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Research Article

Failure to Meet Generative Self-Expectations is Linked to Poorer Cognitive–Affective Well-Being

Molli R. Grossman, BA[1] and Tara L. Gruenewald, PhD, MPH[2]

[1]Davis School of Gerontology, University of Southern California, Los Angeles. [2]Department of Psychology, Crean College of Health and Behavioral Sciences, Chapman University, Orange, California.

Address correspondence to: Molli R. Grossman, BA, Davis School of Gerontology, University of Southern California, 3715 McClintock Avenue, Los Angeles, CA 90089–0191. E-mail: mollie.grossman@usc.edu.

Abstract

Objectives: Generativity, or concern with contributing to others, is theorized to be an important goal of mid-to-late life. Greater self-perceptions of generativity are associated with better well-being over time. The aim of this study is to examine how generative self-perceptions and failure to meet generative expectations over time are linked to specific cognitive–affective states (feelings of connectedness, self-worth, and positive affect), and consequently, life satisfaction.
Method: Analyses used data from Waves 2 and 3 of the National Survey of Midlife Development in the United States (MIDUS). Multiple mediation was utilized to assess whether these cognitive–affective states linked generative failure to decreased life satisfaction. A Johnson–Neyman moderation analysis determined whether these associations vary with age.
Results: In demographically adjusted regressions, generative contributions and expectations were associated with greater perceived social connectedness, self-worth, and positive effect. Generative failure was associated with lower life satisfaction, a link that was strongest in the middle-aged and young-old and mediated by the cognitive–affective states.
Discussion: Greater feelings of generativity, and more positive expectations for future contributions, are associated cross-sectionally and over time with better affective well-being. Positive affect, social connectedness, and self-worth may partially explain why generative failure over time is linked to decreased life satisfaction.

Keywords: Generativity, Personal relationships, Self-concept, Successful aging, Well-being

Psychiatrist and Holocaust survivor Viktor Frankl said, "Life is never made unbearable by circumstances, but only by lack of meaning and purpose." Indeed, a sense of purpose seems to be a crucial component of leading a fulfilling life. One way many individuals find meaning in their lives is through giving to others or leaving a lasting legacy behind. Researchers have investigated how giving and feeling useful to others may, in fact, benefit the giver, a phenomenon sometimes understood in the context of generativity. Generativity is defined as concern and activity focused on supporting the welfare and well-being of others, often including friends, family, and the community (Erikson, 1963; Gruenewald,

Liao, & Seeman, 2012). There are many ways to be generative, ranging from volunteering, mentoring, religious or political or community involvement, parenting, and contributions within friendship networks (McAdams & de St Aubin, 1992). Generative activity is common element across many definitions of successful aging, underscoring the relationship between contributory activities and more positive well-being outcomes (Rowe & Kahn, 1998; Villar, 2012). Indeed, empirical research has shown that both perceptions and behavioral manifestations of generativity are linked to improved well-being, including not only better psychological health but also better physical health,

reduced disability, and lower mortality (Grand, Grosclaude, Bocquet, Pous, & Albarede, 1988; Gruenewald et al., 2012; McAdams, St Aubin, & Logan, 1993).

Developmental Significance of Generativity

The developmental psychologist Erik Erikson proposed an influential model of psychosocial development across the lifespan, consisting of eight stages each of which is characterized by a specific crisis or challenge (1950). The seventh of the eight major stages in this trajectory consists of overcoming the conflict of generativity versus stagnation, as generativity was initially conceptualized as a key goal of psychosocial development to be achieved during midlife. While the focus on caring for others and supporting the next generation was initially postulated to attain the greatest significance in midlife, generative strivings have been found to play a key role in older age as well (Erikson, 1950; McAdams et al., 1993; Villar, 2012). The definition of generativity has also evolved, shifting from a narrow focus on guiding future generations to include any type of "activity or intention that may be beneficial to others through the investment of one's self" (Doyle, Rubinstein, & de Medeiros, 2015, p. 410). This prosocial conceptualization of generativity, in which recipients may be younger, older, or peers, is the definition utilized by the present study. Frankl (1959) postulated that humans are motivated primarily by a "will to meaning," or a need or desire to find meaning in life. Generativity encapsulates one way of deriving such meaning, specifically through providing valuable social contributions before the end of one's life.

Erikson's theory suggested that adults who contribute to the welfare of others are likely to experience more positive mental health as a result of these actions. His theory also suggested that those who repeatedly fail to be generative, or who fail to strive toward generative goals, are likely to experience stagnation, self preoccupation, and as a result, relatively poor psychological adjustment (McAdams & Guo, 2015). In general, research suggests that generative desire typically plays a prominent role in guiding individuals' goals and activities as they age. For example, when prompted to write about their personal strivings, middle-aged and older adults tend to describe many of their goals or strivings in generative terms (e.g., be a positive role model for those who are younger, provide counsel to others, help as a volunteer; McAdams et al., 1993). Indeed, McAdams and de St Aubin's (1992) widely accepted the model of generativity is built around the concept of generative concern or a general disposition toward generativity. According to their model, generativity originates from two motivational sources: cultural expectations and inner desire. These motivational sources feed generative concern which in turn leads to the formation of conscious generative goals that motivate and direct individuals' behavior (Hofer, Busch, Chasiotis, Kartner, & Campos, 2008).

Benefits of Generativity and Potential Underlying Mechanisms

Greater levels of perceived generativity have been tied to more favorable well-being outcomes over time. Specifically, higher perceptions of generativity or usefulness have been shown to be tied to lower mortality, lower risk of the development of disability, and better subjective well-being in later life (Gruenewald, Karlamangla, Greendale, Singer, & Seeman, 2007, 2009; Okamoto & Tanaka, 2004; Pitkala, Laakkonen, Strandberg, & Tilvis, 2004). Older adults who feel more generative have also been shown to have better memory and executive function performance compared with those who perceive themselves as less generative (Hagood & Gruenewald, 2016), as well as greater levels of optimism and life satisfaction (Kruse & Schmitt, 2012). Enhanced perceptions of generativity may also serve to buffer against some experiences of adversity, as they have been suggested to dampen some of the deleterious effects of family caregiving (Grossman & Gruenewald, 2017). A review study conducted by Adams, Liebbrandt, and Moon (2011) provides additional support for these benefits of generativity, positing productive engagement as a key correlate of well-being in later life. Importantly, the links between generativity and health seem to remain when controlling for established sociodemographic, biobehavioral, and psychosocial risk factors for poor health. Though existing research clearly provides support for a positive relationship between generativity and well-being, less is known about the mechanisms through which they are connected as well as the role of generative goal achievement.

One potential path to gaining a better understanding of how generativity might be linked to better health and well-being is to elucidate the thoughts and feelings that flow from generative self-perceptions. Theoretical and empirical interpretations of generative behavior suggest several cognitive–affective benefits of prosocial activity (McAdams et al., 1993; Post, 2005). Specifically, several studies have suggested a positive relationship between contributory activities and positive affect, self-esteem, and social relationships (Brown, Hoye, & Nicholson, 2012; Grossman, Wang, & Gruenewald, 2017; Huta & Zuroff, 2007; Kahana, Bhatta, Lovegreen, Kahana, & Midlarsky, 2013). These empirical connections are supported by role enhancement theory, often used to explain the positive link between volunteering and health. Role theory posits that by assuming productive roles, like volunteering or mentoring, individuals accumulate greater resources, including expanded social networks, as well as greater power and prestige, which positively influence mental and physical health (Lum & Lightfoot, 2005; Moen, Dempster-McClain, & Williams 1992). This theory supports the relationship between generative activities and enhanced social connections as well as a greater sense of self-worth. Additionally, generative perceptions and generative activities (i.e., volunteering) have been shown to be associated with greater levels of positive

affect (e.g., Greenfield & Marks, 2004), a link that is also supported by individuals' reports that helping others makes them "feel good" (Musick & Wilson, 2003). To date, however, there has been a little empirical examination of these hypothesized cognitive and affective pathways linking generativity to improved well-being.

Goal Striving and Self-Discrepancy Theory

Another mechanism through which generativity may be linked to cognitive–affective states is through individuals' abilities to fulfill their generative strivings. Erikson's theory focuses on psychosocial goals at different stages of the life course and the effect that achieving or failing to achieve such goals has on an individual's self-concept. Generally, it is hypothesized that it feels good to achieve personal goals. Research supports the association between successful goal attainment and more positive emotional experiences as well as greater life satisfaction (Brunstein, 1993; Emmons, 1986; Klug & Maier, 2014). However, what happens when individuals are unable to follow through with their goals? Self-discrepancy theory suggests that an individual's failure to meet his or her internal expectations may result in worse affective and health outcomes, or greater emotional vulnerabilities (Higgins, 1989; Maio & Thomas, 2007). For example, it has been found that individuals who fail to attain goals that are intrinsically important to them experience a decrement in well-being (Sheldon & Elliot, 1999). Generativity is generally linked to enhanced well-being, however a high intrinsic desire for generativity may lead to frustration if for some reason this desire cannot be fulfilled (Hofer et al., 2008). Thus, individuals' failure to meet their generative goals may influence their well-being and life satisfaction, one way being through the aforementioned cognitive–affective pathways.

The Potential Role of Age

As generativity is hypothesized to take on greatest developmental salience in middle and later life, it is also important to understand how generative goals shape well-being at different stages of life. While Erikson's construct of generativity was initially hypothesized to attain peak significance during midlife, generative strivings have been found to remain and continue to be important into older age (Erikson, 1950; McAdams et al., 1993; Villar, 2012). Indeed, older adults often seek out opportunities for generative activities and report that these actions contribute to a more positive experience of aging and well-being (Warburton, McLaughlin, & Pinsker, 2006). Despite these patterns, research on the relationship between age and generativity has yielded mixed results. On one hand, research suggests that goals become more prosocial or generative with age, whereas younger adults tend to prioritize more self-focused goals (Hoppman & Blanchard-Fields, 2010;

Maxfield et al., 2014). This pattern is theorized to be related to perceptions of time as limited as well as the symbolic immortality that generativity can provide (Maxfield et al., 2014). On the other hand, other researchers have found no differences in generative concern between younger and older adults (Bellizzi, 2004; Pratt, Norris, Arnold, & Filyer, 1999); thus, this uncertainty requires further scrutiny to gain a better understanding of how these associations vary as a function of age.

Present Analysis

One aim of the current study was to examine how generative self-perceptions and expectations for future generative contributions are related to cognitive–affective states, concurrently and 10 years in the future. Another aim was to determine whether the failure to meet one's expected level of generative contribution over time would be related to poorer cognitive–affective states in addition to lower life satisfaction. Additionally, we examined whether the cognitive–affective states mediated the relationship between generative failure and decreased life satisfaction. Though the importance of fulfilling generative goals for one's psychosocial well-being is at the heart of the Erikson model, empirical evaluation of this hypothesis is lacking, especially within large-scale longitudinal investigations. This study will examine these questions using two waves of a large-scale population-based survey, filling an important gap in the generative strivings literature. Additionally, to better understand how age may play a role in the manifestation of generativity and its benefits, another goal of the current study was to examine how the association between generative failure and these well-being outcomes might vary as a function of age.

Method

Data and Participants

Data for this study come from the National Survey of Midlife Development in the United States (MIDUS), a longitudinal survey containing three waves of data collection (1995/1996, 2004–2006, 2013–2016). The MIDUS survey was designed with the goal of promoting the investigation of the role of psychological, social, and behavioral factors in shaping health and well-being with aging across the life course (http://midus.wisc.edu/). The first wave of the MIDUS survey collected data from 7,108 participants aged 25–74 and was administered in 1995/1996. Subjects were recruited to participate in the study through national random digit dialing and oversampling of five metropolitan cities in the United States. MIDUS 2 is the 10-year follow-up to the original MIDUS study in 2004/2006 ($n = 4,963$ initial phone survey and $n = 4,041$ for subsequent mail survey). Most recently, the MIDUS 3 follow-up

was conducted, with data collection beginning in 2013. The current study will include data from the latter two waves of the MIDUS survey, as the first wave did not contain a complete assessment of the targeted cognitive–affective states. MIDUS 3 researchers were able to contact 4,686 individuals from the prior survey waves, of whom 3,294 completed the phone interview, reflecting a 77% response rate after adjusting for deaths or ineligibility at follow-up. Consistent with prior research, higher rates of retention occurred among whites, women, higher educated, and healthier individuals. Analyses utilized the maximum number of cases available from MIDUS 2 and 3 who provided data on the focal variables of interest, resulting in a final analytic sample of 2,252 adults.

Measures

Perceived generative contributions

Perceived generative contributions are measured in MIDUS with the question, "Using a scale from 0 to 10 where 0 means 'the worst possible contribution to the welfare and well-being of other people' and 10 means 'the best possible contribution to the welfare and well-being of other people', how would you rate your contribution to the welfare and well-being of other people these days?" Additional instructions specify to "take into account all that you do, in terms of time, money, or concern, on your job, and for your family, friends, and the community."

Expected generative contributions

At each time point, respondents were also asked, "Looking ahead ten years into the future, what do you expect your contribution to the welfare and well-being of other people will be like at that time?" Again, respondents rate their response on an 11-point scale ranging from 0 to 10, 10 being the best rating. This study focuses on individuals' expected generative contributions assessed during MIDUS 2 predicting their level of contribution 10 years later, approximately the time of the MIDUS 3 reassessment.

Generative failure

Generative failure was determined by subtracting individuals' expected contributions score reported at MIDUS 2 (0–10) from their perceived contributions score reported at MIDUS 3 (0–10). If individuals failed to meet or exceed their generative expectations, measured by a negative score after the subtraction, they were placed in the generative failure group; otherwise, they were placed in the met or exceeded expectations group.

The cognitive–affective states

Psychological well-being measures of positive affect, sense of self-worth, and social connectedness were examined as cognitive–affective correlates of generative activities.

The questions comprising these scales were included in the self-administered questionnaire, and a factor analysis was conducted to confirm the fit of specific items to scales for positive affect, sense of self-worth, and social connectedness.

Positive affect

The positive affect scale asked participants for how much of the past 30 days they felt "cheerful," "satisfied," "enthusiastic," "full of life," "extremely happy," "calm and peaceful," and "in good spirits." All of these items were rated on a 5-point scale, ranging from 1 indicating "*All the time*," to 5 indicating "*None of the time*." The item ratings were then averaged to compute a scale score for positive affect (α = .91; min: 1, max: 5).

Self-worth

The self-worth scale consisted of the two questions assessing individuals' sense of self-worth, specifically querying how much of the time over the past 30 days they felt "confident" and "proud." Again, respondents were asked to rate their response to these questions on a 5-point scale measuring the frequency of these feelings, and their ratings were averaged to create a self-worth scale score (α = .72; min: 1, max: 5).

Social connectedness

The social connectedness scale was comprised of two questions querying respondents' feelings of social integration or connectedness. The scale consisted of questions asking how much of the time over the past 30 days respondents felt "close to others" and "like you belong." Again, these items were rated on a 5-point scale. Their ratings were then averaged to comprise a social connectedness score (α = .81; min: 1, max: 5).

Life satisfaction

Life satisfaction, which refers to overall assessments of one's quality of life, was assessed with a 5-item measure (Diener, 1984; Prenda and Lachman, 2001). The items assessed satisfaction across the domains of work, finances, health, relationship with child(ren) and/or relationship with spouse/partner, and overall satisfaction with life. Each item was measured on a scale ranging from 0 to 10, with 0 indicating "worst possible" and 10 indicating "best possible" satisfaction. The scores for relationship with child(ren) and relationship with spouse/partner were averaged to create one score representing satisfaction with family. Then this score was averaged with the scores for the other domains to compute the overall score. Scale scores were computed for those who provided a response to at least one item on the scale, and higher scores reflect higher overall levels of life satisfaction. Thus, if an individual did not have children or a spouse, the score was made up of the average of the ratings across the other domains.

Sociodemographic variables and controls

Age (centered), sex, race, and education were included as covariates in the analyses. For race, a dummy variable was created to represent white or nonwhite race/ethnicity. Educational attainment was coded into a categorical variable with three categories, including "high school or less," "some college," and "4-year college degree or greater." Generative failure analyses also controlled for major health conditions, measured on a scale from 0 to 9, assessing the sum of serious health conditions experienced in the last 12 months (e.g., heart disease, diabetes, and cancer).

Analytic Strategy

Regression analyses were conducted using SPSS to examine the effects of perceived and expected generative contributions on the cognitive–affective states of positive-affect, feelings of self-worth, and social connectedness (Hypothesis 1). Then, regression analyses were used to determine whether the failure to meet one's generative expectations was related to poorer cognitive–affective states (Hypothesis 2). Multiple mediation analyses were run using the PROCESS macro in SPSS (Hayes, 2012) to test whether positive affect, self-worth, and social connectedness mediated the link between generative failure and decreased life satisfaction. In addition, Johnson–Neyman analyses were conducted to determine whether these associations varied as a function of age and if so, at which ages they were strongest (Hayes, 2013). All of these analyses controlled for age, sex, race, and education. Additionally, the analyses assessing generative failure also controlled for perceived generativity in MIDUS 2 as well as health status.

Results

Descriptive statistics were generated for all of the variables included in the analysis. The sample contained 2,252 individuals who participated in both Waves 2 and 3 of the MIDUS survey and provided data on the key variables of interest. The average age of the respondents at Time 1 (Wave 2) was 54.86, ranging from 30 to 84. The average age of respondents at Time 2 (Wave 3) was 63.96, with ages ranging from 39 to 92. The sample contained slightly more women than men (55%), and the majority of respondents were white (92%; Table 1). Forty-six percent of the sample failed to meet their generative expectations (*n* = 1,038), and 54% met or exceeded their expected level of contribution (*n* = 1,214; Table 2).

The analysis revealed that both greater self-perceptions of generative contributions and more positive expectations regarding future generative contributions were associated with higher levels of each examined cognitive–affective state, concurrently and 10 years later (all *p*s < .001). Specifically, greater perceived generative contributions predicted greater positive affect concurrently and 10 years into the future (Table 3). Similarly, greater self-perceptions

Table 1. Characteristics of the Analytic Sample (*n* = 2,252)

Variables	*n*	%	*M* (*SD*)	Possible range
Age at MIDUS 2	2,252		54.86 (11)	30–83
Age at MIDUS 3	2,252		63.96 (11)	39–92
Woman	1,238	55.0		
White	2,099	93.2		
Education				
≤High school	647	28.7		
Some college	619	27.5		
>4-year college	986	43.8		
Major health conditions	2,252		0.79 (0.96)	0–9

Note. MIDUS = Midlife Development in the United States; SD = standard deviation.

of generative contributions were associated with a greater sense of self-worth concurrently and in the future. Individuals with higher levels of perceived contributions also reported higher levels of social connectedness at the time of assessment and 10 years later. Greater expectations regarding future levels of contribution were also associated with greater feelings of positive affect, sense of self-worth, and social connectedness concurrently and at the 10-year follow up (Table 3). Furthermore, supplementary analyses indicated that associations with Time 3 cognitive–affective states remained significant, though reduced in magnitude, when also including the Time 2 measure of each cognitive–affective state in the model (M2 perceived contributions standardized coefficients for association with M3 positive affect = .04*, with social connectedness = .05*, and with self-worth = .05*; M2 expected generative contributions 10 years into the future standardized coefficients for association with M3 positive affect = .04*, with social connectedness = .05*, and for self-worth = .04*; cf. Table 3).

Examination of the discrepancy between self-reported generative contributions at follow-up and the level of generativity participants had predicted for themselves 10 years prior indicated that failure to meet one's generative expectations was associated with poorer levels of the three cognitive–affective states at follow-up, compared with meeting or exceeding one's expectations (*p* < .001; Table 4). Additionally, generative failure was also significantly associated with lower levels of life satisfaction. These associations remained even after controlling for prior perceived generative contribution and health status at MIDUS 2 as well as age, sex, race, and education. Again, supplementary analyses showed that when also including the MIDUS 2 measure of each cognitive–affective state in the model, associations with MIDUS 3 outcomes, including life satisfaction, remained significant but were slightly reduced in magnitude (generative failure standardized coefficients for association with M3 positive affect = −.07***, sense of self worth = −.08***, social connectedness = −.07***, and life satisfaction = −.10***).

Furthermore, multiple mediation analyses revealed that positive affect, sense of self-worth, and social connectedness

mediated the relationship between generative failure and poorer life satisfaction. Use of the PROCESS macro in SPSS revealed significant indirect paths from generative failure to life satisfaction for positive affect, social connectedness, and sense of self-worth, indicating that these may be routes through which generative failure is linked to life satisfaction (see Figure 1 for a summary of mediation results).

Lastly, a Johnson–Neyman analysis was conducted to examine whether this association varied in strength by age. There was a significant interaction of generative failure and age [$F(1, 2,244) = 6.22$, $p = .013$], with relatively stronger associations between generative failure and lower life satisfaction at younger ages (1 *SD* below mean age [age 53]

$B = -.43$, 95% confidence interval [CI] [−.58, −.29]; mean age [age 64] $B = -.30$, 95% CI [−.41, −.20], and 1 *SD* above mean age [age 75] $B = -.17$, 95% CI [−.32, −.02]). Inspection of coefficients in the Johnson–Neyman analysis for the range of ages indicated that generative failure significantly predicted lower life satisfaction up through age 75 and then associations became weaker and nonsignificant at older ages. Although the interactions of generative failure and age in predicting levels of each cognitive–affective state were not statistically significant, a similar pattern of stronger associations at younger ages was observed for positive affect and self-enhancement, but not social connectedness.

Discussion

Findings suggest that greater feelings of generativity, and more positive expectations for future generative contributions, are associated with better cognitive–affective states, cross-sectionally and over a 10-year period. Results also indicate that generative failure, or failing to meet one's expected level of contribution over time, is predictive of poorer cognitive–affective states and life satisfaction. These associations remained even after controlling for prior generative contributions and health status. These findings support previous research findings linking greater perceptions of generativity to more favorable health and well-being over time (e.g., Gruenewald et al., 2007, 2009, 2012; Grand et al., 1988; McAdams et al., 1993). However, this study adds to the generativity literature with the finding that not only are individuals' self-perceptions of generativity important for psychosocial development and well-being, as theory and research suggest, but the perceived attainment

Table 2. The Cognitive–Affective States and Generative Perceptions of Sample (*n* = 2,252)

Variables	%	*M (SD)*	Range
Positive affect (M2)		3.47 (0.68)	1–5
Social connectedness (M2)		3.70 (0.85)	1–5
Sense of self-worth (M2)		3.69 (0.81)	1–5
Perceived current contributions (M2)		6.64 (2.1)	0–10
Expected contributions in 10 years (M2)		6.86 (2.2)	0–10
Positive affect (M3)		3.44 (0.72)	1–5
Social connectedness (M3)		3.65 (0.89)	1–5
Sense of self-worth (M3)		3.61 (0.86)	1–5
Perceived current contributions (M3)		6.49 (2.2)	0–10
Failed to meet expectations (M3)	46.1		
Met/exceeded expectations (M3)	53.9		
Life satisfaction (M3)		7.84 (1.3)	1–10

Note. SD = standard deviation.

Table 3. Results From Regressions Examining the Relationship of Perceived Generativity and Expected Generativity to the Cognitive–Affective States, Concurrently and 10 Years Later

Variables	MIDUS 2 outcome			MIDUS 3 outcome		
	Positive affect	Self-worth	Social connectedness	Positive affect	Self-worth	Social connectedness
M2 perceived contributions (centered)	.158***	.170***	.223***	.134***	.140***	.161***
Age (centered)	.171***	.144***	.160***	.110***	.089***	.121***
Woman	−.064**	−.111***	.013	−.013	−.072***	.014
Nonwhite	.043*	.062**	.012	.028	.021	−.005
≤High school	−.027	−.004	−.025	−.011	.002	−.014
M2 expected contributions (centered)	.181***	.178***	.222***	.143***	.141***	.160***
Age (centered)	.212***	.184***	.212***	.143***	.122***	.159***
Woman	−.059**	−.104***	.023	−.008	−.066**	.021
Nonwhite	.035	.055**	.003	.022	.015	−.011
≤High school	−.019	.002	−.018	−.006	.006	−.009

Note. Table contains standardized (β) values. MIDUS = Midlife Development in the United States.
*p < .05. **p < .01. ***p < .001.

Table 4. Results From Regressions Examining the Association Between Generative Failure and the Cognitive–Affective States and Life Satisfaction

Variables	MIDUS 3 outcomes			
	Positive affect	Self-worth	Social connectedness	Life satisfaction
Generative failure	–.104***	–.099***	–.113***	–.122***
Age (centered)	.151***	.115***	.140***	.218***
Woman	–.017	–.077***	.007	–.012
Nonwhite	.037	.028	.001	.000
≤High school	.001	.011	–.005	–.046*
Perceived generative contributions (M2) (centered)	.155***	.161***	.185***	.150***
Major health conditions (M3)	–.168***	–.119***	–.104***	–.230***

Note. Table contains standardized (β) values. MIDUS = Midlife Development in the United States.
*$p < .05$. **$p < .01$. ***$p < .001$.

Indirect effects:

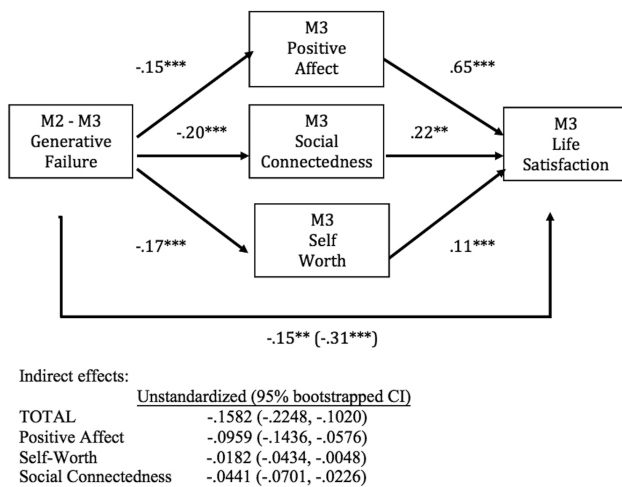|	Unstandardized (95% bootstrapped CI)
TOTAL	–.1582 (–.2248, –.1020)
Positive Affect	–.0959 (–.1436, –.0576)
Self-Worth	–.0182 (–.0434, –.0048)
Social Connectedness	–.0441 (–.0701, –.0226)

Figure 1. Unstandardized Indirect Effects of Generative Failure on Life Satisfaction Through Cognitive–Affective States (model includes M2 generative contributions, age, race, sex, education as covariates). Coefficient in parentheses represents the total effect of generative failure on life satisfaction. Other parenthetical coefficients represent the 95% confidence intervals of the indirect effects.

of one's generative goals over time may also play a significant role. While some research has considered the importance of generative strivings for well-being, no prior studies to our knowledge have tested this theory in a large-scale national data set.

Another important contribution of the present investigation is its elucidation of several potential cognitive–affective pathways through which making generative, or socially useful, contributions may influence well-being, including social connectedness, positive affect, and feelings of self-worth. This study showed that not only is failing to live up to generative self-expectations important for individuals' thoughts and feelings but that these links seem to affect satisfaction with life more broadly. Life satisfaction is an important outcome, as it has been shown to have beneficial health effects ranging from better mental

health to lower risk of disease and mortality (Collins, Glei, & Goldman, 2009; Siahpush, Spittal, & Singh, 2008). Therefore, this study's findings provide convincing support for Erikson's theory on the importance of achieving generativity in the middle and later life, especially as it relates to psychosocial functioning and flourishing.

A Johnson–Neyman analysis indicated that failure to achieve generative goals was more strongly linked to lower life satisfaction in the middle and young-old age groups. A similar, but nonsignificant, age-related pattern was observed for positive affect and self-enhancement states. This finding also supports Erikson's theory of psychosocial development, in which he proposes generativity as a key goal of mid-life. Other researchers have argued that generative desire remains important into older age, and this study supports the salience of these connections, especially for younger older adults (≤75 years old). Socioemotional selectivity theory postulates that time plays a fundamental role in the selection and pursuit of social goals. As time becomes more finite (such as with age), the focus of individuals' goals switches from being knowledge-related to more emotion-focused, social goals (Carstensen, 1993). The possibility that the younger-old may be more affected by generative failure than the older-old may be reflective of a number of different circumstances, one being increased physical limitations. Self-discrepancy literature suggests that people will accept discrepancies that they do not have the power to change (Maio & Thomas, 2007). Furthermore, research has shown that desire to develop or strengthen social ties is a primary motive of volunteer participation in older adults (Okun & Schultz, 2003). However, though this motivation was unique to those over age 60, researchers found that these motivations were much stronger in those from 60 to 70 than those over the age of 80. Moreover, the years immediately following retirement present an individual with unparalleled free time, often accompanied by boredom and depression, making these years a prime time for volunteer engagement. Therefore, it may be that the young-old are

more sensitive than the oldest-old to their degree of success in meeting their generative goals, as they may have greater motivations and opportunities to contribute to others.

Although this study provides important contributions to the generativity literature, there are some limitations that should be acknowledged. Even though the national MIDUS sample was derived from random digit dialing sampling, the survey participants are predominantly white (90%), raising the concern that these findings may not be generalizable to other racial/ethnic groups in the United States. Though the goal of this study was to elucidate cognitive–affective correlates of generativity, there are other potential pathways that may also link generativity to health and well-being, including behavioral or physiological mechanisms. For example, volunteering has been found to lead to increased physical activity, which may represent one plausible behavioral pathway linking generativity to improved well-being (Librett, Yore, Buchner, & Schmid, 2005). Physiological pathways may also play a role in these associations, as giving support to others has been linked to lower blood pressure and heart rate (Piferi & Lawler, 2006). Additionally, the MIDUS surveys do not specifically assess for individuals' personal interpretations of generative contributions and the types of activities and behaviors they are considering when they rate their current and expected contribution levels. There could potentially be a wide range of activities and behaviors that constitute contributions to the welfare of others in the minds of different individuals. Future studies would benefit from collecting more specific data on the types of activities individuals are referencing when answering questions about their contributions. Similarly, this study focuses solely on self-perceptions of generativity, and future studies might benefit from examining indicators of generativity that could be more objectively reported. Prior research has shown similar cognitive–affective benefits of specific generative activities, thus joint assessment of both activities and perceptions could be especially informative (Grossman & Gruenewald, 2017). Finally, the positive affect variable used in this study contains both high and low arousal items. Future experimental work should probe different components of positive affect to better elucidate the mechanisms at play.

Despite these limitations, the study was also characterized by several notable strengths. The MIDUS survey provided access to two waves of data to analyze and examine changes in respondents over time. Because of this longitudinal nature of the data, this study lends some strength to the directionality of this link, suggesting that greater generative perceptions may lead to better cognitive–affective states, and as a result, increased life satisfaction. As shown by the supplementary analyses controlling for baseline cognitive–affective associations, generative perceptions and future predictions of generativity maintain a unique connection with future cognitive–affective states even when accounting for levels of well-being when these perceptions are assessed, adding support to this causal hypothesis. This analysis also

utilized a large, population-based sample to examine these connections, which to our knowledge has not yet been done in the context of generativity. Most importantly, this work furthered the existing understanding of how pivotal generative contributions and goals may be for health and well-being, elucidating some of the potential pathways underlying this connection. Studies that continue to examine these associations are important in several ways, including their potential to inform and encourage programs and policy to facilitate generative goal attainment as a tool for health promotion. Research suggests that high levels of generativity are predicted by early life positive socializing influences, through the family, teachers, mentors, the education system, and other societal institutions (Jones & McAdams, 2013). Thus, as with many aspects of health, early intervention may be key, as well as the modeling of generative behaviors in individuals' early lives.

In summary, the current study suggests that more positive self-perceptions of generative contributions and expectations of future contributions are both linked to greater feelings of social connectedness, sense of self-worth, and positive affect. Whether individuals meet their personal generative goals can also significantly influence their cognitive–affective states, with the perceived failure of generative goals linked to worse mental states, which in turn lessen life satisfaction. These findings suggest that it is not only the process of generative goal striving that is important for well-being but also individuals' perceived degree of success in accomplishing their contributory goals. This study also highlights the future value in examining and promoting factors that may enhance individuals' abilities to follow through with their generative goals to support improvements in health and well-being, both at the personal and societal level.

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Conflict of Interest

The authors certify that they have no financial interests or benefits to disclose.

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