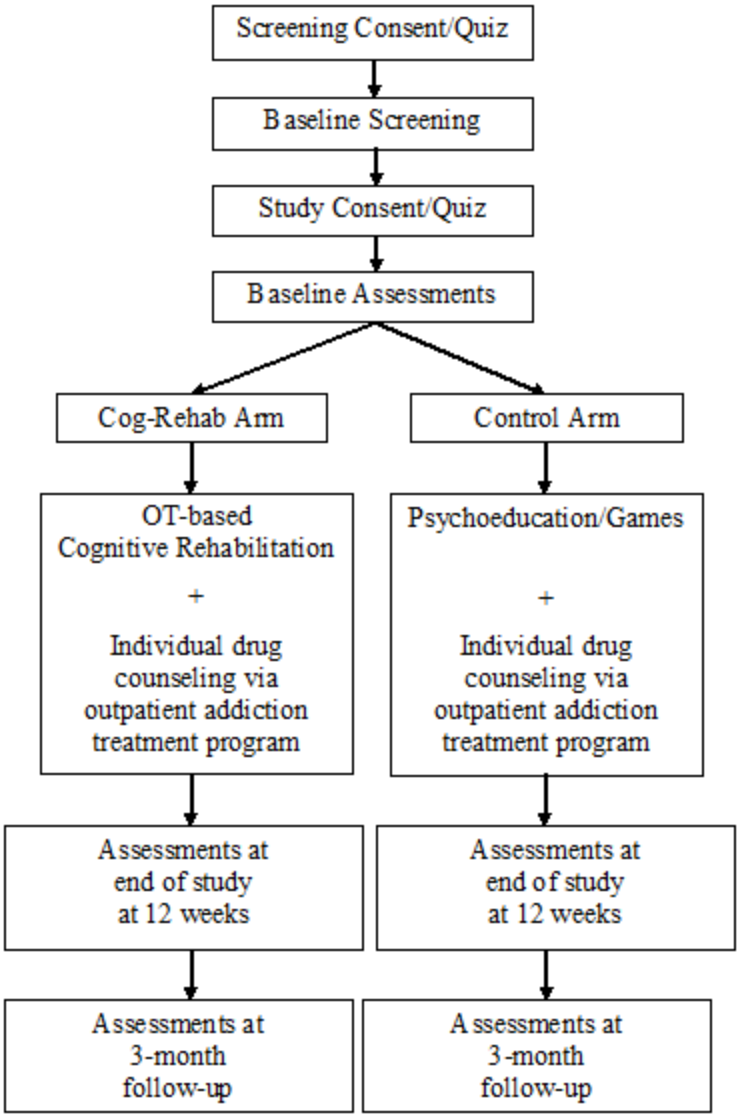


Overall Flow of the Study

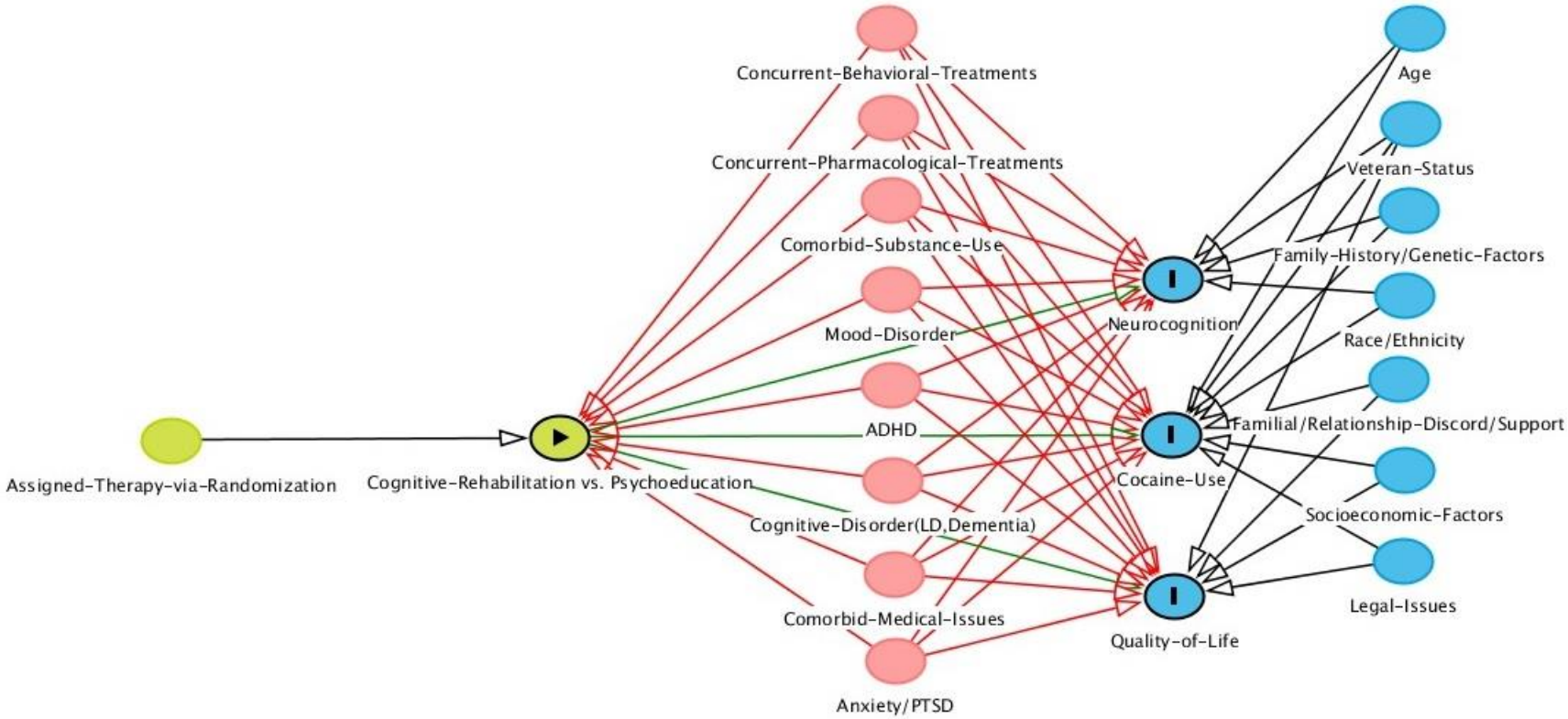
Aim 1: Examine the improvement in cognition from OT-based cognitive rehabilitation.
Hypothesis 1: The Global Deficit Score, a valid neuropsychological test scoring method for detecting clinically significant cognitive impairment, will improve significantly more by study end (at 12 weeks) for participants in the "Cog-Rehab" arm, compared to those in the "Control" arm.

Aim 2: Examine the improvement in cocaine abstinence from OT-based cognitive rehabilitation.
Hypothesis 2: The proportion of urine toxicologies negative for cocaine in the 12-week study period will be significantly greater for participants in the "Cog-Rehab" arm, compared to those in the "Control" arm.

Aim 3: Examine the improvement in daily quality of life/function from OT-based cognitive rehabilitation.
Hypothesis 3: The overall self-rating of quality of life score on the Drug User Quality of Life Scale, a valid measure for capturing the quality of life areas meaningful to substance abusers, will improve significantly more by study end (at 12 weeks) for participants in the "Cog-Rehab" arm, compared to those in the "Control" arm.

Inclusion Criteria
Age 18-65
Primary cocaine use disorder (based on DSM-5 criteria) and in at least 3 months of remission
At least mild cognitive impairment, defined as = or > 1.5 standard deviations impairment on any 2 performance-based neurocognitive measures
Needing to change quality of life, defined as self-identifying at least 2 life areas as needing to change on the Drug User Quality of Life Scale
A Veteran at the San Francisco Veterans Affairs Medical Center
Currently receiving weekly drug counseling (individual or group; at least 1 hour/week) through an outpatient substance use disorder treatment program

Exclusion Criteria
Inability to speak, read, write, and understand English
Inadequate hearing or vision
Concurrent substance use disorder (except tobacco or caffeine) not in at least 3 months of remission
A psychiatric disorder that will interfere with study participation or will make participation hazardous (e.g., psychosis, suicidal or homicidal ideations, severe anxiety)
A depressive disorder classified as severe, defined as a Beck Depression Inventory-II score >29
Current diagnosis of a bipolar disorder needing acute inpatient psychiatric hospitalization
Currently symptomatic from attention-deficit/hyperactivity disorder (DSM-5 criteria)
Any learning disorder, any type of dementia, any type of delirium, or an amnestic disorder due to any general medical condition
Wechsler Test of Adult Reading standard score <70
Mini-Mental State Examination score <24
Current use of scheduled (i.e., prescribed) regular (i.e., daily) psychotropics or other medicines with a high likelihood of sedation & cognitive impairment (e.g., benzodiazepines, clozapine, anticholinergics)
Currently prescribed stimulants (e.g., methylphenidate) or cognitive enhancers (e.g., donepezil, memantine)
Active medical illnesses – uncontrolled diabetes, uncontrolled hypertension, uncontrolled thyroid dysfunction, or uncontrolled B12/folate deficiency; central nervous system illness with potential cognitive aspects (Parkinson's, or Huntington's dementia); Cirrhosis with complications (e.g., ascites, encephalopathy, jaundice, gastrointestinal bleeding); Needing acute medical hospitalization from HIV sequelae, such as HIV-related opportunistic infection
Any history of any type of stroke or brain hemorrhage
Any history of traumatic brain injury, intracranial pathology (e.g., tumor), or brain surgery
Currently on probation or parole
Concurrent participation in another study that medically/administratively interferes with this study


Concurrent-Behavioral-Treatments
Concurrent-Pharmacological-Treatments
Comorbid-Substance-Use
Mood-Disorder
ADHD
Cognitive-Disorder(LD,Dementia)
Comorbid-Medical-Issues
Anxiety/PTSD
Assigned-Therapy-via-Randomization
Cognitive-Rehabilitation vs. Psychoeducation
Neurocognition
Cocaine-Use
Quality-of-Life
Age
Veteran-Status
Family-History/Genetic-Factors
Race/Ethnicity
Familial/Relationship-Discord/Support
Socioeconomic-Factors
Legal-Issues

ADHD 1 @-0.969,0.028
Age 1 @-0.610,-0.217
Anxiety%2FPTSD 1 @-0.966,0.217
Assigned-Therapy-via-Randomization 1 @-1.461,0.066
Cocaine-Use O @-0.777,0.062
Cognitive-Disorder(LD%2CDementia) 1 @-0.968,0.093
Cognitive-Rehabilitation%20vs.%20Psychoeducation E @-1.195,0.064
Comorbid-Medical-Issues 1 @-0.967,0.158
Comorbid-Substance-Use 1 @-0.969,-0.099
Concurrent-Behavioral-Treatments 1 @-0.972,-0.217
Concurrent-Pharmacological-Treatments 1 @-0.971,-0.156
Familial%2FRelationship-Discord%2FSupport 1 @-0.621,0.024
Family-History%2FGenetic-Factors 1 @-0.614,-0.092
Legal-Issues 1 @-0.618,0.149
Mood-Disorder 1 @-0.969,-0.038
Neurocognition O @-0.776,-0.045
Quality-of-Life O @-0.775,0.173
Race%2FEthnicity 1 @-0.617,-0.034
Socioeconomic-Factors 1 @-0.617,0.086
Veteran-Status 1 @-0.613,-0.151

ADHD Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Age Cocaine-Use Neurocognition
Anxiety%2FPTSD Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Assigned-Therapy-via-Randomization Cognitive-Rehabilitation%20vs.%20Psychoeducation
Cognitive-Disorder(LD%2CDementia) Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Cognitive-Rehabilitation%20vs.%20Psychoeducation Cocaine-Use Neurocognition Quality-of-Life
Comorbid-Medical-Issues Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Comorbid-Substance-Use Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Concurrent-Behavioral-Treatments Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Concurrent-Pharmacological-Treatments Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Familial%2FRelationship-Discord%2FSupport Cocaine-Use Quality-of-Life
Family-History%2FGenetic-Factors Cocaine-Use Neurocognition
Legal-Issues Cocaine-Use Quality-of-Life
Mood-Disorder Cocaine-Use Cognitive-Rehabilitation%20vs.%20Psychoeducation Neurocognition Quality-of-Life
Race%2FEthnicity Cocaine-Use Neurocognition
Socioeconomic-Factors Cocaine-Use Quality-of-Life
Veteran-Status Cocaine-Use Neurocognition Quality-of-Life

Questions:

1. **Aside from the obvious # of inclusion/exclusion criteria which limits external validity, are any of my inclusion/exclusion criteria inducing selection bias, are colliders, or unnecessary restrictors/confounders?**
2. **I'm restricting the range of outcomes upfront. Will this be a problem?**