

Examining Mediating Effects of Self-Efficacy on Alcohol and Drug Use Outcomes Following Engagement in Mindfulness-Based Relapse Prevention and Standard Relapse Prevention

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Introduction

- Treatments for Substance Use Disorders (SUD) often have different philosophical foundations yet demonstrate relatively equivalent efficacy.
- As such, there has been a growing effort to improve the efficacy of SUD treatments by delineating the mechanisms through which behavior change occurs.
- Understanding these mechanisms of behavior change (MOBC) will increase knowledge of how best to deliver treatments for SUD and tailor treatment based on the idiographic processes which underlie one's unique psychopathology.
- Self-efficacy, defined as the belief in one's ability to achieve their goals, has been shown as a robust potential MOBC across treatments for SUD.

Aim: We examined if self-efficacy is a MOBC for individuals who engage in Mindfulness-Based Relapse Prevention (MBRP) and Cognitive-Behavioral Relapse Prevention (RP) for treatment of SUD.

Hypothesis: Post-treatment self-efficacy, and change in self-efficacy over time, will mediate the association between treatment condition and 12-month substance use.

Methods

- Secondary analysis of a randomized controlled trial testing the efficacy of MBRP vs RP vs Treatment As Usual (TAU).
- Latent growth curve modeling examined changes in self-efficacy across time
- Mediation analyses examined mediating effects of post-treatment self-efficacy, and change in self-efficacy over time, on substance use at 12-months post-treatment

Participants:

- N = 286 (48% Non-Hispanic White, 71.5% Male)
- Recruited following intensive outpatient/inpatient treatment for SUD

Measures:

- Self-Efficacy:** Drug Taking Confidence Questionnaire (DTQC-8)
- Substance Use:** Timeline Follow-Back (TLFB)

Results

Table 1. Descriptive statistics self-efficacy and outcomes by treatment group.

Measure	Total	TAU	RP	MBRP	Cohen's f
	M (SD)	M (SD)	M (SD)	M (SD)	
DTQC-8 Baseline	4.09 (1.05)	3.98 (1.03)	3.99 (1.13)	4.29 (0.84)	0.14
DTQC-8 Post-treatment	3.99 (1.25)	3.70 (1.19)	3.80 (1.34)	4.21 (1.17)	0.18
DTQC-8 6-months	3.97 (1.35)	3.84 (1.22)	3.96 (1.27)	4.08 (1.26)	0.08
DTQC-8 12-months	3.92 (1.39)	3.77 (1.28)	3.94 (1.3)	4.04 (1.35)	0.08
Drug use days (12-months)	4.50 (16.64)	4.63 (16.03)	6.01 (18.93)	3.06 (15.08)	0.07
Heavy drinking days (12-months)	3.27 (11.92)	4.64 (14.93)	3.83 (12.10)	1.44 (7.66)	0.12

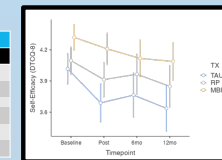


Table 2. Latent growth mediation model results with unstandardized (B) and standardized (B) path coefficients of treatment in predicting drug use via self-efficacy

Direct effects	B (SE)	p-value	β
Contrast 1 → intercept (a-path)*	0.05 (0.01)	<0.001*	0.07
Contrast 2 → intercept (a-path)*	0.10 (0.04)	0.005*	0.13
Contrast 1 → slope (a-path)	-0.001 (0.02)	0.96	-0.003
Contrast 2 → slope (a-path)	-0.01 (0.02)	0.23	-0.02
Intercept → drug use days (b-path)	-0.09 (0.59)	0.52	-0.29
Intercept → no drug use (b-path)*	0.60 (0.21)	<0.001*	0.29
Slope → drug use days (b-path)*	-0.95 (0.45)	0.04*	-0.30
Slope → no drug use (b-path)*	2.23 (1.04)	0.03*	0.34
Contrast 2 → drug use days	-0.18 (0.12)	0.11	-0.18
Contrast 2 → no drug use days	-0.25 (0.18)	0.19	-0.25
Contrast 1 → no drug use	-0.01 (0.17)	0.94	-0.01
Contrast 2 → no drug use	0.29 (0.22)	0.19	0.14
Indirect effects	B (SE)	p-value	IRR/OR (95% CI)
Contrast 1 → intercept → no drug use*	0.04 (0.02)	0.04*	1.04 (1.002, 1.08)
Contrast 2 → intercept → no drug use*	0.08 (0.03)	0.02*	1.08 (1.01, 1.16)

Table 3. Latent growth mediation model results with unstandardized (B) and standardized (B) path coefficients of treatment in predicting heavy drinking via self-efficacy

Direct effects	B (SE)	p-value	β
Contrast 1 → intercept (a-path)*	0.06 (0.01)	<0.001*	0.06
Contrast 2 → intercept (a-path)*	0.10 (0.03)	0.005*	0.13
Contrast 1 → slope (a-path)	-0.001 (0.02)	0.96	-0.002
Contrast 2 → slope (a-path)	-0.02 (0.02)	0.20	-0.07
Intercept → heavy drinking days (b-path)*	-0.93 (0.26)	<0.001*	-0.70
Intercept → no heavy drinking (b-path)*	0.93 (0.24)	0.03*	0.20
Slope → heavy drinking days (b-path)	-1.48 (0.78)	0.06	-0.46
Slope → no heavy drinking (b-path)	1.80 (0.84)	0.03	0.28
Contrast 1 → heavy drinking days	-0.16 (0.17)	0.33	-0.16
Contrast 2 → heavy drinking days	-0.12 (0.44)	0.81	-0.11
Contrast 1 → no heavy drinking	0.14 (0.13)	0.27	0.07
Contrast 2 → no heavy drinking	0.41 (0.14)	0.003	0.20
Indirect effects	B (SE)	p-value	IRR/OR (95% CI)
Contrast 1 → intercept → heavy drinking days	-0.05 (0.02)	0.040*	0.96 (0.92, 0.99)
Contrast 2 → intercept → heavy drinking days	-0.08 (0.04)	0.046*	0.92 (0.84, 0.99)
Contrast 1 → intercept → no heavy drinking	0.03 (0.01)	0.050*	1.03 (1.00, 1.05)
Contrast 2 → intercept → no heavy drinking	0.05 (0.03)	0.120	1.05 (0.99, 1.11)

Note. Contrast 1 = MBRP & RP vs TAU; Contrast 2 = MBRP vs. RP; Indirect effects were only estimated for significant a- and b-paths in **bolded font***; Intercept = post-treatment DTQC-8 scores; Slope = change in DTQC-8 scores between baseline, post-treatment, 6-, and 12-month follow-up; IRR = incident rate ratio, which can be interpreted as percentage increase (above 1.0) or decrease (below 1.0) in drug use (or heavy drinking days) days for a 1-unit increase in the predictor; OR = odds ratio, which can be interpreted as the increase (above 1.0) or decrease (below 1.0) in the odds of not using drugs (or engaging in heavy drinking) for a 1-unit increase in the predictor. All models included age as a covariate, which was grand mean centered.

Conclusions

- MBRP participants had the highest self-efficacy at all time points
- Higher levels of self-efficacy at post-treatment were associated with improved treatment outcomes

- Greater self-efficacy at post-treatment predicted higher probability of no drug use and no heavy drinking at 12-months
- Increases in self-efficacy over time predicted no drug use and no heavy drinking at 12-months

- Self-efficacy mediated the association between treatment condition and the probability of drug use occurring at 12-months
- Self-efficacy mediated the association between treatment condition and the number of heavy drinking days at 12-months

- Results support self-efficacy as a MOBC across treatments, with effects being most pronounced in MBRP
- Future research on the specific components of treatment within MBRP that promote increases in self-efficacy is warranted.

