

SHORT REPORT

Relative Impact of Mindfulness, Self-Compassion, and Psychological Flexibility on Alcohol Use and Burnout Among Law Enforcement Officers

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Abstract

Objectives: In the present study, we investigated the relative impact of improvements in mindfulness, self-compassion, and psychological flexibility in predicting decreased burnout and alcohol use in a sample of law enforcement officers (LEOs) participating in a mindfulness-based intervention (MBI).

Design: This study is a secondary analysis of pre/post data collected as part of a larger randomized controlled trial of mindfulness-based resilience training (MBRT).

Subjects: This secondary analysis comprises pre/post data from 28 LEOs recruited from a metropolitan area and its outlying regions in the Pacific Northwest.

Intervention: MBRT is a MBI tailored specifically to the culture and needs of LEOs and other first responders.

Outcome measures: All included data were obtained through self-report measures. Mindfulness was assessed by the Five Facet Mindfulness Questionnaire-Short Form, self-compassion was assessed by the Self-Compassion Scale-Short Form, psychological flexibility was assessed by the Acceptance and Action Questionnaire-II, alcohol use was measured by the PROMIS[®] (v1.0) Alcohol Use-Short Form, and burnout was assessed by the Oldenburg Burnout Inventory.

Results: In the first regression, only increases in mindfulness significantly predicted decreased post-intervention problematic alcohol use. In the second regression, only increases in self-compassion significantly predicted decreased postintervention burnout.

Conclusions: This study builds upon a growing body of literature on the relative impact of mindfulness, self-compassion, and psychological flexibility in predicting outcomes among high-stress cohorts. Results suggest that different components of MBIs may be emphasized to achieve unique benefits. The Clinical Trial Registration number for the parent study is NCT02521454.

Keywords: mindfulness, self-compassion, psychological flexibility, police, burnout, alcohol

Introduction

LAW ENFORCEMENT OFFICERS (LEOs) are at higher risk for negative health outcomes compared with the general population, including alcohol misuse and burnout.¹ Using alcohol to manage work-related stressors is encouraged by LEO culture, and puts them at elevated risk for alcohol-related problems.¹ Burnout, characterized as emotional exhaustion, depersonalization, and reduced personal

accomplishment caused by occupational stressors,² is also common among LEOs and associated with negative health outcomes, including and depression and anxiety.³

Despite high stress and related negative outcomes among LEOs, interventions are lacking or ineffective.⁴ However, recent meta-analyses found that mindfulness-based interventions (MBIs) improve health outcomes common for LEOs, including alcohol use and burnout.^{2,5} One such MBI is Mindfulness-Based Resilience Training (MBRT), which

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is tailored to first responders.⁶ MBRT has been shown to decrease alcohol use and burnout, and increase mindfulness, self-compassion, and psychological flexibility among LEOs.⁶ Mindfulness, self-compassion, and psychological flexibility—putative change mechanisms in many MBIs—have been linked to reductions in alcohol use^{5,7} and burnout^{8,9}; however, little is known about the relative impact of these mechanisms in MBI trials.

Mindfulness, defined as nonjudgmental present-moment attention,^{5,10,11} may be developed through deliberate training.⁶ Several systematic reviews show the positive impact of mindfulness training on factors related to alcohol use⁵ and burnout.² A recent systematic review found that self-compassion, or experiencing suffering with kindness and warmth,¹² is negatively related to alcohol use and factors related to burnout.¹³ Psychological flexibility is defined as the ability to contact the present moment nonjudgmentally and adjust behavior to contextual demands.¹² A systematic review of interventions targeting psychological flexibility found that it benefits substance use and conditions such as burnout.¹⁴

This secondary analysis is an extension of the parent study by Christopher et al. Building upon the findings of the parent study, the goal of the present study is to examine potential mechanisms of change—pre/post changes in mindfulness, self-compassion, and psychological flexibility—in a sample of LEOs who underwent MBRT.

Materials and Methods

The Pacific University IRB approved all procedures for the parent study, including this secondary analysis. All participants included in this study provided written informed consent.

Mindfulness-based resilience training

MBRT is delivered over eight-weekly 2-h sessions with a 7-h sixth session. The curriculum teaches formal and informal mindfulness practices, with cognitive-behavioral stress reduction techniques presented as well. All content is tailored to LEO culture, and adjustments, including flexible timing, are made to increase LEO willingness to participate.

Participants

Data for this secondary analysis were provided by a sample of LEOs (*n* = 31) randomized to MBRT as part of the parent study. Before the intervention three participants withdrew, and during the intervention four more participants withdrew. Final sample size for analyses were *n* = 28 at preintervention and *n* = 24 at postintervention. Demographic information may be found in the parent study.⁶

Measures

Mindfulness was measured by the Five Facet Mindfulness Questionnaire-Short Form (FFMQ-SF).¹⁰ The Observe and Describe facets of the scale have demonstrated poor psychometric qualities in nonmeditating samples¹¹; therefore, this study only used the Acting with Awareness, Non-Judging, and Non-Reactivity. Higher scores indicate more mindfulness. Reliability in the current sample was good at precourse and adequate at postcourse (α_{Pre} = 0.80; α_{Post} = 0.77).

Self-compassion was measured by the Self-Compassion Scale-Short Form (SCS-SF).¹² Higher scores indicate higher self-compassion. Reliability in the current sample was good at pre- and postcourse (α_{Pre} = 0.81; α_{Post} = 0.80).

Psychological flexibility was measured by the Acceptance and Action Questionnaire-II (AAQ-II).¹⁵ Lower scores indicate higher psychological flexibility. Reliability in the current sample was good at pre- and postcourse (α_{Pre} = 0.89; α_{Post} = 0.89).

Alcohol use was measured by the PROMIS® (v1.0) Alcohol Use-Short Form (PROMIS AU-SF).¹⁶ Higher scores indicate more problematic use. Reliability in the current sample was excellent at pre- and postcourse (α_{Pre} = 0.94; α_{Post} = 0.94).

Burnout was measured by the Oldenburg Burnout Inventory (OLBI).¹⁷ Higher scores indicate greater burnout. Reliability in the current sample was adequate at pre- and postcourse (α_{Pre} = 0.73; α_{Post} = 0.76).

Analyses

To measure change across MBRT, we created residualized change scores for mindfulness, self-compassion, and psychological flexibility by regressing each variable at postcourse on the variable at baseline. This method of measuring change helps to account for regression toward the mean. To measure how change in mindfulness, self-compassion, and psychological flexibility predicted changes in alcohol use and burnout, we built two 4-step regression models with baseline PROMIS AU-SF or OLBI entered into the first step, and residualized change in FFMQ-SF, SCS-SF, and AAQ-II entered in the second, third, and fourth steps, respectively. All four steps predicted postintervention PROMIS AU-SF or OLBI. This stepwise approach was chosen to allow us to investigate the impact of each predictor relative to the others.

Results

As shown in Table 1, all variable means moved in expected directions. All variables approximated a normal distribution and no demographic variables were statistically significant correlates of any of the outcome variables.

TABLE 1. PRE- AND POSTINTERVENTION MEANS AND STANDARD DEVIATIONS OF STUDY VARIABLES

	<i>Pre-MBRT,</i> <i>M (SD)</i>	<i>Post-MBRT,</i> <i>M (SD)</i>	<i>Pre/post</i> <i>difference,</i> <i>p (Cohen's d)</i>
PROMIS AU-SF	46.44 (7.99)	44.04 (6.29)	0.19 (0.33)
OLBI	2.36 (0.35)	2.20 (0.29)	<0.001 (0.50)
FFMQ-SF	17.54 (3.85)	19.07 (3.09)	0.005 (0.44)
SCS-SF	39.93 (6.59)	40.95 (5.70)	0.11 (0.17)
AAQ-II	14.45 (6.69)	11.70 (6.52)	0.005 (0.42)

AAQ-II, Acceptance and Action Questionnaire-II; FFMQ-SF, Five Facet Mindfulness Questionnaire-Short Form; *M*, Mean; MBRT, mindfulness-based resilience training; OLBI, Oldenburg Burnout Inventory; PROMIS AU-SF, Patient-Reported Outcomes Measurement Information System-Alcohol Use-Short Form; SCS-SF, Self-Compassion Scale-Short Form; SD, standard deviation.

TABLE 2. REGRESSION OUTCOMES FOR PROBLEMATIC ALCOHOL USE-SHORT FORM USE AND BURNOUT

	ΔR^2	B	SEB	β	95% CI		p
					LL	HL	
Postintervention PROMIS AU-SF							
Step 1	0.67						
Pre PROMIS AU-SF		1.15	0.17	0.72	0.74	1.56	<0.001
Step 2	0.10						
Pre PROMIS AU-SF		1.00	0.18	0.71	0.63	1.38	<0.001
Δ FFMQ-SF		-4.66	1.77	-0.33	-8.41	-0.92	0.018
Step 3	0.02						
Pre PROMIS AU-SF		0.95	0.18	0.68	0.56	1.33	<0.001
Δ FFMQ-SF		-5.13	1.79	-0.37	-8.96	-1.31	0.01
Δ SCS-SF		3.02	2.60	0.14	-2.52	8.56	0.26
Step 4	0.04						
Pre PROMIS AU-SF		0.89	0.17	0.63	0.52	1.25	<0.001
Δ FFMQ-SF		-5.43	1.66	-0.39	-8.00	-1.86	0.006
Δ SCS-SF		5.83	2.82	0.28	-0.22	11.87	0.06
Δ AAQ-II		3.28	1.73	0.25	-0.42	6.98	0.078
Postintervention OLBI							
Step 1	0.53						
Pre OLBI		0.04	0.01	0.73	0.02	0.06	<0.001
Step 2	0.02						
Pre OLBI		0.04	0.01	0.70	0.02	0.05	<0.001
Δ FFMQ-SF		-0.11	0.11	-0.15	-0.33	0.11	0.325
Step 3	0.07						
Pre OLBI		0.04	0.01	0.71	0.02	0.05	<0.001
Δ FFMQ-SF		-0.07	0.10	-0.10	-0.28	0.14	0.492
Δ SCS-SF		-0.23	0.12	-0.27	-0.48	0.02	0.066
Step 4	0.02						
Pre OLBI		0.04	0.01	0.74	0.02	0.06	<0.001
Δ FFMQ		-0.08	0.10	-0.11	-0.29	0.14	0.46
Δ SCS-SF		-0.28	0.13	-0.33	-0.54	-0.01	0.040
Δ AAQ-II		-0.10	0.09	-0.16	-0.28	0.09	0.292

AAQ-II, Acceptance and Action Questionnaire-II; CI, confidence interval; FFMQ-SF, Five Facet Mindfulness Questionnaire-Short Form; HL, high limit; LL, low limit; OLBI, Oldenburg Burnout Inventory; PROMIS AU-SF, Patient-Reported Outcomes Measurement Information System-Alcohol Use-Short Form; SCS-SF, Self-Compassion Scale-Short Form; SEB, standard error of B.

Complete results of regressions are in Table 2. In the alcohol use model, only changes in mindfulness significantly predicted post-MBRT problematic alcohol use relative to changes in self-compassion and psychological flexibility in step 4 ($\beta = -0.39$, $p = 0.006$). In the burnout model, only changes in self-compassion significantly predicted post-MBRT burnout relative to changes in mindfulness and psychological flexibility in step 4 ($\beta = -0.33$, $p = 0.04$).

Discussion

Alcohol use and burnout are significant concerns for LEOs, and effectively addressing them is crucial for preventing associated negative outcomes for LEOs. MBIs show promise, but little is known about which aspects are most impactful. This study was conducted to elucidate how improvements in mindfulness, self-compassion, and psychological flexibility predict reduced alcohol use and burnout among LEOs over the course of MBRT.

A previous systematic review concluded that MBIs reduce consumption of numerous substances relative to waitlist and active control conditions, including alcohol.⁵ Our finding that increased mindfulness significantly predicted decreased alcohol use at post-MBRT is consistent

with this work. However, increased self-compassion and psychological flexibility did not. This lack of significant results may be due in part to selected self-report measures. The self-report measures of self-compassion and psychological flexibility tend to capture more cognitive constructs (e.g., "Worries get in the way of my success"), whereas the mindfulness measure used in this study included aspects of LEOs' emotional experience, particularly in terms of self-criticism and judgment, which may be more relevant to alcohol use.¹⁸ Additionally, MBRT emphasizes formal mindfulness training to a greater extent than self-compassion or psychological flexibility, and as a result a measure of mindfulness may be germane to the actual intervention being studied.

The mechanisms by which increased mindfulness may reduce alcohol use are not fully understood, but have been discussed in previous studies. A previous systematic review found that increased mindfulness resulting from MBIs may increase individuals' ability to be nonreactive in the face of triggers and cravings for substance use.⁵

Only increased self-compassion significantly predicted reduced burnout post-MBRT. This is consistent with previous findings that increased self-compassion over the course of an MBI is related to lower burnout symptoms in high-stress populations, such as mental health providers.⁹

Mindfulness and psychological flexibility did not significantly predict reductions in burnout post-MBRT. A recent systematic review of self-compassion interventions found that adaptive emotional regulation strategies mediate mental health outcomes such as stress.¹³ As such, improvements in self-compassion in a sample of LEOs may predict their ability to cope positively with job stressors, thus making stressors more tolerable and shielding them from burnout.⁹ To our knowledge, this is the first study to describe these findings in a sample of LEOs.

The null findings for mindfulness and psychological flexibility in predicting burnout post-MBRT may be attributable to sober realities of police work. Whereas mindfulness training can decrease nervous system (NS) reactivity,⁶ the ability to react swiftly is a crucial aspect of LEOs' work. As such, psychological flexibility may not be strongly related to a chronic condition such as burnout, and instead psychological inflexibility is accepted as part of the occupational demands of police work. For this reason, while improving NS regulation appears to benefit other health domains, it may be less relevant to burnout among LEOs. Similarly, it is possible that psychological inflexibility functions as a type of adaptive compartmentalization that allows LEOs to separate occupational stressors from home life, thereby limiting their influence and likelihood of resulting in burnout.

There are several limitations of this study. Primarily, the small sample size of this secondary analysis limited statistical power. Informed by our hypotheses, we examined data from the MBRT condition alone, which further limited our sample size and prevented comparison to the control condition. Although the parent study represented a major step forward for the study of mindfulness among LEOs, it was a feasibility and preliminary efficacy trial, and as such recruited LEOs from a relatively small geographical area in the Pacific Northwest, resulting in a homogeneous sample and limiting our ability to generalize findings. Additional limitations include the use of self-report measures of constructs that are difficult to assess.¹⁰ Finally, during the course of the intervention, some participants were involved in responding to civic unrest. While high-stress situations are common for LEOs, the extent of this unrest and media coverage may have been more stressful than typical duties and impacted LEOs' experience in the training.

Conclusions

This secondary analysis examined three potential mechanisms of action—pre/post changes in mindfulness, self-compassion, and psychological flexibility—in LEOs undergoing MBRT, and found that positive changes in mindfulness predicted lower alcohol postcourse, whereas positive changes in self-compassion predicted lower burnout postcourse.

This study offers direction for future studies by building upon a growing body of literature on the relative impact of mindfulness, self-compassion, and psychological flexibility in predicting outcomes such as alcohol use and burnout in high-stress populations, such as LEOs. Despite increased awareness of the relationships between these constructs and outcomes, it is not well understood how to apply them in specific interventions to achieve optimal benefit. Future

studies are needed to clarify, which health outcomes benefit from mindfulness, self-compassion, and psychological flexibility. This focus is particularly crucial among LEOs, who continue to face unique and challenging stressors as a daily component of their work.

Authors' Contributions

J.K.: participated in data collection, ran the analyses, delegated roles to other authors, interpreted the data, wrote the article, and prepared and submitted the study. A.L.B.: participated in data collection and writing of the article. K.G.: edited and formatted the article, and assisted in preparing the study for submission. E.D.: participated in data collection and writing of the article. M.C.: designed and executed the study, assisted with the data analyses and interpretation, and supervised the writing of the study.

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