treatment, felony hx, # of prior substance use treatment attempts, PHQ-9 score, GAD-7 score, and sober days.

[e]Adjusted for age, race, education, cannabis use, alcohol use, amphetamine use, cocaine use, sedative use, anxiety dx, PTSD dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, unhoused in the past 6 months, felony hx, treatment setting prior to intake, # of prior substance use treatment attempts, and GAD-7 score.

[f]Adjusted for race, education, alcohol use, opioid use, cocaine use, bipolar dx, PTSD dx, schizophrenia/schizoaffective dx, ADD/ADHD dx, eating dx, personality dx, unhoused in the past 6 months, court ordered to treatment, felony hx, age of first substance use, # of prior substance use treatment attempts, and sober days.

[g]Adjusted for age, race, education, opioid use, sedative use, depression dx, bipolar dx, PTSD dx, schizophrenia/schizoaffective dx, court ordered to treatment, age of first substance use, treatment setting prior to intake, PHQ-9 score, and GAD-7 score.

[h]Adjusted for age, race, education, alcohol use, opioid use, cocaine use, anxiety dx, PTSD dx, ADD/ADHD dx, eating dx, personality dx, unhoused in the past 6 months, court ordered to treatment, age of first substance use, PHQ-9 score, and GAD-7 score.

Adjusted for sex, race, education, cannabis use, opioid use, amphetamine use, sedative use, depression dx, anxiety dx, PTSD dx, ADD/ADHD dx, felony hx, # of prior substance use treatment attempts, PHQ-9 score, GAD-7 score, and sober days.