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The Perceived Invalidation of Emotion Scale (PIES): Development and Psychometric Properties

Melissa Jean Zielinski
University of Arkansas, Fayetteville

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The Perceived Invalidation of Emotion Scale (PIES):
Development and Psychometric Properties

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Psychology

by

Melissa Jean Zielinski
The College of New Jersey
Bachelor of Arts in Psychology, 2011
University of Arkansas
Master of Arts in Psychology, 2013

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University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

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Dr. Jennifer C. Veilleux
Dissertation Director

_____   _____

Dr. Ana J. Bridges   Dr. Denise R. Beike
Committee Member   Committee Member

Abstract

Despite the decades that have passed since invalidation was first theorized to causally influence the development of psychopathology (Linehan, 1993), no measures have been designed and statistically validated to index current emotion invalidation. Research on invalidation has thus grown slowly and often used measures that were designed to assess other constructs (e.g., criticism, abuse) or that retrospectively assess childhood invalidation. This series of five studies describes the development and psychometric evaluation of the Perceived Invalidation of Emotion Scale (PIES), a novel measure of emotion invalidation. Items for the PIES were developed using themes from a qualitative investigation of adults' experiences of emotion invalidation (Study 1). The item pool then underwent expert review, exploratory factor analysis, and confirmatory factor analysis (Studies 2-4). Finally, internal consistency, test-retest reliability, and concurrent, divergent, incremental, and predictive validity were assessed using a short-term longitudinal design. Assessment of the reliability and validity of the 10-item PIES was promising across all indices. Directions for future research using the PIES are discussed.

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Dedication

To my parents, for your unconditional support. Thank you for giving me a solid base to jump

from, all the while knowing that I have a place that I can fall back to.

To my husband, for sharing every step of this journey with me – in and out of many coffee shops

and libraries far from home. This accomplishment is yours too.

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Social experiences are important determinants of physical and mental well-being across the lifespan (Cohen & Wills, 1985; Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Uchino, 2006). Overall levels of social support are linked to aspects of cardiovascular functioning, such as blood pressure and heart rate, that can alter an individual's risk for physical illness as well as to aspects of psychological functioning, such as hopelessness and ruminative tendencies, that can alter an individual's risk for mood and anxiety disorders (Johnson et al., 2001; Puterman, DeLongis, & Pomaki, 2010). A spectrum of even more specific social processes have also been found to influence well-being (Campus, Ullman, Aguilera, & Dunkel Schetter, 2014; Campos, Besser, & Blatt, 2010; Crowell, Beauchaine, & Linehan, 2009). For example, high levels of negative social interaction within families (e.g., frequent arguing, conflict, sibling aggression) are associated with the development of mental health problems such as alcohol use disorders and depression (Herrenkohl, Kosterman, Hawkins, & Mason, 2009; Herrenkohl, Lee, Kosterman, & Hawkins, 2012; Paradis et al., 2009) while negative peer-to-peer social experiences (e.g., bullying, cyberbullying, frequent rejection) are associated with the development of depression and anxiety symptoms and suicide and homicide attempts (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Platt, Cohen Kadosh, & Lau, 2013).

The aforementioned body of research has clearly demonstrated that interpersonal interactions can cause or associate with negative outcomes. The current investigation focuses on one particular type of social experience, emotion invalidation. Invalidation has been examined in regard to a wide variety of mental and physical health problems, as well as in relation to communication styles between partners, parents and children, and healthcare providers and patients (see Zielinski, 2014, for a review). Although invalidation is commonly discussed in

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relation to borderline personality disorder (e.g., Linehan, 1993), it has also been examined in relation to conditions such as chronic pain (Linton, Boersma, Vangonsveld, & Fruzzetti, 2012), eating disorders (Haslam, Arcelus, Farrow, & Meyer, 2012; Haslam, Mountford, Meyer, & Waller, 2008; Mountford, Corstorphine, Tomlinson, & Waller, 2007), rheumatic diseases (Cano, Leong, Williams, May, & Lutz, 2012; Kool et al., 2010; Kool & Geenen, 2012; Kool, van Middendorp, Lumley, Bijlsma, & Greenen, 2013), and serious mental illness (Sells, Black, Davidson, & Rowe, 2008).

Despite multidisciplinary interest in understanding the consequences of invalidation, the available research on potentially related outcomes is challenging to synthesize and interpret. In part, this is due to a lack of a clear operational definition that is consistent across studies. The wide majority of published manuscripts on invalidation do not offer an operational definition. The few operationalizations of invalidation that have been elaborated suffer from blurry boundaries and a lack of specificity as to what exactly is being invalidated (e.g., thoughts, emotions, experiences, a person's entire identity). Moreover, there is also a dearth of measures that have been designed and statistically validated to measure this construct. Researchers have thus used a variety of measures that were designed to measure disparate constructs ranging from psychological abuse (Krause, Mendelson, & Lynch, 2003) to parental criticism (Cheavens et al., 2005) and parental acceptance/rejection (Hong, Ilardi, & Lishner, 2011) to index invalidation.

The current study thus aimed to fill the aforementioned limitations in the current literature on invalidation by constructing and validating a measure of one specific type of invalidation, emotion invalidation, based on a clarified operational definition of this currently elusive construct. Of note, the measure sought to examine current levels of emotion invalidation, rather than retrospectively assess past invalidation. Additionally, the measure assessed

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individuals' perceptions of emotion invalidation, rather than behavioral indicators of emotion invalidation meant to be rated by an observer. These features are factors that further distinguish the proposed measure from the few measures of invalidation that are already available in the literature.

A. Defining Emotion Invalidation

Gina comes home from a grueling day at work; she is tired, hungry, and looking forward to having a minute to relax. As soon as she walks in the door, her partner Cameron yells at her for having left the garage door open earlier in the day. "I can't believe you did this again! You need to get it together!" Cameron exclaims. The couple argues for several minutes and Gina retreats to her bedroom in tears. Gina calls her friend Julie to talk about what happened, which she hopes will help her cool down. Gina tells Julie how angry she is that Cameron jumped on her right when she walked in the door and how she is feeling sad because she and Cameron are fighting all the time. "Relationships are so hard!" says Gina.

At this point in the conversation, Julie might respond in many different ways. She might offer support, perhaps by saying, "I'm here for you, Gina," or validate and reflect Gina's feelings by saying, "I would be angry and sad too, Gina. It sounds like you and Cameron are having a rough time right now." On the other hand, Julie's response could be markedly more negative. Julie might dismiss Gina entirely by changing the topic or might change the focus onto her own troubles with a partner. Julie might also invalidate Gina's emotions directly, perhaps by saying, "I don't know, Gina, I think you just need to get over it. Boys will be boys and there's really no reason to be sad or angry." These latter responses, facets of emotion invalidation, are of primary interest in the present investigation.

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Models of invalidation. As previously mentioned, research to date has relied on many different conceptualizations of invalidation when attempting to measure invalidation and assess its consequences. The most widely referenced conceptualization of invalidation is described by Linehan (1993) in her widely-cited Biosocial Theory of borderline personality disorder. According to the Biosocial Theory, invalidating environments are those "in which communication of private experiences is met by erratic, inappropriate, and extreme responses" (Linehan, 1993, p. 49). Invalidating environments often trivialize or disregard emotional experiences, punish displays of negative affect, and highly value control of emotional expressiveness (Linehan, 1993). However, Linehan's (1993) conceptualization of invalidation is extremely broad; the theory goes on to specify that sexism and childhood abuse are both examples of invalidation. Three types of families, all of which display markedly different behaviors, ranging from those characterized by substance abuse and parental unavailability to those characterized by parental expectations of high personal achievements and success, are differentiated by Linehan (1993) but also reported as examples of invalidating environments.

A second conceptualization of invalidation has been developed by researchers examining the experiences of individuals living with chronic pain conditions. Interestingly, although invalidation had emerged as a common theme in qualitative research examining chronic pain patients in the late 1990's (Hallberg & Carlsson, 1998), it took over a decade before researchers elaborated a model of invalidation specific to this population. Kool and colleagues (2009) first explored invalidation among fibromyalgia patients (whom the authors theorized could be especially prone to experience invalidation due to the "invisible pathology" of the illness) using semi-structured interviews. Following the interviews, the responses were translated into Q-sort items that were then administered to additional participants. Responses to the Q-sort task were

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used to build a hierarchical model of invalidation. The researchers found that invalidation consisted of two higher order dimensions: (lack of) understanding and discounting. Lack of understanding was conceptualized as consisting of lack of support and lack of acknowledgment. Discounting was conceptualized as consisting of patronizing, which consisted of lecturing and overprotecting, and denying (Kool et al., 2009).

In sum, while Linehan's (1993) conceptualization of invalidation has been historically influential, invalidation as defined within Biosocial theory is extremely broad. I would posit that the breadth of invalidation as defined within Biosocial theory is problematic; it has resulted in difficulty operationalizing invalidation for research purposes, and corresponding inconsistencies across research studies all reporting to have examined invalidation (see the "Differentiation from Related Constructs" and "Existing Self-Report Measures of Invalidation" sections for further discussion of these issues). The only other model of invalidation was developed to specifically to apply to chronic pain patients and is based primarily on how others have reacted to their illnesses (Kool et al., 2009). Thus, the conceptualization of invalidation offered by Kool and colleagues (2009) is too narrow to be applied to most other populations. Taken together, a necessary task for future research on invalidation will be to find a balance between breadth and specificity. An additional limitation of both of the models is that they do not clearly define which phenomena are being targeted by invalidation. Focusing specifically on emotion invalidation, the construct of interest in this research, is an approach that I believe balances breadth and specificity within the current work.

Invalidation of emotion. A defining feature of the present investigation is that the focus of the proposed measure will index perceived invalidation of *emotion*. Other potential targets of invalidation, such as thoughts or identity, are not the focus of the present research. Emotions are

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important targets of invalidation because of the roles emotions play in healthy and unhealthy functioning. Experts suggest that emotions such as anxiety and fear are necessary for our survival, yet also highlight that extreme levels of anxiety and fear are characteristic of several mental disorders (e.g., generalized anxiety disorder, panic disorder; Kring & Werner, 2004; Barlow, 2002). Greenberg (2008) also identified emotions as "fundamentally adaptive resources" (p. 49) because they help people to judge the significance of events, respond to events with adaptive actions, and regulate internal cognitions and communication with others.

Emotion invalidation is important because it has the potential to change the way that individuals relate to or use their emotions (Tompkins, 1991). For example, research has found that others' reactions to children's emotions can significantly influence the child's emotional and social functioning (Eisenberg, Cumberland, & Spinrad, 1998; Sawyer et al., 2002; Yap, Allen, & Ladouceur, 2008). Although the impact of others' responses to ones emotions has been less frequently investigated in adult or emerging adult samples, there is at least some evidence that suggests that similar processes might operate in adulthood (Leong, Cano, & Johansen, 2011; Linton et al., 2012; but see also Issner, Cano, Leonard, & Williams, 2012).

Research regarding the impact of general invalidation on adults is currently mixed, and therefore it is conceivable that perceived emotion invalidation could impact an individual in a variety of ways. For example, higher levels of emotion invalidation could increase emotional or relational distress (Markman & Hahlweg, 1993; Shenk & Fruzzetti, 2014). Emotion invalidation might also cause an individual to question, inhibit, or even invalidate his or her own emotions (i.e., self-invalidation; Linehan, 1993), leading to difficulties regulating strong emotions. Krause and colleagues' (2003) findings support this possibility; they found that the relation between childhood invalidation and adult psychological distress (i.e., depression and anxiety symptoms)

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was fully mediated by emotional inhibition. Although correlational, this study provides preliminary evidence that experiencing invalidation may alter individuals' expression and acceptance of emotions in ways that are detrimental to well-being. On the other hand, emotion invalidation could dampen emotional responses in ways that are potentially adaptive. One study reported that peer invalidation led to positive physical and psychiatric outcomes in a sample of individuals with severe mental illness (Sells et al., 2008). A second study found that participants whose thoughts and feelings were invalidated (which the researchers termed "challenging") after viewing a rape scene evidenced lower pulse rate reactivity and distress compared to participants in all other study conditions, including participants who received validating responses, when re-exposed to the scene two days later (Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004). The authors therefore concluded that these changes indicated that invalidation led to the greatest benefits for participants. However, the construal of habituation to a rape scene as an adaptive response seems questionable; this response could arguably be indicative of emotional suppression, which could prove to be problematic if persistent across time.

In sum, emotions play important roles in psychological and physical health and illness. Extant research also suggests that others' responses to our emotions can be influential, suggesting that emotion invalidation is a particularly important form of invalidation to understand. A validated and specified measure of emotion invalidation is needed to help clarify the consequences of experiencing emotion invalidation; however, an updated and clarified definition of emotion invalidation is first needed before any measure design project could be successful. While the definition of invalidation used in the current research is rooted in previous research and theory, it also departs from previous work in order to clarify the boundaries of what is (and what is not) emotion invalidation.

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Proposed operational definition. At its heart, emotion invalidation refers to any social exchange during which an individual's expressed emotions or affective experiences are met with a response from another person that is perceived by the individual as implying that their emotions or affective experiences are incorrect or inappropriate for the situation (Zielinski, 2014).

Definitional components. There are three essential components within the proposed definition of emotion invalidation worth highlighting further. First, emotion invalidation is an *active process* and there must be a social transaction during which emotion invalidation takes place. Pure omission of a social reaction (e.g., not getting a response to an emotional email) is not emotion invalidation, nor is any feedback that does not occur between at least two people. For example, while receiving a poor score on an online employment eligibility screening may be distressing, it would not be considered emotionally invalidating. The emphasis on a social context is important given that social experiences can have strong effects on physical and psychological health outcomes, as previously mentioned (Cohen & Wills, 1985; Uchino, 2006).

Second, this definition of emotion invalidation also requires that an affective experience is expressed before emotion invalidation can occur. This definitional component is vital due to previous experimental work that involved the delivery of negative feedback, and thus purported to have delivered emotion invalidation, but did not ensure that participants had first become emotionally activated (see the "Differentiation from Related Constructs" section below for further discussion of this point). The definition does not necessarily require that an emotion has verbalized directly, leaving open the possibility that individuals may have perceived emotional expression to be present (e.g., through nonverbal signaling or implications) without the occurrence of specific emotion labeling.

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Relatedly, the current definition centers on the individual's *perception* of an interaction as being emotionally invalidating. The definition thus emphasizes the viewpoint of the individual who is receiving feedback, rather than the behavior of the person doing the invalidating (as is the case with behavioral measures of invalidation). This is not to say that behavioral measures of invalidation (e.g., the Validating and Invalidating Behaviors Coding Scale; Fruzzetti, 2001; the System for Coding Interactions in Family Functioning; Lindahl & Malik, 2000) are not important contributions to the literature. The use of behavioral measures has yielded information on the short- and long-term impacts of behaviors potentially indicative of emotion invalidation during specific types of interactions (e.g., Markman & Hahlweg, 1993; Shenk & Fruzzetti, 2014). The relation between perceived invalidation and observations of invalidating behaviors will be an important avenue to explore in future research. However, I take the position, along with other researchers (e.g., Ford, Waller, & Mountford, 2011; Linehan, 1997), that what will be experienced as emotionally validating or invalidating is necessarily tied to the perception of the individual rather than to the behavior of his or her social partner.

B. Differentiation from Related Constructs

The present investigation aims to design and validate a new measure of emotion invalidation based on the operational definition of emotion invalidation presented above. As such, it is important to consider how emotion invalidation might differ from related constructs identified in the literature.

Abuse and neglect. A sizeable body of research has documented an association between abuse/neglect and borderline personality disorder (e.g., Ogata et al., 1990; Watson, Chilton, Fairchild, & Whewell, 2006), one of the psychological disorders currently most strongly associated with invalidation. Correspondingly, childhood abuse and neglect have been

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conceptualized by some as an extreme form of invalidation (Linehan, 1993; Krause et al., 2003). However, there are several reasons why childhood abuse (even psychological or emotional) should not be included in the definition of emotion invalidation. First, including childhood abuse within the boundaries of the definition of invalidation detracts from the specificity of the construct, and therefore from researchers' abilities to draw conclusions from their findings. There is already a well-established literature base that has examined abuse independently from other behaviors that would be considered emotion invalidation. It is unclear how these findings would or would not overlap with research specifically regarding emotion invalidation. Second, the term "abuse" implies a greater level of severity than has been historically assessed by measures of invalidation. Third, measurement of abuse is also necessarily more dependent on the occurrence of specific behaviors, regardless of whether the individual being abused labels the behaviors as abusive. Research findings support the distinction between abuse and invalidation made here. Specifically, a study that measured both abuse and parenting practices suggestive of invalidation found that while these two experiences were significantly correlated, the magnitude of the correlation was not high enough to suggest that they should be considered a unitary construct (Krause et al., 2003).

Criticism. At least one study has used a retrospective measure of parental criticism to index childhood invalidation in college students (Cheavens et al., 2005). However, several published manuscripts contain arguments against the proposition that parental criticism is analogous with invalidation (e.g., Fruzzetti, Shenk, & Hoffman, 2005; Linehan, 1993; Mountford et al., 2007). The aforementioned research makes the case that the two constructs can be distinguished based on whether the researcher is interested in taking into account the actual state of the individual being invalidated or criticized (Linehan, 1993; Mountford et al., 2007). For

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example, a parent's critical comment on a child's appearance or grades would be considered as indicative of parental criticism regardless of whether the child did or did not experience the comment as critical. Unfortunately, statistical evidence that can speak to the relation between levels of criticism and invalidation is currently lacking. In sum, although criticism may ultimately perceived as invalidating, these two constructs also evidence important conceptual differences that make it unlikely that they would overlap entirely.

Lack of social support. Invalidation cannot be defined as merely an absence of social support (Kool et al., 2013). Validation (i.e., feedback that suggests that an individual is right to feel as they do), and not social support, is widely accepted as the conceptual opposite to invalidation (Linehan, 1993). Although there is limited research evidence to speak to the relation between overall level of social support and invalidation, extant research has found nonsignificant or small correlations between social support and negative social interactions (Coty & Wallston, 2010; Lincoln, 2000).

Negative feedback. Several laboratory experiments have attempted to manipulate invalidation to examine its consequences but have instead used experimental manipulations that are more akin to negative feedback than to invalidation. For example, one study manipulated an experimenter's response to participants as they completed an anagram task (Woodberry, Gallo, & Nock, 2008); participants in the invalidating condition were verbally invalidated by the experimenter ("There's *no* need to get really frustrated. They're *just* anagrams." spoken in a puzzled tone). A second study randomly assigned participants to receive negative feedback on either their writing or about a personality profile that they put together during the study (Chapman, Walters, & Dixon-Gordon, 2014). A final study administered negative feedback via a computerized response ("You pressed 3. That doesn't make sense. That reaction was wrong.")

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after participants rated their reactions to a set of images they had viewed (Reeves, 2007). There is an important conceptual difference between the provision of (negative) feedback exemplified by these studies and emotion invalidation; namely, emotion invalidation is grounded in reactions to expressed emotion while negative feedback is a behavior exhibited by a social partner. Furthermore, emotion invalidation requires that an individual who is receiving a social response also be experiencing an emotion that is invalidated by the response. This is not the case with negative feedback, which can be given as a response to nearly anything (e.g., performance, appearance, behavior, etc.).

Microaggressions. Behaviors that communicate racial hostility toward people of color have been termed microaggressions. Microinvalidation is a specific subcategory of microaggression that is very similar to definitions of invalidation in which the focus was not on invalidation of *emotion* specifically (Linehan, 1993; Rockquemore & Laszloffy, 2003; Sue et al., 2007). More specifically, Sue and colleagues (2007) defined microinvalidation as involving "verbal comments or behaviors that exclude, negate, or nullify the psychological thoughts, feelings, or experiential reality of a person of color" (Sue et al., 2007, p. 278). As such, while microinvalidation can be considered a more general form of invalidation, microinvalidation is specific to the experiences of people of color and includes the invalidation of components of an individual's experiences that are outside the scope of emotion invalidation (e.g., thoughts).

C. Existing Self-Report Measures of Invalidation

Three self-report measures designed to quantify invalidation have been examined empirically (Kool et al., 2010; Kool et al., 2009; Krause et al., 2003; Mountford et al., 2007; Robertson, Kimbrel, & Nelson-Gray, 2013). Two additional measures designed to assess parental acceptance/rejection and parental criticism were used as proxies for invalidation in

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previous research; these measures are included in Appendix A and not reviewed here because they are not measures of invalidation. The Invalidating Childhood Environment Scale (ICES; Mountford et al., 2007) was initially developed to assess invalidating childhood environments in eating disorder patients. The authors believed that childhood invalidation might underlie different types of childhood abuse (e.g., physical, sexual, emotional), which are connected to eating disorders (Haynos & Fruzzetti, 2011; Mountford et al., 2007). Importantly, many items on the ICES do inquire about parental emotion invalidation and span a variety of discrete emotions (e.g., reactions to anger, anxiety, happiness, and general upset). However, as highlighted in Table 1 (Appendix A), the ICES has several limitations that suggest that the construction of a new measure is still warranted. First, the ICES items do not only assess invalidation of emotion. For example, the ICES contains items such as, "When I talk about my plans for the future, my parents listened to me and encouraged me" and "If I couldn't do something however hard I tried, my parents told me I was lazy." These items contain no explicit consideration of respondents' emotions and focus only on parental responses. A second limitation is that the ICES was designed to retrospectively assess childhood invalidation. Several published manuscripts highlight concerns with retrospective reporting of childhood environments, especially with regard to the development of psychological disorder (e.g., Hardt & Rutter, 2004; Henry, Moffitt, Caspi, Langley, & Silva, 1994). Also, additional research suggests that emotion invalidation may be an important facet of an individual's *current* social experiences (Leong et al., 2011; Linton et al., 2012). Relatedly, the ICES asks participants to aggregate their experiences across their first 18 years of life, which does not allow for a nuanced understanding of how invalidation might influence an individual at any given point in time. Finally, research on the psychometric properties of the ICES in nonclinical samples has been mixed (Mountford et

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al., 2007; Robertson et al., 2013). The authors also provided minimal insight into the process by which items were generated or refined, aside from indicating that the measure originally contained 22 items and four items were removed because they detracted from the internal consistency of the measure (Mountford et al., 2007). In sum, while the ICES became the first available self-report measure of invalidation, there are multiple important limitations that suggest that an additional, well-validated measure of emotion invalidation is still needed.

A second measure, the Illness Invalidation Inventory (I*3; Kool et al., 2009; Kool et al., 2010), was developed to assess invalidation in rheumatic disease patients. The authors of the I*3 grounded the questionnaire in patient experiences and clearly described the measure development process (Kool et al., 2009). However, the I*3 contains items that inquire specifically about invalidation related to medical conditions (e.g., "Finds it odd that I can do much more on some days than on other days" and "Understands the consequences of my health problems or illness") and is thus not generalizable to other populations. Additionally, even items that are not specific to invalidation of physical illnesses still are not specific to emotion invalidation (e.g., "Thinks I should be tougher" and "Gives me unhelpful advice").

One final measure, the Socialization of Emotions Scale (Krause et al., 2003; Sauer & Baer, 2010) was adapted from a widely used measure of parental responses to children's expressions of negative affect (i.e., the Coping with Children's Negative Emotions Scale (CCNES); Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002) and used to index invalidation in several research studies. Krause and colleagues (2003) selected three of the six original CCNES subscales (i.e., distress reactions, punitive reactions, minimization reactions) for inclusion in the SES, based on applicability to Linehan's (1993) conceptualization of invalidation, and reworded items so as to assess retrospective perceptions of caretaker attitudes and behaviors. The SES

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suffers from many of the same limitations as the ICES, including reliance on retrospective reports, requiring participants to aggregate across their entire childhoods, and inclusion of items not specific to invalidation of emotion.

In sum, the three measures discussed above evidence limited suitability for assessing perceptions of *emotion* invalidation. Two of the measures were also designed to measure invalidation in members of a specific population (i.e., eating disorder or chronic pain patients) and may evidence limited utility in other samples. The current lack of a measure designed to specifically index emotion invalidation across diagnostic categories has led researchers to use an array of measures and no measure of invalidation is currently a dominant measure in the field. A summary of all self-report measures used to assess invalidation in previous research is available in Appendix A. Development of a measure of emotion invalidation is thus an important direction for the current research that will have implications for researchers' abilities to make conclusions about the relative influence of emotion invalidation on emotional and physical well-being once disseminated and used.

II. Overview

The current investigation aimed to design and assess the psychometric properties of a new measure of perceived emotion invalidation, the Perceived Invalidation of Emotion Scale (PIES). As such, the investigation was composed of several studies, each meant to contribute to scale development and validation. Study 1 took a qualitative approach to generating themes relevant to invalidation. These themes were then used to generate measure items. Studies 2-5, which focused on scale construction and validation, were based off of the scale design guidelines articulated in the literature (Clark & Watson, 1995; Gehlbach & Brinkworth, 2011; Reise, Waller, & Comrey, 2000). Study 2 used expert review to assess and select items for inclusion in

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the initial PIES item pool. An exploratory factor analysis of the selected items was conducted in Study 3, which also assessed internal consistency, convergent validity, and divergent validity. A confirmatory factor analysis of the PIES was then conducted in Study 4. Lastly, Study 5 involved a short-term longitudinal examination of the predictive validity, incremental validity, and test-retest reliability of the finalized PIES measure. All study procedures were approved by the Institutional Review Board at the University of Arkansas.

III. Study 1

The purpose of this study was to more fully examine emotion invalidation as it is experienced by a general sample of adults to inform item development. To this end, Study 1 used a qualitative, grounded-theory approach (Strauss & Corbin, 1994) to generating themes that are relevant to invalidation by drawing off participant responses to questions asking about others' responses to their emotions. The study included two components: (1) essay questions answered independently and (2) focus groups in which participants discussed their responses to the essay questions and responded to additional inquiries. Both individual and group data collection methods were included to reduce the risk that conclusions drawn from the data would reflect systematic biases associated with any one specific method, thereby increasing study validity (Johnson, 1997).

A. Method

Participants. A total of 22 adults ranging in age from 18 to 69 were recruited for participation in Study 1. Twelve participants were undergraduate students (M_{age} = 19.33, range = 18-21, 50% women) recruited from the psychology subject pool at the University of Arkansas through SONA, a web-based research participation website. An additional ten community adults participated in the study after viewing advertisements on an electronic university announcement

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board or Craigslist and contacting the researcher (M_{age} = 40.30, range = 24-69, 70% women). A total of four focus groups were conducted; two groups used student participants and two groups used community participants. This investigator attempted to recruit an equal number of women and men for each focus group; however, none of the men who had enrolled in one of the community focus groups presented to the study session. See Table 1 for additional demographic information about the Study 1 sample.

Procedure. Upon arrival, participants were escorted to a computer laboratory where they heard an auditory description of the study and signed the study consent form, which included consent to be audio recorded. Participants were informed that the purpose of the study was to investigate experiences in interpersonal relationships. All participants completed the essay stage of the study, followed by the focus group stage of the study.

For the essay stage, participants were seated at individual workstations. Each workstation had a word document containing the three individual essay questions in Appendix B opened on the screen. Participants were given 30 minutes to complete all three questionnaires. Participants who finished early were asked to review their responses and add additional detail. After the allotted time had passed, participants saved their responses, uploaded them to Qualtrics, a secure online data collection platform, and completed the demographics questionnaire that followed.

Next, participants were escorted to a laboratory to complete the focus group stage. They were seated in a circle along with two study facilitators who read the discussion questions (see Appendix C) and asked occasional, non-leading follow-up queries to prompt for additional detail on participant responses. Group members had the opportunity to share experiences and discuss the questions together, though group facilitators also would request for individual participants to

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share if they did not spontaneously provide input. Prompt questions were presented in order from broad to specific in terms of the focus on directly eliciting themes related to invalidation.

Following completion of the focus group, student participants received 2.5 research credits to count toward a General Psychology course research requirement and community participants were paid $25 cash as compensation.

B. Analytic Approach

As previously stated, the goal of Study 1 was to uncover themes related to emotion invalidation. Verbal responses recorded during the participant focus groups were transcribed verbatim. The transcripts and the typed essay question responses were then thematically coded. Coders included this investigator and two undergraduate research assistants who received training in qualitative methods of data analysis. All coders used the descriptive coding method (Saldaña, 2013) to code the essay questions for each participant and the four focus group transcripts individually (i.e., all coders reviewed all available responses). Coders were specifically instructed to identify portions of the text referring to social responses to emotions (i.e., not solely emotion invalidation) and to assign a short descriptive code summarizing the core of each identified portion. Coders initially developed their own descriptive codes. Then, the independently assigned codes were discussed as a team in a series of meetings. Codes that were negatively valenced (based on the surrounding narrative) were discussed as a team, synthesized, and recorded using standardized phrasing with representative examples. For example, one coder initially referred to examples in the not mirror/match emotions code as "lack of matched response" while the other two referred to these examples as "not match emotions" and "unmatched emotions." Several participants directly used the word "mirror" when describing these experiences (e.g., "I honestly can't think of a single time when I didn't mirror someone's

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emotional experience of something as they've related [sic] it to me"). The standardized phrasing that was agreed upon (i.e., not mirror/match emotions) combined these concepts and participant language. The strategy of focusing in on negatively valenced codes was used as a first step to narrow in on responses that were most likely to represent a form of invalidation, given that invalidation is by definition a response to emotion that is perceived as being negative. Finally, coders and this investigator met with members of this investigator's research group and distilled down the negatively categorized responses to emotions to only those responses that were theoretically related to emotion invalidation.

C. Results and Discussion

The descriptive codes and representative higher-order themes judged to be indicative of negatively valanced responses to emotion disclosure are summarized in Table 2, along with illustrative examples taken from participant narratives. Of the 24 higher-order negative themes identified, 19 were judged to overlap with the operational definition of emotion invalidation. The emotion invalidation themes were as follows: (1) direct invalidation of emotion (i.e., responses that clearly identify an emotion or affective experience and construe it as invalid), (2) broad invalidation (i.e., responses that summarize an emotional response set, without identifying a specific emotion, and construe it as invalid), (3) invalidation by group membership (i.e., responses that imply that what the individual is feeling is inappropriate based on personal characteristics, such as gender, religion, or political preferences), (4) criticize emotional response (i.e., responses that question or critique an individual's emotional response/set of responses), (5) general demeaning response (i.e., responses that are attacking, directly or indirectly), (6) get upset (i.e., express negative personal reactions at another's shared emotions), (7) not take seriously (i.e., responses such as laughing or joking at another's emotions), (8) disregard my

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feelings (i.e., responses that are perceived as setting aside the individual's shared emotions), (9) tell me how I should feel (i.e., responses that direct the individual to feel a particular emotion/affective experience), (10) try to change my emotions (i.e., responses that attempt to increase, decrease, or shift the individual's emotional response), (11) question my emotions (i.e., responses that identify and question the individual's emotions), (12) overreact (i.e., expressed personal reactions that exceed the intensity of the individual's own emotions), (13) not mirror/match emotions (i.e., responses that involve a lack of expected shared emotional experience), (14) not understand me (i.e., responses that communicate lack of comprehension of the individual's emotion/affective experience), (15) not take my side (i.e., responses that communicate agreement with an emotional experience other than the individual's), (16) indifference (i.e., responses that communicate failure to care about individual's emotional experience, including complete absence of a response), (17) sterile response (i.e., responses that minimally acknowledge the individual's emotion/affective experience), (18) actively avoid conversation (i.e., responses that intentionally dissuade further discussion after an emotion/affective experience has been shared), and (19) change the topic (i.e., responses that move the focus away from an individual's expressed emotion).

The reactions to shared emotions that were ultimately judged to be overlapping with emotion invalidation as a construct were highly varied. While the inclusion of some thematic codes was expected based on prior research and theory, the inclusion of other thematic codes was more novel. For example, both the direct invalidation of emotion (e.g., responses such as, "Don't be upset, you have no reason to be upset.") and broad invalidation of emotion (e.g., responses such as "You should get over it.") codes represented prototypical invalidating experiences as described in prior work (c.f. Linehan 1993) and experimental manipulations involving

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invalidation (c.f., Reeves, 2007; Woodberry, Gallo, & Nock, 2008). On the other hand, the emergence of the not mirror/match emotions code (e.g., responses such as, "that's not what you want to hear…you want people to be happy when you're happy and sad when you're sad") was surprising and novel. The emergence of this set of emotionally invalidating responses highlights the strength of beginning measure design with a qualitative investigation, which provided the opportunity to ground the PIES item pool in participants' experiences, as they have described them using their own words, rather than in a researcher-driven conceptualization of the emotion invalidation construct.

A second important takeaway from the results of this qualitative study was that even though thematic codes were highly varied as a whole, many codes shared common elements. Differences between responses some codes were relatively nuanced (e.g., the tell me how I should feel code versus the try to change my emotions code), despite that coders decided to separate them as discrete themes. The fact that codes were judged to be both discrete and overlapping is not dissimilar from the findings of the qualitative experiences of illness invalidation in chronic pain patients (Kool et al., 2007), in which codes were ultimately grouped into a hierarchical structure. The approach to item pool construction in this study therefore did not endeavor to create meaningful subscales, as the measure seemed likely to ultimately be unidimensional.

IV. PIES Item Pool Construction

A. Approach to Scale Construction

The initial PIES item pool was designed to be over-inclusive and in line with the scale development recommendations of Clark and Watson (1995) and Gehlbach and Brinkworth (2011). Items were primarily constructed to represent the emotion invalidation themes identified

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in Study 1, but previous measures of invalidation and theory about emotion invalidation were also considered during item construction. Every higher-order theme was represented by at least one item in the initial item pool; however, many items were conceptually related to more than one thematic code. Constructed items used participants' own language wherever possible, consistent with a grounded theory approach. Items were phrased in a way that would encourage participants to specifically consider their perceptions about the frequency of others invalidating their *emotions*. Further, attention was paid to ensuring readability, avoiding double-barreled items, and phrasing items in such a way as to encourage variability in responses.

B. Initial PIES Item Pool

The initial PIES item pool consisted of 37 items, which are available in Appendix D, along with measure instructions and scale anchors. Instructions indicated that respondents should reflect on their experiences with how others have responded to their emotions during the past month. Items anchors were on a 5-point Likert scale ranging from 1 (*Almost never; 0-10%*) to 5 (*Almost always; 91-100%*). The scale anchors were modeled from a popular measure of emotion dysregulation (i.e., the DERS; Gratz & Roemer, 2004). The Flesch-Kincaid Grade Level of the item pool and instructions was 7.5.

V. Study 2

The purpose of Study 2 was to narrow and refine the initial PIES item pool and begin to establish content validity through expert review of items. Four experts (two internal reviewers involved with the current investigation and two external reviewers) were asked to provide input on the over-inclusive item pool generated in Study 1.

A. Methods

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Expert Selection. Two external experts (Dr. Bonnie Sturrock and Dr. Chad Shenk) who were otherwise uninvolved with the current investigation were recruited to complete the expert review for this study via email. External reviewers were offered $50 compensation for the time that they spent completing the review. Both reviewers had a history of multiple publications on the topic of emotion invalidation. Dr. Sturrock is a currently a practicing clinician in Australia. Dr. Shenk is currently an assistant professor in the College of Health and Human Development at Penn State University. An additional external expert was contacted and agreed to complete the review, but did not complete the expert review in a timely manner and thus was removed from the project. The two internal experts were myself and my dissertation committee chair. Both of us were familiar with the results of the Study 1, and had collaborated on several previous investigations of emotion invalidation.

Procedures for Expert Review. Expert reviews for the current investigation were completed online via a Qualtrics survey distributed via email. Experts were provided a document containing instructions for completing the review, a description of the research project, the operational definition of emotion invalidation described earlier, and a brief overview of each type of rating that they were asked to provide (see Appendix E). The instructions provided were modeled off of the guidelines and review form provided by Gehlback and Brinkworth (2011), as well as work by Lawshe (1975) on content validity. More specifically, experts were asked to rate each item with regard to the following: (1) relevance, or how central each item was to emotion invalidation as a construct, (2) clarity, or how comprehensible each item was, and (3) the anticipated mean response to each item if the survey was administered to a nonclinical sample of college and community participants. Relevance ratings options ranged from 1 to 3, where 1 = *Not necessary*, 2 = *Useful but not essential*, and 3= *Essential*. Clarity rating options

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also ranged from 1 to 3 and were 1 = *Not at all understandable*, 2 = *Somewhat understandable*, and 3 = *Extremely understandable*. Experts were able to provide feedback on the relevance and clarity of each item via an open response text box that appeared under the quantitative rating choices. Experts recorded their expected mean ratings on each item using the PIES response anchors. As described above, PIES responses could range from 1-5, where 1 = *Almost never* and 5 = *Almost always*. At the end of the survey, experts were asked to think about the PIES items as a whole and given the opportunity to (a) indicate aspects of emotion invalidation as a construct that they felt were missed or inadequately represented in the PIES item pool and (b) give any general feedback beyond what had already been requested.

B. Results and Discussion

The results of the PIES expert review, including the relevance ratings, clarity ratings, and mean expected scores for each item, are detailed in Table 3. Relevance and clarity ratings were both visually examined, expert-by-expert, and averaged across experts.

Relevance ratings were the primary tool used to determine items to exclude from the item pool. Items were excluded if rated *Essential* by only one expert. If items were scored as *Essential* by at least 3 experts, they were retained. Also, if both external experts scored an item as *Essential*, the item was retained despite the scores of the internal reviewers. In both cases, qualitative and clarity comments were reviewed to determine if any wording changes to these items were warranted. Finally, when item relevance ratings were more mixed (i.e., did not fall into any of the aforementioned categories), the following factors were considered when determining whether to exclude or retain each item: (1) redundancy with other items, (2) the extent to which the theme of the item was present in Study 1 participant narratives, and (3) qualitative relevance comments by experts. Clarity ratings and qualitative clarity comments were

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examined for items that were retained. If an item had an average clarity score that was less than perfect (i.e., mean of 3), wording alterations were considered. However, several items were retained in their current form despite imperfect clarity ratings either because (a) the expert did not provide comments regarding why the item was rated lower than a 3 or (b) I decided that altering the wording from the current form would detract from the emphasis on using participant language in item construction. With regard to the latter, my view was that in some cases making the item perfectly clear/specific would have compromised my goal of assessing emotion invalidation using the language with which a general sample of adults, rather than researchers, describes these experiences. Of the 37 items in the initial PIES item pool, 27 were ultimately retained in an original or slightly altered form (see Appendix F for the revised PIES item pool). The 10 items that were excluded were as follows: 2, 10, 14, 18, 21, 22, 23, 24, 25, and 35.

While experts' ratings for mean expected response to each item were ultimately not used to make decisions about which items to retain or exclude, these responses were examined to assess the overall expected variability of responses on measure items. The intended goal was to create a measure with good response variability, while also included some items that would be more able to tap into perceived emotion invalidation among clinical samples (i.e., via items that would be only minimally endorsed by most participants in a general sample of adults). A review of expert ratings for items retained in the measure at this stage suggested that this goal was achieved.

Taken together, Study 2 provided strong support for the content validity of the PIES item pool. Few items stood out for removal prior to initial measure administration in Study 3, as the majority received high relevance ratings by both the internal experts who were familiar with the

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results of Study 1 and external experts that who had a history of publication related to emotion invalidation.

VI. Study 3

The purpose of Study 3 was to conduct a preliminary psychometric examination of the items that were retained following expert review and constituted the revised PIES item pool. The 27-item PIES and two existing measures of childhood invalidation (i.e., the Invalidating Childhood Environment Scale [ICES] and the Socialization of Emotion Scale [SES]) were administered to a large sample of adults for this initial scale validation, which included an assessment of internal consistency and factor structure. A minimum sample size of 300 was selected for Study 3 based on recommendations found in the literature (Comrey & Lee, 1992; Tabachnick & Fidell, 2006). Additionally, to ensure that the PIES was not redundant with existing measures designed to assess invalidation, as is advised by Clark and Watson (1995), correlational analyses were used to examine the degree of overlap between the PIES and the ICES and SES.

A. Hypotheses

The primary hypotheses for Study 3 were as follows:

1. Given the similarity of the qualitative themes generated in Study 1, it was expected that the results of the exploratory factor analysis would reveal the PIES as a unidimensional measure.

2. While a degree of overlap between the PIES and the two childhood invalidation measures was expected, the PIES was not expected to be redundant with these measures because (1) they assesses retrospective recall of invalidation *during childhood* while the PIES inquires about current invalidation and (2) the PIES focuses specifically on perceived

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invalidation of the *respondents' experienced emotions*, which is untrue of several items on the ICES (e.g., "When I talked about my plans for the future, my parents listen to me and encouraged me" [no reference to emotion], "My parents would explode with anger if I made decisions without asking them first" [focus is on *parental* anger expression]) and the SES (e.g., "Tell me that if I didn't stop I wouldn't be allowed to go out anymore" [no reference to emotion]).

B. Methods

Participants and Procedure. A sample of 402 adults completed Study 3 through Qualtrics via a personal computer. Half of participants were recruited from the psychology student subject pool at the University of Arkansas (*n* = 201) and half were recruited through Amazon Mechanical Turk (MTurk; *n* = 201). MTurk workers were required to live in the United States to be eligible to participate. Both samples received compensation commensurate with the amount of time they spent completing the study (i.e., about 15 minutes); students received 0.5 research credits and MTurk workers received $0.75 USD. All procedures were approved by the Institutional Review Board at the University of Arkansas.

Measures.

Perceived Invalidation of Emotion Scale (PIES). A copy of the PIES items used for Study 3 is available in Appendix F. For this study, the PIES consisted of the 27 items that were retained following expert review. Items were rated on a 5-point Likert scale from 1 (*Almost never; 0-10%*) to 5 (*Almost always; 91-100%*), as described in Study 2. The Flesch-Kincaid Grade Level of the item pool and instructions was 7.2.

Invalidating Childhood Environment Scale (ICES). The ICES (Mountford et al., 2007) is a two-part retrospective self-report measure that asks participants to rate their experiences with

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their mothers and fathers during childhood. The first 14 items are completed for each parent separately, while the last 4 items inquire about the family environment as a whole based on descriptions of four family types (typical, perfect, chaotic, validating) described by Linehan (1993). Items are rated on a 5-point Likert scale from 1 (*never/not at all like my family)* to 5 (*all the time/like my family all the time)*. Reports regarding the psychometric properties of this measure, especially with regard to its performance in college samples, have been mixed (Mountford et al., 2007; Robertson et al., 2013). Internal consistency in the current sample was acceptable ($\alpha = .73$).

Socialization of Emotion Scale (SES). As previously described, the SES (Krause et al., 2003) was adapted from a measure of parental responses to children's negative emotions (CCNES; Fabes et al., 2002). Although the SES was believed to be composed of three subscales from the CCNES (distress reactions, punitive reactions, minimization reactions), a later study by Sauer and Baer (2010) examined the factor structure of the CCNES at the item level using the retrospective wording from the SES and found evidence for evidence for only two broad factors which they termed validation and invalidation. They thus suggested a revised 33-item version of the SES which evidenced good internal consistency ($\alpha = .88$-$.95$) and concurrent validity, as evidenced by positive correlations between child and parent reports (Sauer & Baer, 2010); it is this updated version of the SES that was used in this study. Participants are asked to rate SES items separately for each parent using a 7-point Likert scale ranging from 1 (*very unlikely)* to 7 (*very likely*), but parent ratings are summed for each subscale prior to analysis (Krause et al., 2003; Sauer & Baer, 2010). Internal consistency in the current sample was excellent ($\alpha = .91$).

Demographics. Participants completed a demographics questionnaire to assess factors such as sex, age, race/ethnicity, major, year in school, and parental socioeconomic status.

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C. Results

Data Preparation. Prior to analyzing scores on the two measures of retrospectively assessed childhood invalidation, scores for independent ratings of mothers and fathers were averaged. If a participant reported that either parent was uninvolved during their childhood, the average score for the involved parent only was used in analyses.

Sample Characteristics. Demographic data for Study 3 participants is displayed in Table 4, separately by sample type. Participants recruited through MTurk were slightly over half women (54.7%) and married (50.7%), as well as primarily non-Latina (95.5%) and White (83.1%). The mean age for MTurk participants was 38.56 (range = 20-70). Participants recruited through the subject pool were primarily women (72.6%), non-Latina (91.5%), White (80.6%), and unmarried (94.5%). The mean age for subject pool participants was 19.83 (range = 18-62). Student participants were significantly younger, $t(251.31) = 19.58$, $p < .01$, and more likely to be female, $\chi^2(1) = 13.94$, $p < .01$ compared to MTurk workers. There were no other group differences on demographic variables.[1]

Preliminary Analyses. Individual item response distributions for all 27 items in the PIES item pool were first examined for skewness and kurtosis. The majority of items demonstrated moderate levels of positive skew; however, skewness and kurtosis values were within acceptable ranges for all items (i.e., skewness less than 2, kurtosis less than 4). Correlations between individual items were also examined for the purpose of potentially eliminating items based on redundancy. All items were significantly correlated; however, no items were judged to be redundant (i.e., correlation above .80) and therefore none were eliminated at this stage.

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[1] Adjusted *t*-test values are reported due to lack of equal variance between groups

Exploratory Factor Analysis. A preliminary investigation of the factor structure of the PIES was conducted using exploratory factor analysis (EFA). Analysis of suitability for factor analysis revealed that the data was appropriate; the Kaiser-Meyer-Olkin measure of sampling adequacy was above 0.6 (KMO = .97; Kaiser, 1970) and Bartlett's Test of Sphericity was statistically significant ($p < .001$). Two extraction methods, principal axis factoring and maximum likelihood, were explored. In both cases an oblique rotation was examined because it was expected that any resulting factors would be correlated. The factor structure of the PIES was interpreted using the scree test (Cattell, 1966) and through examination of factor eigenvalues that were (1) greater than 1.0 (i.e., the Kaiser-Guttman criterion) or (2) greater than those generated randomly for a set of 27 factors based on a sample size of 402 using the Monte Carlo PCA for Parallel Analysis program (Watkins, 2006). The latter approach suggested that the eigenvalues for each factor would need to exceed the following values to be retained: 1.51 for Factor 1, 1.44 for Factor 2, 1.38 for Factor 3, and 1.33 for Factor 4.

The results of both factor analysis methods are displayed in Table 5, along with PIES item means and standard deviations. Eigenvalues of 15.40, 1.30, 1.06, and 0.84 were observed for the first four factors. Regardless of extraction method, both an examination of the Scree plot and the results of the parallel analysis strongly suggested that the PIES was unidimensional, with Factor 1 explaining 57.03% of the variance. Examination of the results using the Kaiser-Guttman criterion suggested the presence of two additional factors, with Factor 2 and Factor 3 explaining an additional 4.82% and 3.93% of the variance respectively.

Principal axis factoring method. Examination of the unrotated factor matrix indicated that all 27 items loaded highly on Factor 1 (minimum loading was .588). Examination of the rotated pattern matrix revealed that the majority of items loaded highly on Factor 1. Factor 2

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consisted of items 17-19, which were similarly worded (i.e., all began with "People…"). Factor 3 consisted of items 6 and 7, which were adjacent and similar in content.

Maximum likelihood factoring method. As above, the unrotated factor matrix suggested that all items loaded highly on Factor 1 (minimum loading was .586). Examination of the pattern matrix again indicated that Factor 2 consisted of items 17-19. Factor 3 consisted of two additional similarly worded items (25 and 26, which began with "Others…"). Additionally, all of the remaining items beginning with the word "others" loaded relatively low on Factor 1 compared to other items.

Hypothesis Testing.

Hypothesis 1. Taken together, the results of the exploratory factor analysis suggested that the PIES was composed of a single factor, as expected. All items were retained for the purposes of remaining analyses, and the responses to all items were averaged to create a composite score of current invalidation. The internal consistency of the 27-item composite measure was excellent (Cronbach's α = .97).

Hypothesis 2. Means and standard deviations for all Study 3 measures are reported in Table 6, along with correlations between the two measures of childhood invalidation (i.e., the SES and ICES) and the preliminary version of the PIES. As expected, the PIES was moderately correlated with both childhood invalidation measures. The two childhood measures were correlated more highly with one another than with the PIES.

Supplemental Analyses.

Sample differences. Independent samples *t*-tests were used to compare scores between the two samples on all three measures. Student participants (*M* = 2.64, *SD* = .39) reported significantly greater childhood invalidation than MTurk workers (*M* = 2.49, *SD* = .40) on the

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ICES, $t(400) = 3.77$, $p < .001$. Results were opposite as measured by the SES, as MTurk workers ($M = 3.21$, $SD = 1.13$) reported significantly greater childhood invalidation than student participants ($M = 2.95$, $SD = .91$), $t(382.34) = 2.60$, $p = .01$.[1] The groups did not significantly differ with regard to current emotion invalidation on the PIES. There were no significant differences by sample type in the strength of the correlations between the three invalidation measures (all ps > .05) as examined using Fisher r-to-z transformations.

Sex differences. Independent samples *t*-tests were used to compare scores between male and female participants on all three invalidation measures. There were no significant sex differences on any measure (all ps > .05).

D. Discussion

The results of Study 3 suggested that the 27-item PIES is a unidimensional measure that evidences good convergent validity with existing measures of childhood invalidation. Importantly, the PIES is not redundant with these measures, likely due to the intentional focus on current invalidation of emotion, rather than childhood experiences that may parallel invalidation more generally. The excellent internal consistency evidenced in this sample also provides strong support for measure reliability. Taken together, Study 3 provided emerging evidence as to the psychometric properties of the PIES, which were expanded upon in Study 4.

VII. Study 4

The purpose of Study 4 was to confirm the factor structure of the PIES following the exploratory factor analysis in Study 3, which suggested that the 27-item PIES was a unidimensional measure. Study 4 therefore centered around a confirmatory factor analysis of the PIES using a separate sample of adult participants. A sample size of approximately 600 was selected to allow two separate databases of approximately 300 participants each to be assembled.

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The creation of two independent databases was a research design strategy that was meant to allow for the possibility for two rounds of confirmatory factor analyses, particularly if there were problems with model fit and revisions needed to be made to the measure.

A. Methods

Participants and Procedure. As with Study 3, all participants completed the study measures online using Qualtrics. An overall sample of 604 participants completed the PIES and a demographics questionnaire via personal computer. Approximately half of the sample was recruited via the psychology student subject pool ($n = 301$) and half of the sample was recruited via MTurk workers residing in the United States ($n = 303$). Subject pool participants received 0.5 research credits and MTurk workers received \$0.25 for this 5 minute study.

Measures.

Perceived Invalidation of Emotion Scale (PIES). Same as Study 3.

Demographics. Same as Study 3.

B. Results

Sample Characteristics. Demographic data for Study 4 participants is displayed in Table 7, split by sample type. Similar to Study 3, participants recruited through MTurk ($M_{age} = 36.42$, range = 18-74) were approximately half female (55.8%) and married (51.5%), and were primarily White (73.9%) and heterosexual (88.1%). Subject pool participants ($M_{age} = 19.48$, range = 18-50) were primarily female (62.8%), White (81.1%), unmarried (97.3%), and heterosexual (96.0%), and were significantly younger, $t(338.66) = 23.04$, $p < .001$ and more likely to be White, $\chi^2(1) = 4.41$, $p = .04$, than MTurk workers. There were no other group differences on demographic variables.

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Data Preparation. Prior to analysis, each participant in the overall sample was randomly assigned either a "1" or a "2" as a dataset identification number using SPSS. Cases were then separated into two datasets based on the randomly assigned numbers, in effect creating two halves of the overall Study 4 sample. Dataset 1 was composed of 295 participants (160 from MTurk) and Dataset 2 was composed of 309 participants (143 from MTurk).

Confirmatory Factor Analysis. To replicate the factor structure of the PIES, a confirmatory factor analysis (CFA) was first conducted using Dataset 1, which contained approximately 50% of the Study 4 sample. Only half of the sample was used so that the factor structure of the PIES could be revised if model fit was poor. Model fit was evaluated using several goodness-of-fit measures including the χ^2 goodness-of-fit test, CMIN/DF, the goodness of fit index (GFI), the normed fit index (NFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) values. Guidelines for discriminating between good and poor model fit based on these fit indices vary across sources (Tabachnick & Fidell, 2006). The following values were considered to suggest good model fit in the present investigation: nonsignificant χ^2, GFI $\geq$ .95, NFI $\geq$ .95, CFI $\geq$ .95, and RMSEA upper confidence interval value below .08. Because the χ^2 goodness-of-fit test is highly susceptible to sample size and may incorrectly suggest poor model fit in large samples (Tabachnick & Fidell, 2006), I also examined the ratio of the χ^2 value to degrees of freedom (i.e., CMIN/DF) for which values less than 2 were considered to indicate good model fit. For the purposes of model comparison, the Akaike Information Criterion (AIC) values were also examined, with values closer to zero being more favorable.

Based on the results of Study 3, I hypothesized that the PIES would be a unidimensional measure, with all 27 items loading onto a single factor. AMOS Version 18 for SPSS was used to

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test this hypothesized model. Contrary to prediction, goodness of fit statistics indicated an unacceptable model fit. Specifically, $\chi^2(324) = 1178.69$, $p < .001$, CMIN/DF = 3.64, GFI = .77, NFI = .81, CFI = .86, RMSEA = .095 (CI: .089, .101), and AIC = 1286.69. In an attempt to improve model fit, the model modification indices and item regression weights were examined and two changes were made. First, the error terms for three pairs of like items were allowed to correlate (items 6 and 7, items 18 and 19, items 26 and 27). Second, two items with factor loading below .60 were deleted (items 17 and 20). Model fit following these changes was improved, but fit indices still suggested a poor model fit. Specifically, $\chi^2(272) = 697.81$, $p < .001$, CMIN/DF = 2.57, GFI = .83, NFI = .88, CFI = .93, RMSEA = .073 (CI: .066, .080), and AIC = 803.81.

Therefore, given that the Study 3 results also suggested the possibility of PIES as a 3 factor measure in which items clustered based on wording, an alternative model consisting of three correlated factors was tested. Factor 1 consisted of all items beginning with "When I share how I'm feeling…" (i.e., items 1-16), Factor 2 consisted of the items beginning with "People…" (i.e., items 17-19), and Factor 3 consisted of items beginning with "Others…" (i.e., items 20-27). The resulting fit indices were improved from the initial model, but again suggested poor model fit overall. Specifically, $\chi^2(321) = 875.34$, $p < .001$, CMIN/DF = 2.73, GFI = .81, NFI = .86, CFI = .91, RMSEA = .077 (CI: .071, .083), and AIC = 989.34.

In looking to further improve model fit, the PIES item pool used in Study 3 was re-examined with the intention of reducing the overall number of items. Given that larger models may be statistically more difficult to fit, I hypothesized that the number of highly correlated items was contributing to the problems with model fit despite high internal consistency ($\alpha = .97$ in this sample). Alterations specifically aimed at reducing item redundancy were therefore made.

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First, all items on Factor 2 (items 17-19) were removed. Expert review on these items had resulted in mixed relevance and clarity scores, and the items, in an attempt to capture the "Invalidation by group membership" theme from Study 1, were embedded with examples of group membership (e.g., "liberal") that are likely culturally situated and perhaps confounded with culture. Next, the items on the remaining two factors (Factor 1 and Factor 3) were re-examined considering (1) factor loadings, (2) inter-item correlations, (3) conceptual redundancy with other items, and (4) preserving representation of elements of the thematic codes identified in Study 1. Items with the highest loadings on each factor were first considered for retention (i.e., items 9, 10, 11, and 12 on Factor 1 and items 22, 25, 26, and 27 on Factor 3); however, several of these items were correlated at a strength suggesting redundancy (e.g., items 26 and 27 correlated at .80) and therefore not all were retained.

Items which were judged to be strong contributions to the measure, both statistically and theoretically, were ultimately retained. After revisions, the PIES consisted of 10 items that were split between the two first-order factors underlying one second-order factor. One first-order factor consisted of items 2, 9, 10, 11, 14, and 16 (i.e., items beginning with "When I share how I'm feeling…"). The second first-order factor consisted of items 22, 23, 24, and 26 (i.e., items beginning with "Others..."). The fit indices for this model were substantially improved from the initial model and were consistent with a well-fitting model. Specifically, $\chi^2(34) = 52.37$, $p = .02$, CMIN/DF = 1.54, GFI = .97, NFI = .97, CFI = .99, RMSEA = .043 (CI: .016, .065), and AIC = 94.37.

Given evidence for now having achieved good model fit in Dataset 1, the aforementioned model was examined using the independent sample ($n = 309$) in Dataset 2 (see Figure 1). The fit indices for the final model in the independent sample confirmed that model fit was good and

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were as follows: $\chi^2(34) = 567.34$, $p < .01$, CMIN/DF = 1.98, GFI = .96, NFI = .97, CFI = .98, RMSEA = .056 (CI: .036, .076), and AIC = 109.34.

Importantly, the internal consistency of the finalized 10-item PIES was excellent in both samples examined in Study 4 ($\alpha = .94$ for Dataset 1 and $\alpha = .93$ for Dataset 2). The finalized measure is available in Appendix G.

C. Discussion

Study 4 resulted in substantial changes to the initial 27-item version of the PIES. Examination of the proposed unidimensional factor structure revealed problematic fit indices for the original version of the measure despite a strong item pool evidencing high factor loadings. After several unsuccessful attempt to improve model fit via minor revisions, more major changes were necessary. I hypothesized that reduction in the number of items would be the primary factor that would improve model fit, especially given the very large correlations between many of the items. Moreover, the results of Study 3 suggested that items were clustering based on wording differences, and this was not initially statistically modelled. After reducing the number of items substantially and modeling factors based on item wording, the fit of the hypothesized factor structure of the PIES improved dramatically. The fit of the revisions was confirmed in an independent sample following changes. The issues in Study 4 and subsequent item reductions resulted in a shortened and therefore more practical, as well as statistically strong, measure.

VIII. Study 5

The purpose of Study 5 was to validate the finalized version of the PIES, with a specific focus on examining internal consistency, test-retest reliability, and measure validity (including convergent, divergent, incremental, and predictive validity). To this end a short-term longitudinal design with a one month follow-up period was used. Study measures assessed

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perceived current emotion invalidation, perceived general invalidation during childhood, current levels of social support, personality traits (i.e., agreeableness, and neuroticism), borderline personality features, emotion regulation, emotional distress, and health status.

A. Methods

Participants and Procedure. A sample of 206 adults completed Study 5 measures online via Qualtrics at two time points approximately one month apart. As with Study 3 and Study 4, participants were students in the psychology subject pool ($n = 99$) and MTurk workers residing in the United Stated ($n = 107$). Time 1 data underwent an initial screening for obvious quality issues (i.e., random responding) prior to participant compensation. A total of 7 MTurk participants, whose data evidenced clear random responding, were not compensated and their data were immediately deleted. These participant slots were made available to other MTurk workers to complete for a total initial sample of 100 MTurk workers. Participants received compensation based on the expected duration of the study at each time point, with a slightly increased incentive for participation in Time 2 measures which were expected to take less time (i.e., 25-35 minutes compared to 35-40 minutes for Time 1). Students were compensated with 1 research credit at each time point completed (i.e., total of 2 credits for full study participation), while MTurk workers received $2.00 USD at each time point completed (i.e., total of $4.00 USD for full study participation).

To maximize completion of follow-up assessment measures, all participants were contacted via email approximately 30 days after completion of the Time 1 measures. Participants were given a maximum of 8 days to complete the Time 2 measures, and up to two additional reminder emails were sent to each participant across this 8-day period. The retention rate between Time 1 and Time 2 was 94.9% for student participants and 81% for MTurk participants,

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leaving a total sample of 175 participants whose data were initially screened as usable and who completed both time points. The average time between Time 1 and Time 2 participation was 33.07 days (range = 27.06-38.16 days). The follow-up period for student participants (*M* = 33.50 days, *SD* = 2.37 days) was on average one day longer than for MTurk participants (*M* = 32.58 days, *SD* = 1.65 days), a difference that was statistically significant, $t(165.91) = 2.99, p < .01$.[1]

Measures. Of note, while most measures were administered at both Time 1 and Time 2, it was not necessary to administer all measures twice. The time point(s) at which each measure was administered appears within the relevant measure section.

Invalidation.

Perceived Invalidation of Emotion Scale (PIES). The finalized version of the PIES is a 10-item self-report measure which asks participants to reflect on how others have responded to their emotions over the past month. Items are rated on a 5-point Likert scale from 1 (*Almost never; 0-10%*) to 5 (*Almost always; 91-100%*). The Flesch-Kincaid Grade Level of the item pool and instructions is 6.6, suggesting that the measure is appropriate for use with a general adult sample. The PIES was administered at both Time 1 and Time 2, and responses to individual items were averaged to create a separate mean emotion invalidation score for each time point.

Invalidating Childhood Environment Scale (ICES). Measure description is the same as in Study 3. The ICES was administered at Time 1 only. Internal consistency in the current sample was questionable ($\alpha = .60$).

Socialization of Emotion Scale (SES). Measure description is the same as in Study 3. The SES was administered at Time 1 only. Internal consistency in the current sample was good ($\alpha = .88$).

Emotional Functioning.

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Depression Anxiety Stress Scales (DASS-21). The 21-item DASS-21 is a short form of the 42-item self-report measure of depression, anxiety, and stress (DASS) created by Lovibond and Lovibond (1995). The DASS-21 asks participants to rate items on a 4-point Likert scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). Subscale and total scores can be derived from the DASS-21. The total score, which was used in this study, has demonstrated good reliability in nonclinical samples and evidences strong positive correlations with measures of negative affect (Henry & Crawford, 2005). The DASS-21 was administered at both Time 1 and Time 2. Internal consistency in the current sample was excellent (Time 1 α = .92, Time 2 α = .93).

Difficulties with Emotion Regulation Scale (DERS). The 36-item DERS (Gratz & Roemer, 2004) assesses difficulties regulating emotions across six domains including: (a) nonacceptance of emotional response, (b) difficulties engaging in goal-directed behavior, (c) impulse control difficulties, (d) lack of emotional awareness, (e) limited access to emotion regulation strategies, and (f) lack of emotional clarity. A total score can also be computed. Items are rated on a 5-point Likert scale from 1 (*almost never; 0-10%*) to 5 (*almost always; 91-100%*) in regard to how often the participants believe the items apply to them. The measure demonstrates high internal consistency and test-retest reliability for the total score, as well as adequate test-retest reliabilities for subscale scores (Gratz & Roemer, 2004; Neumann, van Lier, Gratz, & Koot, 2010). The DERS was administered at both Time 1 and Time 2. Internal consistency in the current sample was excellent (Time 1 α = .93, Time 2 α = .94).

McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD). The 10-item MSI-BPD (Zanarini et al., 2003) uses true/false items to assess for the presence of borderline symptoms based upon DSM-IV-TR criteria. Items endorsed as true are summed to

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create a total score where higher scores are indicative of more BPD symptoms. The MSI-BPD showed good reliability in a previous college sample and converges well with other popular screening measures of BPD (Gardner & Qualter, 2009). The MSI-BPD was administered at Time 1 only. Internal consistency in the current sample was good ($\alpha = .80$).

Social Functioning.

Marlowe-Crowne Social Desirability Scale – Short Form, Version XI (MCSF). The 10-item MCSF (Reynolds, 1982) indexes individuals' tendencies to present themselves in a positive light. It is a shorted version of the 33-item Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Items are presented in a *True* or *False* response format and describe culturally approved behaviors that in actuality have a low incidence of occurrence (e.g., "I'm always willing to admit it when I make a mistake"). This measure was included in the present study to index social desirability as a response tendency which may confound results. The MCSF was administered at both Time 1 and Time 2, though only scores at Time 1 were used in this study. Internal consistency in the current sample was adequate ($\alpha = .70$).

Social Support Questionnaire - Short Form (SSQ6). The 6-item SSQ6 (Sarason, Sarason, Shearin, & Pierce, 1987) provides participants with six different scenarios involving social support (e.g., "Whom can you really count on to help you feel more relaxed when you are under stress?"), and asks them to (a) list up to 9 individuals who they could count on in these situations and (b) rate how satisfied they were with the overall support available in each scenario on a Likert scale from 1 (*very dissatisfied)* to 6 (*very satisfied).* Number of supports identified and satisfaction ratings are each averaged across all of the scenarios. The SSQ6 was derived from the 27-item Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Sarason, 1983), with which it correlates highly (Sarason et al., 1987). The SSQ6 has demonstrated excellent internal

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consistency in a previous college sample (Zielinski & Veilleux, 2014). The SSQ6 was administered at Time 1 only. Internal consistency in the current sample was excellent for both number of supports and support satisfaction (α = .94 and α = .95 respectively).

Health.

World Health Organization Quality of Life – Brief (WHOQO). The 26-item WHOQOL (The WHOQOL Group, 1998) measures individuals' perceived quality of life in the physical, social, psychological, and environmental health domains. Items are rated on a 5-point Likert scale from 1 to 5, with verbal scale anchors that change depending upon the item content. The physical, psychological, and environmental health domain scores evidence good internal consistency (α = .80-.82; Skevington, Lotfy, & O'Connell, 2004). The internal consistency of the social relationships domain score was somewhat lower in previous research, though this may be because the domain score includes only 3 items. The WHOQOL was administered at both Time 1 and Time 2. Internal consistency for the subscales were adequate or good for all subscales at both time points (αs = .73-.85) in this sample.

Personality.

Big Five Inventory (BFI). The BFI (John, Donohue, & Kentle, 1991) is a widely-used personality questionnaire that asks participants to rate short statements regarding how they see themselves on a 5-point Likert scale from 1 (*disagree strongly*) to 5 (*agree strongly*). The BFI contains five subscales measuring the big five personality domains (extraversion, agreeableness, conscientiousness, neuroticism, openness). The BFI was administered at Time 1 only, and only the neuroticism, openness, and agreeableness subscales were of interest in the present investigation. Internal consistency was good for the neuroticism subscale (α = .89) and adequate for the agreeableness subscale (α = .79).

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Demographics. Same as in Study 3 and 4.

B. Results

  Data Preparation. Prior to analyses, the quality of data from both MTurk and student participants was reexamined more fully. Of the 175 participants who completed both Time 1 and Time 2 measures, 14 participants (7 students) were excluded due to low effort (i.e., random responding, very short response times coupled with limited response variability), leaving a final sample of 161 participants (87 students) for use in analyses. Data were then screened for normality, and all variables were within acceptable limits for skewness and kurtosis. Data also did not violate assumptions of multicollinearity.

  Sample Characteristics. Demographic data for participants included in Study 5 analyses ($n = 161$) is displayed in Table 8, separately by sample type. Sample characteristics were similar to those in both Study 3 and Study 4. MTurk participants ($M_{age} = 33.59$, range = 18-69) were approximately half female (48.6%), and primarily White (75.7%), heterosexual (82.4%), and unmarried (64.9%). Student participants ($M_{age} = 19.34$, range = 18-29) were primarily female (66.7%), White (72.4%), heterosexual (94.3%), and unmarried (97.7%). Student participants were significantly younger than MTurk workers, $t(76.91) = 13.48$, $p < .001$[1], and were also significantly more likely to be female, $\chi^2(1) = 5.34$, $p = .02$. There were no other group differences on demographic variables.

  Preliminary Analyses. Primary study variables were first examined by sample and by sex to assess for potential differences based on these factors.

  Sample differences. Mean scores for all Study 5 variables are reported by sample in Table 9 along with corresponding independent samples *t*-tests. Results revealed that student participants and MTurk workers were largely similar on study variables. However, student

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participants reported greater childhood emotion invalidation on the ICES ($p = .04$), neuroticism ($p < .01$), and problems with emotion regulation ($p < .01$ at both Time 1 and Time 2). Students also reported a higher number of social supports ($p < .01$) and greater environmental health ($p < .01$ at both Time 1 and Time 2).

Sex differences. Independent samples *t*-tests did not reveal significant sex differences on any study measures aside from for neuroticism ($p < .01$), on which women ($M = 22.87$, $SD = 7.60$) evidenced significantly greater scores than men ($M = 19.74$, $SD = 6.96$).

Reliability of the PIES.

Internal Consistency. The internal consistency of the PIES was examined using Cronbach's alpha. Internal consistency at both time points was excellent for the full sample (Time 1 $\alpha = .91$, Time 2 $\alpha = .93$). When examined independently by sample, internal consistency was either excellent or good for both student participants (Time 1 $\alpha = .87$, Time 2 $\alpha = .91$) and MTurk workers (Time 1 $\alpha = .94$, Time 2 $\alpha = .95$).

Test-Retest Reliability. To examine the test-retest reliability of the PIES, I computed Pearson correlation coefficients between the PIES scores at Time 1 and Time 2. The PIES demonstrated good test-retest reliability, as evidenced by a moderately large correlation ($r = .67$, $p < .01$) between Time 1 and Time 2 scores in the overall sample.

Validity of the PIES.

Convergent Validity. Associations between the PIES and two measures previously used to index general childhood invalidation were examined to assess convergent validity. As with Study 3, small to moderate correlations were expected. The correlations between the PIES and prior measures were somewhat smaller than expected, but statistically significant. Specifically, the PIES correlated with the ICES at $r = .18$ ($p = .02$) and with the SES at $r = .27$ ($p < .01$). The

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PIES therefore evidenced good convergent validity with the SES, while also clearly not being a redundant measure. Convergent validity with the ICES was questionable; however, the ICES also evidenced questionable psychometric properties (i.e., internal consistency) in this sample.

Divergent Validity. To speak to divergent validity, perceived emotion invalidation scores were compared with scores on measures of constructs (personality and social support) that were expected to evidence small or negative correlations with emotion invalidation based upon relevant theory. Results revealed a significant but small positive correlation between Time 1 PIES scores and neuroticism ($r = .34$, $p < .01$). There were also significant but small negative correlations between Time 1 PIES scores and agreeableness ($r = -.37$, $p < .01$) and social support satisfaction ($r = -.38$, $p < .01$). Correlations between Time 1 PIES scores and openness ($r = -.02$, $p = .79$) and number of social supports ($r = -.07$, $p = .38$) were not significant. Taken together, the nonsignificant or small negative correlations between the PIES and measures of disparate constructs provide evidence for divergent validity. The correlation between the PIES and neuroticism suggests some shared overlap between this personality variable and a tendency to perceive emotion invalidation, which was not unexpected.

Concurrent Validity. Concurrent validity was assessed by examining correlations between the PIES and measures associated with both psychopathology and health when measured at the same time point. Past research suggested that emotion invalidation would be positively correlated with worse psychological functioning and lower health. See Table 10 for correlations between all relevant Time 1 measures. As expected, greater emotion invalidation was significantly correlated with higher levels of all variables related to psychopathology and lower levels of all variables related to health. More specifically, greater emotion invalidation at Time 1 evidenced moderate concurrent correlations with greater distress and emotional

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dysregulation, as well as lower physical health, psychological health, relational health, and environmental health.

Incremental Validity. Hierarchical regression was used to examine whether emotion invalidation as indexed by the PIES would predict outcomes above and beyond what can be accounted for by general childhood invalidation. Time 1 scores were used for all analyses. Three separate hierarchical regression analyses examined emotion dysregulation (DERS total scores), borderline features (MSI-BPD total scores), and emotional distress (DASS-21 total scores) as outcomes. Predictor variables were the same in all three models; childhood invalidation as indexed by the SES, sample type (student = 0, MTurk = 1), and social desirability (MCSF total scores) were entered in Step 1. Only one childhood invalidation measure was entered in Step 1 because of the strong correlation between the two measures ($r = .53$, $p < .01$), and the SES was selected because it had the greatest zero-order correlation with the PIES. Sample was included as a Step 1 variable to control for the sample differences evidenced in preliminary analyses. The PIES was then entered at Step 2.

The results of the three regression analyses are available in Table 11. Social desirability and childhood invalidation significantly predicted all three outcomes at Step 1; however, the PIES was incrementally predictive of all outcomes as well. Results were particularly strong for the incremental validity of the PIES in predicting current distress. Specifically, PIES scores predicted an additional 25% of the variance in distress after accounting for childhood invalidation and social desirability. PIES scores accounted for an additional 12% of the variance in emotion dysregulation and 8% of the variance in borderline features in the remaining two regression analyses.

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Predictive Validity. A preliminary investigation of the predictive validity of the PIES examined the correlations between Time 1 PIES scores and emotional functioning and health status at Time 2 (see Table 12). As expected, PIES scores at Time 1 were significantly associated with emotional distress and dysregulation at Time 2, as well as all health status variables. Greater emotion invalidation at Time 1 evidenced moderate correlations with greater distress and emotional dysregulation, as well as lower physical health, psychological health, relational health, and environmental health.

Hierarchical regression analyses were also used to examine the ability of the PIES to predict change in symptom measures over time as a second test of predictive validity. Current distress (DASS-21 total scores), relational health, and psychological health (WHOQOL subscale scores) at Time 2 were examined as outcomes. In each regression model, the Time 1 scores for the commensurate measure were entered in Step 1 to control for existing symptoms. PIES Time 1 scores were entered in Step 2. Results of these final analyses were mixed (see Table 13). The PIES did not evidence ability to predict emotional distress at Time 2 when controlling for emotional distress at Time 1 ($p = .10$). However, the PIES significantly predicted an addition 3% of the variance in relational health ($p < .01$) and 2% of the variance in psychological health ($p < .01$) when controlling for Time 1 scores on the requisite subscales.

C. Discussion

Study 5 was the culminating study in this series of investigations, which endeavored to design and psychometrically validate a new measure of perceived emotion invalidation. The current study provides strong psychometric support for the reliability and validity of the PIES. The internal consistency of the measure was excellent. Test-retest reliability was high, but the moderately large correlation between Time 1 and Time 2 scores also suggests that scores on the

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measure do change somewhat over time. Importantly, this finding suggests that the measure is indeed more of a state, rather than trait, measure. The strength of this correlation would be expected to decrease further with a longer follow-up period. The PIES also converged with existing measures of childhood invalidation and diverged from measures that were not expected to be positively associated with emotion invalidation (e.g., social support, openness). While correlations with existing measures of childhood invalidation were weaker than anticipated based on Study 3, the PIES intentionally deviated from a focus on past experiences and onto current emotion invalidation. Although clinical utility was not directly examined, the results of Study 5 clearly reveal that emotion invalidation is associated with a host of negative outcomes, both in terms of psychopathology/emotional distress and health status. While the PIES was only able to predict relatively small increases in additional symptomology at Time 2 when controlling for Time 1 symptomology, the strength of the relations between Time 1 and Time 2 scores of the same measures were so high that predicting an additional 2-3% variance may be clinically meaningful. Essentially, while present symptoms are clearly a very strong predictor of future symptoms, emotionally invalidating experiences may add additional fuel to the fire, so to speak, for individuals already in emotional distress.

IX. General Discussion

Research on emotion invalidation has been slow to expand, despite the theorized role of invalidation in the development of psychopathology (e.g., borderline personality disorder, anorexia nervosa; Crowell et al., 2009; Haynos & Fruzzetti, 2011; Linehan, 1993) and in exacerbating negative outcomes among clinical populations (e.g., chronic pain patients; Kool et al., 2010). One potential reason for this slow growth is the lack of appropriate, practical measures for assessing this construct. Therefore, the purpose of the present investigation was to

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develop a psychometrically sound measure of current emotion invalidation for use in future research. This series of five studies provided preliminary support for the Perceived Invalidation of Emotion Scale (PIES) as a reliable and valid measure of perceived emotion invalidation. Moreover, these studies expanded upon the literature addressing the conceptualization of emotion invalidation as it is experienced by adults.

Broadly, the PIES aimed to assess emotion invalidation in a way that was consistent with the clarified operational definition described earlier in this investigation. The emphases on both *emotion* invalidation and on *perception*, rather than observable behavior, were novel elements of this operational definition and ultimately of the PIES as a measure of this construct. While the small (but significant) correlations between the PIES and childhood invalidation measures were surprising, the PIES was intentionally developed to assess emotion invalidation differently than extant measures. The emphasis on perception has many relevant pros and cons. It is well-documented that internal processes do not always align with observable behavior (e.g., Veilleux & Skinner, 2015) and that certain clinical conditions are linked with negative perceptual biases (e.g., borderline personality disorder; Ebner-Primer et al., 2006; Gutz, Renneberg, Roepke, & Niedeggen, 2015). Conversely, perceptions and felt experiences also predict important outcomes; symptom measures are commonly administered in a self-report format, even in rigorous treatment trials (e.g., the Beck Depression Inventory for studies of depression; Cuijpers, van Straten, & Warmerdam, 2007). Self-report measures by definition prioritize individuals' experiences of symptoms over observable behavior. Future research exploring the relation between observable invalidating behavior and perceptions of emotion invalidation is warranted. However, it is also possible that the felt experiences of the individual who is sharing his/her

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emotions (i.e., perceptions) about how a conversation partner is responding may be even more important in predicting outcomes than the observable behavior itself.

Centering the PIES on a clarified operational definition while also beginning measure design with a qualitative study that prioritized exploration of individuals' experiences over existing theory was a particular strength of the present investigation. This strategy addressed limitations of past research on invalidation which relied on a wide variety of measures, only two of which were originally designed to measure invalidation. The qualitative responses of participants captured in Study 1 suggest that a wide variety of reactions to emotion, including responses that vary in terms of factors such as intensity and passivity/activity, can all be experienced as invalidating and thus should be included if a full assessment of this construct is desired. Responses to shared emotion that clearly align with past research and theory (e.g., responses captured by the direct invalidation theme, such as "Don't be upset, you have no reason to be upset") were discussed as invalidating alongside responses that prior theory (and even the experts who participated in Study 2 without knowledge of the qualitative codes found in Study 1) would not have included as invalidation. The most striking example of the latter was the frequency at which others not mirroring or matching one's own shared emotions was discussed by participants, and ultimately the strength at which items assessing this theme associated with the broader emotion invalidation scale, despite external reviewers disagreeing with the necessity of including related items. This series of studies therefore provides the first emotion invalidation measure intended for a general sample of adults that also undertook the challenge of qualitatively investigating adults' experiences of others' responses to their emotions prior to measure creation.

Importantly, despite that a variety of discrete responses to emotion were included in the assessment of emotion invalidation within the PIES, there were not clear separations between

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items attempting to assess differing descriptive thematic codes in the exploratory and confirmatory factor analyses conducted in Studies 3 and 4 (i.e., no subscales based on thematic code statistically emerged). This suggests that the measures of related, but narrow, constructs (e.g., criticism; Cheavens et al., 2005) which have been used in past research likely do not capture the full scope of emotion invalidation and should not be used to measure invalidation in future research.

Interestingly, while mean scores on the PIES were somewhat modest in this general sample, experiencing greater emotion invalidation was associated with a host of negative outcomes across nearly all facets of health (i.e., physical, psychological, social, and environmental), in addition to constructs more traditionally examined with regard to emotion invalidation (i.e., borderline features, emotion dysregulation). This suggests that emotion invalidation could be a potential intervention point for psychological and physical health practices, either by modification of perceptions (e.g., through promotion of acceptance-oriented strategies) or by modification of the individuals' social environments (e.g., using family interventions or working to end unhealthy relationships).

Strengths and Limitations. As with any scientific endeavor, this series of studies had both strengths and limitations. Beyond those already discussed above, relevant strengths include the intentional and stepwise nature of this measure design project, the purposeful recruitment of both college student and community samples for each study, and the emphasis within both the study design and the finalized measure on participants' own experiences and words when describing emotionally invalidating experiences. The recruitment of both student and community participants was considered a strength because extant research on invalidation has primarily relied on either college student participants (e.g., Robertson et al., 2013; Sauer & Baer, 2010;

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Shenk & Fruzzetti, 2011; Woodberry et al., 2008) or specific clinical populations (e.g., Mountford et al., 2007; Sells et al., 2008). The present investigation extends beyond this previous work by aiming to design a measure of perceived emotion invalidation that is applicable to adults more broadly. Moreover, while some individuals (including one expert reviewer) may view the emphasis on perceived experiences as a weakness of the PIES, I would argue that this was an intentional design decision that came with important pros and cons, and is a strength in that perceived experiences are just as important to understand as behavioral indices. Indeed, as discussed previously, many measures of psychological constructs emphasize perceived experiences through use of a self-report format, even if this is not an explicitly stated intent of the measure. The tests of incremental and predictive validity in Study 5, which revealed that the PIES predicts outcomes (including those above and beyond the childhood invalidation measures), provide support for the viewpoint that the PIES is a useful addition to the literature on emotion invalidation in that it more fully captures outcomes of these experiences.

The results of this investigation should be interpreted in light of relevant limitations which include the use of self-report data and reliance on convenience samples. As noted above, self-report data can certainly be biased and therefore scores on the PIES are not necessarily expected to align with behaviorally-based measures of invalidation. However, as before, it is my position that the potential for discrepancies does not undermine the potential utility of the measure. Use of a convenience sample precluded examination of how emotion invalidation may present in clinical samples of interest and resulted in relatively limited variance in terms of mean scores on the measure. Diversity, more generally, was also unfortunately limited amongst participants in this series of studies. This is problematic given that perceptions of emotions may be culturally based (Gendron, Roberson, van der Vyver, & Barrett, 2014; Tamir et al., 2015), and

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norms and sensitivities to responses to emotions may therefore differ across cultures and subgroups.

Future Directions. Possibly the greatest contribution of this series of studies is the potential for future research on a construct which has garnered relatively little attention despite theorized importance. Future investigations should continue to examine outcomes potentially related to emotion invalidation, including potential tests of environments/relationships that are marked by chronically high emotion invalidation versus the impact of occasional emotionally invalidating experiences. Future studies should also expand the diversity of the samples examined to include participants from different cultures and clinical populations of interest (e.g., chronic pain, trauma survivors). Additional novel investigations could include the examination of the relation between emotion invalidation and self-invalidation, as the biosocial theory of borderline personality disorder hypotheses that experiencing emotion invalidation ultimately leads individuals to begin to invalidate themselves, and examination of potential links between perceived emotion invalidation and willingness to disclose emotions. It is possible that either of the aforementioned processes could be mechanisms by which emotion invalidation influences outcomes. Finally, future work might benefit from examining the relation between behavioral and self-report measure of emotion invalidation, which would help to more fully speak to the importance of perceived experiences versus observable behaviors.

Taken together, the nascent nature of the PIES and the limited literature base on emotion invalidation affords significant room for novel research on both emotion invalidation as a construct and on the new measure. The results of the present investigation have provided a base from which to launch this seemingly promising area of study.

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XI. Tables

Table 1. *Demographic Data for Study 1 Participants*

		Participant Group	
		Community	*Student*
		M or *n*	*M* or *n*
		(*SD* or *%*)	(*SD* or *%*)
		N = 10	*N* = 12
Demographics			
Age		40.30 (13.61)[a]	19.33 (0.78)[b]
Sex			
	Female	7 (70.0%)	6 (50.0%)
	Male	3 (30.0%)	6 (50.0%)
Race			
	Caucasian	6 (60.0%)	10 (83.3%)
	African American	1 (10.0%)	1 (8.3%)
	Asian	2 (20.0%)	--
	Hispanic/Latino	1 (10.0%)	--
	Other (unspecified)	--	1 (8.3%)
Sexual Orientation			
	Heterosexual	7 (70.0%)	12 (100%)
	Bisexual	3 (30.0%)	--
Marital Status			
	Single	5 (50.0%)	12 (100%)
	Married	4 (40.0%)	--
	Separated	1 (10.0%)	--
Employment Status			
	Unemployed	1 (10.0%)	6 (50.0%)
	Part time	2 (20.0%)	5 (41.7%)
	Full time	7 (70.0%)	1 (8.3%)
College Enrollment Status			
	Yes	2 (20.0%)	12 (100%)
	No	8 (80%)	--

[a] Age range for community group was 24-69
[b] Age range for student group was 18-21

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Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays*

Major Themes/Examples[*,**]

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1.   Direct Invalidation of Emotion

You shouldn't be upset, like your life rocks compared to most people's

Don't be upset, you have no reason to be upset

You shouldn't be smiling right now this is a time of sorrow.

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2.   Broad Invalidation

Also included: Say: get over it, Say: accept situation, Say: give up, Say: calm down

Accept it and move on

You should get over it

Dude just let it go. Who cares…just knock it off

---

3.   Invalidation by group membership

Suck it up son!

Well you just feel that way cause you're a girl!

You just feel that way because you're a Yankee

---

4.   Criticize emotional response

Also included: Alienation, Say: Feelings too intense, Say: Not emotional enough, Ask for more expression

Why are you making such a big deal about this? It's not that bad

Do you need a counselor or something or is something wrong with you? You just have the emotions of a robot or something?
Anything that makes you feel like alienated and like you're the only person in the world that's feeling like that emotion
I was looking for someone to share these feelings with me, but instead I got singled out

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Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays (Cont.)*

Major Themes/Examples[*,**]

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5. General demeaning response

Also included: Say something hurtful, blame me for the situation, judge me, passive-aggressive response, lecture me, call me names, criticize behavior, put down, punish me/make threats, express disapproval, guilt trip

She just went on and on about trying harder

She said I didn't love him because I wasn't showing it.

Gives me the silent treatment

Tell me I was a bad friend

...Looked down on me in emotional times

...told me that he raised me better than that

...continued to sputter angry and unsupportive bits and pieces at both of us

---

6. Get upset

...they got mad & they were like, "why are you making such a big deal about this?" and they like got mad at her

I realized that over the last 5 years I had become lonely and depressed. My new friends made me feel wanted again…I felt alive again. I was so excited. I tried to talk to my husband one evening about it…he instantly got upset and accused me of cheating on him.

...he was really upset, he was like, "there's something wrong with you"

---

7. Not take seriously

Also included: laugh, make a joke, ridicule

When I feel anger most people laugh at me. I am a small person and apparently I am funny when I am angry because people laugh at my rants and such. But if the person is in the same situation as me they are likely to feel that anger as well.

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Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays (Cont.)*

Major Themes/Examples[*,**]

My best friend is kind of uncomfortable with emotions, and she would probably try to turn it into a joke to make it so I don't have to think about negative emotions.

...I felt like no one in the room was taking me seriously. I spoke from the heart and about something that I truly believed to be fascinating and exciting, but I was met with some ridicule.

8.   Use emotions against me

Also included: Emotional manipulation

Twist it and manipulate them into doing stuff

9.   Negative physical indicators

Also included: (opposite) Give physical comfort, (opposite) Hug

Gave me almost like a sneer look, like a 'are you serious?'

She had the look of disappointment on her face, as if I had let her down

10.   Disregard my feelings

Also included: Not see my perspective, Be dismissive, Analyze situation, Ignore how I felt

He doesn't think that I should feel that way or see that way because he doesn't see it

...implies that they know more about your perspective than you do

11.   Tell me how I should feel

Also included: Tell me to feel something different

Aren't you nervous?...Well you should be!

I shouldn't have to explain to her why I was feeling relief, and that's why I wasn't upset at all

...told me I should get mad and stand up for myself.

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Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays (Cont.)*

Major Themes/Examples[*],[**]

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12. Try to change my emotions

Also included: Negative reassurance

> *Most of the time when I am angry/upset and people try to calm me down I become angry at them because they don't understand how bad things are in my mind. They just have to let me be mad for a while and then I get over it. Someone's telling you it's okay or everything's gonna be fine, you're just like 'no it's not, cause right now it's really really horrible'*

13. Question my emotions

> *Why are you happy? Like she's dead, it's so sad*

> *Dude why are you nervous, why are you freaking out right now?*

> *Why are you not upset? Like why are you not bothered?*

16. Give unwanted advice

Also included: Give unsolicited feedback

> *'Try to fix that' and 'try to talk to him'…but that's not really what you want*

> *I think a lot of times he like doesn't know what to say…he just like doesn't have good advice ever*

17. Not mirror/match emotions

Also included: (opposite) Mirror/match emotions, Express surprise

> *…I started dating someone and I was excited and I called my sister and told her about it and she was like "Noooo"…that's not what you want to hear…you want people to be happy when you're happy and sad when you're sad.*

> *(opposite) …if you share something that's kind of like prideful, and like you're proud of yourself for it, they're proud for you.*

Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays (Cont.)*

Major Themes/Examples[*,**]

> *...wanted my friends to be depressed with me so that we could go through it together, but they just ended up going what we all usually do...showing the least amount of emotion possible.*

> *My dad was rather surprised I took it so well.*

18. **Not understand me**

   Also included: Miss the point, (opposite) be understanding

   > *Don't think you are really comprehending what I am trying to tell you*

   > *I don't think they understand*

19. **Not take my side**

   Also included: Disagree with me, (opposite) take my side, (opposite) Agree with me/tell me I'm right

   > *But when I got finished...what she said made it seem like she was taking his side. This made me even more upset! She was MY mom! She was supposed to always pick me over him no matter what. I felt so betrayed. I started crying...and hung up the phone as fast as I could.*

20. **Indifference**

   Also included: Not care, Blow me off, Show no emotion, (opposite) Show concern, (opposite) Give support, (opposite) Pay attention, (opposite) Active listening/active participation, (opposite) Encourage to share, (opposite) Genuine empathy, (opposite) Be understanding, No support, Ignore completely

   > *Don't take the time to listen to the situation*

   > *They didn't even say anything*

   > *...she seems a little not connected to your feelings when she tells you her news. For instance, if I was going through a really rough time with my boss, she thinks nothing of telling me how great things were going for her at [her company]*

   > *I wish he would have considered my feelings more and thought about what makes me happy and not what makes him happy.*

Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays (Cont.)*

Major Themes/Examples[*,**]
…it was a time I really needed her and she acted like she didn't even care

21.	**Sterile response**

Also included: brief/shallow acknowledgement, (opposite) adapts response to situation, (opposite) individualized response

All he said was, "I'm sorry bro. I'll pray for you, and let me know if you need anything." It wasn't very satisfying to me…nowadays I feel like people just say that when they don't know what to tell you, and that's exactly what it felt like.

You see that person say the same thing to everyone.

22.	**Actively avoid conversation**

Also included: Be unavailable, dismiss

We not gon' talk about that

Maybe we can talk about it some other time

23.	**Change the topic**

Also included: Focus on themselves

'Well, I'm sorry that you're going through that but…' and then just started talking about business

Turned it toward something about them

24.	**Lack of follow up**

Also included: (opposite) Follow-up/Check-in on emotion

It's people that you know had been there for me my whole life and…weren't there at all

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Table 2. *Negatively Valanced Responses to Emotions – Qualitative Themes from Focus Groups and Essays (Cont.)*

Major Themes/Examples[*,**]

I was going through a rough time…I needed support and they knew I was going through it and there was no follow up….It seemed like I gave it..every hint possible even direct signs like, "Hey we could use some emotional support," but..no texts, no phone calls, no nothing.

[*]*Note*: responses in bold were those categories determined to be conceptually related to emotion invalidation, rather than a negative response to emotion more generally.

[**]*Note*: When relevant, positively valanced responses that were conceptually opposite to a negatively valenced theme were recorded within the negatively valanced code for descriptive purposes.

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Table 3. *Initial PIES Item Pool as Rated by Experts for Content Validity, Clarity, and Expected Item Means*

PIES Items		Relevance Ratings					Clarity Ratings					
		Experts					Experts					
		A	B	C	D	$M_{relevance}$	A	B	C	D	$M_{clarity}$	$M_{expected}$ (SD)
1.	…no reason to be upset	3	3	3	3	3.00	3	3	3	3	3.00	2.50(.58)
2.	…barely acknowledge me	3	2	3	2	2.50	3	2	2	3	2.50	2.00(.00)
3.	…don't mirror or match my emotions	3	3	2	1	2.25	3	3	3	2	2.75	2.50(1.30)
4.	…act like they don't care	3	3	3	3	3.00	3	3	3	3	3.00	2.25(.50)
5.	…don't really understand why I feel the way I do	2	2	3	3	2.50	3	3	2	3	2.75	2.25(.50)
6.	…tell me that things are not that bad	3	3	3	3	3.00	3	2	3	3	2.75	3.25(.96)
7.	…try to change how I feel rather than just understand me	3	3	2	3	2.75	2	2	3	3	2.50	3.50(.58)
8.	…try to fix my problems without understanding how I'm feeling	3	3	3	3	3.00	3	3	3	3	3.00	3.50(.58)
9.	…blame me for feeling the way that I do	3	3	3	2	2.75	3	2	3	3	2.75	1.25(.50)
10.	…say "whatever" or walk off	2	3	3	1	2.25	3	3	3	3	3.00	1.25(.50)
11.	…tell me things like "get over it" or "accept it and move on"	3	3	3	2	2.75	3	3	3	3	3.00	3.00(.82)

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Table 3. *Initial PIES Item Pool as Rated by Experts for Content Validity, Clarity, and Expected Item Means (Cont.)*

| | | Relevance Ratings | | | | | Clarity Ratings | | | | | |
| | | Experts | | | | | Experts | | | | | |
PIES	Items	A	B	C	D	$M_{relevance}$	A	B	C	D	$M_{clarity}$	$M_{expected}$ (SD)
12.	…seem like they don't want to hear what I have to say	2	2	3	3	2.50	3	3	3	3	3.00	2.50(.58)
13.	…look down on me or judge me	3	3	3	2	2.75	3	3	3	3	3.00	2.25(.50)
14.	…change the topic or end the conversation	3	3	3	2	2.75	3	3	3	3	3.00	2.00(.82)
15.	…act like I'm blowing things out of proportion	3	3	3	2	2.75	3	3	3	3	3.00	2.25(.50)
16.	…make it all about themselves and don't take the time to listen to me	3	3	3	1	2.50	3	2	3	3	2.75	3.50(1.00)
17.	…don't take me seriously or they even laugh at me	3	2	3	2	2.50	3	3	3	3	3.00	2.25(.96)
18.	…get more emotional than I feel	3	3	2	1	2.25	2	3	3	2	2.50	1.50(.58)
19.	…express disapproval or disappointment	3	3	3	1	2.50	3	2	3	3	2.75	1.75(.50)
20.	…tell me or imply what I should actually feel	3	3	3	3	3.00	3	3	3	2	2.75	3.00(.82)
21.	…tell me or imply that I'm actually feeling something that I'm not	3	2	3	2	2.50	2	2	3	2	2.25	2.00(.00)

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Table 3. *Initial PIES Item Pool as Rated by Experts for Content Validity, Clarity, and Expected Item Means (Cont.)*

		Relevance Ratings					Clarity Ratings					
		Experts					Experts					
PIES	Items	A	B	C	D	$M_{relevance}$	A	B	C	D	$M_{clarity}$	$M_{expected}$ (SD)
22.	…act like it's inappropriate for the situation	3	2	3	1	2.25	3	3	3	3	3.00	1.25(.50)
23.	…bring me down	3	2	3	1	2.25	3	2	3	3	2.75	2.00(.82)
24.	…aren't sad along with me	3	2	2	2	2.25	3	3	3	3	3.00	2.25(1.26)
25.	…don't get angry at the situation too	3	2	2	2	2.25	3	2	3	3	2.75	2.00(.82)
26.	...feel like a robot…or like a crybaby…	3	3	3	1	2.50	3	3	2	1	2.25	1.50(.58)
27.	…feeling the way that I do because of who I am	3	2	3	2	2.50	3	3	3	2	2.75	2.75(.96)
28.	…not feeling what I should because of who I am	3	2	3	2	2.50	2	2	3	2	2.25	2.50(1.00)
29.	…understand how I feel even though I know that they don't	3	2	3	2	2.50	3	3	3	3	3.00	3.00(.82)
30.	…pick my feelings apart from every angle	3	3	3	1	2.50	2	3	2	2	2.25	2.00(.00)
31.	…get mad or upset when I express my feelings	3	3	3	1	2.50	3	3	3	3	3.00	2.25(.50)
32.	…don't take my side or agree with how I'm feeling	3	3	3	1	2.50	3	3	3	3	3.00	2.75(.96)

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Table 3. *Initial PIES Item Pool as Rated by Experts for Content Validity, Clarity, and Expected Item Means (Cont.)*

PIES Items	A	B	C	D	$M_{relevance}$	A	B	C	D	$M_{clarity}$	$M_{expected}$ (SD)
			Relevance Ratings					Clarity Ratings			
		Experts						Experts			
33. ...like it's not okay for me to feel the way that I do	3	3	3	3	3.00	3	3	3	3	3.00	2.50(.58)
34 ...guilty about my emotions	3	3	3	2	2.75	3	2	3	3	2.75	1.75(.50)
35. ...don't understand why I'm feeling the way I do	2	3	3	2	2.50	2	3	3	2	2.50	2.25(.50)
36. ...like my emotions are unimportant	3	3	3	3	3.00	3	3	3	3	3.00	2.50(.58)
37. ...like my emotions don't make any sense	3	3	3	3	3.00	3	3	3	3	3.00	2.00(.82)

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Table 4. *Demographic Data for Study 3 Participants*

		Participant Group	
		Community *M* or *n* (*SD* or *%*) *N* = 201	*Student* *M* or *n* (*SD* or *%*) *N* = 201
Demographics			
Age		38.56 (12.76)[a]	19.83 (4.61)[b]
Sex			
	Female	110 (54.7%)	146 (72.6%)
	Male	91 (45.3%)	55 (27.4%)
Race			
	Caucasian	167 (83.1%)	162 (80.6%)
	African American	13 (6.5%)	8 (4.0%)
	Asian	11 (5.5%)	11 (5.5%)
	Hispanic/Latino	5 (2.5%)	13 (6.5%)
	Other	5 (2.5%)	7 (4.3%)
Sexual Orientation			
	Heterosexual	183 (91.0%)	191 (95.0%)
	Bisexual	11 (5.5%)	3 (1.5%)
	Lesbian/Gay	6 (3.0%)	6 (3.0%)
	Other	1 (0.5%)	1 (0.5%)
Marital Status			
	Single	77 (38.3%)	190 (94.5%)
	Married	102 (50.7%)	11 (5.5%)
	Separated	8 (4.0%)	--
	Divorced/Widowed	14 (7.0%)	--
Employment Status			
	Unemployed	47 (23.4%)	145 (72.1%)
	Part time	50 (24.9%)	50 (24.9%)
	Full time	104 (51.7%)	6 (3.0%)
College Enrollment Status			
	Yes	16 (8.0%)	201 (100%)
	No	185 (92.0%)	--

[a] Age range for community group was 20-70

[b] Age range for student group was 18-62

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Table 5. *Item Descriptives and Regression Weights from Study 3 Exploratory Factor Analysis*

Item	Mean	SD	Principal Axis Factoring			Maximum Likelihood		
			Factor 1 weight	Factor 2 weight	Factor 3 weight	Factor 1 weight	Factor 2 weight	Factor 3 weight
1	1.91	.94	.71			.71		
2	1.98	1.00	.66			.76		
3	1.76	.99	.90			.93		
4	2.03	1.06	.64			.69		
5	2.22	1.05	.63			.71		
6	2.24	1.07			.70	.63		
7	2.20	1.04			.56	.51		
8	1.73	1.01	.74			.71		
9	2.19	1.12	.62			.68		
10	1.91	1.07	.90			.91		
11	1.68	.96	.83			.82		
12	2.07	1.03	.72			.81		
13	2.05	1.12	.72			.65		
14	1.78	.99	.89			.86		
15	1.65	.97	.84			.76		
16	1.94	1.05	.60			.66		
17	1.87	1.16		.51			-.48	
18	1.73	.98		.89			-.91	
19	1.66	.97		.80			-.87	
20	2.23	1.07				.44		
21	1.60	.92	.45					
22	1.63	.97	.81			.52		
23	1.97	1.03	.68			.65		
24	1.84	1.07	.71			.46		
25	1.76	.99	.76					-.81
26	1.80	1.05	.81			.43		-.47
27	1.87	1.07	.66			.41		

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Table 6. *Descriptive Statistics and Zero-Order Correlations of Study 3 Invalidation Measures*

	Measure	*M*	*SD*	Range	1	2	3
1.	PIES	1.90	0.77	1.00-4.74	--	.43**	.35**
2.	ICES	2.57	0.40	1.00-4.14		--	.57**
3.	SES	3.08	1.03	1.20-7.00			--

$**p < .01$

Table 7. *Demographic Data for Study 4 Participants*

		Participant Group	
		Community *M* or *n* (*SD* or *%*) *N* = 303	*Student* *M* or *n* (*SD* or *%*) *N* = 301
Demographics			
Age		36.42 (12.42)[a]	19.48 (3.06)[b]
Sex			
	Female	169 (55.8%)	189 (62.8%)
	Male	134 (44.2%)	112 (37.2%)
Race			
	Caucasian	224 (73.9%)	244 (81.1%)
	African American	32 (10.6%)	14 (4.7%)
	Asian	25 (8.3%)	8 (2.7%)
	Hispanic/Latino	13 (4.3%)	11 (3.7%)
	Other	9 (3.0%)	24 (8.0%)
Sexual Orientation			
	Heterosexual	267 (88.1%)	289 (96.0%)
	Bisexual	20 (6.6%)	8 (2.7%)
	Lesbian/Gay	11 (3.6%)	3 (1.0%)
	Other	5 (1.7%)	1 (0.3%)
Marital Status			
	Single	156 (51.5%)	293 (97.3%)
	Married	111 (36.6%)	6 (2.0%)
	Separated	4 (1.3%)	2 (0.7%)
	Divorced/Widowed	32 (10.6%)	--
Employment Status			
	Unemployed	59 (19.5%)	198 (65.8%)
	Part time	121 (39.9%)	99 (32.9%)
	Full time	123 (40.6%)	4 (1.3%)
College Enrollment Status			
	Yes	60 (19.8%)	301 (100%)
	No	243 (80.2%)	--

[a] Age range for community group was 18-74
[b] Age range for student group was 18-50

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Table 8. *Demographic Data for Study 5 Participants*

		Participant Group	
		Community	*Student*
		M or *n*	*M* or *n*
		(*SD* or *%*)	(*SD* or *%*)
		N = 74	*N* = 87
Demographics			
Age		33.59 (8.97)[a]	19.34 (1.59)[b]
Sex			
	Female	36 (48.6%)	58 (66.7%)
	Male	38 (51.4%)	29 (33.3%)
Race			
	Caucasian	56 (75.7%)	63 (72.4%)
	African American	2 (2.7%)	4 (4.6%)
	Asian	4 (5.4%)	7 (8.0%)
	Hispanic/Latino	8 (10.8%)	7 (8.0%)
	Other	4 (5.5%)	6 (6.8%)
Sexual Orientation			
	Heterosexual	61 (82.4%)	82 (94.3%)
	Bisexual	9 (12.2%)	1 (1.1%)
	Lesbian/Gay	2 (2.7%)	3 (3.4%)
	Other	2 (2.7%)	1 (1.1%)
Marital Status			
	Single	48 (64.9%)	85 (97.7%)
	Married	23 (31.1%)	2 (2.3%)
	Separated	--	--
	Divorced/Widowed	3 (4.1%)	--
Employment Status			
	Unemployed	13 (17.6%)	58 (66.7%)
	Part time	21 (28.4%)	28 (32.2%)
	Full time	40 (54.1%)	1 (1.1%)
College Enrollment Status			
	Yes	2 (2.7%)	87 (100%)
	No	72 (97.3%)	--

[a] Age range for community group was 20-69

[b] Age range for student group was 18-29

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Table 9. *Descriptive Statistics for Study 5 Variables*

Construct (Measure)	Time 1 - *M* (*SD*)			Time 2 - *M* (*SD*)		
	Student	MTurk	*t*-test	Student	MTurk	*t*-test
Invalidation Measures						
Current Emotion Invalidation (PIES)	1.75 (.61)	1.61 (.72)	1.26	1.86 (.69)	1.73 (.76)	1.10
Childhood Invalidation (ICES)	2.53 (.32)	2.42 (.37)	2.09*	--	--	--
Childhood Emotion Invalidation (SES)	2.67 (.83)	2.97 (1.15)	-1.83	--	--	--
Emotional Functioning						
Emotional Distress (DASS-21)	23.84 (17.67)	20.05 (19.86)	1.28	21.10 (20.82)	15.68 (17.29)	1.80
Borderline Features (MSI-BPD)	2.93 (2.65)	2.42 (2.57)	1.23	--	--	--
Emotion Dysregulation (DERS)	2.31 (.61)	1.94 (.56)	4.01**	2.27 (.59)	1.90 (.55)	4.07**
Emotion Disclosure (GEDS)	2.47 (1.01)	2.61 (.98)	< 1.00	2.48 (.96)	2.55 (.96)	< 1.00
Social Functioning						
Number of Supports (SSQ6)	4.58 (2.28)	3.09 (1.82)	4.52**	--	--	--
Support Satisfaction (SSQ6)	5.18 (1.09)	5.14 (.85)	< 1.00	--	--	--
Social Desirability (MCSF)	4.80 (2.19)	4.47 (2.60)	< 1.00	4.79 (2.18)	4.28 (2.77)	1.28
Health						
Physical Health (WHOQOL)	16.77 (2.21)	17.00 (2.68)	< 1.00	17.02 (2.32)	16.70 (2.96)	< 1.00
Psychological Health (WHOQOL)	14.79 (2.72)	15.05 (3.02)	< 1.00	14.75 (2.95)	15.21 (3.06)	< 1.00
Relational Health (WHOQOL)	14.76 (3.37)	15.14 (3.68)	< 1.00	14.69 (3.30)	15.14 (3.51)	< 1.00

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Table 9. *Descriptive Statistics for Study 5 Variables (Cont.)*

Construct (Measure)	Time 1 - *M* (*SD*)			Time 2 - *M* (*SD*)		
	Student	MTurk	*t*-test	Student	MTurk	*t*-test
Health						
Environmental Health (WHOQOL)	16.13 (1.94)	14.91 (2.88)	3.10**	16.06 (2.09)	14.96 (3.14)	2.66**
Personality						
Neuroticism (BFI)	23.37 (6.61)	19.53 (7.90)	3.27**	--	--	--
Agreeableness (BFI)	34.96 (5.40)	34.81 (6.44)	< 1.00	--	--	--

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*p < .05, **p < .01

Note: PIES = Perceived Invalidation of Emotion Scale, ICES = Invalidating Childhood Environment Scale, SES = Socialization of Emotion Scale, DASS-21 = Depression Anxiety Stress Scales – 21 item Version, MSI-BPD = McLean Screening Inventory for Borderline Personality Disorder, DERS = Difficulties in Emotion Regulation Scale, GEDS = General Emotion Disclosure Scale, SSQ6 = Social Support Questionnaire – 6-item Version, MCSF = Marlow Crowne Short Form, WHOQOL = World Health Organization Quality of Life – Brief, BFI = Big Five Inventory

Table 10. *Bivariate Correlations for Study 5 Variables Measured at Time 1*

Construct (Scale)	1	2	3	4	5	6	7	8
1. Current Emotion Invalidation (PIES)	--	.59**	.37**	.46**	-.36**	-.47**	-.45**	-.42**
2. Emotional Distress (DASS-21)		--	.59**	.63**	-.50**	-.63**	-.52**	-.41**
3. Borderline Features (MSI-BPD)			--	.47**	-.45**	-.56**	-.41**	-.30**
4. Emotion Dysregulation (DERS)				--	-.47**	-.58**	-.45**	-.29**
5. Physical Health (WHOQOL)					--	.69**	.48**	.60**
6. Psychological Health (WHOQOL)						--	.59**	.64**
7. Relational Health (WHOQOL)							--	.46**
8. Environmental Health (WHOQOL)								--

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

Table 11. *Three Hierarchical Regressions Predicting Emotion Dysregulation (DERS Total Scores), Borderline Features (MSI-BPD) and Emotional Distress (DASS-21)*

	DERS Total Scores	MSI-BPD	DASS-21
	B (SE)	B (SE)	B (SE)
Step 1	($R^2 = .19$**)	($R^2 = .10$**)	($R^2 = .12$**)
Sample [a]	-.43 (.09)**	-.74 (.40)	-5.65 (2.84)[+]
Social Desirability (MCSF)	-.06 (.02)**	-.23 (.08)**	-1.76 (.59)**
Childhood Invalidation (SES)	.13 (.05)**	.51 (.20)*	4.34 (1.43)**
Step 2	($\Delta R^2 = .12$**)	($\Delta R^2 = .08$**)	($\Delta R^2 = .25$**)
Sample	-.36 (.08)**	-.50 (.39)	-2.51 (2.44)
Social Desirability (MCSF)	-.04 (.02)*	-.16 (.08)[+]	-.86 (.52)
Childhood Invalidation (SES)	.07 (.04)	.29 (.20)	1.55 (1.26)
Current Invalidation (PIES) [b]	.34 (.07)**	1.18 (.31)**	15.23 (1.93)**

Notes: [a] Student participants were coded as 0 and MTurk workers were coded as 1for these analyses. [b] Scores at Time 1 administration.

[+] $p = .05$, *$p < .05$, **$p < .01$

Table 12. *Bivariate Correlations between PIES at Time 1 and Selected Time 2 Variables for Study 5*

Construct (Scale)	1	2	3	4	5	6	7
1. Current Emotion Invalidation (PIES) [a]	--	.51**	.40**	-.37**	-.51**	-.49**	-.43**
2. Emotional Distress (DASS-21) [b]		--	.59**	.63**	-.50**	-.63**	-.52**
3. Emotion Dysregulation (DERS) [b]			--	-.46**	-.59**	-.39**	-.35**
4. Physical Health (WHOQOL) [b]				--	.67**	.52**	.67**
5. Psychological Health (WHOQOL) [b]					--	.64**	.64**
6. Relational Health (WHOQOL) [b]						--	.51**
7. Environmental Health (WHOQOL) [b]							--

Note: [a] Measured at Time 1, [b] Measured at Time 2

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

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Table 13. *Three Hierarchical Regressions Predicting Emotional Distress (DASS-21) and Relational and Psychological Health (WHOQOL subscales)*

	Emotional Distress	Relational Health	Psychological Health
	B (SE)	B (SE)	B (SE)
Step 1	($R^2 = .55$**)	($R^2 = .57$**)	($R^2 = .65$**)
Time 1 Scores on Corresponding Outcome Measure [a]	.76 (.06)**	.73 (.05)**	.85 (.05)**
Step 2	($\Delta R^2 = .01^+$)	($\Delta R^2 = .03$**)	($\Delta R^2 = .02$**)
Current Invalidation (PIES) [b]	3.19 (1.91)$^+$	-.92 (.29)**	-.72 (.23)**

Notes: [a] DASS-21 scores at Time 1 were entered in Step 1 for emotional distress outcome, WHOQOL scores for relational and psychological health at Time 1 were entered in Step 1 for relational and psychological health outcomes respectively. [b] Scores at Time 2 administration.

$^+ p = .10$, $*p < .05$, $**p < .01$

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Figure 1. *Factor Structure of Finalized 10-Item PIES*
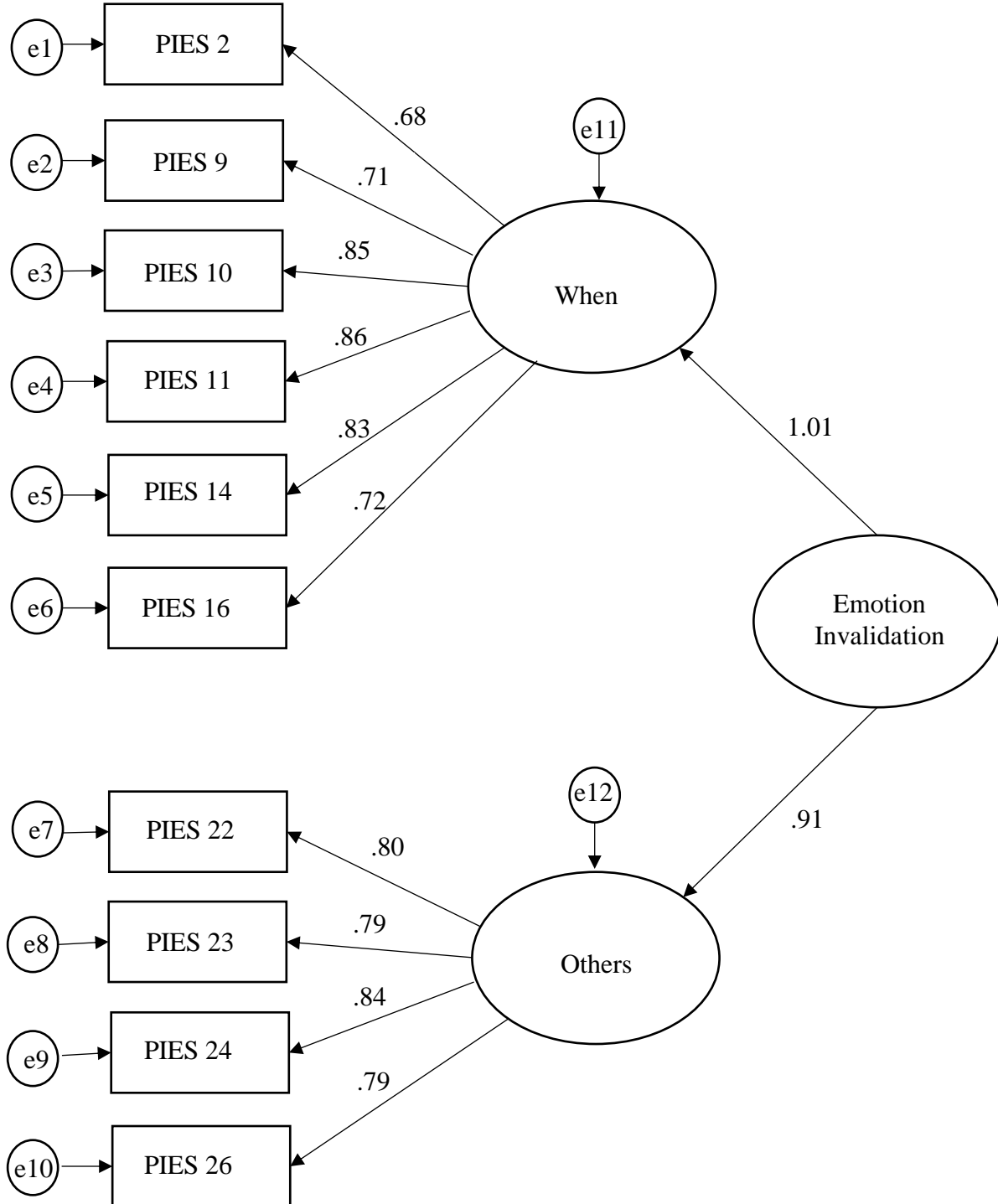
Note: Reported values are standardized factor loadings.

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Appendix A – *Self-report measures used to index invalidation in previous research*

Measure	Format	Items and Content	Internal Consistency	Limitations
Illness Invalidation Inventory (Kool et al., 2010; Kool & Middendorp, 2009)	5-point Likert scale ranging from 1 (*never*) to 5 (*very often*)	40 items total, consisting of 8 items per invalidation source (spouse, family, medical professionals, work environment, social services) Rate severity of two dimensions of invalidation (lack of understanding, discounting)	α = .67-.94 in rheumatoid arthritis and fibromyalgia patients (Kool et al., 2010)	Designed specifically for chronic pain populations, has limited applicability to other populations Item content not specific to emotion invalidation (e.g., "Gives me unhelpful advice")
Invalidating Childhood Environments Scale (Mountford et al., 2007)	5-point Likert scale ranging from 1 (*never/not at all like my family*) to 5 (*all the time/like my family all the time*)	14 items for each parent 4 additional items regarding entire family Rate experiences with mother and father up to age 18 Provides total score for severity of overall invalidation plus single-item scores for three invalidating (typical, perfect, chaotic) and	α = .77-.79 in eating disorder patients; α = .59-.66 in nonclinical sample (Mountford et al., 2007) α = .88-.90 in college students (Robertson et al., 2013)	Designed for eating disorder patients, mixed data regarding reliability in other samples Measures retrospective recollections of invalidation only Item content not specific to emotion invalidation (e.g., "My parents would explode with anger if I made decisions without asking them first.")

Appendix A – *Self-report measures used to index invalidation in previous research (Cont.)*

Measure	Format	Items and Content	Internal Consistency	Limitations
		one validating family type based on Linehan (1993)		Original scale items evidence poor fit when subjected to a confirmatory factor analysis (Robertson et al., 2013) Limited availability of psychometric properties and measure development procedure Data to date has been overwhelmingly collected on female participants
Multi-Dimensional Perfectionism Scale – Parental Criticism Subscale (Frost, Marten, Lahart, & Rosenblate, 1990)	5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*)	4 items Rate perceived parental criticism during childhood (e.g., never being able to meet parental expectations/standards)	$\alpha = .84$ in female undergraduates (Frost et al., 1990) $\alpha = .85$ in male and female undergraduates (Cheavens et al., 2005)	Item content indexes parental criticism, not emotion invalidation (e.g., "I never felt like I could meet my parents' expectations" and "As a child, I was punished for doing things less than perfect."
Parental Acceptance and Rejection Questionnaire (Rohner, 1991)	4-point Likert scale ranging from 1 (*almost never true*) to 4 (*almost always*	60 items Rate perceived parental acceptance and rejection across four subscales (warmth/affection,	$\alpha = .89$ mean in meta-analysis (Khaleque & Rohner, 2002)	Indexes parental acceptance and rejection, not emotion invalidation

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Measure	Format	Items and Content	Internal Consistency	Limitations
	true)	hostility/aggression, indifference/neglect, undifferentiated rejection)		
Socialization of Emotion Scale (Krause, Mendelson, & Lynch, 2003; Sauer & Baer, 2010)	7-point Likert scale ranging from 1 (*very unlikely*) to 7 (*very likely*)	36-items (Krause et al., 2003) or 33-items (Sauer & Baer, 2010) Adapted from the Coping with Children's Negative Emotions Scale (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002) Krause et al. (2003) version measures perceptions of parental distress reactions, punitive reactions, and minimization reactions Sauer & Baer (2010) found evidence for only two factors, validation and invalidation; made recommendations to alter items included in measure	α = .78-.85 in individuals ages 18-30 (Krause et al., 2003) α = .88-.95 in undergraduate students (Sauer & Baer, 2010)	Measures retrospective recollections of invalidation only Item content not specific to emotion invalidation (e.g., "If I was at a park and appeared on the verge of tears because the other children were being mean to me and wouldn't let me play with them, my caretaker would tell me that if I started crying then we'd have to go home right away") Retrospective self-report measure, does not index others' current environment; scenarios upon which items are based reflect childhood activities Requires participants to aggregate ratings across entire childhood

Note: Some researchers created their own items to measure invalidation (e.g., Nguyen, Ecklund, MacLehose, Veasley, & Harlow, 2012; Selby, Braithwaite, Joiner, & Fincham, 2008; You & Leung, 2012). The aforementioned measures have not been psychometrically evaluated and are thus not reviewed here.

Appendix B – *Study 1 Individual Essay Questions*

Instructions: Please take a moment to think about relationships with other people who you are in contact with on a regular basis (i.e., at least once per week). You may want to consider your relationships with parents, friends, intimate partners, coworkers, and acquaintances.

Question 1a:
We all have different experiences in our relationships with others. Considering the people with whom you have regular contact, how would you expect that people in your life would react to you if you shared an emotional experience with them?

For the purpose of this essay, an emotional experience refers to any instance in which you had experienced one or more emotions. Here are some examples of emotions:

Excitement	*Anger*	*Sadness*	*Joy*
Pride	*Boredom*	*Numbness*	*Guilt*
Contentment	*Fear*	*Surprise*	

Note: If you would expect different people to respond differently, feel free to specify different responses for different people in your life.

Question 2:
There are times when others do not respond to our emotions in the way that we would like. Please write about a time when someone in your life did not respond to your emotions the way that you would have liked. Walk us through this situation in as much detail as you can, including:

> (a) who was involved and your relation to that person (friend, partner, etc.)
> (b) where the conversation took place
> (c) what you said and did
> (d) what emotions you were feeling at the time
> (e) what the other person said and did
> (f) how the other person's response to your emotion made you feel
> (g) what part of how the person responded did you not like
> (h) how you wished the person would have responded to you.

You don't need to give us the real names of the individuals involved if you don't want to do so. If that's the case, please make up fake names so that we can follow the story.

Note: Make sure that you answer all parts of the question, but write your response as if you were telling a friend a story about this situation.

Question 3:
There are times when we may not experience emotion(s) (i.e., feel fairly emotionless), despite that other people may experience emotion(s) in that same situation. Please write about a situation during which someone in your life expressed that you should have had more or different emotions. Walk us through this situation in as much detail as you can, including:

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(a) who was involved and your relation to that person (friend, partner, etc.)
(b) where the conversation took place
(c) what you said and did
(d) what emotions you were feeling at the time
(e) what the other person said and did
(f) how the other person's response to your emotion made you feel
(g) what part of how the person responded did you not like
(h) how you wished the person would have responded to you.

You don't need to give us the real names of the individuals involved if you don't want to do so. If that's the case, please make up fake names so that we can follow the story.

Note: Make sure that you answer all parts of the question, but write your response as if you were telling a friend a story about this situation.

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Appendix C – *Study 1 Focus Group Questions and Facilitator Instructions*

Facilitator: "Hello everyone! Thank you again for being willing to participate in our group interview. We hope that each of you will be open to sharing your experiences, and that each of you respect and listen to what other group members have to say. There are not any right or wrong answers to our questions today. We are just interested in hearing your feelings and opinions. At this time, we'll go around the circle and say your name and a fun fact about yourself."

(Wait for participants to complete round robin).

Facilitator: "Thanks for doing that! The first thing that we will do is sign a group confidentiality agreement. As stated in the consent form for this study, you will need to keep everything shared in this session confidential. We hope this will help everyone to feel comfortable participating today, without fear that information that they share will leave the room. Is everyone willing to sign the confidentiality agreement?"

(Pause to allow time for participants to sign the agreement).

Facilitator: "Okay, let's get started with our interview. We are going to start by talking a little bit about the essay assignment that you just completed."

(Continue with questions, calling on participants to speak if necessary).

1. Neutral Statement: The essay question you all just answered asked about how others typically respond to you when you share emotional experiences with them. People often report many different responses to this question.

   Q: Could you share with the group the types of responses you often get when you share your emotions with other people in your life?

2. Neutral Statement: The essay question also asked about a time that someone responded to an emotional experience that you shared with them in a way that you did not like.

   Q: Could you share with the group several examples of responses that you have gotten and not liked after sharing your emotions with someone else?

   Q: What other types of responses have you heard happen to other people when they shared their emotions that you can imagine that you would not like?

   Q: Are there any other types of responses that you can imagine someone giving after you have shared an emotion that you would not like?

3. Neutral Statement: There are also times in which others respond to our emotions in a way that we do like.

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Q: Could you share with the group several examples of responses that you have gotten and liked after sharing your emotions with someone else?

4. Neutral Statement: We all have times when we go to another person for support and the person does not deliver the support we are looking for.

   Q: Could you share with the group an example of a time that you went to another person for support and you did not get the support you were looking for? This example can be the same as or different from the example you wrote about in your essay question.

5. Neutral Statement: The researchers in this study are interested in understanding a concept that we refer to as emotion invalidation. At its heart, emotion invalidation refers to any social exchange during which an individual's expressed emotions are met with responses from another person that imply that their emotions are incorrect or invalid.

   Q: Could you please share with the group an example of a time when you shared *negative emotions with others* and someone implied or directly said something that you felt told you your emotions were wrong or invalid?

   Q: Could you please share with the group an example of a time when you shared *positive emotions with others* and someone implied or directly said something that you felt told you your emotions were wrong or invalid?

   Q: Could you please share with the group an example of a time when *you were not feeling much emotion* and someone implied or directly said something that you felt told you your *lack of emotion* was wrong or invalid?

   Q: Even if you have not experienced the examples you give, what other types of responses might imply that someone's emotions are wrong or invalid?

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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.

Then, please indicate how often each item applied to you over the past month using the following scale:

1	2	3	4	5
Almost Never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost Always (91-100%)

_____ 1. When I share how I'm feeling, others act like I have no reason to be upset.

_____ 2. When I share how I'm feeling, others barely acknowledge me.

_____ 3. 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.

_____ 4. When I share how I'm feeling, others act like they don't care.

_____ 5. When I share how I'm feeling, others don't really understand why I feel the way that I do.

_____ 6. When I share how I'm feeling, others tell me that things are not that bad.

_____ 7. When I share how I'm feeling, others try to change how I feel rather than just understand me.

_____ 8. When I share how I'm feeling, others try to fix my problems without understanding how I'm feeling.

_____ 9. When I share how I'm feeling, others blame me for feeling the way that I do.

_____ 10. When I share how I'm feeling, others just say "whatever" or walk off.

_____ 11. When I share how I'm feeling, others tell me things like "get over it" or "accept it and move on."

_____ 12. When I share how I'm feeling, others seem like they don't want to hear what I have to say.

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_____13. When I share how I'm feeling, others look down on me or judge me.

_____ 14. When I share how I'm feeling, others change the topic or end the conversation.

_____ 15. When I share how I'm feeling, others act like I'm blowing things out of proportion.

_____ 16. When I share how I'm feeling, others make it all about themselves and don't take the time to listen to me.

_____ 17. When I share how I'm feeling, others don't take me seriously or they even laugh at me.

_____ 18. When I share how I'm feeling, others get more emotional than I feel.

_____ 19. When I share how I'm feeling, others express disapproval or disappointment.

_____ 20. When I try to share how I'm feeling, others tell me or imply what I should actually feel.

_____ 21. When I try to share how I'm feeling, others tell me or imply that I'm actually feeling something that I'm not.

_____ 22. When I express happiness or joy, people act like it's inappropriate for the situation.

_____ 23. When I express happiness or joy, others bring me down.

_____ 24. When I express sadness, others aren't sad along with me.

_____ 25. When I express anger at a situation, others don't get angry at the situation too.

_____ 26. People around me make me feel like a robot because I don't show enough emotion, or like a crybaby because I'm too emotional.

_____ 27. People say that I'm only feeling the way that I do because of who I am. For example, by saying, "Well you just feel that way because you're ____(a man/a women/liberal/ young/etc.)___!"

_____ 28. People say that I'm not feeling what I should because of who I am. For example, by saying, "The only reason you don't feel that way is because you're ____(a man/a women/liberal/young/etc.)___!"

_____ 29. Others tell me that they understand how I feel even though I know that they don't.

_____ 30. Others pick my feelings apart from every angle.

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_____ 31. Others get mad or upset at me when I express my feelings.

_____ 32. Others don't take my side or agree with how I'm feeling.

_____ 33. Others make me feel like it's not okay for me to feel the way that I do.

_____ 34. Others make me feel guilty about my emotions.

_____ 35. Others question my emotions as if they don't understand why I'm feeling the way that I do.

_____ 36. Others make me feel that my emotions are unimportant.

_____ 37. Others act like my emotions don't make any sense.

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Instructions:
Thank you again for agreeing to participate in expert review of the items of the *Perceived Invalidation of Emotion Scale (PIES)* that I am developing. Below is a description of the research project and the operationalization of emotion invalidation that I am using in the current project. I have also provided a brief overview of each set of ratings that you will be asked to complete (i.e., Section III in this document).

Specifically, you will be asked to provide ratings of (1) item relevance, (2) item clarity, and (3) anticipated item means. You will also be asked to provide your thoughts about the operationalization of invalidation being used in the present study and the range of the items in the measure item pool as a whole.

Once you have read this document and reviewed the items on the PIES (see email attachment), please use the following link to complete the content validation:

(link was available here)

****

I: Research Project:
　　　　Despite the decades passed since emotion invalidation was first theorized to causally influence the development of psychological disorder (Linehan, 1993), research on emotion invalidation has grown slowly. Extant research has often utilized measures that were designed to measure related or overlapping constructs (e.g., criticism, low care, abuse), but which arguably do not capture the construct of invalidation as a whole. As such, my dissertation aims to develop and validate a self-report measure that can be used to index current levels of perceived invalidation of emotions in college student and community samples.
　　　　Items in the current PIES item pool were developed based upon the results of a qualitative study that examined people's experiences with how others respond when they share their emotions. More specifically, participants' responses on individual essay questions and during focus groups were qualitatively coded and these codes, along with corresponding participant quotes, were used as a base for PIES items. The PIES item pool has been designed to be over-inclusive at this stage of measure development, consistent with the guidelines reported in the literature (Clark & Watson, 1995).

II: Construct Definition for the Current Study:
　　　　Emotion invalidation refers to any social exchange during which an individual's expressed emotions or affective experiences are met with a response from another person that is perceived by the individual as implying that their emotions or affective experiences are incorrect or inappropriate for the situation (Zielinski, 2014).
　　　　Several components of the proposed updated definition of invalidation are worth highlighting and expanding upon further. First, the focus of emotion invalidation is upon *active instances* of behavior. In other words, there must be a social transaction or transactions present during which invalidation occurs. Second, an individual has to *express* an emotion or affective

experience before emotion invalidation can occur. These expressions of emotion can occur through verbal or nonverbal communication; however, offering assumptions about an individual's emotional state prior to the individual displaying an emotion is not included in the definition of invalidation proposed here. Finally, the proposed definition of emotion invalidation highlights that importance of an individual's *perception* of an interaction as invalidating. While behavioral measures of invalidation constitute an important contribution to the literature, emotion invalidation can also be examined from the perspective of how an individual experiences an interaction.

III: Overview of Ratings to be Completed:

Please note: You may find it helpful to keep a copy of the PIES open while completing the following item ratings.

Relevance:
In this section, I would like to know how central each item is to my construct of interest. Please rate the relevance of each item to the construct of **emotion invalidation.**

Also, if you have any comments about the relevance of the item, please note your thoughts in the text box provided. If you do not have any comments, leave the text box blank.

Clarity:
In this section, I would like to know how comprehensible each item is. Please rate how comprehensible each of the items is by using the scale provided.

Also, if you have ideas for how to clarify the item, please note your thoughts in the text box provided beneath each item. If you do not have any comments, leave the text box blank.

Item Means:
In this section, I would like your help anticipating whether the items will produce an adequate range of means. Please indicate what you think the average (mean) response for each item will be given our target respondents (i.e., college students and community adults).

Following completion of these ratings, you will be asked to think about all of the items as a whole and provide any additional feedback you find relevant.

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.

Then, please indicate how often each item applied to you over the past month using the following scale:

1	2	3	4	5
Almost Never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost Always (91-100%)

_____ 1. When I share how I'm feeling, others act like I have no reason to be upset.

_____ 2. 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.

_____ 3. When I share how I'm feeling, others act like they don't care.

_____ 4. When I share how I'm feeling, others don't seem to understand why I feel the way that I do.

_____ 5. When I share how I'm feeling, others act like things are not that bad.

_____ 6. When I share how I'm feeling, others try to change how I feel rather than just understand me.

_____ 7. When I share how I'm feeling, others try to fix my problems without understanding how I'm feeling.

_____ 8. When I share how I'm feeling, others blame me for feeling the way that I do.

_____ 9. When I share how I'm feeling, others want me to "get over it" or "accept it and move on."

_____ 10. When I share how I'm feeling, others seem like they don't want to hear what I have to say.

_____11. When I share how I'm feeling, others look down on me or judge me.

_____ 12. When I share how I'm feeling, others act like I'm blowing things out of proportion.

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_____ 13. When I share how I'm feeling, others make it all about themselves rather than just take the time to listen to me.

_____ 14. When I share how I'm feeling, others don't take me seriously.

_____ 15. When I share how I'm feeling, others express disapproval or disappointment.

_____ 16. When I try to share how I'm feeling, others tell me or imply what I should actually feel.

_____ 17. People around me make me feel like a robot because I don't show enough emotion, or like a crybaby because I'm too emotional.

_____ 18. People say that I'm only feeling the way that I do because of who I am. For example, by saying, "Well you just feel that way because you're ____(a man/a women/liberal/ young/etc.)___!"

_____ 19. People say that I'm not feeling what I should because of who I am. For example, by saying, "The only reason you don't feel that way is because you're ____(a man/a women/liberal/   young/etc.)___!"

_____ 20. Others tell me that they understand how I feel even though I know that they don't.

_____ 21. Others pick my feelings apart from every angle.

_____ 22. Others get mad or upset at me when I express my feelings.

_____ 23. Others don't take my side or agree with how I'm feeling.

_____24. Others make me feel like it's not okay for me to feel the way that I do.

_____ 25. Others make me feel guilty about my emotions.

_____ 26. Others make me feel that my emotions are unimportant.

_____ 27. Others act like my emotions don't make any sense.

Appendix G – *Final PIES Measure (Used in Study 5)*

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.

Then, please indicate how often each item applied to you over the past month using the following scale:

1	2	3	4	5
Almost Never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost Always (91-100%)

_____ 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 at me 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 that I do.

_____ 10. Others make me feel that my emotions are unimportant.

Appendix H – *Institutional Review Board Approval*

UNIVERSITY OF
ARKANSAS

Office of Research Compliance
Institutional Review Board

March 5, 2015

MEMORANDUM

TO: Melissa Zielinski
                  Kayla Skinner
                  Desmond Webb
                  Jennifer Veilleux

FROM: Ro Windwalker
                  IRB Coordinator

RE: New Protocol Approval

IRB Protocol #:   15-02-490

Protocol Title: *The Perceived Invalidation of Emotion Scale: Development and Psychometric Properties*

Review Type: ☒ EXEMPT   ☐ EXPEDITED   ☐ FULL IRB

Approved Project Period: Start Date: 03/05/2015 Expiration Date: 03/04/2016

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (https://vpred.uark.edu/units/rscp/index.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 2,000 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.

109 MLKG · 1 University of Arkansas · Fayetteville, AR 72701-1201 · (479) 575-2208 · Fax (479) 575-6527 · Email irb@uark.edu
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