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Valuing Negative Affect Weakens Affect-Health Linkages: Similarities and Differences Across Affect Valuation Measures

Gloria Luong[1], **James W. Miller**[1], **David Kirkland**[1], **Jessica L. Morse**[2,3], **Cornelia Wrzus**[4], **Manfred Diehl**[1], **Sy-Miin Chow**[5], **Michaela Riediger**[6]

[1]Department of Human Development and Family Studies, Colorado State University

[2]University of California, San Diego

[3]VA San Diego Healthcare System

[4]Department of Psychological Aging Research, Ruprecht Karls University of Heidelberg

[5]Department of Human Development and Family Studies, The Pennsylvania State University

[6]Department of Developmental Psychology, Friedrich Schiller University Jena

Abstract

Negative affect (NA) has been robustly linked to poorer psychological health, including greater depressive symptoms, personal burnout, and perceived stress. These associations, known as *affect-health links*, have been postulated by our research team to vary with different levels of *negative affect valuation* (NAV), such that people who *evaluate* NA states as more pleasant, helpful, appropriate, and/or meaningful may show weaker affect-health links. Another affect valuation construct is *ideal NA*, which is the degree to which people ideally want to experience NA states (i.e., *desirability* of affective states). The current study extends previous research by examining these two different measures of affect valuation (NAV and ideal NA) and comparing the extent to which they moderate affect-health links for psychological health and functioning. Participants from the Health and Daily Experiences (HEADE) study (N = 162 comprising of 56 younger adults and 106 older adults) completed questionnaires in a laboratory setting and ecological momentary assessments of NA 6 times a day for 7 consecutive days (i.e., trait NA). The results demonstrated that the two affect valuation constructs were distinct and showed different patterns of buffering effects. NAV attenuated the association between trait NA and depressive symptoms, personal burnout, and intolerance of uncertainty. Ideal NA attenuated affect-health links for depressive symptoms and perceived stress. These findings point to the importance of sharpening the distinctions between various affect valuation constructs to elucidate their unique contributions to attenuating affect-health links.

Keywords

negative emotions; emotion-health links; perspectives on emotion; negative affect valuation; ideal affect

Correspondence concerning this article should be addressed to: Gloria Luong, Department of Human Development and Family Studies, Colorado State University, 1570 Campus Delivery, Fort Collins, CO 80523-1570. Gloria.Luong@colostate.edu.

A large and growing literature shows that more frequent and intense experiences of negative affect (NA) states, such as anger, anxiety, and sadness, are associated with poorer psychological health and functioning, including lower life satisfaction, greater depressive symptoms, and personal burnout (Bos et al., 2019; Kuppens et al., 2008). These *affect-health linkages* have been shown to vary for different individuals and across cultural contexts, but more research is needed to elucidate potential moderators of these associations. Emerging research suggests that different valuation perspectives on emotions (i.e., the degree to which people value NA experiences) may attenuate the extent to which NA is associated with poorer psychological health (Luong et al., 2016). *Negative affect valuation* (NAV) refers to *evaluations* of NA states as pleasurable, helpful, appropriate, and/or meaningful experiences (Luong et al., 2016; Riediger & Luong, 2015). Another affect valuation measure, *ideal NA*, refers to the *desirability* of NA and how much people ideally want to experience NA (Tsai et al., 2006). The current study builds upon previous research by investigating these two different perspectives on affect valuation, negative affect valuation (NAV) and ideal NA, and compares how these constructs may weaken affect-health links.

Links Between Negative Affect (NA) and Psychological Health and Functioning

NA is often considered "negative," not only because these states can be unpleasant and aversive emotional experiences in and of themselves (Riediger & Luong, 2016), but also because they are related to a host of undesirable psychological health measures (e.g., Charles et al., 2013). These associations between negative affect and poorer psychological health indices are hereafter referred to as *affect-health links*. Affect-health links have been documented across numerous studies, such that NA is related to lower life satisfaction (Kuppens et al., 2008; Lightsey et al., 2012; Siedlecki et al., 2008). NA is also associated with lower levels of global indicators of positive psychological health, including self-compassion, which involves being kind and understanding with oneself in the face of stressors or failures (e.g., Booker & Dunsmore, 2019; Johnson & O'Brien, 2013; Krieger et al., 2015; Shephard & Cardon, 2009). Moreover, NA is linked to poorer psychological health, including greater depressive symptoms (Bos et al., 2019; Charles et al., 2013; Tarlow & Haaga, 1996), perceived stress (Snippe et al., 2017; Whitehead, 2021), and personal burnout, which involves feelings of physical and emotional exhaustion (Montero-Marin et al., 2015; Zhao et al., 2019). In addition, NA is associated with higher intolerance of uncertainty which involves fearing the unknown and is a transdiagnostic marker of mental health disorders such as anxiety and depression (Talkovsky & Norton, 2018) and lower psychological well-being (Morse et al., 2021).

Together, these findings demonstrate a pervasive and robust association between NA and diverse psychological health indices – from more proximal and direct psychological and mental health issues (e.g., life satisfaction, depressive symptoms, perceived stress, personal burnout) to more distal and global predictors of (mal)adaptive functioning (e.g., self-compassion, intolerance of uncertainty). The inclusion of a wide range of psychological health and functioning measures is important in studies of affect-health links to help establish potential boundary conditions of the effects. Although affect-health links may be

bidirectional, such that greater NA may lead to poorer psychological health and detrimental psychological functioning may be stressful and lead to increased NA, we focus on NA as a predictor of psychological health in this study (Luong et al., 2016). We adopt this perspective based on theoretical and empirical evidence showing that greater NA leads to heightened physiological states (e.g., psychoneuroendocrinological pathways such as hypothalamic-pituitary-axis activation leading to increased cortisol "stress hormone" levels, cardiovascular arousal, heart rate variability) which are associated with poorer mental health (Perna et al., 2020; Sapolsky, 2007). NA may also be indirectly linked to mental health, such that NA can reduce effective and healthy coping (Fisher et al., 2007), increase the likelihood of engaging in unhealthy behaviors (Ferrer et al., 2017), and disrupted sleep (Thomsen et al., 2003), contributing to psychological distress.

Emerging research suggests, however, that the degree to which NA is related to poorer psychological health varies for different people and across cultural contexts (e.g., Curhan et al., 2014; Haase et al., 2012; Kuppens et al., 2008). For example, studies suggest that NA may be more strongly linked to poorer physical and mental health among WEIRD (Western, educated, industrialized, rich, and democratic) samples (e.g., De Vaus et al., 2018; Miyamoto et al., 2013). It has been posited that individual and cultural differences in the extent to which people value and ideally want to experience NA may account for variation in affect-health linkages (Tsai, 2017). Yet, few studies have directly tested these claims to identify affect valuation constructs that may moderate affect-health links.

Affect Valuation Constructs: Negative Affect Valuation and Ideal Negative Affect

Appraisal theories of emotions propose that people evaluate events (e.g., level of threat to one's well-being or goals), which in turn, elicits concomitant affective states (e.g., Frijda, 1986; Moors, 2013; Siemer et al., 2007; Smith & Ellsworth, 1985). Subsequently, the affective states themselves may be subjected to a higher-ordered appraisal process whereby people evaluate the desirability and value of the affective states on various dimensions (Bartsch et al., 2008; Lazarus, 1991; Oschsner & Gross, 2014; Simons & Gaher, 2005). These affect valuation dimensions have encompassed a range of constructs, including how much people appreciate various emotions (Harmon-Jones et al., 2011), metaemotions (i.e., emotions about emotions; see review by Bartsch et al., 2008; Mayer & Gaschke, 1988), attitudes toward emotions (Izard, 1971), and acceptance of emotions (Ford et al., 2018; Shallcross et al., 2010). To more comprehensively understand the different facets that may account for affect valuation, however, the current study focuses on comparing two constructs: negative affect valuation (NAV; Luong et al., 2016) and ideal NA (based on the Affect Valuation Index; Tsai, Knutson, & Fung, 2006).

Negative affect valuation (NAV) is the extent to which individuals may appraise or *evaluate* negative affect states as providing value with respect to: (a) hedonic pleasure states, (b) helpfulness or adaptiveness in achieving one's goals, (c) appropriateness or acceptability, and (d) meaningfulness (Luong et al., 2016). Although NA states have been labeled "negative" because they are generally aversive and unpleasant experiences, labeling them as

such may mask the degree to which there are individual differences in the ways that people value NA states (Solomon & Stone, 2002; Zaborowski, 2013). For example, people differ in the ways that they view NA states as being hedonically pleasant, such that some people may enjoy experiencing sadness and fear when watching drama and horror films, respectively (Andrade & Cohen, 2007; Riediger et al., 2014). Anger can also feel empowering to some people, whereas it may feel extremely uncomfortable to others (Harmon-Jones et al., 2011). Moreover, NA can sometimes be helpful, adaptive, or useful in attaining one's goals (Haase et al., 2012; Knobloch-Westerwick & Alter, 2006; Lieberman & Goldstein, 2006). Anger, for example, can be helpful when negotiating deals and advocating for one's needs (Keltner & Gross, 1999) and fear and anxiety can enhance performance on certain tasks (Lang et al., 2000; Tamir, 2005; Tamir & Ford, 2009). People also differ in the extent to which NA is viewed as appropriate and meaningful, such as feeling sad when experiencing a loss (Miyamoto et al., 2014; Uchida & Kitayama, 2009). Thus, greater NAV is reflected by higher evaluations of these 4 dimensions of affect valuation: pleasantness, helpfulness/utility, appropriateness, and meaningfulness.

Another important affect valuation construct is *ideal negative affect*, which refers to the extent to which people ideally want to experience various NA states (i.e., *desirability* of NA; Tsai, 2007). Affect Valuation Theory posits that ideal negative affect is distinct from actual affective experiences and can be influenced by cultural factors that prescribe the degree to which NA may be considered desirable, valuable, and worthy (Tsai et al., 2006). Although much of the previous work in this area has focused on cultural variation in the valuation of NA (e.g., Koopmann-Holm & Tsai, 2014), ideal NA can also differ between individuals within a given culture and may be an important factor to consider when examining affect-health links (Scheibe et al., 2013; Yoo & Miyamoto, 2018).

Previous research has focused primarily on investigating individual affect valuation constructs and have not included multiple measures within the same study to delineate their similarities and differences. It is unclear, for example, to what degree NAV and ideal NA are related. Research suggests that experiences of NA shape how people evaluate and value those affective states (Ford & Gross, 2019; Netzer et al., 2015). It is thus possible that with more frequent and intense experiences of NA (trait NA), people will develop more nuanced and differentiated evaluations of affect valuation constructs. This hypothesis would suggest that with greater trait NA, the associations between NAV and ideal NA would show greater divergence. Conversely, however, greater trait NA may lead to more favorable valuations of NA overall, which could lead to stronger convergence between NAV and ideal NA (Netzer et al., 2015). One aim of the current study will be to elucidate the extent to which NAV and ideal NA are related, and how this association may depend on trait NA.

Affect Valuation as a Buffer of Affect-Health Links

Research has suggested that affect valuation can buffer against affect-health links by weakening the association between actual NA and poorer psychological health and functioning (Tsai, 2017). Theoretical frameworks suggest that appraisals of emotional experiences, including affect valuation, can alter the course, significance, correlates, and corresponding outcomes of the emotional experience (Bartsch et al., 2008; Gross, 2015).

That is, appraisals of NA experiences as desirable, wanted, valuable, and/or consistent with one's goals may reduce the aversive responses or caustic consequences of NA. For example, one recent study showed that the more people valued a negative emotion, nervousness, the lower their cardiovascular stress reactivity (distress) was to a mental arithmetic stressor (Yoo et al., 2021). When NA experiences are associated with more positive or redeeming appraisal qualities, affect-health links may show greater decoupling. Over time, NA may not be viewed as a solely detrimental experience, but one that is more nuanced. Indeed, another study found that greater NAV was related to better psychological health overall, but also that affect-health links were reduced with greater levels of NAV across a variety of both physical and psychological health outcomes, including emotional health problems, social integration, health conditions, hand grip strength, and physical well-being in daily life (Luong et al., 2016). That study was based on the Multi-Method Ambulatory Assessment (MMAA) project, which included a lifespan sample of German participants ranging from 14-88 years of age (see Riediger et al., 2009). Questions remain, therefore, regarding the extent to which these findings would replicate in a different sample and country (in a midwestern region of the United States).

Other studies examining ideal NA have also pointed to the potential link between ideal NA and mental health (e.g., Swerdlow et al., 2019), but additional research is needed to better understand how ideal NA may play a unique role in moderating affect-health links (e.g., Tsai, 2017). Conceptually, NAV assesses how individuals evaluate the value of different dimensions and qualities (pleasantness, helpfulness, appropriateness, meaningfulness) of discrete emotions (e.g., anger, sadness). Ideal NA, in contrast, taps into desirable emotional motivations and goals that people have regarding specific emotions that are ideal and valued (Tsai et al., 2006). It is not yet clear how these two approaches to studying affect valuation may be empirically distinct from one another. Previous work suggests that the helpfulness facet may be important for reducing distress (e.g., Yoo et al., 2021) but theoretical predictions suggest that the desirability facet (ideal affect) should also help to weaken affect-health links (Tsai, 2017). The current study will contribute to the literature by elucidating the extent to which NAV (evaluating NA) and ideal NA (desiring NA) show similarities and differences in how they may buffer affect-health associations.

To better understand the scope of affect-health linkages, we sampled a range of psychological health outcomes, including positive (e.g., life satisfaction, self-compassion) and negative indices of psychological functioning (e.g., depressive symptoms, perceived stress, personal burnout, and intolerance of uncertainty). These measures also varied in the extent to which they are direct (e.g., life satisfaction, depressive symptoms) or indirect indicators of psychological health (e.g., intolerance of uncertainty, which is a transdiagnostic predictor of mental health disorders). In a previous study of German participants, NAV attenuated the association between trait NA and emotional health issues (including depressive mood), but not life satisfaction (Luong et al., 2016). The present study will allow us to test the degree to which these findings are replicated in a midwestern U.S. sample and the boundary conditions of such buffering effects on NAV and ideal NA. To our knowledge, no studies to date have directly tested the extent to which ideal NA moderates affect-health linkages, though it has been posited to dampen these associations (e.g., Tsai, 2017).

The Present Study

The current study addressed the following 3 research questions:

1. **How are NAV and ideal NA related to one another?** We hypothesize that NAV and ideal NA will be positively correlated. We will explore the degree to which this association may depend on levels of NA experienced in daily life (trait NA).
2. **To what extent does NAV moderate affect-health links?** Extending previous research, we will test the degree to which these findings are replicated in a U.S. sample and focus on a diverse array of psychological health and functioning outcomes, including life satisfaction, self-compassion, depressive symptoms, perceived stress, personal burnout, and intolerance of uncertainty. We predict that NAV will attenuate affect-health links as evidenced in prior research.
3. **To what extent does ideal NA moderate affect-health links?** To our knowledge, past studies have not directly examined ideal NA as a potential moderator of affect-health links, nor have they compared how the pattern of results may be similar or different relative to those obtained when examining NAV as a moderator of affect-health links. Given that ideal NA reflects individual and cultural values for emotional experiences, we expect that ideal NA will also attenuate affect-health links, though we will explore the degree to which the pattern of results may be comparable to those obtained for NAV.

Method

Participants

Participants were from a larger project, the Health and Daily Experiences (HEADE) study, which focused on examining adult age group differences in stress responses. Participants were recruited through the university human participants pool (younger adults only), email listservs, newspaper advertisements, community flyers, and word-of-mouth from a medium-sized county in the midwestern United States. Of the 247 participants in the HEADE study, 164 participants completed data collection from both the protocols for the laboratory sessions and the ecological momentary assessments (EMAs) in daily life across the course of one week. We conducted power analyses in the design planning stage, which showed that our sample size provided adequate power to detect small to moderate effect sizes with significance level = .05 and power level = .80. To be eligible for the original study, participants had to fall within one of two age groups (younger adults: 18-35 years of age; older adults: 60+ years old) and did not endorse having any affective or psychological disorders within the past year. Older adults also needed to be free of cognitive impairments by correctly answering three questions on a modified version of the Mini-Mental State Examination (MMSE; Folstein et al., 1975), such knowing the date and who is currently the President of the United States.

Two of the original HEADE study participants were excluded because they did not meet the age group eligibility criterion and were erroneously included in the study. The final sample of 162 participants comprised of 56 younger adults (19-35 years old; M = 27.93 years, SD = 3.89 years) and 106 older adults (60-90 years old; M = 69.78 years; SD = 6.59 years). Over

half of the sample identified as women (56.8%), with the remaining participants identifying as men (43.2%). Most participants were non-Hispanic White (79.0%) with the remaining participants belonging to a minoritized ethnic or racial group, such as having Hispanic ethnicity and/or racial background such as Black, Asian, Native American/Indigenous, etc. (21.0%). The racial and ethnic breakdown of the sample reflects the demographics of the geographical region from which participants were recruited, which was predominantly White (>86% of residents in the area were White non-Hispanic). This sample was relatively well educated with 79.6% of the sample reporting having a Bachelor's degree or higher. Participants reported a median income level between $40,000-$49,999.

Procedure

The HEADE study was approved by the university Institutional Review Board for ethical and responsible conduct of research with human participants. At the beginning of the study, participants were provided with an informed consent form that detailed the purpose of the study and reminded participants they could withdraw from the study at any time. An experimenter also verbally explained the procedures to the participants and answered their questions. After consenting to the study, participants took part in the two major protocols of the HEADE study that occurred over the course of one week: laboratory sessions and ecological momentary assessments (EMA) in daily life. The three lab sessions involved a well-validated and standardized psychological stressor task, the Trier Social Stress Test (TSST; Kirschbaum et al., 1993), which reliably elicit physiological and emotional distress responses in adults (Allen et al., 2017). During the lab sessions, participants completed filler questionnaires before and after the TSST, including information on their general negative affect valuation and ideal affect, global psychological health and functioning (e.g., depressive symptoms, life satisfaction, personal burnout, self-compassion), and demographic background (age, gender identity, race and ethnicity). The current study does not focus on participant responses to the TSST but on the questionnaire data collected during the lab sessions.

Participants also completed EMA surveys on mobile smart phones (Samsung J3) equipped with an experience sampling application that pinged participants 6 times per day for 7 consecutive days to complete surveys in vivo, as well as a practice EMA survey day. The EMA surveys occurred semi-randomly during the participants' reported waking hours. EMA surveys were scheduled no less than 30 minutes apart and no more than 4 hours between surveys. In total, 7,104 surveys were completed, with 36 of those surveys partially completed. Less than 10% of surveys were missing, on average. Participants received a bonus compensation for completing at least 90% of the EMA surveys so they may have been highly motivated to comply with study procedures. Participants were asked about their momentary emotional states (including negative affect) and daily life experiences (e.g., sleep quality, stressor occurrences, positive experiences, activities, social partners present), the latter of which were not the focus of the current investigation. At the conclusion of the study, participants were debriefed about the study aims, including about why the TSST was used in the study. Participants were given the option to withdraw their data from the study. Compensation involved course extra credit for those participants who were drawn from the

university human participants pools, or up to $200 for community research participants who completed all study protocols.

Measures

The predictor variable, trait negative affect (NA), was derived from momentary assessments of negative affect in daily life from the EMA surveys, as described further below. All of the other measures (moderators and psychological health outcome variables) were obtained from the questionnaires administered during the lab sessions.

Predictor Variable

Trait Negative Affect (NA).: We computed trait negative affect (NA) by averaging each person's momentary experiences of NA assessed with EMA surveys 6 times per day for 7 days. Participants rated the degree to which they were currently experiencing 5 different negative emotional states (angry, sad, bored, anxious, tired) on a 1 (*not at all*) to 7 (*extremely*) Likert scale at the time that the EMA surveys were completed ($\alpha_{\text{average across persons}}$ = .78; ($\alpha_{\text{average across occasions}}$ = .66, which is considered to be of moderate reliability; Nezlek, 2017; Shrout, 1998). This measure has been used successfully in previous EMA studies and shown good reliability and validity (Luong et al., 2016; Riediger et al., 2009).

Moderators

Negative Affect Valuation (NAV).: We used an English-translated version of the Negative Affect Valuation (NAV) scale which was administered during the lab sessions and assessed the degree to which individuals generally see value in 3 different negative emotions (anger, anxiety, sadness) across 4 dimensions (pleasantness, helpfulness, meaningfulness, and appropriateness) with two items per dimension (see Luong et al., 2016). In total, the NAV scale comprised of 24 items, with 8 items for each of the 3 emotions. That is, for each emotion, participants rated how often they experienced it as pleasant, unpleasant (reverse scored), helpful, disruptive (reverse scored), appropriate, inappropriate (reverse scored), meaningful, and pointless (reverse scored) using a Likert-scale from 1 ((*Almost) Never*) to 7 (*(Almost) Always*). The measure had good internal consistency in the current study (Cronbach's α = .81) and had previously shown good reliability (Cronbach's α = .85) and validity in predicting affect-health links in a different study of German participants (see Luong et al., 2016).

Ideal Negative Affect.: Ideal negative affect (NA) was assessed using a modified version of the Affect Valuation Index (Tsai et al., 2006). Participants were asked, "Please rate the extent to which you would ideally like to feel each of these emotions, in general" for 7 different negative emotions (anger, anxiety, sadness, boredom, embarrassment, frustration, and fear) using a 7-point Likert scale from 1 (*not at all*) to 7 (*extremely*). Ideal NA is sometimes scored separately for high and low arousal NA states (e.g., Swerdlow et al., 2019). However, to create a more similar comparison to the trait NA measure in this study, and to maintain higher scale reliability, all 7 NA states were combined into one composite measure of ideal NA. The internal consistency of the measure in this study was good (Cronbach's α = .72.). Ideal NA has shown strong reliability and validity in previous studies (see Tsai, 2007; 2017; Tsai & Sims, 2018).

Psychological Health Dependent Variables

Life Satisfaction.: The Satisfaction with Life Scale (SWLS; Diener et al., 1985) consisted of 5 items assessing participants' overall satisfaction with the way things were going in their lives. Participants used Likert scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) to rate their agreement with statements such as "In most ways, my life is close to my ideal" and "I am satisfied with my life." This measure exhibited good internal consistency in the current study (Cronbach's α = .85). The SWLS is a reliable and well-validated measure that has been used successfully in many previous studies (see review by Pavot & Diener, 2008).

Self-Compassion.: The Self-Compassion Scale (SCS; Raes et al., 2011) assesses the frequency with which individuals feel compassion for themselves, including expressing understanding, kindness, warmth, and caring during difficult situations toward oneself. The SCS consists of 12 items rated on a 5-point Likert scale from 1 (almost never) to 5 (almost always) on statements such as "I try to see my failings as part of the human condition" and "When I'm going through a very hard time, I give myself the caring and tenderness I need." The SCS had good internal consistency with the current sample (Cronbach's α = .82) and has been established as a reliable and valid measure of self-compassion (Neff, 2016).

Depressive Symptoms.: The Center for Epidemiological Studies – Depression Scale (CES-D) consisted of 20 items assessing depressive symptoms experienced over the past week, from 0 (*rarely or none of the time (less than one day)* to 3 (*all of the time (5-7 days)*., Radloff, 1977). Sample items included "I felt depressed" and "I thought my life had been a failure." Symptoms were summed such that higher scores indicated greater depressive symptoms. This measure exhibited good internal consistency with the current sample (Cronbach's α = .88) and has been established as a reliable and valid measure of depressive symptoms across a number of different samples (Irwin et al., 1999).

Perceived Stress.: The Perceived Stress Scale (PSS) measures the degree to which people perceive their current life circumstances to be stressful and challenging (Cohen et al., 1983). Using a 5-point Likert scale from 0 (never) to 4 (very often), participants responded to questions including "How often have you felt nervous and 'stressed'?" and "How often have you felt difficulties were piling up so high that you could not overcome them?" This measure had good internal consistency with the current study sample (Cronbach's α = .87) and has demonstrated strong reliability and validity (Cohen et al., 1983).

Personal Burnout.: An adapted version of the Copenhagen Burnout Inventory subscale for personal burnout was used to assess feelings of burnout and prolonged physical and emotional exhaustion (Kristensen et al., 2005). A 5-point Likert scale from 1 (*always*) to 5 (*never*) measured the frequency with which participants agreed with 6 statements such as "How often do you feel worn out?," "How often do you feel physically exhausted?," and "How often do you feel emotionally exhausted?" Items were reverse scored such that higher values indicated greater personal burnout. The measure showed good internal consistency in the current sample (Cronbach's α = .84) and strong reliability and validity in its psychometric properties (Kristensen et al., 2005).

Intolerance of Uncertainty.: The Intolerance of Uncertainty Scale comprised of 12 items indicating the degree to which people are able to tolerate uncertain or unknown situations and experiences (Hale et al., 2016). Participants responded to statements such as "I can't stand being taken by surprise" and "When I am uncertain, I can't function very well" on a 5-point Likert scale from 1 (*not at all characteristic of me*) to 5 (*entirely characteristic of me*). This scale showed excellent internal consistency with the current study sample (Cronbach's α = .90). This measure has shown strong psychometric properties (Hale et al.).

Covariates—Age group (0 = *younger adults*, 1 = *older adults*), gender (0 = *men*, 1 = *women*), and race/ethnicity (0 = W*hite non-Hispanic*, 1 = *Hispanic, LatinX, or other minoritized racial or ethnic background*) information were obtained from the laboratory questionnaires. We adjusted for these covariates given the unique demographics of our study sample and because these individual differences variables are associated with affective experiences (e.g., Luong & Charles, 2014; Luong et al., 2020).

Results

Descriptive Statistics

The correlation matrix and descriptive statistics are shown in Table 1 for all key study variables. As expected, trait NA was statistically significantly related to each of the psychological health indicators in the expected directions with moderate to large sized correlations ranging from *r's* = −.34 to .61. Of interest, although trait NA exhibited a small to moderate sized correlation with ideal NA, $r(162) = .26$, it was not related to NAV, $r(161) = -.11$. The two affect valuation measures (NAV and ideal NA) evinced a small to moderate sized positive correlation with one another, $r(161) = .22$, suggesting that they are related but distinct. The two affect valuation constructs diverged, however, in that NAV was significantly positively associated with nearly all measures of psychological health and ideal NA was not significantly related to any of them. Specifically, greater NAV was associated with better psychological health, except in the case of personal burnout (see Table 1).

Consistent with the literature on aging and affect (Luong & Charles, 2014; Riediger et al., 2009; Tsai & Sims, 2018), older adults exhibited lower trait NA and greater psychological health on all measures except life satisfaction, compared to younger adults (see Table 1). We found no age differences in NAV, but older adults showed a slight tendency to ideally want to feel less NA than younger adults. Moreover, compared to the White non-Hispanic group, those of minoritized racial/ethnic backgrounds experienced greater perceived stress, personal burnout, and intolerance of uncertainty. Thus, in all of the following analyses testing our main research questions, we adjusted for age group, gender, and racial/ethnic group. Although we did not find gender differences in any of the key study variables, we included it as a covariate in our analyses given previous studies have found gender differences in affective valuation and experiences (Zhou, Yeung, Gerstein, & Zhang, 2022).

Associations Between Negative Affect Valuation (NAV) and Ideal Negative Affect

Our first research question examined the extent to which negative affect valuation (NAV) and ideal negative affect (ideal NA) are related. To address the exploratory hypothesis that

the association between NAV and ideal NA may depend on trait NA, we conducted a multiple linear regression with ideal NA regressed on NAV (mean centered), trait NA (mean centered), and the multiplicative interaction term between NAV and trait NA (NAV × trait NA), adjusting for the covariates of age group, gender, and ethnic/racial group. The results showed that the NAV × trait NA interaction was statistically significant, $B = 0.35$, $SE = .07$, $p < .001$, 95% CI [0.21, 0.49], indicating that NAV was positively associated with ideal NA, but only for those who experienced more intense NA in daily life (simple slope for high trait NA, i.e., 1 *SD* above the mean, $B = 0.47$, $t(154) = 3.31$, $p < .001$). For those with less intense experiences of daily life NA (i.e., low trait NA at 1 SD below the mean), there was no association between NAV and ideal NA, $B = .01$, $t(154) = 0.16$, $p = .87$. Figure 1 shows this moderation effect, with trait NA plotted at one standard deviation above and below the mean. This model accounted for approximately 25.4% of the variance in ideal NA.

To explore the possibility that different emotions may be differentially functional, we conducted 3 exploratory follow-up analyses to our first research question by separately examining how NAV of each discrete emotion (anger, anxiety, and sadness) and actual experiences of that corresponding emotion in daily life (e.g., trait anger, trait anxiety, and trait sadness, respectively) interact to predict ideal emotions (ideal anger, ideal anxiety, and ideal sadness, respectively). We used the same data analytic approach as our first research question by including the covariates (age group, gender, and racial/ethnicity group), mean-centered trait emotion, mean-centered NAV emotion, and the multiplicative interaction term between mean-centered trait emotion and NAV emotion predicting the corresponding ideal emotion. Specifically, we found that the interaction term NAV for Anger × Trait Anger predicting Ideal Anger, $B = .14$, $t(154) = 1.67$, $p = .096$; the interaction term for NAV for Anxiety × Trait Anxiety predicting Ideal Anxiety, $B = .15$, $t(154) = 3.15$, $p = .002$; and the interaction term for NAV for Sadness × Trait Sadness predicting Ideal Sadness, $B = .24$, $t(154) = 2.64$, $p = .009$, showed a similar pattern of findings as the overall negative affect composite reported above and as displayed in Figure 1, though the model for the discrete emotion, anger, did not reach statistical significance.

Testing Negative Affect Valuation (NAV) as a Moderator of Affect-Health Linkages

Next, we investigated the extent to which each of the affect valuation measures, NAV and ideal NA, moderates the affect-health links. We began by testing NAV as a moderator, predicting that greater NAV would attenuate the association between greater trait NA and lower psychological functioning and health (i.e., affect-health links). We tested a series of multiple linear regressions using SPSS Version 27 with each of the six psychological functioning and health outcome variables (e.g., life satisfaction, self-compassion, depressive symptoms, perceived stress, personal burnout, and intolerance of uncertainty) in separate models. All models included mean-centered NAV, mean-centered trait NA, and the interaction term between NAV × trait NA along with the same dichotomous covariates described previously: gender, age group, and race/ethnicity. Results of these analyses are displayed in Table 2, showing that these models accounted for between 19-43% of the variance in the psychological health dependent variables.

Model Predicting Life Satisfaction—Of the 6 psychological health dependent variables, two were based on positive well-being measures: life satisfaction and self-compassion. In contrast to our hypotheses, the key interaction term (NAV × trait NA) was not statistically significant in predicting life satisfaction (see Model A, Table 2). In the multiple linear regression model predicting life satisfaction (Model A, Table 2), there were statistically significant main effects such that greater trait NA was associated with lower life satisfaction, and higher NAV was related to greater life satisfaction, conditional upon the full model shown in Table 2.

Model Predicting Self-Compassion—We did not find evidence that NAV moderated the association between trait NA and self-compassion (see Model B, Table 2). Similarly, however, trait NA was inversely related to self-compassion whereas greater NAV was related to higher self-compassion in the full conditional model. The older age group also reported significantly higher levels of self-compassion compared to younger adults in the study, conditional based on the model shown in Table 2.

Model Predicting Depressive Symptoms—As shown in Model C (Table 2), we found a similar pattern of main effects as above, such that greater trait NA was associated with more depressive symptoms, and higher NAV was related to fewer depressive symptoms in the full model. Consistent with our predictions, there was a statistically significant interaction between NAV × trait NA. Simple slopes tests assessing NAV at 1 SD above and below the mean demonstrated that although higher trait NA was generally related to greater depressive symptoms, the strength of the NA-depressive symptom effect was attenuated for people higher on NAV, $B = 4.27$, $t(154) = 3.78$, $p < .001$, compared to those lower on NAV, $B = 8.15$, $t(154) = 7.60$, $p < .001$ (see Figure 2A).

Model Predicting Perceived Stress—Contrary to our hypothesis, the NAV × trait NA interaction term was not statistically significant in predicting perceived stress (see Model D, Table 2); however, consistent with the correlation matrix results from Table 1, we found main effects of NAV and trait NA on perceived stress in the expected directions in the full conditional model. Results from this full model also highlighted that participants from minoritized racial and ethnic backgrounds tended to report greater perceived stress compared to non-Hispanic Whites.

Model Predicting Personal Burnout—In this model, we found a statistically significant NAV × trait NA interaction, consistent with our expectations (see Model E, Table 2). The tests of simple slopes for NAV at 1 SD above and below the mean revealed that, as hypothesized, although trait NA was generally related to greater personal burnout, this effect was less pronounced for those higher on NAV, $B = 0.38$, $t(145) = 4.29$, $p < .001$, relative to those lower on NAV, $B = 0.63$, $t(145) = 7.40$, $p < .001$ (see Figure 2B). We also found that older adults reported less personal burnout than younger adults, overall, in the full model.

Model Predicting Intolerance of Uncertainty—As predicted, we found a statistically significant NAV × trait NA interaction in the model predicting intolerance of uncertainty (see Model F, Table 2). The results of the tests of simple slopes at 1 SD above and below the mean for NAV showed that for people lower on NAV, $B = .61$, $t = 1.95$, $p = .053$, trait NA

was more strongly related to intolerance of uncertainty than for people higher on NAV, B = .18, t = .59, p = .555, though neither of these slopes was statistically significantly different from zero. Figure 2C illustrates this moderation effect.

Testing Ideal Negative Affect (NA) as a Moderator of Affect-Health Linkages

The final research aim was to assess the degree to which ideal NA moderated the associations between trait NA and the six different psychological functioning and health measures. We used the same approach as above, but included mean-centered ideal NA, mean-centered trait NA, and the interaction term between ideal NA × trait NA as predictors in separate multiple linear regression models for each outcome variable, adjusting for the covariates (age group, gender, and ethnicity/racial group). Our general hypotheses were that greater ideal NA would weaken affect-health links.

The six interaction models are displayed in Table 3 showing the results for each of the psychological health dependent variables, including life satisfaction (Model A), self-compassion (Model B), depressive symptoms (Model C), perceived stress (Model D), personal burnout (Model E), and intolerance of uncertainty (Model F). Overall, the models accounted for 13-43% of the variance in the dependent variables.

Model Predicting Life Satisfaction—Consistent with the previous results testing NAV × trait NA interactions predicting the positive psychological health variables, but contrary to our predictions, the ideal NA × trait NA interactions were not statistically significant when predicting life satisfaction (see Table 3 (Model A)).

Model Predicting Self-Compassion—The ideal NA × trait NA interaction also showed a null effect in predicting the other positive psychological well-being outcome variable, self-compassion (see Table 3 (Model B)), contrary to our hypothesis.

Model Predicting Depressive Symptoms—Consistent with our hypotheses and the previous analyses testing the NAV × trait NA interactions, we found a statistically significant ideal NA × trait NA interaction predicting depressive symptoms (see Table 3, Model C). Trait NA was generally related to greater depressive symptoms, but this effect was attenuated for those who had higher ideal NA, B = 4.99, t = 4.88, p < .001 compared to those with lower ideal NA, B = 8.15, t = 7.83, p < .001. See Figure 3A for a depiction of this moderation effect.

Model Predicting Perceived Stress—In contrast to the null findings testing the moderating effects of NAV, we discovered that ideal NA moderated the links between trait NA and perceived stress, as evidenced by the statistically significant ideal NA × trait NA interaction term (see Table 3, Model D). The test of simple slopes revealed that although trait NA was generally related to greater perceived stress, this effect was weaker for those with higher ideal NA (1 SD above the mean), B = 0.60, t = 8.12, p < .001, relative to those with lower ideal NA (1 SD below the mean), B = 0.35, t = 4.81, p < .001, as illustrated in Figure 3B.

Model Predicting Personal Burnout—Unlike the analyses testing the NAV × trait NA interaction term predicting personal burnout, we did not find support that ideal NA moderates the affect-health links for this outcome variable (see Table 3, Model E).

Model Predicting Intolerance of Uncertainty—Although we found evidence for moderating effects of NAV on trait negative affect predicting intolerance of uncertainty, we did not find support for such interaction effects with ideal NA. The interaction term, ideal NA × trait NA, was not statistically significant in predicting intolerance of uncertainty (see Table 3, Model F).

Discussion

The current study used data from questionnaires collected from laboratory sessions and ecological momentary assessments (EMA) from the Health and Daily Experiences (HEADE) study to investigate how two different affect valuation constructs, negative affect valuation (NAV) and ideal negative affect (NA), may be related. Conceptually, NAV measured different *evaluations* of dimensions of negative affective experiences (pleasantness, helpfulness, appropriateness, and meaningfulness), whereas ideal NA assessed the degree to which people *desired* or ideally wanted to experience different negative emotions. Additionally, the NAV measure had greater depth of measurement, assessing multiple dimensions of valuation with 8 items per discrete emotion (anger, anxiety, and sadness) with a total of 24 items. In contrast, ideal NA provided a greater breadth of the desirability of 7 different negative emotional states.

Our first research question addressed the extent to which NAV and ideal NA were related. The study provided empirical evidence for a small to moderate correlation between NAV and ideal NA. This finding suggests that these measures have some overlap but are conceptually and empirically distinct. Moreover, this effect was moderated by trait NA, such that there was a positive association between NAV and ideal NA for those who experienced higher levels of trait NA, but no association between NAV and ideal NA for those with lower trait NA. One possibility for these findings is that if people find NA states to be valuable and useful, they may seek out those experiences more frequently (Ford & Tamir, 2012; Netzer et al., 2015; Tamir et al., 2015). It is also possible, however, that people who experience higher trait NA may try to make sense of their experiences and reconcile feelings of dissonance by finding greater value in NA and desiring NA more, such as by preferring these actual emotional states (e.g., Vanderlind et al., 2022). One implication of these findings may be that peoples' ideal affect and goals may be more closely aligned with different and nuanced valuation dimensions when people gain more first-hand experience with NA experiences in daily life. More research is necessary to disentangle these possibilities.

Given that functionalist-developmental perspectives posit that discrete emotions (i.e., anger, anxiety, and sadness) may show different patterns of associations across emotion-health links (Kunzmann & Wrosch, 2018), we conducted exploratory follow-up analyses for this first research question. We examined how the relations between NAV for each discrete emotion (anger, anxiety, sadness) and each trait emotion interacted to predict the respective ideal emotion. These exploratory analyses revealed no differences between the discrete

emotions – the individual patterns for anger, anxiety, and sadness were largely the same as those described for the composite measures of negative affect for research question 1. It is possible that we did not find differences in the patterns of results for the discrete emotions because such functionalist-developmental theories argue that discrete emotions may be adaptive within specific contexts, situations, and life goals and for certain people (e.g., across different life stages; Barlow et al., 2022). Our analyses were unable to account for the extent to which people may be pursuing particular goals for which discrete emotions may be useful (e.g., sadness may be adaptive for goal disengagement; Barlow et al., 2022). Future research could consider investigating how affect-health links vary for discrete emotions across various contexts throughout the lifespan.

Another aim of the current investigation was to test the degree to which each affect valuation construct (NAV and ideal NA) moderated affect-health links, following up on previous research conducted in Germany (Luong et al., 2016). Our study demonstrated that both NAV and ideal NA evinced similarities and differences in the types of psychological health outcomes they predicted and moderated. More specifically, NAV buffered (weakened) the affect-health links with respect to depressive symptoms, personal burnout, and intolerance of uncertainty, whereas ideal NA attenuated the affect-health links for depressive symptoms and perceived stress. For both affect valuation constructs (NAV and ideal NA), the associations between trait NA and negative psychological health outcomes were less pronounced with greater evaluations or desirability of NA, showing a high level of consistency in the pattern of results, with some differences in the sets of health outcomes moderated.

The only outcome variable that both affect valuation constructs showed the same moderating effects for is depressive symptoms. One possibility for why the effect emerged for depressive symptoms for both affect valuation measures could be because depression is an affective disorder with measurement items directly assessing negative emotional states. Future research on this topic should address the boundary conditions in which affect valuation attenuates affect-health links. This line of work may be especially useful to delineate why we did not find evidence of this buffering effect for either of the two positive psychological health outcome variables (life satisfaction or self-compassion). These results point to the idea that affect valuation may primarily work by dampening the damaging effects of negative affect, rather than enhancing well-being, but further research is needed to better understand the mechanisms by which affect valuation may influence psychological health.

Limitations and Future Directions

One limitation of the current investigation is that, given the correlational nature of the study, we cannot determine the causal direction of the effects. We have interpreted the findings in line with theoretical propositions that affect valuation influences affect-health linkages (Tsai, 2017), but it is also possible that those who have the strongest NA-health linkages may be the least likely to derive value and meaning from such NA experiences in daily life. That is, affect-health linkages may be so interwoven for certain individuals that their experiences of NA cannot be uncoupled from the deleterious health effects they are associated with. Indeed,

another possibility is that people who have greater psychological health may be better able to see the benefits to their negative emotions. Results from the correlation matrix show that greater NAV was linked to many indicators of better psychological health (except personal burnout), though this was not the case for ideal NA. Ideal NA was not directly related to any of the psychological health measures. Longitudinal studies with multiple time scales and assessments of NA in daily life across different contexts will be valuable for elucidating the direction and magnitude of these effects. Future studies could also incorporate experimental designs to manipulate affect valuation and subsequent psychological health and well-being correlates. Further, this study focused primarily on psychological health and functioning indices, but future research investigations should also test the degree to which these effects extend to physical health and illness.

Another limitation of the study pertains to the sample. The original aims of the HEADE study were to examine age differences in stress responses, so an extreme age groups design was used to compare younger and older adults. Without middle-aged adults represented, however, it is unclear how the findings may generalize to this segment of the population. The HEADE study, however, includes a broader range of community participants, including older adults, which improves on many previous studies in the social psychology literature that primarily rely on college student samples. Moreover, the data were collected from a midwestern region in the United States that comprised of predominantly non-Hispanic White residents, making it a “WEIRD” (Western, educated, industrialized, rich, and democratic) sample with limited generalizability to other global regions (Rad et al., 2018). In our sample, participants exhibited interindividual variability in NAV (i.e., extent to which they evaluated negative emotions as pleasant, useful, appropriate, and meaningful), but ratings of ideal NA were clustered on the extreme low end of the scale. The inclusion of cultural contexts in which moderation and balance of positive and negative emotions are valued may show greater mean values and variability in ideal NA (e.g., Tsai, 2007). Our sample included 21% minoritized racial/ethnic participants, but because there were too few participants in any given racial/ethnic group, we could not make meaningful group comparisons between specific racial or ethnic groups. Studies have suggested there is great cultural variation around how people ideally want to feel (Tsai, 2007) so future studies should include more diverse, international, and cross-cultural samples to be able to understand how variability in the valuation of emotional experiences may differentially predict affect-health links for different people.

The study was also limited by the measures of NAV and ideal NA. The original measures were not designed to create perfect comparisons between different dimensions of affect valuation, such as pleasantness, utility/helpfulness, appropriateness, meaningfulness, desirability, or volitational/motivational pursuits. Thus, future studies that plan to compare these measures could focus on understanding, for example, the reasons *why* people value or ideally want to experience particular emotions. Additionally, we were unable to examine facets of negative affect by arousal or activation levels (e.g., high arousal emotions such as anger and anxiety vs. low arousal emotions such as sadness or boredom) because doing so decreased the scale reliability of the ideal NA measure below accepted standards (e.g., Cronbach’s α = .29 for ideal low arousal NA in the current study). Some studies suggest that arousal itself is a distinct, continuous dimension that is orthogonal to, or

even mildly associated with, the valence dimension (Verma & Shanker Tiwary, 2016). Future investigations should consider how affect valence and arousal may show different associations, as they have been linked with different mental health outcomes (Swerdlow et al., 2019).

Relatedly, one potential drawback to our measurement of trait NA is that although it was meaningful in capturing interindividual differences in each person's NA for a particular week, it may still be susceptible to contextual and situational influences. Despite this limitation, this approach has been used successfully in previous studies (Luong et al., 2016; Riediger et al., 2009) and our measure of trait NA showed convergent validity in predicting each of the psychological health measures in the expected directions. This measure of trait NA also may be a potential improvement over previous approaches. For example, past investigations often studied trait NA by asking participants to recall their general affective experiences over the course of some period of time, such as a week or a month (e.g., the Positive and Negative Affect Schedule; Watson, Clark, & Tellegen, 1988). Studies have shown there are clear reporting biases when participants are asked to recall their affective experiences over longer periods of time due to problems with recall biases and with the tendency to overestimate the intensity and frequency of salient experiences (e.g., peak-and-end effects; Frederickson, 2000). Nonetheless, future research could compare and contrast how different assessments of experienced affect, including state and trait measurements, may yield varying patterns of results.

Contributions of the Current Study

Despite these limitations, the present study had several strengths. First, we replicated and extended previous findings (e.g., Luong et al., 2016) using a midwestern U.S. sample with a variety of different psychological health outcome variables, including those that involved more complex indicators of well-being, such as intolerance of uncertainty and personal burnout. These indicators of well-being have been linked to greater psychological functioning, such as meaning in daily life (Morse et al., 2021). Importantly, we examined two types of affect valuation measures, NAV and ideal NA, to understand how each construct may be related. We also tested the degree to which each construct differentially moderates affect-health links. We demonstrated that these constructs are distinct, showing some similarities and differences in the pattern of moderating effects. The current study also advances knowledge in the field by enhancing understanding of the ways affect valuation constructs are measured and conceptualized, and points to important distinctions between NAV and ideal NA.

Conclusion

This study compared two types of affect valuation measures, NAV and ideal NA, by examining how they are related and how experiences of NA may moderate these relations. The two affect valuation constructs were most strongly linked for people who also experienced high levels of trait NA. This study points to important moderating effects of affect valuation, and how distinguishing between features of related constructs enables us to better understand the role of affect valuation versus ideal affect in dampening affect-health

links. We showed that NAV, but not ideal NA, moderates affect-health links, though the reasons for these differences need to be further delineated. These findings may help to pave the way for building more precise conceptual models on how different facets and measurement components of affect valuation measures may have unique effects in predicting health and attenuating affect-health links.

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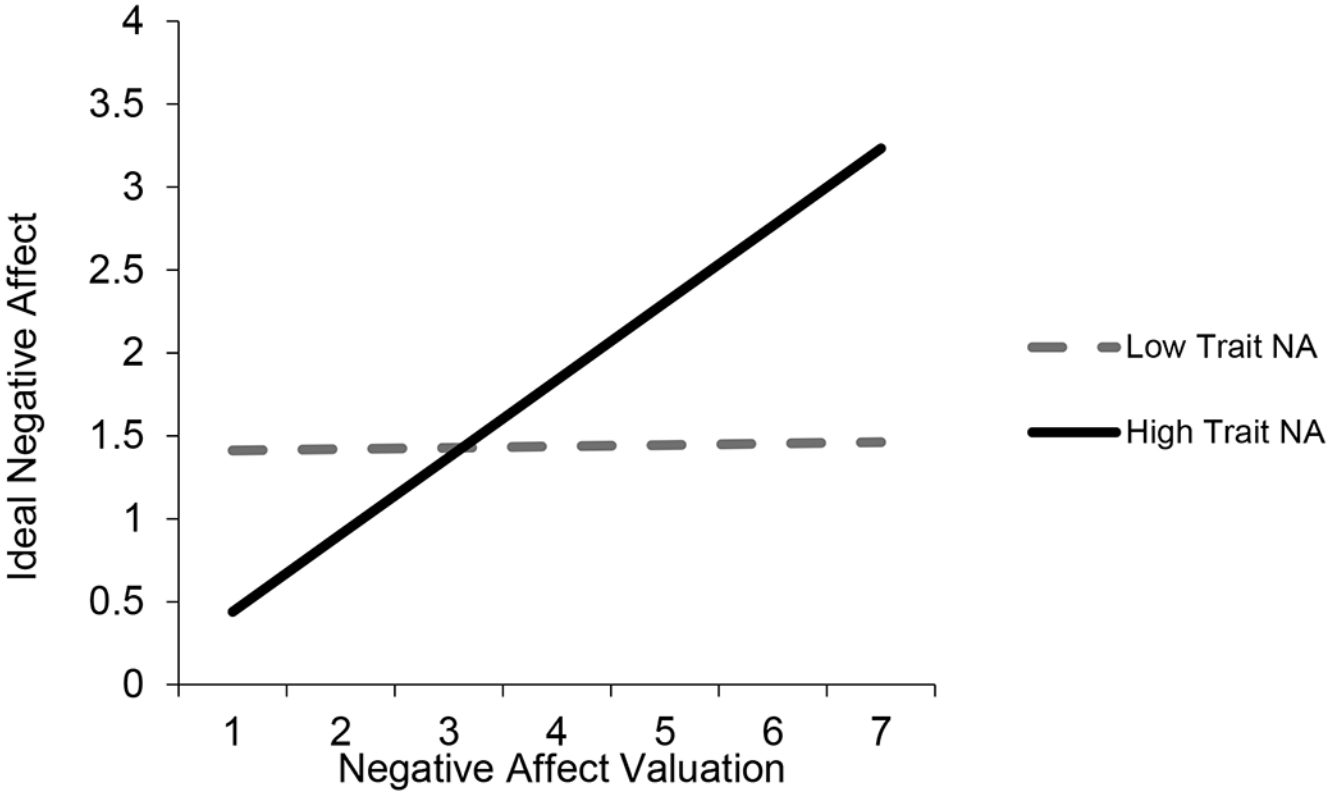
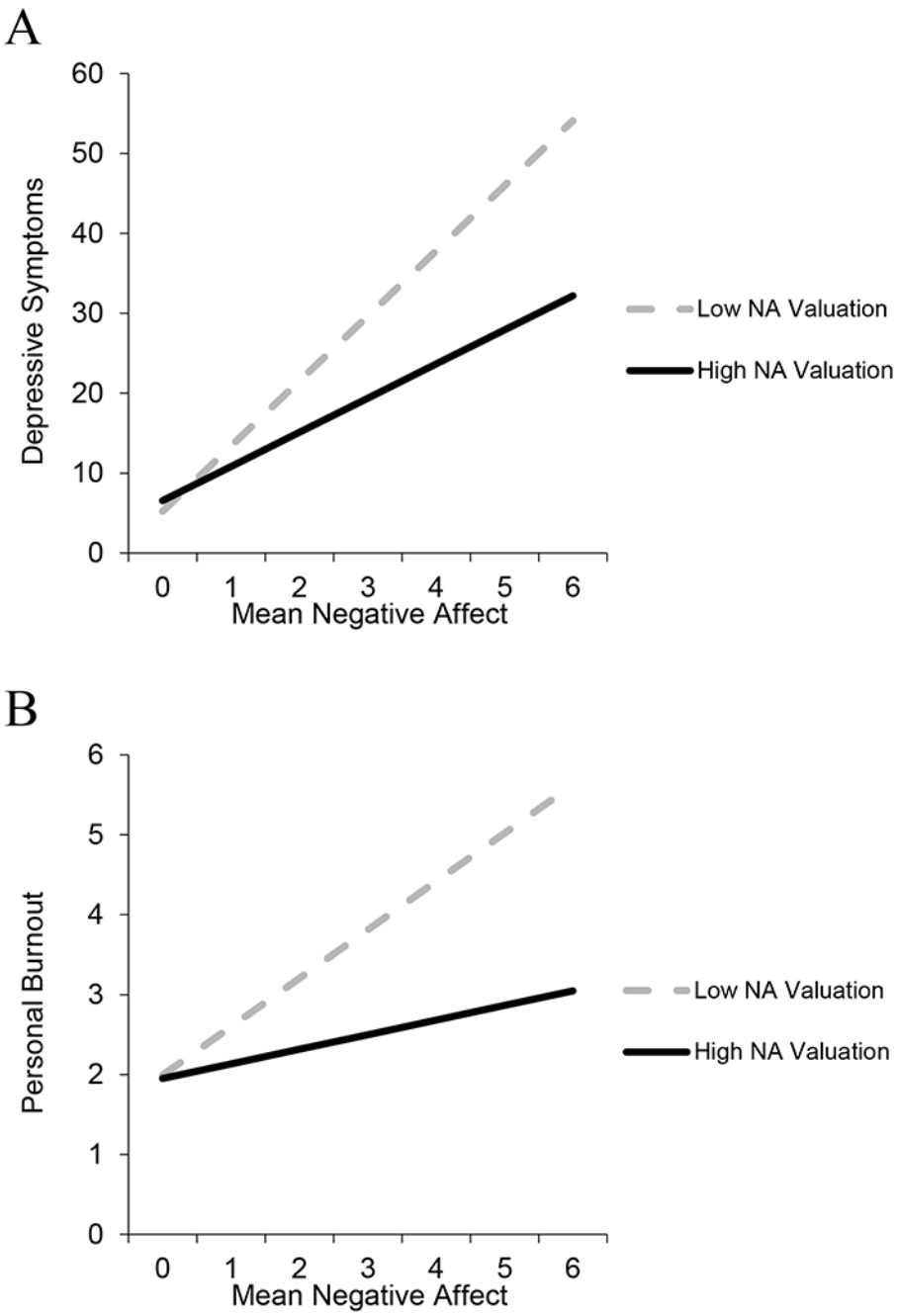


Figure 1. Trait Negative Affect Moderates the Association Between Negative Affect Valuation and Ideal Negative Affect

Note. NA = negative affect. Negative affect is plotted as 1 SD below (low NA) and above (high NA) above the mean NA. The interaction plot shows that the extrapolated values for high trait NA extend beyond the theoretical range of the ideal NA measure.



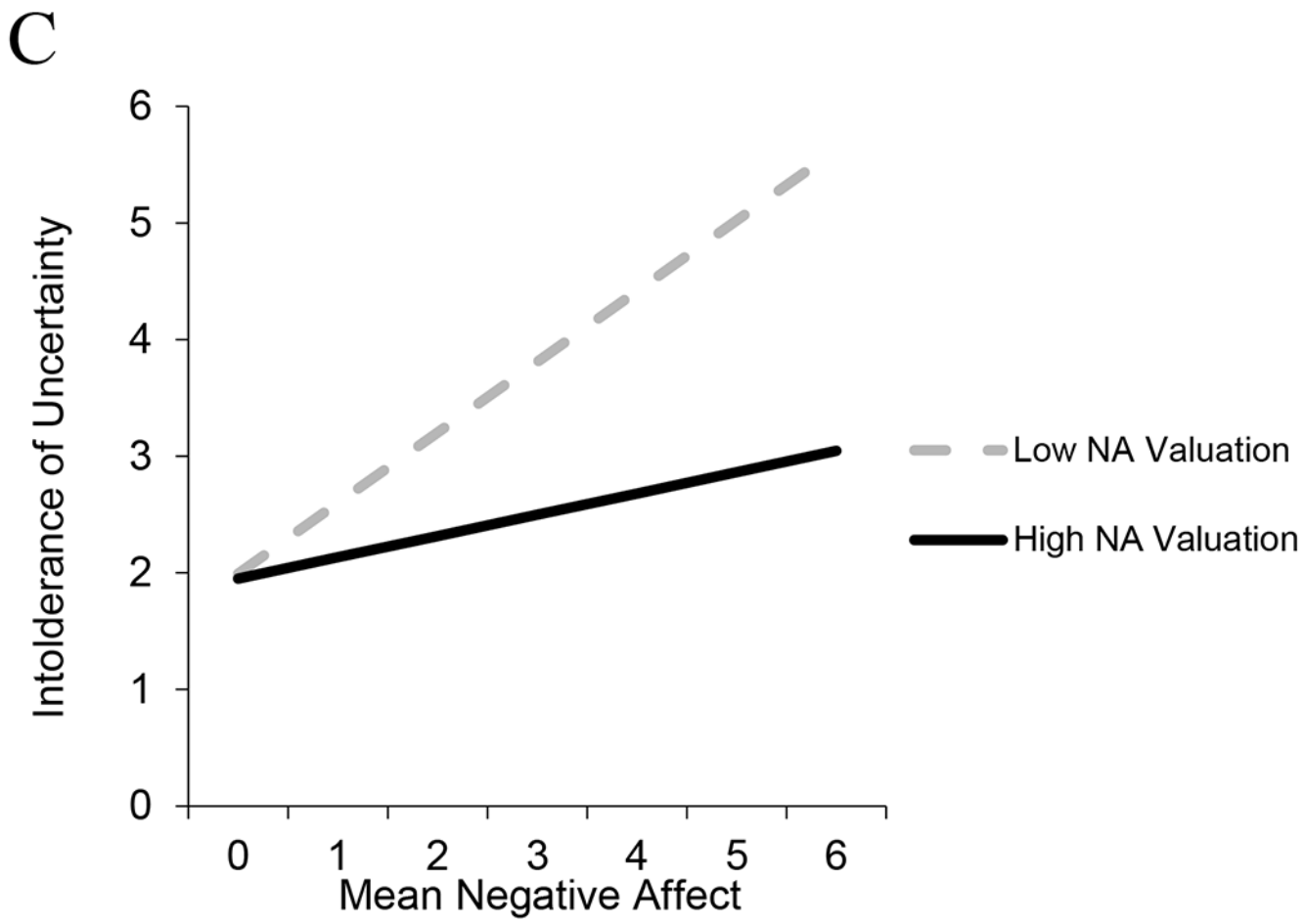


Figure 2.
Negative Affect Valuation Moderates the Association between Trait Negative Affect and Psychological Health

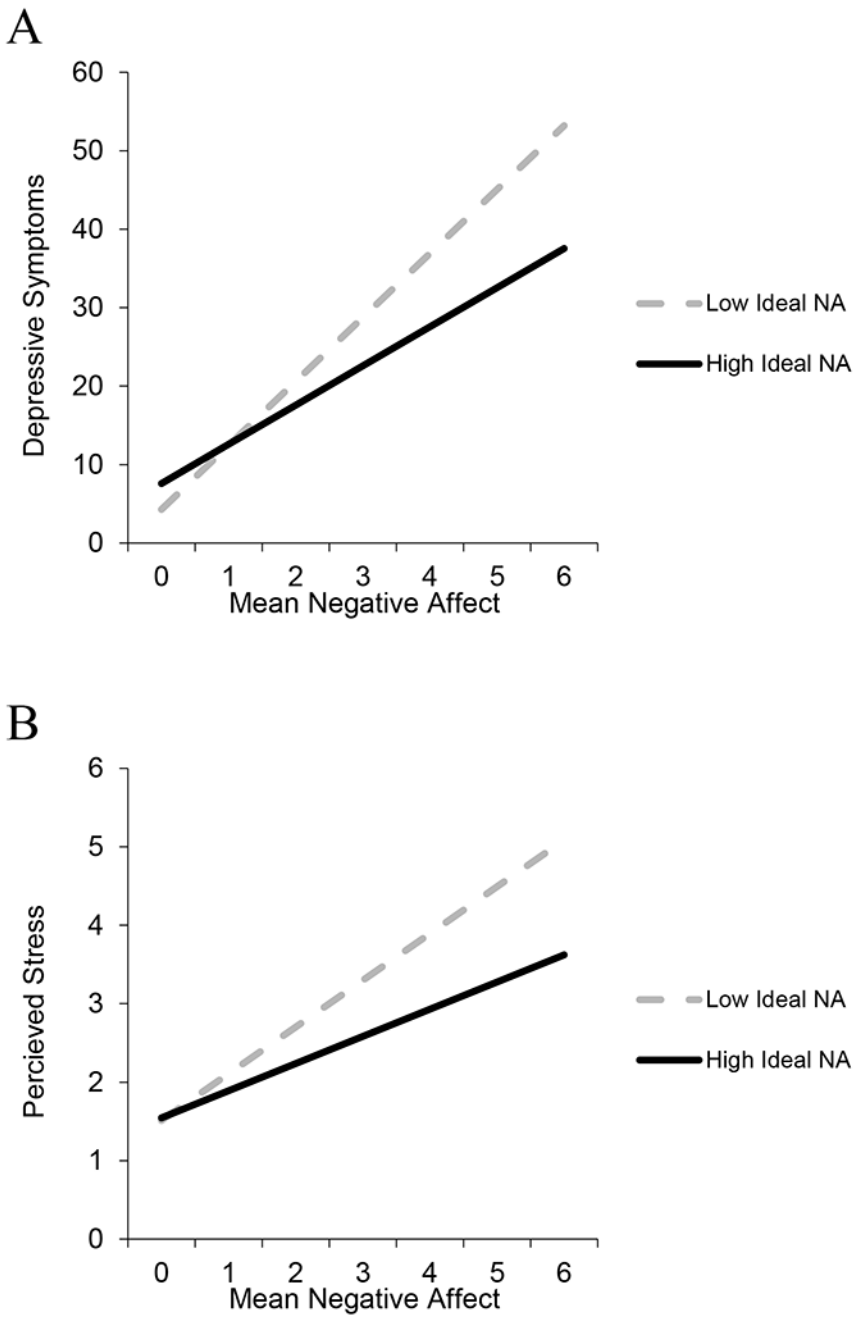


Figure 3.
Ideal Negative Affect Moderates the Association between Trait Negative Affect and Psychological Health

Table 1

Inter-Correlation Matrix and Descriptive Statistics of Key Study Variables by Age Group (N = 162)

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Trait NA	--	−.11	.26**	−.34***	−.41***	.58***	.57***	.61***	.41***	−.29***	−.01	.06
2. NAV		--	.22**	.29***	.24**	−.18*	−.32***	−.12	−.30**	.10	.04	−.03
3. Ideal NA			--	−.02	−.12	.14	.15	.09	.00	−.18*	−.12	.06
4. Life Satisfaction				--	.24**	−.50***	−.46***	−.31***	−.25*	−.01	.12	.02
5. Self-Compassion					--	−.53***	−.57***	−.43***	−.67***	.34***	.07	−.10
6. Depressive Symptoms						--	.75***	.70***	.44***	−.26**	−.07	.09
7. Perceived Stress							--	.65***	.52***	−.31***	−.01	.22**
8. Personal Burnout								--	.53***	−.40***	.04	.19*
9. Intolerance of Uncertainty									--	−.29**	.07	.22*
10. Age Group										--	−.03	−.36***
11. Gender											--	.17*
12. Race/ethnicity												--
Mean (SD)	0.97 (0.65)	3.67 (0.71)	1.40 (0.45)	4.84 (1.25)	3.35 (0.65)	10.70 (7.67)	1.46 (0.57)	2.28 (0.62)	2.46 (0.74)	65% older adults	56.8% women	79% White non-Hispanic
Younger Adults *M(SD)*	1.23 (.63)	3.57 (0.68)	1.51 (0.42)	4.85 (1.26)	3.06 (0.63)	13.43 (8.56)	1.70 (0.57)	3.40 (0.66)	2.64 (0.76)	M_{age} = 27.93 (3.89)	58.9% women	58.9% White non-Hispanic
Older Adults *M(SD)*	0.83 (0.62)	3.72 (0.73)	1.34 (0.46)	4.83 (1.25)	3.51 (0.61)	9.26 (6.77)	1.33 (0.53)	3.90 (0.51)	2.20 (0.65)	M_{age} = 69.78 (6.59)	55.7% women	89.6% White non-Hispanic

Note.

* $p < .05$,

** $p < .01$,

*** $p < .001$.

NA = negative affect. NAV = negative affect valuation. For age group, 0 = younger adults, 1 = older adults. Gender was coded 0 = men, 1 = women. Race/ethnicity was coded 0 = White non-Hispanic, 1 = minoritized racial or ethnic group, including Hispanic.

Table 2

Multiple Linear Regressions Testing Moderating Effects of Negative Affect Valuation on Affect-Health Links

	Model A: Life Satisfaction			Model B: Self-Compassion			Model C: Depressive Symptoms			Model D: Perceived Stress			Model E: Personal Burnout			Model F: Intolerance for Uncertainty		
Variable	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***
Intercept	4.95***	.21	[4.55, 5.36]	3.11***	.11	[2.91, 3.32]	11.91***	1.12	[9.71, 14.12]	1.50***	.08	[1.35, 1.65]	2.40***	.09	[2.23, 2.57]	2.35***	.13	[2.10, 2.61]
Age Group	−0.37	.21	[−0.78, 0.05]	0.32**	.11	[0.11, 0.53]	−1.41	1.14	[−3.67, 0.84]	−0.12	.08	[−0.28, 0.03]	−0.27**	.09	[−0.45, −0.10]	−0.17	.15	[−0.46, 0.12]
Gender	0.26	.18	[−0.10, 0.62]	0.08	.09	[−0.10, 0.27]	−1.01	0.99	[−2.98, 0.95]	−0.04	.07	[−0.18, 0.10]	.03	.08	[−0.12, 0.19]	.08	.14	[−0.20, 0.36]
Ethnicity	−0.06	.24	[−0.52, 0.41]	−0.01	.12	[−0.26, 0.23]	0.65	1.29	[−1.90, 3.20]	.22*	.09	[0.04, 0.40]	.12	.10	[−0.08, 0.32]	.26	.15	[−0.05, 0.56]
Trait NA	−0.67***	.14	[−0.96, −0.39]	−0.31***	.07	[−0.46, −0.17]	6.21***	0.78	[4.67, 7.75]	−0.43***	.05	[0.32, 0.54]	.51***	.06	[0.39, 0.62]	.39***	.11	[0.18, 0.60]
NAV	0.51***	.13	[0.25, 0.77]	0.19**	.07	[0.06, 0.32]	−1.70*	0.72	[−3.12, −0.29]	−0.22***	.05	[−0.32, −0.12]	−0.07	.06	[−0.19, 0.04]	−0.32**	.10	[−0.51, −0.13]
NAV × Trait NA	0.22	.20	[−0.18, 0.62]	0.14	.10	[−0.07, 0.34]	−2.72*	1.09	[−4.88, −0.57]	−0.12	.08	[−0.27, 0.03]	−0.18*	.08	[−0.34, −0.01]	−0.30*	.14	[−0.57, −0.02]
Adjusted R^2		.19			.24			.36			.43			.43			.29	

Note.

NA = negative affect; NAV = negative affect valuation; *SE* = standard error; *CI* = confidence interval. Unstandardized coefficients are listed for all models. Adjusted R^2 refers to the final model with all covariates included.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Multiple Linear Regressions Testing Moderating Effects of Ideal Negative Affect on Affect-Health Links

	Model A: Life Satisfaction			Model B: Self-Compassion			Model C: Depressive Symptoms			Model D: Perceived Stress			Model E: Personal Burnout			Model F: Intolerance for Uncertainty		
Variable	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***	***B***	***SE***	***95% CI***
Intercept	4.86***	.21	[4.44, 5.28]	3.09***	.11	[2.87, 3.30]	12.31***	1.13	[10.07, 14.54]	1.53***	.08	[1.37, 1.69]	2.43***	.09	[2.26, 2.60]	2.43***	.13	[2.17, 2.70]
Age Group	−0.32	.22	[−0.75, .11]	0.32**	.11	[.10, .54]	−1.33	1.15	[−3.60, 0.94]	−0.12	.08	[−0.28, 0.05]	−0.28**	.09	[−0.45, −0.11]	−0.21	.16	[−0.51, 0.11]
Gender	.30	.19	[−0.08, .68]	0.09	.10	[−0.10, 0.28]	−1.06	1.01	[−3.05, 0.93]	−0.03	.07	[−0.18, 0.11]	0.01	.08	[−0.14, 0.16]	0.02	.15	[−0.27, .31]
Ethnicity	−0.06	.25	[−0.55, .42]	−0.07	.13	[−0.26, 0.24]	0.63	1.30	[−1.94, 3.20]	0.21*	.10	[0.02, 0.40]	0.12	.10	[−0.08, 0.32]	0.26	.12	[−0.06, 0.59]
Trait NA	−0.76***	.15	[−1.06, −0.46]	−0.35***	.08	[−0.50, −0.20]	6.57***	.80	[4.99, 8.15]	0.47***	.06	[0.36, 0.59]	0.53***	.06	[0.41, 0.65]	0.44***	.12	[0.21, 0.68]
Ideal NA	0.13	.22	[−0.30, 0.57]	−0.003	.11	[−0.22, 0.22]	0.26	1.17	[−2.05, 2.57]	0.04	.09	[−0.13, 0.21]	−0.07	.09	[−0.25, 0.11]	−0.13	.17	[−0.45, 0.20]
Ideal NA × Trait NA	.37	.27	[−0.17, 0.90]	−0.15	.14	[−0.12, 0.42]	−3.47*	1.43	[−6.29, −0.65]	−0.27*	.11	[−0.48, −0.07]	−0.18	.11	[−0.39, 0.04]	−0.13	.20	[−0.52, 0.26]
Adjusted R^2		.13			.20			.35			.37			.43			.19	

Note.

NA = negative affect; *SE* = standard error; *CI* = confidence interval. Unstandardized coefficients are listed for all models. Adjusted R^2 refers to the final model with all covariates included.

* $p < .05$.

** $p < .01$.

*** $p < .001$.