Quinn, Adam, M3; Lewis, Jeffrey, MD; Stanfield, Jessica, MD; Merrill, Brian, MD; Patterson, Jason, MD; Gainer, Danielle, MD; Cowsar, Kristi, MD.

Boonshoft School of Medicine; Department of Psychiatry.
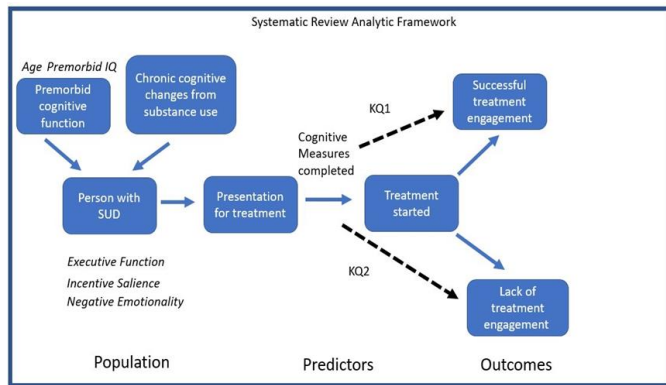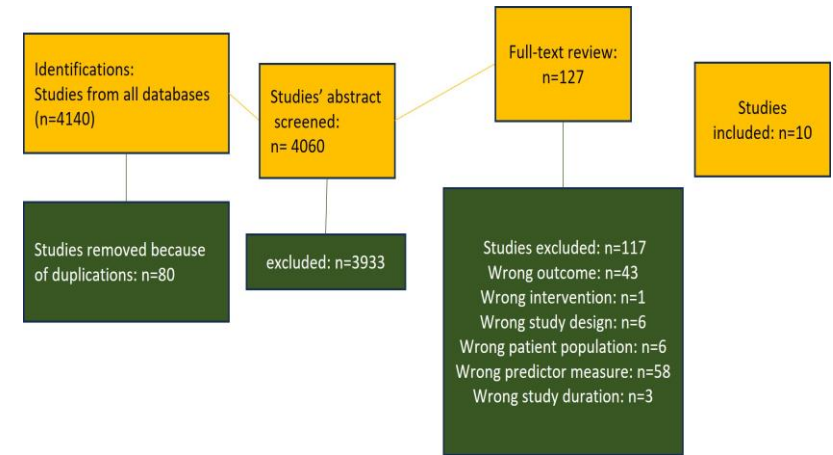
WRIGHT STATE UNIVERSITY

Background

Substance use disorders (SUD) have a tremendous and rising cost for society and the healthcare system. So it is important to find ways to improve treatment outcomes.

Methods

We selected studies with SUD with validated cognitive predictive measures and an outcome measure of treatment retention or dropout. Studies must have at least data to 3 months because that suggest that most patient will continue to adhere past that point. We selected studies from the following databases: MEDLINE, Web of Science, PsycINFO, and EMBASE.. We used Covidence to narrow down the studies we found. There were 2 rounds of exclusion and 1 round of data extraction

Results

Across the 10 studies, there were 1227 participants. No cognitive measures were consistently significant. Four studies showed no cognitive measures were statistically significant. The most used tests were the Wisconsin Card Sorting Test, Stroop Color Word Test, and Iowa Gambling Task. However, the Wisconsin Card Sorting Test, MicroCog, and Self-Regulation - Revised Strategy Application Test were each found to be significant predictors of treatment retention or dropout in a few studies. There was insufficient data to complete a meta-analysis. The risk of bias was low to moderate.

	Chen 2015	López-Torrecillas 2014	vanEmmerik-vanOortmerssen 2020	Aharonovich 2006	Congia 2020	Dean 2009	Peters 2013	Tate 2011	Turner 2009	Verdejo-Garcia 2012
Setting	Out	Out	Out	Out	In	Out	Out	Out	Out	In
Participants	42	164	174	56	95	60	127	260	84	165
Primary Use Disorder(s)	Meth	Nicotine	Alcohol	Cocaine	Cocaine	Meth	Cannabis	Alcohol, Cannabis, stimulant	Cocaine	Cocaine
Cognitive Tasks	CPT WCST IGT	IGT Go No-Go DDT	ToL CWST BART	Microcog WCST	IGT CWST BART	N-back BDI	DDT	WAIS CWST TMT CVLT NART WCST Rey BDI	CVLT Rey TMT PASAT WCST	Similarities CWST R-SAT LNS IGT
Outcome	Dropout	Dropout	Dropout	Retention	Retention	Retention	Retention	Retention	Retention	Retention
Key Question	1	1	1	2	2	2	2	2	2	2
Statistically Significant	IGT	None	ToL CWST	Microcog	None	1-back	None	None	WCST	R-SAT

Discussion

Now, that addiction medicine has focused more on treatment retention, more studies on cognitive measures must be done to see if cognitive remediation can help improve treatment retention and outcomes. Further, studies should broaden their predictive measures to all three cognitive domains because most studies focus on executive function.