

Working Out, Working Within: The Protective Factor of Exercise for Flourishing and Mindfulness at the Start of a Pandemic

Amy Schaefer, M.A.¹, Jennifer Altman, Ph.D.¹, Yancy Nesbitt¹, Tori Dickerson, M.A.¹, Christian French¹, & Abbie Beacham, Ph.D.²

¹ Spalding University, Louisville, KY; ² University of Louisville School of Dentistry, Louisville, KY



INTRODUCTION

Relationships between exercise, mindfulness, and affect have been well established in the literature. Specifically, evidence indicates a bidirectional relationship between mindfulness and frequency of exercise engagement. Such that those who report high levels of trait mindfulness also demonstrate more frequent exercise engagement, which in turn increases one's ability to achieve present moment awareness [1]. In fact, mindfulness training has been shown to increase motivation to exercise, exercise adherence, and ratings of self-efficacy [2].

Similarly, exercise has been shown to foster positive affect which can increase motivation to exercise in the future [3]. To better understand the impact of experienced positive affect on an individual's overall well-being, it has been suggested that the balance between positive and negative affect be taken into account [4]. Specifically, the literature highlights the utility of obtaining a ratio between positive and negative affect, providing a positivity ratio value that is indicative of overall mental health status or flourishing [5].

The current study sought to further examine these established relationships in the context of the onset of a pandemic, specifically investigating the potential protective role of previously established regular exercise engagement in maintaining flourishing and mindfulness during broad and nebulous external stressors. Given the widespread stress experienced in the COVID-19 context, we predicted that the relationship between exercise engagement, mindfulness, and flourishing would be weakened.

METHOD

- ❖ The study consisted of 93 adults between the ages of 18 and 64.
- ❖ Participant's mean age was 27.5 (SD=10.7), with the majority of the sample identifying as Caucasian (88.2%) and female (77.4%).
- ❖ Participants completed the measures as part of a larger battery assessing psychosocial impacts of the COVID-19 pandemic.
- ❖ Measures used for this study included:
 - ❖ Positive and Negative Affect Scale (PANAS) [6]
 - ❖ Five Facet Mindfulness Questionnaire- Short Form (FFMQ-SF) [7]
 - ❖ Retrospective demographic questions regarding exercise behavior (prior to stay-at-home orders)

Table 1. Means and Standard Deviations for Measures used in Analyses Within Groups of High, Medium, and Low Exercisers

		Mean	SD
PANAS, Positive Affect	Low	28.43	7.88
	Medium	31.93	7.26
	High	35.23	7.36
PANAS, Negative Affect	Low	24.46	8.45
	Medium	21.60	8.16
	High	19.76	7.64
FFMQ-SF Total	Low	75.75	15.6
	Medium	82.29	12.04
	High	86.53	12.37
Flourishing	Low	1.42	0.93
	Medium	1.76	0.93
	High	2.10	1.06

Table 2. Analysis of Variance Salient Facets of Mindfulness

	df	Mean Square	F	Sig.
FFMQ – Nonjudging of Inner Experience	2	54.91	3.40	.038
FFMQ – Acting with Awareness	2	53.85	3.78	.027

RESULTS

- ❖ Participants provided retrospective report on how many days per week they exercised >15 minutes prior to the mandated stay-at-home order. Groups of Hi, Med, Low exercisers differed overall on mindfulness ($F(2,83)=4.78, p=.011$) and Flourishing positivity ratio scores ($F(2,87)=3.69, p=.029$) with all scores increasing with higher frequency of exercise.
- ❖ Mindfulness facets *Nonjudging of Inner Experience* and *Acting with Awareness*, as well as *Positive Affect* were the most salient contributors to overall model findings.

DISCUSSION

Findings suggest frequent exercise engagement contributes to higher levels of reported mindfulness and overall flourishing. In a more "typical" scenario, these results may be expected. We hypothesized that groups may not differ on these measures due to the COVID-19 related context.

Results indicate well-established exercise and mindfulness habits may be able to withstand the impact of external widespread stressors, such as the COVID-19 pandemic. In fact, these habits may provide a protective benefit for affect/mental health.

Given these results, messages aimed toward advocating engagement in physical activity and exercise may be effective in fostering Nonjudging of Inner Experience and Acting with Awareness to enhance flourishing in challenging and uncontrollable times such as the COVID-19 pandemic. In addition, these results introduce interesting questions regarding state dependent nature of mindfulness and affect/mood that could be a topic of interest for future research.

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