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## The Influence of Beliefs about Emotion on Avoidance Behaviors

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The Influence of Beliefs about Emotion on Avoidance Behaviors

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts in Psychology

by

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University of Arkansas  
Bachelor of Arts in Psychology, 2015  
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December 2022  
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## **Abstract**

The beliefs individuals hold about emotions have been shown to influence their tendencies to avoid distressing situations. While much of the work to-date has been on beliefs about whether emotions can be changed (i.e., malleability beliefs), there is research suggesting that the belief that emotions last for long periods of time (i.e., longevity beliefs) have important implications for emotion regulation (Veilleux et al., 2020). Thus, our aim was to examine the relationship between longevity beliefs and experiential avoidance. We predicted that greater longevity beliefs would be associated with greater avoidance tendencies, and that stronger beliefs in the moment would also be associated with greater momentary urges to avoid. In a Pilot Study, university students completed individual difference measures of beliefs about emotion and experiential avoidance. Results revealed that the belief that one's emotions last for long periods of time (i.e., longevity) and the belief that emotions are bad/destructive (i.e., judgment) were the strongest unique predictors of self-reported experiential avoidance. Study 1 assessed a different sample of college students with ( $n = 52$ ) and without ( $n = 50$ ) borderline personality disorder and replicated the findings from Study 1, suggesting that judgment and longevity beliefs are the most salient beliefs linked with experiential avoidance. Study 2 also included an ecological momentary assessment component in which participants completed random prompts up to seven times per day where they identified if they were feeling subjectively worse than usual and answered questions about momentary emotion beliefs, intensity of their negative affect, and attempts/urges to avoid. Multilevel model analyses examined the relationship between momentary longevity beliefs and behavioral avoidance during "worse" emotional episodes. Results showed that greater person-centered momentary beliefs about longevity predicted greater attempts to escape the distressing situation, after controlling for intensity of negative affect.

Studies 3a through 3d included studies which attempted to shift beliefs about emotion and to, subsequently, examine the relationship between longevity beliefs and experiential avoidance. We were able to shift beliefs about emotion to be more maladaptive using fictitious feedback from a survey, but these beliefs were not associated with perceived behavioral avoidance. These results suggest that beliefs that emotions last for long periods of time are linked with individuals' choices to avoid distress. Implications are discussed.

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## Introduction

An individual may hold various beliefs about emotion. The bulk of the research to date has focused on the belief that emotions are malleable and can be changed. Other examples of beliefs about emotion include the belief that emotions last forever (vs. a short period of time), the belief that emotions should be simple (vs. complex), and the belief that one's emotions are unlike others' emotions (Veilleux, Baker, Chamberlain, & Warner, 2021). Clinically, these beliefs have been examined as emotional schemas, or the beliefs and attitudes people hold about emotions as well as their perceptions of their ability to control these emotions (Leahy, 2015). There are, therefore, a number of beliefs about emotion that an individual may hold.

These beliefs about emotions are wide-ranging and important, as they have been found to not only influence how individuals perceive their own abilities to control and manage their emotions (De Castella et al., 2013; Leahy, 2002; Tamir, John, Srivastava, & Gross, 2007) but to also influence the behavioral choices that people make regarding emotions (see Ford & Gross, 2017, for review; Kappes & Schikowski, 2013; Tamir et al., 2007). Beliefs which suggest that emotions are helpful, useful, or a shared human experience are generally considered more adaptive and have been shown to have positive implications (see Ford & Gross, 2017, for review). For instance, if a person maintains the belief that anger is helpful, they may choose regulation strategies to increase anger (Tamir & Millgram, 2017) or choose to be in situations that could elicit anger (Tamir & Ford, 2012). Conversely, individuals who hold maladaptive beliefs about emotion, such as the belief that emotions are bad or dangerous, may choose to not engage in emotion regulation at all (De Castella et al., 2013) or may choose to engage in experiential avoidance in which they avoid experiences that elicit undesired emotional states (Tamir & Millgram, 2017). Experiential avoidance is problematic, as it has been linked to many

types of psychopathology (Kashdan, Barrios, Forsyth, & Steger, 2006; Orcutt, Pickett, & Pope, 2001; Stewart, Zvolensky, & Eifert, 2002). However, there is currently little research on the beliefs that individuals hold about emotions - that is, outside of malleability beliefs - and the behavioral assessment of experiential avoidance. Therefore, the purpose of the current set of studies is to bridge this gap in research by examining the relationship between beliefs about emotion and experiential avoidance.

### **Emotion Regulation and Beliefs about Emotion**

Recent work has shown that the beliefs that we have about our emotions influence how we perceive and manage our own emotions through emotion regulation (De Castella et al., 2013; De Castella, Platow, & Gross, 2017; Tamir et al., 2007; Veilleux et al., 2015). Emotion regulation is the process by which an individual modifies the trajectory of an emotional experience, including the kinds of emotions experienced, as well as the intensity, duration, and expression of emotions (Gross, 2008). Specific emotion regulation strategies have historically been conceptualized as adaptive or maladaptive (Aldao, Nolen-Hoeksema, & Schweitzer, 2010; Webb, Miles, & Sheeran, 2012). One classic adaptive strategy is cognitive reappraisal, or generating a positive interpretation or perspective of a distressing situation. Beliefs about emotion, such as beliefs that change is possible or that emotions are useful, have been associated with useful and adaptive regulation choices (De Castella et al., 2013; Tamir et al., 2015).

### **Experiential Avoidance**

Meanwhile, beliefs that emotions are “bad” have been linked to maladaptive emotion regulation strategies (Baer, Smith, & Allen, 2004; see Ford & Gross, 2017, for review), most of which involve some kind of avoidance (Aldao et al., 2010). One umbrella term for types of avoidance is experiential avoidance. Experiential avoidance is broadly defined as the avoidance

or escape of negative internal experiences (e.g., thoughts, emotions, and memories) that cause distress (Hayes, Strosahl, & Wilson, 1999). Experiential avoidance theoretically consists of two parts: 1) an unwillingness to remain in contact with negative private experiences, such as bodily sensations, emotions, and thoughts, among other things and 2) the action taken to alter these experiences (Hayes et al., 1996). According to one review (see Chawla Ostafin, 2007), experiential avoidance encompasses several maladaptive regulation strategies, including thought suppression (Wenzlaff & Wegner, 2000), emotional suppression (Gross & Levenson, 1993), avoidance coping (Penley, Tomaka, & Wiebe, 2002), and self-deception (Paulhus, 1988). Examples of experiential avoidance include behaviors such as avoiding places or things that remind a person of a prior traumatic event or drinking alcohol to avoid negative emotions (Gamez et al., 2011). Though individuals use experiential avoidance to avoid distressing stimuli to decrease or avoid negative emotions, experiential avoidance has typically been considered maladaptive, because it produces a rebound effect in which the individual comes to think about or engage in the to-be-avoided thought or behavior more often rather than less often (Erskine & Georgiou, 2010; Haaga, Thorndike, Friedman-Wheeler, Pearlman, & Wernicke, 2004; Roemer & Borkovec, 1994). Further, experiential avoidance has been implicated as an underlying factor for many types of psychopathology, such as substance misuse (Stewart, Zvolensky, & Eifert, 2002), posttraumatic stress disorder (Orcutt et al., 2001), and anxiety disorders (Kashdan, Barrios, Forsyth, & Steger, 2006). Therefore, it would be beneficial to examine the influence of different beliefs about emotion on experiential avoidance.

Beliefs about emotion have been studied in conjunction with specific avoidance strategies. For example, beliefs about emotion have been studied in relation to expressive suppression and cognitive avoidance. Research shows that individuals who held the belief that



general emotions are relatively uncontrollable were more likely to try to suppress their emotional expressions (e.g., De Castella et al., 2013; Ford, Lwi, Hankin, Gentzler, & Mauss, in press; Tamir et al., 2007). Another study also found that adults induced to believe that emotions were relatively uncontrollable were less likely to use reappraisal and were more likely to engage in suppression (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016). There is, thus, evidence that beliefs about emotion are both correlated with and appear to cause expressive suppression.

In terms of cognitive avoidance, one study showed that the belief that one has a lack of control over emotions (i.e., low regulatory self-efficacy) is both associated with higher levels of cognitive avoidance and predicts greater cognitive avoidance intentions (De Castella, Platow, Tamir, & Gross, 2017). A second study (Kappes & Schikowski, 2013) found that greater belief that emotions are fixed was associated with greater cognitive avoidance and a marginal tendency to avoid a distressing movie clip. Similarly, individuals who believe that they have less ability to regulate their emotions have been found to avoid places or situations they believe will exceed their coping abilities while selecting environments they feel better able to handle (Bandura, 1997; Ozer & Bandura, 1990). This is supported by research also showing that low regulatory self-efficacy is associated with greater behavioral avoidance intentions (Fergus, Bardeen, & Orcutt, 2013; Gratz & Roemer, 2004). Overall, this research suggests that there is a link between beliefs about emotion and avoidance. However, much of the extant work on beliefs about emotion has been on the belief about emotions as malleable vs. fixed with less research examining other beliefs about emotion.

### **Behavioral Indices of Avoidance.**

Experiential avoidance has typically been assessed using self-report measures. These self-report formats have assessed experiential avoidance as a broad construct (Gamez,

Chmielewski, Kotov, & Ruggero, 2014; Hayes et al., 2004) as well as more specific aspects of experiential avoidance, such as thought suppression (e.g., the White Bear Suppression Inventory; Wegner & Zanakos, 1994), or dissociation (e.g., the Dissociative Experiences Scale; Bernstein & Putnam, 1986). However, self-report formats do not allow researchers to understand how constructs like experiential avoidance actually manifest in terms of the actions that people take in distressing situations. This might be resolved by assessing experiential avoidance using objective behavioral measures. However, it is difficult to measure experiential avoidance as a current momentary action because experiential avoidance is by nature inaction or lack of engagement, which is difficult to assess. Consequently, there are no current behavioral measures of experiential avoidance though there are currently validated measures of distress intolerance which have been used to behaviorally assess experiential avoidance.

Distress tolerance is the ability to withstand aversive internal states, including negative emotions and uncomfortable bodily sensations (Zvolensky, Vujanovic, Bernstein, & Leyro, 2010). Distress tolerance is a broad term for several lower-order constructs, such as tolerance of uncertainty, tolerance of ambiguity, tolerance of frustration, tolerance of negative emotion, and tolerance of physical discomfort (Zvolensky et al., 2010). Conversely, some researchers have previously conceptualized distress intolerance as difficulty withstanding a negative emotion or bodily sensation, resulting in the avoidance of emotions or sensations through attempts to alleviate these negative states as quickly as possible (Holzhauer et al., 2017; Simons & Gaher, 2005). This suggests that distress intolerance may sometimes serve as a motivating factor for avoidance behaviors that reinforce quickly removing distressing experiences or states that are perceived as uncontrollable (McHugh et al., 2012). For example, if an individual has high distress intolerance and believes that they cannot withstand the distress caused by running into an

ex-boyfriend they know will be at a party they were invited to, they will likely avoid the situation so that they do not have to experience the distress (Kappes & Schikowski, 2013). This overlap between experiential avoidance and distress intolerance is supported empirically with work showing distress intolerance to be associated with avoidance behaviors such as substance misuse (Brown et al., 2009).

Prior research suggests that distress tolerance measures also correlate with experiential avoidance (Cochrane, Barnes-Holmes, Barnes-Holmes, Stewart, & Luciana, 2007; Karekla, Forsyth, & Kelly, 2004; Sloan, 2004). In fact, some researchers have previously examined distress intolerance as a type of experiential avoidance in their studies, resulting in the use of behavioral distress tolerance tasks to measure experiential avoidance behaviorally (Gratz, Bornovalova, Delany-Brumsey, Nick, & Lejuez, 2007). Behavioral tasks of distress tolerance typically measure an individual's persistence while completing distressing tasks, evaluating the length of time people are willing to endure distress (Leyro et al., 2010). An individual with high distress intolerance may struggle with persistence on a distressing task and choose to quickly discontinue the task to alleviate distress. In some research, these tasks were used such that an unwillingness to persist on these distressing laboratory tasks was indicative of experiential avoidance (Gratz et al., 2007), suggesting that behaviorally indexed distress intolerance may serve as a type of experiential avoidance.

### **Which Beliefs?**

Much of the research to-date on the effect of emotion beliefs has been on the influence of the belief of emotions as malleable or fixed on important outcomes such as emotion regulation (De Castella et al., 2013; Schroder, Dawood, Yalch, Donnellan, & Moser, 2014), emotional well-being (Tamir et al., 2007), and psychopathology like depression (De Castella, Goldin, Jazaieri,

Ziv, Heimberg, & Gross, 2014). However, there are other individual beliefs about emotions that may also have important implications. Emotion beliefs have been studied under the umbrella of emotional schemas in prior research and reflect attitudes and beliefs that people hold about emotions as well as their perceived self-efficacy in managing emotions (Leahy, 2015; Leahy, Tirsch, & Napolitano, 2011). These include many beliefs about emotion beyond just beliefs about malleability, such as beliefs that emotions linger and last for long periods of time (e.g., “My emotions last ‘forever’”) or the belief that emotions should not be complex (e.g., “I should only feel one emotion at a time”), among others (Leahy, Tirsch, & Melwani, 2012; Tirsch et al., 2012; Veilleux, Salomaa, Shaver, Zielinski, & Pollert, 2015). These maladaptive emotion beliefs have been linked with psychopathology, such as depression, (Leahy et al., 2012; Veilleux et al., 2015; Veilleux et al., 2019) anxiety, (Tirsch, et al., 2012; Veilleux et al., 2019) and borderline symptoms (Veilleux et al., 2019). In addition to predicting psychopathology, beliefs about emotion also predict other variables related to emotional processing. Specifically, the belief that emotions last forever and that negative emotions are bad predict greater emotion dysregulation and lower mindfulness, and the beliefs that emotion should be kept to the self and a preference for logic over emotion predict lower emotional expressivity (Veilleux, Pollert, Skinner, Baker, Chamberlain, & Hill, 2019). Thus, there is reason to examine beliefs beyond malleability related to emotional processes, suggesting that these expanded emotion beliefs may also be associated with distress intolerance and experiential avoidance.

The aim of the current set of studies was to examine the influence of individual beliefs about emotion on subsequent avoidance behaviors. Given a lack of research on emotion beliefs beyond malleability beliefs as related to distress tolerance and experiential avoidance, a Pilot Study was conducted from an existing dataset that examined the association between individual

beliefs about emotion and self-reported distress tolerance and experiential avoidance. Results showed that the belief that emotions last for long periods of time (i.e., longevity) was the belief most strongly associated with distress intolerance and experiential avoidance (see Appendix A for full description of Pilot Study method and results). Thus, this belief was used for the subsequent studies.

## **Hypotheses**

The aim of Study 1 was to examine the influence of self-reported beliefs about emotions on behavioral avoidance tasks in a laboratory setting, thus attempting to replicate the Pilot Study results with a behavioral indicator of distress intolerance as the outcome variable. As this is a preliminary study, there were no apriori hypotheses. Study 1 includes secondary data analysis of a completed study. I predicted that people who have greater beliefs that emotion last forever would have greater distress intolerance (lower EIT scores), and that this relationship would be stronger for individuals in the clinical group.

The aim of study 2 was to examine whether endorsing the belief that emotions last for long periods of time, in the moment, was associated with greater self-reported avoidance tendencies, while individuals are living their day-to-day lives. I predicted that greater longevity beliefs in the moment would predict greater avoidance outcomes (i.e., greater escape, greater thought suppression, and greater expressive suppression). The aim of Study 3 was to manipulate beliefs about emotion and examine whether endorsing the belief that emotions last for long periods of time (vs. short periods of time and a control group) was associated with greater perceived avoidance tendencies in an online setting. I predicated that people led to believe that emotions last for long periods of time (i.e., long emotions group) would have greater distress, less willingness (or tolerance) to sit with distress, and greater tendencies to take steps to escape

distressing situations than those led to believe emotions last for short periods of time (i.e., short emotions group).

### **Study 1**

The aim of Study 1 was to conduct secondary data analysis to examine the influence of self-reported beliefs about emotions on behavioral avoidance tasks in a laboratory setting, thus attempting to replicate the Pilot Study results with a behavioral indicator of distress intolerance as the outcome variable.

### **Method**

This study also used secondary data analysis of a study primarily designed to evaluate changes in emotion beliefs in daily life via ecological momentary assessment. For this study, we focused exclusively on the relationship between beliefs about emotion and behaviorally indexed distress intolerance, where both were assessed at the baseline session prior to beginning ecological momentary assessment.

### **Participants**

Participants were university students recruited from a subject pool ( $n = 102$ ) using a prescreening survey that included the Personality Assessment Inventory – Borderline Features Scale (PAI-BOR; Morey, 1991). The 24-item scale is given on a four-point scale rating of *False*, *Slightly True*, *Moderately True*, and *Very True*. The scale has been used in the past to identify individuals who report significant features of borderline personality disorder (Trull, 1995; Trull et al., 1997), indicated by a *T*-score of 70 or greater (raw score 28 or greater). Of the 104 people who completed the study, 2 were excluded, as one participant did not meet criteria for the PAI-BOR and was erroneously recruited and one was missing one distress intolerance score. Within the overall sample, there was a clinical group ( $n = 52$ ) indicated by a *T*-score of 70 or greater and

a control group ( $n = 50$ ) indicated by a  $T$ -score of 60 or below. The entire sample was 71.6% female and 73.5% White with a mean age of 19.28 ( $SD = 2.12$ ), and there were no differences in gender or minority status across groups. The clinical group was younger, though not significantly ( $M_{age} = 18.88$ ,  $SD = 1.00$ ) compared to the control group ( $M_{age} = 19.70$ ,  $SD = 2.80$ ),  $t(60.94) = 1.94$ ,  $p = .057$ . Data collection was completed between August 2018 and May 2019.

## Measures

**Brief Experiential Avoidance Questionnaire.** (BEAQ; Gamez, Chmielewski, Kotov, Ruggero, Suzuki, & Watson, 2014). This questionnaire is a 15-item truncated adaptation of a larger 59-item Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gamez et al., 2011). The BEAQ is aimed at assessing experiential avoidance, or the avoidance of personal experiences (e.g., thoughts, feelings, emotions, situations) associated with distress. This measure consists of 15 items given on a Likert-type scale from a 1 (*strongly disagree*) to a 6 (*strongly agree*). A total score is calculated by summing all 15 items, with higher items indicating greater experiential avoidance and lower items indicating lower experiential avoidance. The measure had excellent reliability ( $\alpha = .89$ ).

**Distress Tolerance Scale.** (DTS; Simons & Gaher, 2005). This measure consists of 14 items used to assess general distress tolerance, or the inability to withstand feeling distressed or upset (e.g., “I can’t handle feeling distressed or upset”). The anchors for each item are given on a 1 (*strongly agree*) to 5 (*strongly disagree*) Likert-type scale. There are four subscales for the DTS: 1) tolerance, or the perception of ability to tolerate distress, 2) absorption, the degree to which a person is consumed by negative emotions, 3) appraisal, a person’s assessment of the of the tolerability of distress, and 4) regulation, or the feeling of urgency to do something to alleviate the distress. Subscales are calculated by taking the means of each subscale. The higher-

order DTS is computed from adding all four subscale means together. Lower scores indicate low distress tolerance, and higher scores indicate high distress tolerance. The measure had excellent reliability ( $\alpha = .94$ ).

**Emotional Image Tolerance Task.** (EIT; Veilleux et al., 2017). This task was administered to assess behaviorally-indexed emotional distress intolerance. The task was programmed in Eprime. Participants were asked to view 45 negatively-valenced images from the International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 2008). For each slide, participants were asked to press “q” when they begin to feel distress and “p” when the distress was “nearly intolerable,” at which point the program moved on to the next slide. Each image could be viewed for up to 30 seconds before the program moved on to the next slide. The measure has four outcome variables: (1) image persistence, or the average total image viewing time across the set of slides; (2) count of distress, or the number of images (out of 45) the client indicated distress on (e.g., on how many slides the client pressed “q”), (3) distress threshold, or the average time into the slides the participant pressed began to feel distress (i.e., the average time into the slide the participant pressed “q”) and (4) distress tolerance, or the average amount of time after acknowledging distress the participant continued to view the slide (i.e., the time between pressing “q” and “p”). For the distress tolerance index, only slides in which the person pressed “q” or acknowledged any distress could be averaged.

**Individual Beliefs about Emotions.** (IBAE; Veilleux, et al., 2019). This measure includes 10 items, with the first 9 items each assessing individual beliefs about emotion and the final item assessing beliefs about emotion changeability (see Appendix B). The anchors are different for each item, designed to represent opposite poles of each belief, with low anchors assigned a value of 1, and high anchors assigned a value of 5. No verbal labels are given for the



middle responses (2-4). The beliefs are as follows: (1) beliefs about the cause of emotions (Low = “Emotions come out of the blue, for no reason;” High = “Emotions happen because of clear identifiable causes”), (2) the belief that negative feelings should be judged as bad (Low = “Negative feelings are bad and destructive. I would prefer to never feel bad;” High = “Negative feelings are helpful and useful. I welcome my negative feelings”), (3) the belief that emotions should be simple/complex (Low = “I should only feel one thing at a time;” High = “I can feel a variety of conflicting emotions at once”), (4) the belief that emotions should not be expressed (Low = “Emotions should be kept inside the self; no one wants to deal with other people’s emotions;” High = “Emotions must be ‘let out’ and expressed to the world”), (5) the belief that logic is preferable to emotion (“Low = “Logic is preferable to emotion;” High = “Feeling is preferable to effortful thought”), (6) the belief that emotions control behavior (Low = “It is extremely hard, maybe impossible, to act differently than what my emotions tell me to do;” High = “It is possible, maybe even easy, to act differently than how I feel inside”), (7) the belief that emotions can be changed (Low = “Emotions have to ‘run their course’; they are hard to change or alter;” High = “Everyone can learn to control their emotions”), (8) the belief in emotional uniqueness, or that a person’s emotions are unlike other people’s (Low = “No one seems to experience emotions the way I do;” High = “My emotions are similar to everyone else’s”), and (9) the belief that negative emotions last for long periods of time (Low = “Negative feelings seem to last forever;” High = “Negative feelings are difficult but don’t last very long”) The tenth and final item assesses belief changeability and is dichotomous (Yes/No). It asks, “Do your beliefs about emotions (all of the above) *change* when you are in a strong emotion?”

## **Procedure**

The study consisted of an initial laboratory session, in which participants completed individual difference measures via Qualtrics on a desktop computer (full list available from the authors), including the IBAE. After the self-report measures, participants were asked to complete a behavioral measure of distress intolerance, the Emotional Image Task (see Measures section for description). The majority of the study involved completion of questions via cell phone (i.e., experience sampling) for the next 7 days using an application called LifeData (<http://lifedatacorp.com>). Participants then returned after 7 days for a follow-up interview and debriefing. A full description of the study and entire EMA protocol is not listed, with only information relevant to this specific study provided.

## **Data Analysis Plan**

Zero-order correlations among each of the nine emotion beliefs and the DTS and BEAQ were conducted to replicate findings from the Pilot Study. Additionally, zero-order correlations among each belief about emotion and the EIT were conducted. We also examined whether the correlations differed based on recruitment group (clinical versus non-clinical). To examine performance on a behavioral measure of distress intolerance, hierarchical multiple regressions were conducted. Specifically, two hierarchical multiple regressions with gender in Step 1 and the IBAE items in Step 2 were conducted to evaluate the relationship between individual beliefs about emotion as predictors of behaviorally indexed distress intolerance. Additionally, a moderation analysis was conducted to assess if recruitment group (clinical group with *T*-scores of 70 on the PAI-BOR versus control group with *T*-scores below 50) moderated the relationship between beliefs about emotion and distress intolerance. We predicted that people who have

greater beliefs that emotion last forever would have greater distress intolerance (lower EIT scores), and that this relationship would be stronger for individuals in the clinical group.

## Results

### Descriptives of IBAE Beliefs

Descriptive statistics for the overall sample are displayed in Table 1, along with comparisons for the BPD and non-BPD groups. Overall, the BPD sample was younger and had more females than the non-BPD sample. Mean scores for experiential avoidance and self-report distress intolerance scores were greater in the BPD group than the non-BPD group. Specifically, individuals in the BPD group were higher in experiential avoidance and distress intolerance than individuals in the non-BPD group. Mean scores for beliefs about the cause of emotions, uniqueness of emotions, and the longevity of negative emotions were greater in the BPD group than in the non-BPD control group, such that greater belief that emotions come from out of the blue, that emotions are unlike others, and that negative emotions last for longer periods of time was greater in the BPD group than the non-BPD control group.

Table 1. Descriptive statistics for the entire study, broken down by BPD and non-BPD group.

	Total ( <i>n</i> = 102)	Non-BPD ( <i>n</i> = 50)	BPD ( <i>n</i> = 52)	<i>t</i> or $\chi^2$	<i>P</i>	<i>d</i>
Age	19.28 (2.12)	19.70 (2.80)	18.88 (1.00)	1.92	.06	.39
% Female	71.6%	66.7%	75%			
% White	75.7%	73.1%	78.8%			
BEAQ	50.04 (10.75)	46.14 (9.67)	53.87 (10.46)	-3.89***	<.001	.77
DTS	3.37 (.81)	3.74 (.66)	3.01 (.77)	5.12***	<.001	1.02
EIT-DT	7.13 (6.53)	7.72 (7.60)	6.58 (5.37)	.82	.42	.17

Cause	2.27 (1.00)	2.02 (.95)	2.52 (.10)	-2.60***	.01	.74
Judgment	2.88 (1.14)	2.69 (1.15)	3.06 (1.11)	-1.66	.10	.33
Complexity	2.46 (.10)	2.27 (.92)	2.63 (1.05)	-1.85	.07	.38
Expression	2.35 (1.08)	2.18 (.87)	2.52 (1.25)	-1.63	.11	.32
Preference	3.30 (1.36)	3.39 (1.25)	3.21 (1.46)	.67	.50	.13
Behavior Control	2.69 (1.29)	2.47 (1.32)	2.90 (1.26)	-1.72	.09	.33
Changeability	2.37 (.99)	2.31 (.93)	2.42 (1.05)	-.56	.58	.11
Uniqueness	3.13 (1.17)	2.88 (1.16)	3.37 (1.14)	-2.13**	.04	.43
Longevity	2.72 (1.24)	2.14 (.98)	3.29 (1.21)	-5.31***	<.001	1.04

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

Note: DTS = Distress Tolerance Scale (Simons & Gaher, 2005), BEAQ = Brief Experiential Avoidance Questionnaire (Gamez et al., 2014), EIT = Emotional Image Tolerance Task (Veilleux et al., 2019)

### Correlations among Beliefs and Distress Tolerance

We conducted zero-order correlations among the beliefs about emotions, self-reported distress intolerance, self-reported experiential avoidance, as well as distress intolerance on the lab task (EIT) (see Table 2). Greater experiential avoidance (i.e., higher scores on the BEAQ) and greater distress intolerance (i.e., lower scores on the DTS) were associated with: 1) greater belief that negative emotions are bad or destructive, 2) greater belief that emotions should be simple, and 3) greater belief that negative emotions last forever. Greater experiential avoidance was also associated with: 1) greater distress intolerance, 2) greater belief that one cannot act different than his/her emotions, and 5) a greater belief that emotions are unique.

Table 2. Zero-order and partial correlations among the emotion beliefs and distress tolerance

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12
1. DTS	--											
2. BEAQ	-.59*	--										
3. EIT-DT	-.16	.19	--									
4. Cause	.10	-.10	-.08	--								
5. Judgment	.45**	-.23*	-.02	.12	--							
6. Complexity	.24*	-.21*	.05	.03	.40**	--						
7. Expression	.16	-.08	.02	.04	.02	.17	--					
8. Preference	-.01	.02	.12	.11	.13	.15	.36**	--				
9. Behavior	.04	-.22*	-.08	.23*	.03	.01	.12	-.19	--			
Control												
10. Changeability	.10	-.02	-.07	.23*	.25*	.14	-.13	-.10	.12	--		
11. Uniqueness	.17	-.28**	-.15	.12	-.08	.10	.20*	.08	.11	.01	--	
12. Longevity	.32**	-.50**	-.16	.35**	.40**	.32**	.18	.16	.18	.25**	.15	--

+ $p < .05$  \* $p < .01$ , \*\*\* $p < .001$ . BEAQ = Brief Experiential Avoidance Questionnaire. DTS = Distress Tolerance Scale. EIT = distress tolerance on Emotional Image Tolerance Task

### Simultaneous Regressions Predicting Distress Tolerance and Experiential Avoidance

To examine the role of the IBAE beliefs in predicting self-reported experiential avoidance, self-reported distress intolerance, and distress intolerance on the EIT, three hierarchical multiple linear regressions were conducted with gender in Step 1 and the nine emotion beliefs in Step 2 (see Table 3). Gender was controlled for as prior work has found that emotion beliefs vary based on gender (Veilleux et al., 2019). The set of IBAE beliefs accounted for significant variability in self-report experiential avoidance after controlling for gender (overall model  $R^2 = 48\%$ ). Results showed that greater belief that negative emotions are bad or destructive (i.e., judgment beliefs) uniquely predicted greater experiential avoidance. The set of IBAE beliefs also accounted for significant variability in self-report distress intolerance after controlling for gender (overall model  $R^2 = 36\%$ ). Results showed that greater belief emotions are unlike others and greater belief that negative emotions last for long periods of time uniquely predicted greater distress intolerance. None of the beliefs about emotion significantly predicted distress intolerance on the behavioral laboratory task.

Table 3. Simultaneous regressions of the single item belief measures predicting experiential avoidance, distress intolerance, and distress intolerance on the EIT

	BEAQ	DTS	EIT
	<i>B (SE)</i>	<i>B (SE)</i>	<i>B (SE)</i>
Step 1	$R^2\Delta = .12^{***}$	$R^2\Delta = .01$	$R^2\Delta = .04$
Gender (Male = 0; Female = 1)	6.34 (2.13)**	-.20 (.18)	-2.93 (1.60)
Step 2	$R^2\Delta = .36^{***}$	$R^2\Delta = .35^{***}$	$R^2\Delta = .09$
Cause	-2.51 (1.00)	.07 (.08)	-.62 (.84)
Judgement	3.41 (.95)**	-.06 (.07)	-.25 (.77)
Complexity	.56 (1.02)	-.04 (.08)	.13 (.83)
Expression	1.48 (.94)	.05 (.07)	.12 (.78)
Preference	-1.10 (.77)	.05 (.06)	.37 (.63)
Behavior Control	-.24 (.76)	-.09 (.06)	-.13 (.66)
Changeability	-.96 (.10)	.13 (.08)	-.02 (.78)
Uniqueness	1.16 (.81)	-.15 (.06)*	-.74 (.73)
Longevity	1.30 (.89)	-.31 (.07)***	-.19 (.75)

Overall Model	$R^2 = .48$	$R^2 = .36$	$R^2 = .13$
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\* $p < .05$  \*\* $p < .01$ , \*\*\* $p < .001$

## Moderation

A moderated regression analysis was conducted using the PROCESS Macro for SPSS. The belief that emotions last for long periods of time was entered as the predictor and distress intolerance, as measured by the EIT, was entered as the outcome, with recruitment group entered as the moderator. Recruitment group did not significantly predict distress intolerance on a laboratory task, ( $B = 4.44$ ,  $SE = 3.71$ ,  $p = .24$ ). The belief that emotions last for long periods of time also did not significantly predict distress intolerance on the EIT, ( $B = .26$ ,  $SE = 1.02$ ,  $p = .80$ ). Finally, the interaction was not significant, ( $B = -1.78$ ,  $SE = 1.30$ ,  $p = .18$ ).

## Discussion

We conducted zero-order correlations among the beliefs about emotions, self-reported distress intolerance, self-reported experiential avoidance, as well as distress intolerance on the lab task (EIT). The finding that greater difficulty tolerating distress was associated with greater belief that negative emotions are bad or destructive as well as a greater belief that negative emotions last forever was consistent with findings from the Pilot study. However, the finding that greater difficulty tolerating distress was associated with a greater belief that emotions should be simple was novel. The finding that greater experiential avoidance was correlated with: 1) greater distress intolerance, 2) greater belief that one cannot act different than their emotions, and 5) a greater belief that emotions are unique was consistent with findings from the Pilot Study. Thus, the results of the pilot study were replicated in the current study with a different sample of individuals, suggesting that these specific beliefs are rather salient.

Additionally, we found that individuals in the BPD group were higher in experiential avoidance and distress intolerance than individuals in the non-BPD group. Mean scores for

beliefs about the cause of emotions, uniqueness of emotions, and the longevity of negative emotions were greater in the BPD group than in the non-BPD control group, such that greater belief that emotions come from out of the blue, that emotions are unlike others, and that negative emotions last for longer periods of time was greater in the BPD group than the non-BPD control group. These findings are consistent with research showing that the belief that emotions are unlike others and that negative emotions last for long periods of time predict greater psychopathology (Veilleux et al., 2019). Given that individuals with BPD traits have been theorized to have a higher baseline on emotional intensity and reactivity to emotionally-evocative stimuli (Linehan, 1993) than those who do not have BPD traits, future research should look at the influence that these high baselines has on beliefs about emotion in a sample of individuals with borderline traits.

Results of the regressions showed that greater belief that negative emotions are bad or destructive (i.e., judgment beliefs) uniquely predicted greater experiential avoidance. This suggests that individuals who believe that their negative emotions are “bad” report having a tendency to avoid situations that might elicit distress or other negative emotions. Future research might try to experimentally manipulate the judgment belief and examine participants’ behavior in distressing situations to determine if this maladaptive belief causes individuals to experientially avoid distressing situations. Greater belief that emotions are unlike others and greater belief that negative emotions last for long periods of time uniquely predicted greater distress intolerance, contributing to the pattern of findings showing the influence of the “uniqueness” and “longevity” beliefs about emotion (Veilleux et al, 2019). None of the beliefs about emotion significantly predicted distress intolerance on the behavioral laboratory task, which was not what we expected to find. It might be worthwhile to ask the participants to



consider the beliefs that they endorsed on the IBAE *while* completing the EIT task in future studies, so these beliefs are fresh on their minds during the task.

The current study is beneficial as it replicated findings from the pilot study and extended work on beliefs about emotion and psychopathology (i.e., BPD traits) to distress intolerance and experiential avoidance. It was expected that the beliefs about emotion would uniquely predict greater distress intolerance on the EIT task, though no significant effects were found. The EIT task will be updated in the future to ensure that participants cannot click through distressing images to end the task early but, instead, will be shown a black screen until time has fully passed before moving on to the next image. Additionally, future research should measure experiential avoidance using ecological momentary assessment (EMA) data to capture individuals' self-reported tendencies in the moment, within the context of their natural environments.

## **Study 2**

The purpose of study 2 was to conduct secondary data analysis of ecological momentary assessment data (EMA) to examine the relationship between the belief that emotions last for long periods of time and avoidance strategies in individuals who endorsed moments of elevated distress in daily life. To be fully transparent, the data from Study 2 come from the same overall project as Study 1, but are presented separately because (a) the idea for the secondary analysis was generated after Study 1 was written, and (b) Study 1 focused exclusively on the laboratory portion whereas this focuses exclusively on the EMA portion.

## **Method**

### **Participants**

Participants from this study were pulled from the same overall sample as Study 1; university students recruited from a psychology subject pool prescreened to be low ( $n = 50$ ) or

high ( $n = 52$ ) in borderline features according to the Personality Assessment Inventory-Borderline Features Scale (PAI-BOR; Morey, 1991).

For the purpose of this study, we used only EMA sessions in which participants indicated that they were more distressed than usual (277 sessions out of 3975 were selected). This restriction meant that only 83 people are represented in analyses (73.5% women, mean age 19.11 ( $SD = 1.50$ ), 75.9% White), because 20 participants were excluded for having 0 cases indicating more distress than usual. Of these, 19 participants had one session in which they indicated feeling more distressed than usual, 18 indicated 2 separate sessions in which they reported feeling more distressed than usual, and 46 indicated 3 or more.

## Measures

**Individual Beliefs About Emotion.** (IBAE; Veilleux, Chamberlain, Baker, & Warner, 2019). This is the same measure that was used in Study 1 and the pilot study.

### EMA Measures.

**Random Prompts.** Participants were prompted randomly 7x/day between the hours of 9:30 AM and 9:30 PM, and at each random prompt participants were asked the same set of questions. First, they were asked to rate their beliefs about emotion on the IBAE (see Measures section above), including the belief that emotions last for long periods of time, with each belief assessed by a single item. Participants also answered other questions about their willpower, distress tolerance, and current context (e.g., where they were and what they were doing) that we will not be analyzing in this study; the code book for the entire study including all self-report measures given at baseline and during EMA can be found here: [https://osf.io/d7r38/?view\\_only=82f947abc2f14acda64d4c099a3d6745](https://osf.io/d7r38/?view_only=82f947abc2f14acda64d4c099a3d6745).

After these questions, participants were asked how they felt at that moment in time on a

scale from 0 (*not at all*) to 100 (*extremely*); specifically, they were asked to rate how much they felt sad, angry, anxious, ashamed, jealous, guilty, joyful, calm, relaxed, excited, proud, and happy. They were then asked to compare their current level of distress to their “typical” or baseline distress, with the purpose of gauging subjective experience of when a person feels “different” than usual. We did this by asking participants to report on their subjective experience of distress (*More distress than usual, about at baseline or pretty typical for me, and Less distress than usual*). These questions refer directly to “baseline” distress as explained to the participants in the initial laboratory session (see Procedure below).

Participants were further asked about their emotion goals (e.g., to maintain distress, to increase distress, or to reduce distress), and if they indicated that their goal was to reduce distress in that moment, they were then asked about current emotion regulation strategies. Specifically, they were asked, “To manage your distressing feelings, to what extent are you trying to...” on a 6-point Likert-type scale from 0 (*not at all*) to 6 (*extremely*). They were then presented with ten types of emotion regulation strategies, including the following: escape, expressive suppression, reappraisal, distancing, thought suppression, trying to figure out why things are happening to them, acceptance, fixing the problem, expression, and behavioral regulation. Behavioral regulation was examined by asking, “Are you doing any of the below things to help manage your feelings?” Participants were also presented with a list of activities (e.g., eat food, drink alcohol, exercise, etc.) they might be doing to manage their emotions and asked to indicate which of them they were doing. For the purpose of the current study, only emotion regulation strategies that are considered avoidance strategies (i.e., escaping the situation (escape), avoiding showing other people how you are feeling (expressive suppression), and avoiding thinking (thought suppression)) were used. Participants were also asked to log their emotions throughout the day, at

which time they received these same set of questions as those described above.

### ***Procedure***

Eligible participants were invited to the lab to complete an initial orientation session. During this session, participants completed individual difference measures. Participants were then introduced to the idea of a “distress baseline,” and it was explained that some people have low “baseline” levels of distress (e.g., 10 on a 0-100 scale), with some individuals “hovering” at a higher baseline level. Participants were asked to identify their own baseline levels of distress. The participants were later asked, via EMA, to consider their baseline level of distress when determining if they were feeling more or less distressed than is typical. Participants were then introduced to the EMA phone application LifeData, which was used for data collection. LifeData is free for participants and is available on both iPhone and Android operating systems. A trained research assistant helped familiarize participants with the application and what to expect for the next week when prompted by the application, and how to log emotional events.

Then, after leaving the lab, the bulk of the study was completed via the LifeData app. Specifically, participants were randomly prompted 7 times a day for 7 days during the hours of 9:30 AM to 9:30 PM. They were also notified once daily at 9:35 PM to complete nightly entries, which included logging the number of emotions experienced throughout the day that they neglected to log into the app and to describe why they missed logging them; the nightly entries were not used in the analyses for the current study. Part of the random prompt included asking participants about their current level of distress in that moment. If participants indicated that they were more distressed than usual (i.e., the baseline that they identified in the initial session), they were asked what they were trying to do about the distress. If participants indicated that they were trying to get rid of the distress, they were asked which emotion regulation strategies they were

using to do so, three of which (i.e., escape, expressive suppression, and thought suppression) were included in the current study to examine avoidance strategies.

After completing the week-long EMA session, participants came in for a final half-hour debriefing session where they completed a semi-structured interview designed for this study to discuss their experience of completing a study on their phones while living their lives. They were further asked to reflect on what they learned about themselves as they noted their emotions and beliefs over the course of a week. Participants received partial course credit for participation in this research, with pro-rated credit based on their study response rate (e.g., those who completed 80% or more of the prompts were given full credit, and partial credit was awarded for lower response rates).

### ***Data Analytic Strategy***

Multilevel modeling was used to account for the nested data structure of sessions (Level 1) nested within individuals (Level 2). To examine the relationship between the longevity belief about emotions and avoidance tendencies in the moment, we conducted three multilevel models. We used two strategies where longevity and avoidance outcomes were assessed at the momentary level (Level 1), which was nested within individuals (Level 2). Intensity of negative affect was also entered as a control variable at Level 1. Each multilevel model included the longevity belief as the focal predictor with and intensity of negative affect as a control variable. The three outcome variables, one for each model, assessed thought suppression, expressive suppression, and behavioral avoidance.

After conducting the initial multilevel models, we redid the same three multilevel models, with person mean-centered predictors, for exploratory purposes. We created daily longevity beliefs and intensity of negative affect variables by centering each variable at the person mean to

reduce between-persons variation (Enders & Tofighi, 2007). Therefore, while initial models included all participants, these secondary data analyses excluded anyone with only one session ( $n = 19$ ), leaving a total sample size of 258. We then conducted three multilevel models with the longevity beliefs as the focal predictor and intensity of negative affect as a control variable, with three outcome variables, one for each model (i.e., thought suppression, expressive suppression, and behavioral avoidance).

## Results

To examine the role of momentary longevity beliefs in predicting avoidance outcomes (i.e., escape, thought suppression, and expressive suppression), three multilevel model analyses were conducted (see Table 4). Results showed that longevity beliefs did not significantly predict escape (Coeff = 1.88,  $SE = 1.04$ ,  $t = 1.81$ ,  $p = .07$ ), thought suppression (Coeff = 8.15,  $SE = 1.13$ ,  $t = .72$ ,  $p = .47$ ), or expressive suppression (Coeff = 1.47,  $SE = 1.20$ ,  $t = 1.23$ ,  $p = .22$ ). Intensity of negative affect only significantly predicted thought suppression in model 2 (Coeff = 1.47,  $SE = 1.20$ ,  $t = 3.00$ ,  $p = .003$ ), with greater intensity of negative affect predicting greater thought suppression.

The same three multilevel models were conducted again with longevity beliefs and intensity of negative affect variables person-centered. Results showed that longevity beliefs did not significantly predict thought suppression (Coeff = .03,  $SE = .17$ ,  $t = .19$ ,  $p = .85$ ), or expressive suppression (Coeff = 5.18,  $SE = 1.79$ ,  $t = .29$ ,  $p = .77$ ) while controlling for intensity of negative affect (see Table 5). However, longevity beliefs significantly predicted escape in model 1 (Coeff = 4.37,  $SE = 1.81$ ,  $t = 1.41$ ,  $p = .02$ ), with greater momentary beliefs that emotions last for long periods of time predicting greater attempts to escape a momentary distressing situation.

Table 4. Momentary longevity beliefs predicting avoidance outcomes, while controlling for intensity of negative affect

Avoidance Outcome	Predictor	Estimate (SE)	<i>T</i>	<i>P</i>
Escape	Intensity of Negative Affect	1.21 (.09)	1.70	.09
	Longevity Belief	1.88 (1.04)	1.81	.07
Thought Suppression	Intensity of Negative Affect	2.06 (6.88)	3.00	.003**
	Longevity Belief	8.15 (1.13)	.72	.47
Expressive Suppression	Intensity of Negative Affect	1.45 (7.39)	1.96	.05
	Longevity Belief	1.47 (1.20)	1.23	.22

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

Table 5. Person-centered momentary longevity beliefs predicting avoidance outcomes, while controlling for person-centered intensity of negative affect

Avoidance Outcome	Predictor	Estimate (SE)	<i>T</i>	<i>P</i>
Escape	Intensity of Negative Affect	3.86 (8.49)	.46	.65
	Longevity Belief	4.37 (1.81)	1.41	.02 *
Thought Suppression	Intensity of Negative Affect	.01 (.008)	1.91	.06
	Longevity Belief	.03 (.17)	.19	.85
Expressive Suppression	Intensity of Negative Affect	1.24 (8.34)	1.49	.14
	Longevity Belief	5.18 (1.79)	.29	.77

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

## Discussion

The aim of study 2 was to examine the relationship between the belief that emotions last for long periods of time and avoidance strategies in individuals who endorsed moments of elevated distress in daily life. We found that greater momentary beliefs that emotions last for long periods of time predicted greater attempts to escape momentary distressing situations. This

finding aligns with the other studies showing a relationship between beliefs about the longevity of emotions and experiential avoidance. Meanwhile, these results are novel as research on behavioral avoidance is lacking, with few current behavioral measures of experiential avoidance. Ecological momentary assessment data allowed for the examination of momentary avoidance attempts in individuals' daily lives, suggesting the utility of EMA as a means of studying momentary choices related to avoidance. These results may also have clinical implications as treatment could include targeting maladaptive beliefs (specifically longevity) to reduce experiential avoidance.

### **Study 3a**

The aim of Study 3 was to examine whether endorsing the belief that emotions last for long periods of time (vs. short periods of time and a control group) causes people to state that they would engage in more avoidance behaviors on self-reported behavioral avoidance in an online setting. However, as previously mentioned, there are no extant behavioral measures of experiential avoidance outside of laboratory tasks that were created to examine distress tolerance. Thus, the Behavioral Avoidance in Distressing Situations (BADS; Veilleux et al., 2019) measure was created to examine behavioral intentions surrounding distressing situations in a self-report format. Initial tests of the new measure found that the total number of avoidance options selected across the scenarios was associated with lower average tolerance across situations, greater trait experiential avoidance, and greater trait distress intolerance (Veilleux et al., 2019). This measure was also found to be amenable to manipulation, such that when asked to complete the BADS using either cognitive reappraisal as an emotion regulation strategy, suppression as an emotion regulation strategy, or were given no additional instructions (i.e., control group), expressive suppression was associated with increased BADS scores and



reappraisal lower BADS scores compared to control. Thus, this new BADS measure was used as a scenario-based index to examine experiential avoidance in study 3.

## **Method**

### ***Participants***

Participants for this study were recruited from Prolific. Participants were required to be at least 18 years of age and living in the United States. Participants from Prolific were paid \$1.30 to complete this 10-minute study. A statistical power analysis was performed for sample size estimation using “pwr” in R Studio, based on data from prior work (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016) in which beliefs about emotion were manipulated to examine their influence on emotion regulation. The effect size in this study was .20, considered to be small using Cohen's (1988) criteria. With an  $\alpha = 0.05$  and power = 0.80, the projected sample size needed with this effect size (R version 3.5.1) is approximately  $n = 81$  per group for this simplest between group comparison. Because the power analysis suggested 81 participants per group for a 3-group comparison, we sought a sample size of 243 for this study, opening the study up to a total of 250 participants. There were initially 251 participants, but 13 participants were excluded for indicating that they did not pay attention during the study and 10 participants were excluded for failing the manipulation check, leaving an overall sample size of 227. The entire sample was 50.7% female and 71.4% White (8% African American, 7.6% Latino, 8% Asian American/Pacific Islander, 4.4% Biracial, and .6% Other) with a mean age of 35.10 ( $SD = 13.83$ ), and there were no differences in gender, age, or minority status across the three manipulation groups. Data collection was completed in December 2019.

## **Measures**

**Behavioral Avoidance of Distressing Situations.** (see Appendix C). (BADS; Veilleux, Warner, Chamberlain, & Baker, 2019). Participants were given the directions “You will see a variety of situations. For each situation, you will be asked to indicate how you would feel in this situation, and what you would do. Select the choice that you feel best describes how you respond to each scenario. While there may be other behaviors that you might do in these situations, please select which of these two options you think you would be MORE likely to choose for each scenario.” They will then see 13 scenarios with forced choice responses, one reflecting an acceptance or tolerance of the emotional aspect of the situation (i.e., choosing to stay in the situation), the other reflecting an avoidance or escape response. Each tolerance response is scored 0 and each avoidance response is scored 1. For example, one situation is “You just had an upsetting fight with someone that you care about. The fight ended horribly, and you are still very upset. Now you are getting a call from that person on your phone, and you don’t know what they are going to say to you. Which would you be more likely to do?” with the response options of “Choose to pick up the phone, knowing this will likely perpetuate your emotional response” (acceptance response, scored 0) or “Choose to ignore the call” (avoidance response, scored 1). A total score is thus the sum of all the items, reflecting the number of scenarios in which the person said they would choose the avoidance response.

**Difficulties with Emotion Regulation Scale-16.** (DERS-16; Bjureberg et al., 2016). The DERS is a 16-item version of the original 36-item version of the Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). Items are given on a 5-point Likert scale from 1 (*Almost Never*) to 5 (*Almost Always*). The scale has six subscales including the following: (1) lack of emotional clarity, which measures a lack of understanding of the emotions being

experienced, (2) limited access to emotion regulation strategies, or not knowing ways to help one control emotions, (3) lack of emotional awareness, which measures being unaware of the emotions experienced, (4) impulse control difficulties, or acting out impulsively due to emotions, (5) difficulties engaging in goal-directed behavior, including having difficulties engaging one's self in a goal-directed way, and (6) nonacceptance, which refers to the inability to come to terms with emotions being experienced. A total score is calculated by summing across items, with higher scores indicating greater difficulties in emotion regulation. Subscales are scored by calculating means of the subscale items, with higher scores indicating greater difficulty with the corresponding facet of emotion regulation. The DERS-16 had excellent reliability ( $\alpha = .94$ ).

**Emotion Reactivity Scale.** (ERS; Nock et al., 2008). ERS is a 21-item measure of emotion reactivity, or the extent to which an individual experiences emotion. Items are given on a 4-point Likert-type scale, ranging from 0 (*Not at all like me*) to 4 (*Completely like me*). The scale has three subscales: (1) sensitivity, which measures how easily emotions are provoked (e.g., “I tend to get very emotional very easily”), (2), arousal/intensity, which measures the strength or intensity of the emotions (e.g., “When I experience emotions, I feel them very strongly/intensely”), and (3) persistence, which measures how long an emotion continues until return to baseline (e.g., “When something happens that upsets me, it's all I can think about for a long time”). A total score can be calculated, with higher scores indicating greater emotional reactivity and lower scores indicating less emotional reactivity. The ERS had excellent reliability ( $\alpha = .96$ ).

**Individual Beliefs about Emotions.** (IBAE; Veilleux et al., 2019). The same measure was used in the previous studies.

### ***Procedure***

After informed consent, participants were first asked to complete the individual difference measures related to emotion and emotion regulation. Participants were then randomly assigned to one of three groups. One experimental group (i.e., long emotions group,  $n = 72$ ) was asked to read an article that cited fabricated information about how emotions last for long periods of time (see Appendix D). A second experimental group (i.e., short emotions group,  $n = 72$ ) was asked to read an article that cited fabricated information about how emotions last for short periods of time (see Appendix D). Both articles included fake research findings and a testimonial that supported the corresponding belief. Participants in the control group ( $n = 83$ ) asked to read an article on ethics training in master's level programs (see Appendix D). Participants answered a manipulation check question and those who answered incorrectly were excluded from the study. After reading the articles, the participants completed the Behavioral Avoidance in Distressing Situations.

### ***Data Analysis Plan***

A one-way ANOVA was used to compare BADS scores between the long emotions, short emotions, and control group. We predicted that people who are manipulated to believe that emotions last forever (e.g., long emotions group) would have significantly greater perceived behavioral avoidance (higher BADS scores) than those whose beliefs were not manipulated (e.g., control group). Additionally, we predicted that those who are manipulated to believe that emotions last for short periods of time would have significantly lower perceived behavioral avoidance (lower BADS scores) than the control group. A moderation analysis was also conducted using PROCESS macro in SPSS (Hayes, 2013) to examine if the relationship between condition and BADS was moderated by either emotional reactivity or perceived difficulties with

emotion regulation. We predicted that individuals who reported greater longevity beliefs would report greater perceived behavioral avoidance (higher BADS scores), and that this relationship would be stronger for people higher in emotional reactivity. We also predicted that individuals who reported greater longevity beliefs would report greater perceived behavioral avoidance (higher BADS scores), and that this relationship would be stronger for people higher in perceived emotion dysregulation. In these models, the individual difference variables were entered as the focal predictor (because PROCESS requires the predictor to be a continuous variable), condition entered as the moderator, with perceived behavioral avoidance as the outcome. Emotional reactivity was entered as the predictor and perceived behavioral avoidance was entered as the outcome, with condition as the moderator.

## **Results**

### ***Difference in BADS Scores for Condition***

A one-way ANOVA on BADS scores revealed a statistically significant difference between emotion belief conditions,  $F(2, 224) = 3.26, p = .04$ . Tukey post hoc tests revealed that perceived behavioral avoidance was significantly greater for those led to believe that emotions last for short periods of time ( $M = 4.65, SD = 2.10$ ) compared to either the control group ( $M = 3.86, SD = 1.88$ ) or those led to believe emotions last for long periods of time ( $M = 4.65, SD = 2.10$ ) (see Figure 1).

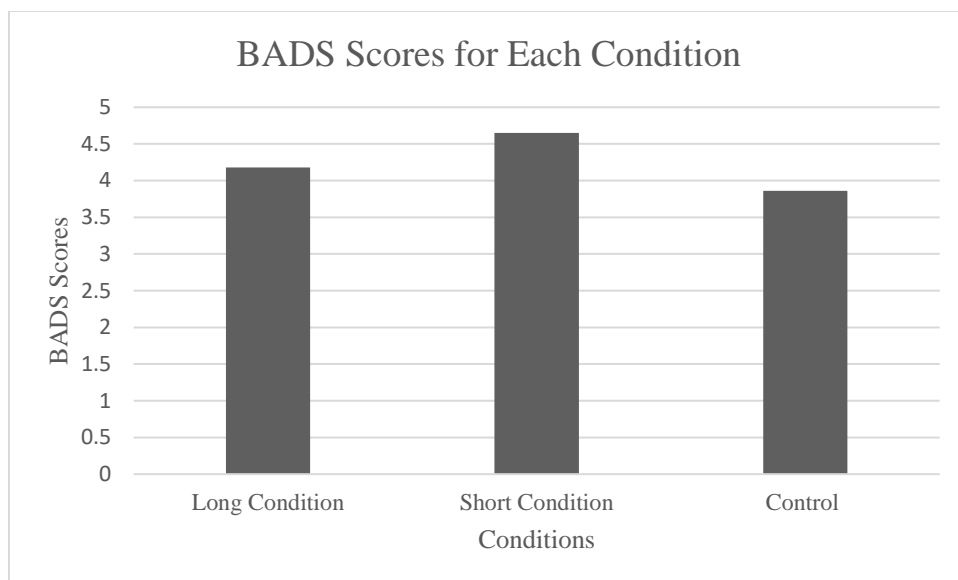


Figure 1. BADS scores for long condition, short condition, and control.  
 \*Higher scores indicate greater experiential avoidance.

### **Moderations**

A moderated regression analysis examined emotional reactivity as an individual difference predictor. The model accounted for 27.53% of the variability in perceived behavioral avoidance,  $F(2, 227) = 28.24, p < .001$ . Condition did not significantly predict perceived behavioral avoidance, ( $B = .19, SE = .14, p = .15$ ), though greater emotional reactivity did significantly predict greater perceived behavioral avoidance, ( $B = .05, SE = .01, p < .001$ ). The interaction was not significant, ( $B = -.008, SE = .01, p = .31$ ).

A second moderated regression analysis focused on emotion dysregulation. The model accounted for 14% of the variability in perceived behavioral avoidance,  $F(2, 227) = 12.05, p < .001$ . Condition did not significantly predict perceived behavioral avoidance with emotion dysregulation in the model, ( $B = .15, SE = .15, p = .32$ ), though greater emotion dysregulation significantly predicted higher perceived behavioral avoidance, ( $B = .83, SE = .14, p < .001$ ). There was not a significant interaction between condition and emotional reactivity on experiential avoidance, ( $B = .03, SE = .19, p = .86$ ).

### *Secondary analyses*

In the current study, we expected that people who were manipulated to believe that emotions last forever (e.g., long emotions group) would have significantly greater perceived behavioral avoidance (higher BADS scores) than those whose beliefs were not manipulated (e.g., control group). Additionally, we expected that those who were manipulated to believe that emotions last for short periods of time would have significantly lower perceived behavioral avoidance (lower BADS scores) than the control group. However, we found that perceived behavioral avoidance was greater for those led to believe their emotions last for short periods of time than those led to believe they last for long periods of time, the opposite of what was predicted. As the current study is intended to inform the following studies in this thesis, we conducted secondary analyses to determine if there were potential confounding variables. Emotional reactivity is one construct which has been linked with beliefs about emotion (Veilleux et al., 2019) and experiential avoidance (Sloan, 2004). Thus, a one-way ANOVA was conducted to determine if the conditions differed on emotional reactivity. The ANOVA showed significant differences between groups (i.e., control, long emotions, and short emotions) on emotional reactivity (i.e., total ERS score), ANOVA,  $F(2, 227) = 3.45, p = .03$  (see Figure 2). Tukey post hoc tests revealed that emotional reactivity was significantly greater in the short emotions group ( $M = 33.76, SD = 19.87$ ) compared to the long emotions group ( $M = 26.01, SD = 17.56, p = .031$ ). The control group ( $M = 27.65, SD = 18.76$ ) was not significantly different from either the short emotions or control group.

As such, a one-way ANCOVA examined the relationship between groups (i.e., control, long emotions, and short emotions) on perceived behavioral avoidance when controlling for emotional reactivity. Results for the one-way ANCOVA showed that there were no significant

differences between groups on perceived behavioral avoidance when controlling for emotional reactivity,  $F(2, 223) = 1.86, p = .186$ .

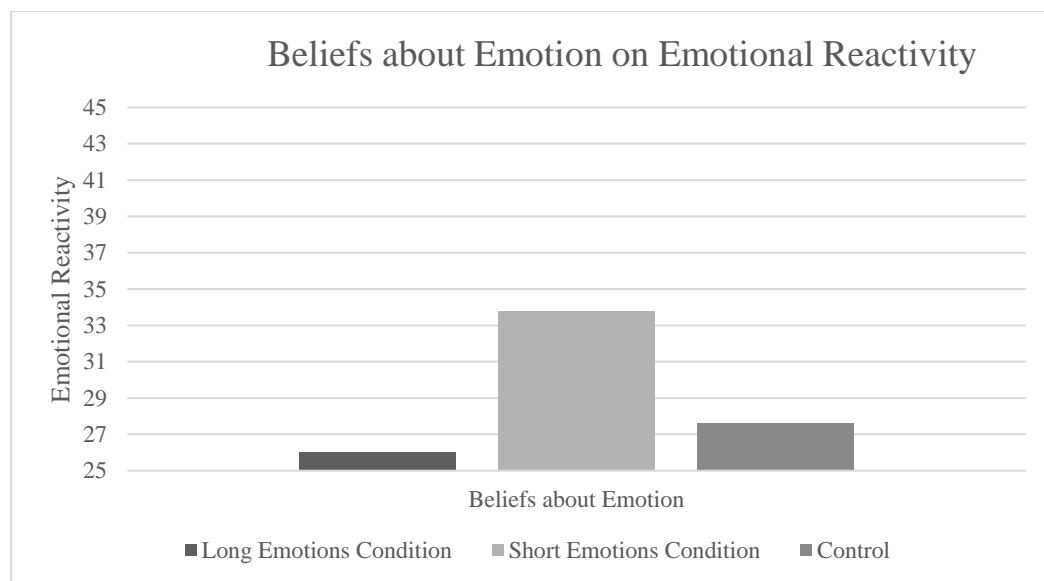


Figure 2. Differences between condition on emotional reactivity.

## Discussion

The purpose of the current study was to examine the relationship between beliefs about the duration of negative emotions on experiential avoidance in distressing situations. We expected that those who were led to believe that their emotions lasted for short periods of time would report lower perceived behavioral avoidance than the long emotions or control group. We also expected that those were led to believe that their emotions lasted for long periods of time would report greater perceived behavioral avoidance than the control group. However, we found the opposite; those who were led to believe that their emotions lasted for short periods of time reported greater perceived behavioral avoidance than the long emotions group or control group. Those in the long emotions group had significantly greater perceived behavioral avoidance than those in the control group. However, when controlling for emotional reactivity, we found that these relationships were no longer significant. This suggests that the results were confounded by



emotional reactivity. Emotional reactivity has been linked with beliefs about emotion (Veilleux et al., 2019) and experiential avoidance (Sloan, 2004); thus, it makes sense that greater baseline levels of emotional reactivity might have influenced the relationship between individuals' beliefs about emotion and perceived behavioral avoidance.

We found that controlling for emotional reactivity yielded nonsignificant results. This suggests that the manipulation did not work, which is inconsistent with prior research which has used fabricated data or information to effectively manipulate beliefs about emotions (Kneeland et al., 2016). We chose to conduct another study with a different manipulation (i.e., providing fictitious feedback on a survey of emotion) which has previously been found to effectively manipulate beliefs about emotion (De Castella, Platow, Tamir, & Gross, 2017).

### **Study 3b**

The purpose of this study was to test whether a manipulation of providing false feedback on a survey of emotion would significantly shift individuals' beliefs about longevity prior to using the manipulation to assess the effect on avoidance tendencies.

## **Method**

### ***Participants***

Participants for this study were recruited from Prolific. Participants were required to be at least 18 years of age and living in the United States. Participants from Prolific were paid \$1.30 to complete this 10-minute study. The sample included 267 participants, but 21 participants were excluded for indicating that they did not pay attention during the study, leaving an overall sample size of 246. The entire sample was 69.9% female and 71.4% White (6.6% African American, 7.4% Latino, 8.1% Asian American/Pacific Islander, 4.8% Biracial, and 1.7% Other) with a

mean age of 32.35 ( $SD = 12.47$ ), and there were no differences in gender, age, or minority status across groups. Data collection was completed in September 2020.

### ***Measures***

**Behavioral Avoidance of Distressing Situations.** (*BADS; Veilleux, Warner, Chamberlain, & Baker, 2019*). This is the same measure that was used in Study 2.

**Individual Beliefs about Emotions.** (*IBAE; Veilleux et al., 2019*). The same measure was used in the previous studies.

### ***Procedure***

Participants were randomly assigned to one of three groups: a short emotions group ( $n = 84$ ), a long emotions group ( $n = 81$ ), and a control group ( $n = 81$ ). The long and short emotions groups were asked to complete a survey on duration of emotional responses (see Appendix E). Participants saw 10 items and were asked how true each item was for them. In the long emotions group, the 10 items included items about emotions lasting for long periods of time (e.g., “There are times when my emotions take a long time to go away”). After completing the survey, individuals in the long condition were given the following feedback: “According to your response, you appear to be someone who experiences emotions for long periods of time. You have scored in the top 15% of people in our research on duration of emotions.” In the short emotions group, the 10 items included items about emotions lasting for short periods of time (e.g., “There are times when my emotions pass quickly”). After completing the survey, individuals in the short condition were given the following feedback: “According to your responses, you appear to be someone who experiences emotions for short periods of time. You have scored in the bottom 15% of people in our research on duration of emotions.” The control group was asked to complete a survey about reading habits. This manipulation was chosen as it

was expected that individuals' beliefs would be informed by what they endorse on the survey, in line with the self-perception theory (Bem, 1972). After reading the articles, the participants completed the Individual Beliefs about Emotions (IBAE).

### ***Data Analysis Plan***

A one-way ANOVA examined the effect of beliefs condition (long, short vs control) on beliefs about longevity of emotions. I predicted that those led to believe that emotions last for long periods of time (i.e., long emotions group) would have greater beliefs that emotions last for long periods of time than those whose beliefs were not manipulated (e.g., control group), and the control group would have greater beliefs that emotions last for long periods of time than those led to believe emotions last for short periods of time (i.e., short emotions group).

### **Results**

#### ***Difference in Longevity Beliefs for Condition***

The one-way ANOVA revealed significant differences in longevity beliefs based on manipulated condition,  $F(2, 243) = 8.47, p < .001$  (see Figure 3). Tukey post hoc tests revealed that beliefs that emotions last for long periods of time (i.e., higher longevity beliefs score on the IBAE) were significantly greater for those led to believe that emotions last for long periods of time ( $M = 3.40, SD = 1.11$ ) compared to either the control group ( $M = 2.70, SD = 1.31$ ) or those led to believe emotions last for short periods of time ( $M = 2.77, SD = 1.14$ ) (see Graph 3). There was not a significant difference in longevity beliefs between the short emotions condition and the control condition.

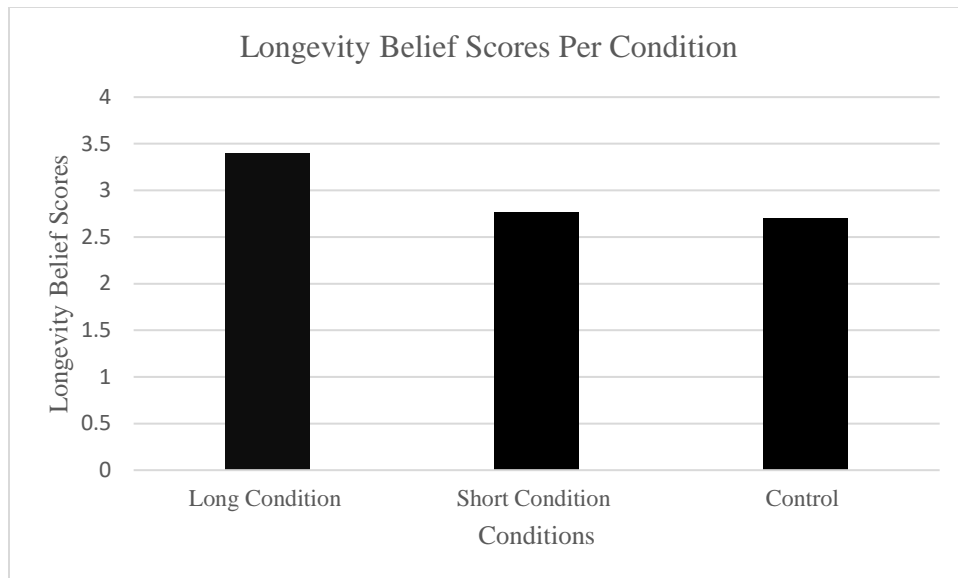


Figure 3. Longevity belief scores for long condition, short condition, and control.

\*Higher scores indicate greater belief that emotions last for long periods of time.

## Discussion

Taken together, individuals who were led to believe that emotions last for long periods of time had significantly greater beliefs that emotions last for long periods of time than those manipulated to believe that emotions last for short periods of time as well as those whose beliefs were not manipulated. These findings suggest that we were able to manipulate individuals to believe that their emotions last for long periods of time, shifting their beliefs to be more maladaptive. Given that beliefs about emotion are linked to how individuals regulate their emotions (De Castella et al., 2013; De Castella et al., 2017; Tamir et al., 2007; Veilleux et al., 2015), it could potentially be beneficial to be able to shift beliefs to be more adaptive. However, telling people their emotions last for short periods of time did not actually make them believe that that was the case, as the control condition and short condition were not statistically different. As such, we chose to eliminate the control group in Study 3c, also with the purpose of increasing power.

### Study 3c

The aim of this study was to use the manipulation developed for study 3b to now examine the influence of beliefs about emotion on perceived behavioral avoidance, a conceptual replication of study 3a with a different manipulation.

#### Method

##### *Participants*

Participants for this study were recruited from a psychology subject pool. Participants were required to be at least 18 years of age and living in the United States. There were initially 387 participants, but 76 participants were excluded for indicating that they did not pay attention during the study and 26 participants were excluded for failing at least one attention check item, leaving an overall sample size of 304. The entire sample was 66.8% female and 84.5% White (5.3% African American, 6.3% Latino, 1.6% Asian American/Pacific Islander, and 2.3% Biracial) with a mean age of 19.13 ( $SD = 1.60$ ), and there were no differences in gender or age across groups. Data collection was completed in December 2020.

##### *Measures*

**Behavioral Avoidance of Distressing Situations.** (BADS; Veilleux, Warner, Chamberlain, & Baker, 2019). This is the same measure that was used in Study 3a.

**Individual Beliefs about Emotions.** (IBAE; Veilleux et al., 2019). The same measure was used in the previous studies.

##### *Procedure*

Participants were randomly assigned to one of two conditions, short emotions ( $n = 156$ ) and long emotions ( $n = 148$ ). Both groups received the false feedback survey, the same

manipulation as used in the previous study. After reading the articles, the participants completed the Behavioral Avoidance of Distressing Situations (BADs).

### ***Data Analysis Plan***

An independent samples t-test was used to determine whether there was a statistically significant difference in perceived behavioral avoidance between the long emotions and short emotions (control) groups. We predicted that people who were manipulated to believe that emotions last for long periods of time (e.g., long emotions group) would endorse greater perceived behavioral avoidance than those who were manipulated to believe that emotions last for short periods of time (e.g., control group).

### **Results**

#### ***Differences in Avoidance for Condition***

The independent samples t-test revealed no differences between conditions on BADs scores,  $F(2, 302) = .44, p = .68$ .

### **Discussion**

We expected that people who were manipulated to believe that emotions last for long periods of time would endorse greater perceived behavioral avoidance than those manipulated to believe that emotions last for short periods of time. However, there were no significant differences between these two conditions on avoidance tendencies. One potential reason for these nonsignificant results could be that the BADs, a relatively new measure of avoidance tendencies, includes dichotomous options for avoidance tendencies. Individuals are asked to choose to tolerate or avoid the distress elicited by each situation. While these answers may give some insight into general tendencies toward avoidance or tolerance, many individuals may not prefer to choose either option; there are many choices individuals might make when faced with distressing situations. Thus, the dichotomous choice format of the BADs might not fully capture

avoidance urges that accompany these situations. To ensure that the response format of the BADS was not the reason for these nonsignificant results, we revised the BADS by including a dimensional outcome in Study 3d.

### **Study 3d**

The purpose of this study was redo study 3c with a revised version of the BADS with a dimensional outcome as opposed to the original dichotomous choice options.

#### **Method**

##### ***Participants***

Participants for this study were recruited from Prolific. Participants were required to be at least 18 years of age and living in the United States. Participants from Prolific were paid \$1.30 to complete this study. There were initially 203 participants, but 28 participants were excluded for indicating that they did not pay attention during the study, leaving an overall sample size of 175. The entire sample was 54.9% female and 74.3% White (6.9% African American, 6.3% Latino, 5.7% Asian American/Pacific Islander, .6% Native American/Alaskan Native, 5.7% Biracial, .6% Other) with a mean age of 34.37 ( $SD = 11.32$ ), and there were no differences in gender, age, or minority status across groups. Data collection was completed in September 2020.

##### ***Measures***

**Behavioral Avoidance of Distressing Situations, revised.** (BADS; Veilleux & Warner, 2020). Participants were given the directions “You will see a variety of situations. For each scenario, you will see three questions. Please read each answer carefully and answer each question on the sliding scale from 0 to 100.” They saw 13 scenarios with three sliding scale questions (on a scale from 0 to 100), one reflecting level of distress (i.e., distress level index), a second reflecting willingness to sit with (or tolerate) that level of distress (i.e., distress tolerance

index), and a third item reflecting the tendency to take action to avoid or escape the situation (i.e., escape index). For example, one situation is “You just had an upsetting fight with someone that you care about. The fight ended horribly, and you are still very upset. Now you are getting a call from that person on your phone and you don’t know what they are going to say to you.” High scores indicate greater level of distress across scenarios, greater inability to sit with (or tolerate) distress across situations, and greater tendency to take action steps to avoid feeling distress across situations.

**Individual Beliefs about Emotions.** (*IBAE; Veilleux et al., 2019*). The same measure was used in all previous studies.

### ***Procedure***

Participants were randomly assigned to one of two groups, a control group ( $n = 95$ ) and a long emotions group ( $n = 80$ ). The long and short emotions groups saw the same manipulation as in study 2b and Participants then completed the revised BADS.

### ***Data Analysis Plan***

Three separate independent t-tests were used to determine whether there was a statistically significant difference in avoidance tendency facets of distress level, distress tolerance, and escape between the long emotions and control groups. I predicated that people led to believe that emotions last for long periods of time (i.e., long emotions group) would have greater distress, less willingness (or tolerance) to sit with distress, and greater tendencies to take steps to escape distressing situations than those led to believe emotions last for short periods of time (i.e., short emotions group).

## **Results**

### ***Difference in Distress, Willingness, and Escape for Condition***



There were no differences in average distress index scores between the long and short beliefs conditions,  $t(2, 173) = .49, p = .65$ . There were no differences in average willingness index scores between the long and short beliefs conditions,  $t(2, 173) = 1.04, p = .84$ . There were no differences in average distress index scores between the long and short beliefs conditions  $t(2, 173) = .28, p = .27$ .

## **Discussion**

The purpose of Study 3d was to conduct Study 3c again but with a revised version of the BADS, which featured dimensional choice options as opposed to dichotomous options. We expected to find that people led to believe that emotions last for long periods of time (i.e., long emotions group) would have greater distress, less willingness (or tolerance) to sit with distress, and greater tendencies to take steps to escape distressing situations than those led to believe emotions last for short periods of time (i.e., short emotions group). However, there were no significant differences between conditions on the BADS distress, willingness, or escape indices. These findings reflect the difficulty of measuring experiential avoidance. Experiential avoidance has also been conceptualized as a dynamic, state-dependent process (Gross & John, 2003; Kashdan et al., 2013). Future research should examine experiential avoidance in-the-moment to better understand which factors influence momentary avoidance tendencies.

## **General Discussion**

The aim of this set of studies was to examine the relationship between the belief that individuals' emotions last for long periods of time (i.e., longevity beliefs) and experiential avoidance. First, given that much of the work to-date has been on the malleability belief about emotion (Kneeland & Dovidio, 2020; Kneeland et al., 2016; Tamir et al., 2007), we were interested in examining which additional belief about emotion, from a set of 10 beliefs (Veilleux et al., 2021), was the strongest unique predictor of experiential avoidance. We found that the belief that emotions last for long periods of time was the belief most strongly associated with greater experiential avoidance and distress intolerance. We examined individuals' beliefs about longevity of emotions in the moment and their momentary avoidance choices. Finally, wanted to know if the longevity belief could be manipulated and would, subsequently, be linked to experiential avoidance. The findings and their implications are discussed below.

### **Which Belief is Most Salient?**

Much of the extant work on beliefs about emotion have been on the belief that emotions can be changed (i.e., malleability; Kneeland & Dovidio, 2020; Kneeland et al., 2016; Tamir et al., 2007). However, there are other beliefs about emotion that are important and warrant further examination (Veilleux et al., 2016; Veilleux et al. 2020). Our initial question was which of these beliefs was the strongest unique predictor of experiential avoidance. In our pilot study, we found that the belief that greater beliefs that emotions last for long periods of time reported greater experiential avoidance and greater distress intolerance. The finding that those who endorsed greater beliefs that their emotions last for long periods of time also reported greater experiential avoidance and greater distress intolerance was replicated in Study 1. Findings from both the pilot study and Study 1 are consistent with prior work suggesting the salience of the longevity belief

as related to emotion regulation and well-being (Veilleux et al., 2020; Veilleux et al., 2021), while further highlighting the importance of the longevity belief in better understanding experiential avoidance. These results also expand on previous work on beliefs about emotion, which were largely focused on the singular belief of the changeability of emotions (i.e., malleability beliefs; Kneeland & Dovidio, 2020; Kneeland et al., 2016; Tamir et al., 2007).

### **Momentary Longevity Beliefs and Experiential Avoidance**

As we expected that we were not capturing actual momentary avoidance behaviors using hypothetical situations on the BADS, we used secondary data analysis to examine avoidance inclinations in the moment. Though our initial plan was to conduct an in-lab study examining the influence of beliefs about longevity of emotions on experiential avoidance on a lab-based task, lab studies were suspended at this time due to university COVID-19 protocol. Therefore, Study 2 included secondary data analysis taken from an ecological momentary assessment study, in which individuals completed questions on their phones concerning emotion beliefs, questions regarding affect, and avoidance tendencies, such as expressive suppression, thought suppression, and escaping distressing situations. We found that greater momentary longevity beliefs predicted greater attempts to escape a momentary distressing situation.

These findings have several implications. First, these findings corroborate work suggesting that beliefs about longevity of emotions shift in the moment (Veilleux et al., 2020). When these beliefs are stronger than typical, clinically, it might be worthwhile to teach clients to recognize when these beliefs are strongest, when they are shifting, and when they're different than usual to reduce experiential avoidance. For example, individuals with borderline personality features have been shown to have stronger beliefs that their emotions last for long periods of time (Veilleux et al., 2020), and may, therefore, benefit from clinical treatments targeting their

beliefs about emotions. The dynamic nature of experiential avoidance, particularly escape, also needs to be studied further, to better understand other factors that might influence these choices. Finally, we cannot assume causality from this dataset, and, therefore, it is recommended that future work examine the casual relationship between longevity beliefs and momentary avoidance behaviors.

### **Manipulating Longevity Beliefs**

We then wanted to determine if the belief that emotions last for long periods of time could be shifted, and if these beliefs would, subsequently, be associated with greater avoidance tendencies. Manipulating maladaptive beliefs about emotion, such as the belief that emotions last for long periods of time, could have clinical implications, as beliefs about emotion have been shown to influence how individuals manage their emotions (De Castella et al., 2013; De Castella et al., 2017; Tamir et al., 2007; Veilleux et al., 2015). If individuals' beliefs about the length of their emotional experiences influence their avoidance tendencies, then targeting these beliefs could potentially reduce avoidance. This could be particularly useful for individuals who experience stronger emotional states, like individuals with borderline personality features (Ebner-Priemer et al., 2015; Houben, Van Den Noortgate, & Kuppens, 2015; Linehan, Bohus, & Lynch, 2007). Clinically, this would also be relevant for individuals with tendencies to use avoidance as a coping strategy, such as individuals who use substances to cope (Chawla & Ostafin, 2007) or socially anxious individuals who tend to avoid social settings that would elicit distress (Kashdan et al., 2008; Nicholls et al., 2014). We expected that we could manipulate individuals' beliefs about the length of time they experience emotions using previous methods of manipulating malleability beliefs (i.e., having participants read an article about the longevity of people's emotions; Kneeland et al., 2016).

Across studies 3a through 3d, we found that it was difficult to manipulate the beliefs individuals had about their emotions. Articles which featured testimonials and fabricated research findings about individuals' typical lengths of emotional experiences (i.e., long periods, short periods, and a control group who read a mundane article) did not significantly shift these beliefs. This is inconsistent with research which has used fictitious data to effectively manipulate beliefs about emotions (Kneeland et al., 2016). One reason why the manipulation might not have worked is because the fabricated research content was not replicated from the previous study, since the beliefs that were being manipulated were different. It has been difficult, historically, to shift the way individuals think using information, as studies have shown that you can get people to understand facts (in this case false information), but facts do not always change people's attitudes (Nyhan, Porter, Reifler, & Wood, 2019; Nyhan & Reifler, 2010). Future work should further examine what interferes with changing beliefs using faking information, so that researchers may better understand effective ways to change the beliefs that matter.

Meanwhile, we were able to lead individuals to believe that their emotions last for long periods of time using fictitious feedback from a survey about emotion, we were unable to lead individuals to believe emotions last for short periods of time. This corroborates research which has successfully manipulated beliefs about emotion using a survey format (De Castella et al., 2017) as well as beliefs about skill and ability (Valins, 1996) and identification with social groups (Platow, Huo, Lim, Tapper, & Tyler, 2015). The fictitious feedback may have worked, in part, due to the self-perception theory (Bem, 1972) which postulates that attitudes can be inferred from observing one's own responses, in this case to survey questions. Individuals may have inferred that they are individuals who experience emotions for long periods of time due to endorsing items corresponding with these longevity beliefs. However, while there is little

research, if any, that currently looks at the ability to manipulate different emotion beliefs, it is within the realm of possibility that some beliefs are more difficult to change. There is a dearth of research to suggest that people are often resistant to changing their own beliefs, especially when these beliefs are central to their identity (Ahluwalia, 2000; Jacks & Devine, 2000, Kaplan, Gimbel, & Hariss, 2016). Future work should examine the ability to shift different beliefs to better understand if there are beliefs that are more firmly held and less flexibly changed than others, and whether this is linked to how strongly individuals identify with these beliefs.

To examine individuals perceived behavioral avoidance, we used a new measure called the BADS, which feature distressing situations and then asked individuals to choose an option in which they tolerate the distress or avoid the distress. Even when we were able to shift beliefs to be more maladaptive, avoidance tendencies did not change based on the manipulation. As these findings were not as expected, we suspected that perhaps the response options on the BADS were too limiting. Individuals were asked to choose between one of two responses to a distressing scenario, one in which they avoided the distress or one on in which they tolerated the distress. It is possible that the dichotomous format of the BADS did not allow for the breadth of responses individuals might have to the distressing situations. Therefore, in Study 2d we changed the BADS to include three indices of avoidance per distressing situation: 1) level of distress for each situation, 2) willingness to sit with the distress, and 3) steps taken to avoid sitting with the distress. We found that those in the longevity beliefs condition endorsed greater beliefs that emotions last for long periods of time.

Given that manipulated beliefs did not influence avoidance tendencies, we suspect that the BADS may have not adequately captured experiential avoidance in the way we truly intended. While the BADS was intended to capture self-reported tendencies to avoid or tolerate

distress in specific situations, it is possible that asking what individuals would do in specific situations may not be an adequate representation of momentary decisions (Solhan, Trull, Jahn, & Wood, 2009). Experiential avoidance has also been conceptualized as a dynamic and state-dependent process sensitive to social contexts (Gross & John, 2003; Kashdan et al., 2013). The situations described in the BADS may not elicit the same emotions an individual may experience in their natural environments, and there are a number of other uncontrollable factors that could occur in the individuals' daily lives (outside of an online setting) as these situations would arise. For instance, an individual faced with the distress of receiving a phone call from an ex-partner after a fight may choose to tolerate or avoid the distress of the call based on factors occurring in their lives at that time, including time of day, what they are doing at that time, who they are with, and so forth. It is difficult to take the full context into consideration on a self-report measure of behavioral tendencies. One alternative would be to examine experiential avoidance in individuals' daily lives, using ecological momentary assessment.

### **Limitations**

These findings should be considered in light of several limitations. First, though these studies include different samples of individuals, the majority of these samples are White. As such, the results may not generalize well to individuals of other ethnicities. For example, prior research suggests that the social consequences of emotion suppression are moderated by cultural values, where individuals who endorsed more Asian values experienced less deleterious effects (e.g., negative partner-perceptions and hostile behavior) than individuals who identified with Western-European values (Butler, Lee, & Gross, 2007). This finding suggests that some cultures have differing values and beliefs surrounding emotion and expression of emotion, which produce distinct outcomes. Future work should include more diverse samples to better elucidate

differences in the beliefs that individuals have about emotion as well as how this impacts avoidance decisions. Additionally, data from the Pilot Study, Study 1, and Studies 3a through 3d were collected online, and data collection from online sources remain subject to insufficient or unreliable self-report. Meanwhile, data from Study 2 was collected via EMA, with information taken from individuals while they were living their lives. While EMA allows for an understanding of what individuals feel and do in their everyday lives, data collection outside of the laboratory means researchers have less control over extraneous or outside variables.

Further, this study further demonstrated the difficulty of studying experiential avoidance. The findings from studies 3a through 3d seem to suggest that experiential avoidance may be a particularly difficult construct to fully measure. This may be, in part, due to the conceptualization of experiential avoidance as state-dependent and dynamic. Avoidance tendencies may depend on many different factors, such as a person's immediate environment (Turner et al., 2002) or how much self-control a person has already depleted (Schlauch, Christensen, Derrick, Crane, & Collins, 2015). Studying experiential avoidance, both in the lab but also in a person's daily life, may be tricky and will require continued consideration in the future. Another limitation of these studies is that individuals may endorse the belief that emotions last for long periods of times for different reasons. For some, the longevity belief may be accurate, as we know that some individuals seem to experience more intense, long-lasting emotions than others (Linehan et al., 2007). It is possible that some individuals endorse these emotions because they are accepting that this is their experience. Meanwhile, others may *fear* that negative emotions may stick around or linger, which is difficult to tease apart when examining these beliefs. Clinically, discussing these beliefs and where they come from could be



beneficial for clients, though this requires further consideration for future researchers when examining the longevity beliefs.

## **Conclusion**

The current set of studies solidifies the importance of beliefs about the longevity of emotions (Veilleux et al. 2020; Veilleux et al., 2021) and extends that notion to confirm that beliefs about the longevity of emotion are associated with experiential avoidance. We found that the longevity belief was salient across studies, suggesting that the belief that individuals' emotions last for long periods of time is an important belief about emotion to consider. We also found that greater longevity beliefs were associated with greater experiential avoidance, suggesting that targeting longevity beliefs clinically may help individuals who have a tendency to avoid distress. However, we learned that it is difficult to change these beliefs, at least within an online setting, and more research is needed to better understand how these beliefs may be shifted to be more adaptive. This would give us more insight into how to change beliefs in a clinical setting. Importantly, there are few, if any, studies which have examined the relationship between beliefs about the longevity of emotions and avoidance behaviors (i.e., escape) in the moment. The finding that momentary longevity beliefs was related to individuals' self-reported choices to escape from a distressing situation further suggest that these beliefs may influence the way individuals handle distressing situations. The finding also highlights the importance of studying experiential avoidance in more naturalistic settings to better account for the sensitive, state-dependent nature of experiential avoidance.

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## Appendix

### Appendix 1. Pilot Study

There is a lack of evidence on the scope of emotion beliefs to determine which beliefs about emotion uniquely predict experiential avoidance and distress tolerance. Thus, the purpose of the current pilot study was to conduct secondary data analysis of an existing dataset to identify which beliefs about emotions are the strongest unique predictors of experiential avoidance and distress tolerance. Given the exploratory nature of the current study, there were no a priori hypotheses. Also, age and gender were controlled for in the regression analysis given that prior work has shown that age and gender are associated with beliefs about emotions and emotion schemas (Veilleux et al., 2019).

## Method

### *Participants and Procedure*

Participants were university students recruited from a subject pool ( $n = 192$ ) as well as individuals recruited from Amazon's Mechanical Turk (mTurk;  $n = 202$ ) using TurkPrime (Litman, Robinson, & Abberbock, 2017). Subject pool participants received partial course credit for participation, and participants from mTurk were paid \$6.65 to complete roughly 45 minutes worth of measures (full list of measures given available from the authors). Of the 394 participants who completed the study, 20 were excluded for admitting that they did not fully attend to the study when asked at the end of the study, and another 15 participants were excluded for having taken over 2 hours to complete the questionnaires. This left a final sample size of 359 (Subject pool  $n = 162$ , mTurk  $n = 197$ ). The entire sample was 59.1% female and 78.3% White with a mean age of 28.30 ( $SD = 11.15$ ). The subject pool sample was significantly younger ( $M_{age} = 19.81$ ,  $SD = 5.25$ ) compared to the mTurk sample ( $M_{age} = 35.19$ ,  $SD = 9.84$ ),  $t(355) =$

17.82,  $p < .001$  and had a higher percentage of women (73.5%) compared to mTurk (47.2%),  $\chi^2 = 25.28$ ,  $p < .001$ . For all participants, measures were completed online via Qualtrics, with demographic items given at the end.

### ***Measures***

**Brief Experiential Avoidance Questionnaire.** (*BEAQ*; Gamez, Chmielewski, Kotov, Ruggero, Suzuki, & Watson, 2014). This questionnaire is a 15-item truncated adaptation of a larger 59-item Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gamez et al., 2011). The BEAQ is aimed at assessing experiential avoidance, or the avoidance of personal experiences (e.g., thoughts, feelings, emotions, situations) associated with distress. This measure consists of 15 items given on a Likert-type scale from a 1 (*strongly disagree*) to a 6 (*strongly agree*). A total score is calculated by summing all 15 items, with higher items indicating greater experiential avoidance and lower items indicating lower experiential avoidance. The measure had excellent reliability ( $\alpha = .89$ ).

**Distress Tolerance Scale.** (*DTS*; Simons & Gaher, 2005). This is the same measure that was used in Study 1.

**Individual Beliefs about Emotions.** (*IBAE*; Veilleux, et al., 2019). This is the same measure that was used in Study 1.

### **Results**

#### ***Descriptives of IBAE Beliefs***

Descriptives of the overall sample are in Table 1, along with comparisons for the mTurk and subject pool samples separately. Beliefs about preference for logic or emotion, complexity of emotions, beliefs about the expression of emotion, beliefs about changeability of emotions, beliefs about emotions controlling behavior, beliefs about the uniqueness of emotions, and

beliefs about longevity of emotions were significantly different between the two samples. Mean scores for beliefs about changeability of emotions, emotions controlling behavior, uniqueness of emotions, and longevity of emotions were greater in the subject pool than in the mTurk sample. Beliefs about preference for logic or emotion, beliefs about complexity of emotions, and beliefs about the expression of emotion were greater in the mTurk sample than the subject pool. Distress tolerance scores were significantly greater in the mTurk sample than in the subject pool, and experiential avoidance scores were significantly greater in the subject pool sample than in the mTurk sample.

Table 1. Descriptive statistics for the entire study, broken down by subject pool and mTurk participants.

	Total ( <i>n</i> = 359)	Subject Pool ( <i>n</i> = 162)	mTurk ( <i>n</i> = 197)	<i>t</i> or $\chi^2$
Age	28.30(11.15)	19.81(5.25)	35.19(9.84)	-17.82***
% Female	59.1%	73.5%	47.2%	25.28***
% White	78.3%	80.2%	76.6%	.68
BEAQ	46.86 (13.20)	49.41 (11.41)	44.76 (14.19)	3.37**
DTS	3.42 (.87)	3.21 (.75)	3.58 (.93)	-4.07**
Cause	2.08 (.87)	2.14 (.86)	2.04 (.87)	1.09
Judgment	3.17 (1.10)	3.28 (1.12)	3.08 (1.07)	1.75
Complexity	2.70 (1.00)	2.56 (1.02)	2.81 (.98)	-2.42*
Expression	2.51 (1.05)	2.35 (1.05)	2.64 (1.03)	-2.71*
Preference	3.39 (1.23)	3.02 (1.30)	3.69 (1.07)	-5.27***
Behavior Control	2.67 (1.13)	2.87 (1.96)	2.50 (1.04)	3.15*
Changeability	2.42 (1.11)	2.75 (1.17)	2.14 (.97)	5.34***
Uniqueness	2.75 (1.13)	3.00 (1.08)	2.54 (1.13)	3.93***

Longevity	3.61 (1.09)	2.52 (1.09)	2.28 (1.07)	2.12*
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\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Note: DTS = Distress Tolerance Scale (Simons & Gaher, 2005), BEAQ = Brief Experiential Avoidance Questionnaire (Gamez et al., 2014)

### *Correlations among Beliefs and Distress Tolerance*

We conducted zero-order correlations among the beliefs about emotions and distress tolerance and experiential avoidance (see Table 2). Those who reported greater difficulty tolerating distress also reported the following: 1) greater belief that emotions last forever, 2) greater belief that emotions come from out of the blue 3) greater belief that negative emotions are bad or destructive 4) greater belief that one cannot act different than their emotions, 5) greater belief that emotions have to run their course, 6) and greater belief that one's emotions are different than others'. Those who reported a greater tendency to experientially avoid distressing situations reported the following: 1) lower distress tolerance, 2) greater belief that emotions come from out of the blue, 3) greater belief that emotions are destructive or bad, 4) greater belief that emotions should be simple, 5) greater belief that one cannot act different than his/her emotions, 6) greater belief that emotions have to run their course, 7) greater belief that emotions are unique, and 8) greater belief that emotions last forever.

Table 2. Zero-order and partial correlations among the emotion beliefs and distress tolerance

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
13. BEAQ	--										
14. DTS	-.48*	--									
15. Cause	-.13*	.13*	--								
16. Judgment	.39**	-.26**	-.00	--							
17. Complexity	.13*	-.02	-.01	.29**	--						
18. Expression	.09	.11*	.02	.02	.09	--					
19. Preference	-.08	.16**	.21**	-.07	.01	.30**	--				
20. Behavior Control	-.28**	.25**	.15**	-.16**	-.09	.17**	.23**	--			
21. Changeability	-.25**	.22	.22**	-.06	-.01	.07	.61**	.41**	--		
22. Uniqueness	.28**	-.29**	-.12**	.12	-.01	.10**	.10*	-.17**	-.17**	--	
23. Longevity	-.36**	.39**	.13**	-.21**	.00	-.06	.00	.26**	.21**	-.19**	--

+ $p < .05$  \* $p < .01$ , \*\*\* $p < .001$ . BEAQ = Brief Experiential Avoidance Questionnaire. DTS = Distress Tolerance Scale

### *Simultaneous Regressions Predicting Distress Tolerance and Experiential Avoidance*

To examine the role of the IBAE beliefs in predicting distress tolerance and experiential avoidance, two separate hierarchical multiple regressions were conducted with age and gender in Step 1 and the nine emotion beliefs in Step 2 (see Table 3). The set of IBAE beliefs accounted for significant variability in distress tolerance after controlling for age and gender (overall model  $R^2 = 29\%$ ). Results showed that greater belief that negative feelings are bad/destructive, the belief that it is hard to act differently than one's emotions, the belief that one's emotions are unlike others, and the belief that that negative feelings seem to last forever uniquely predicted lower distress tolerance. The set of IBAE beliefs accounted for significant variability in experiential avoidance after controlling for age and gender (overall model  $R^2 = 35\%$ ). Beliefs about attitude toward negative emotions, expression of emotions, emotions controlling behavior, and longevity predicted greater experiential avoidance. Specifically, greater beliefs that negative feelings are bad/destructive, the belief that emotions should be kept inside oneself and not shared, the belief that it is extremely hard, maybe impossible to act different than one's emotions, and the belief that negative feelings seem to last forever predicted greater experiential avoidance.

Table 3. Simultaneous regressions of the single item belief measures predicting distress tolerance

		Experiential Avoidance BEAQ		Distress Tolerance DTS	
		$B$ ( $SE$ )	$B$	$B$ ( $SE$ )	$B$
Step 1		$R^2\Delta = .10^{***}$		$R^2\Delta = .11^{***}$	
	Age	-.31 (.06)***	-.27	.02 (.00)***	.23
	Gender (Male = 0; Female = 1)	4.15 (1.35)**	.16	-.40 (.09)***	-.23
Step 2		$R^2\Delta = .25^{***}$		$R^2\Delta = .18^{***}$	
	Cause	-.83 (.68)	-.05	.04 (.05)	.04
	Judgement	3.32 (.54)***	.28	-.11 (.04)**	-.14

Complexity	.59 (.59)	.05	.02 (.04)	.02
Expression	1.93 (.57)***	.16	.03 (.04)	.04
Preference	.41 (.51)	.04	.002 (.04)	.003
Behavior	-2.13 (.57)***	-.18	.09 (.04)*	.12
Control				
Changeability	-.29 (.59)	-.03	-.01 (.04)	-.01
Uniqueness	.83 (.53)	.07	-.12 (.04)***	-.16
Longevity	-2.52 (.56)***	-.20	.20 (.04) ***	.26
Overall Model	$R^2 = .35$		$R^2 = .29$	

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

## Discussion

The purpose of the pilot study was to identify which emotion beliefs serve as the strongest unique predictors of experiential avoidance and distress tolerance. Results revealed that greater beliefs that negative feelings are bad/destructive, greater beliefs that it is hard to act differently than what one's emotions tells them to do, and greater beliefs that negative emotions last "forever" predicted lower distress tolerance and greater experiential avoidance. Of these, the strongest predictors were the belief that negative feelings last forever and the belief that negative feelings are bad/destructive. Further, prior work on the IBAE which has found that longevity beliefs are associated with psychopathology (Veilleux et al., 2019) but extends prior findings into the arena of emotion regulation. This work suggests that the belief about longevity of emotions would be an ideal candidate to further examine in the context of experiential avoidance and distress tolerance behaviors.

The findings from this pilot study also confirm that greater maladaptive beliefs about emotion predict lower distress tolerance and greater experiential avoidance. These findings are consistent with prior work which has shown that beliefs about emotion differentially predict emotion regulation strategies (Gross, 2008). Specifically, research suggests that holding more adaptive beliefs about emotion (e.g., beliefs that emotions can be changed) are associated with greater use of adaptive emotion regulation strategies (e.g., cognitive reappraisal; De Castella et

al., 2013). Conversely, research also shows that holding more maladaptive beliefs, such as the belief in one's lack of ability to control emotions, predicts greater use of avoidance-based strategies (De Castella et al., 2013). However, these studies examined few beliefs and did not include all beliefs featured in the IBAE. Thus, this pilot study extends prior work to show additional beliefs about emotion as related to experiential avoidance and distress tolerance. This pilot study is beneficial given that the work on IBAE is relatively new and has not been studied in conjunction with experiential avoidance and distress tolerance. However, these findings should be considered in light of several limitations. The study relies on self-report measures to assess beliefs about emotion, experiential avoidance, and distress tolerance. Given that self-report measures are used to measure individual's perceptions, these results do not give much insight into individuals' behavioral responses. Additional studies will, thus, be conducted to better understand how manipulation of longevity beliefs causally influences experiential avoidance and distress tolerance. It is also important to note that, though mTurk has previously been deemed a reliable technique for large data collection (Buhrmester, Kwang, & Gosling, 2011), data collection from online sources still remain susceptible to insufficient or unreliable self-report.



## Appendix 2. Individual Beliefs About Emotion (IBAE)

Below are questions about emotions. Choose the number associated with which “pole” you tend to side with. A “middle” choice would suggest that you aren’t consistent in your beliefs, that sometimes you tend to lean to one side, and other times to the other side. There are no wrong answers here; people believe a lot of different things about emotions!

1.	Where do emotions come from?	1 Emotions come from out of the blue, for no reason	2	3	4	5 Emotions happen because of clear identifiable causes
2.	What is your attitude toward negative emotions?	1 Negative feelings are helpful and useful; I welcome my negative feelings.	2	3	4	5 Negative feelings are bad and destructive; I would prefer to never feel bad.
3.	Should emotions be simple or complex?	1 I should feel a variety of conflicting emotions at once	2	3	4	5 I should only feel one thing at a time
4.	Should emotions be shared with others?	1 Emotions must be “let out” and expressed to the world	2	3	4	5 Emotions should be kept inside the self; no one wants to deal with other people’s emotions
5.	Which do you prefer, thought or feeling?	1 Feeling is preferable to effortful thought.	2	3	4	5 Logic is preferable to emotion
6.	Do emotions control behavior?	1 It is extremely hard, maybe impossible, to act differently than what my emotions tell me to do.	2	3	4	5 It is possible, maybe even easy, to act differently than how I feel inside.
7.	Can emotions be changed?	1 Emotions have to “run their course”; they are hard to change or alter	2	3	4	5 Everyone can learn to control their emotions.
8.	Are your emotions	1	2	3	4	5

	different from other peoples?	My emotions are similar to everyone elses				No one seems to experience emotions the way I do
9.	How long do negative feelings last?	1 Negative feelings seem to last forever	2	3	4	5 Negative feelings are difficult but don't last very long
10	Do your beliefs about emotions (all of the above) <i>change</i> when you are in a strong emotions?	No	Yes			

### Appendix 3. Behavioral Avoidance of Distressing Situations

Directions: You will see a variety of situations. For each situation, you will be asked to indicate how you would feel in this situation, and what you would do.

Select the choice that you feel best describes how you would respond to each scenario. While there may be other behaviors that you might do in these situations, please select which of these two options you think you would be MORE likely to choose for each scenario.

*Note: For each scenario, the two responses are presented in random order.*

#	Scenario Text	Tolerance Response (Scored 0)	Avoidance Response (Scored 1)
1.	You just had an upsetting fight with someone that you care about. The fight ended horribly, and you are still very upset. Now you are getting a call from that person on your phone and you don't know what they are going to say to you. Which would you be more likely to do?	Choose to pick up the phone, knowing this will likely perpetuate your emotional response	Choose to ignore the call
2.	You are running late to an important meeting. It is the first time you are meeting with these specific people and you want to make a good first impression. You left your house on time, but you find yourself stuck in traffic on the highway. Traffic is not moving, and the clock is ticking. You feel your heart beating faster, your chest feels tight, your palms get sweaty, and your stomach is in knots. Which would you be more likely to do?	Think "I am clearly going to be late, this situation sucks. It's okay to feel bad right now." You try to breathe in and out as you sit in the traffic.	Think "This isn't happening, my boss is going to be so pissed at me, I can't handle this." You then turn on the radio to try to distract you from how bad you feel.
3.	You are stuck on a 3 hour flight on a small plane. The person next to you is using your arm rest, and you did not sleep well the night before. You were planning on taking a nap on the plane. You start feeling the child behind you kicking the back of your seat. You assume the child's parent will tell the child to stop. However, the parent says nothing and the child continues to kick the	Give up on the idea of sleeping, and count the number of times the kid kicks your seat in hash marks on a plane napkin.	Turn around and yell at the parent to have their child stop kicking the back of the seat.

	back of your seat for nearly fifteen minutes, making it impossible to sleep. Which would you be more likely to do?		
4.	You are watching a movie at the theatre with a few friends, and there are several scenes that are very upsetting to you. You do not want to keep watching the movie, as it is making you more and more disturbed and it strongly opposes your personal values. Which would you be more likely to do?	You allow yourself to feel disturbed for the duration of the movie, realizing the movie will end at some point.	You tell your friends you have to go to the bathroom and leave the theatre, hoping the upsetting pieces are over by the time you get back.
5.	You are in your college class when the professor says you have to present the content of a chapter to the whole class. You did not know that you would be asked to present. You didn't actually read the chapter, and the idea of standing up in front of the class to either admit you didn't read or to try to stumble your way through the presentation sounds dreadful to you. You also know this professor has an attendance requirement, and you can only miss three times. You have already missed class once, and you know you have an upcoming appointment that will cause you to miss another class. Which would you be more likely to do?	You get up in front of the class and tell the class you are really anxious about talking in front of the group, and to forgive your verbal stumbles.	You quietly get up and leave before your turn to present.
6.	You are out with a group of new friends seeing a standup comedy show. Two people over from you, you see your ex- (boyfriend/girlfriend) with a date. You actually still have feelings for your ex, and it hurts you to see him/her so happy with a new person. Your ex texts you to say "Hi, I see you at this club, don't want things to be awkward!" But they definitely are, and you really want to "run for the hills." You also	'Fess up to your new friends that your ex is there with a date and that it's both distracting and upsetting to you, even though you don't know what they will think of you.	Decide to tell your new friends that aren't feeling well and then go home.

	<p>don't want to tell all of your new friends about this ex and make them think you are being dramatic. Which would you be more likely to do?</p>		
7.	<p>You are on a first date with someone you met online. It is not going well. Your date doesn't look anything like their picture, and they are talking about themselves A LOT. You are currently at dinner, and you had originally made plans to go out for ice cream and a movie after dinner. You do not want to stay on this date, but you also don't want to be rude. Which would you be more likely to do?</p>	<p>Acknowledge in your mind that the next few hours will probably feel like a century, but that you never have to see this person again after tonight.</p>	<p>You text your friend to call you and come up with an emergency that will require you to leave the date.</p>
8.	<p>You get a call that your favorite uncle, who you are really close to, was just diagnosed with Stage 4 cancer. You get this call right before you are supposed to go into a training for your job. You are extremely upset, and you are on the verge of crying. You cannot stop thinking about your uncle and your family. Which would you be more likely to do?</p>	<p>Go to the training and tell the trainer that you are experiencing a family situation, and tell them to not take it personally if you become visibly upset during the training.</p>	<p>Tell the trainer you cannot concentrate on the training due to a family situation, and tell them you will have to do the training on a different day.</p>
9.	<p>Your friend Chris has stopped talking to you out of the blue and you don't know why, but you hear from a mutual friend that Chris is upset with you and no longer wants to be your friend. This makes you sad—you liked Chris a lot, and you think back to what you might have done to upset Chris to such a strong degree. You feel hurt and confused and sad about losing a friend. You aren't sure what you did to make him not want to be friends with you and begin feeling down about yourself. Which would you be more likely to do?</p>	<p>You allow yourself to think about the loss of your friendship, letting yourself be upset about missing Chris and to think about how much you will miss his friendship.</p>	<p>You make frantic efforts to get in contact with Chris, calling and texting to try to get him to talk to you.</p>

10.	You sprain your ankle. It hurts a lot, and the pain is very strong and intense. The doctor's office prescribed you hydrocodone, which you know will reduce the pain, but it will also cause you to fall asleep. You have things you need to do around the house because your relatives are coming to visit tomorrow. Which would you be more likely to do?	You stay awake and get your work done, recognizing that your leg is going to be in pain while you do your tasks.	You figure that you won't really be able to get much done while you are in pain anyway, so you take the meds and go to sleep.
11.	You have a really strong headache, possibly a migraine, but you have several meetings and classes to attend that are important to you. Which would you be more likely to do?	You go to your meeting, tell people you have a headache, and apologize in advance for possibly being disengaged as a result.	You cancel your meeting and stay in bed with the curtains closed.
12.	You are visiting a close family member's house for dinner. You're eating at the dinner table when your relative starts to talk about politics. You have had political conversations with him in the past, and they have always ended in a screaming argument. You strongly disagree with his political views. He continues to rant for several minutes about politics, and you continue to think about how strongly you disagree with everything he is saying. He is also attacking your political party. You are becoming very angry. Which would you be more likely to do?	Remind yourself that responding to your family member's political rants have always ended in arguments. You tell yourself that it's not worth it to fight with him, and you accept the fact that he's being annoying but you just don't happen to see eye to eye and that's okay.	You cannot hold your tongue with all of the things he is saying. He needs to know how wrong he is and that what he is saying is not acceptable to you, so you tell him how ignorant and idiotic he sounds.
13.	Your boss is giving an award to the hardest worker in the department. It's between you and one of your co-workers who you don't like very much, but who you know sucks up to the boss. The award comes with a promotion and a plaque. You know how hard you have worked for this over the last several years, and you want to win for yourself, and because you know your coworker is	You tell yourself that you have wanted this for a long time and that you know you deserve it, so it is understandable that you are feeling anxious.	You have a few drinks to try to numb yourself and to help yourself fall asleep to make tomorrow come faster.

	<p>only in the running because of their close relationship with the boss. Your boss is announcing the winner tomorrow. You are feeling a lot of anxiety over not knowing if you will receive the reward and you are having trouble falling asleep. Which would you be more likely to do?</p>		
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## Appendix 4. Manipulation Conditions

### Long Emotions Condition

#### How Long do Emotions Really Last?

Amber is a hard-working stay at home mom of three. She came into therapy looking for skills to help manage her emotions. This is what she told her therapist.

*"I just get so emotional when I am home all day with the kids. When they don't listen, I just feel so angry! I want to yell at them, but then I remind myself that this is not the best way to parent them. So I just sit with those emotions. Sometimes I feel like they last for hours and will never end. I don't know if I'm overreacting or if others feel that their emotions last for hours on end — is this a normal thing?"*

Actually, according to some recent research by a team of scientists headed by Rebecca Schwartz from the Department of Psychological Science at Harvard, Amber was describing a common situation. Schwartz's research team set out to examine how long emotions really last. To do this, they conducted an online experiment and gathered data from 1,110 adults (male and female) in the United States. In this particular group, they found that 75% of adults report that their emotions last at least three hours at a time. Apparently, both males and females are claiming that their emotions last for extended periods of time.

Schwartz and researchers followed this online study with an in-lab experiment, with the purpose of examining length of emotions in adults. One group watched sad movie scenes from popular films and the other group watched a documentary. Both groups then completed a questionnaire about how they were feeling. They continued to fill these questionnaires out every five minutes for a total of thirty minutes. The group that watched the sad movie clips had much higher ratings of feelings of sadness after watching the movie clips than the individuals who watched the documentary. Interestingly, these individuals reported feelings of sadness lasting for almost six hours.

A second set of researchers from Columbia University had similar findings. James Mitchell and Robert Buchanan studied adults ages 18 and over by asking questions that popped up on the participants' phones. They asked the participants to log when they had strong emotional responses over a one week period of time. They too found that participants reported emotions lasting for a long time. In fact, on average, the participants said that they felt these emotions for 4.5 hours.

One question that researchers have been asking for quite some time is, "How long do emotions typically last?" Some will tell you they feel their emotions sticking around for long periods of time, whereas others may say they aren't really feeling these emotions for very long before they are gone. However, when we aren't fully giving our emotions much consideration, we may not be aware of how long they are actually lasting. What researchers are finding, however, is that when people tune into how they are actually feeling, they are noticing that emotions last for long



periods of time, in fact they are lasting hours at a time! Emotional events are clearly sticking around for a while before they are fully gone for good.

Manipulation Check:

The article suggests there is new research to support which of the following?

- a. Emotions tend to last for short periods of time.
- b. Emotions influence how people behave.
- c. Emotions tend to last for long periods of time.
- d. Emotions have no influence on people behave.

(correct answer: C – Emotions tend to last for long periods of time)

Researchers James Mitchell and Robert Buchanan found that adults reported feeling emotions for an average of how long?

- a. 30 minutes
- b. 2 minutes
- c. 1 hour
- d. 4.5 hours

(correct answer: d – 4.5 hours)

A second research team found that what percentage of adult participants reported that their emotions lasted at least three hours at a time?

- a. 6%
- b. 10%
- c. 50%
- d. 75%

(correct answer: d – 75%)

### Short Emotions Condition

#### How Long do Emotions Really Last?

Amber is a hard-working stay at home mom of three. She came into therapy looking for skills to help manage her emotions. This is what she told her therapist.

*"For as long as I can remember, I have felt emotions for just a short period of time and then they go away. I never really thought too much about it until I had kids who seem to have such strong emotional reactions! I will get upset with them sometimes, frustrated or stressed, like when they don't listen to me or start fighting with each other. But the frustration or stress really only last a few minutes then I am back to normal. I am not really too focused on how I am feeling anymore. I don't know if I'm just under-reacting or if others feel that their emotions last for just short periods of time — is this a normal thing?"*

Actually, according to some recent research by a team of scientists headed by Rebecca Schwartz from the Department of Psychological Science at Harvard, Amber was describing a common situation. Schwartz's research team set out to examine how long emotions really last. To do this, they conducted an online experiment and gathered data from 1,110 adults (male and female) in

the United States. In this particular group, they found that 75% of adults report that their emotions last, at most, 15 minutes at a time. Apparently, both males and females are claiming that their emotions last for short periods of time.

Schwartz and researchers followed this online study with an in-lab experiment, with the purpose of examining length of emotions in adults. One group watched sad movie scenes from popular films and the other group watched a documentary. Both groups then completed a questionnaire about how they were feeling. They continued to fill these questionnaires out every five minutes for a total of thirty minutes. The group that watched the sad movie clips indicated negative emotions after the first and second questionnaire. However, by the end of the thirty minutes, they had the same ratings as those who had watched the documentary. Interestingly, the individuals who watched movie clips indicated feeling sad for about ten minutes before returning to normal.

A second set of researchers from Columbia University had similar findings. James Mitchell and Robert Buchanan studied adults ages 18 and over by asking questions that popped up on the participants' phones. They asked the participants to log when they had strong emotional responses over a one week period of time. They too found that participants reported emotions lasting for short spans of time. In fact, on average, the participants said that they felt these emotions for 13.5 minutes.

One question that researchers have been asking for quite some time is, "How long do emotions typically last?" Some will tell you they feel their emotions sticking around for long periods of time, whereas others may say they aren't really feeling these emotions for very long before they are gone. However, when we aren't fully giving our emotions much consideration, we may not be aware of how long they are actually lasting. What researchers are finding, however, is that when people tune into how they are actually feeling, they are noticing that emotions last for short periods of time, in fact they are lasting only minutes at a time! Emotional events are clearly not sticking around for long before they are fully gone for good.

Manipulation Check:

The article suggests there is new research to support which of the following?

- a. Emotions tend to last for short periods of time.
- b. Emotions influence how people behave.
- c. Emotions tend to last for long periods of time.
- d. Emotions have no influence on people behave.

(correct answer: A – Emotions tend to last for short periods of time)

Researchers James Mitchell and Robert Buchanan found that adults reported feeling emotions for an average of how long?

- c. 2 minutes
- d. 13.5 minutes
- c. 1 hour
- d. 2 hours

(correct answer: b – 13.5 hours)

A second research team found that what percentage of adult participants reported that their emotions lasted about 13 minutes at a time?

- e. 6%
- f. 10%
- g. 50%
- h. 75%

(correct answer: d – 75%)

### Control Condition

## How Much Ethics Training are Master's Level Students Receiving?

Michael is a recent Master of Business Administration (MBA) graduate who just began working for a well-established company in Portland, Oregon. The company created a new Manager of Ethics (Training and Communication) position after a recent push by the CEO for a stronger emphasis on ethical standards in the workplace. Michael was excited to fill the position.

*"My MBA program did a thorough job of implementing ethical training within my classes and internship experience. I learned to resolve workplace ethical issues, reason through ethical dilemmas and learned how to manage feelings about ethics and corporate fraud. I was fairly privileged to be able to gain a solid background in ethical training in graduate school, but what I quickly learned from my friends, who were in other MBA programs and other master's level programs, was that many master's level programs lack basic ethical training designed to prepare students for workplace dilemmas. That made me wonder – just how pervasive is the ethical training in current master's level programs?"*

According to recent research by a team of scientists headed by Rebecca Schwartz from the Business School at Harvard, Michael was asking a germane question. Schwartz's research team set out to examine experiences and perceptions of classroom ethics training in 50 master's level programs in the United States. Overall, they found that only 15% of programs include an ethics course designed to train graduate students in navigating ethical situations in the workplace. Furthermore, roughly 75% of the programs admit to having no ethics training within the program at all. Meanwhile, the other 10% of programs noted that they are beginning to implement ethics within the program, typically by facilitating some ethical decision-making discussions within the required courses. It seems that few of the current master's level programs are reporting required ethics course, with the majority indicating no ethics training at all, but programs are beginning to recognize the need for more training in this area.

A second set of researchers from Columbia University created a qualitative study with the purpose of examining recent master's level graduates' perceptions of competency regarding ethical decision-making. They designed a survey that was administered to 1,128 individuals in the United States who graduated within the last 3-months from a master's level program. They found that nearly 2/3rds of the graduates indicated that they lacked strong ethical training. While over half of recent graduates claimed they could figure out how to navigate less significant ethical dilemmas in the workplace, only 327 of these individuals reported feeling competent that they could navigate a dilemma involving something as serious as corporate fraud.

One question that researchers are asking in recent years is, “How prepared are graduates for ethical decision making in the workplace?” New research says that few programs require ethics training. Unsurprisingly, graduate students are reporting that they don’t feel adequately prepared to manage serious ethical dilemmas. On the upside, graduate programs are taking steps to implement stronger ethics training with the hopes of preparing master’s students to navigate these sticky unethical situations in the workplace. With new research and a stronger push for ethical training, we might just begin to see stronger ethical training in master’s programs.

## Appendix 5. False Feedback Survey Conditions

### Long Emotions Condition

Now we will ask you to complete a short survey regarding the duration of your emotional experiences. Please be as honest as possible when completing these questions. There are no right or wrong answers. Please indicate how true each of the following items are for you on a scale from not at all true for you to extremely true for you.

Not at all true, slightly true, somewhat true, moderately true, quite a bit true, very true, extremely true

1. There are times when my emotions take a long time to go away.
2. My emotions sometimes stick around like a thick fog.
3. When I feel angry, it can feel like a fire that takes a long time to go down.
4. Sometimes my emotions linger.
5. Sometimes I feel sad for a long time.
6. My anxiety can feel like a weight on my chest that stays there for a long time.
7. My emotions tend to stick around for long periods of time.
8. Sometimes, I can stay disgusted for quite a while.
9. When something upsets me, it can take some time before I feel back to my typical self.
10. People have told me that I struggle to get over things quickly.

Feedback: According to your responses on the previous questions, you appear to be someone who experiences emotions for relatively long periods of time. You have scored in the top 15% of people in our research on duration of emotions.

### Short Emotions Condition

Now we will ask you to complete a short survey regarding the duration of your emotional experiences. Please be as honest as possible when completing these questions. There are no right or wrong answers. Please indicate how true each of the following items are for you on a scale from not at all true for you to extremely true for you.

Not at all true, slightly true, somewhat true, moderately true, quite a bit true, very true, extremely true

1. There are times when my emotions pass quickly.
2. My emotions are sometimes like a passing storm – they come up quickly and last for a short time before things calm back down.
3. When I feel angry, it's a sharp, quick burst of anger and then it's over.
4. Sometimes my emotions are fleeting.
5. Sometimes I don't feel sad for very long.
6. My anxiety flares up like a storm and then it clears and I am calm.
7. My emotions don't tend to stick around for long periods of time.
8. I am disgusted for only short periods of time.
9. When something upsets me, I usually feel back to my typical self after not too long.
10. People have told me I get over things quickly.

Feedback: According to your responses, you appear to be someone who experiences emotions for relatively short periods of time. You have scored in the bottom 15% of people in our research on duration of emotions.

#### Control Condition

Now we will ask you to complete a short survey regarding the duration of your emotional experiences. Please be as honest as possible when completing these questions. There are no right or wrong answers. Please indicate how true each of the following items are for you on a scale from not at all true for you to extremely true for you.

Not at all true, slightly true, somewhat true, moderately true, quite a bit true, very true, extremely true