



# The Impact of Trait Mindfulness on Stress Eating

Keena C. Singletary, Ian M. MacFarlane, & T. Evan Smith  
Elizabethtown College



## Introduction

College students are faced with academic pressures, newfound independence, and chaotic schedules that create chronic stress. Eating can serve as a favorable stress relief alternative for residential college students (Chao, Jastreboff, White, Grilo, & Sinha, 2017). Consistent indulgence in cravings can restructure neural reward pathways and lead to food addiction (Pivarunas & Conner, 2015). Researchers support the advantage of mindfulness interventions, but the impact of trait mindfulness in stress regulation is still under debate due to the different neural pathways associated with each process (Thompson & Waltz, 2007):

- Researchers evaluated whether preference for fruits mediated the relationship between mindfulness and healthy snack choice.
  - Those high in trait mindfulness chose more fruits than sweets, connecting trait mindfulness to self-control and healthy eating preferences (Jordan, Wang, Donatoni, & Meier, 2014).
- Friese and Hofmann (2016) created a self-report smartphone study to evaluate if mindfulness influences impulsivity.
  - Individuals with higher levels of trait mindfulness overindulged in their desires with less regret.

There is a necessity for stress preventative measures that are compatible with college students' demanding schedules. The purpose of this study is to examine the impact of trait mindfulness on impulsivity and food choice.

**Hypothesis 1:** Trait mindfulness will mediate the relationship of perceived stress on impulsivity.

**Hypothesis 2:** Stress, impulsivity, and trait mindfulness will predict food preference and consumption values.

## Method

### Participants

- The study consisted of 60 participants from a convenience sample design.
- Participants were recruited from the Psychology Department participant pool at a private liberal arts college.
- To conceal the study concept, the title was changed to "College Students' Eating Preferences."

### Instruments

- Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983)
- Five Facet Mindfulness Scale-15 (FFMQ-15; Gu et al., 2016)
- Participants completed the Barratt Impulsivity Scale-II (BIS-II; Patton, Stanford, & Barratt, 1995)

### Procedure

- Participants completed the PSS (Cohen et al., 1983) and FFMQ-15 (Gu et al., 2006).
- Participants conducted a taste test with three pre-weighed bowls (i.e., Skittles, pretzels, and popcorn) and rated their eating experience with a taste test survey.
- Participants completed the BIS-II (Patton et al., 1995).
- Each bowl was re-weighted to determine individual consumption values.

## References

## Results

### Hypothesis 1:

#### 3-Step Mediation Regression Model

- Mindfulness fully mediated the effect of perceived stress on impulsivity (Figure 1).

### Hypothesis 2:

#### Binary Logistic Regression Model (A)

- Analysis was utilized to determine if stress, impulsivity, or mindfulness predict which food is consumed most.
- No significant predictors in either full-scale or subscale models (Table 1).

#### Multiple Regression Models (B)

- Analysis was utilized to determine if stress, impulsivity, or mindfulness predict total food consumption.
- No significant predictors in either full-scale or subscale models.
  - BIS-II Attentional sub-scale and PSS were marginally significant (Table 2).

Table 1

Binary Logistic Regression Analysis for Stress (PSS), Mindfulness (FFMQ), or Impulsivity (BIS) Scores as Predictors of Consuming Skittles the Most in a College Student Sample (n = 39).

Variable	R <sup>2</sup>	b	SE	Wald's z	p	OR
<b>Model 1</b>						
Constant	.01	-0.39	4.83	0.01	.94	0.68
PSS Total		0.03	0.07	0.20	.66	1.03
FFMQ Total		0.004	0.07	0.003	.96	1.00
BIS Total		-0.001	0.03	0.001	.97	1.00
<b>Model 2</b>						
Constant	.19	2.08	6.70	0.10	.76	8.03
PSS Total		0.12	0.10	1.37	.24	1.13
FFMQ Observing		-0.21	0.17	1.49	.22	0.81
FFMQ Describing		-0.05	0.17	0.08	.77	0.95
FFMQ Acting Awareness		-0.13	0.31	0.16	.69	0.88
FFMQ Non-Judging		0.11	0.20	0.28	.60	1.11
FFMQ Non-Reactivity		0.02	0.21	0.01	.91	1.02
BIS Attentional		-0.17	0.17	0.98	.32	0.85
BIS Motor		0.19	0.12	2.43	.12	1.21
BIS Non-Planning		-0.13	0.11	1.35	.25	0.88

Note. R<sup>2</sup> = Nagelkerke's R<sup>2</sup>

Table 2

Multiple Regression Analysis of Stress (PSS), Mindfulness (FFMQ), or Impulsivity (BIS) Scores as Predictors of Overall Food Consumption in a College Student Sample (n = 60).

Variable	R <sup>2</sup>	b	SE	β	t	p
<b>Model 1</b>						
Constant	.06	24.54	7.81	--	3.14	.003
PSS Total		0.19	0.10	0.28	1.91	.06
FFMQ Total		0.09	0.10	0.14	0.88	.38
BIS Total		-0.02	0.06	-0.05	-0.31	.76
<b>Model 2</b>						
Constant	.17	34.29	9.40	--	3.65	.001
PSS Total		0.13	0.13	0.19	1.03	.31
FFMQ Observing		0.42	0.26	0.24	1.60	.12
FFMQ Describing		-0.04	0.23	-0.03	-0.18	.86
FFMQ Acting Awareness		-0.24	0.38	-0.11	-0.62	.54
FFMQ Non-Judging		-0.27	0.24	-0.19	-1.12	.27
FFMQ Non-Reactivity		-0.10	0.28	-0.06	-0.37	.71
BIS Attentional		-0.42	0.21	-0.43	-1.99	.052
BIS Motor		0.13	0.16	0.14	0.78	.44
BIS Non-Planning		0.06	0.16	0.07	0.38	.71

## Results (cont.)

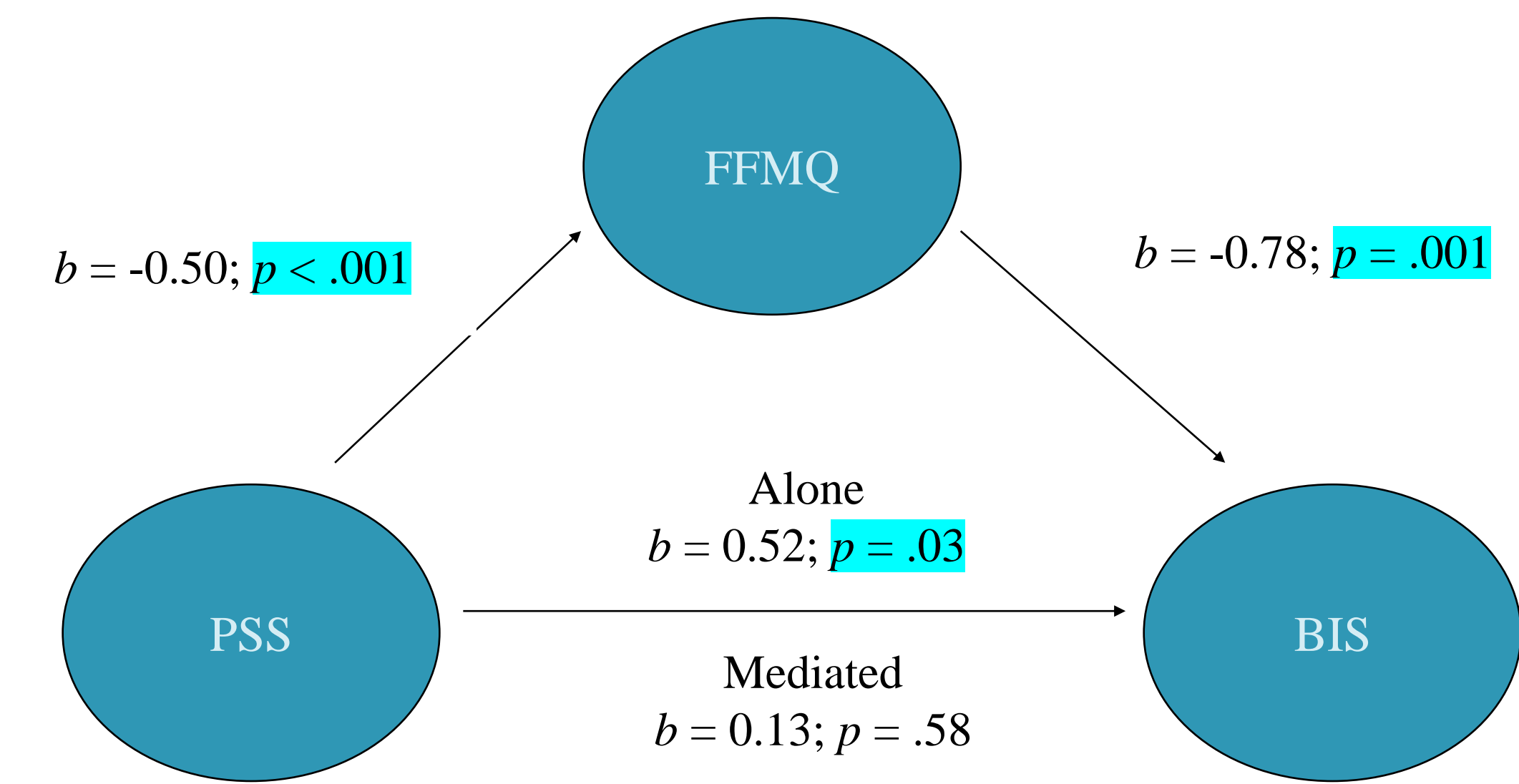


Figure 1. Three-step mediation regression analysis predicting the mindfulness (FFMQ) mediation effect of perceived stress (PSS) on impulsivity (BIS) in a college student sample (n = 60).

## Discussion

### Hypothesis 1: Supported

- Researchers support the role mindfulness plays in increased self-regulation and executive control (Jordan et al., 2014).
- Acknowledging stressful events may allow individuals to gain control of their responses and inhibit negative coping styles.

### Hypothesis 2 (A): Not Supported

- In comparison to state mindfulness, certain tenets of trait mindfulness may be harmful due to the unique neural pathways associated with the processes (Thompson & Waltz, 2007).
- Aspects of impulsivity may be overshadowed by motivational factors (e.g., Friese & Hofmann, 2016; Single et al., 2019).

### Hypothesis 2 (B): Not Supported

- Researchers prioritize beneficial aspects of mindfulness and may fail to mention its negative side effects (e.g., Cheung & Ng, 2018; Single et al., 2019).

### Limitations

- Calculation errors while weighing foods
- Some participants abstained from eating
- Lab setting may have altered consumption behaviors

### Applied Recommendations

- Diversify sample
- Utilize a high precision scale
- Determine and control for consumption related motivational factors
- Ensure current trait mindfulness assessments are effective among college populations

### Future Research

- Encourage colleges to explore mindfulness-based coping programs
- Use information to structure treatments in college counseling services
- Encourage colleges to offer healthy food alternatives
- Ensure mindfulness practices do not restrict dieting among those with certain eating disorders

