Article

Perceived Relational Support Is Associated With Everyday Positive, But Not Negative, Affectivity in a U.S. Sample

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Abstract

Research suggests that perceived social support bolsters emotional well-being. We tested whether perceived support from friends, family, and spouses/partners was associated with reduced negative and greater positive affectivity (i.e., everyday affective baseline), and whether perceived strain in these relationships had opposite effects, accounting for age and relevant covariates. Using data from the third waves of the Midlife in the United States survey and National Study of Daily Experience (n = 1,124), we found negative affectivity was not tied to relational support nor strain, but instead was associated positively with neuroticism and negatively with conscientiousness. In contrast, positive affectivity was related positively to support from friends and family, conscientiousness, and extroversion, and negatively to strain among partners and neuroticism. Exploratory analyses within second-wave Midlife in Japan data (n = 657) suggest patterns for future cross-cultural study. Some relationship dynamics may vary, but perceived support might enhance emotional well-being by bolstering positive, rather than mitigating negative, emotionality.

Keywords

social support, emotion, interpersonal relationships, well-being

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Introduction

Social life in the early 2020s is characterized by a paradox: people are in increasingly greater contact (Pew Research Center, 2021), but are also experiencing more loneliness than ever before (McGinty et al., 2020). Recent United States survey data suggests that people tend to have relatively few close friends and are less likely to discuss personal problems with them than in the 1990s (Cox, 2021; Goddard, 2023). This decline has been attributed not only to the COVID-19 pandemic, but also to rising professional workloads and more widespread migration. Loneliness and social isolation can be devastating to health and well-being (Bzock & Dunbar, 2022). In fact, prolonged loneliness may be as detrimental to physical health as obesity and smoking (Cacioppo & Cacioppo, 2014; Holt-Lunstad et al., 2015). Consequently, rising levels of loneliness have sounded the alarm among public health experts (Murthy, 2023; U.S. Department of Health & Human Services, 2023). The knowledge that we can lean on loved ones for support (i.e., perceived support) cushions stress and amplifies joy (Bolger & Amarel, 2007; Horn et al., 2019; Oveis et al., 2020; Shrout et al., 2006), but also stabilizes everyday physical, emotional, and mental well-being (Battaglini et al., 2022; Feeney & Collins, 2015; Lopes et al., 2011; Siedlecki et al., 2014; Uchino, 2009). In this article, we directly test whether perceived support in friendship, familial, and romantic relationships is related to everyday emotional well-being—specifically, individuals' positive and negative affective baselines.

Defining Emotional Well-Being and Affectivity

Emotional well-being is a multifaceted concept that describes individuals' affective tendencies and maintenance of subjective emotional health (Park et al., 2022). Given its broad definition, emotional well-being (which often overlaps with subjective and psychological well-being) is the composite result of multiple related psychological constructs, including positive and negative affectivity, mood, life satisfaction, emotional regulation, sense of purpose, and eudemonia (Park et al., 2022; Ryff, 1989). *Positive* and *negative affectivity* have been studied as subcomponents of emotional well-being

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and are, respectively, defined here as average personal tendencies to experience positive and negative emotions in everyday life (Diener et al., 1999; Koslouski et al., 2022). Recent research suggests that positive and negative affect consistently represent strong proxies for psychological/emotional well-being over time (Dejonckheere et al., 2019; Houben et al., 2015; Koval et al., 2016). Moreover, negative and positive affectivity represent independent facets of emotional well-being, as individuals can have varying levels of each (e.g., high levels of positive *and* negative affect; Diener & Emmons, 1984). While experiencing negative emotions can be adaptive and support goal-pursuit in some contexts (Gruber et al., 2011; Tamir, 2016; Tamir et al., 2008), over time, average tendencies toward relatively greater positive affectivity and lower negative affectivity have been associated with benefits for health and well-being across cultures (Fredrickson & Joiner, 2002; Hu & Gruber, 2008; Jebb et al., 2020; Kitayama et al., 2000). In general, emotional well-being is considered more robust when positive affect is fairly high and negative affect is typically low on a daily basis (Battaglini et al., 2022).

Within the broader umbrella of emotional well-being, affectivity and emotional regulation work in tandem. While affectivity represents one's baseline affective states, emotional regulation—defined as the implementation of intentional and unintentional cognitive and behavioral strategies to manage one's emotional intensity, quality, and/or duration (Gross, 1998, 2015)—enables one to return to their homeostatic state following affectively impactful daily events. Many studies focus on enhanced *down*-regulation (i.e., reduction) of negative emotions and *up*-regulation (i.e., amplification) of positive emotions as adaptive regulatory outcomes (Fredrickson, 2004; Gross, 2015). By this definition, more effective emotional regulation would result in greater positive affectivity and reduced negative affectivity over time. Furthermore, recent research on interpersonal emotion regulation suggests that people can intentionally and automatically influence one another's emotional-regulatory processes (Zaki & Williams, 2013). If effective support from others enhances individuals' emotional regulation, it may also yield relatively greater positive affectivity and lower negative affectivity over time. It is possible that this process may arise intentionally when emotional support is actively exchanged (received/enacted), or unintentionally when it is not (perceived). We examine how reports of perceived support (and tension) in crucial relationships influence individuals' positive and negative affectivity over the course of a daily diary study in a large U.S. sample.

Defining Support and Strain

Perceived support is the perception that close others are available to provide effective support when it is needed (Cohen et al., 2000). It is one of two primary types of social support identified in past research. In contrast to perceived support, received support is that which is actively provided from a giver to a recipient in response to a specific stressor or opportunity (Wills & Shinar, 2000). Received support can be exchanged directly (acknowledged as help by both giver and recipient) or indirectly (recognized as help only by its giver), but always entails an active exchange (Zee & Bolger, 2019). In contrast, perceived support is the pure availability of support and does not involve an active exchange. To illustrate this distinction, take the example of a person experiencing a difficult day at work. The *anticipation* of decompressing with a partner during the stressful day (before support has been exchanged) constitutes perceived support. In contrast, received support might entail returning home and receiving advice on the stressful event (direct) and a well-prepared meal (indirect) from one's partner. Both perceived and received social support are beneficial for well-being if they are provided effectively because they can help people manage their affective experiences (Feeney & Collins, 2015), bolster individual emotional regulation (Levy-Gigi & Shamay-Tsoory, 2017), and thus yield generally reduced negative affect, and greater positive affect (Dunkel-Schetter & Bennett, 1990; Battaglini et al., 2022). In contrast, perceived strain in one's relationships is characterized by perceptions of tension, lack of trust, and expected negative interaction (Schuster et al., 1990). Correspondingly, perceived strain tends to be detrimental for emotional well-being (Abbey et al., 1985; Lepore, 1992).

Affective Impacts of Perceived Support and Strain in Relationships

Effective perceived social support has been associated with benefits for physical and psychological health (Brummett et al., 2001; House et al., 1988; Kessler & McLeod, 1985; Reblin & Uchino, 2008; Uchino, 2009). However, the precise mechanisms linking perceived support to its benefits remain unclear (Thoits, 2011; Uchino et al., 2012). Some past research has examined how perceived support is associated with stable traits and how it tends to develop over the lifespan. This body of work finds that reported experiences of perceived support are often relatively stable through development (Newcomb, 1990; Sarason et al., 1986). Similarly, perceived support has been bidirectionally associated with personality traits. For example, personality facets including greater optimism, lower neuroticism, and lower hostility have been positively correlated with reports of perceived support (Ko et al., 2007). Likewise, a recent longitudinal study found that reports of perceived support are both predicted by emotional stability, and predict later trait inventories of emotional stability, extraversion, agreeableness, openness, and conscientiousness (Udayar et al., 2020). Furthermore, trait negative affect explains the relationships between perceived social support and reports of depression, loneliness, life satisfaction, and physical health among elderly adults (Kahn et al., 2003). Likewise, lack of general perceived support can predict momentary reports of negative affect in adults of all ages, but this effect weakens when

accounting for individual personality measures (Siedlecki et al., 2014). Finally, perceived familial and friend support is linked to reductions in depressive symptoms (DuPertuis et al., 2001). In spite of its known stability across development and links to individual differences, the mechanisms that make perceived support so influential remain unclear. Some past research theorizes that health benefits associated with effective social support result from its impacts on everyday emotional well-being (Cohen & Wills, 1985; Feeney & Collins, 2015).

Just as effective perceived support can be beneficial, perceived strain can be detrimental; again, the mechanisms linking strain to its detrimental impacts are unclear. For example, greater relationship conflict has been associated with reduced self-awareness of personal emotional-regulatory needs (Lopes et al., 2011). In professional settings, relational strain has been associated with mounting emotional labor (Hülsheger et al., 2010). Ineffective *received* support that can arise in strained relationships can undermine recipients' effective regulation of stress and heighten cognitive demand (Bolger & Amarel, 2007; Bolger et al., 2000; Seidman et al., 2006). While perceived relational strain appears to be detrimental, its impacts on everyday emotional well-being remain unclear.

The present research extends past findings by pinpointing the effects of perceived support (and strain) in multiple relationships on real-world affectivity and testing the extent to which these associations covary within a large U.S. sample (n = 1,124). This approach addresses relevant empirical questions in the fields of emotional well-being and social support. Most existing research has identified concrete affective impacts of *received* support (Bolger & Amarel, 2007; Bolger et al., 2000; Oveis et al., 2020; Zee & Bolger, 2019). In contrast, links between *perceived* support and real-world affective outcomes remain more opaque. We examine whether effective perceived support in individuals' relationships serves to impact their everyday negative and positive affectivity—that is, the baseline intensity of their negative and positive affect accounting for influential daily stressors and positive events, respectively. We examine these questions using data from a naturalistic, 8-day experience sampling study within the United States, providing a strong degree of external validity (Koval et al., 2023). What's more, the present study examines samples of relatively older adults (age range = 43−90 years), for whom links between social support and emotional well-being might have especially meaningful implications (Cacioppo & Cacioppo, 2014; Holt-Lunstad, 2018; Poscia et al., 2018). These results will indicate whether individuals' perceptions of the support available in their relationships impact affectivity in daily life even in the absence of emotionally relevant daily events.

Hypotheses

In this article, we test the extent to which negative and positive affect in everyday life (measured via experience sampling) are influenced by perceived support and strain in friendships, romantic partners, and family members. Using data from the publicly available Midlife in the United States (MIDUS) data set, we directly test the following hypotheses:

Hypothesis 1 (H1): Stronger perceived support from family, friends, and romantic partners is associated with less negative affectivity, and with more positive affectivity in daily life.

Hypothesis 2 (H2): Reporting less support and greater strain (i.e., lack of effective support), in family, friend, and romantic relationships is associated with greater negative affectivity, and less positive affectivity in daily life.

Hypothesis 3 (H3): Age will be associated with affectivity in the hypothesized models such that older adults will report greater positive affectivity, and reduced negative affectivity, or age amplifies the predicted H1 and H2 effects. This is consistent with *Socioemotional Selectivity Theory* (Carstensen, 1992) and similar findings that adults often hold more positively biased affect later in the lifespan (Mather, 2012).

In addition to including of age in analyses to test *H3*, we also test covariates of self-reported sex, socioeconomic status (SES), total household income, race, and personality traits (agreeableness, conscientiousness, neuroticism, extroversion, and openness to experience; Goldberg, 1992). Hypotheses and analyses are preregistered (https://aspredicted.org/ah8yq.pdf), although the language and approach has been modified here compared to the preregistration to clarify our primary aim of examining the influence of support and strain on positive and negative *affectivity* (i.e., emotional baseline in the absence of affectively relevant events, calculated via the per-person intercept, exploratory) reported in daily life, as opposed to negative and positive emotional *reactivity* to daily events (calculated via the per-person slope, preregistered; see Method section and Supplemental Materials). In our "Discussion" section, we include exploratory correlational analyses using similar measures from the Midlife in Japan (MIDJA) project to identify potentially fruitful, cross-cultural future directions. We conducted all analyses in *R* (see Supplemental Materials for software references).

We briefly note here the positionality of authors on this article and constraints on the generality of this work (Simons et al., 2017). All three authors are based at a university in and come from the United States, identify as White, identify as women, and are educated in social psychology, cognitive psychology, and/or neuroscience. We recognize that our backgrounds may influence our foci in this article (Buchanan et al., 2021; Gruber et al., 2021; Roberts et al., 2020). Regarding constraints on generality, all data examined here are from samples located in the United States (with some exploratory analyses examining a Japanese sample) in which participants hold varied levels of education, tend to identify as female, are middle- to older-aged adults, and tend to identify as White. The generalizability of findings reported here is limited within these constraints.

Method

In this article, we examined two publicly available Midlife in the United States (MIDUS) data sets (Ryff et al., 2019; Ryff & Almeida, 2022) and a Midlife in Japan (MIDJA) data set (exploratory analysis, see "Discussion" section and Supplemental Materials; Ryff et al., 2018). All data sets, documentation, materials, and codebooks are publicly available through the Institute for Social Research at the University of Michigan for the third-wave MIDUS survey (Ryff et al., 2019; https://www.icpsr.umich.edu/web/ICPSR/studies/36346), third-wave MIDUS National Study of Daily Experience (Ryff & Almeida, 2022; https://www.icpsr.umich.edu/web/ICPSR/studies/38529), and second-wave MIDJA survey (exploratory; Ryff et al., 2018; https://www.icpsr.umich.edu/web/ICPSR/studies/36427) examined in this article. All analytic code is available via OSF (https://osf.io/f4kav/). Hypotheses and analyses are preregistered via As-Predicted with deviations as noted in the Introduction (https://aspredicted.org/ah8yq.pdf). We report all measures and exclusions for this study below.

Participants

Participants examined in the present study were those who completed both the third wave of the MIDUS National Study of Daily Experience (NSDE, collected 2017−2019; Ryff & Almeida, 2022) and the third wave of the MIDUS survey (collected 2013−2014; Ryff et al., 2019). Participants were originally recruited for participation in the longitudinal MIDUS project via random digit dialing or for one of several follow-up MIDUS projects. Some third-wave NSDE participants were recruited from the third-wave MIDUS Milwaukee survey ($n = 112$). These participants were excluded from the present analyses because the third-wave MIDUS Milwaukee survey data were collected later (2016−2017; Ryff et al., 2023) than the other third-wave MIDUS survey data, which may have affected the validity of our analyses. Measures in the MIDUS survey and MIDUS-NSDE sub-component were collected via phone interview (every day for 8 days for the MIDUS-NSDE) or self-administered survey. Third-wave MIDUS and MIDUS-NSDE participants provided informed consent for their participation according to protocols approved by the local institutional review boards at the universities through which they were collected.

The third-wave MIDUS and MIDUS-NSDE projects aimed to test relationships between behavioral, psychological, and social features in health among older adults (Ryff et al., 2019), and to examine relationships between these factors and daily life experiences (particularly stressors; Ryff & Almeida, 2022). Beyond those discussed below, other measures collected in the MIDUS survey include inventories of physical and psychological health, individual differences (e.g., personality), career perceptions (e.g., job characteristics), and relationship qualities (e.g., prioritization of marriage and family). The MIDUS-NSDE subcomponent included physical and

Table 1. Demographic Data Among Participants Examined in the Present Study (n = 1,124).

Demographic	
Sex	
"Female"	55.872%
"Male"	44.128%
Missing or refused	0.000%
Age (at third MIDUS-NSDE)	
M (*SD*)	62.711 (10.391)
Range	43–90
Missing or refused	0.000%
Race/Racial origins	
"White"	89.146%
"Black and/or African American"	3.203%
"Native American or Alaska Native Aleutian Islander/Eskimo"	0.979%
"Asian"	0.356%
"Native Hawaiian or Pacific Islander"	0.000%
"Other"	5.783%
"Don't know" or "refused"	0.534%
Highest level of education completed	
"No school/Some grade school (1−6)"	0.267%
"Eighth grade/junior high school (7−8)"	0.534%
"Some high school (9−12 No Diploma/No GED)"	2.402%
"GED"	0.712%
"Graduated from High School"	19.840%
"1 to 2 years of college, no degree yet"	16.370%
"3 or more years of college, no degree yet"	3.025%
"Graduated from a 2-year college, vocational school, or Associate's Degree"	10.943%
"Graduated from a 4- or 5-year college, or Bachelor's Degree"	23.399%
"Some graduate school"	2.669%
"Master's Degree"	14.235%
"Ph.D., Ed.D., M.D., DDS, LLB, LLD, JD, or other professional degree"	5.516%
"Don't know" or "refused"	0.089%
Relative community standing (SES; reverse-scored such that higher scores indicate higher standing)	
M (*SD*)	6.662 (1.751)
Range	1–10
Missing or refused	4.537%
Total household income	
M (*SD*)	92,444 (71,903)
Range	0–300,000
Missing or refused	7.295%
Total	
N	1,124

Note. Participants participated both in the third-wave MIDUS NSDE (2016−2017) and the third wave MIDUS survey (2013−2014, $n = 1,124$). For more information on MIDUS demographic items, see documentation here: https://www.icpsr.umich.edu/web/ICPSR/studies/36346 (Ryff et al., 2019); https://www.icpsr.umich.edu/web/ICPSR/studies/38529 (Ryff & Almeida, 2022). DDS = Doctor of Dental Surgery; JD = Juris Doctor; LLB = Bachelor of Laws; LLD = Legum Doctor; MIDUS = Midlife in the United States; NSDE = National Study of Daily Experience; GED = General Educational Development; SES = socioeconomic status.

physiological health inventories, stressor appraisals, and questions on daily usage of time (see codebooks for full measures; Ryff & Almeida, 2022; Ryff et al., 2019).

In the present article, we examine whether the daily affectivity reported by participants in the third-wave MIDUS-NSDE as outlined above (n = 1,124, 55.872% female, M_{age} = 62.711, SD_{age} = 10.391; Table 1) was associated with their perceived strain and support in familial, friend, and romantic relationships reported in the third-wave MIDUS survey. Although sample size was constrained to this set of third-wave MIDUS and MIDUS-NSDE participants, prior research suggests that it provides sufficient power (>80%) to observe even small effects in our multiple regression models (Mason & Perreault, 1991). Among participants included in the present study, the total completion rate for the third MIDUS-NSDE was 94.82%, with 8,528 observations of 8,992 possible in the data set (1,124 participants multiplied by 8 days). For all measures, participants could choose not to respond. For some measures, they could indicate that they did not know how to respond (e.g., unsure whether they had experienced a stressor) or that the measure did not apply to them (e.g., no spouse/partner to refer to for the spouse/partner support scale). In the present study, we code all three of these response types—nonapplicable, refused to respond, and do not know—as missing data for all measures.

Measures

Third MIDUS Survey (Ryff et al., 2019)

Relationship Perceived Support and Strain Scales. Participants responded to a set of six scales regarding perceived support and strain in their family, friend, and spouse/partner relationships (Grzywacz & Marks, 1999; Schuster et al., 1990; Whalen & Lachman, 2000). For all six scales, items were reverse-scored before calculating composite scales such that higher values would reflect higher standing in the scale (e.g., more support). Scales were calculated for all participants who responded to at least one item within them or to whom the scales applied (i.e., those who reported being in marriages/domestic partnerships) See Supplemental Materials for complete scale items (Ryff et al., 2019).

Family Support. As a measure of perceived family support, we used the family support scale. Participants were asked to respond to four family support items (ω = 0.835).

Family Strain. To examine the extent to which family relationships were a source of strain, we examined the family strain scale. Participants were asked to respond to four family strain items (ω = 0.792).

Friend Support. As a measure of perceived support from friends, we examined the friend support scale. Participants were asked to respond to four friend support items (ω = 0.854).

Friend Strain. To examine the extent to which friend relationships were a source of strain, we examined the friend strain scale. Participants were asked to respond to four friend strain items (ω = 0.810).

Spousal/partner support. As a measure of perceived support among romantic partners/spouses, we examined the spouse/partner support scale. Participants were asked to respond to six spouse/partner support items (ω = 0.914).

Spousal/Partner Strain. To examine romantic partnership perceived strain, we examined the spouse/partner strain scale. Participants were asked to respond to six spouse/partner strain items (ω = 0.874).

Personality (Big Five). We included Big Five personality traits as covariates (Goldberg, 1992; Leger et al., 2021; Ryff et al., 2019). Participants indicated the extent to which each of a set of adjectives associated with each trait—openness to experience (seven items), extroversion (five items), neuroticism (four items), conscientiousness (five items), agreeableness (five items)—described them (response scale: 1 = "a lot" through 4 = "not at all"; see codebooks, Rossi, 2001; Ryff et al., 2019). Scores for each item were inverted (except reverse-scored items) such that higher scores on each trait indicate higher standing. Composite trait scores were calculated by averaging items for participants who completed at least half per trait.

SES (Relative Community Standing). Socioeconomic status (SES) was included as a covariate. Participants were asked to place themselves within a ladder (from 10, the bottom rung, to 1, the top rung; see codebooks, Ryff et al., 2019) relative to other people in a community with whom they most identified (similar to the MacArthur Scale of Subjective Social Status; Adler et al., 2000). Before analyses, we reverse-scored SES such that higher scores would represent higher standing on SES.

Race (Racial Origins). Self-reported race was included as a covariate. Participants were asked to report their primary racial origins (see codebooks, Ryff et al., 2019; Table 1). Due to the White majority among participants (89.146%), we recoded self-identified race as White (0) or non-White (1; comprised of those who reported they were "Black and/or African American," "Native American or Alaska Native Aleutian Islander/Eskimo," "Asian," Native Hawaiian or Pacific Islander," or "Other,") to strengthen power to detect effects in analyses.

Total Household Income. Self-reported total household income was included as a covariate. Participants were asked to report, as numeric values, income they and others in their households earned in the last year from wages, pensions, social security, or other sources, which was totaled

into a single metric of total household income (range: US$0−US$300,000 cap, see codebooks, Ryff et al., 2019).

Third MIDUS NSDE Daily Diary Project (Ryff & Almeida, 2022)

Age and Sex. Participants' self-reported age (numeric) and sex (recoded as female (0) or male (1) for analyses) at the third MIDUS-NSDE were included in analyses.

Average Daily Positive Affect. On each day of the daily diary study, participants were asked to indicate the extent to which they had experienced each of thirteen positive affective states from scales developed for the MIDUS study (Supplemental Materials; Mroczek & Kolarz, 1998; Watson et al., 1988). Overall daily positive affect was calculated per participant per day by averaging across scale items.

Average Daily Negative Affect. On each day of the daily diary study, participants were asked to indicate the extent to which they had experienced each of 14 negative affective states from scales developed for the MIDUS study (Supplemental Materials; Mroczek & Kolarz, 1998; Watson et al., 1988; Almeida & Kessler, 1998). Overall daily negative affect was calculated per participant per day by averaging across scale items.

Occurrence of Stressors. On each day of the daily diary study, participants were asked whether they had experienced each of seven stressors identified in past work (Almeida et al., 2002; Supplemental Materials). If participants had experienced a specific stressor, they were asked follow-up questions regarding their risk appraisal, perceived control of, and negative affect associated with the stressor (these follow-up measures are outside the scope of the present study). We used this scale to examine occurrence of at least one stressor on each interview day (i.e., "any stressor"; none or at least one) and to calculate the average number of stressors (i.e., the sum of stressors reported per day, averaged) experienced by each participant across the 8-day experience sample (used to calculate negative affectivity, Leger et al., 2021).

Occurrence of Positive Events. Each day of the daily diary study, participants were asked whether they had experienced each of six positive events identified in past work (Almeida et al., 2002; Supplemental Materials). We used this scale to examine occurrence of at least one positive event on each interview day (i.e., "any positive event"; none or at least one) and to calculate the average number of positive events (i.e., the sum of positive events reported per day, averaged) experienced for each participant across the 8-day experience sample (used to calculate positive affectivity).

Negative Affectivity. Our analytic strategy for calculating negative affectivity is in line with methods laid out in past research (Bolger et al., 1989) and recent work that finds negative affective reactivity mediates the relationship between personality traits and the development of chronic health conditions using prior MIDUS data (Leger et al., 2021). In their article, Leger and colleagues (2021) measure negative affective reactivity as the within-person slope representing differences in negative affective intensity on days containing at least one stressor compared with days including no stressors. We followed this strategy to first estimate a two-level multilevel model using R package "lme4", Bates et al., 2015, specified as follows: *average_daily_negative_affect ~ any_stressor + average_number_stressors + (1 + any_stressor|ID)*. This model had a dependent variable of average daily negative affect predicted by a fixed effect of occurrence of at least one daily stressor (within-person exposure to stress, Level 1) and a covariate of the average number of stressors experienced by each participant across days reported (or between-person exposure to stress, Level 2) and a random effect of stressor-exposure by individual. Continuous independent variables (average number of stressors) were mean-centered prior to modeling.

We measure negative affectivity for each participant as the per-participant *intercept* from the calculation of negative affective reactivity, which represents negative affective intensity for a given participant across the 8-day experience sampling duration when the influence of daily stressors and average number of daily stressors (grand mean) are held constant (i.e., equal to zero). In contrast, the within-person *slope* provides a measure of individual negative affective reactivity to stressful daily events by parameterizing differences in negative affect on days with versus without at least one stressor (Leger et al., 2021). Put simply, negative affectivity provides a measure of individuals' baseline negative affect on a daily basis without the effects of external stressors. This measure of negative affectivity is consistent with existing operationalizations (Denollet, 2013). This method also enables us to isolate the effects of perceived support on baseline negative affectivity accounting for the effects of daily stressors, including interpersonal interactions (e.g., arguments).

Some observations (participant*day) were missing measures necessary to calculate negative affectivity. These measures were missing completely at random as indicated via Little's Test, $\chi^2(2) = 0.124$, $p = .940$; C. Li, 2013; Little, 1988, indicating that we could omit observations missing necessary measures ($n = 418$, or 4.902% of the 8,528-observation sample) via pairwise deletion without biasing model parameters. As a result, our calculation of negative affectivity includes a sample of 8,110 observations (across $n = 1{,}076$ participants). It is worth noting that the model has some nonnormality in the distribution of residuals; however, some traditional approaches to resolving nonnormality, such as transformation, may not enhance the validity of results (Knief & Forstmeier, 2021). Multilevel regression models tend to be robust to violations of distributional assumptions and yield reliable estimates with large sample sizes ($n \geq 50$ per group), including the ones we have here (Maas & Hox, 2004; Warrington et al., 2014).

Positive Affectivity. Consistent with the methods laid out for calculating negative affectivity, we first estimated a two-level multilevel model with a dependent variable of average daily positive affect predicted by a fixed effect of occurrence of at least one daily positive event (or within-person exposure to positive events, Level 1) and a covariate of the average number of positive events experienced by each participant across days reported (or between-person exposure to positive events, Level 2) and a random effect of positive event occurrence by individual, specified in R package "lme4," Bates et al., 2015, as follows: *average_daily_positive_affect ~ any_positive_event + average_number_positive_events + (1 + any_positive_event|ID)*. Continuous independent variables (average number of positive events) were mean-centered prior to modeling.

We measure positive affectivity for each participant as the per-participant *intercept* representing positive affective intensity for each participant across the study duration when the influence of daily positive events and average number of daily positive events (grand mean) are held constant (i.e., equal to zero). Conversely, the within-person *slope* would provide a measure of individual positive affective reactivity to positive daily events by parameterizing differences in positive affect on days with, versus without at least one positive event (Leger et al., 2021). Our measure of positive affectivity provides information on individuals' baseline positive affect without the effects of external positive events. This measure of positive affectivity is consistent with its previous operationalizations (Watson & Naragon, 2009). As with negative affectivity, this method also enables us to isolate the effects of perceived support on positive affectivity accounting for the effects of daily positive events, including interpersonal interactions (e.g., sharing a laugh).

Some observations (participant*day) were missing measures necessary to calculate positive affectivity. These measures were missing completely at random as indicated via Little's Test, $\chi^2(1) = 0.004$, $p = .950$; C. Li, 2013; Little, 1988, indicating that we could omit observations missing needed measures ($n = 391$, or 4.585% of the total 8,528-observation sample) via pairwise deletion without biasing model parameters. As a result, our calculation of positive affectivity includes a sample of 8,137 observations (across $n = 1{,}076$ participants). This model has slight non-normality of residuals; again, this should not undermine the validity of model estimates due to our large sample size (Knief & Forstmeier, 2021; Maas & Hox, 2004; Warrington et al., 2014).

Analysis

Exclusion of Outliers. 1,076 participants provided sufficient data to calculate positive affectivity, and 1,075 provided sufficient data to calculate negative affectivity ($n = 1{,}078$; three participants had sufficient data to calculate either negative or positive affectivity). However, some participants ($n = 32$) were outliers 3 standard deviations above or below the mean for negative affectivity and/or positive affectivity. In line with our preregistration, these outlying participants were excluded before analyses, leaving a final sample of 1,046 participants (93.060% of the original $n = 1{,}124$).

Multiple Imputation for Missing Data. All 1,046 participants included in analysis had complete data for negative affectivity, positive affectivity, age, and sex (Table 2). However, some participants were missing friend support (4.015%) and strain (4.207%), family support (4.015%) and strain (3.920%), and partner support (30.688%) and strain (30.688%) scales, SES (11.759%), income (6.788%), race (0.574%), and scales for neuroticism (3.346%), conscientiousness (3.346%), agreeableness (3.250%), extroversion (3.346%), and openness to experience (3.346%). Notably, spousal/partner support and strain scales had more missing data as there were more individuals to whom they were not applicable (i.e., those who reported not having spouses). Data were not missing completely at random via Little's Tests, negative affectivity model, $\chi^2(356) = 559.46$, $p < .001$, and positive affectivity model, $\chi^2(356) = 557.34$, $p < .001$; C. Li, 2013; Little, 1988.

In line with our preregistration, we used multiple imputation to account for missing data, which is appropriate to handle data not missing completely at random (Enders, 2022; van Buuren, 2018). Multiple imputation produces reliable results particularly when the proportion of missing data are relatively low (<40% of the total sample size), which is the case here (Collins et al., 2001; Schafer, 1997; van Buuren, 2018). Imputing missing data can produce *more* reliable results because it allows all usable observations to be included in analyses. We implemented multiple imputation using the R package "mice" (van Buuren & Groothuis-Oudshoorn, 2011). In line with best practices (Bodner, 2008; Enders, 2022; White et al., 2011), we created 15 multiply imputed data sets simulating missing values (10 iterations each; Raghunathan et al., 2001; van Buuren, 2018; van Buuren et al., 1999) using Predictive Mean Matching for numeric variables and Polytomous Regression for categorical variables (unordered) to estimate missing data based on responses for all variables of interest (the imputation process included negative and positive affectivity, all support and strain scales, age, SES, income, race, sex, all personality traits, and excluded participant ID as this was a random identifier and otherwise not meaningful, van Buuren, 2018). In analysis, multiple regressions are run across the 15 imputed data sets and estimates are pooled to provide the most accurate estimates (van Buuren, 2018). Analyses based on imputed data are reliable as observed and imputed data sets share similar distributions (Table 2; Supplemental Materials).

Multiple Regression Models. We preregistered two structural equation models that fit the data poorly (see Supplemental Materials), so followed our preregistered contingency plan to

Table 2. Means, Standard Deviations, and Correlations With 95% Confidence Intervals for Each Correlation (Cumming, 2014) for All Numeric Variables Included in Analyses With Imputed Data Combined and Included (n = 1,046).

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Negative affectivity	0.11	0.09															
2. Positive affectivity	2.62	0.64	−.41** [−.46, −.35]														
3. Family strain[a]	1.97	0.60	.16** [.10, .21]	−.22** [−.28, −.16]													
4. Family support[a]	3.51	0.55	−.16** [−.22, −.10]	.28** [.22, .33]	−.41** [−.46, −.36]												
5. Friend strain[a]	1.71	0.51	.12** [.06, .18]	−.20** [−.25, −.14]	.48** [.43, .53]	−.19** [−.25, −.13]											
6. Friend support[a]	3.37	0.60	−.13** [−.19, −.07]	.23** [.17, .29]	−.18** [−.24, −.12]	.37** [.31, .42]	−.13** [−.19, −.07]										
7. Spouse/partner strain[a]	2.13	0.56	.14** [.08, .19]	−.29** [−.35, −.24]	.42** [.37, .47]	−.27** [−.32, −.21]	.35** [.29, .40]	−.11** [−.17, −.05]									
8. Spouse/partner support[a]	3.59	0.50	−.15** [−.21, −.09]	.24** [.18, .30]	−.26** [−.32, −.20]	.35** [.29, .40]	−.14** [−.20, −.08]	.15** [.09, .20]	−.72** [−.75, −.69]								
9. Neuroticism[a]	2.02	0.61	.30** [.25, .36]	−.29** [−.34, −.23]	.28** [.22, .33]	−.25** [−.31, −.19]	.21** [.15, .27]	−.18** [−.24, −.12]	.26** [.21, .32]	−.21** [−.27, −.15]							
10. Conscientiousness[a]	3.41	0.44	−.15** [−.21, −.09]	.26** [.21, .32]	−.10** [−.16, −.04]	.17** [.11, .23]	−.11** [−.17, −.05]	.23** [.17, .28]	−.14** [−.20, −.08]	.12** [.06, .18]	−.18** [−.24, −.12]						
11. Agreeableness[a]	3.45	0.49	−.05 [−.11, .01]	.27** [.21, .32]	−.05 [−.11, .01]	.24** [.18, .30]	−.07* [−.13, −.01]	.33** [.28, .38]	−.05 [−.11, .01]	.01 [−.05, .07]	−.13** [−.18, −.06]	.29** [.23, .34]					
12. Extroversion[a]	3.14	0.54	−.12** [−.18, −.06]	.37** [.32, .43]	−.06* [−.12, −.00]	.24** [.18, .30]	−.05 [−.11, .01]	.30** [.25, .36]	−.11** [−.17, −.05]	.13** [.07, .19]	−.20** [−.25, −.14]	.27** [.21, .32]	.50** [.45, .54]				
13. Openness to experience[a]	2.95	0.52	−.07* [−.13, −.01]	.21** [.15, .27]	−.05 [−.11, .01]	.10** [.04, .16]	−.01 [−.07, .05]	.23** [.17, .29]	−.03 [−.09, .03]	.06* [.00, .12]	−.18** [−.24, −.12]	.31** [.26, .37]	.35** [.30, .40]	.53** [.49, .58]			
14. Age	62.76	10.33	.01 [−.05, .07]	.10** [.04, .16]	−.18** [−.24, −.12]	.09** [.03, .15]	−.12** [−.18, −.06]	.00 [−.06, .06]	−.10** [−.16, −.04]	.11** [.05, .17]	−.20** [−.25, −.14]	−.08* [−.14, −.02]	.04 [−.02, .10]	.06* [.00, .12]	.05 [−.01, .11]		
15. SES[a]	6.53	1.54	−.19** [−.25, −.13]	.22** [.16, .28]	−.15** [−.21, −.09]	.21** [.16, .27]	−.06 [−.12, .00]	.24** [.18, .29]	−.14** [−.20, −.08]	.22** [.16, .28]	−.31** [−.36, −.25]	.20** [.14, .26]	.12** [.06, .18]	.30** [.24, .35]	.30** [.25, .36]	.14** [.08, .20]	
16. Income[a]	94084.59	70136.15	−.12** [−.18, −.06]	.02 [−.04, .08]	.02 [−.04, .08]	−.01 [−.07, .05]	.02 [−.04, .08]	−.02 [−.08, .04]	−.06 [−.12, .00]	.13** [.07, .19]	−.04 [−.10, .02]	.07* [.00, .13]	−.06* [−.12, −.00]	.00 [−.06, .06]	.07* [.01, .13]	−.27** [−.33, −.22]	.18** [.12, .24]

Note. SES = socioeconomic status.
[a]Variable has missing data imputed.
*$p < .05$. **$p < .01$.

estimate regression models (with positive and negative affectivity as DVs rather than reactivity as noted in the Introduction, and using standard linear rather than multilevel regression models as data were not nested), which will be outlined here. To evaluate whether greater familial, friend, and partner support would be associated with greater everyday positive affectivity and reduced negative affectivity *(H1)*, that greater strain in familial, friend, and romantic partner relationships would have the opposite effects *(H2)*, and that age would amplify these effects or people would feel more positively and less negatively at older ages (*H3*), we estimated two multiple linear regression models using the "lm" function in the "stats" R package (R Core Team, 2023). Regression results are estimated for each imputed data set and then pooled to provide the most accurate estimates, in line with best practices (Enders, 2022; van Buuren, 2018). We obtained pooled estimates across multiple-imputed data sets using the "pool" function from the "mice" R package (van Buuren & Groothuis-Oudshoorn, 2011). We utilized an Ordinary Least Squares regression method to estimate both models, which is robust as outliers are excluded. All continuous predictors and outcome variables were standardized prior to modeling to enhance interpretability of results.

Our first multiple regression model included fixed effects for family, friend, and partner support and strain, and age, predicting the dependent variable of negative affectivity (Model 1.1). To examine effects of covariates, we developed models identical to Model 1.1 but with additional fixed effects of personality traits (Model 1.2), SES, income, sex, and race (Model 1.3), and all of the aforementioned covariates (Model 1.4). Model fit statistics for all four models are reported and the best-fitting model is emphasized in Results.

Our second multiple regression model included fixed effects for family, friend, and partner support and strain, and age, predicting the dependent variable of positive affectivity (Model 2.1). Again, we developed models identical to Model 2.1, but with additional fixed effects of personality traits (Model 2.2), SES, income, sex, and race (Model 2.3), and all covariates (Model 2.4). All model fit statistics are reported, and the best-fitting model of positive affectivity is highlighted.

We tested the strength of our best-fitting model results in two additional ways. First, we tested whether negative and positive affectivity models with age moderating support and strain variables variables were a better fit to the data than models treating all hypothesized predictors and covariates as fixed effects for *H3*. Second, we include multiverse analyses (Steegen et al., 2016) wherein we estimate the best-fitting negative and positive affectivity models with data sets taking different approaches to missing data treatment and outlier exclusion compared with those preregistered. These multiverse analyses thus also serve the purpose of sensitivity analysis (Table 3, Versions 3−4). Some data sets also include different treatments of the partner support/strain variables, which were missing the most data due to some participants reporting not having partners (Versions 2 and 5). Full statistics for all models are reported in Supplemental Materials.

Results

Negative Affectivity (Model 1). We found that the best-fitting model predictive of negative affectivity was Model 1.4, which included fixed effects of family, friend, and partner support and strain, age, and all personality and demographic covariates (R^2 adj. pooled = 0.118; Table 4). Model 1.2, $F(5, 1{,}021.8) = 16.293$, $p < .001$, and Model 1.3, $F(4, 990.92) = 6.858$, $p < .001$, fit the data better than Model 1.1; Model 1.2 fit better than Model 1.3, $F(5, 1{,}021.8) = 16.293$, $p < .001$. Model 1.4 was a better fit than Model 1.1, $F(9, 1{,}014.9) = 10.418$, $p < .001$, Model 1.2, $F(4, 970.16) = 3.119$, $p = .015$, and Model 1.3, $F(5, 1{,}016.4) = 13.048$, $p < .001$. We also found that when Model 1.4 included age as a moderator of family, friend, and spouse support and strain with the same covariates, the model did *not* fit the data differently than the fixed effects model, $F(6, 803.97) = 0.812$, $p = .561$. As a result, Model 1.4 was identified as the best-fitting model (Table 4).

We estimated Model 1.4 using data processed following our preregistration (Tables 3 and 5, Version 1; Figure 1). To test the validity of results based on this approach, we conducted a multiverse analysis (Table 5). Importantly, data sets excluding missing data via pairwise deletion include many fewer participants, but these participants provided responses to all measures of interest. We will report results primarily from Model 1.4 (the best-fitting model) using the preregistered data processing method, but will refer to other versions of the multiverse analysis when describing strength of results.

Daily Negative Affectivity Was Not *Associated With Friend, Familial, Nor Partner Support (*H1*).* According to the best-fitting model (1.4, R^2 adj. pooled = 0.118), negative affectivity was not related to perceived support from friends, $\beta = -0.032$, 95% CI [−0.099, 0.036], $SE = 0.035$, $t(858.733) = -0.914$, $p = .361$, partners, $\beta = -0.049$, 95% CI [−0.157, 0.059], $SE = 0.054$, $t(91.816) = -0.901$, $p = .370$, nor family, $\beta = -0.027$, 95% CI [−0.100, 0.047], $SE = 0.037$, $t(677.647) = -0.716$, $p = .475$. These results were consistent across most multiverse versions (Table 5, Versions 2, 4, 5), suggesting that support from friends, family, and partners may be unrelated to negative affectivity.

*Negative Affectivity Was Not Related to Strain in Familial, Friend, or Partner Relationships (*H2*).* Strain in relationships with family, $\beta = 0.047$, 95% CI [−0.029, 0.123], $SE = 0.039$, $t(925.814) = 1.222$, $p = .222$, friends, $\beta = 0.038$, 95% CI [−0.030, 0.106], $SE = 0.035$, $t(940.185) = 1.098$, $p = .272$, and partners, $\beta = -0.034$, 95% CI [−0.130, 0.062], $SE = 0.049$, $t(367.077) = -0.696$, $p = .487$, were also not related to negative affectivity. These results were strong as they were consistent across all multiverse versions (Table 5).

Negative Affectivity May Be Lower When One Has a Partner, But Unrelated to the Level *of Support or Strain Provided by Said Partner.* When examining partner presence/absence

Table 3. Summary of Data Sets Examined in Multiverse Analyses.

Data set version for multiverse analyses	Partner/spouse variable treatment	Missing data treatment	Outlier exclusion (±3SD on DVs)	Observations
Version 1	Includes partner/spouse support and strain, imputed for those missing	Multiple imputation	Yes	$n = 1046$
Version 2	Includes partner/spouse support and strain, only includes participants who report having a partner/spouse	Multiple imputation	Yes	$n = 718$
Version 3	Includes partner/spouse support and strain, excludes those missing	Pairwise deletion	Yes	$n = 616$
Version 4	Includes partner/spouse support and strain, excludes those missing	Pairwise deletion	No	$n = 631$
Version 5	Includes those who report having (1) or not applicable (0) partner instead of partner/spouse support and strain	Pairwise deletion	Yes	$n = 859$

Note. In addition to data processed via our preregistered method outlined above in which outliers are excluded (outliers being those ±3SD on negative and/or positive affectivity) and multiple imputation is used for missing data (Version 1, n = 1046), we re-ran the best-fitting negative and positive affectivity models using a data set including only those who report having partners, excluding outliers, and with multiple imputation for all other missing data (Version 2, $n = 718$), a data set excluding outliers and excluding participants with missing data on any measure of interest (Version 3, $n = 616$), a data set leaving outliers in the data set and excluding participants with missing data on any measure of interest (Version 4, $n = 631$), and a data set excluding outliers, including a fixed effect for presence/absence of a partner instead of partner support and strain, and excluding participants with missing data on any measure of interest (Version 5, $n = 859$).

as a predictor rather than partner support/strain (Version 5, Table 5), simply reporting that one had a partner (as opposed to not) was associated with reduced negative affectivity, $\beta = -0.249$, 95% CI [−0.399, −0.098], $SE = 0.077$, $t(843) = -3.243$, $p = .001$. However, among individuals who reported having partners (Version 2, Table 5), neither one's reported *level* of partner support, $\beta = -0.029$, 95% CI [−0.135, 0.076], $SE = 0.054$, $t(698.64) = -0.546$, $p = .585$, nor strain, $\beta = -0.012$, 95% CI [−0.120, 0.096], $SE = 0.055$, $t(698.39) = -0.218$, $p = .828$, were related to negative affectivity.

Negative Affectivity Was Somewhat Higher With Older Age (H3) *and Greater Neuroticism, and Lower With More Conscientiousness.* Regarding age and covariates, we found that negative affectivity rose marginally significantly with age, $\beta = 0.060$, 95% CI [−0.004, 0.123], $SE = 0.032$, $t(924.205) = 1.842$, $p = .066$. While age and negative affectivity had a positive relationship in all analytic versions, none of these were significant, suggesting a weak effect (Table 5). Negative affectivity was also positively related to neuroticism, $\beta = 0.242$, 95% CI [0.178, 0.307], $SE = 0.033$, $t(977.005) = 7.342$, $p < .001$, a strong effect consistent across all analytic versions (Table 5).

Negative affectivity was negatively associated with conscientiousness, $\beta = -0.073$, 95% CI [−0.137, −0.009], $SE = 0.033$, $t(988.290) = -2.235$, $p = .026$, SES (marginally significant), $\beta = -0.068$, 95% CI [−0.138, −0.001], $SE = 0.035$, $t(581.884) = -1.930$, $p = .054$, and income, $\beta = -0.078$, 95% CI [−0.143, −0.013], $SE = 0.033$, $t(582.709) = -2.347$, $p = .019$. Effects for conscientiousness are strong across most analytic versions; effects for income and SES may not be reliable, however, as they did not hold across other analytic versions (Table 5).

Positive Affectivity (Model 2). The best-fitting model predictive of positive affectivity was Model 2.4, with fixed effects of family, friend, and partner support and strain, age, and all personality and demographic covariates (R^2 adj. pooled = 0.253, Table 6). Model 2.2, $F(5, 1{,}000.8) = 29.19$, $p < .001$, and Model 2.3, $F(4, 1{,}000.5) = 6.454$, $p < .001$, fit the data better than Model 2.1; Model 2.2 fit better than Model 2.3, $F(5, 1{,}000.8) = 29.19$, $p < .001$. Model 2.4 was a better fit to the data than Model 2.1, $F(9, 1{,}011.6) = 18.008$, $p < .001$, Model 2.2, $F(4, 989.76) = 3.607$, $p = .006$, and Model 2.3, $F(5, 996.42) = 26.565$, $p < .001$. When Model 2.4 included age as a moderator of family, friend, and spouse support and strain and the same covariates, the model did not fit the data differently than the fixed effects model, $F(6, 793.12) = 0.522$, $p = .792$. Model 2.4 was thus the best-fitting model (Table 6).

Like Model 1.4, we estimated Model 2.4 using data processed following our preregistration (Tables 3 and 7, Version 1; Figure 2) To test the validity of results based on this approach, we conducted a multiverse analysis (Table 7). We will focus on results from best-fitting Model 2.4 using the preregistered data processing method, and will refer to other versions in the multiverse analysis when describing the strength of results.

*Stronger Friend and Family Support Were Associated With Greater Daily Positive Affectivity, But Romantic Partner Support Was Not (*H1*).* According to Model 2.4 (R^2 adj. pooled = 0.253), positive affectivity was positively related to perceived support from friends (marginally significant), $\beta = 0.054$, 95% CI [−0.009, 0.116], $SE = 0.032$, $t(897.307) = 1.694$, $p = .091$, and from family, $\beta = 0.090$, 95% CI [0.022, 0.158], $SE = 0.034$, $t(670.747) = 2.616$, $p = .009$ which are strong effects present across all other analytic versions

Table 4. Negative Affectivity Model Comparison.

	Models 1.1–1.4			
Predictor	Model 1.1	Model 1.2	Model 1.3	Model 1.4
(Intercept)	−0.003 [−0.063, 0.056]	−0.002 [−0.060, 0.055]	−0.001 [−0.085, 0.084]	−0.013 [−0.096, 0.071]
Family support	−0.068† [−0.142, 0.005]	−0.031 [−0.103, 0.042]	−0.060 [−0.134, 0.014]	−0.027 [−0.100, 0.047]
Friend support	−0.072 * [−0.137, −0.007]	−0.037 [−0.103, 0.029]	−0.053 [−0.120, 0.015]	−0.032 [−0.099, 0.036]
Partner/spouse support	−0.077 [−0.182, 0.029]	−0.071 [−0.177, 0.036]	−0.041 [−0.147, 0.066]	−0.049 [−0.157, 0.059]
Family strain	0.078 * [0.001, 0.155]	0.051 [−0.024, 0.126]	0.066† [−0.011, 0.143]	0.047 [−0.029, 0.123]
Friend strain	0.056 [−0.014, 0.127]	0.035 [−0.032, 0.103]	0.060† [−0.009, 0.130]	0.038 [−0.030, 0.106]
Partner/spouse strain	−0.006 [−0.102, 0.091]	−0.043 [−0.140, 0.053]	0.006 [−0.090, 0.102]	−0.034 [−0.130, 0.062]
Age	0.047 [−0.014, 0.108]	0.077 * [0.017, 0.137]	0.036 [−0.028, 0.100]	0.060† [−0.004, 0.123]
Neuroticism		0.259 *** [0.196, 0.323]		0.242 *** [0.178, 0.307]
Conscientiousness		−0.081 * [−0.144, −0.017]		−0.073 * [−0.137, −0.009]
Agreeableness		0.048 [−0.023, 0.119]		0.036 [−0.036, 0.109]
Extroversion		−0.067† [−0.143, 0.010]		−0.060 [−0.137, 0.017]
Openness to experience		0.033 [−0.037, 0.104]		0.051 [−0.021, 0.123]
Sex (reference = female)			−0.012 [−0.140, 0.117]	0.008 [−0.121, 0.138]
SES			−0.128 *** [−0.196, −0.061]	−0.068† [−0.138, 0.001]
Race (reference = White)			0.059 [−0.139, 0.258]	0.087 [−0.107, 0.280]
Income			−0.085 * [−0.151, −0.019]	−0.078 * [−0.143, −0.013]
Num. Obs.	1,046	1,046	1,046	1,046
Num. Imp.	15	15	15	15
R^2	.049	.120	.075	.131
R^2 Adj.	.042	.110	.065	.118

Note. The table shows standardized coefficients (pooled estimates across imputed data sets) and model comparison statistics for Models 1.1 (fixed effects for family, friend, and partner support and strain, in addition to age, predicting negative affectivity), 1.2 (identical to Model 1.1 with additional fixed effects of neuroticism, conscientiousness, agreeableness, openness to experience, and extroversion), and 1.3 (identical to Model 1.1 with additional fixed effects of SES, income, sex, and race), and 1.4 (Model 1.1 plus all covariates in Models 1.2 and 1.3). SES = socioeconomic status.
†$p < .1$. *$p < .05$. **$p < .01$. ***$p < .001$.

(Table 7). Support from partners was not related to positive affectivity, β = −0.015, 95% CI [−0.110, 0.080], SE = 0.048, $t(122.871) = -0.314$, $p = .754$, which was also found across analytic versions (Table 7).

*Positive Affectivity Was Negatively Related to Strain in Partner Relationships and to Strain in Friendships (Weakly), But Not Family (*H2*).* Conversely, positive affectivity was negatively related to strain in relationships with partners, β = −0.132, 95% CI [−0.233, −0.031], $SE = 0.051$, $t(106.599) = -2.594$, $p = .011$, and friends (marginally significant), β = −0.062, 95% CI [−0.126, 0.003], $SE = 0.033$, $t(637.588) = -1.884$, $p = .060$. Positive affectivity was not related to family strain, β = −0.017, 95% CI [−0.088, 0.054], $SE = 0.036$, $t(698.306) = -0.460$, $p = .646$. More strain with partners was associated with reduced positive affectivity across analytic variations, while strain in friendships and family were generally weaker or unrelated to it (Table 7).

Table 5. Negative Affectivity Model 1.4 Multiverse Analysis.

	Negative affectivity Model 1.4 multiverse analysis				
Predictor	Version 1	Version 2	Version 3	Version 4	Version 5
(Intercept)	−0.013	0.008	−0.006	−0.060	0.146 *
	[−0.096, 0.071]	[−0.100, 0.117]	[−0.125, 0.113]	[−0.177, 0.056]	[0.009, 0.283]
Family support	−0.027	−0.013	0.005	0.011	−0.047
	[−0.100, 0.047]	[−0.101, 0.074]	[−0.091, 0.100]	[−0.082, 0.104]	[−0.122, 0.028]
Friend support	−0.032	−0.060	−0.099 *	−0.085†	−0.051
	[−0.099, 0.036]	[−0.142, 0.022]	[−0.188, −0.010]	[−0.172, 0.003]	[−0.124, 0.021]
Family strain	0.047	0.009	0.004	0.021	0.054
	[−0.029, 0.123]	[−0.082, 0.100]	[−0.093, 0.101]	[−0.075, 0.117]	[−0.024, 0.133]
Friend strain	0.038	0.043	0.025	0.041	−0.005
	[−0.030, 0.106]	[−0.040, 0.126]	[−0.064, 0.114]	[−0.046, 0.128]	[−0.076, 0.067]
Spouse/partner strain	−0.034	−0.012	0.030	−0.018	
	[−0.130, 0.062]	[−0.120, 0.096]	[−0.088, 0.147]	[−0.133, 0.098]	
Spouse/partner support	−0.049	−0.029	−0.008	−0.074	
	[−0.157, 0.059]	[−0.135, 0.076]	[−0.124, 0.108]	[−0.188, 0.041]	
Age	0.060†	0.071†	0.054	0.012	0.030
	[−0.004, 0.123]	[−0.005, 0.147]	[−0.028, 0.137]	[−0.069, 0.092]	[−0.038, 0.099]
Sex (reference = female)	0.008	−0.017	0.009	0.084	0.055
	[−0.121, 0.138]	[−0.176, 0.143]	[−0.165, 0.184]	[−0.087, 0.255]	[−0.085, 0.196]
SES	−0.068†	0.003	0.025	−0.024	−0.052
	[−0.138, 0.001]	[−0.080, 0.086]	[−0.060, 0.110]	[−0.108, 0.060]	[−0.124, 0.020]
Race (reference = White)	0.087	−0.007	0.019	0.218	0.095
	[−0.107, 0.280]	[−0.257, 0.242]	[−0.264, 0.301]	[−0.055, 0.491]	[−0.124, 0.315]
Income	−0.078 *	−0.028	−0.027	−0.069†	−0.051
	[−0.143, −0.013]	[−0.104, 0.048]	[−0.107, 0.054]	[−0.147, 0.010]	[−0.121, 0.018]
Neuroticism	0.242 ***	0.256 ***	0.235 ***	0.224 ***	0.229 ***
	[0.178, 0.307]	[0.178, 0.334]	[0.150, 0.320]	[0.140, 0.308]	[0.159, 0.299]
Conscientiousness	−0.073 *	−0.089 *	−0.071†	−0.035	−0.079 *
	[−0.137, −0.009]	[−0.166, −0.013]	[−0.154, 0.013]	[−0.117, 0.047]	[−0.148, −0.009]
Agreeableness	0.036	0.028	0.049	0.078	0.064
	[−0.036, 0.109]	[−0.060, 0.117]	[−0.047, 0.146]	[−0.017, 0.173]	[−0.014, 0.143]
Extroversion	−0.060	−0.060	−0.116 *	−0.143 **	−0.116 **
	[−0.137, 0.017]	[−0.152, 0.032]	[−0.217, −0.015]	[−0.242, −0.045]	[−0.199, −0.033]
Openness to experience	0.051	0.041	0.050	0.056	0.071†
	[−0.021, 0.123]	[−0.044, 0.127]	[−0.043, 0.142]	[−0.034, 0.147]	[−0.007, 0.148]
Partner presence (reference = absent)					−0.249 **
					[−0.399, −0.098]
Num. Obs.	1,046	718	616	631	859
Num. Imp.	15	15			
R^2	.131	.110	.107	.121	.145
R^2 Adj.	.118	.090	.084	.098	.130
AIC			1,713.1	1,744.3	2,336.4
BIC			1,792.7	1,824.3	2,417.2
Log. Lik.			−838.549	−854.127	−1,151.184
F			4.508	5.287	9.516
RMSE			0.94	0.94	0.92

Note. The table shows standardized regression coefficients (pooled estimates for models using imputed data sets, Versions 1 and 2) produced by estimating Model 1.4 with five versions of data preprocessing: the preregistered data processing method (Version 1), a data set including only those who report having partners, excluding outliers, and with multiple imputation for all other missing data (Version 2), a data set excluding outliers and excluding participants with missing data on any measure of interest (Version 3), a data set retaining outliers and excluding participants with missing data on any measure of interest (Version 4), and a data set excluding outliers, including a fixed effect for partner presence/absence instead of partner support and strain, and excluding participants with missing data on any measure of interest (Version 5). Full regression tables for each version are reported in Supplemental Materials. SES = socioeconomic status; AIC = Akaike's Information Criteria; BIC = Bayesian information criteria; RMSE = Root Mean Squared Error.

†$p < .1$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 6. Positive Affectivity Model Comparison.

	Models 2.1–2.4			
Predictor	Model 2.1	Model 2.2	Model 2.3	Model 2.4
(Intercept)	0.005 [−0.052, 0.061]	0.004 [−0.049, 0.057]	−0.081* [−0.162, −0.001]	−0.099* [−0.176, −0.021]
Family support	0.150*** [0.080, 0.220]	0.075* [0.008, 0.142]	0.156*** [0.085, 0.227]	0.090** [0.022, 0.158]
Friend support	0.144*** [0.082, 0.205]	0.039 [−0.023, 0.100]	0.138*** [0.075, 0.201]	0.054† [−0.009, 0.116]
Partner/spouse support	0.001 [−0.099, 0.100]	0.008 [−0.085, 0.100]	−0.031 [−0.132, 0.069]	−0.015 [−0.110, 0.080]
Family strain	−0.021 [−0.096, 0.053]	−0.034 [−0.105, 0.037]	−0.002 [−0.077, 0.073]	−0.017 [−0.088, 0.054]
Friend strain	−0.075* [−0.144, −0.007]	−0.059† [−0.123, 0.006]	−0.080* [−0.148, −0.013]	−0.062† [−0.126, 0.003]
Partner/spouse strain	−0.166** [−0.275, −0.057]	−0.122* [−0.224, −0.020]	−0.177** [−0.284, −0.071]	−0.132* [−0.233, −0.031]
Age	0.061* [0.003, 0.120]	0.040 [−0.016, 0.096]	0.053† [−0.008, 0.114]	0.046 [−0.012, 0.105]
Neuroticism		−0.125*** [−0.184, −0.065]		−0.109*** [−0.169, −0.049]
Conscientiousness		0.118*** [0.059, 0.177]		0.125*** [0.066, 0.184]
Agreeableness		0.058† [−0.008, 0.123]		0.085* [0.017, 0.152]
Extroversion		0.250*** [0.179, 0.322]		0.241*** [0.170, 0.313]
Openness to experience		−0.030 [−0.096, 0.036]		−0.052 [−0.120, 0.015]
Sex (reference = female)			0.149* [0.026, 0.272]	0.203*** [0.083, 0.323]
SES			0.110*** [0.047, 0.173]	0.021 [−0.042, 0.083]
Race (reference = White)			0.177† [−0.013, 0.367]	0.129 [−0.050, 0.308]
Income			0.006 [−0.055, 0.068]	0.010 [−0.049, 0.068]
Num. Obs.	1,046	1,046	1,046	1,046
Num. Imp.	15	15	15	15
R^2	.143	.254	.165	.265
R^2 Adj.	.138	.245	.156	.253

Note. The table shows standardized coefficients (pooled across imputed data sets) and model comparison statistics for Models 2.1 (fixed effects for family, friend, and partner support and strain, in addition to age, predicting positive affectivity), 2.2 (identical to Model 2.1 with additional fixed effects of neuroticism, conscientiousness, agreeableness, openness to experience, and extroversion), 2.3 (identical to Model 2.1 with additional fixed effects of SES, income, sex, and race), and 2.4 (Model 2.1 plus all covariates in Models 2.2 and 2.3). SES = socioeconomic status.
†$p < .1$. *$p < .05$. **$p < .01$. ***$p < .001$.

Stronger Positive Affectivity Was Linked to Partner Presence, But Not Support Provided by Said Partner. Simply reporting that one had a partner (as opposed to not) was associated with greater positive affectivity, β = 0.154, 95% CI [0.013, 0.294], SE = 0.071, $t(843) = 2.151$, $p = .032$ (Version 5, Table 7). Among individuals who reported having partners (Version 2, Table 7), one's reported *level* of partner support was not related to positive affectivity, β = −0.026, 95% CI [−0.121, 0.070], SE = 0.049, $t(696.96) = -0.526$, $p = .599$, but strain from partners was negatively related to positive affectivity, β = −0.132, 95% CI [−0.229, −0.034], SE = 0.050, $t(695.72) = -2.655$, $p = .008$ (consistent with Version 1).

*Positive Affectivity Was Not Associated With Age (*H3*). Positive Affectivity Was Positively Related to Extroversion, Conscientiousness, and Reporting Being Male (Compared with Female), and Negatively Related to Neuroticism.* Positive affectivity did

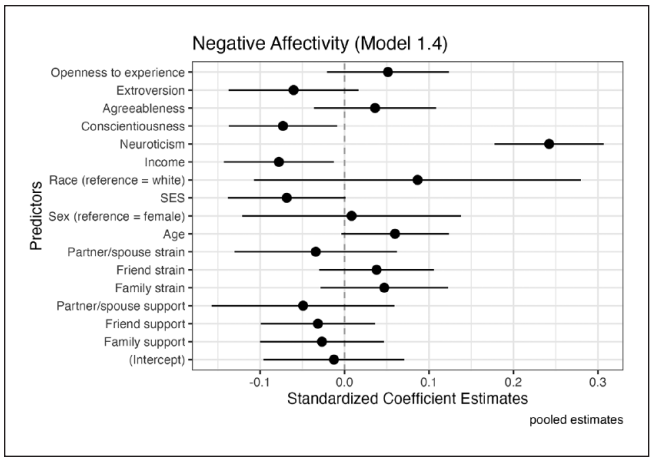

Figure 1. Predictors of Negative Affectivity.
Note. Across multiverse analyses, negative affectivity tended to be lower among those with higher levels of conscientiousness, and higher among those who reported higher levels of neuroticism and relatively older ages (although this is a weak effect). Figure depicts standardized regression coefficient estimates surrounded by 95% confidence interval bars from Model 1.4, multiverse analysis Version 1 (n = 1,046) which are pooled across data sets with missing data imputed. SES = socioeconomic status.

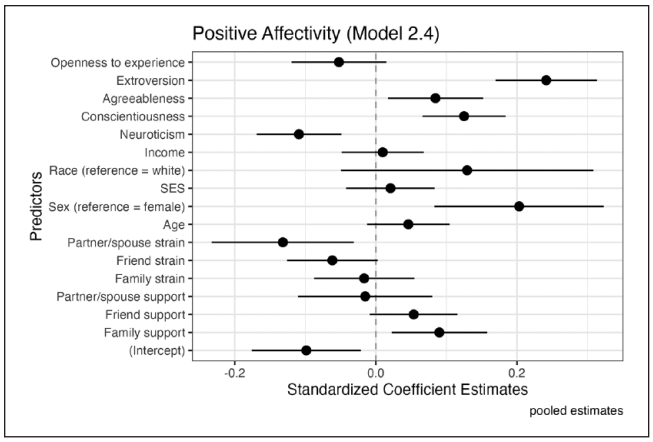

Figure 2. Predictors of Positive Affectivity.
Note. Across multiverse analyses, positive affectivity tended to be greater with more friend and family support, with less partner strain and friend strain (although this is a weak effect), among those who reported being male relative to female, at higher levels of extroversion and conscientiousness, and at lower levels of neuroticism. Figure depicts standardized regression coefficient estimates surrounded by 95% confidence interval bars from Model 2.4, multiverse analysis Version 1 (n = 1,046) which are pooled across data sets with missing data imputed. SES = socioeconomic status.

not shift with age, β = 0.046, 95% CI [−0.012, 0.105], SE = 0.030, t(944.849) = 1.547, p = .122, which was consistent across most other analytic versions (Table 7). Among covariates, stronger positive affectivity was related to reporting being male (over female), β = 0.203, 95% CI [0.083, 0.323], SE = 0.061, t(911.268) = 3.320, p < .001, more conscientiousness, β = 0.125, 95% CI [0.066, 0.184], SE = 0.030, t(975.959) = 4.157, p < .001, and more extroversion, β = 0.241, 95% CI [0.170, 0.313], SE = 0.037, t(733.772) = 6.598, p < .001; these results are strong and held across other analytic versions (Table 7). In addition, agreeableness was positively linked to positive affectivity, β = 0.085, 95% CI [0.017, 0.152], SE = 0.034, t(797.897) = 2.462, p = .014, but this effect is tenuous and was not present in other versions of analysis (Table 7). Likewise, openness to experience was negatively associated with positive affectivity, but not significantly, β = −0.052, 95% CI [−0.120, 0.015], SE = 0.034, t(876.466) = −1.526, p = .127; however, this relationship was significant in some analytic versions (Versions 3−5, Table 7). Positive affectivity was finally negatively related to neuroticism, β = −0.109, 95% CI [−0.169, −0.049], SE = 0.031, t(906.336) = −3.561, p < .001, which was a strong effect consistent across all other analytic versions (Table 7).

Discussion

In this article, we evaluate whether perceived support and strain in three types of relationships—familial, friendship, and romantic—were associated with baseline positive and negative affect during a week-long daily diary assessment at a later timepoint. We found mixed support for our hypotheses, adjusting for covariates (income, SES, race, sex, and Big Five personality traits). In support of *H1*, we found that greater friend and family support was linked to more positive affectivity; however, partner support was not. Likewise, partner *presence* was associated with reduced negative and greater positive affectivity. Perceived support within partner, friend, and family relationships were not linked to negative affectivity. Consistent with *H2*, more partner and (weakly) friend strain were associated with reduced positive affectivity, although they were not associated with negative affectivity. Family strain was not linked to positive or negative affectivity. Contrary to *H3*, negative, but not positive, affectivity tended to rise with age, although this effect was weak. In addition, we found that individual differences were related to negative and positive affectivity. Greater neuroticism was related to more negative, and less positive affectivity. Conversely, greater conscientiousness was related to less negative affectivity, and more positive affectivity (alongside extroversion). These results suggest that the specific dynamics and expectations for support in each type of relationship may guide their impacts on emotional well-being. The present research builds upon and extends prior work, finding that positive affectivity may be more mutable through supportive relationships beyond its links to individual disposition, while negative affectivity may be more strongly associated with personality.

Turning first to friendship, we found that more support within friendships was associated with greater positive affectivity, but was not related to negative affectivity. Conversely, higher reported strain among friends was weakly related to reduced positive affectivity, and was unrelated to negative

Table 7 Positive Affectivity Model 2.4 Multiverse Analysis.

	Positive affectivity Model 2.4 multiverse analysis				
Predictor	Version 1	Version 2	Version 3	Version 4	Version 5
(Intercept)	−0.099*	−0.117*	−0.124*	−0.094†	−0.206**
	[−0.176, −0.021]	[−0.216, −0.019]	[−0.231, −0.017]	[−0.199, 0.012]	[−0.334, −0.078]
Family support	0.090**	0.087*	0.091*	0.097*	0.107**
	[0.022, 0.158]	[0.007, 0.166]	[0.005, 0.177]	[0.013, 0.182]	[0.036, 0.177]
Friend support	0.054†	0.076*	0.104*	0.123**	0.074*
	[−0.009, 0.116]	[0.002, 0.150]	[0.024, 0.183]	[0.044, 0.202]	[0.007, 0.142]
Family strain	−0.017	0.026	0.048	0.064	−0.027
	[−0.088, 0.054]	[−0.056, 0.109]	[−0.039, 0.136]	[−0.023, 0.151]	[−0.100, 0.046]
Friend strain	−0.062†	−0.075*	−0.058	−0.054	−0.054
	[−0.126, 0.003]	[−0.150, 0.000]	[−0.138, 0.022]	[−0.133, 0.025]	[−0.120, 0.013]
Spouse/partner strain	−0.132*	−0.132**	−0.157**	−0.118*	
	[−0.233, −0.031]	[−0.229, −0.034]	[−0.262, −0.051]	[−0.223, −0.013]	
Spouse/partner support	−0.015	−0.026	−0.044	0.030	
	[−0.110, 0.080]	[−0.122, 0.070]	[−0.148, 0.060]	[−0.074, 0.134]	
Age	0.046	0.025	0.034	0.047	0.066*
	[−0.012, 0.105]	[−0.044, 0.094]	[−0.040, 0.108]	[−0.026, 0.120]	[0.002, 0.129]
Sex (reference = female)	0.203***	0.219**	0.230**	0.173*	0.191**
	[0.083, 0.323]	[0.074, 0.363]	[0.073, 0.388]	[0.018, 0.328]	[0.060, 0.321]
SES	0.021	0.006	−0.014	−0.003	−0.005
	[−0.042, 0.083]	[−0.071, 0.082]	[−0.091, 0.062]	[−0.079, 0.073]	[−0.072, 0.062]
Race (reference = White)	0.129	0.093	0.106	0.080	0.106
	[−0.050, 0.308]	[−0.133, 0.319]	[−0.148, 0.361]	[−0.167, 0.327]	[−0.098, 0.311]
Income	0.010	−0.016	−0.018	0.006	−0.002
	[−0.049, 0.068]	[−0.085, 0.053]	[−0.090, 0.055]	[−0.065, 0.078]	[−0.067, 0.063]
Neuroticism	−0.109***	−0.121***	−0.104**	−0.116**	−0.115***
	[−0.169, −0.049]	[−0.191, −0.050]	[−0.181, −0.027]	[−0.192, −0.040]	[−0.180, −0.049]
Conscientiousness	0.125***	0.160***	0.167***	0.127***	0.134***
	[0.066, 0.184]	[0.091, 0.229]	[0.092, 0.242]	[0.053, 0.201]	[0.069, 0.198]
Agreeableness	0.085*	0.065	0.050	0.018	0.072†
	[0.017, 0.152]	[−0.015, 0.145]	[−0.037, 0.137]	[−0.067, 0.104]	[−0.001, 0.146]
Extroversion	0.241***	0.271***	0.292***	0.305***	0.283***
	[0.170, 0.313]	[0.188, 0.355]	[0.202, 0.383]	[0.216, 0.394]	[0.205, 0.360]
Openness to experience	−0.052	−0.074†	−0.105*	−0.092*	−0.083*
	[−0.120, 0.015]	[−0.152, 0.003]	[−0.188, −0.022]	[−0.174, −0.010]	[−0.156, −0.011]
Partner presence (reference = absent)					0.154*
					[0.013, 0.294]
Num. Obs.	1,046	718	616	631	859
Num. Imp.	15	15			
R^2	.265	.273	.276	.281	.258
R^2 Adj.	.253	.256	.256	.262	.244
AIC			1,584.6	1,617.7	2,214.9
BIC			1,664.2	1,697.7	2,295.8
Log. Lik.			−774.301	−790.847	−1,090.452
F			14.237	14.984	19.497
RMSE			0.85	0.85	0.86

Note. The table shows standardized regression coefficients (pooled estimates for models using imputed data sets, Versions 1 and 2) produced by estimating Model 2.4 with five versions of data preprocessing: the preregistered data processing method (Version 1), a data set including only those who report having partners, excluding outliers, and with multiple imputation for all other missing data (Version 2), a data set excluding outliers and excluding participants with missing data on any measure of interest (Version 3), a data set retaining outliers and excluding participants with missing data on any measure of interest (Version 4), and a data set excluding outliers, including a fixed effect for presence/absence of a partner instead of partner support and strain, and excluding participants with missing data on any measure of interest (Version 5). Full regression tables for each version are reported in Supplemental Materials. SES = socioeconomic status; AIC = Akaike's Information Criteria; BIC = Bayesian information criteria; RMSE = Root Mean Squared Error.

†$p < .1$. *$p < .05$. **$p < .01$. ***$p < .001$.

affectivity. Friendship is a unique and adaptive relationship that is considered one of the potential bases of complex, modern human cognition (Dunbar, 2009). The availability of support from friends may play a fundamental role in benefiting emotional regulation and well-being (Zerwas et al., 2023). Positive affect (happiness, elation, calm, and relaxation) is associated with strong perceived support among close others in the United States, Japan, the Philippines (Uchida et al., 2008), China (H. Li et al., 2014), and Jordan (Brannan et al., 2013). Likewise, in the United States, newly acquainted individuals, colleagues, and roommates reported increased positive affect when they experienced greater perceived support (Lakey et al., 2016). Individuals have agency to select and prioritize beneficial friendships, which may enhance their relative impact on emotional well-being (Deci & Ryan, 2000; Vella-Brodrick et al., 2022; Yu et al., 2018). Although our results underscore the relative gravity of friendship for emotional well-being, the strong and consistent benefits of friendships may be attributed to their multitude as opposed to their quality. Due to the availability heuristic (Gilovich et al., 2002), people may more readily recall support and strain across many instances available in multiple different friendships, as opposed to the relatively limited instances that may come to mind within partnerships and family groups. Friendships may represent an under-sung hero in the study of social support and emotional well-being, but this may be due to their abundance relative to other types of relationships.

Turning next to family, we found that more family support was linked to greater positive affectivity, but was unrelated to negative affectivity. Familial strain was not associated with positive or negative affectivity. Other longitudinal research in the United States has found that, across the lifespan (ages 18−95), positive affectivity is predicted by a sense of family belonging (Siedlecki et al., 2014). Family relationships strongly influence the experience of emotion and its regulation throughout the lifespan (Thompson, 2014), and our results suggest that familial relationships may benefit positive emotionality, but may be less impactful for negative emotionality . Our results might reflect the study's relatively older participants, who may be more likely to prioritize familial relationships that yield emotional benefits than their young-adult counterparts (Carstensen, 1992). Family support may benefit emotional well-being, but family relationships may also be more selectively prioritized later in the lifespan in a way that organically favors more supportive qualities with positive emotional benefits.

Finally, within romantic partners, we found a negatively skewed effect wherein greater tension was associated with reduced positive affectivity, while partner *presence*, but not the degree of their support, was associated with reduced negative affectivity and greater positive affectivity. These results are consistent with past work finding that in romantic partners, effective dyadic coregulation contributes to emotional stability in both individuals (Butler & Randall, 2013; Horn & Maercker, 2016; Julien & Markman, 1991). Similarly, spouses tend to experience heightened covariation in both positive and negative emotional intensity when they report less relationship security (Schoebi, 2008). Our results indicate that support expectations for romantic partners may importantly differ from those of friends or family members. Individuals in the United States may *expect* support in their romantic relationships to bolster their emotional well-being, and therefore experience reduced positive, and heightened negative daily affect in the absence of this partner relationship. Finkel and colleagues (2014, 2015) suggest that American marriages have meaningfully changed in recent decades due to increasing expectations that long-term romantic partners are meant to support personal autonomy and growth needs. Our findings provide evidence that people may expect partners' support in maintaining their emotional well-being in the United States and thus experience detrimental impacts if this expectation is not met. However, our findings may again be related to the older age of the sample, as those who report not having partners may be more likely to have lost or be separated from a former spouse than would be the case within a younger sample.

Finally, we found that older adults often hold a (weakly) higher baseline negative, rather than positive, affect later in life. This contradicts with previous findings that older adults, on average, experience relatively greater positive emotionality later in the lifespan (Carstensen, 1992; Reed & Carstensen, 2012). Our results suggest that within a sample of relatively older adults, older age is weakly associated with greater everyday negative affect. This effect contrasts with past findings that older adults tend to better select emotionally healthy situations and more effectively regulate emotions than their younger adult counterparts (Mather, 2012, 2016). However, a study within a wider age range may elicit different effects between young and older adults.

This study contributes to evidence connecting relationships to emotional well-being. Perceived support may be influential on positive emotional well-being because it uniquely addresses fundamental needs by providing a sense of connection to loved ones while maintaining personal self-efficacy and autonomy to manage daily emotional experiences (Deci & Ryan, 2000; Yu et al., 2018; Zee & Bolger, 2019). In line with past work establishing emotional benefits of effective social support in its many forms (Cohen & Wills, 1985; Feeney & Collins, 2015; Lakey & Orehek, 2011), we find that effective perceived support is linked to stronger positive affectivity, whereas negative affectivity is primarily related to personality traits. These findings also provide evidence that positive affective outcomes associated with successful interpersonal emotion regulation may also arise related to perceived support. This builds on past research showing benefits of effective received support exchanges on individuals' emotional regulatory processes (Oveis et al., 2020; Reeck et al., 2016). These findings finally echo past work on interpersonal self-regulation more generally

(Fitzsimons et al., 2015). Just as representations of close others can improve pursuit of performance-based personal goals (e.g., financial, academic; Shah, 2003; Stasiak et al., 2022), perceived support may bolster everyday positive affect.

Limitations

This study is limited in several ways. First, similar research using data from the larger MIDUS project has found, for example, that overall subjective well-being is associated with both perceived and received support (Chen & Feeley, 2012), personal growth is facilitated by supportive relationships (Lee et al., 2018), and support and strain in relationships are associated with health outcomes including cardiovascular inflammation (Yang et al., 2014), functional health (Lachman & Agrigoroaei, 2010), and psychological health (Hung et al., 2019). To our knowledge, this article is the first to utilize this data for the purposes of examining whether three types of perceived support (and strain) impact emotionality in daily life. This allows for a more granular analysis of how these factors may impact day-to-day life, rather than a retrospective estimate or construction of one's general well-being. Nonetheless, to reduce researcher degrees of freedom, we preregistered our analytic strategy prior to examining data.

Another limitation is the potential for relationship changes between the time of the MIDUS 3 survey (2013−2014) and the third NSDE study (2017−2019); some participants may have gained or lost friends, family members, or partners in that time. Although relationship changes may have impacted some participants, selecting independent variables from the third MIDUS survey allows us to establish temporal precedence necessary to draw relational conclusions in analyses. Furthermore, this method of predicting daily experience outcomes from prior survey data has been used in past work with the MIDUS data set (Leger et al., 2021). However, this approach notably precludes study of reverse causation in our analyses. It is entirely possible that one's levels of negative and positive affectivity may influence the extent to which they perceive support or strain in their relationships, rather than affectivity being driven by these relational qualities.

A third limitation is missing data, particularly within the in third-wave MIDUS survey data. We accounted for missing data using multiple imputation in line with best practices (Enders, 2022; van Buuren, 2018) and used extensive multiverse analysis to examine the strength of results based on imputed data compared with data processed through alternative approaches (Steegen et al., 2016).

Finally, the generalizability of these results is limited to the demographics of the third-wave MIDUS-NSDE participants (Table 1) and within the United States. Importantly, analyses including covariates of race, SES, and income may not necessarily be indicative of true patterns in the U.S. population. In the present sample, White, higher-SES, higher-income individuals are overrepresented compared with the broader United States (U.S. Census Bureau, 2020).

Future Directions: Support & Emotional Well-Being Across Cultures

In this article, we found that perceived support may be associated with more positive, but not necessarily less negative emotionality in a U.S. sample. The affective impacts of support and strain in specific relationships may vary cross-culturally. We conducted an exploratory correlational analysis of the second wave of the Midlife in Japan (MIDJA) data set, which includes most of the same measures as the MIDUS third-wave survey ($n = 657$, $M_{age} = 59.251$, $SD_{age} = 13.544$, 52.968% female; $n = 651$ included in analyses excluding those with insufficient data to calculate retrospective negative or positive affect). We imputed missing data following the procedure outlined for the MIDUS analyses (van Buuren, 2018; see Supplemental Materials for full details; Ryff et al., 2018). We found retrospective negative affect was negatively correlated with age and support from family, friends, and spouses/partners, and positively correlated with strain from family, friends, and spouses/partners, among older adults in Japan (Table 8, Supplemental Materials). Conversely, retrospective positive affect was positively correlated with age, support within family, friends, and spouses/partners, and negatively correlated with strain from family, spouses/partners, but not friends, within this sample (Table 8, Supplemental Materials). However, these analyses are not directly comparable to the ones conducted on U.S. data. Retrospective affect scales examined in the MIDJA data set are imperfect comparisons to the daily diary affect measures collected in the MIDUS-NSDE, given possible changes to recalled emotions (Gilbert et al., 1998). Furthermore, Japanese and Asian-American individuals hold different retrospective biases in reporting their emotions and levels of well-being compared with European Americans in the United States (Oishi, 2002). In addition, measurement invariance may affect how support and strain are operationalized across cultures (Milfont & Fischer, 2010), and measures on these scales may be interpreted differently by participants in the United States and Japan (e.g., one may not consider family support to be separate from spousal support in Japan; Raymo et al., 2009).

These results are consistent with the directionality of those in the United States (Table 2). However, the magnitude of these relationships are distinct—correlations between support and strain seem to be systematically weaker in Japan (Table 8) compared with the United States (Table 2). Despite cross-cultural commonalities regarding emotional experience (Cowen et al., 2021), there are also some important differences in valuation and expression of emotions (Cong et al., 2022; Cordaro et al., 2018; Lindquist et al., 2022; Kitayama et al., 2000; Markus & Kitayama, 1991; Mesquita & Boiger, 2014; Senft et al., 2023; Tamir et al., 2016; Uchida

Table 8. Means, Standard Deviations, and Correlations With 95% Confidence Intervals for Each Correlation (Cumming, 2014) for Midlife in Japan (Wave 2) Retrospective Positive and Negative Affect, Relational Support and Strain, and Relevant Numeric Covariates With Missing Data Imputed and Combined for Analyses (n = 651; see Supplemental Materials for Full Details on MIDJA Wave 2 Data Set).

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Retrospective negative affect	1.81	0.61														
2. Retrospective positive affect	3.18	0.68	−.48** [−.54, −.42]													
3. Family strain[a]	1.90	0.61	.29** [.22, .36]	−.09* [−.17, −.01]												
4. Family support[a]	2.52	0.67	−.10* [−.17, −.02]	.24** [.17, .31]	−.14** [−.21, −.06]											
5. Friend strain[a]	1.67	0.48	.12** [.04, .20]	−.04 [−.12, .03]	.35** [.28, .42]	−.03 [−.10, .05]										
6. Friend support[a]	2.49	0.61	−.11** [−.18, −.03]	.34** [.27, .41]	−.09* [−.16, −.01]	.37** [.30, .43]	.05 [−.03, .13]									
7. Partner strain[a]	2.27	0.52	.31** [.24, .38]	−.24** [−.31, −.16]	.43** [.37, .49]	−.22** [−.29, −.14]	.33** [.26, .40]	−.04 [−.11, .04]								
8. Partner support[a]	2.85	0.63	−.21** [−.28, −.13]	.44** [.37, .50]	−.22** [−.29, −.15]	.33** [.26, .40]	−.10* [−.17, −.02]	.21** [.14, .29]	−.53** [−.58, −.47]							
9. Neuroticism[a]	2.05	0.52	.45** [.39, .51]	−.30** [−.37, −.23]	.16** [.08, .23]	−.03 [−.11, .05]	.15** [.07, .22]	−.09* [−.17, −.01]	.13** [.06, .21]	−.06 [−.13, .02]						
10. Conscientiousness[a]	2.60	0.51	−.19** [−.26, −.11]	.29** [.22, .36]	−.06 [−.14, .02]	.12** [.04, .19]	−.05 [−.13, .02]	.10** [.03, .18]	−.12** [−.19, −.04]	.27** [.20, .34]	−.12** [−.19, −.04]					
11. Agreeableness[a]	2.60	0.61	−.18** [−.26, −.11]	.36** [.29, .42]	−.05 [−.13, .03]	.20** [.12, .27]	.05 [−.02, .13]	.29** [.22, .36]	−.05 [−.12, .03]	.31** [.24, .37]	−.13** [−.20, −.05]	.53** [.48, .59]				
12. Extroversion[a]	2.40	0.66	−.29** [−.36, −.22]	.50** [.44, .55]	.03 [−.05, .10]	.20** [.12, .27]	.07 [−.01, .15]	.28** [.21, .35]	−.03 [−.11, .05]	.32** [.24, .38]	−.11** [−.19, −.04]	.35** [.28, .41]	.66** [.62, .70]			
13. Openness to experience[a]	2.14	0.58	−.14** [−.21, −.06]	.33** [.26, .40]	.09* [.02, .17]	.14** [.07, .22]	.15** [.07, .22]	.15** [.08, .23]	.03 [−.05, .11]	.26** [.19, .33]	.01 [−.06, .09]	.41** [.35, .47]	.58** [.52, .63]	.64** [.59, .68]		
14. Age	59.17	13.57	−.15** [−.23, −.08]	.12** [.05, .20]	−.23** [−.30, −.15]	−.04 [−.12, .04]	−.15** [−.23, −.08]	−.07 [−.15, .00]	−.07 [−.14, .01]	−.00 [−.08, .07]	−.26** [−.33, −.19]	.14** [.06, .21]	.02 [−.06, .09]	−.07 [−.15, .00]	−.10** [−.18, −.03]	
15. SES[a]	5.97	1.97	−.27** [−.34, −.20]	.37** [.30, .43]	−.05 [−.12, .03]	.13** [.05, .21]	.07 [−.01, .14]	.23** [.15, .30]	−.06 [−.13, .02]	.21** [.14, .28]	−.20** [−.28, −.13]	.27** [.19, .34]	.37** [.31, .44]	.42** [.36, .48]	.38** [.31, .44]	.07 [−.01, .14]

Note. SES = socioeconomic status.
[a]Indicates that variable has missing data imputed.
*$p < .05$. **$p < .01$.

et al., 2009) and social cognition (Keltner et al., 2022; Kitayama et al., 2006; Kitayama & Uchida, 2005; Singelis, 1994). Associations between relationships and emotions may also differ between the United States and Japan. Socially relevant emotions are more encouraged in Japan, whereas socially disengaging emotions are more strongly encouraged in the United States (Kitayama et al., 2006). Furthermore, experiencing culturally emphasized social emotions yields benefits for subjective well-being in either locale (Kitayama et al., 2000). Finally, age is associated with greater interdependent happiness only in some cultures (e.g., Japan and Costa Rica, but not the Netherlands; Hitokoto & Takahashi, 2021). This suggests that age may have distinct impacts on both emotional well-being and perceptions of support in the United States and Japan.

Support in relationships may have distinct functions and implications for emotional well-being in the United States and Japan. Subjective well-being more generally (i.e., life satisfaction, hedonic and eudaimonic well-being, and physical health) is most strongly predicted by sense of personal control in the United States, and absence of relational strain in Japan (Kitayama et al., 2010). Likewise, disengagement from strained social relationships enhances physical health (indexed by biomarkers of inflation and cardiovascular risk) in the United States, but can undermine it in Japan (Hartanto et al., 2020). Some of these differences may be driven by differences in relationship structures and expectations cross-culturally (Hoshino-Browne et al., 2005; Kito et al., 2017). For example, relationships tend to be more fluid and easier to form in the United States than in Japan, and greater relationship trust and intimacy results from more fluid relationships, although these are also more fragile (Thomson et al., 2018). Partner support may also be differently valued and yield distinct emotional well-being outcomes in Japan than the United States. For example, past research shows that spousal support (over children and unrelated others) may be most important for positive well-being among Japanese older adults (Okabayashi et al., 2004). However, lack of familial support can be a similarly negative experience across cultures (Ryan et al., 2005). Nuanced research on how relationships and support within them impact emotional well-being outside the United States is a necessary next step for future research.

Conclusion

Using large, experience-sampling and survey data sets, we identified associations between perceived support (and strain) from family members, friends, and romantic partners with real-life negative and positive affectivity. We found that friends' support was consistently related to more positive affectivity, and strain was weakly related to reduced positive affectivity. Likewise, perceived support in family relationships was associated with greater positive affectivity. Finally, relationships with romantic partners may have skewed impacts on affectivity reflective of discrepant expectations, as partner tension corresponds with reduced positive affectivity while partner presence alone is linked to less negative, and more positive emotionality. Future research might further explore how one's friends, family, and partners impact their everyday emotional processes, test whether qualities of received support exchanges are linked to optimal interpersonal emotion regulation, and further examine whether relationships between support and affect vary cross-culturally. While negative affectivity may be primarily related to personality characteristics, maintaining strong relational support may enhance emotional well-being through its links to positive affectivity.

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Data Availability

All data used for this research is publicly available through the Inter-University Consortium for Political and Social Research (ICPSR: https://www.icpsr.umich.edu/web/ICPSR/series/203) at the University of Michigan and comes from the longitudinal study titled "Midlife in the United States," (MIDUS: https://midus.wisc.edu/index.php).

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Supplemental Material

Supplemental material is available online with this article.

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*Indicates that referenced empirical article also uses data from the Midlife in the United States project.

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