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Invalidation and Emotion Regulation: How does emotional invalidation relate to the efficacy and endorsement of emotion regulation strategies?

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ABSTRACT

Past research has reliably shown that emotional invalidation poses a threat to one's capacity for successful emotion regulation, though the relationship between the two is complex. The pair of studies presently discussed sought to understand how perceptions of emotional invalidation relate to the success (Study 1) and endorsement (Study 2) of emotion regulation strategies. Study 1 did not provide support for the prediction that perceptions of invalidation would undermine the success of the particular emotion regulation strategy of affect labeling, generating a new hypothesis: invalidation may be more related to how we conceive of the process of regulating our emotions, rather than whether a specific strategy is successful. Study 2 tested this hypothesis and found that invalidation (defined generally) is associated with higher endorsement of suppressive emotion regulation strategies and lower endorsement of the strategies of problem-solving and social support. This study also examined whether the relationship between invalidation and emotion regulation differed as a function of the source of invalidation (family vs. friends). Invalidation from family members in particular was also associated with increased endorsement of rumination, a relationship that was not exhibited in the case of invalidation from friends. A continued understanding of the relationship between invalidation and emotion regulation is invaluable to the understanding of emotional well-being broadly defined.

Keywords: *emotion regulation, affect labeling, emotional invalidation, mental health*

Invalidation and Emotion Regulation: How does emotional invalidation relate to the efficacy and endorsement of emotion regulation strategies?

One in five adults in America experienced mental illness in 2019 (SAMHSA, 2019). Though exact figures are not available, recent work suggests that this number has only increased as a result of COVID-19, making it increasingly vital to understand the mechanisms that facilitate a healthy mental state (Czeisler et al., 2020). Across myriad diagnoses, challenges involving emotion regulation emerge as a key dimension of psychopathology and more general mental illness (Cludius et al., 2020). For college students in particular, difficulties in emotion regulation have been associated with increased negative affectivity and emotional distress, underscoring the importance of emotion regulation in the domain of holistic well-being (Mohammadkhani et al., 2021). Therefore, an examination of factors that inhibit or promote adaptive regulation is vital to efforts to understand and improve mental health across communities. The present study aims to investigate the relationship between emotional invalidation and emotion regulation to better conceptualize and promote the wellness of young adult populations.

Emotion Regulation

Emotion regulation refers to the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions (Thompson, 1991). Essentially, emotion regulation encompasses our ability to notice, identify, react to, and manage our emotional states. The range of emotional regulation strategies is vast, and strategy selection and adaptive value are both variable across contexts (Livingstone & Isaacowitz, 2021). For example, Greenaway (2021) and colleagues found that not only do

we consider how we want to *feel* when selecting an emotion regulation strategy, but we also consider how we want to be *seen feeling*; emotion regulation strategy selection was related to whether or not participants wanted to experience emotion as well as whether or not they wanted to express it. Other work has found that social context, personality factors, and emotional valence (i.e., positive or negative) additionally influence our evaluation of appropriate emotion regulation strategies (Tang & Huang, 2019). Emotion regulation is therefore both an inter- and intrapersonal process. The strategy that we employ in a given situation is based on our own understanding of and goals related to our own emotions as well as the social environment in which we find ourselves.

The current literature suggests that some emotional regulation strategies may be more adaptive than others—and the adaptivity of a given strategy can vary alongside the context in which it is deployed. Some strategies serve to down-regulate emotions, while others up-regulate emotional experience; in other words, certain strategies may reduce the intensity or duration of an emotional experience, and other strategies instead increase its intensity or duration. For example, emotion regulation strategies such as suppression of emotional experience (or expression) create psychological distance between an individual and their emotions, thus reducing the intensity of emotional experience; in contrast, strategies like rumination lead to the prolonging of an emotional reaction and, consequently, increase the duration and intensity of emotion (Gross, 2002). Certain strategies—rumination and social withdrawal, for example—have been associated with trait emotion dysregulation, suggesting that some strategies may be inherently less adaptive than others (Daros & Ruocco, 2021). However, it is additionally important to

note that given the contextual influence on both strategy selection and adaptivity, a single strategy can vary in efficacy based on the context in which it is employed (Wenzel et al., 2021). In fact, the ability to flexibly and variably employ emotion regulation strategies is associated with greater well-being in daily life (Davidson et al., 2000).

Neurologically, emotion regulation is thought to be a process involving the communication between the prefrontal cortex and areas of the limbic system (Davidson, 2003). Our emotions are largely a product of the amygdala—this structure provides what is considered the biological emotional response. When we feel fear, for example, the amygdala triggers the release of hormones which provoke bodily reactions like increased heart rate and decreased metabolic activity to prepare the body to protect itself from perceived danger (Rasia-Filho et al., 2000). However, we are able to make sense of these reactions and experiences because of the prefrontal cortex; this region of the brain synthesizes input from other parts of the brain and body with prior knowledge and experiences to facilitate things like reflection or even the simple ability to name what we are feeling (Siddiqui et al., 2008). Emotion regulation strategies represent a combination of learned and innate behaviors that influence the communication between the amygdala and prefrontal cortex. Strategies that generally down-regulate emotions such as reappraisal and affect labeling have been empirically associated with both a decrease in amygdala activity and an increase in prefrontal cortex activity (Ortner, 2015). In this way, many strategies help facilitate the top-down processing necessary to make sense of and attenuate our emotional reactions.

A person's capacity to regulate their emotions is dynamic and thus develops throughout the lifespan. For example, regulatory capabilities are present as early as infancy, but the processes employed by the infant are heavily reliant on the influence of their caregiver(s); parental modeling of emotion regulation strategies as well as responses to a child's emotional reactions through direct intervention (e.g., attempting to alter the child's emotional experience, discouraging or encouraging certain emotions or reactions, etc.) and/or reinforcement can have lifelong consequences for social-emotional development (Thompson, 1991). As a child grows, their relationship with caregivers and the consequent role of the caregiver in the child's emotion regulation develops. An infant eventually learns to move about their environment, and can then exert more control over their emotional environment—primarily by choosing to enter or leave a space. Emotion regulation is also highly influenced by language development; as children become more able to articulate their feelings and needs, caregivers begin to enter more complex regulatory relationships with their children—for example, a parent might be able to ask their child what would make them feel better and help them access such comfort. Throughout development, we learn to rely less and less on our caregivers for emotional support and instead develop the capacity to self-regulate (Calkins, 1994).

The more reliant we become on our own capacities to regulate emotions, the greater the role of individual and internal factors on our ability to regulate. In adolescence, for example, we begin to see a more dramatic shift towards emphasis on peer relationships compared to familial bonds, and these friendships add to our base of social support. During adolescence, emotion regulation strategies may be more variable

and less reliant on caregivers, instead based more deeply in peer relationships (De France & Hollenstein, 2021). Adolescence can represent a critical period in the development of emotion regulation because we begin to diversify our support networks and, consequently, the emotion regulation strategies we use. Importantly, our role in regulating emotion is not only strategy selection, but also the selection of peers to make up our network of support. We learn not only how to deal with emotions, but also how to communicate these feelings in a way that elicits peer support. Factors such as social skills and personality traits may therefore continually influence our emotional development because of the role they play in our social networks, peer relationships, and abilities to communicate our feelings.

Our emotional cognitions influence our regulatory abilities as well. Especially as we continue to grow and increase our self-reliance to regulate our emotions, the ways we come to understand our emotions impact how we choose to address them. For example, a study examining emotion regulation in young adulthood found that distinct cognitive distortions—that is, biased patterns of thought, often negatively valenced—predict the types and efficacy of emotional regulation strategies employed (Deperrois & Combalbert, 2021). Additionally, our broad conceptions of emotion (i.e., emotion beliefs, mindsets, or schemas) affect not only our experience of emotion, but also how we choose to deal with it (e.g., Kneeland et al., 2020; Manser et al., 2011). For example, Kneeland et al. (2020) found that people who hold more malleable views of emotions (as opposed to fixed mindsets) are more likely to employ cognitive reappraisal in response to upsetting events and, consequently, tend to experience reduced negative affect in response to such events

(Kneeland et al., 2020). The simple belief that emotions are holistically “bad” has also been associated with general dysregulation, and the belief that emotions are private or should be concealed is associated with less expression, reduced social support seeking, and even lower emotional intelligence (Veilleux et al., 2021).

Of particular importance when examining emotion beliefs and regulation is the understanding of their relationships with psychopathology. While dysregulation is often seen as a symptom *indicative* of clinical disorder, psychopathology brings with it a number of distinct cognitive distortions surrounding emotion, and thus—in the absence of treatment—may lead to a continued feedback loop of emotional difficulties, maladaptive cognition, poor regulation ability, and dysregulation (Faustino & Branco Vasco, 2020). Unstable beliefs about emotion have indeed been associated with increased psychopathology, and certain beliefs may be more “pathological” than others—for example, beliefs that emotions are more fixed than malleable and that one’s own emotional experience is unique tend to correlate with psychopathology (Veilleux et al., 2021). Whether beliefs precede pathology or vice versa, it is clear that psychopathology and its related factors are undoubtedly intertwined with emotion regulation. Understanding emotion regulation is therefore also crucial to the understanding of its relationship with psychopathology, and this understanding may provide useful insights toward the improvement of emotion regulation in clinical, subclinical, and non-clinical populations.

Affect Labeling

Among myriad strategies of emotion regulation, affect labeling is a particularly fascinating case; in contrast to other strategies such as reappraisal or suppression, affect labeling does not involve any attempts to alter or control one's emotional experience but has nonetheless been validated as an effective regulation strategy (Torre & Lieberman, 2018; Bai & Yue, 2013). Indeed, a number of studies have shown consistently that affect labeling can downregulate the experience of negative emotions. For example, a 2015 study (Constantinou et al.) examined the relationship between certain types of cues and symptom reporting in irritable bowel syndrome (IBS) patients and found that while unpleasant cues generally led to an increase in reported symptom severity, patients who were instructed to label the emotional content of the image cues reported fewer and less severe symptoms (Constantinou et al., 2015). A study using a similar paradigm in which participants either labeled or passively viewed affective stimuli (in the form of emotionally-evocative images) found that those who were engaged in labeling reported significantly less distress following image presentation (Burklund et al., 2014). Research investigating the autonomic consequences of affect labeling supports these findings, revealing that autonomic nervous activity can be reduced as a consequence of affect labeling (Bai & Yue, 2013).

The juxtaposition of these regulatory benefits and the lack of explicit regulatory *intent* has led to a widespread lay belief that affect labeling is not, in fact, an effective emotion regulation strategy (Torre, 2017). Nonetheless, psychological scholarship makes clear that affect labeling is indeed a beneficial strategy. For this reason, scholars argue

that affect labeling is a form of implicit emotion regulation; similar to the mechanisms associated with processes such as habituation and fear extinction, affect labeling can regulate the emotional experience in the absence of conscious efforts or intentions to do so (Torre & Lieberman, 2018). Unlike habituation and extinction, however, affect labeling does require a degree of conscious involvement in order to consider and assign a name to one's emotional experience. In some cases, affect labeling acts as a precursor to the deployment of another emotion regulation strategy—one might assign a label of “sad” to their emotional experience and choose to distract from the painful feeling, or alternatively notice “anger” and begin to reframe the situation from another person's perspective, effectively engaging in reappraisal. Affect labeling therefore represents an interesting junction between the conscious and unconscious aspects of emotional processing and emotional regulation.

As previously noted, emotion regulation involves the neural communication between the prefrontal cortex and the amygdala (Davidson, 2003). The benefits associated with affect labeling are therefore also a product of the pathways between these regions; more specifically, affect labeling appears to primarily involve greater activity in the ventrolateral, dorsolateral, and dorsomedial prefrontal cortices along with an associated decrease in activity in limbic regions such as the amygdala and subgenual anterior cingulate cortex (Lieberman et al., 2007). The regions activated during an affect labeling task—unsurprisingly—overlap with a number of other emotion regulation strategies, suggesting that emotion regulation generally maintains a similar neural profile despite experiential differences in the strategy employed. Scholars have speculated on the

mechanisms underlying the benefits of affect labeling based on these similarities. Distraction, reappraisal, and self-reflection, for example, all share features with the neural profile of affect labeling (Torre, 2017). Perhaps, then, affect labeling is effective because it distracts attention from the emotional trigger, or because it prompts engagement with more reflective practices which, in turn, lead to better understanding of and responses to emotions. The successes of affect labeling as an emotion regulation strategy have additionally been attributed to its ability to reduce uncertainty about emotions as well as its capacity to convert an emotional experience into a meaningful symbol through language use (Torre, 2017). Despite any neural and/or experiential similarity, however, none of these theories can account for the consequences of affect labeling independently. Instead, it remains likely that the capacity of affect labeling to regulate one's emotional experience is a complex conglomeration of the mechanisms previously identified, and this may still vary between individuals.

Emotional Invalidation

A distinct challenge to successful and adaptive emotion regulation is emotional invalidation—in other words, the feeling that one's emotions are invalid, unreasonable, irrational, or should be concealed (Elzy & Karver, 2018). Emotions may be invalidated by one's close family, friends, peers and other social connections, and even oneself. The experience of invalidation can take many forms, and some examples include being told how or what to feel, that one's emotions are excessive (e.g., "You're overreacting!"), or feeling that one's emotions have been overlooked or do not matter (Zielinski & Veilleux, 2018). One might imagine that hearing such a reaction to sharing one's feelings could

make it difficult to move past the emotional experience. This common-sense deduction has been empirically validated as well; studies have shown that invalidating feedback following emotional experiences or expressions leads to heightened physiological and emotional arousal compared with validation or neutral responses and thus exacerbates emotional responding (Greville-Harris et al., 2016; Herr et al., 2015).

Much literature examines this construct of invalidation within the context of childhood - namely, the consequences and correlates of experiencing chronic emotional invalidation from caregivers early in life. One study makes the case that trait emotion dysregulation is transmitted intergenerationally; based on self-report measures from parent-child dyads, researchers found that parents who experienced greater emotion dysregulation tended to be more invalidating of their children's emotions which, in turn, accurately predicted greater levels of emotion dysregulation among their children (Buckholdt et al., 2014). A number of research efforts have reproduced and expanded upon this finding that emotional invalidation is related with dysregulation down the line; for example, emotional invalidation during childhood has been supported as a risk factor for borderline personality disorder (BPD) and subclinical symptoms of psychopathology that relate to disorders including BPD as well as post-traumatic stress disorder (PTSD), anxiety, and depression (Sturrock & Meller, 2013; Hong & Lishner, 2016; Krause et al., 2003). In other words, experiencing chronic emotional invalidation may be related to a disruption in well-being almost—if not directly—comparable to a diagnosable disorder.

The relationship between emotional invalidation and BPD is particularly interesting in the context of affect labeling because of the structures of the brain that are

implicated in both the aforementioned disorder and the processes of emotion regulation. As previously mentioned, affect labeling primarily relies on pathways between distinct areas of the prefrontal cortex (i.e., the ventrolateral PFC) and the amygdala (Lieberman et al., 2007). Interestingly, a study that aimed to test theories of the relationship between childhood emotional invalidation and BPD found that participants with BPD showed significantly reduced activity along these pathways when compared to non-clinical participants (New et al., 2007). This suggests that invalidation of emotions in particular may be associated with certain upsets in the functions of these pathways and may have implications for emotion regulation later in life. In BPD, this neurological disruption may play a role in the emotional volatility associated with the condition (Selby et al., 2008). Highly volatile emotions require greater effort to regulate, and therefore may be less responsive to certain emotion regulation strategies than others (Daros & Williams, 2019).

Study 1

The literature reviewed above intersects to suggest that there may be some intriguing connections between emotional invalidation and emotion regulation in the particular form for affect labeling. The present study therefore aims to investigate how perceptions of emotional invalidation in one's current life are associated with the efficacy of affect labeling as an emotion regulation strategy. Previous work has found that affect labeling is an effective emotion regulation strategy while emotional invalidation diminishes the ability to regulate successfully and adaptively. I therefore expect to find main effects of affect labeling and emotional invalidation such that affect labeling will promote more emotion regulation while participants experiencing invalidation will be

less-able to regulate their emotions. Further, the present study seeks to extend previous work by additionally hypothesizing an interacting effect of affect labeling and emotional invalidation on emotional regulation. I believe that this interaction could manifest in one of two ways; first, affect labeling may be a strategy with enough success to overcome the detriments to emotion regulation that invalidation poses. While this would represent a null interaction, the widespread success of affect labeling as an emotion regulation strategy represented in previous literature would support such a conclusion. On the other hand, scant literature investigates the efficacy of affect labeling when other challenges to emotion regulation are present. It is therefore also possible that the presence of emotional invalidation in one's environment may undermine the efficacy of affect labeling as an emotion regulation strategy.

Method

Participants

One hundred and seventy-one participants consented to participate in the present study. Of the 171 who gave consent, 28 failed to complete the survey and were excluded from analysis. An additional four participants were excluded due to age (i.e., they were older than 26 years of age), and nine more were excluded due to incorrect responses to a manipulation check. This left 128 participants eligible for analysis.

Based on the population of interest (young adults), participants' age ranged from 18-25 years (Mean = 20.64, SD = 1.65). In terms of gender identity, 18.75% (n = 24) of the participants utilized in analysis identified as men, 70.31% (n = 90) as women, and 5.47% (n = 7) identified as non-binary. Additionally, 40.63% (n = 52) of participants

self-identified as cisgender, 3.13% (n = 4) identified as transgender, and the remaining 56.25% did not indicate either of these options. One participant utilized the “Other” option to input their own gender identity as “gender fluid, gender queer.” In terms of race/ethnicity, 83.59% (n = 107) racially identified as White, 2.34% (n = 3) as Black or African American, 12.5% (n = 16) as Asian, 3.91% (n = 5) Latinx, .78% (n = 1) identified as Native Hawaiian or other Pacific Islander, and 1.56% (n = 2) participants utilized the “other” option and indicated Arabic (n = 1) and Middle Eastern (n = 1) racial identities. Among all participants, 7.03% (n = 9) indicated more than one racial identity.

Measures

Demographics

Participants were given a brief demographic questionnaire (Appendix B) to collect the aforementioned data about age, race, and gender identity.

Emotional Invalidation

Participants’ experience of emotional invalidation was assessed using the 10-item Perceived Invalidation of Emotion Scale (PIES, $\alpha = 0.93$; Zielinski & Veilleux, 2018). Participants were asked to rate the extent to which each of 10 statements (e.g., “When I share my feelings, others don’t take me seriously.”) applied to them on a 5-point likert scale (1 = “Almost never,” 2 = “Sometimes,” 3 = “About half of the time,” 4 = “Most of the time,” 5 = “Almost always”).

Affect

Participants’ affective state at baseline and following mood induction was assessed using subsets of the Implicit Positive and Negative Affect Test (IPANAT, $\alpha =$

0.81; Quirin et al., 2009). This scale is designed to capture implicit affect by allowing participants to project their internal experience onto ambiguous stimuli (nonsense words). Implicit affect was measured (in place of explicit affect) in order to avoid the labeling nature of most explicit measures of affect. The original measure included six items, each of which consisted of one nonsense word (SUKOV, TALEP, BELNI, SAFME, VIKES, TUNBA) and six emotion words (happy, tense, cheerful, helpless, energetic, inhibited). These six items were split into two subsets of three items each—one was presented at the start of the experiment (BELNI, TALEP, TUNBA) and the other was presented following completion of the labeling tasks (SUKOV, SAFME, VIKES). Participants were asked to judge how well each of the six emotion words were represented by the provided nonsense word using a 5-point scale (1 = “Doesn’t fit at all,” 2 = “Fits somewhat,” 3 = “Fits fairly well,” 4 = “Fits very well”). This scale produces two subscale scores: implicit positive affect and implicit negative affect. Implicit positive affect is represented by endorsements given to positive emotion words, while implicit negative affect is captured on the endorsements given to negative words. In making their judgments, participants were instructed to rely on their “spontaneous feelings.”

To ensure that the three items presented at pre-test were not consistently rated differently from those presented at post-test, a second study was run concurrently presenting participants with the six test items in a random order (see Appendix A for a full write-up of this study). Results revealed that the pre-test items (TUNBA, BELNI, and TALEP) were rated significantly differently from post-test items (VIKES, SUKOV, and SAFME) when assessed at the group level (Positive affect: $t(44) = 4.06, p < .001$;

Negative affect: $t(44) = -3.23, p = .002$). Examination of marginal means identified two items that varied considerably from the remaining four items; BELNI was consistently rated as significantly more positive than any other item (all pairwise $p < .001$), and SUKOV was consistently rated as generally (but not always significantly) more negative (see Tables 6 & 7 (Appendix A) for all comparisons). The removal of these items from their respective groups equalized group ratings, thus no significant differences were found between the resulting two-item pre- and post-test measures of affect (Positive affect: $t(44) = .426$; Negative affect: $t(44) = -.589, p = .559$). Participants responded to all original items, but BELNI and SUKOV were excluded from analysis in the present study.

Negative Mood Induction

Participants were induced to experience a mild negative mood using a vignette created by Vine et al. (2018) specifically to elicit multiple and/or ambiguous emotions. While traditional emotion-induction vignettes often target discrete emotions, an emotional experience with more variety is conducive to a more naturalistic representation of emotions. Vine et al. therefore created a vignette (Appendix E) that has been shown to provoke emotional responses that range from sadness to jealousy and disappointment to anger (Vine et al., 2018). Participants were instructed to imagine the story as if it were really happening, and they were informed that they would be asked to recall information about the passage at a later time.

Labeling Tasks

Roughly half ($n = 57$; experimental) of the participants were instructed to complete an affect labeling task after reading the mood inducing vignette while the others

($n = 62$; control) completed a content labeling task. In both conditions, participants were prompted to reflect on the passage they had just read. Participants in the affect labeling condition were instructed to provide a list of any emotions they noticed or experienced in relation to what they had read (Vine et al., 2018). Participants in the control condition were instead asked to list anything they could remember about the contents of the vignette (Vlasenko et al., 2021). These tasks were created to encourage both groups to reflect on the passage itself and maintain the emotional experience of the vignette in their minds so that neither group would be disproportionately engaged with (or disengaged from) this experience. The key difference, therefore, remains to be whether or not the emotion regulation strategy of affect labeling was employed.

Manipulation Check

To ensure that the data reflect participants who truly engaged with the inductive vignette, a brief two-item manipulation check was included. Although the content labeling (control) group was asked to freely recall information from the passage as part of the prior survey sections, this check ensured that both groups were assessed for a basic understanding of the passage and that participants in either group who had not attended to the vignette were excluded from analysis. Both items were multiple choice and referred to fairly general aspects of the vignette narrative (see Appendix F).

Exclusion from analyses based on these measures was determined using a point-system algorithm; participants were awarded one point for each correct response in question one (struggling with work and school, argument with significant other) and would lose a point for each extra wrong answer included in their response. The correct

answer for question two (over an hour) was worth 2 points, and if participants answered 45 minutes for this question, they were awarded one point (each time increment in the vignette was 30 minutes, therefore recognizing that it was longer than that minimum was adequate, although incorrect). Participants who earned 3-4 points were automatically included while participants who earned 1 point or less were automatically excluded. If a participant received exactly 2 points, their responses to the labeling tasks were qualitatively evaluated to determine whether engagement was evident in these responses.

Positive Mood Induction

Because the present study involves an induction of negative mood, participants were given the option to undergo a positive mood induction at the close of the study. A clip (158 seconds) from the film *The Mighty Ducks* was used based on previous work that validated this clip as an effective tool for inducing positive mood (Gilman et al., 2017). Participants could either opt into viewing the clip or instead choose to move straight to the debriefing form. Participants were able to stop the viewing and move on at any point. Out of the 128 participants who were eligible for analyses, 45.3% (n = 58) chose to utilize the positive mood induction while the remaining 54.7% (n = 70) did not.

Procedure

This experiment was conducted entirely online using the survey platform Qualtrics. The survey was distributed as a link via email and social media platforms. Participants in this study therefore represent a convenience sample. The distributed link was completely anonymous and did not record any personal or identifying information from the participants or their devices.

Participants were first presented with a consent form describing the contents of the survey. Once informed consent was collected, participants were directed to complete a brief demographic questionnaire. Following this, participants completed the Perceived Invalidation of Emotion Scale (PIES) which was followed by a subset of the Implicit Positive and Negative Affect Test (IPANAT). These measures were intended to assess baseline levels of the perception of environmental emotional invalidation and implicit affect, respectively, and were therefore presented prior to the experimental manipulations and mood inductions alike. Following these preliminary measures, participants were then exposed to a negative mood induction in the form of a vignette. Before reading, participants were instructed to read carefully and notified that they would be expected to answer questions about the vignette later in the survey.

After undergoing the induction of negative mood, participants were randomly assigned to either an experimental or control condition. The control group was instructed to reflect on the passage and list anything they could remember about it (content labeling condition) while the experimental group was instructed to reflect on the passage and list any emotions that they experienced during reflection (affect labeling condition). In both conditions, participants were not permitted to advance to the next survey item until at least one minute had passed since they began the labeling activity.

Following the condition manipulation, participants completed another subset of the IPANAT intended to detect changes in implicit affect. Afterwards, participants were presented with two questions regarding the content of the vignette. Both questions were

multiple choice and participants' responses acted as evidence as to whether or not they had engaged with the vignette. This check was also used to determine exclusion of participants based on whether their answers reflected sufficient engagement. Finally, participants were given the option to undergo a positive mood induction using a film clip from *The Mighty Ducks*. This was presented as optional to provide participants with an opportunity to engage with a positive mood induction without requiring them to spend additional time engaged with the survey. After either viewing the clip or choosing to skip it, participants were presented with a debriefing form and thanked for their time.

Results

The present analysis was performed using IBM SPSS Statistics Software. Summary scores were computed for responses to the Perceived Invalidation of Emotion Scale (PIES) and Implicit Positive and Negative Affect Test (IPANAT). The individual responses to PIES items were aggregated to produce the average value across all 10 items (Mean = 1.89, SD = 0.82). Participants were then grouped into "high" vs. "low" perceived invalidation based on their score and its relationship with the sample median (Median = 1.6). Participants who scored 1.5 or lower were classified as "low invalidation," (n = 65) and participants who scored 1.7 or higher were classified as "high invalidation" (n = 54). Participants with scores in the middle range ($1.5 < x < 1.7$; n = 9) were excluded from analyses in order to maintain separation between groups. IPANAT scores were calculated at baseline (T0, 2 items) and after reading the vignette and completing labeling tasks (T1, 2 items). Additionally, the IPANAT produces two separate scores: one for positive affect (IPANAT-P) and the other for negative affect (IPANAT-N).

At each time-point, the average of all values assigned to positive emotion words represents the score for IPANAT-P (T0: Mean = 2.02, SD = .56; T1: Mean = 1.69, SD = .57), and the average of all values assigned to negative emotion words comprises the score for IPANAT-N (T0: Mean = 1.89, SD = .55; T1: Mean = 2.15, SD = .57). To assess change in implicit affect over time (and thus in response to the vignette and labeling tasks), a difference score for both implicit positive and negative affect was computed by subtracting IPANAT scores at T0, from IPANAT scores at T1 (IPANAT-P Difference: Mean = -.34, SD = .68; IPANAT-N Difference: Mean = .26, SD = .63).

These two measures were also subjected to reliability analyses. Cronbach's alpha for the PIES was .924, indicating excellent internal reliability. However, Cronbach's alpha for the IPANAT subscales was middling (IPANAT-P: $\alpha(T0) = .553$, $\alpha(T1) = .724$, ; IPANAT-N: $\alpha(T0) = .629$, $\alpha(T1) = .619$). To investigate whether these values were the result of a faulty item in the set, an analysis of the values of Cronbach's alpha if each item were removed was performed. Resulting values ranged from .461 to .712 (IPANAT-P) and .517 to .618 (IPANAT-N), indicating that the removal of any singular item would not be particularly beneficial to scale reliability.

Before any testing of hypotheses, it was first necessary to determine whether the random assignment of participants into conditions of affect and content labeling tasks resulted in groups with comparable perceptions of invalidation and implicit affect at baseline; it was also necessary to confirm that the negative mood induction vignette was successful in inducing negative mood. Initial investigations using a univariate analysis of variance (ANOVA) revealed no significant differences between affect and content

labeling groups in terms of their PIES scores ($F(1, 127) = .842, p = .361, \eta^2 = .007$) or baseline IPANAT scores (IPANAT-P: $F(1, 127) = 3.13, p = .079, \eta^2 = .024$; IPANAT-N; $F(1, 127) = 1.68, p = .197, \eta^2 = .013$). Additionally, a one-way ANOVA revealed that across all participants there was an overall significant decrease in IPANAT-P (Mean(T0) = 2.05, Mean(T1) = 1.69; $F(1, 127) = 35.56, p < .001, \eta^2 = .219$) and increase in IPANAT-N (Mean(T0) = 1.90, Mean(T1) = 2.15; $F(1, 127) = 20.26, p < .001, \eta^2 = .138$) scores from baseline (T0) to post-test (T1), indicating that the vignette presented was successful in inducing negative mood. An additional analysis was conducted to confirm equal engagement with the vignette and labeling task between conditions. An independent-samples t-test revealed that more time was spent on the labeling task by participants in the content labeling condition (Mean = 118.12 seconds, SD = 55.66) compared to participants in the affect labeling condition (Mean = 94.92, SD = 52.74; $t(126) = -2.41, p = .017$). This suggests that the content labeling task took longer to complete than the affect labeling task, perhaps also implying that participants in the content labeling condition experienced greater levels of engagement with the mood-inducing vignette compared with participants in the affect labeling condition.

To test the hypotheses that a) affect labeling would be beneficial to emotion regulation, b) emotional invalidation will hinder emotion regulation, and c) that these two factors will interact such that affect labeling will be differentially effective for emotion regulation in relation to the level of invalidation perceived in one's environment, a multivariate analysis of variance (MANOVA) was performed. The MANOVA tested the effects of labeling task condition, perceived invalidation, and the combination of these

factors on the changes in implicit positive and negative affect together as a combined dependent variable. No significant main effects of labeling task condition ($F(2, 114) = 2.02, p = .138, \eta^2 = .034$) nor perceived invalidation of emotion ($F(2, 114) = 1.43, p = .243, \eta^2 = .024$) were found. The interaction between these two variables also failed to reach significance ($F(2, 114) = .568, p = .568, \eta^2 = .010$).

A brief exploratory analysis was also conducted to determine whether there was any relationship between emotional invalidation and general affect. This could have been a potential confound if participants who experienced higher levels of invalidation displayed different levels of positive or negative implicit affect compared with participants reporting lower levels of invalidation. Univariate ANOVA revealed that the groupings created based on levels of reported invalidation were not significantly different from one another in terms of implicit positive ($F(1, 118) = .465, p = .465, \eta^2 = .004$) or implicit negative affect ($F(1, 118) = .719, p = .398, \eta^2 = .006$) at baseline. Bivariate correlation analyses were also conducted between PIES score and each measure of baseline implicit affect. These analyses revealed no significant correlation between perceived invalidation of emotion and implicit negative affect at baseline ($r = -.047, p = .612$). However, a weak but significant correlation between perceived invalidation of emotion and baseline implicit positive affect emerged ($r = -.182, p = .047$). This suggests that participants who experienced higher levels of perceived emotional invalidation may have experienced reduced implicit positive affect overall.

Discussion

The present study sought to examine the relationship between emotional invalidation and emotion regulation in the particular form of affect labeling. The current literature on emotion regulation has supported the hypothesis that affect labeling would facilitate emotion regulation while emotional invalidation would hinder it. Speculations based on previous research suggest that these two factors would interact in such a way that affect labeling may be less effective for people who experience high levels of emotional invalidation. The results presented above failed to support either of the hypothesized main effects of affect labeling and perceived invalidation on emotion regulation. These findings are inconsistent with previous work that has reliably shown the successes of affect labeling as an emotion regulation strategy as well as work that has underscored the detriment to emotion regulation posed by emotional invalidation (e.g., Torre & Lieberman, 2018; Bai & Yue, 2013; Greville-Harris et al., 2016; Herr et al., 2015). Further, these results fail to support the hypothesized interaction between affect labeling and emotional invalidation. While this may imply that there is no such interaction to be found, the contradiction between the aforementioned results and current supporting literature concerning main effects of affect labeling and invalidation suggests that there may instead be paradigmatic issues with the present study which obscure existing effects. Strengths and limitations of the present study are discussed subsequently, and their implications for future research will follow.

Strengths

A notable strength of the present work is the effectiveness of the vignette employed. Overall, participants showed a trend of decrease in implicit positive affect and an increase in implicit negative affect after having read the vignette—that is, it successfully induced negative mood. Additionally, random assignment successfully led to two condition groups which were not significantly different from one another in terms of perceived invalidation or baseline implicit affect. Finally, the Perceived Invalidation of Emotion Scale (PIES) maintained good reliability within this sample, suggesting that emotional invalidation was well-measured and operationalized within this study

Limitations

The investigation presented above is not without limitations. One of the measures employed in this study—namely, the Implicit Positive and Negative Affect Test (IPANAT)—did not display robust reliability within this sample. This may bear additional consequence for the findings reported if it is not an accurate or reliable measure of implicit affect. This middling reliability score may be due in part to the fact that the IPANAT was presented at two time points, and different items were used at baseline compared to post-test assessments to avoid the influence of previous responses on those subsequent. However, previous work has found the IPANAT to be reliable in various contexts and in many forms—one study found that a single item was sufficient to detect change in implicit affect over time, suggesting that the division of items should not impact the overall reliability of the measure (Quirin et al., 2009). While the other survey measure employed in this study (PIES) did show good reliability, it is worth noting that

participants overall experienced relatively low levels of invalidation, leading to a truncation of range in observed values. Future work may therefore benefit from a more variable sample in terms of invalidation so that the group divisions represent more meaningful differences in this construct. Also in regards to the construct of emotional invalidation, bivariate correlations revealed that the perception of emotional invalidation is moderately (but significantly) negatively correlated with implicit positive affect as measured by the IPANAT. While this is perhaps unsurprising given that emotional invalidation has been associated with emotional dysregulation and low mood (e.g., Sturrock & Meller, 2013; Hong & Lishner, 2016), it also implies that participants who were higher in perceived emotional invalidation may have experienced differing baseline levels of implicit affect. Subsequent studies examining the constructs of implicit affect and emotional invalidation may need to consider controlling for this relationship.

Additional limitations are present in the attempted manipulation of negative mood and subsequent emotion regulation strategy. Although proven to induce a negative mood, reading a vignette is not identical to the naturalistic experience of emotional response and regulation. The emotions brought to light and subsequently labeled therefore may not accurately represent a realistic emotional experience, and this could impact the observed effects or lack thereof. In the labeling conditions themselves, it should be noted that participants spent considerably greater time completing the content labeling (control) exercise than did those who completed the affect labeling (experimental) task. The control group may have consequently engaged with the passage more, and thus experienced different levels of emotional response than did those who were simply asked

to focus on their feelings, rather than relive the passage as a whole. It is also worth noting that participants in the content labeling condition did not necessarily complete the task without regard to their emotional states. Interestingly, throughout their recount of the short story, some participants indicated how imagining such events made them feel. The control condition therefore may have increased the strength of resulting negative emotion rather than remaining a neutral exercise as it was originally intended.

Future Directions

Based on the findings presented above, future work may benefit from subsequent investigations of these hypotheses with methodological alterations. Given the limitations associated with the Implicit Positive and Negative Affect Test (IPANAT), this paradigm may be replicated with an adjustment to this measure. While operationalizing emotion regulation in the context of affect labeling is difficult (given that most measures of affect involve some type of labeling), perhaps more abstract, global measures of affect would be able to capture the changes to emotional state which the IPANAT sought to measure. Another way around the confounds of affect labeling as a condition and an assessment tool would be to utilize a similar study design and operationalize emotion regulation using neurological or physiological correlates—a much more costly and time-consuming design, but one that might shed additional light on the relationships between emotional invalidation and emotion regulation.

Future endeavors may also look to flesh out the implications of emotional invalidation on affect labeling as they differ between positive and negative affect. Either or both of these factors may impact emotion regulation differently based on whether a

positively or negatively valenced emotional state is present. It would be additionally beneficial to examine other factors aside from invalidation that intersect with emotion regulation; for example, while invalidation represents a largely external factor (although one might argue that its *perception* is indeed internal), internal factors such as emotion mindsets or schemas may also impact our capacity to regulate emotions. Because emotion regulation can be conceptualized and employed in many different ways, future research may also investigate how invalidation (or other factors) impact other emotion regulation strategies as well as how such factors impact the selection and successful employment of these strategies. Alternatively, the present paradigm could be extended to investigate the mechanisms underlying emotion invalidation and/or emotion regulation by assessing certain state difficulties that arise in emotion regulation and whether those challenges are related to invalidation or some other identified factor (i.e., emotion mindsets). Finally, although no meaningful relationships were identified between emotional invalidation and the efficacy of affect labeling in particular, perhaps other strategies may be more prone to the effects of invalidation; or, perhaps invalidation is more relevant to the particular strategies which are often used as opposed to their general efficacy.

Study 2

Although Study 1 did not detect a relationship between affect labeling and emotional invalidation, much research still supports a connection between emotion regulation and the experience of emotional invalidation. Perhaps it is not the success of emotion regulation strategies that suffers from invalidation, but rather it is the perception

of emotion regulation strategies themselves that is affected. Emotion regulation strategy selection has been shown to differ based on the context of emotion regulation as well as our desired emotional experience, thus invalidation may be an important contextual factor that impacts the strategies appraised as useful (Livingstone & Isaacowitz, 2021; Greenaway, 2021; Tang & Huang, 2019). Further, emotion dysregulation has been conceptualized as “transmissible” intergenerationally as a product of invalidation such that dysregulated parents are more likely to invalidate their children’s emotions and, as a result of this chronic invalidation, their children are more likely to experience greater issues with emotion regulation later on in life (Buckholdt et al., 2014). Based on the influences of both contextual and socialization-related factors on the experience of emotion regulation, there is reason to believe that the perception of invalidation is also a factor in the selection of strategies to regulate emotions. The present study aims to clarify this relationship.

Invalidation first and foremost represents a social cue which signals to an emoter that their emotions are unwarranted or unappreciated, and this may impact the ways that an individual comes to understand emotions as a whole. If others reject our expressions of emotion, we may come to believe that emotions are inherently negative or inutile. I therefore expect invalidation from both family and friends to show a negative association with acceptance of emotion—that is, awareness without judgment. Following Greenaway’s (2021) model of emotion goals, I predict that invalidation will contribute to a social context in which one would desire to neither feel or be seen feeling their emotions (Greenaway, 2021). Therefore, I additionally expect to find a positive

association between emotional invalidation (from both family and friends) and suppression of emotional experience (i.e., efforts to avoid feeling one's emotions) and suppression of emotional expression (i.e., efforts to hide any indication of one's emotional state). Finally, I believe that the experience of invalidation will be associated with the extent to which social support is endorsed as an emotion regulation strategy; on one hand, the experience of invalidation may lead one to believe that talking with others about their feelings won't help or will make the feeling worse. However, it is also possible that the experience of invalidation will have prompted the selection of "safe people" to discuss emotions with, and this safe space may be a powerful source of emotion regulation for otherwise-invalidated individuals.

It is also worth noting that the source of invalidation (family vs. friends) may impact the relationship between invalidation and the strategy of social support. I suspect that invalidation from friends may be more negatively associated with social support as a regulation strategy compared with familial invalidation of emotions, but I concede that the opposite is equally plausible. In the present sample of young adults, I expect to find that friendships and peer relationships are more strongly associated with distinct emotion regulation strategies compared to family relationships because young adulthood is often a time of greater independence from the family. However, given the extensive literature examining the consequences of invalidation in the family environment, it is equally plausible that invalidation from family members will show equal or greater association with regulation strategies.

Method

Participants

Participants were recruited for the present study using convenience sampling by sharing the anonymous survey link via social media, text, and email platforms. One hundred and eighty-four participants consented to participate in the present study, but 44 were excluded due to failure to complete the full survey. An additional 22 were excluded due to age (i.e., they were outside of the prespecified population of interest). This left 118 participants eligible for analysis.

Based on the population of interest (young adults), participants' ages ranged from 18-28 years (Mean = 20.99, SD = 2.06). In terms of gender identity, 22.03% (n = 26) of the subjects utilized in analysis identified as men, 74.75% (n = 88) as women, and 4.24% (n = 5) identified as non-binary. Additionally, 18.64% (n = 22) of participants self-identified as cisgender, 1.69% (n = 2) identified as transgender, and the remaining 79.67% did not indicate either of these options. One participant (.85%) indicated that they would prefer not to indicate a gender identity. In terms of race/ethnicity, 72.88% (n = 86) racially identified as White, 6.78% (n = 8) as Black or African American, 16.10% (n = 19) as Asian, and 8.47% (n = 10) identified as Latinx. Among all participants, 5.08% (n = 6) indicated more than one racial identity.

Materials

Demographics

Participants were given a brief demographic questionnaire to collect the aforementioned data about age, race, and gender identity.

Emotional Invalidation

Participants' experience of emotional invalidation was assessed using two versions (Appendix G) of the 10-item Perceived Invalidation of Emotion Scale (PIES, $\alpha = 0.93$; Zielinski & Veilleux, 2018). While the original scale prompted participants to reflect generally about their interactions with "others" around them, the two altered versions asked participants to reflect specifically on their experiences with a) family members and b) friends. Participants were asked to rate the extent to which each of 10 statements had applied to them over the past month on a 5-point likert scale (1 = "Almost never," 2 = "Sometimes," 3 = "About half of the time," 4 = "Most of the time," 5 = "Almost always").

Emotion Regulation Strategy Selection

Emotion regulation strategy selection was measured using the English version of the Heidelberg Form for Emotion Regulation Strategies (HFERST; subscale α 's = .78 - .86; test-retest correlations for subscales = .64 - .84) to assess the extent to which participants would endorse or utilize various emotion regulation strategies (Izadpanah et al., 2019). Participants were asked to rate the extent to which each of 28 statements had applied to them over the past month using a 5-point likert scale (1 = "Never," 2 = "Occasionally," 3 = "About half of the time," 4 = "Usually," 5 = "Always"). This scale produces ratings for each of eight subscales, each representing particular emotion regulation strategies; rumination (4 items), reappraisal (4 items), acceptance (3 items), problem-solving (4 items), suppression of emotional expression (4 items), suppression of

emotional experience (4 items) avoidance (3 items), and social support (2 items). The full scale is provided in Appendix H.

Free-Response Questions

As a qualitative measure of emotional response and regulation to invalidation, participants were also asked to respond to a set of four free-response questions in regards to a recalled experience in which they had tried to share their feelings with someone and they felt that they had not been taken seriously. Participants were instructed to think of such an event and respond to four questions about their relationship to the person with whom they wanted to share their feelings, the feelings they were trying to share, their immediate reactions to feeling invalidated, and what they chose to do about it (see Appendix I). The present analysis focused mainly on the responses to the first question: the source of invalidation in the recalled scenario.

Procedure

The present study used a correlational design to investigate the relationships between perceived levels of invalidation from two different sources (friends vs. family) and the endorsement of various emotion regulation strategies. This study was performed completely online using Qualtrics. Participants were first presented with a consent form, and once consent was obtained, they were presented with either the Heidelberg Form for Emotion Regulation Strategies (HFERST) or one version of the Perceived Invalidation of Emotion Scale (PIES). The order of these scales was randomized in order to control for any order effects. Both versions of the PIES were presented together (one following the other), but the order of the scale type (friends vs. family) was also randomized.

Participants were then prompted to think about an interaction they had with someone in which the other person didn't take their feelings seriously, and to answer a set of four free-response questions with regard to this interaction. Finally, participants were presented with a debriefing form and thanked for their time.

Results

Items from each version of the Perceived Invalidation of Emotion Scale (PIES) were averaged to produce scores for invalidation from family ($M = 2.08$, $SD = 1.00$) and friends (1.45 , $SD = .591$), respectively. Additionally, a measure of general invalidation was created by averaging scores from the aforementioned variations of the PIES ($M = 1.76$, $SD = .688$). To generate scores of endorsement for emotion regulation strategies, ratings given to the Heidelberg Form for Emotion Regulation Strategies (HFERST) were averaged within each of the eight subscales. Across participants, the strategy of problem-solving was the highest-endorsed ($M = 3.73$, $SD = .804$; all p 's $< .001$) and the strategy of experiential suppression received the lowest endorsement ($M = 2.63$, $SD = .818$; all p 's $< .014$). All means and standard deviations for each scale are reported in Table 1.

I expected to find positive associations between invalidation (generally as well as from family and friends in particular) and emotion regulation strategies that suppress both emotional experience and expression, as well as a negative association between invalidation and the emotion regulation strategy of acceptance of emotions. I also expected to find a relationship between invalidation and social support such that invalidation from friends would be more negatively associated with social support as an

emotion regulation strategy compared with invalidation from family members. To test these hypotheses, bivariate correlations were performed between all invalidation measures (overall, family, and friends) and each emotion regulation strategy subscale. All Pearson correlations and p -values are reported in Tables 2-4. Small but significant negative correlations emerged between overall invalidation and the strategies of problem-solving ($r = -.193, p = .037$) and social support ($r = -.208, p = .025$). Small but significant positive correlations emerged between overall invalidation and strategies of suppression of emotional experience ($r = .250, p = .006$) and expression ($r = .212, p = .021$). While the relationship between invalidation and acceptance of emotions did not reach significance, the correlation was in the expected direction ($r = -.153, p = .099$).

These bivariate correlations additionally revealed differential relationships between invalidation and emotion regulation strategy endorsement based on the source of invalidation (family vs. friends). While invalidation from family members was positively associated with rumination ($r = .248, p = .007$) and suppression of emotional experience ($r = .223, p = .016$) and negatively associated with social support ($r = -.198, p = .033$), invalidation from friends was positively associated with both suppressive strategies (experiential: $r = .237, p = .011$; expressive: $r = .186, p = .045$) and negatively associated with problem-solving ($r = -.284, p = .002$). The correlation between familial invalidation and the strategy of rumination was identified as significantly different from the (non-significant) correlation between invalidation from friends and rumination using Fisher's r -to- z transformation ($z = 2.24, p = .025$). The positive correlations between both sources of invalidation and suppression of emotional experience were not significantly

different from one another ($z = -.11, p = .912$), and the significant positive correlation between invalidation from friends and suppression of emotional expression was not significantly different from the (non-significant) positive correlation between this strategy and familial invalidation ($z = -.08, p = .936$). Further, the significant negative correlation between familial invalidation and social support was not significantly different from the (non-significant) negative correlation between invalidation from friends and social support ($z = -.28, p = .780$).

Exploratory analyses

Exploratory analyses were conducted to examine how endorsement of each emotion regulation strategy related to the endorsement of other emotion regulation strategies. All correlation coefficients are reported in Table 5. All strategies displayed significant associations with at least one other strategy, but rumination emerged as the least-associated strategy among all eight, being associated only with two other strategies (positively with avoidance and negatively with problem-solving). This suggests that emotion regulation is a complex process. While these subscales certainly capture discrete experiences of emotion regulation and particular strategy features, there may also be meaningful relationships between them which impact the overall experience of individual emotion regulation.

Additional analyses were performed on the free-response portion of the present study; namely, responses to the first question asking participants to identify their relationship with the individual in their recalled anecdote of invalidation were assessed to determine whether any patterns emerged in the types of relationships most likely to

involve memorable instances of invalidation. Of the 118 participants included in these analyses, 91 provided an answer to this question. Of these 91 responses, 40.66% (n = 37) provided anecdotes of being invalidated by a parent, 30.77% (n = 28) recalled an invalidating experience with a friend, 14.29% (n = 13) described being invalidated by a romantic partner, 8.79% (N = 8) reported having been invalidated by a sibling, 3.30% (n = 3) identified the source of invalidation in their recollection as a coworker, and 2.20% (n = 2) mentioned being invalidated by a “family member” not captured by parents or siblings (“grandparent;” n = 1) or not otherwise specified (n = 1).

Discussion

The present study sought to determine whether a meaningful relationship exists between the experience of emotional invalidation and the endorsement of particular emotion regulation strategies as well as to examine the nature of this relationship, should it emerge. First and foremost, the results presented above provide support for the existence of meaningful relationships between invalidation and emotion regulation, as evidenced by the significant correlations. Additionally, given that differential associations emerged for particular sources of invalidation (family vs. friends), these results also establish support for the importance of the source of invalidation in examining its relationships with emotion regulation. The interpretations and implications of the results presented above will be discussed below, followed by a summary of the strengths and limitations of the present study, and finally a presentation of potential avenues for future research will be provided.

Strategies associated with general invalidation

I expected to find that invalidation was associated with higher endorsement of suppressive strategies and lower endorsement of acceptance of emotions and social support strategies. General invalidation (a composite score representing invalidation from both family and friends) was associated with greater endorsement of suppressive emotion regulation strategies (suppression of emotional experience and expression) and lower endorsement of problem-solving and social support strategies. No significant relationship was found between emotional acceptance and invalidation. This may be due to the fact that no such relationship exists, or due to issues of measurement; while I expected to find this association based on previous work that has found negative associations between emotional invalidation and facets of mindfulness such as non-judgement and non-reaction toward emotion (which approximate some form of acceptance of emotions), the items that measure acceptance on the HFERST do not refer to emotions specifically, but rather one's ability to accept or tolerate the situation at hand (Warner et al., 2020). Perhaps a scale which more directly measures the degree to which one is accepting of their emotional states and experiences may better elucidate this proposed association.

Suppressive strategies

In line with the research on emotion regulation which suggests that contextual factors (such as type of social setting or evaluated appropriateness of emotional display) and emotion goals (e.g., desire to experience and/or express one's emotions) shape the employment of emotion regulation strategies, the positive association between invalidation and endorsement of suppressive strategies suggest that emotional

invalidation represents a particular social context in which individuals wish to neither express nor experience emotion; if an individual has been invalidated by others in the past, they may choose to keep their emotional state more private and thus resist expressing or even experiencing emotion for fear of repeated invalidating experiences. Alternatively, because causation cannot be assumed in a correlational study, it is also possible that individuals who prefer to suppress their emotional experience and expression are more likely to perceive invalidation from others; for example, revealing verbally that one is feeling sad while also suppressing the expressive features of sadness (such as frowning or crying) may lead others to perceive that this individual is only feeling small degrees of sadness, and their responses to the sad individual may reflect this perception. The person who admitted their sadness may, in turn, feel as though the individual with whom they have shared their experience didn't take them seriously enough, and thus invalidation may be experienced as a consequence—rather than a prerequisite—of this emotion regulation strategy choice.

Social support

Similarly, the lower endorsement of social support associated with higher levels of invalidation may emerge either as a result of invalidating environments or as a contributor to the perception of invalidation in one's environment. On one hand, perhaps experiences with invalidation over time may make an individual reluctant to confide in another to deal with their feelings, instead preferring to keep their emotions private and process them alone. On the other hand, perhaps reluctance to seek social support perpetuates the perception that others have or will invalidate one's emotions. Theories of

anxiety lend well to this interpretation, suggesting that avoiding anxiety-provoking situations maintains anxiety symptoms because such habitual avoidance prevents the falsification of anxiety-based beliefs (e.g., Kimble et al., 2014; Barzeva et al., 2019). For example, one who is preoccupied with worries that others will judge them harshly in social situations may avoid such contexts altogether, therefore missing the opportunity to experience a positive social interaction that could alter these preconceived notions. Perhaps, then, individuals who aren't eager to seek social support as a means to process their emotions prevent themselves from redefining their expectations surrounding the interaction. Reluctance to seek social support and perception of invalidation from others may arise independently within an individual, but they may also serve to reinforce one another such that a lack of social support-seeking reinforces not only these avoidant behaviors, but also the perceptions that others will not take one's emotions seriously.

Problem-solving

The negative association between the experience of emotional invalidation and endorsement of problem-solving as an emotion regulation strategy was not predicted, but nevertheless provides important insight into the relationships between invalidation and emotion regulation. Once again, given the correlational nature of the present study, causality cannot be assumed from this association. It may be the case that the experience of invalidation leads to what has been called the "deconstructed state:" a defensive state of cognitive deconstruction that avoids meaningful thought, emotion, and self-awareness, is characterized by lethargy and altered time flow, and arises as a result of social exclusion (Twenge et al., 2003; Twenge & Baumeister, 2005). Invalidation may be

conceptualized as a particular form of social exclusion which can lead to this deconstructed state when experienced—or perhaps even simply anticipated—and, consequently, higher-order cognitive processes that are necessary for rational exercises in decision-making are hindered. Alternatively, lower endorsement of problem-solving strategies of emotion regulation may instead reflect a general desire to rely on one's intuition in place of rational or scientific-minded thought. The negative association between emotional invalidation and the endorsement of problem-solving as an emotion regulation strategy may owe to a similar pattern of thought and behavior to that of anxiety, as discussed above; if one is not motivated or able to consider alternative outcomes or explanations for the reactions of their confidant, they may consequently be unable to falsify a pre-existing expectation that they will be invalidated. This, in turn, may lead to greater perceptions of invalidation in one's environment.

Strategies associated with familial invalidation

I expected that the predicted associations between invalidation (generally speaking) and suppressive strategies as well as acceptance would be consistent across sources of invalidation. While the association between invalidation and acceptance was neither supported by an analysis of invalidation as a whole nor an analysis of invalidation particularly from the family, a significant positive association emerged between familial invalidation and the strategy of suppression of emotional experience. The association between familial invalidation and suppression of emotional expression, though in the expected direction, failed to reach significance. This association may emerge as significant with a higher-powered study, though it is additionally possible that the

observed approach to significance is spurious in the current analysis. Future work may seek to disambiguate this finding with a larger sample or a more targeted design.

I additionally predicted that social support would exhibit a negative relationship with invalidation as a whole, and that this relationship may differ based on the source of invalidation. In particular, I expected to find that social support would be more negatively associated with invalidation from friends than from family. However, a significant negative association emerged between familial invalidation and the endorsement of social support as an emotion regulation strategy; importantly, the significance of this relationship was not maintained in an analysis of invalidation from friends. Interestingly, the relationship between invalidation from friends and reduced endorsement of social support was not found to be significantly different from the relationship between this strategy and perceptions of familial invalidation. The latter relationship reached significance while the former did not—though the association was in the expected direction. While this may suggest that the relationships do not differ in any meaningful way, it may also suggest that familial relationships are more impactful to emotion socialization compared to friendships. Studies have indeed shown that familial invalidation poses a major risk factor for emotion dysregulation, and therefore it is possible that enduring invalidation from family members may lead individuals to avoid seeking support from others, more so than invalidation from friends (Buckholdt et al., 2014). Future work might test this supposition directly.

In line with models of familial emotion socialization, the present study also revealed a significant positive relationship between familial invalidation and the

endorsement of the emotion regulation strategy of rumination. This association was also found to be significantly distinct from the nonsignificant correlations found between rumination and both general and friendship-related invalidation. Despite not having been predicted, this finding lends itself well to the literature discussing the impacts of familial invalidation, which has been identified as a prominent risk factor for emotional dysregulation as well as diagnoses of pathology such as borderline personality disorder (BPD) and depression. While the correlational design of the present study prevents any assumptions of causality based on its results, past work has suggested that familial invalidation contributes to the development of pathology through its influence on emotion regulation strategy use such that greater invalidation is associated with greater use of maladaptive regulation strategies, and this in turn contributes to symptomology later in life (Yap et al., 2008). The association between familial invalidation and endorsement of rumination is consistent with such findings, and suggests that emotional invalidation may contribute to dysregulation through an influence on emotion regulation strategy endorsement and use.

Strategies associated with invalidation from friends

In accordance with the previously-discussed findings, the relationships between general invalidation and suppressive strategies were expected to be maintained in an analysis of invalidation from friends in particular; this hypothesis was supported. Also consistent with the findings presented above, no significant relationship was found between the strategy of acceptance and invalidation from friends. The associations found between invalidation from friends and both suppressive strategies provides further

support for a relationship between emotional invalidation and the desire to suppress one's emotional experience and its expression, though future work is necessary to determine whether emotional invalidation is the *cause* of suppression.

Although not explicitly predicted, invalidation from friends was found to exhibit a significant negative association with endorsement of the strategy of problem-solving, consistent with the findings brought forth by the analysis of general invalidation presented above. Interestingly, this association was not significant in the analysis of invalidation specifically from family members, nor was significance even marginally approached. These two associations were, surprisingly, not significantly different from one another, despite differences not only in significance, but also strength. These results provide ambiguous evidence which future research may attempt to clarify. On one hand, the lack of significance in the difference between each source of invalidation investigated may suggest that invalidation from any source is related to a lower endorsement of problem-solving as an emotion regulation strategy. On the other hand, there may be something meaningful in the fact that this association only emerged as significant when considering invalidation from friends. This latter supposition would provide support for the notion that the perception of invalidation may act as a form of social rejection and thus contribute to the "deconstructed state" in which problem-solving and other higher-order cognitive processes are less likely to occur. Invalidation as social rejection may be more salient among friends and peers than family, especially in a sample of young adults who may hold varying relationships to their families of origin but may rely heavily on peer support during this stage of life (De France & Hollenstein, 2021). Future

research utilizing a larger sample or more direct measures of these constructs is warranted to further elucidate the nature of the relationship between invalidation, its sources, and the emotion regulation strategy of problem-solving.

Exploration of strategy-strategy relationships

An exploratory analysis of the correlations among strategy endorsement on the Heidelberg Form for Emotion Regulation Strategies found a number of significant associations in both positive and negative directions. For example, endorsement of the strategy of social support was negatively associated with endorsement of suppressive strategies, while endorsement of the strategy of rumination was positively associated with endorsement of the strategy of avoidance. Additionally, some strategies—such as reappraisal and rumination—were associated with most other strategies, while others were only significantly correlated with one or two other strategies. Given the multiplicity of these associations, a clear conclusion is difficult to draw. What these relationships may suggest, though, is that emotion regulation is a complex process, and that each strategy may not represent a distinct domain of experience. Rather, individuals likely utilize a range of strategies both across contexts and within an isolated situation. Indeed, past research has supported the notion that it is not only common, but beneficial for one to be able to flexibly and variably employ emotion regulation strategies throughout day-to-day life (Livingstone & Isaacowitz, 2021). The observations generated from the present study extend this notion such that they identify the need to investigate whether there may be meaningful patterns which underlie the combination of strategies most likely to be

endorsed and utilized by a given individual. This may be a valuable avenue for future work to embark upon.

Exploration of free-response data

This study included free-response items at the end of the survey in hopes of collecting additional experiential information from participants to elucidate the impacts of invalidating feedback on emotional responding and social relationships. These questions asked participants to describe an instance in which they were invalidated after having shared an emotion with someone else, including the nature of their relationship with the other person, what they had shared, how the reaction of the other person made them feel, and what they had done in response. An examination of the responses revealed that a large proportion of respondents recalled invalidating experiences with family members and friends, while others provided anecdotes about relationships such as coworkers or romantic partners. The largest proportion of responses discussed experiences of invalidation from parents in particular, and the next-largest proportion of responses represented invalidating experiences with friends. While much research has investigated the impacts of familial invalidation, fewer studies look particularly at friendships or peer relationships. These anecdotes suggest that, while family members' invalidation is indeed salient, so too is invalidation from friends. This finding supports the intention of the present study to investigate particular sources of invalidation, rather than only invalidation from family members or invalidation broadly-defined. Additionally, given the emergence of additional sources of invalidation among the

responses from this sample, future work may also benefit from considering invalidation from other sources—for example, invalidation in the workplace.

Although no scientific analyses were conducted on the narrative accounts of invalidation collected in the present study, impressionistic examinations of these responses provided notable insights. Most prominently, the vast majority of participants indicated that they had been trying to share a negatively-valenced emotion or experience, and the magnitude of such emotions ranged from sadness and disappointment to anger and frustration and further still to suicidality and self-harm. This suggests that some of the most salient experiences of invalidation occur when one is trying to seek support for a negative experience, though it is additionally worth noting that some participants also described situations in which they felt invalidated because another person hadn't shared in their happiness over good news or pride in their accomplishments. Future work may therefore investigate whether there are distinct consequences to invalidation with regard to whether the invalidated emotion (or experience) was positive or negative in nature.

Additionally noteworthy is the discussion of social consequences of invalidation as revealed in these responses. While some participants described having stood up against the invalidating feedback, many were faced with the urge to disengage with the other person. Some of this disengagement was more mild in nature (e.g., simply changing the subject of conversation), while in other cases participants reported physically removing themselves from the presence of the other person. Others mentioned that their relationship to this person suffered consequences and, in some cases, was dissolved. Around a third of participants (35) recalled choosing to hide their feelings or refrain from

processing or expressing them until they found solitude, perhaps supporting the notion that invalidation may be associated with greater desire to suppress emotional expression and experience. Interestingly, although the correlational analyses between invalidation measures and those measuring the endorsement of emotion regulation strategies found that increased perceptions of invalidation are associated with decreased endorsement of social support as a regulation strategy, a number of participants mentioned that one of their responses to being invalidated by one person was seeking others to talk with about the experience. This suggests that the relationship between invalidation and the regulation strategy of social support may be more complex than that which is represented in the present study. Perhaps this relationship is impacted by individual-level characteristics such as the presence of other supportive, non-invalidating relationships, or the nature of the emotion or situation for which support may (or may not) be sought.

Strengths

The present study aimed to determine whether meaningful relationships exist between the perception of emotional invalidation and the endorsement (or lack thereof) of various emotion regulation strategies, as well as to investigate whether these relationships differed based on the source of invalidation. The results presented and discussed above provide evidence in support of the existence of such relationships, and suggest that there is merit in isolating and comparing particular sources of invalidation when examining their relationship to emotion regulation. The present study also introduces an investigation of how invalidation is related to a multitude of emotion regulation strategies; while some past work has investigated the relationship between invalidation

and emotion dysregulation (e.g., Buckholdt et al., 2014) or the relationships between invalidation and a few particular emotion regulation strategies (e.g., Brandão et al., 2022), the results of this endeavor extend these previous findings by identifying additional strategies which exhibit relationships with emotional invalidation. This study is therefore not only in support of previous findings—for example, that invalidation in the family environment contributes to ruminative tendencies—but also supplements this literature with the emergence of strategies such as problem-solving and social support that are also meaningfully related to the perception of invalidation.

Additionally, the present study included free-response questions in order to collect the kind of qualitative data that is unobtainable using scale-response measurement items. These data provide anecdotal evidence of the consequences of receiving invalidating feedback in real-life settings, and allow for more nuanced representations of the individual experience of being invalidated. These responses underscored the importance of familial and friendship relationships in emotional experience, as well as identify interesting future avenues for the investigation of other sources of invalidation that may also be impactful in emotion regulation (i.e., romantic partners or coworkers). Further, the responses generated from these items make clear that invalidation poses a major strain to social relationships, and may contribute to their eventual dissolution. Importantly, the variety observed among these responses highlights the ways in which the contexts and outcomes associated with invalidating feedback differ amongst individuals. This serves as a valuable reminder that, while some experiences surrounding invalidation may be common, others are more particular to one's circumstance. Also notably, although

many participants provided anecdotes about having felt invalidated after sharing a negative emotion, others recalled an instance in which their experience of invalidation stemmed from a lackluster—or, in some cases, explicitly negative—reaction to a positive emotion or experience. Though much literature focuses on the consequences of invalidation in the context of negative emotions, these observations identify the need for investigations of how this experience may compare to invalidation involving more positive emotions such as pride or happiness.

Limitations

Alongside the strengths discussed above, the present study is also limited in some respects. First, the use of recollection-based survey items prevents the investigation of more real-time experiences with emotional invalidation and emotion regulation. Rather than investigating how an individual goes about regulating their emotions in the face of invalidation, the correlational design of the present study explores how rated perceptions of invalidation relate to rated endorsements of various emotion regulation strategies. Notably, participants' *actual* use of emotion strategies could not be measured using this design, but instead their reflection on the extent to which they *believe* they utilize certain strategies must stand in its place. Relying on participants' ability to accurately recall and represent their experiences with invalidation and emotion regulation may not allow for a full insight into the relationships between these constructs, and thus additional work is needed to understand the nature of these relationships more clearly.

Additionally, not all participants provided responses to the qualitative measures at the end of the survey. This may have led to bias in the types of experiences that are (and

are not) part of the present analysis. It is also worth noting that participants' ratings of the extent to which they experienced invalidation within their relationships with family members and friends was relatively low. While some participants did indeed indicate experiencing high levels of invalidation, the majority of the sample did not. This prevents the drawing of conclusions about more extreme and chronic experiences of emotional invalidation. Perhaps, with more variability in the levels of invalidation experienced by participants, clearer relationships between this invalidation and emotion regulation processes may emerge. Future work may therefore benefit from the examination of invalidation in populations which may experience higher levels of invalidation, such as clinical samples.

Furthermore, while the data collected from the free-response portion of the survey suggest that a wide range of relationships may involve invalidation, the present study only investigated the invalidation participants perceived from the particular sources of friends and family. Although these relationships proved important in understanding the connections between invalidation and emotion regulation, additional insight could be gathered through a more thorough investigation of a broader range of relationships within which invalidation may occur. Romantic partners, for example, made up 15% of the reported instances of invalidation collected through the free-response questions. These relationships are undoubtedly important in the lives of young adults, but at this life-stage they may not fit into either categories of friends or family. The relationship between invalidation from this source and emotion regulation is therefore not accounted for in the present study, but this particular invalidation from romantic partners would likely prove

relevant in understanding both the broad and specific correlates of emotional invalidation and emotion regulation.

Not only may the present study exclude important relationships such as romantic partners from the understanding of the associations between perceptions of invalidation and emotion regulation strategy endorsement, but there may also be some ambiguity in whom participants were considering when reflecting on their experiences of invalidation from “family members.” The instructions for the version of the Perceived Invalidation of Emotions Scale (PIES) modified for family members asked participants to consider “their family of origin, the people who cared for them in childhood.” This was intended to disambiguate between the family of childhood and one which an individual may have created for themselves, such as their romantic partner and/or any children they may have, as well as to avoid the specificity of simply asking about “parents” when a number of family figures may also act as one’s primary caregiver or hold an important role within an individual’s childhood. However, participants may have reflected on interactions with a number of family members, rather than just the immediate family. Additionally, although parents emerged as a popular source of invalidation among the free-response data, some participants also recalled interactions with their siblings that were perceived as invalidating. While the adaptation of the PIES to specifically investigate particular sources of invalidation (family and friends) was meant to narrow the scope of such reflections on invalidation, perhaps “family” itself is still too broad a category. Future work may therefore benefit from investigations of or comparisons between invalidation

from parents or caregivers as opposed to invalidation from siblings, cousins, or peer-aged relatives.

Future directions

The results of the present study lay the groundwork for a number of subsequent avenues of inquiry. First, because the present study was correlational in design, the current findings may be better understood through more direct experimental manipulations. While these results indicate that the perception of invalidation is associated with greater endorsement of suppressive strategies, for example, it is unknown whether either causes the other, or whether they are related through a third variable. Future work might manipulate invalidation directly, perhaps as controlled “feedback” given to participants, and investigate whether this type of feedback predicts how participants engage in subsequent emotion regulation compared to validating or neutral feedback. It may also be worthwhile to examine whether other factors moderate the presently-observed associations; for instance, might invalidation also relate to one’s perceptions of social exclusion and thus impact the endorsement of strategies like problem-solving or social support? Or, does one’s tendency to “deconstruct” following invalidating feedback relate to the degree to which such strategies are (or are not) endorsed? Further, a more direct examination of the *actual* strategies that individuals employ to regulate their emotions in the face of invalidation could be useful in more fully understanding the impacts of invalidation on emotion regulation. Rather than simply asking participants to reflect on the ways in which they engage with their emotional

experience, future work would benefit from observing the ways in which these emotions are regulated in real-time.

It would also be worthwhile to further investigate the hypothesis that invalidation is associated with a reduced acceptance of one's emotional experience. Past research on emotion regulation suggests that the ways in which we view our own emotions impacts how we choose to respond to them (Deperrois & Combalbert, 2021). Further, invalidation itself has been shown to relate to how one's emotions are treated and understood within the self (Edwards & Rupperman, 2019). Such findings as these make the case that invalidation may hinder one's ability to accept their emotional state, and perhaps therefore contribute to difficulties in employing constructive strategies to manage them. In the case of the present study, the lack of support for this hypothesis may owe to issues of measurement within the Heidelberg Form for Emotion Regulation Strategies (HFERST). The three items which comprise the "acceptance" scale make no explicit mention of one's emotional state; instead, participants are asked the extent to which they are able to "accept the situation as it is when it cannot be changed," "accept things as they are," and "tolerate uncomfortable situations." The first two items appear to assess the propensity of an individual to accept their circumstances in general, while the final item seems more akin to a measure of distress tolerance. A scale which more directly interrogates respondents' ability to accept their emotional state may be better able to detect a relationship between invalidation and the emotion regulation strategy of acceptance, should such a proposed relationship truly exist.

Additionally, given the number of significant relationships which emerged among endorsement of various emotion regulation strategies, a more thorough, intentional investigation of these relationships is warranted. Perhaps individuals may exhibit discrete profiles of emotion regulation, such that they are likely to endorse and employ certain strategies more than others. Or, it may be the case that certain strategies are meaningfully related to one another while others operate more independently or variably. Further still, it would be interesting to investigate whether particular strategies which exhibit relationships with one another are related on a neural or physiological level. While many strategies of emotion regulation utilize overlapping brain regions, perhaps there are distinct circuits which differentiate some strategies from others. If this is the case, the relationships between strategy endorsement may reflect brain pathways that are more habitually or instinctively utilized when regulating emotional experiences.

In light of the responses to the qualitative measurement items, a more thorough investigation of the converging and differential relationships between particular sources of invalidation and emotion regulation is warranted. Participants who responded to these items described instances of invalidation from a wide variety of sources, and it is likely that the variation in the source of invalidating feedback has consequences for the nature of the relationship between such invalidation and consequent emotion regulation. For instance, invalidation from closer relationships such as family members, romantic partners, and close friends may be more impactful to an individual's emotion regulation capacity when compared to potentially less salient relationships like coworkers or more distant friendships. However, given that chronic invalidation in particular has been

identified as a major risk factor for emotion dysregulation, it may be that the source is less important than the degree to which invalidation is present within a given relationship. A single instance of invalidation from one's parent, for example, is likely to be less detrimental than the ongoing experience of invalidation in the workplace. Such questions as these may provide interesting and nuanced insights into the broad experience of invalidation.

The free-response items also revealed that, while invalidation in the case of negative emotions appears highly salient, the invalidation of one's positive emotions also leaves a mark. The current literature on emotional invalidation focuses largely on the experience of invalidation when support for a negative emotion is sought. However, the present study has shown that one may feel hurt, disappointed, and dismissed when their pride or excitement is not shared by someone else. Indeed, individuals often wish to share happy news with others in an effort to savor the positive experience and invite others to join (Quoidbach et al., 2010). Although invalidation in the face of negative emotions may be more pervasive in both the literature and individual experience, future work might consider whether there are differential consequences of invalidation in the context of positive emotions compared with the invalidation of one's negative emotions. It may be the case that such consequences are more severe in one case than the other, or that certain elements of the emotion regulation experience are impacted more directly than others based on the nature of the emotion being shared. Additional work is necessary to more fully understand these relationships.

Finally, although no scientific analyses were conducted on the qualitative data collected in the present study, the responses generated provided invaluable insights into the individual experience of emotional invalidation and emotion regulation. A number of invalidating sources were identified, as well as common themes in the emotions that individuals were hoping to find support in dealing with and the strategies they employed to manage their response to feeling invalidated. The body of literature surrounding emotional invalidation and its consequences for emotion regulation would undoubtedly benefit from further endeavors that are more qualitative in nature to better understand not only the internal, individual experiences of emotional invalidation, but also to investigate real-life reactions to invalidation—perhaps through the use of ecological momentary assessment (EMA). For example, a number of responses mentioned that this kind of behavior was expected from the particular individual named as the “invalidator,” suggesting that these individuals may have been experiencing more chronic forms of invalidation beyond the acute instance which was described. Their responses to this invalidation may have differed from those respondents who found the invalidating experience to be unexpected or uncommon. Further, a number of individuals mentioned in their responses that they were no longer in contact with the individual by whom they had recalled being invalidated. Future research may more thoroughly investigate such social consequences of invalidation as these to more fully understand the aftermath of emotional invalidation.

General Conclusion

The pair of studies presently discussed sought to understand how perceptions of emotional invalidation relate to the success (Study 1) and endorsement (Study 2) of emotion regulation strategies. Study 1 did not provide support for the prediction that perceptions of invalidation would undermine the success of the particular emotion regulation strategy of affect labeling, generating a new hypothesis: invalidation may be more related to how we conceive of the process of regulating our emotions, rather than whether a specific strategy is successful. Study 2 tested this hypothesis and found that invalidation (defined generally) is associated with higher endorsement of suppressive emotion regulation strategies and lower endorsement of the strategies of problem-solving and social support. Study 2 also examined whether there were differences in this relationship based on the source of invalidation (family vs. friends), and found that invalidation from family members in particular was associated with increased endorsement of rumination. This supports previous work identifying the emotion socialization behaviors (e.g., whether a child's emotional expressions are validated or invalidated, punished or rewarded, etc.) of the family as predictors of later symptoms of anxiety and depression, such as ruminative thought (Krause et al., 2003). The results of Study 2 suggest that the reactions of others to our emotional states may impact how we come to understand these states ourselves—and, in turn, how we choose to respond to them.

We are social beings by nature, and we consequently come to understand the world both around and within ourselves through a great deal of social learning.

Constructionist perspectives of emotion, for example, argue that we hold particular constructs of emotions within the mind, and that these constructs are acquired and shaped through the teachings of our caregivers, our own experiences, and our interactions with our peers (Feldman Barrett, 2012). Invalidation may therefore represent a powerful form of social learning through which we may come to understand our emotions in negative ways. An understanding of the relationship between invalidation and emotion regulation is invaluable to the understanding of emotional well-being broadly defined, as it will offer insight into the ways in which we can more constructively deal with our own emotions, as well as respond to the emotions of others.

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Table 1.

PIES and HFERST scale means and standard deviations.

Scale	Mean	Standard Deviation
General Invalidation	1.76	.688
Invalidation - Family	2.08	1.00
Invalidation - Friends	1.45	.591
Problem-solving ^a	3.73	.804
Rumination ^b	3.43	.836
Acceptance ^{bc}	3.22	.891
Avoidance ^c	3.19	.779
Suppression of Expression ^{cd}	3.05	.838
Social Support ^{cd}	2.98	1.16
Reappraisal ^d	2.98	.849
Suppression of Experience ^e	2.63	.818

Note. Variables with the same superscripts do not differ significantly from one another ($p > .05$)

Table 2.

Correlational analysis between general invalidation and emotion regulation strategy endorsement.

Strategy	Pearson's r	Significance
Rumination	.148	.110
Reappraisal	-.138	.136
Acceptance	-.153	.099
Problem-solving	-.193*	.037
Suppression of Experience	.250*	.006
Suppression of Expression	.212*	.021
Avoidance	.041	.660
Social Support	-.208*	.025

Note. Significant correlations are identified with '' ($p < .05$)*

Table 3.

Correlational analysis between invalidation from family and emotion regulation strategy endorsement.

Strategy	Pearson's r	Significance
Rumination	.248*	.007
Reappraisal	-.118	.204
Acceptance	-.162	.082
Problem-solving	-.091	.330
Suppression of Experience	.223*	.016
Suppression of Expression	.176	.058
Avoidance	.036	.702
Social Support	-.198*	.033

Note. Significant correlations are identified with '' ($p < .05$)*

Table 4.

Correlational analysis between invalidation from friends and emotion regulation strategy endorsement.

Strategy	Pearson's r	Significance
Rumination	-.044	.636
Reappraisal	-.123	.187
Acceptance	-.082	.380
Problem-solving	-.284*	.002
Suppression of Experience	.237*	.011
Suppression of Expression	.186*	.045
Avoidance	.005	.957
Social Support	-.162	.081

Note. Significant correlations are identified with '' ($p < .05$)*

Table 5.

Correlational analysis of endorsement of emotion regulation strategy between strategies.

	1	2	3	4	5	6	7
1. Rumination	-						
2. Reappraisal	.017	-					
3. Acceptance	-.018	.543***	-				
4. Problem-solving	-.287**	.493***	.514***	-			
5. Supp. Experience	.110	.311***	.239**	.208*	-		
6. Supp. Expression	.078	.268**	.311***	.287**	.549***	-	
7. Avoidance	.217*	.196*	.156	.302***	.459***	.369***	-
8. Social support	.133	.264**	.159	.191*	-.276**	-.323***	-.089

Note. Significant correlations are identified with '*' ($p < .05$), '**' ($p < .01$) '***' ($p < .001$)

Appendix A
Investigating Equality of Implicit Positive and Negative Affect Test (IPANAT) Items

This study was conducted to determine whether the items used in pre- and post-test measures of implicit affect in the principal study (Invalidation & Emotion Regulation) were indeed equivalent. I expected to find no significant differences between items at the individual level (comparisons between one another) as well as at the group level (comparisons between pre-test and post-test subsets).

Method

Participants

45 participants were recruited using convenience sampling via social media advertising and electronic correspondence in the form of text messages and emails disseminating the online survey link. Demographic information was not collected from these participants.

Materials

All participants were presented with the Implicit Positive and Negative Affect Test (IPANAT, $\alpha = 0.81$; Quirin et al., 2009). This measure included six items, each of which consisted of one nonsense word (SUKOV, TALEP, BELNI, SAFME, VIKES, TUNBA) and 6 emotion words (happy, tense, cheerful, helpless, energetic, inhibited). Participants were asked to judge how well each of the six emotion words were represented by the provided nonsense word using a 5-point scale (1 = “Doesn’t fit at all,” 2 = “Fits somewhat,” 3 = “Fits fairly well,” 4 = “Fits very well”). In making these judgments, participants were instructed to rely on their “spontaneous feelings.”

Procedure

Participants were presented with a brief consent form describing the nature of the study, and informing them that they would be asked to make judgements about various words. They were then presented with the six IPANAT items in random order. Upon completion of the IPANAT, participants were thanked for their time and the survey was ended.

Results

IPANAT items were divided into pre-test (T0) and post-test (T1) groupings consistent with those used in the principal study. BELNI, TALEP, and TUNBA comprised T0 items, and SAFME, SUKOV, and VIKES comprised items pertaining to the T1 group. Each group of items produced two scores, IPANAT-P and IPANAT-N (representing implicit positive and negative affect, respectively) computed by averaging the ratings given to positive (IPANAT-P: Mean(T0) = 2.04, SD(T0) = .496; Mean(T1) = 1.67, SD(T1) = .410) and negative (IPANAT-N: Mean(T0) = 1.73, SD(T0) = .411; Mean(T1) = 2.02, SD(T1) = .522) emotion words.

Paired-samples *t*-tests revealed that T0 and T1 item groups were significantly different in terms of both positive ($t(44) = 4.06, p < .001$) and negative ($t(44) = -3.23, p = .002$) ratings. Pairwise comparisons between all six items using repeated measures analysis of variance (ANOVA) revealed that one item, BELNI (used at T0), was consistently rated as significantly more positive than all other items (all pairwise $p < .001$). Additionally, the item SUKOV (used at T1) was generally rated as more negative than all other items, though it was only significantly different from TUNBA (in terms of

positive emotion words; $p = .015$) and SAFME (in terms of negative emotion words; $p = .023$). See Table 6 for full pairwise comparisons on ratings given to positive emotion words, and see Table 7 for full pairwise comparisons on ratings given to negative emotion words.

Table 6.

Pairwise comparisons of IPANAT items' positive emotion ratings.

	Item Compared	Mean Difference	Standard Error	Significance
BELNI	SUKOV	.962*	.171	< .001
	SAFME	.898*	.166	< .001
	VIKES	.716*	.174	< .001
	TUNBA	.640*	.203	.003
	TALEP	.845*	.175	< .001
SUKOV	SAFME	-.64	.155	.680
	VIKES	-.246	.158	.127
	TUNBA	-.322*	.127	.015
	TALEP	-.117	.185	.530
SAFME	VIKES	-.182	.156	.252
	TUNBA	-.258	.167	.130
	TALEP	-.053	.190	.782
VIKES	TUNBA	-.076	.187	.687
	TALEP	.129	.178	.474
TUNBA	TALEP	.205	.212	.340

Note. Significant values are identified with '*'

Table 7.

Pairwise comparisons of IPANAT items' negative emotion ratings.

	Item Compared	Mean Difference	Standard Error	Significance
BELNI	SUKOV	-.742*	.136	< .001
	SAFME	-.451*	.129	.001
	VIKES	-.621*	.137	< .001
	TUNBA	-.455*	.156	.006
	TALEP	-.485	.111	< .001
SUKOV	SAFME	.292*	.124	.023
	VIKES	.121	.130	.357
	TUNBA	.288	.151	.063
	TALEP	.258	.142	.077
SAFME	VIKES	-.170	.148	.257
	TUNBA	-.004	.166	.982
	TALEP	-.034	.149	.820
VIKES	TUNBA	-.167	.168	.328
	TALEP	.136	.147	.359
TUNBA	TALEP	-.030	.165	.855

Note. Significant values are identified with ''*

Removal of BELNI and SUKOV from T0 and T1 item groups, respectively, neutralized the differences observed between these item groups. In other words, items presented at pre-test were no longer significantly different from items presented at post-test in terms of positive ($t(44) = .426, p = .672$) and negative affect ($t(44) = -.589, p = .559$) once they no longer included the ratings given to BELNI and SUKOV.

Discussion

This study represents an endeavor to determine whether all IPANAT items are indeed rated equally amongst participants. I expected to find that, given that participants all experience varying levels of implicit affect at a given point in time, the ratings given to each nonsense word item (i.e., “TUNBA” vs. “VIKES”) would not demonstrate any significant patterns at individual (word vs. word) and group (pre- vs. post-test) levels. Contrary to these hypotheses, results indicated that the original pre- and post-test item groups produced significantly different ratings when aggregated. An investigation at the item-level revealed two nonsense word items, BELNI and SUKOV, that were consistently differentiated from all other test items. Specifically, BELNI was rated as significantly more positive than all other items, and SUKOV was rated as generally (but not always significantly) more negative than all other items. Once these items were removed from the pre- and post-test aggregate scores, item groups were no longer significantly different from one another.

These results have implications for the principal investigation of the relationship between emotional invalidation and emotion regulation in that these skewed items influence the dependent measure of implicit affect such that the pre-test measure including BELNI will be positively skewed while the post-test measure including SUKOV will be negatively skewed. This would create a confound in the dependent variable, misrepresenting the levels of positive and negative implicit affect experienced at baseline and at post-test measurements. Therefore, the results of this investigation require that BELNI and SUKOV be excluded from analysis in the principal investigation.

The present results also call into question the validity of these two test items for the IPANAT as a whole. When applied in other studies, it may be the case that these two items misrepresent the levels of implicit positive and negative affect in participants. Subsequent research should approach these items (and perhaps the measure as a whole) with caution, recognizing that some words may be inherently more positive or negative than others. This is in contrast with the findings reported in the original validation of this measure (Quirin et al., 2009). Future research may therefore also benefit from further testing of the validity of these items.

Appendix B
Demographic Questionnaire

1. What is your age? _____
2. Please indicate your gender identity below (select all that apply):
 - Woman
 - Man
 - Transgender
 - Non-binary
 - Other: _____
 - Prefer not to answer
3. Please indicate your race/ethnicity below (select all that apply):
 - American Indian or Alaskan Native
 - Asian
 - Black or African-American
 - Latinx
 - Native Hawaiian or other Pacific Islander
 - White
 - Other: _____
 - Prefer not to answer

Appendix D
The Perceived Invalidation of Emotion Scale (PIES)

Instructions: Please take a moment to think about your relationships with the people who you are in contact with on a regular basis (i.e. at least once per week) and how they respond to your emotions when you share them. You may want to consider your relationships with family, friends, intimate partners, coworkers, and acquaintances. Please indicate how often each item has applied to you over the past month using the following scale:

1	2	3	4	5
Almost never	Sometimes	About half the time	Most of the time	Almost always

1. When I share how I'm feeling, others don't seem to mirror or match my emotions. For example, they don't share sadness with me when I'm sad or happiness with me when I'm happy.
2. When I share how I'm feeling, others want me to "get over it" or "accept it and move on."
3. When I share how I'm feeling, others seem like they don't want to hear what I have to say.
4. When I share how I'm feeling, others look down on me or judge me.
5. When I share how I'm feeling, others don't take me seriously.
6. When I try to share how I'm feeling, others tell me or imply what I should actually feel.
7. Others get mad or upset when I express my feelings.
8. Others don't take my side or agree with how I'm feeling.
9. Others make me feel like it's not okay for me to feel the way I do.
10. Others make me feel that my emotions are unimportant.

Appendix E
Mood Induction Vignette (Vine et al., 2018)

Read the following story and imagine yourself in the provided scenario. As you are reading, do your best to treat the story as if it were a real event that you are experiencing. You will be asked to answer questions about this story at a later point, so please read carefully.

You are waiting at your favorite coffee shop for your friend. It has been a difficult week—you haven't done well on assignments at work or school, you had an argument with your significant other, and your activities just are not going as well as you would like. You have confided in your friend about your problems and asked this friend to meet you to talk about them. You could really use their ear and support. You made the plan for 3:00 and your friend told you they would be coming from another friend's apartment. You arrive on time and wait outside on the sidewalk. You check your phone to make sure you have the day and time right, which you do. After waiting outside for 30 minutes you go inside to get a table. Your friend is often a little late and easily distracted, so you keep waiting. Another 30 min go by. You call and text your friend. Other couples ask for the extra chair, but you insist that someone is coming. Your friend has still not responded, which is unlike them and worrying. You continue to wait alone. After an hour and a half, it is clear that your friend is not going to show.

Appendix F

Task Prompts

Affect labeling task:

Reflect on the story you just read. List any emotions you notice yourself feeling in response. Provide as many labels as it takes to accurately represent your emotional experience. It may take a few moments to tune into what you are feeling, so you will not be able to advance until 2 minutes have passed.

Content labeling task:

Reflect on the story you just read. List anything you can remember. It may take a few moments to start recalling, so you will not be able to advance until 2 minutes have passed.

Manipulation check:

1. For what reasons was the character in the story (“you”) feeling upset? Select all that apply.
 - rejection from a job interview
 - struggling with work and school
 - loss of a family member
 - injury
 - argument with significant other
2. For roughly how long was the character (“you”) waiting in the coffee shop?
 - 5 minutes
 - 20 minutes
 - 45 minutes
 - over an hour

Appendix G
[ADAPTED] Perceived Invalidation of Emotion Scale (PIES)

Instructions:

Family: For the following questions, think about your family of origin (the people who cared for you in childhood).

Friends: For the following questions, think about your friendships with others.

Please indicate how often each item has applied to you over the past month using the following scale.

1	2	3	4	5
Almost never	Sometimes	About half the time	Most of the time	Almost always

1. When I share how I'm feeling, **my (family members/friends)** don't seem to mirror or match my emotions. For example, they don't share sadness with me when I'm sad or happiness with me when I'm happy.
2. When I share how I'm feeling, **my (family members/friends)** want me to "get over it" or "accept it and move on."
3. When I share how I'm feeling, **my (family members/friends)** seem like they don't want to hear what I have to say.
4. When I share how I'm feeling, **my (family members/friends)** look down on me or judge me.
5. When I share how I'm feeling, **my (family members/friends)** don't take me seriously.
6. When I try to share how I'm feeling, **my (family members/friends)** tell me or imply what I should actually feel.
7. **My (family members/friends)** get mad or upset when I express my feelings.
8. **My (family members/friends)** don't take my side or agree with how I'm feeling.
9. **My (family members/friends)** make me feel like it's not okay for me to feel the way I do.
10. **My (family members/friends)** make me feel that my emotions are unimportant.

Appendix H
Heidelberg Form for Emotion Regulation Strategies—English Translation
(HFERST)

Instructions: *Please rate using the provided scale the extent to which the following statements applied to you in the last month.*

1	2	3	4	5
Never	Occasionally	About half the time	Usually	Always

[Rumination]

1. When I have negative feelings, I often brood about why I am feeling this way.
2. After emotional experiences or situations, I think a lot about what I did and said, so as to understand my feelings better.
3. I realize over and over again that I have to think about something that made me angry or sad.
4. I remember past conflicts often and think about what I could have done differently.

[Reappraisal]

5. When I feel bad, I try to see the positive aspects of a situation.
6. When I find myself in a stressful situation, I change my thoughts about the situation in such a manner that I become calm.
7. When I want to feel better, I concentrate on the good aspects of a situation.
8. I change my feelings by thinking differently about my current situation.

[Acceptance]

9. When I cannot change something, I accept the situation as it is.
10. I am able to tolerate and endure uncomfortable situations.
11. I am able to accept things as they are.

[Problem solving]

12. When looking for solutions for a problem, I do not only rely on my instincts but try to think as rationally as possible.
13. I think about the possible solutions for how to change the situation.
14. When I am confronted with problems, I think very carefully about how I can deal best with the situation.
15. When I have to make a decision, I carefully weigh the different alternatives against each other.

[Suppression of emotional expression]

16. When something makes me angry or sad, I try to hide my feelings from others.
17. I hide physical expressions of my feelings.
18. It is very hard for other people to tell how I am feeling at the moment.
19. Even when I am very agitated, I am able to keep a calm exterior.

[Suppression of emotional experience]

20. I try not to allow for negative emotions to begin with.
21. I rarely let my emotions run high, but keep them down.
22. Whenever possible, I avoid realizing my feelings.
23. When I have strong emotions, I immediately push them aside.

[Avoidance]

24. I prefer to avoid situations that could cause negative emotions in me.
25. I try to avoid thoughts about things that weigh me down.
26. Whenever possible, I take care that I am not confronted with uncomfortable situations.

[Social support]

27. I like to share negative and positive feelings by calling or meeting up with others and talking about them.
28. I often talk about my emotions with my partner or my close friends.

Appendix I
Free-response questions

1. What was your relationship to this person? (*e.g., parent, sibling, friend, partner, coworker, etc...*)
2. Please describe the feelings you were trying to share with this person.
3. What were your immediate reactions to this interaction? (*thoughts, feelings, beliefs, etc...*)
4. What was your response to this interaction? *Think particularly about how you managed your emotions in response to this situation and what you said or did in response to the other person.*