

A Meta-Analysis of the Effect of Mindfulness Training in Education on Self-Compassion

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Abstract

Introduction: The experience of the academic environment can be competitive, stressful, and at times overwhelming for students and faculty alike. Self-compassion, defined by Kristen Neff PhD as including self-kindness, common humanity, and mindfulness, has been associated with general resourcefulness, self-regulation, and well-being in university students, but mindfulness practices evoking self-compassion remain underutilized in academic contexts. **Methods:** This meta-analysis evaluated five studies and seeks to establish associations between the characteristics of mindfulness-based interventions in educational contexts, namely contact time, individual time (outside of the group context), type of intervention (Mindfulness-based stress reduction or Self-compassion courses) and their influence on the between-group (treatment-control) and within-group (pre-post) standardized mean differences (SMD) of scores on the Self-compassion Scale. **Results:** The SMDs across four studies where treatment & control groups were evaluated, ranged from 0.18-1.17 while SMDs across three studies where pre/post treatment scores were evaluated ranged from 0.39-1.07. In the control/treatment design, Intervention Type (p=0.08), Contact Time (p=0.08) and Duration (p=0.03) were all significant predictors of self-compassion. In the Pre/Post treatment design (suited for ad-hoc semester-long class cohort studies), Intervention Type (p=0.001) and Contact Time (p=0) were significant predictors while Duration (p=0.161) was not. In both study designs; Intervention type, specifically interventions modeled after the Self-Compassion Course, was the most influential factor effecting self-compassion outcomes (C/T: $\beta = 0.68$ P/P: $\beta = 0.43$) on self-compassion outcome measures. **Conclusion:** Two to eight-week mindfulness courses embedded within coursework can have a significant effect on self-compassion scores for student cohorts.

Introduction

Research Questions

- What effect do mindfulness-based interventions applied in education settings have on the construct of self-compassion?
- What aspects of a mindfulness-based intervention exert the greatest influence on self-compassion: course duration, type, or total contact time?

- Self-compassion is a state of “loving, connected presence.” It is linked to positive states of mind and overall well-being. Self-compassion has gained popularity in the West in part due to an alarming rise in psychological unwellness related to stress, anxiety, and depression.
- According to the APA, 41.6% to 63% of college students report anxiety, 36.4% depression, and 35.8% relational difficulties (APA, 2013).
- College students have a unique set of stressors: moving out of their home and no longer living with family, limited social support, many career choices, increased ambitions, competition, coursework demands, unhealthy ways of coping with stress including substance use and sex, and often looming student loan debt.
- In higher educational settings, failings are unavoidable, since learning itself presents a series of trial, error, growth, experimentation, testing boundaries, and putting oneself in uncomfortable situations. One can

argue that self-regulation in a form of being able to pick yourself up, kindly and with understanding, as a useful prevention tool for short- and long-term physical and mental wellness.

- Self-compassion is associated with increased well-being in first year university students and decreased decline in well-being over the course of the college career (Gunnell et al., 2017), reduced procrastination (n = 200; Loona & Khan, 2016); and is positively correlated with emotional intelligence (n = 571; Şenyuva et al., 2014).

Methods

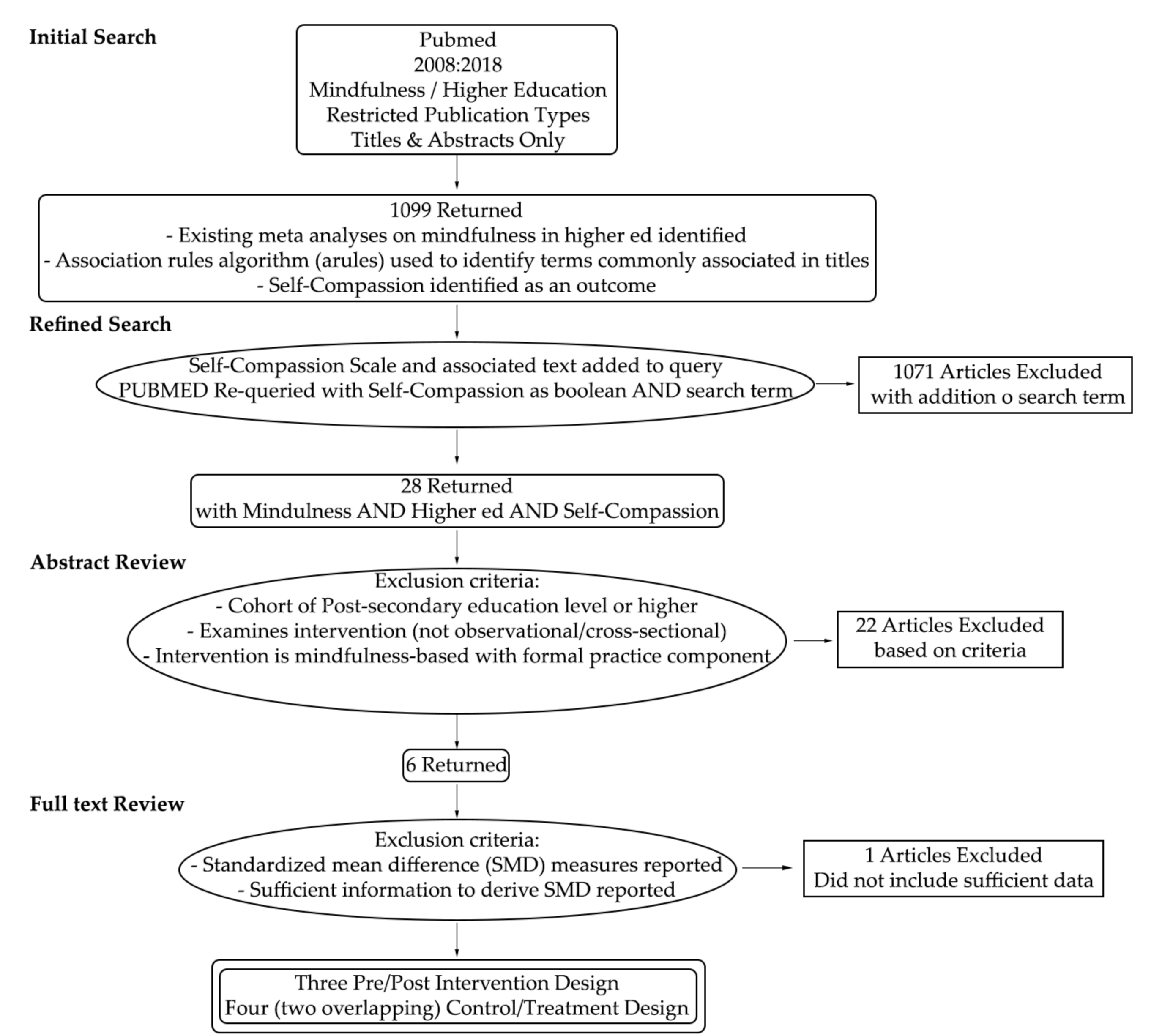


Fig.1 Prisma Diagram

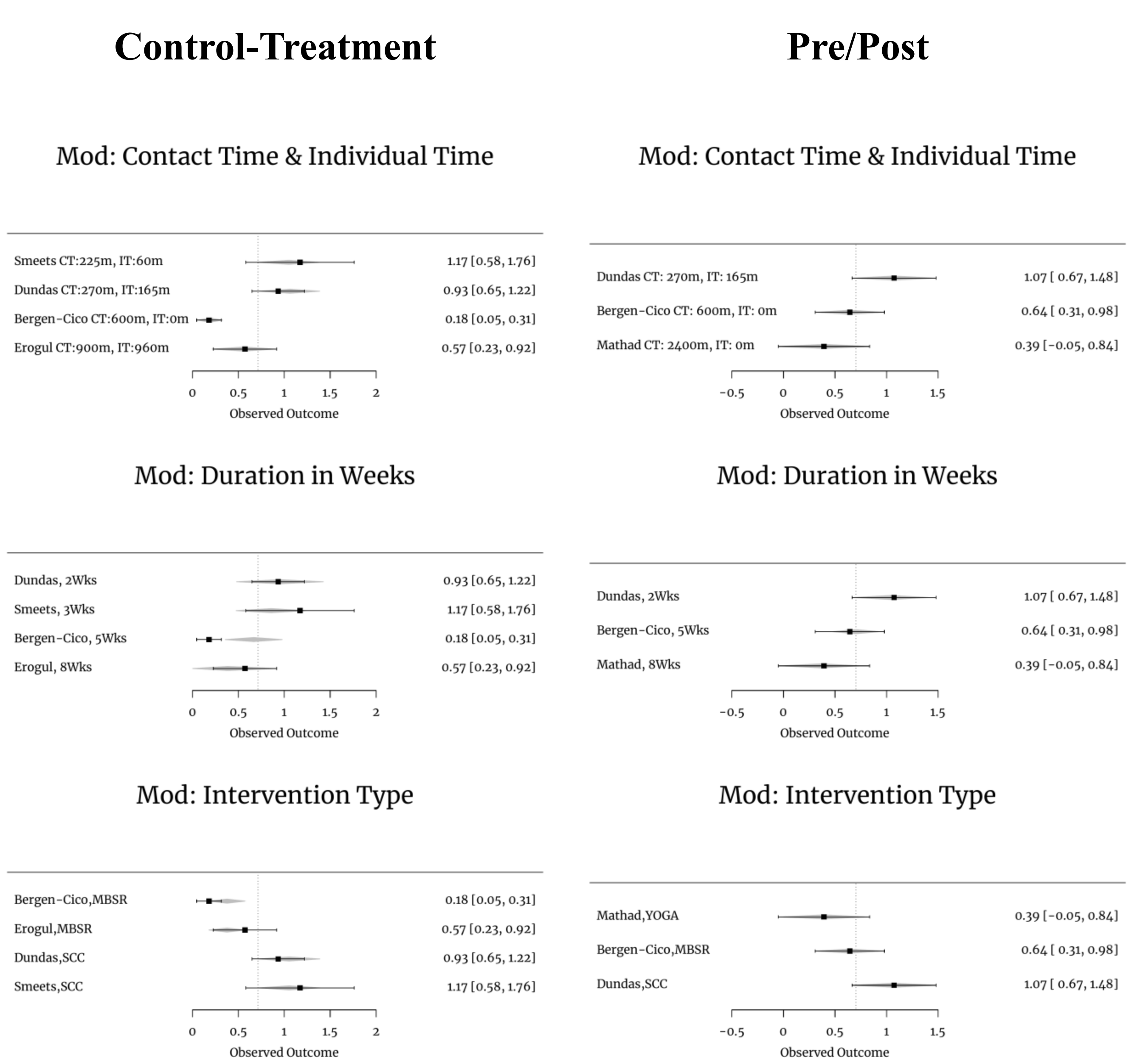
Design for Control - Treatment Model

Study	Year	Population	Type	Contact Time (Min)	Ind Time (Min)	Duration (Wks)	Int Type	Treatment Intervention	Control Intervention	Nint	Ncon	Hedges' g (CT)
Bergen-Cico, Possemato, Cloon	2013	Undergraduate students	Quasi-experimental pretest/posttest	600	0	5	MBSR	brief (5-week) mindfulness-based stress reduction (brief MBSR)	a didactic lecture course that met once per week for approximately 2.5 hours.	72	47	0.58 [0.19, 0.95]
Dundas, Binder, Hansen, Stige	2017	University students	Randomized controlled trial	270	165	2	SCC	two-week self-compassion course - three 90-minute sessions delivered over a period of two weeks. Course was developed based around previous mindfulness interventions	waitlist control; participants were offered the intervention one week after the intervention-group had completed theirs	53	64	0.94 [0.66, 1.22]
Ergul, Singer, McIntyre, & Stefanov	2014	First-year medical students	Randomized controlled trial	900	960	8	MBSR	8-week MBSR intervention. Full-day meditation retreat between week 7 and week 8.	no intervention	28	29	0.57 [0.23,0.91]
Smeets, Neff, Alberts & Peters	2014	Undergraduate females	Randomized controlled trial	225	60	3	SCC	3-week Self-compassion course - three 90 minute sessions and a final 45 minute session.	3-week time management course - two 90 minute sessions and a final 45 minute session.	27	25	1.17 [0.60, 1.78]

Design for Pre/Post Treatment Model

Study	Year	Population	Type	Contact Time (Min)	Ind Time (Min)	Duration (Wks)	Int Type	Treatment Intervention	Control Intervention	Nint	Ncon	Hedges' g (CT)
Bergen-Cico, Possemato, Cloon, 2013	2013	Undergraduate students	Quasi-experimental pretest/posttest	600	0	5	MBSR	brief (5-week) mindfulness-based stress reduction (brief MBSR)	a didactic lecture course that met once per week for approximately 2.5 hours.	72	47	1.23 [0.89,1.60]
Dundas, Binder, Hansen, Stige, 2017	2017	University students	RCT	270	165	2	SCC	two-week self-compassion course - three 90 minute sessions delivered over a period of two weeks. Course was developed based around previous mindfulness interventions	waitlist control	53	64	1.07 [0.67,1.49]
Mathad, 2017	2017	Female nursing students	RCT	2400	0	8	YOGA	Integrated approach to yoga therapy as designed by S-VYASA	waitlist control	40	40	0.39 [-0.05,0.84]

Results



Conclusion

- Full length and brief mindfulness-based interventions for students in educational settings show large improvements in self-compassion as measured by the Self-compassion Scale.
- Interventions with less total contact time and duration show similar effect sizes to interventions with markedly more contact time and of longer duration.
- Inteventions modeled after the Self-compassion course showed the most significant effect size on the Self-compassion Scale.

Limitations

- Small number of studies (C/T: 4 Studies, N = 345, P/P: 3 Studies, N = 165)
- Relationship between the Self-compassion construct and objective/physiological measures of stress is correlative.

Next Steps

- Future studies might examine comparisons between outcomes on the Self-compassion Scale and physiological biometric markers of stress, attention or distractibility.
- Future studies can increase the validity of evidence by including third-person reports of psychological, behavioral and performance measures to provide a more objective view of the outcomes participants are able to realize by participating in mindfulness-based interventions in educational settings.