

**Interactive Effects of Mindfulness and Negative Urgency on Intimate Partner Aggression
Perpetration**

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Abstract

Intimate partner aggression (IPA) is a costly and incompletely understood phenomenon. Negative urgency, the tendency to act impulsively in response to negative affect, is predictive of IPA perpetration. Mindfulness, by virtue of its emphasis on non-reactivity to negative affect, is an opposing force to urgent tendencies that may mitigate the negative urgency-IPA link. Yet, no research to date investigates the interactive effects of negative urgency and mindfulness on IPA perpetration. Two studies were conducted that measured and manipulated multiple facets of mindfulness alongside measures of negative urgency and tendencies of IPA perpetration (combined $N = 508$ undergraduate students in monogamous intimate relationships). Counter to our preregistered predictions, we found that negative urgency's association with greater IPA perpetration increased at *higher* levels of mindfulness. These findings suggest that mindfulness may not be a protective factor against IPA perpetration for individuals higher in negative urgency, but rather may serve as a risk factor.

Keywords: negative urgency, mindfulness, intimate partner aggression, couples, close relationship

Introduction

Intimate partner aggression (IPA) - any attempt to intentionally harm or control intimate partners against their will via physical, sexual, or psychological means - poses a significant and wide-reaching public health concern (Peterson et al., 2018). The extensive public health costs of intimate partner aggression highlight the need for a better understanding of factors influencing its perpetration. While there are extensive lines of research establishing both risk and protective factors of IPA perpetration, our understanding of personality factors that either perpetuate or mitigate IPA perpetration remains incomplete. Some personality risk factors of interest include impulse control deficiencies and impulsivity, which are robust predictors of IPA perpetration (Finkel et al., 2009; McNulty & Hellmuth, 2008). Conversely, mindfulness may serve as a protective factor against IPA perpetration due to its utility in mitigating negative affect and reducing relationship stress (Barnes et al., 2007; Chambers, Lo, & Allen, 2008). More research is necessary to further understand the interactive effects of risk and protective factors for IPA perpetration.

Negative Urgency

Impulsivity – the individual likelihood to react without forethought in situations that normatively prescribe one’s consideration of actions – is a personality characteristic that serves as a potent risk factor for IPA perpetration (Derefinko et al., 2011; Schafer et al., 2004; Shorey et al., 2011). Negative urgency, a facet of impulsivity, refers to individual tendencies towards rash, impulsive behaviors in response to negative emotions (Cyders & Smith, 2008). Compared to the other facets of impulsivity (i.e., sensation seeking, lack of perseverance, lack of premeditation; Whiteside & Lynam, 2001), negative urgency serves as a well-established predictor of IPA perpetration (Derefinko et al., 2011; Finkel et al., 2009; McNulty & Hellmuth, 2008).

As such, high levels of negative urgency serve as a personality risk factor of particular importance for IPA perpetration. Personality factors, such as negative urgency, are often not useful targets for treatment, intervention, or psychotherapy because they are not *easily* modifiable (Condino et al., 2016). Therefore, further research is necessary to uncover processes that may mitigate negative urgency's role in IPA perpetration. Intervention efforts that target factors that weaken the link between maladaptive personality traits and their downstream effects may be effective in this context. Mindfulness may hold promise in such a mitigating role.

Mindfulness and the Regulation of Negative Affect

Mindfulness is a multi-faceted construct characterized by viewing experiences in the present moment in a non-judgmental capacity (Brown & Ryan, 2003). Brown and Ryan (2003) suggest mindfulness consists of a single factor that captures present moment awareness of, and attention to, external events and internal experiences. However, Baer and colleagues (2006) posit there are five facets that underlie the latent mindfulness construct: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience (Table 1).

Table 1*Definitions and Example of the Facets of Mindfulness (Baer et al., 2006)*

Facet	Definition	Example
Observing	Attending to, or being aware of, internal and external experiences	Noticing tension in certain body parts when feeling frustrated
Describing	Labeling internal experiences with words	Labeling an unpleasant experience as “frustrating”
Acting with awareness	Attending to one’s everyday experiences in the moment	Acting with intention in the present moment
Non-judging of inner experiences	Non-evaluative perspective towards one’s thoughts and feelings	Not feeling guilty for feeling frustrated
Non-reactivity of inner experience	Tendency to permit thoughts to ebb and flow without being carried away by them	Stopping to think before reacting to feeling frustrated

Mindful awareness and its facets explain a skillset that may promote adaptive responses to negative affect. Importantly, mindful awareness is a set of skills which are *modifiable* (Niles et al., 2012). This ability for mindful awareness and mindfulness to be learned may assist in its disruption of the negative downstream effects of negative urgency.

Mindfulness-based interventions (MBIs) have been used for a variety of purposes, including emotion regulation and the reduction of negative affectivity, since the late 1970s (Chambers et al., 2008; Kabat-Zinn, 2011; Sears & Kraus, 2009; Schumann-Olivier et al., 2020). Brief mindfulness inductions via audio recordings have been increasing in popularity since 2010; meta-analytic results suggest these brief interventions have a small, yet significant effect for reducing negative affectivity (Schumer et al., 2018).

As such, the promising abilities of mindfulness and mindful awareness may serve as a protective factor against IPA perpetration, even in individuals with high levels of negative

urgency. Further research is necessary to investigate mindfulness' mitigating role in the link between negative urgency and IPA perpetration.

Mindfulness and Intimate Partner Aggression

A recent systematic review suggests that mindfulness-based interventions may be useful for decreasing levels of aggression in adults (Gillions et al., 2019). Specific to romantic relationships, the Describing, Acting with Awareness, and Non-Reactivity facets are negatively associated with IPA perpetration (Shorey et al., 2014). Furthermore, mindfulness-based interventions have considerable utility for the reduction of IPA perpetration (Tollefson & Phillips, 2015; Tollefson et al., 2009) and other externalizing behaviors (Mitchell & Wupperman, 2023). Additionally, mindfulness-based interventions exhibit lasting effects on the reduction of IPA (Zarling et al., 2015; Zarling et al., 2019). No studies, though, investigate mindfulness' utility for reducing the link between negative urgency and intimate partner aggression.

Negative Urgency and Mindfulness: Natural Reciprocals

Negative urgency and mindfulness are conceptualized as 'natural reciprocals,' as these constructs are both focused on the present moment, yet opposite in nature (Murphy & MacKillop, 2012; Peters et al., 2011). As negative urgency promotes reactivity without forethought to aversive psychological states, mindfulness promotes attention and *non*-reactivity to such states. More specifically, mindfulness is rooted in autonomous functioning (i.e., acting with intention and awareness) that tempers cognitive defensiveness (e.g., self-serving biases, stereotyping; Hodgins & Knee, 2002). Being mindful of present-moment experiences may aid in reducing automatic aversive reactions to one's partner (Karremans et al., 2015). As such, the reciprocal nature of mindfulness and negative urgency suggests that mindfulness may inhibit the tendency to engage in IPA perpetration, of which negative urgency is a potent risk factor.

Additionally, investigations of negative urgency and mindfulness that utilized the five-facet conceptualization indicated a positive relationship between the Observe facet and negative urgency. The other facets demonstrate a negative relationship (e.g., Murphy & MacKillop, 2012). With that said, it is currently unknown whether mindfulness interventions can effectively reduce traits such as negative urgency, given a dearth of studies on this topic. As such, it is necessary to examine these facets separately, rather than as a single mindfulness construct, to assess their modulating capabilities.

Present Study

The current literature provides an incomplete understanding of the interactive effects between mindfulness and negative urgency as factors of IPA perpetration. Thus, the present set of studies had two overarching research aims: 1) to replicate past findings that link higher negative urgency to greater intimate partner aggression perpetration, and 2) to investigate whether mindfulness would attenuate the positive correlation between negative urgency and IPA perpetration using both correlational and experimental approaches. These research aims were examined across intimate partner and general forms of aggression to examine the specificity of our findings. Given the unique potency of negative urgency in the context of intimate partnerships, we sought to test whether the interactive effects would be pronounced for IPA or if they would hold across aggression modalities. The following predictions were preregistered (Study 1: <https://osf.io/2p3k6>; Study 2: <https://osf.io/pajf2>):

Hypothesis 1: Negative urgency will be positively associated with intimate partner aggression.

Hypothesis 2: Trait mindfulness will attenuate the relationship between negative urgency and intimate partner aggression.

IPA can take many forms (e.g., physical, sexual, psychological, coercive). Yet most of the literature we have cited to justify our predictions focused on physical IPA. In line with these past studies, we used measures that retained this focus on physical forms of IPA tendencies.

To test these predictions, two studies were conducted that assessed dispositional mindfulness, trait negative urgency, and measured IPA tendencies via a behavioral task. In Study 2, state mindfulness was manipulated during an in-person lab session.

Deviating from the preregistration plan, data was combined from both studies for inferences about *trait* mindfulness. Ultimately, we decided to pursue this course of action over an internal meta-analysis (i.e., aggregating effects from the two studies). This integrative data analysis was conducted to increase statistical power while decreasing the overall number of analyses (Curran, 2009). We feel this is the strongest statistical avenue to pursue for multiple reasons. The studies were quite similar, the samples were drawn from the same population in consecutive academic years, and the self-report measures have demonstrated utility in both virtual and in-lab administration. Importantly, it has become increasingly apparent that between-participant interactions, such as those we model here, require far more statistical power than researchers, such as us, previously thought (e.g., Hyatt et al., 2022). Were we to test the hypotheses regarding trait mindfulness separately, we would double to number of analyses which would dramatically inflate the rate of Type I error.

The de-identified datasets are publicly available (Study 1: <https://osf.io/ke6vb/>; Study 2: <https://osf.io/dvjx/>). Both studies were approved by the IRB prior to data collection.

Method

Participants

The final total sample consisted of 508 undergraduates enrolled in an introductory psychology course at a large Mid-Atlantic university. 236 participants enrolled in Study 1. 272 participants were enrolled in Study 2. Participants were unable to enroll in both studies. Participants were compensated with research credit towards partial fulfillment of course requirements. Participants completed an eligibility screening survey prior to their official enrollment in the study. Eligibility criteria included being at least 18 years of age, and having an exclusive, continuous romantic partner for a minimum of three months. Thirty-one participants were not included in the final sample due to a change in their relationship status between the eligibility survey and their participation. One participant was not included in the final sample due to technological malfunctions. The average age of participants was 19.76 ($SD = 3.33$, range: 18-60). Participants reported spending an average of 16.99 days ($SD = 11.36$, range: 0-31) with their partner in each month. The average relationship length was 19.36 months ($SD = 23.40$, range: 3-408). Other demographic characteristics are included in Table 2. Notably, the final sample of participants consisted of a majority of non-White undergraduate students, which is representative of the larger undergraduate population at the university.

Table 2*Demographic Characteristic of Participants at Baseline (N = 508)*

Baseline characteristics	%
Gender	
Female	76.2
Male	23.2
Other	0.6
Race	
Asian	12.4
Black/African-American	21.9
Hawaiian or Pacific Islander	0.2
Native American	0.4
Other	17.4
White/Caucasian	47.7
Ethnicity	
Hispanic	14.6
Non-Hispanic	85.4
Sexual Orientation	
Asexual	0.4
Bisexual	9
Gay	2.1
Heterosexual	82.8
Lesbian	3.9
Other	1.8

Measures and Materials

Measures are presented in the order that participants completed them.

Doll Aggression Task (DAT; DeWall et al., 2013)

A digitized version of this task instructed participants first to imagine their romantic partner. Participants then read the following: “Below is an image of a doll. This doll represents your romantic partner. Please take a moment to look at the doll and imagine it as this person.” After they were asked to imagine the doll on the screen as their intimate partner, they were asked to decide the number of pins to stab in the doll using a slider scale ranging from zero to 51 pins,

with more pins indicating greater intimate partner aggression. Participants completed the same task a second time with the doll representing an “average person”. Although negative mood states may strengthen the effect of negative urgency on intimate partner aggression perpetration, intimate partner aggression is inherently an aversive emotional experience (Chester et al., 2019). As such, negative affect was not induced via a separate mood induction. Additionally, the original validation procedures of the DAT lacked a negative mood induction while finding robust evidence in support of the task’s validity (see Studies 1-6, 9 in DeWall et al., 2013). There was no provocation prior to completing the DAT.

Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003)

Trait mindfulness was measured using the 15-item MAAS, that assesses receptive attention to, and awareness of, present-moment events and experiences (example item: "I find it difficult to stay focused on what is going on in the present moment"). Items were rated from 1 (*Almost Always*) to 6 (*Almost Never*). The average of the responses indicated dispositional mindfulness; higher scores indicated higher levels of dispositional mindfulness.

UPPS-P Impulsive Behavior Scale (UPPS-P; Lynam et al., 2006)

Dispositional impulsivity was measured with the 59-item UPPS-P (Lynam et al., 2006). The full scale contained five distinct subscales: negative urgency, lack of premeditation, lack of perseverance, sensation seeking, and positive urgency. Each item was rated on a four-point Likert-type scale, from 1 (*Not at All*) to 4 (*Very Much*), where higher values indicated a greater level of each respective impulsivity subscale. The present study focused on the negative urgency subscale for the preregistered analyses (example item: "Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse").

Five-Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006)

The FFMQ is a 39-item measure that assesses five facets of mindfulness: observe, describe, acting with awareness, non-judgment, and non-reactivity. Each item was rated from 1 (*Never or Very Rarely True*) to 5 (*Very Often or Always True*), where higher scores indicated a higher level of each facet. See Table 3 for example items of each facet. We included this scale alongside the MAAS to increase the construct span of mindfulness in our analyses. Additionally, the FFMQ and MAAS are widely used measures of dispositional mindfulness. We use both measures to increase the construct span of mindfulness. Including both scales and analyzing the facets separately allowed us to capture a larger breadth of the construct of mindfulness rather than distilling them to a single factor that would serve as a rough approximation of the construct.

Table 3

Example items for each facet of the FFMQ

Facet of FFMQ	Example Item
Observe	When I'm walking, I deliberately notice the sensations of my body moving.
Describe	I am good at finding words to describe my feelings.
Acting with Awareness	It seems I am "running on automatic" without much awareness of what I'm doing. (R)
Non-Judgement	I tell myself that I shouldn't be thinking the way I'm thinking. (R)
Non-Reactivity	When I have distressing thoughts or images, I feel calm soon after.

Note: (R) = reversed scored

Procedures

Study 1

Interested and eligible participants (n=236) completed informed consent and survey measures online. Participants were told that the research explored how imagination abilities and personality influenced intimate relationships. Participants first completed the DAT, where they imagined their intimate partner as the doll and decided the number of pins they wanted to insert

into the doll. Next, participants received the same instructions but were asked to complete the DAT with the “average person” as the target. Due to the emotionally aversive experience of the DAT (Chester et al., 2019), negative affect was not explicitly invoked prior to the administration of the task. The “average person” condition was included as a control group to compare aggressive tendencies specific to the romantic partner and general aggressive tendencies. Then, participants completed digitized self-report measures, including the UPPS-P, MAAS, and FFMQ. Participants were then debriefed and awarded research credit for their participation. Study procedures lasted no more than 1 hour, and participants received 1 research credit for compensation.

Study 2

Study 2 followed the same structure as Study 1 with the additions of audio recordings. Participants listened to either a mindfulness audio induction or the active control audio induction through a pair of headphones.

The experimental mindfulness condition guided participants through an open state of attention to the present-moment and bodily sensations during an eight-minute audio recording. This eight-minute recording instructed participants to attend to present-moment sensations in the body, with a focus on the physical sensations of breathing. Participants were also instructed to make a mental note of their thoughts and emotions as they arose and not to judge themselves if their mind wandered. If mind wandering occurred, participants were guided to gently return their focus to the physical sensations of their breath.

The control condition was structurally equivalent (lasted for the same amount of time and similar in speaker voice) to the mindfulness audio recording and instructed participants on the importance of “putting first things first” when planning. The recorded instructions asked

participants to visualize aspects of their life that were important to them and explained how to incorporate these essential aspects when planning. Selecting a control condition that emphasized control of attention was beneficial in isolating mindful attention (experimental condition) from a more general attentional control (Brown et al., 2016).

Eligible participants (n=272) arrived at the laboratory alone or in small groups of two or three participants. All participants were told that the study explored how imagination abilities and personality influenced intimate relationships. Assignment to the mindfulness audio induction or control audio conditions was completed in ABBA format (e.g., Participant 101 in Condition A, Participant 102 in Condition B, Participant 103 in Condition B, Participant 104 in Condition A). The research assistant played the designated audio recording for the participant while the computer monitor was blank to minimize distractions. Participants were instructed to keep the headphones on for the entire duration of the audio recording and notify the research assistant when the recording ended. The research assistant remained in the room for the duration of the induction.

After listening to the audio recording, participants completed the DAT, where they imagined the doll as their intimate partner and then again as the average person. Following the protocol from Study 1, negative affect was not explicitly invoked due the aversive emotional experience inherent to the task (Chester et al., 2019). Participants then completed digitized attention checks for the audio conditions. These questions generally assessed whether participants were able to hear the audio recordings. There were no planned analyses for these questions, and we did not include or exclude participants from the final sample based on their responses to these questions. Specifically, participants were asked: “How easy was it for you to follow the recorded audio instructions?” and “To what extent were you able to focus on the

recorded audio instructions?”. Participants responded along a seven-point scale (-3 = *very difficult*, 3 = *very easy*). Then, participants completed the UPPS-P, MAAS, and the FFMQ.

After the battery of questionnaires, participants answered three suspicion probes. Participants were then fully debriefed and completed a data consent form that allowed them the opportunity to withdraw their data. The complete laboratory session took 1.0-1.5 hours, wherein participants were compensated with 1.5 research credits for their time.

Data Analysis

All analyses were conducted using R Statistical Software (Version 4.2.2: R Core Team, 2022). Zero-Inflated Poisson modeling was conducted for the DAT data due to the expected zero-inflation of scores inherent to the task. We controlled for the origin of study (i.e., Study 1 and Study 2) via a dummy coded variable (i.e., 1 = originated from Study 1, 2 = originated from Study 2). To fit these models, the *emmeans* package was used (Lenth, 2022). Predictors were mean-centered prior to the analysis. Separate models were run with the MAAS and each facet of the FFMQ as moderators of the negative urgency-IPA link. For statistically significant interactions, simple slopes and simple effects were conducted to examine the between-group differences within one level of one of the predictor variables. Statistically significant interactions were probed at relatively high (+1 *SD*) and low (-1 *SD*) levels of trait mindfulness (Spiller et al., 2013). These levels were chosen because the independent variable and moderator variables were mean-centered. The mindfulness induction was completed as part of the Study 2 protocol *only* and therefore was run with only participants from this study with the condition coded as 1 (mindfulness induction) and 0 (control induction).

This statistical approach deviated from the preregistration plan, which originally planned to run a bootstrapped, moderated regression model. This deviation was ultimately a more

appropriate statistical test given the zero-inflated nature inherent to the DAT. The R script for the analysis is available at: <https://osf.io/kqbwj/>

Results

Descriptive Statistics

In Study 2, participants in the experimental condition did not differ in self-reported attentiveness ($M = 4.26$, $SD = 0.65$) from those in the control condition ($M = 4.30$, $SD = 0.68$) during the audio instructions, $t(273) = 0.43$, $p = .666$, $d = .06$. Descriptive statistics and zero-order correlations are provided in Supplemental Tables 1 and 2. As expected, both the intimate partner and average person versions of the DAT were positively-skewed (DAT Partner skew = 4.24; DAT Average Person skew = 2.08) and zero-inflated. Across both samples, 64.40% of participants selected zero pins in the doll that represented their intimate partner and 52.30% selected zero pins in the doll that represented the average person. Supporting our first hypothesis, we found a positive correlation in the combined sample between negative urgency and intimate partner aggression, $r(508) = .13$, $p = .003$, but not for general aggression, $r(492) = .06$, $p = .200$. The decrease in the degrees-of-freedom is due to missing data for the general aggression DAT measure. These correlations are not statistically different, $Z(488) = 1.40$, $p = .163$.

Moderation by Trait Mindfulness

Due to the novelty of Hypothesis 2, the data from each study for this analysis was combined to reduce the total number of statistical tests and increase the statistical power, decreasing the risk of a Type I error. Against the preregistered predictions, negative urgency's effect on IPA perpetration exhibited significant, *positive* interactions with the six measures of trait mindfulness, such that negative urgency's effect became more positive at *higher* levels of mindfulness (Figure 1A-1F; Table 4). At higher levels (+1 *SD*) of trait mindfulness, positive

associations between negative urgency and IPA were found, except for the FFMQ's Acting with Awareness subscale (Table 4). At lower levels (-1 *SD*) of trait mindfulness, negative associations between negative urgency and IPA perpetration were found (Table 5). Mindfulness was consistently negatively associated with IPA at low (-1 *SD*) levels of negative urgency. At high (+1 *SD*) levels of negative urgency, mindfulness' effect was either non-significant or positive (in the case of the Non-Judgment subscale of the FFMQ). Results with *general* aggression as the dependent variable yielded similar results (Supplemental Table 3), for the exception of FFMQ's Observe subscale which showed a non-significant interaction.

Table 4*Results from Zero-Inflated Poisson moderation analyses for IPA DAT scores.*

Model Parameters	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
<i>MAAS (N = 503)</i>				
Intercept	1.65	0.09	17.67	<.001
NU	-0.09	0.05	-1.70	.089
MAAS	-0.21	0.04	-4.94	<.001
NU x MAAS	0.29	0.06	5.05	<.001
<i>FFMQ - Acting with Awareness (N = 505)</i>				
Intercept	1.68	0.09	18.38	<.001
NU	-0.07	0.06	-1.25	.213
Acting with Awareness	-0.15	0.05	-3.38	<.001
NU x Acting with Awareness	0.19	0.06	3.13	.002
<i>FFMQ - Observe (N = 505)</i>				
Intercept	1.52	0.10	15.85	<.001
NU	0.01	0.05	0.27	.792
Observe	-0.27	0.04	-6.07	<.001
NU x Observe	0.26	0.06	4.10	<.001
<i>FFMQ - Describe (N = 505)</i>				
Intercept	1.65	0.09	17.69	<.001
NU	<-0.01	0.05	-0.02	.984
Describe	-0.23	0.04	-5.29	<.001
NU x Describe	0.28	0.06	4.73	<.001
<i>FFMQ - Non-Judgment (N = 505)</i>				
Intercept	1.73	0.09	18.69	<.001
NU	0.06	0.05	1.11	.267
Non-Judgment	-0.05	0.04	-1.28	.202
NU x Non-Judgment	0.28	0.06	4.96	<.001
<i>FFMQ - Non-Reactivity (N = 505)</i>				
Intercept	1.67	0.09	18.24	<.001
NU	0.03	0.05	0.54	.588
Non-Reactivity	-0.11	0.06	-1.85	.065
NU x Non-Reactivity	0.22	0.07	3.03	.002

Note. MAAS = Mindful Attention Awareness Scale; NU = Negative Urgency

Table 5

Probed Interactions for Simple Slopes and Effects

Effect of:	Probed at:	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
<i>MAAS as Moderator (N = 503)</i>					
MAAS	-1 <i>SD</i> Urgency	-0.92	0.37	-2.50	.012
	Mean Urgency	-0.43	0.26	-1.68	.094
	+1 <i>SD</i> Urgency	0.23	0.35	0.65	.518
Urgency	-1 <i>SD</i> MAAS	-0.15	0.48	-0.31	.755
	Mean MAAS	0.64	0.30	2.17	.030
	+1 <i>SD</i> MAAS	1.26	0.40	3.14	.001
<i>FFMQ - Awareness as Moderator (N = 505)</i>					
Awareness	-1 <i>SD</i> Urgency	-0.08	0.31	-0.26	.797
	Mean Urgency	0.17	0.27	0.61	.540
	+1 <i>SD</i> Urgency	0.52	0.39	1.35	.177
Urgency	-1 <i>SD</i> Awareness	0.62	0.36	1.74	.082
	Mean Awareness	0.95	0.30	3.19	.001
	+1 <i>SD</i> Awareness	1.29	0.42	3.09	.002
<i>FFMQ - Observe as Moderator (N = 505)</i>					
Observe	-1 <i>SD</i> Urgency	-1.04	0.34	-3.05	.002
	Mean Urgency	-0.68	0.24	-2.79	.005
	+1 <i>SD</i> Urgency	-0.16	0.34	-0.46	.064
Urgency	-1 <i>SD</i> Observe	0.21	0.41	0.51	.614
	Mean Observe	0.73	0.24	3.11	.002
	+1 <i>SD</i> Observe	1.09	0.26	4.21	<.001
<i>FFMQ - Describe as Moderator (N = 505)</i>					
Describe	-1 <i>SD</i> Urgency	-1.14	0.35	-3.23	.001
	Mean Urgency	-0.63	0.23	-2.75	.005
	+1 <i>SD</i> Urgency	0.05	0.31	0.17	.862
Urgency	-1 <i>SD</i> Describe	-0.08	0.42	-0.20	.843
	Mean Describe	0.74	0.25	2.96	.003
	+1 <i>SD</i> Describe	1.31	0.33	3.93	<.001
<i>FFMQ - Non-Judgment as Moderator (N = 505)</i>					
Non-Judgment	-1 <i>SD</i> Urgency	-0.36	0.29	-1.23	.219
	Mean Urgency	0.01	0.24	0.03	.975
	+1 <i>SD</i> Urgency	0.62	0.36	1.71	.087
Urgency	-1 <i>SD</i> Non-Judgment	0.42	0.35	1.21	.227
	Mean Non-Judgment	1.02	0.29	3.48	<.001
	+1 <i>SD</i> Non-Judgment	1.67	0.47	3.55	<.001
<i>FFMQ - Non-Reactivity as Moderator (N = 505)</i>					
Non-Reactivity	-1 <i>SD</i> Urgency	-1.26	0.45	-2.77	.006
	Mean Urgency	-0.59	0.34	-1.77	.078
	+1 <i>SD</i> Urgency	0.30	0.43	0.69	.491
Urgency	-1 <i>SD</i> Non-Reactivity	0.04	0.38	0.11	.916
	Mean Non-Reactivity	0.77	0.28	2.84	.005
	+1 <i>SD</i> Non-Reactivity	1.39	0.37	3.73	<.001

Simple effects listed above simple slopes for the six different moderators (i.e., the Mindful Attention Awareness Scale [MAAS] and the Five Facet Mindfulness Questionnaire's [FFMQ] facet scores) of the link between negative urgency and intimate partner aggression.

Moderation by Mindfulness Induction

As the state mindfulness induction was conducted in Study 2, data for this analysis comes exclusively from Study 2. Consistent with trait mindfulness results and against our preregistered predictions, negative urgency's effect on IPA perpetration exhibited significant, *positive* interactions with the experimental mindfulness manipulation from Study 2, such that negative urgency's effect became more positive in the mindfulness (versus control) condition (Figure 2; Table 6). The mindfulness induction decreased IPA perpetration at relatively low ($-1 SD$) levels of negative urgency. Yet the mindfulness induction increased IPA perpetration at relatively high levels ($+1 SD$) of negative urgency (Table 7). Furthermore, negative urgency's link to IPA was only positive within the mindfulness condition (the association was negative in the control condition; Table 7). This pattern of findings was not consistent for general aggression (Supplemental Table 4).

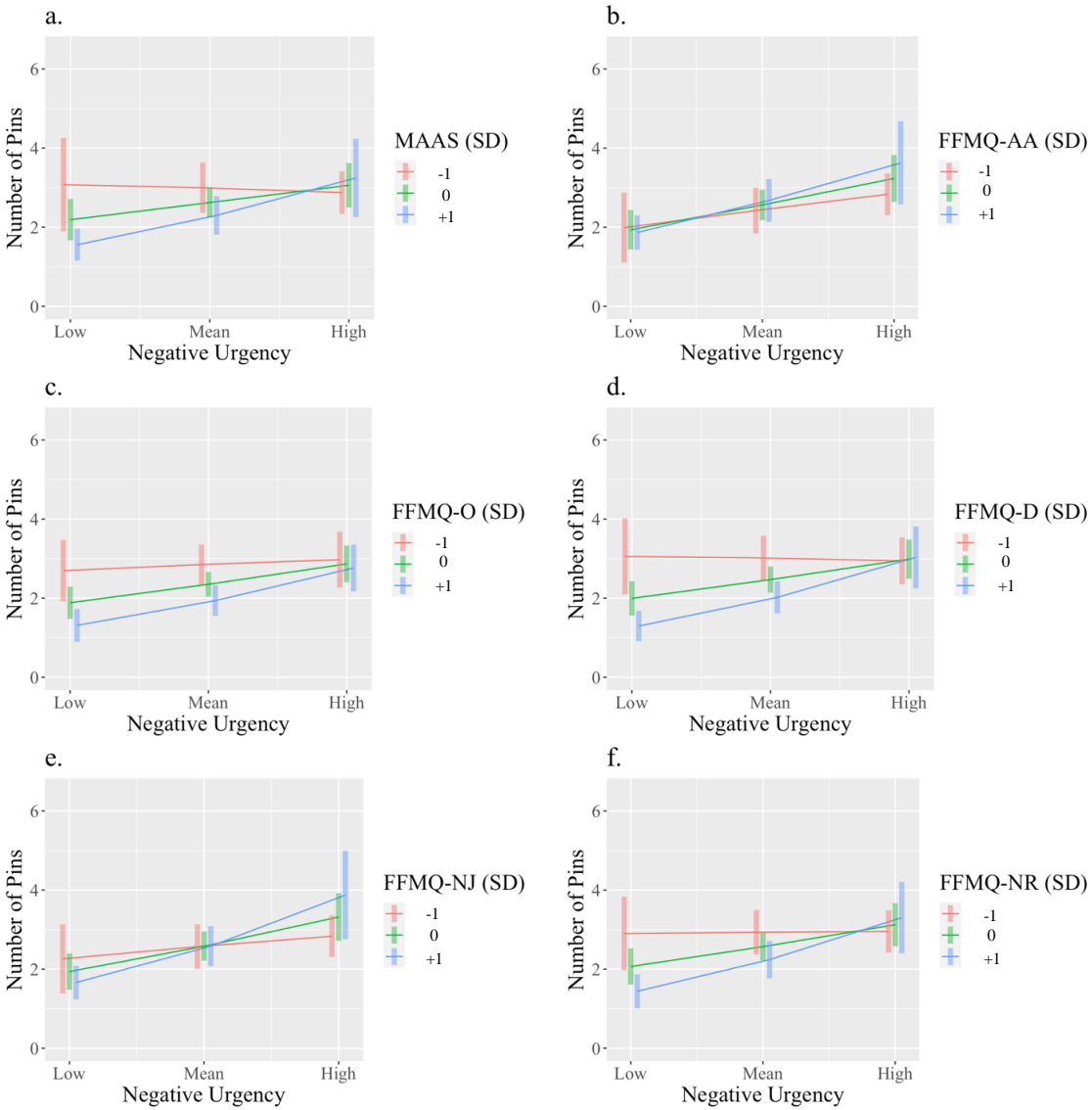


Figure 1. Interactive effect of negative urgency and six measures of trait mindfulness (a. MAAS, b. FFMQ - Acting with Awareness, c. FFMQ - Observe, d. FFMQ - Describe, e. FFMQ - Non-Judge, and f. FFMQ - Non-React) on IPA DAT scores. Interactions are plotted at the mean and one standard deviation above or below the mean for both negative urgency and trait mindfulness. Interactions were plotted with the *emmeans* package for R (Lenth, 2022).

Table 6

Zero-Inflated Poisson moderation analyses for experimental condition on the link between Negative Urgency and IPA DAT scores.

Model Parameters	<i>B</i>	<i>SE</i>	<i>z</i>	<i>p</i>
Intercept	1.99	0.06	35.25	<.001
Negative Urgency	-0.28	0.08	-3.48	<.001
Condition	-0.16	0.09	-1.77	.076
Negative Urgency x Condition	0.77	0.12	6.19	<.001

Note. *N* = 272.

Table 7.

Simple effects listed above simple slopes for the mindfulness induction’s moderating effect on the link between negative urgency and intimate partner aggression.

Effect of:	Probed at:	<i>B</i>	<i>SE</i>	<i>z</i>	<i>p</i>
Mindfulness Condition	-1 <i>SD</i> Urgency	-1.68	0.63	-2.66	.008
	Mean Urgency	-0.67	0.44	-1.54	.123
	+1 <i>SD</i> Urgency	0.98	0.72	1.35	.178
Urgency	Mindfulness Condition	1.88	0.49	3.83	<.001
	Control Condition	-0.05	0.45	-0.113	.910

Note. *N* = 272.

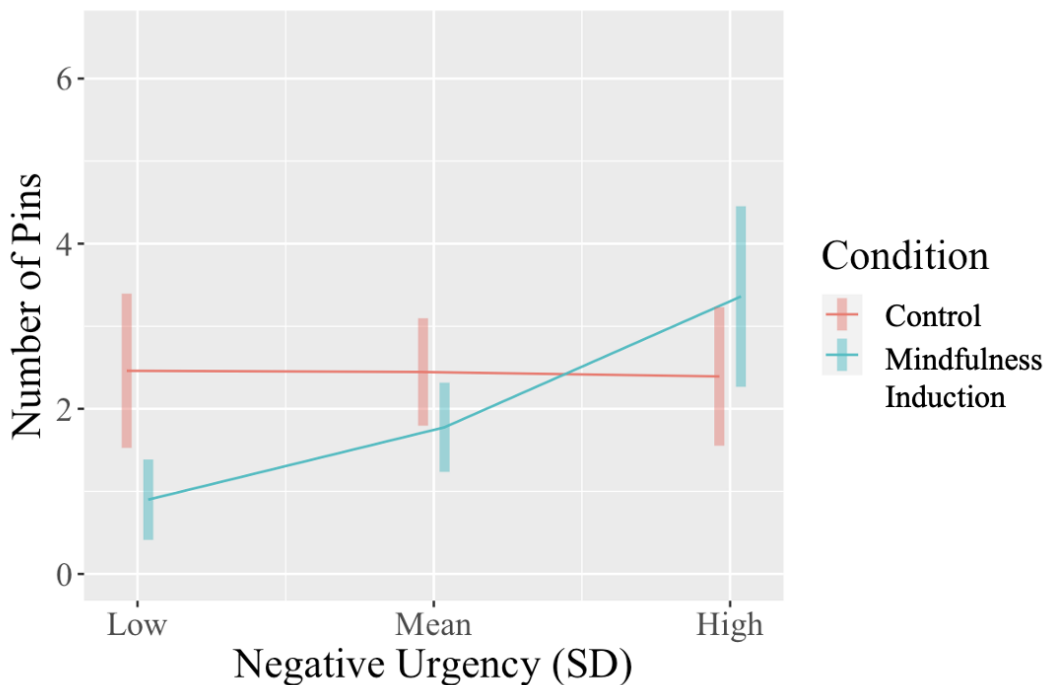


Figure 2. The interactive effect from negative urgency and experimental condition on IPA DAT scores. Interaction plotted with *emmeans* package for R (Lenth, 2022).

Discussion

The present research set out to investigate the interactive effects of negative urgency and mindfulness on intimate partner aggression perpetration. Negative urgency was positively linked to IPA but not general aggression, which supports previous findings and the preregistered predictions. Consistent with its conceptualization, negative urgency acted as a risk factor; individuals with higher levels of negative urgency perpetrated more than those with low levels (Birkley & Eckhardt, 2019). Negative urgency remains an important risk factor for IPA perpetration investigations, not just general aggression. The question remains: how one might behave if they have high levels of negative urgency *and* mindfulness?

Negative urgency and mindfulness are conceptualized as natural reciprocals. Researchers may be interested to investigate how one person may exemplify both constructs. The findings suggest that someone with high levels of both negative urgency and mindfulness may be aware of their negative emotions but unable to disrupt downstream negative effects. For instance, in the I³ Model (Finkel & Hall, 2018), aggressive behavior is predicted by the net forces of impelling and inhibiting factors in response to instigating stimuli. For those with high levels of negative urgency (impelling factor) the urge to aggress is greater in the face of negative affect. An individual with high levels of negative urgency is not only reactive to negative emotions, but also has impaired executive functioning that does not accommodate appropriate inhibition of maladaptive consequences (Finkel et al., 2009). In the context of the present research, the inability to inhibit maladaptive reactions to negative emotions may result in IPA perpetration. Someone who self-reports high levels of trait mindfulness, or completes a brief mindfulness induction, may be acutely aware of their present negative emotions, yet still unable to inhibit maladaptive responses. This awareness of negative affect, a cornerstone of mindfulness

constructs, may function as another risk factor, rather than a protective factor as hypothesized. The combination of these constructs, then, may create powerful impelling forces for IPA perpetration.

Regarding the second aim, the interactive effects of mindfulness and negative urgency on IPA perpetration surprisingly countered to the preregistered predictions. Negative urgency's positive association with IPA perpetration was observed only at *high* levels of mindfulness when expected at only low levels of this trait. Conversely, at lower levels of mindfulness, negative urgency was *negatively* associated with IPA perpetration. Findings were consistent across MAAS and all facets of the FFMQ, supporting the notion that negative urgency enacted its effect on mindfulness in a holistic manner. It appears negative urgency is powerful enough to block the ability to act with intention (acting with awareness), label emotional experiences (describe), attend to internal and external sensations (observe), view thoughts as they arise without reactional thoughts or feelings (non-reactivity), and assess thoughts and feelings at face value, rather than assigning positive or negative labels (non-judgment). Unfortunately, the evidence suggests that dispositional mindfulness or a brief mindfulness induction may not be enough to mitigate the downstream effects of negative urgency on inclinations for IPA perpetration, though future research with other measures, stronger inductions, or at-risk samples may prove otherwise.

A brief mindfulness induction increased IPA perpetration for those with high levels negative urgency relative to a control condition. The purpose of the control condition was to induce attentional control by guiding participants through visualization of important aspects of life and planning for the future. This active control was distinctly different from, yet structurally equivalent to, the experimental mindfulness condition that guided participants through the focus of attention on internal and external sensations.

The interaction between dispositional negative urgency and the experimental condition was fully crossed. Those with higher levels of negative urgency put more pins in the doll representing their intimate partner after listening to the mindfulness condition compared to the control condition. In contrast, individuals with lower levels of negative urgency put more pins in the doll after listening to the control condition, relative to the mindfulness condition. The mindfulness condition was only effective at low levels of negative urgency. Therefore, mindfulness may not be a useful intervention at mitigating the link between negative urgency and IPA perpetration. Mindfulness may serve as a comorbid risk factor in those with high levels of negative urgency.

The findings for the interactive effects of negative urgency and dispositional mindfulness for general aggression were similar for all except the FFMQ - Observe facet. Consistent with prior research, the Observe facet of the FFMQ appears to function differently from the other facets in its association with negative outcomes (Baer et al., 2006; 2012). These findings suggested that the interaction between high levels of trait mindfulness and high levels of negative urgency is a risk factor that may result in greater IPA perpetration. The interactive effects for the experimental condition and negative urgency on general aggression differed from the IPA perpetration findings. Individuals high in negative urgency exhibited greater aggressive tendencies towards the 'average person' after listening to the control condition. There was not a significant difference in general aggression based on negative urgency scores after listening to the experimental condition. Overall, participants exhibited greater aggressive tendencies towards the average person compared to their romantic partner. These findings may be capturing negative urgency as a personality predictor for externalizing behavior more broadly (Settles et al., 2012).

A closer examination of the underlying mechanisms would bolster the investigation of the interacting effects to interpret these mixed findings with greater precision.

Mindfulness and negative urgency have been conceptualized as natural reciprocals, which are both rooted in the present moment yet act in opposition (Murphy & MacKillop, 2012). The management of attention and emotions are common to both constructs, but present differently. Mindfulness is a thoughtful, intentional way of experiencing the present moment, whereas negative urgency is reactive, particularly to the experience of negative emotions. These findings do not support this conceptualization. In contrast, negative urgency and mindfulness appear to be working in tandem to enhance IPA perpetration. Mindfulness may draw our attention to impulses and feelings that are better left ignored, especially among individuals with high levels of negative urgency. Focusing attention on aggressive impulses may only serve to increase the likelihood that they will be enacted. This conceptualization fits well within the I³ Model positing some personality processes (e.g., negative urgency) as an impelling force. Under this framework, mindfulness can be conceptualized as an emotion regulation strategy functioning as an inhibiting force that decreases the likelihood of aggressive behavior. The findings show that the impelling force of negative urgency outweighs the inhibiting force of mindfulness and produces aggressive responses. It may be that the combination of being aware of the impulse to aggress or negative feelings in concert with the inability to regulate reactions to negative emotional experiences creates a non-mitigatable impelling force for aggression.

While the benefits of mindfulness on enhancing well-being are widespread and well-documented (Schreiner & Malcolm, 2008), there is still much to learn about what contexts mindfulness may be maladaptive. Currently, there is mixed evidence as to whether mindfulness-based practices are effective in reducing aggression (Fix & Fix, 2013). Although some studies

suggest mindfulness-based interventions are effective in reducing aggression across multiple timepoints, other studies do not show any significant change compared to an active control group (Fix & Fix, 2013). In addition, motivation is a key factor in understanding the beneficence of mindfulness across situations and contexts (Pronk & Righetti, 2015). Empirical evidence from relationship research demonstrates that partners only forgive or sacrifice for their partner when they are committed to the relationship (Righetti & Impett, 2017). These mixed effects may be due to the interactions that mindfulness evinces with tendencies such as negative urgency, especially among intimate partners. Future research will benefit from examining the contextual and idiographic variables that alter mindfulness' ability to alter aggressive behavior.

Limitations and Future Directions

Although this article contributes to the literature, it is not without limitations. Negative urgency was not experimentally manipulated to establish the causal and directional nature of its effects. Negative urgency is a personality trait that is not readily modifiable, thus future studies should manipulate the emotional experiences of individuals who have high levels of negative urgency to see its effect on IPA perpetration.

Similarly, Study 2 included a brief audio induction, which may not have been sufficient training to attenuate the deleterious effects of negative urgency on IPA perpetration. Future studies should increase the amount of mindfulness training participants receive to determine whether attentional training is beneficial in reducing IPA perpetration or whether alternative emotion regulation strategies would be more effective.

Additionally, the results of Study 2 are likely underpowered to detect substantial moderating effects of the audio induction. Future investigations should utilize larger samples to ensure adequate power based on *a priori* power analysis (Hyatt et al., 2022).

There is limited research that measures state negative urgency, outside of behavioral tasks (e.g., Emotional Go/No-Go). Thus, it would be beneficial to assess state negative urgency with a combination of self-report and behavioral tasks in future research. Furthermore, future studies may use a within-participant design to control for between-participant differences as negative urgency may fluctuate within-participants (Feil et al. 2020). Adding brief state negative urgency self-report measures after different mood inductions (e.g., positive, negative, neutral) may aid in the understanding of how negative urgency fluctuates within-person.

Although emergent adults are at a meaningful risk for interpersonal conflict, including IPA (see Nabors & Jansinski, 2009), undergraduate students may not generalize to other populations that are more at-risk for intimate partner violence. Future investigations should recruit both members of a romantic relationship and from populations that are at an elevated risk of IPA perpetration and victimization.

The mindfulness audio induction was relatively brief which does not allow us to speak to the potential effects of more robust mindfulness-based interventions, such as weeks-long training programs, on the negative urgency-IPA link. Future investigations should utilize longer mindfulness-based interventions or mindfulness-based therapeutic programs to estimate whether our findings are indeed an artifact of our relatively brief mindfulness induction. That said, our similar findings with *trait* mindfulness do suggest that our results are likely to extend beyond short-term states.

There are limitations to the Doll Aggression Task (DAT) in this study and the context of IPA perpetration. The administration of the partner and average person versions of the DAT were not counterbalanced, and future research should randomize the presentation of these

measures. Indeed, many studies administer these tasks in non-counterbalanced designs and there is no existing evidence that doing so invalidates them.

Additionally, the DAT is considered a symbolic measure of aggression and does not involve actual acts of harm. Several studies, though, support the use of DAT as an IPA perpetration measure (DeWall et al., 2013; Chester & Lasko, 2019) as well as a valid aggression task against close others (Liang et al., 2018; McCarthy et al., 2016). It is crucial to examine IPA perpetration along a continuum and to examine the severity of the IPA perpetration, rather than identifying the mere existence of IPA perpetration. Further, the Zero-Inflated Poisson model adopted assumes that a small number of responses will be at the higher end of the distribution; the model accounts for such influences in the calculation of parameter estimates (DeWall et al., 2013). Future researchers should seek to replicate our findings using a wider array of measures of both IPA and mindfulness, to exclude the potential measurement issues in contributing to our results.

Conclusion

The current studies assessed the role of trait and state mindfulness on the link between negative urgency and intimate partner aggression perpetration. The results indicated mindfulness may not be a protective factor against the negative urgency – IPA perpetration link, but rather may function as an additional risk factor. Across two studies, this effect was consistent across two widely used self-report measures of dispositional mindfulness and a state mindfulness induction. These findings highlight the fact that mindfulness and negative urgency share a complex relationship that requires further examination. Effective prevention and treatment programs are necessary to reduce the consequences of impulsivity, namely negative urgency. Mindfulness may be one appropriate strategy to help mitigate maladaptive behaviors but may not

be universally applicable across contexts as previously thought. Future research should focus on the underlying mechanisms that mitigate IPA perpetration, such as strategies that involve effective emotion regulation.

References

- Baer, R. A., Smith, G. T., Hopkins, J., Krietmeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.
- Baer, R. A., Lykins, E. L., & Peters, J. R. (2012). Mindfulness and self-compassion as predictors of psychological wellbeing in long-term meditators and matched nonmeditators. *The Journal of Positive Psychology, 7*(3), 230-238.
- Barnes, S., Brown, K. W., Krusemark, E., Campbell, W. K., & Rogge, R. D. (2007). The role of mindfulness in romantic relationships satisfaction and responses in relationship stress. *Journal of Marital and Family Therapy, 33*(4), 482-500.
- Birkley, E. L., & Eckhardt, C. I. (2019). Effects of instigation, anger, and emotion regulation on intimate partner aggression: Examination of the “perfect storm” theory. *Psychology of Violence, 9*(2), 186-195.
- Broderick, P. C. (2005). Mindfulness and coping with dysphoric mood: Contrasts with rumination and distraction. *Cognitive Therapy and Research, 29*(5), 501-510.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822-848.
- Brown, K. W., Goodman, R. J., Ryan, R. M., & Anālayo, B. (2016). Mindfulness enhances episodic memory performance: Evidence from a multimethod investigation, *PloS one, 11*(4), e0153309.
- Chambers, R, Lo, B. C. Y., & Allen, N. B. (2008). The impact of intensive mindfulness training on attentional control, cognitive style, and affect. *Cognitive Therapy and Research, 84*(4), 822-848.

- Chester, D. S., & Lasko, E. N. (2019). Validating a standardized approach to the Taylor Aggression Paradigm. *Social Psychological and Personality Science*, *10*(5), 620-631.
- Condino, V., Tanzilli, A., Speranza, A. M., & Lingardi, V. (2016). Therapeutic interventions in intimate partner violence: An overview. *Research in Psychotherapy: Psychopathology, Processes, and Outcome*, *19*, 79-88.
- Curran, P. J., & Hussong, A. M. (2009). Integrative data analysis: The simultaneous analysis of multiple data sets. *Psychological Methods*, *14*(2), 81-100.
- Cyders, M. A., & Smith, G. T. (2008). Emotion-based dispositions to rash action: Positive and negative urgency. *Psychological Bulletin*, *134*(6), 807-828.
- Derefinko, K., DeWall, C. N., Metze, A. V., Walsh, E. C., & Lynam, D. R. (2011). Do different facets of impulsivity predict different types of aggression? *Aggressive Behavior*, *37*(3), 223-233.
- DeWall, C. N., Finkel, E. J., Lambert, N. M., Slotter, E. B., Bodenhausen, G. V., Pond Jr, R. S., ... & Fincham, F. D. (2013). The voodoo doll task: Introducing and validating a novel method for studying aggressive inclinations. *Aggressive Behavior*, *39*(6), 419-439.
- Dziak, J. J., Dierker, L. C., & Aber, B. (2020). The interpretation of statistical power after the data has been gathered. *Current Psychology*, *39*(3), 870-877.
- Feil, M., Halvorson, M., Lengua, L., & King, K. M. (2020). A state model of negative urgency: Do momentary reports of emotional impulsivity reflect global self-report? *Journal of Research in Personality*, *86*, 103942.
- Finkel, E. J., DeWall, C. N., Slotter, E. B., Oaten, M., & Foshee, V. A. (2009). Self-regulatory failure and intimate partner violence perpetration. *Journal of Personality and Social Psychology*, *97*(3), 483-499.

- Finkel, E. J., & Hall, A. N. (2018). The I^3 model: A metatheoretical framework for understanding aggression. *Current Opinion in Psychology*, *19*, 125-130.
- Fix, R. L., & Fix, S. T. (2013). The effects of mindfulness-based treatments for aggression: A critical review. *Aggression and Violent Behavior*, *18*(2), 219-227.
- Gillions, A., Cheang, R., & Duarte, R. (2019). The effect of mindfulness practice on aggression and violence levels in adults: A systematic review. *Aggression and Violent Behavior*, *48*, 104-115.
- Hodgins, H. S., & Knee, C. R. (2002). The integrating self and conscious experience. *Handbook of self-determination research*. Rochester, NY: The University of Rochester Press.
- Hyatt, C. S., Crowe, M. L., West, S. J., Vize, C. E., Carter, N. T., Chester, D. S., & Miller, J. D. (2022). An empirically based power primer for laboratory aggression research. *Aggressive Behavior*, *48*(3), 279-289.
- Kabat-Zinn, J. (2011). Some reflections on the origins of MBSR, skillful means, and the trouble with maps. *Contemporary Buddhism*, *12*(1), 281-306.
- Karremans, J. C., Schellekens, M. P. J., & Kappen, G. (2015). Bridging the sciences of mindfulness and romantic relationships: A theoretical model and research agenda. *Personality and Social Psychology Review*, *21*(1), 29-41.
- Lenth, R. (2022). *emmeans: Estimated Marginal Means, aka Least-Squares Means*. R package version 1.8.1-1, <https://CRAN.R-project.org/package=emmeans>.
- Liang, L. H., Brown, D. J., Lian, H., Hanig, S., Ferris, D. L., & Keeping, L. M. (2018). Righting a wrong: Retaliation on a voodoo doll symbolizing an abusive supervisor restores justice. *The Leadership Quarterly*, *29*(4), 443-456.

- Lynam, D. R., Whiteside, S. P., Smith, G. T., & Cyders, M. A. (2006). The UPPS-P: Assessing five personality pathways to impulsive behavior. West Lafayette, IN: Purdue University, 2006.
- McCarthy, R. J., Crouch, J. L., Basham, A. R., Milner, J. S., & Skowronski, J. J. (2016). Validating the voodoo doll task as a proxy for aggressive parenting behavior. *Psychology of Violence*, 6(1), 135.
- McNulty, J. K., & Hellmuth, J. C. (2008). Emotional regulation and intimate partner violence in newlyweds. *Journal of Family Psychology*, 22(5), 794-797.
- Mitchell, J. E., & Wupperman, P. (2023). Mindfulness treatments for domestic violence: A review. *Journal of Aggression, Maltreatment & Trauma*, 32(7-8), 1055-1075.
- Murphy, C., & MacKillop, J. C. (2012). Living in the here and now: Interrelationships between impulsivity, mindfulness, and alcohol misuse. *Psychopharmacology*, 219(2), 527-536.
- Nabors, E. L., & Jasinski, J. L. (2009). Intimate partner violence perpetration among college students: The role of gender role and gendered violence attitudes. *Feminist Criminology*, 4(1), 57-82.
- Niles, B. L., Klunk-Gillis, J., Ryngala, D. J., Silberbogen, A. K., Paysnick, A., & Wolf, E. J. (2012). Comparing mindfulness and psychoeducation treatments for combat-related PTSD using a telehealth approach. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(5), 538-547.
- Peters, J. R., Erisman, S. M., Upton, B. T., Baer, r. A., & roemer, L. (2011). A preliminary investigation of the relationships between the dispositional mindfulness and impulsivity. *Mindfulness*, 2(4), 228-235.

- Peterson, C., Kearns, M. C., McIntosh, W. L., Estefan, L. F., Nicoladis, C., McCollister, K. E., Gordon, A., Florence, C. (2018). Lifetime economic burden of intimate partner violence among U.S. adults. *American Journal of Preventive Medicine*, *55*(4), 434-444.
- Pronk, T. M., & Righetti, F. (2015). How executive control promotes happy relationships and a well-balanced life. *Current Opinion in Psychology*, *1*, 14-17.
- R Core Team (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>.
- Righetti, F., & Impett, E. (2017). Sacrifice in close relationships: Motives, emotions, and relationship outcomes. *Social and Personality Psychology Compass*, *11*(10), e12342.
- Schafer, J., Caetano, R., & Cunradi, C. B. (2004). A path model of risk factors for intimate partner violence among couples in the United States. *Journal of Interpersonal Violence*, *19*(2), 127-142.
- Schreiner, I., & Malcolm, J. (2008). The benefits of mindfulness meditation: Changes in emotional states of depression, anxiety, and stress. *Behaviour Change*, *25*(3), 156-168.
- Schumann-Olivier, Z., Trombka, M., Lovas, D. A., Brewer, J. A., Vago, D. R., Gawande, R., Dunne, J. P., Lazar, S. W. Loucks, E. B., & Fulwiler, C. (2020). Mindfulness and behavior change. *Harvard Review of Psychiatry*, *28*(6), 371-394.
- Schumer, M. C., Lindsay, E. K., & Creswell, J. D. (2018). Brief mindfulness training for negative affectivity: A systematic review and meta-analysis. *Journal of Consulting and Clinical Psychology*, *86*(7), 569-583.
- Sears, S., & Kraus, S. (2009). I think therefore I am: Cognitive distortions and coping style as mediators for the effects of mindfulness mediation on anxiety, positive and negative affect, and hope. *Journal of Clinical Psychology*, *65*(6), 561-573.

- Settles, R. E., Fischer, S., Cyders, M. A., Combs, J. L., Gunn, R. L., & Smith, G. T. (2012). Negative urgency: a personality predictor of externalizing behavior characterized by neuroticism, low conscientiousness, and disagreeableness. *Journal of Abnormal Psychology, 121*(1), 160–172.
- Shorey, R. C., Brasfield, H., Febres, J., & Stuart, G. L. (2011). An examination of the association between difficulties with emotion regulation and dating violence perpetration. *Journal of Aggression, Maltreatment, and Trauma, 20*(8), 870-885.
- Shorey, R. C., Larosn, E. E., & Cornelius, T. L. (2014). An initial investigation of the relation between mindfulness and female perpetrated dating violence. *Partner Abuse, 5*(1), 3-20.
- Spiller, S. A., Fitzsimons, G. J., Lynch, Jr., J. G., & McClelland, G. H (2013). Spotlights, floodlights, and the magic number zero: Simple effects tests in moderated regression. *Journal of Marketing Research, 50*(20), 277-288.
- Tollefson, D., & Phillips, I. (2015). A mind-body bridging treatment program for domestic violence offenders. *Journal of Family Violence, 30*(6), 783-794.
- Tollefson, D., Webb, K., Shumway, D., Block, S. H., & Nakamura, Y. (2009). A mind-body approach to domestic violence perpetrator treatment: Program overview and preliminary outcomes. *Journal of Aggression, Maltreatment & Trauma, 18*(1), 17-45.
- Whiteside, S. P., & Lynam, D. R. (2001). The five-factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences, 30*, 669-689.
- Zarling, A., Bannon, S., & Berta, M. (2019). Evaluation of acceptance and commitment therapy for domestic violence offenders. *Psychology of Violence, 9*(3), 257-266.
- Zarling, A., Lawrence, E., & Marchman, J. (2015). A randomized control trial of acceptance and

commitment therapy for aggressive behavior. *Journal of Consulting and Clinical Psychology*, 83(1), 199-212.

Zeileis, A., Kleiber, C., & Jackman, S. (2008). Regression models for count data in R. *Journal of Statistical Software*, 27(8), 1-25.

Zhang, Y., Hedo, R., Rivera, A., Rull, R., Richardson, S., & Tu, X. M. (2019). Post hock power analysis: Is it informative and meaningful analysis? *General Psychiatry*, 32, e100069.
doi: 10.1136/gpsych-2019-100069

Supplemental Table 1.*Descriptive statistics for key variables included in Study 1, Study 2, and combined dataset.*

Variable	Study	N	M	SD	Min	Max
Negative Urgency	1	237	2.28	0.65	1.00	3.92
	2	275	2.23	0.69	1.00	4.00
	C	512	2.24	0.67	1.00	4.00
MAAS	1	235	3.64	0.81	1.53	5.60
	2	274	3.80	0.80	1.67	6.00
	C	509	3.73	0.81	1.53	6.00
FFMQ - Acting with Awareness	1	236	3.08	0.73	1.13	5.00
	2	275	3.10	0.78	1.00	5.00
	C	511	3.46	0.68	1.50	5.00
FFMQ - Observe	1	236	3.39	0.67	1.50	4.88
	2	275	3.52	0.68	1.50	5.00
	C	511	3.24	0.79	1.13	5.00
FFMQ - Describe	1	236	3.17	0.74	1.13	5.00
	2	275	3.31	0.83	1.13	5.00
	C	511	3.09	0.75	1.00	5.00
FFMQ - Non-Judgment	1	236	3.02	0.84	1.00	5.00
	2	275	2.96	0.85	1.00	5.00
	C	511	2.99	0.84	1.00	5.00
FFMQ - Non-Reactivity	1	236	2.98	0.60	1.43	4.71
	2	275	3.02	0.57	1.00	4.86
	C	511	3.00	0.58	1.00	4.86
VDAT Pins in Partner	1	235	2.60	5.69	0	51
	2	276	2.26	5.85	0	51
	C	511	2.42	5.77	0	51
VDAT Pins in Average Person	1	228	7.43	10.91	0	51
	2	267	4.60	8.80	0	49
	C	495	5.90	9.92	0	51

Note: MAAS = Mindful Attention Awareness Scale; FFMQ = Five Facet Mindfulness Questionnaire; VDAT = Voodoo Doll Aggression Task

Supplemental Table 2.*Zero-order correlations of key variables in the combined dataset.*

Variables	1	2	3	4	5	6	7	8
1. Negative Urgency	-							
2. MAAS	-.36***	-						
3. FFMQ - Acting with Awareness	-.57***	.72***	-					
4. FFMQ - Observe	-.01	.12**	.04	-				
5. FFMQ - Describe	-.28***	.34***	.36***	.29***	-			
6. FFMQ - Non-Judgement	-.47***	.42***	.44***	-.15**	.27***	-		
7. FFMQ - Non-Reactivity	-.46***	.31***	.26***	.20***	.24***	.22***	-	
8. VDAT Partner	.09*	-.08	-.04	-.07	-.08	-.03	-.07	-
9. VDAT Average Person	.11*	-.12**	-.05	-.02	-.07	<-.01	-.08	.37***

Note: MAAS = Mindful Attention Awareness Scale; VDAT = Voodoo Doll Aggression Task

* $p < .05$, ** $p < .01$, *** $p < .001$

Supplemental Table 3.*Results from Zero-Inflated Poisson moderation analyses for general aggression.*

Model Parameters	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
<i>MAAS</i>				
Intercept	2.82	0.06	47.85	<.001
NU	0.14	0.03	3.94	<.001
MAAS	-0.10	0.03	-3.52	<.001
NU x MAAS	0.20	0.04	5.58	<.001
<i>FFMQ - Acting with Awareness</i>				
Intercept	2.83	0.06	48.77	<.001
NU	0.20	0.04	5.53	<.001
Acting with Awareness	0.03	0.03	0.95	.345
NU x Acting with Awareness	0.13	0.04	3.61	<.001
<i>FFMQ - Observe</i>				
Intercept	2.81	0.06	48.45	<.001
NU	0.16	0.03	5.32	<.001
Observe	< -0.01	0.03	-0.04	.972
NU x Observe	0.05	0.04	1.27	.206
<i>FFMQ - Describe</i>				
Intercept	2.86	0.06	49.21	<.001
NU	0.21	0.03	6.70	<.001
Describe	0.03	0.03	1.26	.208
NU x Describe	0.24	0.04	6.65	<.001
<i>FFMQ - Non-Judgment</i>				
Intercept	2.76	0.06	46.81	<.001
NU	0.24	0.03	7.26	<.001
Non-Judgment	0.16	0.03	5.79	<.001
NU x Non-Judgment	-0.03	0.03	-0.89	0.37
<i>FFMQ - Non-Reactivity</i>				
Intercept	2.81	0.06	48.46	<.001
NU	0.14	0.03	4.48	<.001
Non-Reactivity	-0.14	0.04	-3.47	<.001
NU x Non-Reactivity	0.33	0.05	6.23	<.001

MAAS = Mindful Attention Awareness Scale; NU = Negative Urgency

Supplemental Table 4.

Zero-Inflated Poisson moderation analyses for experimental condition on the link between Negative Urgency (NU) and general aggression VDAT scores.

Experimental Condition	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
<i>Average Person</i>				
Intercept	2.44	0.05	54.33	<.001
NU	0.27	0.07	3.66	<.001
Condition	-0.11	0.05	-1.97	.063
NU x Condition	-0.28	0.09	-2.98	.003

Note: NU = Negative Urgency