

UC Riverside

UC Riverside Previously Published Works

Title

The Role of Mindfulness in Daily Experiences of Patience and Impatience

Permalink

<https://escholarship.org/uc/item/5p33b3sp>

Journal

Mindfulness, 17(3)

ISSN

1868-8527

Authors

Hawes, Jason

Sweeny, Kate

Publication Date

2026-03-01

DOI

10.1007/s12671-026-02783-0

Peer reviewed

The Role of Mindfulness in Daily Experiences of Patience and Impatience

Jason Hawes¹ and Kate Sweeny¹

¹University of California, Riverside, Department of Psychology, Riverside, California, USA

Acknowledgments and Funding Information

This study was funded by University of California, Riverside. We thank Chandra Reynolds and Stephen Antonoplis for assistance with analyses.

Author Note

Jason Hawes  <https://orcid.org/0009-0005-1128-2044>

Kate Sweeny  <https://orcid.org/0000-0002-6653-422X>

Correspondence concerning this article should be addressed to Jason Hawes, Department of Psychology, University of California, Riverside, CA 92521, United States. Phone number: (951) 827-7165. Email: jason.hawes@email.ucr.edu

The Role of Mindfulness in Daily Experiences of Patience and Impatience

Patience is considered a virtue across most religions and cultures. However, psychological research on patience is largely limited to temporal discounting and delayed gratification. Although relevant, this literature narrowly defines patience as a decision between smaller, more immediate rewards or larger rewards later. A more recent approach defined patience more broadly as a set of strategies for regulating the emotion of impatience (Sweeny, 2025). In this context, mindfulness may play a role in diminishing feelings of impatience and increasing patient responses by promoting a non-judgmental attitude, presence of mind, and acceptance of one's internal state and external environment (Bishop et al., 2004). This attentional focus on the present is antithetical to the future-focused and goal-driven emotion of impatience.

The psychological sciences have generally overlooked the topic of patience. Some studies have peripherally addressed the concept, such as Friedman's (1996) Type A personality that incorporated impatience and irritability as an indicator. However, most research on this topic focuses on intertemporal choice. These studies measured patience under the narrow scope of delayed gratification, in that waiting longer for larger rewards is deemed patient behavior, whereas opting for smaller but more immediate rewards is impatient behavior (Curry et al., 2008; Dai & Fishbach, 2013). Although intertemporal choice is an aspect of patience, it is limited to the dichotomous choice of now-or-later decisions (Schnitker, 2012). Beyond intertemporal choice, work by Schnitker and Emmons (2007) approached patience through a virtue lens and provided one of the first comprehensive psychological investigations into the construct (Schnitker, 2012; Schnitker et al., 2017). Other work has focused on "waiting well" as a form of patience (e.g., Sweeny et al., 2016). However, this near-absence of direct and thorough research on patience has left many open questions.

To understand patience as a form of emotion regulation, it is integral to first understand the experience of impatience. The process model of patience, a new theoretical model, posits that impatience is an emotion that arises in response to an objectionable delay in reaching a goal (Sweeny, 2025). That is, people experience impatience when they perceive time as moving slower than it ought to be or than they wish it would (Sweeny et al., 2026). Some examples are waiting in long lines, prolonged and unwanted conversations, and waiting for potentially life-altering news. As an emotion, impatience is negatively valenced and moderately high in arousal (Scherer, 2005; Sweeny, 2025) and presents via easily recognizable forms of psychomotor agitation (e.g., shaking legs and pacing). Like other emotions, impatience carries with it a motivating action tendency, in this case a motivation to resolve the delay and hasten goal attainment. For example, someone who feels impatient might channel that feeling toward finding a shorter line, disengaging from a boring conversation, or calling the doctor to check on a test result. However, this motivation can also lead to impulsive or dangerous behavior, such as driving on the shoulder to get ahead of traffic. Similarly, for longer-term goals, impatience may lead people to rush, produce lower-quality outcomes, cut corners, or prematurely disengage from their goals.

Against the backdrop of the emotion of impatience, the process model of patience posits that patience is a specific and targeted form of emotion regulation that aims its efforts toward subjective experiences and outward expressions of impatience. Applying Gross's (2013) model of emotion regulation, patience regulates feelings of impatience at the attentional deployment stage (via distraction), the cognitive change stage (via cognitive reappraisal), or the response modulation stage (e.g., via expressive suppression, deep breathing, or meditation). These regulation strategies manage impatience by targeting feelings or expressions, or both. For

example, a person may find themselves in a waiting period that is out of their control and taking longer than expected. Rather than anxiously checking the time, they may instead distract themselves with another task to mitigate impatient feelings (i.e., attentional deployment). Alternatively, they might continue feeling impatient while also regulating their impulse to ask for updates repeatedly and rudely (i.e., response modulation).

Albeit novel, this approach to patience is compatible with, yet broader than, other conceptualizations of patience, such as Schnitker's (2012) three types of virtuous patience (i.e., life hardship, interpersonal, and daily hassles). In our model, these types of patience are simply domains in which impatience might arise and thus present an opportunity for patience. The relatively limited approaches to patience, such as intertemporal choice and awaiting uncertain news, also capture aspects (but not the full picture) of patience's emotion regulation function. For intertemporal choice, people must regulate their impulsive desire, driven by impatience, to end the task early and get a smaller, more immediate reward. As for awaiting uncertain news, patience can make the unpleasant experience of impatience more tolerable when facing an unavoidable delay.

Conceptualizing impatience as a future-oriented emotion, mindfulness may promote a presence of mind that decreases feelings of impatience and may facilitate patient responses. Mindfulness entails an orientation toward present-moment experiences and a curiosity about, openness to, and acceptance of these experiences (Bishop et al., 2004). This present focus and nonjudgmental acceptance of internal processes are likely antithetical to the negative, future-oriented emotion of impatience. Dispositional mindfulness has also been shown to lessen emotional arousal (Bullis et al., 2014; Coffey et al., 2010), and mindfulness interventions have yielded reduced negative emotional reactivity (Arch & Craske, 2006), more positive emotional

responses (Erismann & Roemer, 2010), and less emotional interference from negative emotions when attempting to complete a task (Ortner et al., 2007; Roemer et al., 2015). Thus, mindfulness may work on the front end as a buffer against the eliciting stimulus of impatience (e.g., a future-oriented, objectionable delay), rendering the regulation strategies engaged by patience unnecessary.

Alternatively, mindfulness may work on the back end by promoting the successful regulation of impatience (i.e., patience). Drawing further inspiration from Gross's process model, evidence points to mindfulness acting predominantly at the level of attentional deployment by shifting attention away from negative cognitions about emotions and promoting non-judgmental acceptance (Gross, 2013), though studies utilizing self-report measures suggest that acceptance may be the aspect of mindfulness most relevant for healthy emotion regulation and psychological well-being (Coffey et al., 2010). Mindfulness may also support the work patience does to downregulate feelings of impatience, as people with higher levels of dispositional mindfulness more easily regulated emotional arousal (Lutz et al., 2014; Roemer et al., 2015) and showed quicker physiological recovery to emotional arousal (Bullis et al., 2014; Coffey et al., 2010). Hayes and Feldman (2004) also claimed that mindfulness reduces distress in response to negative emotions and promotes openness more broadly. This openness encourages emotional learning and more adaptive emotion regulation strategies, particularly for people with emotional disorders (Hayes & Feldman, 2004). Mindfulness can also buffer against emotional exhaustion (Hülshager et al., 2013), which may have implications for situations requiring prolonged patience. An underlying mechanism of these benefits may be that mindfulness improves executive control and thus supports various types of self-regulation (Teper et al., 2013).

The relative dearth of research on patience, particularly on how mindfulness relates to everyday experiences of impatience and patience, leaves many unexplored research avenues. Building on the process model of patience (Sweeny, 2025) and prior evidence that mindfulness reduces negative emotional reactivity and supports emotion regulation (e.g., Arch & Craske, 2006; Coffey et al., 2010), we conducted three studies to examine whether mindfulness reduces impatience and bolsters patience in daily life. Across all three studies, we expected greater mindfulness to be associated with less impatience and more patience.

In Study 1, we tested correlational and longitudinal associations among mindfulness, impatience, and patience in a 5-day daily diary study. We hypothesized that greater mindfulness on a given day would predict less impatience and more patience that day (*Hypothesis 1*). In Study 2, we introduced an experimental design comparing the effects of a 5-day mindfulness induction to a 5-day relaxation control, with measures completed at the end of the day, to test the causal effect of mindfulness on patience and impatience. We hypothesized that participants assigned to the mindfulness condition would report less impatience and more patience in response to their most impatience-inducing experience each day (*Hypothesis 2*). In Study 3, we strengthened this causal test by offering a broader repertoire of mindfulness activities and contrasting the effect of those activities with a competing process (i.e., mind-wandering). We also included additional measures to dive deeper into the processes of patience and impatience. We hypothesized that participants engaging in mindfulness activities, relative to those engaging in mind-wandering, would again report less impatience and greater patience in response to an impatience-inducing event (*Hypothesis 3*).

Study 1

Method

Participants

Participants in the U.S. recruited from Prolific ($N = 200$; 54% women; $M_{age} = 26.5$; 60% White, 16% Black or African American, 16% Latino/a/x, 4% Multiracial, 3% Other) took part in a brief longitudinal study regarding their daily experiences of mindfulness, patience, and impatience. The participants were recruited internationally through Prolific with the requirements that they must be at least 18 years old, have access to the Internet, be enrolled in Prolific as a participant, and can read and write in English.

Procedure

Participants completed a baseline survey consisting of measures of individual differences, mindfulness, emotions, emotion regulation, and demographics. In all studies, following the baseline, participants completed once-daily surveys for the subsequent five days (6 surveys in total). Daily surveys were released at 5:00 p.m. Pacific Standard Time (PST), and participants were instructed to complete them in the evening, as late as possible and ideally before going to sleep, to capture that day's experiences of mindfulness, patience, and impatience. We focus on the measures pertinent to our hypotheses; full measures, deidentified data, R code and output, and intercorrelations among key study variables for all studies are available on the [Open Science Framework](#).

Of the 200 participants who completed the baseline survey, 10 completed no additional surveys and are excluded from the analyses. The majority of participants completed all daily surveys ($n = 132$, 66%), and 89% completed at least three daily surveys. Neither baseline mindfulness, $r(198) = -0.05$, $p = 0.52$, nor baseline feelings of impatience, $r(198) = 0.04$, $p = 0.59$, predicted attrition.

Measures

To assess dispositional mindfulness, at baseline participants completed the Mindful Attention Awareness Scale (MAAS; 15 items; Brown & Ryan, 2003; e.g., “I could be experiencing some emotion and not be conscious of it until some time later”; 1 = *Almost never*, 6 = *Almost always*; $M = 3.86$, $SD = 0.83$, Cronbach’s $\alpha = 0.87$). Using an adapted form of the MAAS, each day participants reported the extent that they felt mindful throughout their day ($M_{overall} = 4.65$, $SD_{overall} = 0.81$, $\alpha_{average} = 0.91$).

To measure daily feelings of impatience, each day participants rated 33 emotions in response to the prompt, “Thinking about your day as a whole, please indicate how much you experienced the following emotions overall today.” We used the single item assessing impatience (1 = *Not at all*, 7 = *Extremely*; $M_{overall} = 2.84$, $SD_{overall} = 1.71$).

To examine participants’ experience in response to a particularly relevant event, each day they responded to the following prompt:

Now we’d like you to think about a specific event, experience, or incident that occurred today. Specifically, think back to your day and identify something that made you feel IMPATIENT. It could be something small or big; anything that gave you that frustrating feeling of impatience. Briefly describe that experience from today. The arrow to continue will appear after you’ve been typing for at least 30 seconds.

To assess feelings of impatience in response to the impatience-inducing event, participants completed a single-item response (“How impatient did you feel during the experience you just described?”; 1 = *Not at all*, 7 = *Extremely*; $M_{overall} = 4.36$, $SD_{overall} = 1.72$).

After completing the event-specific impatience measure, participants were prompted to continue thinking about their experience that day and to indicate “to what extent did you try to do the following in response to that experience?” They then completed an 8-item state measure

of emotion regulation (“Remain calm,” “Take deep breaths,” “Reframe the situation to see it in a more positive light,” “Suppress feelings or thoughts about the situation,” “Suppress physical reactions to the situation (e.g., foot or finger tapping, sighing),” “Suppress rude or impatient comments about the situation,” “Make efforts to resolve the situation in a positive way,” and “Distract yourself from thinking about or paying attention to the situation”; 1 = *Not at all*, 7 = *Extremely*; $M_{overall} = 3.74$, $SD_{overall} = 0.98$, $\alpha_{average} = 0.77$). Because no established measure of state patience (or even state emotion regulation) was available prior to our work in this area, we created a brief set of items reflecting common emotion-regulation strategies (Gross, 2013). The scale includes items related to cognitive reappraisal, attentional deployment, expressive suppression, and other response-modulation strategies (e.g., staying calm, taking deep breaths). Recent work using this measure confirms its utility in this context (Sweeny et al., 2026).

Data Analyses

To test our hypotheses, we conducted multilevel models using the lme4 package (v1.1-26; Bates et al., 2015) predicting individual impatience and patient responses from person mean-centered state mindfulness (within-person effects) and grand mean-centered (between-person effects) state mindfulness, controlling for trait mindfulness (grand-mean centered) and day in the study (out of 5, centered). By centering the variables that way, the analyses capture both the interplay between patience/impatience and mindfulness within day for each person (within-person effects) and the overall association between patience/impatience and mindfulness across participants (between-person effects).

Results

Table 1 presents key parameters from multilevel models predicting impatience and patience from state and trait mindfulness. Given the inevitable influence of third variables on

between-person effects, we focus our discussion on within-person associations. We found within-person associations in each model: greater state mindfulness predicted less daily impatience, less event-specific impatience (consistent with *Hypothesis 1*), and surprisingly, *less* event-specific patience (contrary to *Hypothesis 1*).

Discussion

The primary focus of Study 1 was to investigate associations between daily state mindfulness and patient and impatient responses to daily events. Consistent with *Hypothesis 1*, on days when people reported being relatively mindful, they also reported feeling less impatient overall and less impatient in response to a difficult situation that occurred that day. Contrary to *Hypothesis 1*, participants also reported responding *less* patiently on days when they were particularly mindful—and consistent with that finding, impatience and patience were positively associated in our study ($r = 0.44$ for event-specific impatience, $r = 0.17$ for daily impatience, $ps < 0.001$).

We suspected that our measure of patience in Study 1 captured immediate reactions to impatience (“I was feeling impatient, so I had to try extra hard to be patient”—producing a positive relationship) rather than a reflection on successful regulatory processes (“I was patient, so I didn’t feel much impatience”—which would produce a negative relationship). That is, the measure asked participants to report the extent to which they “tried” to engage in various patient responses rather than whether they engaged in those responses successfully. In Study 2, we modified our measure to capture more reflective emotion regulation processes.

Study 2

The primary aim of Study 2 was to test causal associations between mindfulness and patience and impatience via a randomized mindfulness intervention. We also adjusted our

measure of patience to better capture successful emotion regulation efforts, as noted above, and we added a measure of participants' appraisal that the delay leading to their impatience (in the daily impatience event) was objectionable, consistent with our theoretical reasoning.

Method

Participants

Participants were recruited from Prolific ($N = 200$; 63% women; $M_{age} = 36.53$; 60% White, 12% Asian, 10.5% Black or African American, 5.5% Latino/a/x, 12% Multiracial) and assigned to one of two conditions: mindfulness or control. Participants had to be at least 18 years old, reside in the United States, have access to the Internet, be enrolled in Prolific as a participant, and be able to read and write in English.

Procedure

Participants completed a similar baseline survey to Study 1, with notable changes listed below. Following the baseline was a two-day break in which participants were assigned to their condition and provided instructions on their daily activity. Participants in the mindfulness condition were instructed to listen to a 10-minute guided meditation recording created by Dr. David Boles (and lightly edited for length), an ordained monk and licensed acupuncturist based in Gainesville, Florida (used with his permission). The recording instructed participants to sit in a comfortable position and focus their attention on their breathing. Throughout the recording, Dr. Boles provided mindfulness techniques to practice, including observing thoughts and feelings with detachment and redirecting attention to the breath whenever the mind wandered.

Participants in the control condition were instructed to listen to a 10-minute audio recording featuring relaxing instrumental music and nature sounds. The recording offered calming background music without guidance or instructions, intended to provide a neutral

comparison for the mindfulness condition.

After confirming their ability to complete the activity each day during the study period, participants completed end-of-day surveys on experiences of mindfulness, patience, and impatience through self-report measures for the subsequent five days. We focus here on measures pertinent to our hypotheses; full measures are available on the [Open Science Framework](#).

Of the 200 participants who completed the baseline survey, 60 completed no additional surveys and were excluded from analyses. We also removed survey responses on days when participants failed an attention check (5 total across the 5 days). More than a quarter of participants completed all daily surveys ($n = 53$, 27%), and nearly half ($n = 90$, 46%) completed at least three daily surveys. Neither trait mindfulness, $r(182) = -0.06$, $p = 0.40$, baseline impatience, $r(198) = -0.07$, $p = 0.31$, nor condition assignment, $t(193) = 0.71$, $p = 0.48$, predicted attrition.

Measures

To assess dispositional mindfulness, participants completed the Five Facet Mindfulness Questionnaire (FFMQ; 15 items; Baer et al., 2012; e.g., “I’m good at finding words to describe my feelings”; 1 = *Never or very rarely true*, 5 = *Very often or always true*; $M = 3.27$, $SD = 0.53$, Cronbach’s $\alpha = 0.78$). We replaced the MAAS with the FFMQ, as the FFMQ offers a more comprehensive assessment of mindfulness by encompassing a broader set of dimensions.

To measure daily feelings of mindfulness, participants completed the Toronto Mindfulness Scale (TMS; 13 items; Lau et al., 2006; e.g., “I experienced myself as separate from my changing thoughts and feelings.” 1 = *Not at all*, 5 = *Very much*; $M_{overall} = 2.44$, $SD_{overall} = 0.83$, $\alpha_{average} = 0.92$). We replaced the MAAS with the TMS, as the MAAS is designed to

measure dispositional mindfulness, whereas the TMS is specifically intended for assessing state mindfulness.

To measure daily feelings of impatience, participants completed the same single-item measure of impatience as in Study 1 ($M_{overall} = 2.55$, $SD_{overall} = 1.53$). They then responded to the same prompt to recall an impatience-inducing event and indicated how impatient they felt in response to that event ($M_{overall} = 4.34$, $SD_{overall} = 1.25$).

To evaluate patient responses to the impatience-inducing event, participants were prompted to continue thinking about their experience that day and to “consider whether you managed your feelings of impatience in the ways described below. For each item, indicate the extent to which you used that strategy during your experience with impatience today.” They then completed a 9-item state measure of emotion regulation (“Thinking about other things to distract myself,” “Doing something pleasant or entertaining to distract myself,” “Accepting the situation for what it is,” “Focusing on the positive side of the situation,” “Thinking about the situation in a different way,” “Taking some deep breaths,” “Praying or meditating,” “Controlling my physical reactions to the situation (e.g., foot or finger tapping, sighing),” “Keeping rude or snippy comments about the situation to myself”; 1 = *Not at all*, 7 = *Extremely*; $M_{overall} = 3.56$, $SD_{overall} = 1.18$, $\alpha_{average} = 0.78$). We made minor edits and one addition to the measure compared to the one used in Study 1 to better capture the relevant set of emotion regulation strategies.

The process model of patience proposes that people feel impatient when they appraise a delay as objectionable (i.e., inappropriate, unfair, or unreasonable; Sweeny, 2025). Participants completed a 5-item measure that captured this appraisal (Sweeny et al., 2026; e.g., “This is going on too long,” “I wish this would resolve more quickly,” “Why isn’t this situation over yet?”; 1 = *Not at all*, 7 = *Very much*; $M_{overall} = 4.32$, $SD_{overall} = 1.82$, $\alpha_{average} = 0.94$) with regard to their

experience of impatience each day.

Data Analyses

To test our hypotheses, we first compared the effects of condition with independent-samples t-tests. We then tested whether the results of Study 1 replicated by again conducting multilevel models using the lme4 package (v1.1-26; Bates et al., 2015) predicting individual impatience and patient responses from person mean-centered state mindfulness (within-person effects) and grand mean-centered (between-person effects) state mindfulness, controlling for trait mindfulness (grand-mean centered) and day in the study (out of 5, centered).

Results

Surprisingly, participants in the control condition ($M = 2.58$, $SD = 0.81$) reported higher average levels of mindfulness across the study than did participants in the mindfulness condition ($M = 2.34$, $SD = 0.72$), $t(133) = -1.84$, $p = 0.07$, $d = 0.32$, which complicated the evaluation of *Hypothesis 2*. To better understand this unexpected result, we examined participants' comments on their experience in the study, which revealed that some participants in the mindfulness condition expressed displeasure and, ironically, impatience with the guided meditation. Study 3 took a different approach to the mindfulness intervention; here, we focused on associations among variables given the unsuccessful manipulation.

Table 1 presents key parameters from multilevel models predicting impatience, patience, and delay appraisals from state mindfulness, controlling for trait mindfulness. Largely consistent with the results of Study 1 and consistent with *Hypothesis 1*, within-person associations emerged in all models, such that greater state mindfulness predicted less daily impatience, less event-specific impatience, more event-specific patience, and appraisals of the impatience-inducing delay as less objectionable (the latter fell just short of traditional standards for statistical

significance).

Discussion

The primary aim of Study 2 was to test the causal effect of mindfulness on patience and impatience (*Hypothesis 2*). Unfortunately, our mindfulness intervention did not adequately induce mindfulness, at least in comparison to our chosen control condition, which unexpectedly produced somewhat greater mindfulness. We attribute this failure largely to the guided meditation format, which may not resonate with everyone. Indeed, some participants cited the guided meditation as the most impatience-inducing event of their day.

Despite the failure of our intervention, participants who reported higher levels of mindfulness on a given day once again reported feeling less impatient that day and less impatient in response to difficult situations that occurred that day—and in contrast to Study 1, more patient in response to those difficult situations, perhaps due to our updated patience prompt. We also found that people who were more mindful perceived impatience-inducing delays as less objectionable, consistent with the process model of patience.

Study 3

Study 3 had several aims. First, we used the feedback from participants in Study 2 to inform our intervention for Study 3, in which we offered a variety of mindfulness exercises to choose from (e.g., mindful eating, mindful walking, etc.). We also altered our control group to focus on mind-wandering, which is characterized by interference with task-focused attention due to task-irrelevant stimuli or thoughts (Smallwood & Schooler, 2006). We reasoned that mind-wandering is essentially the opposite state of mindfulness and would thus provide a strong test of the potential benefits of a relatively mindful (compared to mind-wandering) state. Participants in this group were similarly provided with a list of activities, structured in a similar format but

designed to encourage focus on anything other than the present moment.

In addition to revising our intervention and control instructions, we investigated two additional factors of relevance to the predictions of the process model of patience. The model posits that people will respond patiently to the extent that they have the ability (e.g., mental resources, emotion regulation skill) and motivation to do so. In Study 3, we explored whether our mindfulness intervention affected participants' perceptions of their ability and motivation to be patient.

Method

Participants

Participants were recruited from Prolific ($N = 200$; 57% women; $M_{age} = 34.16$; 63.5% White, 14.5% Black or African American, 7.5% Asian, 4% Latino/a/x, 9% Multiracial, 1.5% Other). Participants had to be at least 18 years old, reside in the United States, have access to the Internet, be enrolled in Prolific as a participant, and be able to read and write in English.

Procedure

The procedure closely mirrored that of Study 2, with participants completing a baseline survey assessing individual differences, mindfulness, mind-wandering, and demographics. Following the baseline survey, participants were randomly assigned to either a *mindfulness* or *mind-wandering* condition. They then received instructions for a variety of activities that would induce either mindfulness (e.g., meditation, mindful eating, mindful walking) or mind-wandering (e.g., daydreaming, thinking about something unrelated to the task at hand) and were instructed to engage in one of their assigned activities for 10 minutes each day during the study. Over the following five days, participants engaged in their assigned activity and completed self-report surveys on their experiences of mindfulness, patience, and impatience. Our analyses focused on

measures relevant to our hypotheses; full measures are available on the [Open Science Framework](#).

Of the 200 participants who completed the baseline survey, 38 did not complete any additional surveys and were excluded from the analyses. We also removed survey responses on days when participants failed an attention check (5 total across the 5 days) and when they indicated that they did not complete any part of their assigned activity that day (22 total). Nearly half of the participants completed all daily surveys ($n = 81$, 40.5%), and 64.5% ($n = 129$) completed at least three. Neither baseline mindfulness, $r(198) = -0.05$, $p = 0.52$, baseline feelings of impatience, $r(198) = 0.04$, $p = 0.59$, nor condition assignment, $t(198) = -0.32$, $p = 0.75$, predicted attrition.

Measures

Participants completed the same measures of trait mindfulness (FFMQ; $M = 3.32$, $SD = 0.53$, $\alpha = 0.78$), daily mindfulness (TMS; $M_{overall} = 2.58$, $SD_{overall} = 0.78$, $\alpha_{average} = 0.93$), daily impatience ($M_{overall} = 2.90$, $SD_{overall} = 1.11$), event-specific impatience ($M_{overall} = 3.89$, $SD_{overall} = 1.23$), event-specific patience ($M_{overall} = 3.67$, $SD_{overall} = 0.95$, $\alpha_{average} = 0.76$), and event-specific delay appraisal ($M_{overall} = 4.49$, $SD_{overall} = 0.83$, $\alpha_{average} = 0.93$) as in Study 2. The only additions were a measure of mind-wandering to accompany the new condition and several theory-relevant appraisal items.

To assess mind-wandering, participants completed the Mind-Wandering Questionnaire (MWQ; 5 items; Mrazek, 2013; e.g., “I had difficulty maintaining focus on simple or repetitive work.”; 1 = *Almost never*, 6 = *Almost always*). Participants completed the measure at baseline (“how often you currently have each experience”; $M = 2.79$, $SD = 1.12$, $\alpha = 0.89$) and each day of the study (“how often you had each experience today”; $M_{overall} = 3.39$, $SD_{overall} = 1.09$, $\alpha_{average}$

= 0.89).

We added two items to this study to assess predictors of patience during the impatience-inducing event: patience ability (“How much did you feel like you had the ability in that moment to be patient?” 1 = *not at all*, 7 = *very much*; $M_{overall} = 4.67$, $SD_{overall} = 1.24$) and patience motivation (“How motivated were you to be patient in the situation you described?” 1 = *not at all*, 7 = *very much*; $M_{overall} = 4.67$, $SD_{overall} = 1.24$).

Data Analyses

To test our hypotheses, we first compared the effects of condition with independent-samples t-tests. Next, we tested the effects of our intervention in multilevel models predicting patience-relevant variables from condition (mind-wandering = -0.5, mindfulness = +0.5), controlling for day (centered). Finally, we then tested whether the results of Studies 1 and 2 replicated by again conducting multilevel models using the lme4 package (v1.1-26; Bates et al., 2015) predicting patience-relevant variables from person mean-centered state mindfulness (within-person effects) and grand mean-centered (between-person effects) state mindfulness, controlling for trait mindfulness (grand-mean centered) and day in the study (out of 5, centered).

Results

Manipulation Checks

We first tested the effectiveness of our manipulation. As intended, participants in the mindfulness condition ($M = 2.72$, $SD = 0.79$) reported higher levels of mindfulness on average across the five days compared to the mind-wandering condition ($M = 2.46$, $SD = 0.75$); $t(152) = 2.05$, $p = 0.04$, $d = 0.33$, and participants in the mind-wandering condition ($M = 2.99$, $SD = 1.18$) reported higher levels of mind-wandering on average ($M = 2.61$, $SD = 1.02$), $t(152) = -2.20$, $p =$

0.03, $d = 0.36$. As shown in Table 3, multilevel models confirm the effectiveness of the manipulation.

Effects of the Intervention

Table 2 presents the effect of our intervention on all outcome variables. Participants in the mindfulness condition reported somewhat more patience in response to their daily impatience-inducing events, appraised those delays as less objectionable, and reported more motivation and somewhat greater ability to be patient in those moments, partially supporting *Hypothesis 3*. The manipulation did not affect reports of impatience on either measure, contrary to *Hypothesis 3*.

Associations Among Measured Variables

Although our focus was to test the causal effect of our mindfulness intervention, we also sought to replicate the patterns found in Studies 1 and 2. Table 3 presents key parameters from multilevel models predicting impatience, patience, and delay appraisals from state mindfulness and state mind-wandering, controlling for trait mindfulness and trait (baseline) mind-wandering, respectively. At the within-person level, consistent with *Hypothesis 3*, greater state mindfulness predicted less daily impatience, less event-specific impatience, greater event-specific patience, appraisals of the impatience-inducing delay as somewhat less objectionable, and greater ability and motivation to be patient during that delay.

In contrast to the pattern for state mindfulness, greater state mind-wandering predicted more daily impatience, more event-specific impatience, appraisals of the impatience-inducing delay as more objectionable, and less ability to be patient during that delay.

General Discussion

The present research advanced our understanding of the potentially powerful yet complex

role of mindfulness in reducing impatience and promoting patience. Collectively, our findings suggested that a state of mindfulness may be an effective psychological shield when facing a frustrating delay, but practicing mindfulness, at least in the short term, may be more effective at setting the stage for patience rather than directly promoting it. Overall, results provided partial support for *Hypotheses 1-3*, with more consistent effects on patience-related outcomes than on impatience.

As expected, on days when people reported being relatively mindful, they also reported feeling less impatient overall and less impatient in response to a frustrating delay that occurred that day—and with a small but conceptually significant adjustment to our measure following Study 1, more patient in response to that delay. Studies 2 and 3 provided initial insight into the process by which mindfulness might reduce impatience, namely by altering one's appraisal of delays as objectionable, and by which it might promote patience, namely by altering one's motivation to be patient and their perceived ability to do so.

We posited that mindfulness could act as either a buffer against impatience via its present-moment focus and nonjudgmental acceptance of experiences, or as a booster for patience by strengthening executive function and supporting effective use of emotion regulation strategies. Our findings provided initial evidence for a dual role of mindfulness, suggesting that it may be a particularly effective tool for mitigating both the subjective unpleasantness and impulsive, socially-disruptive consequences of impatience.

That said, our findings were less clear about the best route by which to achieve mindfulness, if the goal is to reduce impatience. Our initial intervention failed, despite previous success during a stressful waiting period (Sweeny & Howell, 2017). In Study 3 we opted for a strong test of mindfulness, allowing participants to choose their mindfulness practice each day

and comparing those practices to an active mind-wandering condition rather than a passive relaxation condition. There, our efforts were more successful in boosting daily mindfulness as intended (and reducing daily mind-wandering), and although the effect fell just short of traditional standards of statistical significance, the intervention also increased patience in response to frustrating delays throughout the study. The intervention also increased people's motivation, and to a lesser extent ability, to respond patiently to those delays, which may explain the intervention's success in bolstering daily patience. A mediation test using the PROCESS macro for SAS 9.4 supports this explanation, such that the indirect effect of the intervention on patience via motivation was significant, $\beta = 0.08$ [95% CI: 0.02, 0.17].

However, the intervention had no effect on impatience during the study, even though the mindfulness group perceived those frustrating delays as less objectionable. The process model of patience (Sweeny, 2025) positions impatience as a discrete emotion that arises in response to the appraisal that a delay is inappropriate, unfair, or unreasonable (i.e., objectionable)—and consistent with that reasoning, delay appraisals and event-specific impatience were strongly correlated (Study 2: $r = 0.67$; Study 3: $r = 0.74$). Further research is needed to understand conditions under which appraising a delay as relatively objectionable might not provoke a feeling people identify as impatience, or whether a feeling of impatience can arise despite appraising a delay as relatively benign.

Limitations and Future Research

Our investigation has several strengths, including an ethnically diverse sample, high ecological validity, a strong theoretical foundation, and repeated assessment of key variables. However, a number of limitations deserve mention. First, participants completed the study entirely online, necessitating a reliance on self-reports and limiting our ability to control the

quality of their reports. The process model of patience posits a characteristic expression of impatience (i.e., psychomotor or verbal agitation), so expanding our investigation to collect behavioral and physiological data is an important next step.

Second, and common to most studies of mindfulness, our investigation cannot speak to the “active ingredients” of our mindfulness intervention. Mindfulness has a number of facets (e.g., present-moment focus, nonjudgment, non-reactivity) that could be key to bolstering patience, particularly in comparison to a condition designed to promote unfocused attention via mind-wandering. Of course, people do not need to know why their mindfulness practice works, as long as it does—but a deeper understanding of the precise mechanisms by which mindfulness increases patience would inform the development of tailored, targeted interventions.

Finally, everything about our approach to patience, namely concepts and measures, is quite new. A recent test of the process model of patience provided some assurance of its validity (Sweeny et al., 2026), but far more research is needed to thoroughly test the model’s tenets and comprehensively validate our measures. In particular, the measures of one’s ability and motivation to be patient are entirely new, and we included only single items to assess those constructs.

Despite those limitations, our findings suggested that mindfulness practice is a promising path to greater patience in the face of common and frustrating delays, and that mindfulness, however achieved, is robustly associated with a more sanguine response to such delays and greater resistance against impatience throughout one’s day.

Declarations

Conflict of Interest

The authors have no relevant financial or non-financial interests to disclose.

Ethics Approval

The study was approved by the University of California's IRB and conducted in accordance with the 1964 Declaration of Helsinki.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

Author Contributions

All authors contributed to the designs and analyses of these studies.

Data Availability

Datasets for this study can be found at [Open Science Framework](#). This study was not preregistered.

Funding

This study was funded by University of California, Riverside.

Use of Artificial Intelligence

Generative AI was used for resolving errors in statistical code and proofreading final drafts.

References

- Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focused breathing induction. *Behaviour Research and Therapy*, 44(12), 1849–1858.
<https://doi.org/10.1016/j.brat.2005.12.007>
- Baer, R. A., Carmody, J., & Hunsinger, M. (2012). Weekly change in mindfulness and perceived stress in a mindfulness-based stress reduction program. *Journal of Clinical Psychology*, 68(7), 755-765. <https://doi.org/10.1002/jclp.21865>
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48.
<https://doi.org/10.18637/jss.v067.i01>
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, 11(3), 230–241.
<https://doi.org/10.1093/clipsy.bph077>
- 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.
<https://doi.org/10.1037/0022-3514.84.4.822>
- Bullis, J. R., Bøe, H. J., Asnaani, A., & Hofmann, S. G. (2014). The benefits of being mindful: Trait mindfulness predicts less stress reactivity to suppression. *Journal of Behavior Therapy and Experimental Psychiatry*, 45(1), 57–66.
<https://doi.org/10.1016/j.jbtep.2013.07.006>
- Coffey, K. A., Hartman, M., & Fredrickson, B. L. (2010). Deconstructing mindfulness and constructing mental health: Understanding mindfulness and its mechanisms of action.

- Mindfulness*, 1, 235–253. <https://doi.org/10.1007/s12671-010-0033-2>
- Curry, O. S., Price, M. E., & Price, J. G. (2008). Patience is a virtue: Cooperative people have lower discount rates. *Personality and Individual Differences*, 44(3), 780–785. <https://doi.org/10.1016/j.paid.2007.09.023>
- Dai, X., & Fishbach, A. (2013). When waiting to choose increases patience. *Organizational Behavior and Human Decision Processes*, 121(2), 256–266. <https://doi.org/10.1016/j.obhdp.2013.01.007>
- Erisman, S. M., & Roemer, L. (2010). A preliminary investigation of the effects of experimentally induced mindfulness on emotional responding to film clips. *Emotion*, 10(1), 72–82. <https://doi.org/10.1037/a0017162>
- Friedman, M. (1996). *Type A behavior: Its diagnosis and treatment*. Springer Science & Business Media.
- Gross, J. J. (Ed.). (2013). *Handbook of emotion regulation*. Guilford Press.
- Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice*, 11(3), 255–262. <https://doi.org/10.1093/clipsy.bph080>
- Hülshager, U. R., Alberts, H. J. E. M., Feinholdt, A., & Lang, J. W. B. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology*, 98(2), 310–325. <https://doi.org/10.1037/a0031313>
- Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., Shapiro, S., Carmody, J., Abbey, S., & Devins, G. (2006). The Toronto mindfulness scale: Development and validation. *Journal of Clinical Psychology*, 62(12), 1445–1467.

<https://doi.org/10.1002/jclp.20326>

Lutz, J., Herwig, U., Opialla, S., Hittmeyer, A., Jäncke, L., Rufer, M., Holtforth, M. G., & Brühl,

A. B. (2014). Mindfulness and emotion regulation—An fMRI study. *Social Cognitive and Affective Neuroscience*, 9(6), 776–785. <https://doi.org/10.1093/scan/nst043>

Mrazek, M. D., Phillips, D. T., Franklin, M. S., Broadway, J. M., & Schooler, J. W. (2013).

Young and restless: Validation of the Mind-Wandering Questionnaire (MWQ) reveals disruptive impact of mind-wandering for youth. *Frontiers in Psychology*, 4, 560.

<https://doi.org/10.3389/fpsyg.2013.00560>

Ortner, C. N., Kilner, S. J., & Zelazo, P. D. (2007). Mindfulness meditation and reduced emotional interference on a cognitive task. *Motivation and Emotion*, 31, 271–283.

<https://doi.org/10.1007/s11031-007-9076-7>

Roemer, L., Williston, S. K., & Rollins, L. G. (2015). Mindfulness and emotion regulation.

Current Opinion in Psychology, 3, 52–57. <https://doi.org/10.1016/j.copsyc.2015.02.006>

Scherer, K. R. (2005). What are emotions? And how can they be measured? *Social Science*

Information, 44(4), 695–729. <https://doi.org/10.1177/0539018405058216>

Schnitker, S. A., & Emmons, R. A. (2007). Patience as a virtue: Religious and psychological perspectives. *Research in the Social Scientific Study of Religion*, 18, 177–207.

<https://doi.org/10.1163/ej.9789004158511.i-301.69>

Schnitker, S. A. (2012). An examination of patience and well-being. *Journal of Positive*

Psychology, 7(4), 263–280. <https://doi.org/10.1080/17439760.2012.697185>

Smallwood, J., & Schooler, J. W. (2006). The restless mind. *Psychological Bulletin* 132(6), 946–

958. <https://doi.org/10.1037/0033-2909.132.6.946>

Sweeny, K., Reynolds, C. A., Falkenstein, A., Andrews, S. E., & Dooley, M. D. (2016). Two

definitions of waiting well. *Emotion*, 16(1), 129–143.

<https://doi.org/10.1037/emo0000117>

Sweeny, K. (2025). On (im) patience: A new approach to an old virtue. *Personality and Social Psychology Review*, 29, 145-158. <https://doi.org/10.1177/10888683241263874>

Sweeny, K., Hawes, J., & Karaman, O. T. (2026). When time is the enemy: An initial test of the process model of patience. *Personality and Social Psychology Bulletin*, 52, 621-638. <https://doi.org/10.1177/01461672241284028>

Teper, R., Segal, Z. V., & Inzlicht, M. (2013). Inside the mindful mind: How mindfulness enhances emotion regulation through improvements in executive control. *Current Directions in Psychological Science*, 22(6), 449–454. <https://doi.org/10.1177/0963721413495869>

Table 1*Studies 1 and 2 Multilevel Models with Mindfulness Predicting Impatience and Patience*

Predictor	Daily feelings of impatience		Event-specific impatience		Event-specific patience		Delay appraisals	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Study 1								
State mindfulness (within-person)	-0.28**	[-0.33, -0.22]	-0.26**	[-0.31, -0.20]	-0.07*	[-0.13, -0.02]		
State mindfulness (between-persons)	-0.26**	[-0.38, -0.14]	-0.34**	[-0.46, -0.22]	-0.28**	[-0.44, -0.16]		
Trait mindfulness	< 0.001	[-0.12, 0.12]	0.12*	[0.0001, 0.23]	-0.04	[-0.09, 0.01]		
Study 2								
State mindfulness (within-person)	-0.14**	[-0.22, -0.06]	-0.13**	[-0.21, -0.05]	0.17**	[0.11, 0.24]	-0.08 ⁺	[-0.16, 0.005]
State mindfulness (between-persons)	-0.02	[-0.15, 0.11]	0.15*	[0.02, 0.29]	0.55**	[0.43, 0.69]	0.15*	[0.01, 0.28]
Trait mindfulness	-0.25**	[-0.37, -0.12]	-0.03	[-0.16, 0.09]	-0.13*	[-0.25, -0.006]	0.02	[-0.10, 0.15]

Note: ** $p < 0.01$, * $p < 0.05$, ⁺ $p < 0.10$. Models also control for day in the study.

Table 2*Study 3 Effects of Intervention Condition on Outcomes*

	β	95% CI
Daily mindfulness	0.15*	[0.009, 0.29]
Daily mind-wandering	-0.15*	[-0.30, -0.01]
Daily feelings of impatience	0.004	[-0.11, 0.11]
Event-specific impatience	-0.06	[-0.17, 0.06]
Event-specific patience	0.12 ⁺	[-0.003, 0.25]
Delay appraisal	-0.12*	[-0.23, -0.02]
Patience ability	0.11 ⁺	[-0.004, 0.21]
Patience motivation	0.15**	[0.04, 0.25]

Note: ** $p < 0.01$, * $p < 0.05$, ⁺ $p < 0.10$. Mindfulness condition = +0.5; mind-wandering condition = -0.5. Models also control for day in the study.

Table 3*Study 3 Mindfulness and Mind-Wandering Predicting Outcomes*

Predictor	Daily feelings of impatience		Event-specific impatience		Event-specific patience		Delay appraisal		Patience ability		Patience motivation	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Mindfulness models												
State mindfulness (within-person)	-0.11*	[-0.19, -0.02]	-0.11**	[-0.17, -0.04]	0.14**	[0.07, 0.21]	-0.08 ⁺	[-0.16, 0.003]	0.12**	[0.06, 0.21]	0.13**	[0.06, 0.19]
State mindfulness (between-persons)	0.18**	[0.07, 0.29]	0.19**	[0.08, 0.30]	0.48**	[0.38, 0.58]	0.20**	[0.09, 0.31]	0.20**	[0.11, 0.30]	0.27**	[0.17, 0.36]
Trait mindfulness	-0.13*	[-0.23, -0.02]	-0.06	[-0.17, 0.06]	0.02	[-0.08, 0.13]	-0.07	[-0.18, 0.04]	0.19**	[0.09, 0.28]	0.17**	[0.07, 0.27]
Mind-wandering models												
State mind-wandering (within-person)	0.12**	[0.04, 0.19]	0.14**	[0.07, 0.20]	-0.03	[-0.10, 0.04]	0.12**	[0.04, 0.20]	-0.13**	[-0.20, -0.05]	-0.003	[-0.07, 0.07]
State mind-wandering (between-persons)	0.29**	[0.16, 0.42]	0.25**	[0.11, 0.39]	0.31**	[0.15, 0.47]	0.28**	[0.15, 0.42]	-0.13 ⁺	[-0.27, 0.007]	-0.005	[-0.15, 0.14]
Trait mind-wandering	-0.13 ⁺	[-0.26, 0.001]	-0.10	[-0.24, 0.04]	-0.24**	[-0.40, -0.08]	-0.03	[-0.17, 0.10]	-0.07	[-0.21, 0.07]	-0.15*	[-0.29, -0.001]

Note: ** $p < 0.01$, * $p < 0.05$, ⁺ $p < 0.10$. Models also control for day in the study.