

Positive and Negative Affect at Midlife

Daniel K. Mroczek

How healthy are we? A national study of well-being at midlife. (2004) Brim, OG, Ryff, CD, & Kessler, RC (eds). Chicago, IL The University of Chicago Press, 205-226

The past decade has seen tremendous growth in research on emotional development. Children and older adults remain the staples of these studies and theories (Thompson 1999; Lawton 1996; Magai and McFadden 1996; Schaie and Lawton 1996), although many positions are life span in outlook (Carstensen and Turk-Charles 1994; Lawton et al. 1992; Lewis and Haviland 1993; Malatesta and Kalnok 1984; Mroczek, in press; Schulz and Heckhausen 1998). Other traditions, although not explicitly developmental, have nonetheless considered the ways that emotions might be influenced by age-graded events over the course of adulthood (e.g., Lazarus 1991). Rarely, however, has midlife been the focus of research on affect. How do midlife adults differ from younger or older persons with respect to positive and negative affect? Using the Midlife in the United States survey (MIDUS), we took a first step toward answering these questions.

The current study stems from two basic questions. First, were there mean or variance differences on positive and negative affect between midlife adults and younger or older persons? Emotions are sensitive to changes in people's life contexts, and because many unique contextual changes occur during midlife (childrearing, career-building), it is reasonable to hypothesize that shifts may occur either in absolute levels of key affect variables or in their variances. Second, were associations between key correlates of affect, especially contextual variables, different for people at midlife when compared with those for people who were younger or older?

Level of Affect at Midlife

Why would we expect differences in affect means or variances between midlife adults and adults of other ages? First, life-span developmental theory holds that many psychological variables should remain sensitive to contextual influences throughout the life course (Baltes 1987; Baltes and Nesselroade 1973; Baltes, Reese, and Nesselroade 1977; Bronfenbrenner

1979; Wohlwill 1973). The life-span approach suggests that variables such as affect are subject to the developmental tenet of plasticity, referring to the ability of constructs to remain supple and malleable throughout the life span (Baltes 1987). Positive and negative affect are among the types of variables that should be responsive to the contextual changes manifested at different ages. These age-graded changes in life contexts should give rise to age-graded differences in affect. Midlife is a period when such contextual changes occur in the form of increased time demands and competition between work and family (Havinghurst 1972), potentially altering levels of positive and negative affect. With respect to the direction of the effect, it is possible to imagine overload as a negative influence, minimizing positive affect while maximizing negative affect, but it is also possible to picture the overloads of midlife as a strengthening force for some, producing better mental health and with it heightened positive affect and diminished negative affect. This chapter attempts to answer this question by inspecting mean levels of affect over different age groups in the MIDUS. In a previous study we established that within the MIDUS, positive affect has a positive correlation with age, and negative affect an inverse relationship (Mroczek and Kolarz 1998). Thus, from previous work on the MIDUS, we know the general direction of the age–affect associations, although until the present study, mean levels had not been reported.

Besides life-span theory, there are other bodies of work on affect that have relevance for midlife. Using individual growth modeling and a twenty-three-year longitudinal study, Charles, Reynolds, and Gatz (2001) established that negative affect declines as people age, although persons high in neuroticism decline at a slower rate than those low on this personality trait. Charles, Reynolds, and Gatz (2001) also documented that positive affect generally remains stable as we age and that persons high in the personality trait extraversion are more stable than others. Gatz and colleagues have reported that young adults display higher levels of negative affect (in the form of anxiety and depression) than do midlife adults and, in turn, that older adults report less than those at midlife (Gatz, Kasl-Godley, and Karel 1996; Gatz and Hurwicz 1990). Gatz also proposes a diathesis-stress mechanism for understanding affect and mental health in adulthood (Gatz, Kasl-Godley, and Karel 1996; Gatz 1998). She holds that both vulnerability (which is influenced by genetic dispositions) and external challenges contribute to the affective response to stress. However, she also proposes that age has an impact on this diathesis-stress process, through changes in neurotransmitter functioning that occur with aging

(e.g., Panksepp and Miller 1996) as well as through age-graded changes in the probability of certain stressors, such as the deaths of family members and friends (Gatz, Kasl-Godley, and Karel 1996). Gatz's model has relevance for the study of affect at midlife because it appears that midlife may also bring certain age-graded changes in the likelihood of particular stressors. As noted earlier, work and family demands are often maximized during the middle years. In its emphasis on age-graded stressors, Gatz's model has relevance for middle age and may help to explain differences in level of affect between midlife adults and adults of other ages.

In accentuating the interplay of biological and environmental events and the ways in which each changes over the life span to influence affect, Gatz suggests that in adulthood, emotions are the product of complex processes that stem from both internal and external sources. Many other models of emotion in adulthood emphasize complex processes as well. For example, Labouvie-Vief and Blanchard-Fields (1982) hold that the association between affect and cognition becomes more complex as we proceed through adulthood. As the two domains become better integrated, the result is increased control of one's emotions. Indeed, recent empirical work on emotion regulation has hinted that the link between cognition and emotion is more porous than previously believed (Gross 1998). Although most tests of the Labouvie-Vief and Blanchard-Fields (1982) hypothesis have focused on young-old comparisons (e.g., Labouvie-Vief, DeVoe, and Bulka 1989), it is not unreasonable to speculate that the processes giving rise to greater emotion regulation have their roots in midlife. The process by which affect and cognition become restructured, more connected, and better regulated may well begin during the middle years.

Similarly, Carstensen (1995) has suggested that changes in affect regulation occur among older adults partly as a result of shifts in the relative salience of cognition versus emotion as we grow older. These shifts are the result of a sense of limited time and of heightened awareness that ending points are drawing nearer as we age (Carstensen, Isaacowitz, and Turk-Charles 1999; Lang, Staudinger, and Carstensen 1998). Like the ideas of Labouvie-Vief and colleagues, Carstensen's theory implies greater emotional complexity among older adults. The beginnings of such complexity may be visible among midlife adults as well.

In addition, the theories of Labouvie-Vief and Carstensen suggest processes that not only foster greater emotional complexity but also contribute to a greater sense of integration and maturity. It is at midlife that such integration and maturity may first manifest themselves, altering

levels of affect in the process. Indeed, other theories lend support to the notion that midlife is a time when people blossom into more mature and integrated beings, although few have linked these midlife changes to emotion. For example, Erikson (1963) portrayed midlife as a time when individuals attempt to leave a generative gift to the world in the form of deeds, creative expressions, or childrearing (cf. McAdams and de St. Aubin 1998). This generativity requires a maturity and perspective that rarely come before midlife and that may have an impact on emotion via the kinds of mechanisms proposed by Labouvie-Vief and Carstensen (Labouvie-Vief, DeVoe, and Bulka 1989; Carstensen 1995).

Affect Variability and Midlife

Midlife adults may diverge from younger and older adults in other ways as well. Affect variability may decrease or increase in midlife. Why would we expect a shift in variance? As noted earlier, as a result of neurochemical changes in the brain that result in lowered levels of acetylcholine and dopamine, the brain is less arousable in older age than in youth (Panksepp and Miller 1996). These changes have formed the basis of various hypotheses about emotional arousability and aging, each suggesting that emotions should become less extreme or less intense with age (Gatz, Kasl-Godley, and Karel 1996; Panksepp and Miller 1996). Midlife may mark the first period during which these biological changes become observable through decreased variability in positive and negative affect. If this arousability hypothesis is correct, affect variability should decrease with age, meaning that midlife adults should have smaller variances than younger adults but larger variances than their older counterparts. From this perspective, midlife adults should simply be in the middle of a lifelong decline in affect variability.

Other theoretical perspectives, however, suggest increased variability in affect with age. As people grow older, the contextual factors that influence them often diverge (Baltes 1987). In youth, people share many common contexts (e.g., most young people are in school, thus providing a common frame of experience). As they move away from youth, however, people from a common cohort go in separate directions, and the resulting divergent experiences may increase the individual differences between them, in turn increasing affect variability. Midlife, marking the period during which many people have finished school, started a career and family, and forged an identity of their own, may represent the earliest point in the life span where we may observe such increased variability.

There is another reason to expect increased variability in affect at midlife. As mentioned earlier, it is possible to conceive of the time demands and overloads of midlife as a negative influence for some people but as a strengthening force for others. This may produce divergent levels of affect among those at midlife, with some people experiencing quite low positive and high negative affect as a result of overload, and others experiencing the opposite as they draw strength from the stimulation that multiple demands may bring. If individuals at midlife are pulled in opposite directions, we would predict greater affect variability among them, and less variability among both younger and older adults. By examining and testing differences in positive and negative affect variances across younger, midlife, and older adults in the MIDUS, we may be able to determine which perspective has the most empirical support.

Differential Associations among Affect and Contextual Variables at Midlife

In addition to potential age differences in means and variances, the associations between affect and its main correlates vary over the course of adulthood. Are the associations between key explanatory variables and affect the same in midlife as they are in youth or older adulthood? Contextual variables in particular may show varying associations with affect variables over the course of adulthood. Work-related stress, for example, may give rise to higher negative and lower positive affect among young people, who generally have less control over their jobs than do midlife and older adults and who tend to be near the bottom of the seniority ladder. On the other hand, a lack of seniority may lead to a weak association between work stress and affect. Less seniority may mean less responsibility, hence less hassle and worry, even when work stress increases. By contrast, midlife adults tend to have jobs with greater seniority and responsibility as compared with younger adults, creating an increase in the association between work stress and affect. A midlife adult with heavy work responsibilities (and who perhaps is also dealing with family responsibilities—hence overload) may react to increased work stress with increased negative and decreased positive affect. The strength of the stress–affect association should therefore be greater among midlife adults if this scenario is correct. Within older adults, however, the relationship between work stress and affect may be weak or nonexistent. In the MIDUS, many of the oldest adults were retired or near retirement, or were in extremely senior positions. As Super (1990) has argued, many adults nearing retirement

undergo a transformation in which work is removed from a central position in their lives. Work becomes less pivotal to one's overall identity and self-concept, and may be less likely to foster stress. If this is the case, we would expect a weaker relationship between work stress and affect among older adults than among midlife or younger adults.

Work stress is but one example of how an association may vary at different points along the life span. Other stress-based contextual variables, such as relationship discord, may also show similar age-graded differences in affect. Through years of experience, midlife and older adults may be more skilled at working through relationship issues in ways that do not heighten distress. Indeed, Carstensen, Gottman, and Levenson (1995) demonstrated that older adults were able to resolve conflicts in ways that minimized negative affect. In the MIDUS, the association between relationship stress and negative affect may be stronger in younger adults (who have not yet acquired such skills) and weaker in midlife and older adults. Such an age-graded difference in this association may reflect greater maturity of the type referred to earlier, a maturity that begins to blossom in midlife.

The MIDUS covered a wide age range (25–74), allowing researchers a unique opportunity to examine differential, age-graded associations over a wide stretch of the adult portion of the life span. By comparing the relationships between affect and key explanatory variables *within* age groups representing younger, midlife, and older adults, we will be able to assess differential associations. Few studies have considered such differential relationships, and fewer still have considered differences in variances. Nonetheless, the body of literature on age and affect comprises a valuable knowledge base regarding emotion in adulthood.

Age Differences in Affect in Adulthood

What has the extant literature revealed about affect at midlife? Few empirical studies of affect in adulthood have focused on age as an explanatory variable, and of those, only a handful used samples that included the midlife range. Most of these studies were atheoretical and simply tested whether an age–affect association existed. There was little speculation about potential maturational processes that might underlie changes in affect over the adult life span. For example, Diener, Sandvik, and Larsen (1985) provided evidence showing that midlife and older adults report less intense affect when compared with that reported by younger adults and adolescents. Similarly, Costa et al. (1987) reported that both negative and positive affect were higher among younger adults when compared

with that of midlife and older adults. These early studies, while valuable, were mainly descriptive in tone.

Later empirical investigations were more theory-driven and concerned with maturational and developmental processes that produce changes in affect over the life span (Diener et al. 1999; Magai 2001). For example, Ryff (1989) based her empirical investigations on a theoretical formulation that emphasized maturity and integrated functioning. She found that persons at midlife were not different from older adults in terms of affect balance (negative affect subtracted from positive affect) but that both groups had a higher balance than young adults. Like Ryff, Gatz, and colleagues approached the issue of affect from a more theoretically informed viewpoint (the diathesis-stress perspective) and reported higher negative affect among younger adults (Gatz, Kasl-Godley, and Karel 1996; Gatz and Hurwicz 1990). Rossi and Rossi (1990), in discussing how intergenerational relationships mature, reported a steady decline in both positive and negative affect in a sample of people ranging in age from 19 to 92. Midlife adults displayed lower levels of both types of affect than did younger adults, but higher levels than older persons. Finally, Mroczek and Kolarz (1998), using the MIDUS sample and drawing on several of the aforementioned viewpoints, found that positive affect increased (at an accelerating rate) from the ages of 25 to 74, but that negative affect declined over the same age range. We must keep in mind, though, that all of the documented effects of age on emotion are small. Age usually accounts for no more than 2 percent of the variance in either positive or negative affect. Further, most of these investigations were cross-sectional (with the exception of Charles, Reynolds, and Gatz 2001), so we cannot rule out cohort explanations.

It is clear that recent studies of affect and adulthood have stood on more theory than have earlier investigations. Further, a distinct trend has emerged. In most of the previously mentioned studies, persons at midlife reported more positive and less negative affect than did younger adults, but less positive and more negative affect than older adults. This empirical evidence contradicts earlier viewpoints that portrayed midlife as a stress-filled time of crisis (Levinson 1978). Rather, the middle years may open a period when people begin moving toward more emotional balance and maturity.

Current Study

In this study, we first documented mean and variance differences in positive and negative affect between younger, midlife, and older adults.

Then we turned to the question of differential associations between affect and key explanatory variables across these three groups of adults. In posing this second question, we considered a broad collection of factors that reflected changing contexts or were sensitive to context. These were physical health, work and relationship stress, and marital status, along with two variables that are generally fixed over adulthood: gender and educational level. Inclusion of these variables was a novel aspect of the present study in that much of the theory and research reviewed in the previous sections had not considered a wide array of contextual influences. The multitude of variables available on the MIDUS allowed a broader consideration of contextual factors than had previous investigations. Additionally, few previous studies had used a sample as large or as representative as the MIDUS.

We emphasized contextual factors because more than other types of variables, they have the potential to exert different effects on affect within different parts of adulthood. For example, physical health can change quickly and unexpectedly over the course of adulthood, creating contexts that have differential effects on affect. Illnesses that are unexpected in youth, such as cancer, may have a different effect than those same illnesses would have in the middle or older years, when such illnesses are more common. Additionally, stressors can vary in their impact across adulthood (e.g., the aforementioned example on work stress). A stressor that is quite taxing during one period of adulthood may have little or no impact in another period.

We first considered mean and variances for positive and negative affect over three age groups that represented younger, midlife, and older adults. Additionally, age differences in means and variances were also examined separately for men and women because of the well-known gender difference on positive and negative affect (Mroczek and Kolarz 1998). The two affect variables were then regressed (within each of the three age groups) on gender, marital status, education, and physical health. After consideration of these results, the two stress variables (work and relationship stress) were added to the equation, again for each age group. The analysis followed this order because relatively fixed sociodemographic factors such as gender, education, and marital status, although undoubtedly sensitive to context, likely set the stage for the effects of more strongly contextualized variables such as work and relationship stress. In sum, these analyses provided a description of affect in midlife as well as insights into the variables that differentially impact positive and negative affect at different ages.

METHODS

All data were from the Midlife in the United States survey (MIDUS), conducted by the John D. and Catherine T. MacArthur Foundation Research Network on Successful Midlife Development. All measures were from the survey instrument used for the MIDUS, the Midlife Development Inventory (MIDI). The MIDI was created by the Midlife Research Network for special use on the MIDUS. It had both a telephone and mail portion.

Sample

Persons who completed both the phone and mail portions of the MIDI were used in the current analyses, for a total number of 2984. However, many questions that involved work and relationship stress were irrelevant for those not employed or not in relationships. The total sample dropped to 1937 for analyses that used these stress variables, representing those MIDUS respondents who were working and were in a relationship.

Measures

Our key variables, positive and negative affect, were assessed independently by using Watson and Tellegen's (1985) argument that the two are separate dimensions. Frequency measures of positive and negative affect, each six items in length, were included on the MIDI. These scales are described in greater detail by Mroczek and Kolarz (1998). Despite their brief length, both scales have respectable alphas: .87 for positive affect and .91 for negative affect. Summed scores were created from these items. Nearly every participant responded to all six items for each scale, but among those who did not, mean substitution was used (within scales) only if the participant responded to at least four items. Scores ranged from 6 to 30 for both positive and negative affect.

Age ranged from 25 to 74 on the MIDUS. The purpose of this particular investigation was to document various differences in affect between distinct periods of adulthood. This required the division of our age range into partitions representing young, middle, and older adulthood. After the discrete definitions of midlife suggested by Schaie and Willis (1996) and Willis and Reid (1999), age was categorized as follows: young adulthood was defined as the ages 25–34, inclusive; middle adulthood as 35–64, inclusive; and older adulthood as 65–74, inclusive. The numbers of people in these categories were 578, 1895, and 287 for young, midlife, and older persons, respectively. The boundary between young and midlife adults,

age 35, reflects a point at which most people have married (and perhaps divorced) and established themselves in a career or job. Most individuals age 35 and older have negotiated the key work and relationship tasks of youth and are fairly labeled midlife adults. The boundary between midlife and older adults, age 65, represents the official retirement age in the United States but also reflects a psychological turning point as well for many people (Schaie and Willis 1996). It is the point at which people are considered senior citizens, and thus MIDUS participants age 65 and above are fairly labeled older adults.

As mentioned earlier, gender, marital status, education, and physical health were also included in the present investigation. Respondents reported education by indicating the level of schooling they had attained. The variable consisted of twelve levels, anchored on the low end by "some grade school" and at the high end by "graduate or professional degree." Marital status was assessed by use of a single item that simply asked whether one was married, never married, separated, divorced, or widowed. The item was dichotomized, with 1 representing currently married persons and 0 representing all others. Physical health was assessed by use of a single-item, global self-rating of general physical health at present, which was Likert-scaled and ranged from 1 to 5. Higher scores indicated better self-reported health.

Two types of context-based stress were assessed. One measured work and financial strain, and the other indexed relationship discord. Taken from different sections of the MIDI, these measures were built by use of several items that asked about various stressful events and situations. The four work/finance questions asked whether a person (1) had recently been laid off, (2) was experiencing serious ongoing problems with someone at work, (3) was undergoing other serious stress at work, or (4) felt no control over finances. The questions that comprised the relationship stress scale asked whether a person (1) was in the worst possible marriage or relationship, (2) felt no control over his or her relationship, and (3) described his or her relationship as poor. Each of the work and relationship items were dichotomized and then summed to create the two stress scales.

RESULTS

As noted earlier, the current study had two main goals. The first set of analyses documented basic differences in reported level of affect across adulthood. These analyses also took account of gender differences. The second set of analyses probed the effects of contextual influences on

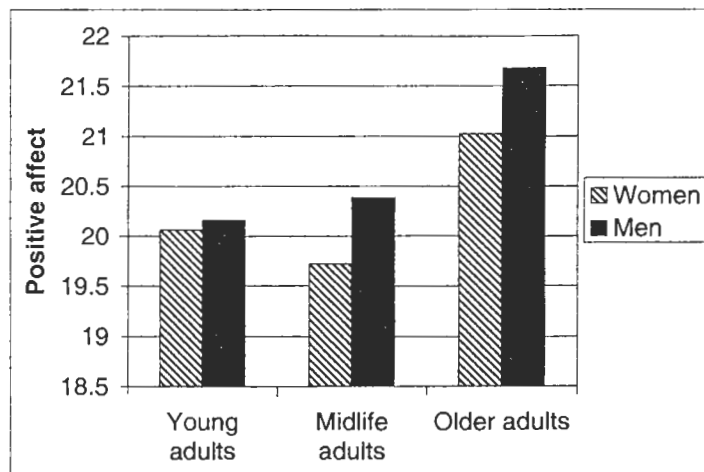


FIGURE 1. Mean positive affect by age group.

affect across three different periods of adulthood. Did variables that were associated with positive and negative affect within youth continue to be associated within midlife and, in turn, within older adulthood?

Age and Gender Differences in Means and Variances

Means

Figure 1 displays mean positive affect for younger, midlife, and older adults, by gender. Differences in these six means were tested using a two-way factorial ANOVA, which indicated a significant overall effect, $F(5, 2979) = 7.11, p < .0001$. The main effect associated with age group was significant, $F(2, 2979) = 11.33, p < .0001$, as was the main effect for gender, $F(1, 2979) = 10.94, p < .001$. The interaction between age and gender was not significant. Scheffé post-hoc tests revealed that midlife adults were significantly different from older adults but not from younger adults. Post-hoc tests also revealed that younger and older adults were significantly different from each other.

Note the general age pattern in figure 1. Young adults (ages 25–34) reported the least amount of positive affect, while the oldest adults (65–74) reported the most. Midlife adults, although not significantly different from younger adults, nonetheless showed an interesting pattern. Women in midlife appeared to decrease in positive affect, while men showed an uptick. Among the oldest adults, both women and men were elevated, although women were not as high. The main effect for gender was significant, although it was clear that midlife and older adults were accounting for that difference. Young women and men appeared no different in level of positive affect. Also, despite the visual appearance of

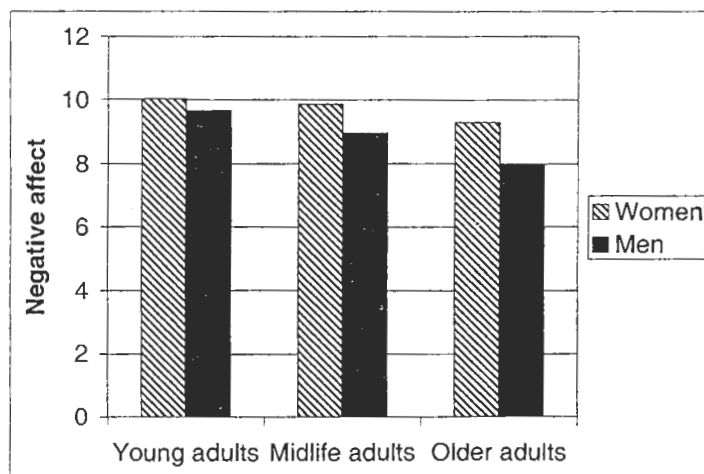


FIGURE 2. Mean negative affect by age group.

an interaction between age group and gender, there was no significant interaction. Nonetheless, the main effects of age and gender were clearly visible, and they indicated that midlife may not necessarily bring higher levels of positive affect. There was no overall mean difference between midlife adults and their younger counterparts.

With regard to negative affect, there was a much clearer picture. Figure 2 displays means for negative affect for young, midlife, and older adults. A two-way factorial ANOVA indicated a significant effect, $F(5, 2985) = 11.85, p < .0001$. The main effect associated with age group was significant, $F(2, 2985) = 10.18, p < .0001$, as was the main effect for gender, $F(1, 2985) = 34.92, p < .0001$. Again, the interaction between age and gender was not significant. Scheffé post-hoc tests revealed that all age groups were significantly different from one another.

The general pattern shown in figure 2 is one of decline in negative affect over the three age groups, along with a gender difference (women scored higher than men on negative affect in all age groups). This pattern was different from that observed for positive affect. Rather than being a point of transition where affect changes direction, midlife seemed to have no distinctive role with regard to absolute level of negative affect. Both men and women decreased on negative affect across the age range, although men appeared to decrease a bit more, and these declines were steady from youth through midlife and into older age.

Variances

Figure 3 displays variances for positive affect by gender and age group. Pairwise comparisons among these six variances were investigated by

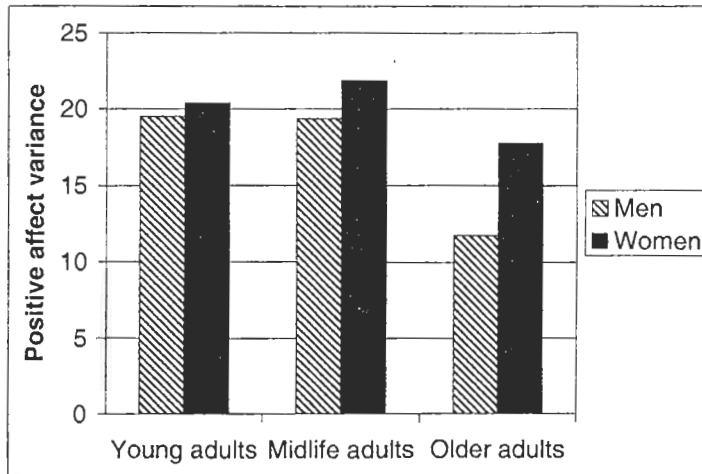


FIGURE 3. Variances in positive affect by age group.

using the significance test for variances, the F_{\max} test (Kirk 1968). Note the general trend with respect to age and positive affect. Older women and men were less variable than were midlife or younger adults. The variances of these two latter groups were not significantly different from one another, but both were different from older adults. Younger men were significantly more variable than older men, $F_{\max}(1, 288) = 1.67$, $p < .05$; and midlife men were significantly more variable than older men, $F_{\max}(1, 946) = 1.65$, $p < .05$. Younger women were significantly more variable than older women, $F_{\max}(1, 289) = 1.15$, $p < .05$; and midlife women were significantly more variable than older women, $F_{\max}(1, 947) = 1.23$, $p < .05$. Note that among younger and midlife adults, there was not much difference in variance between the genders. Yet among older adults, men appeared less variable than women.

Figure 4 shows variances for negative affect, by gender and age group. Again, we found that older adults were less variable on negative affect as they were on positive affect. Younger men were significantly more variable than older men, $F_{\max}(1, 289) = 1.79$, $p < .05$; midlife men were significantly more variable than older men, $F_{\max}(1, 946) = 1.72$, $p < .05$. Younger women were significantly more variable than older women, $F_{\max}(1, 288) = 1.21$, $p < .05$; midlife women were significantly more variable than older women, $F_{\max}(1, 947) = 1.31$, $p < .05$. Note that women were more variable than men across each of our age groups, although the difference seemed less pronounced among younger adults.

These results are consistent with the models offered by Gatz, Kasl-Godley, and Karel (1996) and Panksepp and Miller (1996). Both groups argue that emotions in older adults should be less arousable than they are

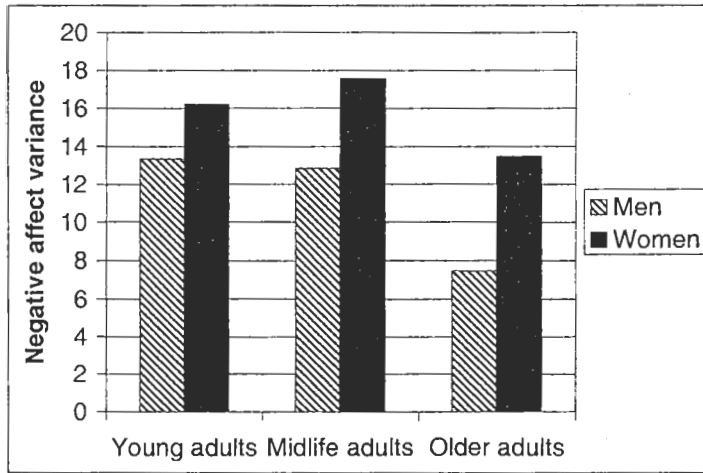


FIGURE 4. Variances in negative affect by age group.

in younger adults. Indeed, we found that older adults were significantly less variable on both positive and negative affect. Further, the significant differences were between older adults and the other two groups of adults. Midlife and younger adults did not differ from one another with respect to affect variability. If the decreased arousability model is correct, these MIDUS data suggested that older adults account for the effect. Midlife adults certainly appeared no less variable than young adults.

Differential Associations across Adulthood Groups

Having documented basic differences in affect means and variances over our adulthood groups, we turned our attention to differential associations. Were the patterns of association the same across our adulthood groups? We regressed the two affect variables on key explanatory variables within our three age categories. Such an examination allowed us to determine if particular variables were more important at midlife than at other times during adulthood. As noted earlier, we concentrated on age-graded differences in the associations between contextual factors and affect.

The top of table 1 shows regressions of positive affect on the initial set of explanatory variables (gender, education, marital status, and physical health). One element in this table stands out. All four predictors were significant among midlife adults, whereas among younger and older adults only physical health was a significant covariate. Better physical health was associated with greater positive affect across the entire (25–74) age range. However, not even one of the other three predictors was associated with positive affect in either young or older adulthood. In midlife, on the other

TABLE 1 Regressions of Positive and Negative Affect on Explanatory Variables by Adulthood Categories

	Young Adults (<i>N</i> = 578)	Midlife Adults (<i>N</i> = 1895)	Older Adults (<i>N</i> = 287)
Positive affect			
Gender	.20 (.36)	−.52 (.20)**	−.46 (.48)
Education	.01 (.08)	−.08 (.04)*	−.13 (.09)
Marital status	.35 (.36)	.56 (.22)**	.78 (.48)
Physical health	1.31 (.20)***	1.28 (.10)***	1.14 (.21)***
<i>R</i> ²	.075	.086	.103
Negative affect			
Gender	.17 (.32)	.70 (.17)***	1.00 (.38)*
Education	−.03 (.07)	−.06 (.03)	−.08 (.07)
Marital status	−.14 (.32)	−.70 (.18)***	−.61 (.39)
Physical health	−.98 (.18)***	−1.15 (.09)***	−1.22 (.17)***
<i>R</i> ²	.058	.118	.212

Notes: Gender: 1 = women, 0 = men; married: 1 = married, 0 = not married; young adults, 25–34; midlife adults, 35–64; older adults, 65–74. The first number in each group is the b coefficient; the number in parentheses is the standard error.

p* < .1. *p* < .01. ****p* < .001.

hand, each of these factors was associated with positive affect. Women and better-educated persons reported less and married people reported more positive affect in midlife.

We observed a similar pattern with regard to negative affect. Better physical health was associated with less negative affect over all three age groups, but again this was the only variable that had a cross-adulthood effect. Women reported higher levels than men in midlife and older age, but not in younger adulthood (this effect was visible in fig. 2 as well). Education, though, had no effect across any of the age groups. Finally, at midlife, married people reported less negative affect than unmarried people, an effect that was not present among the younger or older group. This mimics the pattern detected for positive affect.

These results showed that physical health had a significant impact on both affects across the broad range of the adult years covered in the MIDUS. This effect seemed to transcend age. Gender, education, and marriage, however, had effects that were present only in midlife. The effects observed for gender must be interpreted cautiously, because we tested for a gender–age interaction in the aforementioned ANOVA, and it was not significant. Note that gender had an effect on both affect variables only among midlife adults. Among older adults, women reported higher negative affect than men, but there was no effect for positive affect. Only in midlife did gender have an impact on both affect variables. It is tempting

TABLE 2 Regressions of Positive and Negative Affect on Explanatory Variables by Adulthood Categories, Adding Relationship and Work Stress

	Young Adults (<i>N</i> = 403)	Midlife Adults (<i>N</i> = 1354)	Older Adults (<i>N</i> = 180)
Positive affect			
Gender	.03 (.42)	-.56 (.23)*	-1.10 (.52)*
Education	.09 (.09)	-.01 (.05)	-.12 (.09)
Marital status	-.86 (.52)	.02 (.42)	.78 (1.56)
Physical health	1.30 (.23)***	1.18 (.12)***	.84 (.24)***
Relationship stress	-.79 (.64)	-1.61 (.40)***	-4.99 (1.03)***
Work stress	-1.11 (.31)***	-1.04 (.17)***	1.97 (1.00)
<i>R</i> ²	.117	.115	.239
Negative affect			
Gender	.19 (.38)	.83 (.19)***	1.22 (.45)**
Education	-.09 (.08)	-.12 (.04)**	-.08 (.08)
Marital status	-.07 (.47)	-.55 (.36)	.63 (1.33)
Physical health	-.78 (.21)***	-1.03 (.10)***	-.96 (.21)***
Relationship stress	1.08 (.58)	.89 (.34)**	1.94 (.89)*
Work stress	1.04 (.31)***	.62 (.15)***	.68 (.85)
<i>R</i> ²	.085	.131	.210

Notes: Gender: 1 = women, 0 = men; married: 1 = married, 0 = not married; young adults, 25–34; midlife adults, 35–64; older adults, 65–74. The first number in each group is the b coefficient; the number in parentheses is the standard error.

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

to think that perhaps these gender effects reflect strain emanating from trying to balance family and career. Women at midlife, perhaps as a result of reasons stemming from societal structures and expectations, may have been more susceptible to stress overload. However, table 2, in which work and relationship stress are added to the models, shows that this is not the case.

As shown in table 2, we added indicators of work and relationship stress to the equations. Note that *N* decreased for each age category in moving from table 1 to 2. This was because those who responded to the work stress items were those who were working. Those not working, such as retired persons, would have skipped some or all of the items that comprised the work stress variable. The same was true of those who were not in a relationship. Lack of data as a result of these reasons lowered *N* in the second phase of analysis, reducing the comparability of the two sets of regressions. It may therefore be preferable to interpret the two phases as distinct analyses rather than as one building on the other.

Table 2 shows regressions of affect on the initial four indicators, along with relationship and work stress. The top half of table 2 displays results

for positive affect. Among both midlife and older adults, relationship stress was inversely related to positive affect, net of the other five variables in the equation. Work stress was also inversely related to positive affect among midlife and younger adults. As shown in the bottom half of table 2, we observed a similar pattern for negative affect. Greater relationship stress was associated with greater negative affect among midlife and older adults, whereas work stress was associated with negative affect among midlife and younger adults.

It was interesting that both stress variables were related to both affects among midlife adults but not among their younger and older counterparts. Among younger adults, relationship stress did not have an effect on either positive or negative affect. Keep in mind that the young adults in the MIDUS were probably less likely to be in relationships than were midlife or older adults, and thus they may have been less likely to answer the relationship questions. Nonetheless, those younger people who were in relationships and who reported relationship stress were not necessarily lower on positive affect or higher in negative affect. Relationship discord may have a lighter impact among adults aged 25–34 when compared with midlife or older adults. Perhaps this was because individuals younger than 35 are less likely to have children, or are less committed to their relationship, or have not been with their partner as long as midlife or older adults. Additionally, young adults experiencing relationship discord may have been less likely to encounter some of the issues confronting midlife and older adults who experience such problems. For example, midlife and older couples are more likely to share assets, such as a house, that add an element of complexity to relationship difficulties.

With regard to work stress, note that for both positive and negative affect, midlife and younger adults shared the same pattern. Positive affect was lowered and negative affect was heightened by work stress. The older adults in this analysis were those that were still performing some work for pay. Keep in mind that many older adults did not answer the work stress questions because they were not working and so the questions were irrelevant. Nonetheless, among those older adults who were still working, work stress appeared to have no impact at all on either affect variable.

Midlife and younger adults seem to share a common encumbrance with regard to work stress. The process of finding a job or launching a career and then maintaining it throughout midlife perhaps creates work-related burdens that foster higher negative and lower positive affect. However, by the older years, work may cease to be a source of affective grief. If older adults know that they will not remain much longer in a given job or

career (e.g., Super 1990), then the ensuing decline in future orientation may free people from becoming unduly bothered by the petty trials and tribulations of the workplace.

DISCUSSION

The present investigation centered on two questions. First, were there age differences in affect means and variances when contrasting midlife adults to other adults? Second, were the parameters that defined the relationships between affect and its predictors different across several eras of adulthood?

Data from the MIDUS provided ambiguous answers to the first set of questions. We did find mean differences. However, with regard to positive affect, midlife looked like an extension of young adulthood; with respect to negative affect, midlife appeared to simply represent the midpoint of a life-span decline. When we examined variances, midlife adults were more similar to younger than older adults. Older adults had significantly smaller affect variances than either midlife or younger adults, both of whom had variances of comparable size. It was not clear that midlife was a unique period of adulthood in terms of affect means or variances. Older adulthood, by contrast, appeared to usher in mean and variance shifts, although it was not clear whether these were aging or cohort effects. The age decline in mean negative affect was consistent with prior empirical findings (e.g., Costa et al. 1987; Rossi and Rossi 1990), although our results for positive affect were unique to the MIDUS sample (see also Mroczek and Kolarz 1998). Interestingly, the decline in both affect variances observed among older adults was consistent with biologically based theories of arousability (Gatz, Kasl-Godley, and Karel 1996; Panksepp and Miller 1996). Lower arousability in the oldest MIDUS participants may belie these significantly lower variances.

The answer to the second question was a clear yes. The relationships between affect and key explanatory variables were different over the three groups of adults. Those variables that were associated with affect in midlife were not necessarily those that were related to affect in young or older adulthood. The significant effects of education and marriage were exclusive to the middle years. More importantly, midlife was the only age group in which both stress indicators had a significant effect on affect.

These latter findings signal an interesting possibility. Midlife adults may be more influenced by context than younger or older adults. Perhaps careers, relationships, and families dominate their lives more than they dominate the lives of adults of other ages. As a result, midlife adults

may find themselves more heavily engaged in the contexts that bring about stress, or at least have greater investments in those activities that bring about stress. For example, work and the money it brings take on greater importance when children need to be clothed and fed, retirement funds need building, and mortgages require financing. Relationships may take on greater importance in midlife as the shakier marriages begin to fall apart, as the demands of child-raising strain relationships, and as the prospect of losing a partner in later life begins to loom on the not too distant horizon. Midlife adults are heavily engaged in their work and relationships, and this involvement may be a source of tension as well as fulfillment. In the MIDUS, work and relationship stress had greater impact on affect during the midlife years than at other times, a finding consistent with the interpretation offered earlier in the chapter. As Havinghurst (1972) argued, midlife brings unique challenges, stressors, and demands. Midlife can often be a time of overwhelming responsibilities, especially with regard to work and family. As our findings demonstrated, these context-based stressors indeed had a unique impact on affect, but the impact took the form of differential associations, not differences in mean levels or variances.

We would like to draw attention to one additional finding. Note that among midlife adults, educational level was significantly associated with less positive affect before we added the stress variables. This was interesting, because higher educational attainment was paired with lower levels of positive affect. Better-educated people reported less positive emotion. However, after introducing the two stress variables into the model, the effect was rendered nonsignificant. In essence, people with higher educational attainment tended to have higher levels of work and relationship stress, and thus lower levels of positive affect. In other words, there was nothing about midlife itself that created the inverse association between education and positive affect. A contextual shift that was based in midlife was responsible for this effect.

With respect to negative affect, note that the reverse effect occurred. Among midlife adults, education was not initially significant, but when the contextual stress variables were added, it became significant. Midlife adults with higher levels of education had lower levels of negative affect but only when stress was controlled. This means that stress was masking the effect of education. People with higher levels of education had lower levels of negative affect, but they also had higher levels of stress. Thus, when stress was in the model (and was thus held constant), the education–affect association was able to emerge.

These context-based differential associations were all very interesting, and they shed light on the ways in which midlife was unique with respect to affect in the MIDUS. Additionally, midlife adults were clearly better off from an affective perspective than were young adults. They had higher levels of positive affect than did younger adults (at least men did) and lower levels of negative affect (a cross-gender finding). Midlife adults in the MIDUS were moving in the right direction, even in the face of stronger associations between work and relationship stress and affect. However, midlife adults were not nearly as well off as older adults, who had the lowest levels of negative and highest levels of positive affect in the MIDUS sample. Keep in mind that our oldest adults were age 74 on the high end, and it is unclear that affect remains at these levels past age 75 (Smith et al. 1999).

Differences in mean levels and variances were what made older adults unique with regard to affect. Midlife adults, on the other hand, were distinguished by a number of differential associations between affect and explanatory variables; this was the most novel element of emotion during the middle portion of adulthood. Of course these differential associations were not likely to have been caused by midlife itself but rather by contextual shifts that happen to take place in midlife. Nonetheless, we found that affect during the middle years was not distinguished by differences in level or variability but rather by the way that affect was related to key correlates. The MIDUS midlife adults were not more cheerful or distressed than other groups of adults, but the factors that provoked cheer and distress within them were different. It was this that gave affect at midlife a unique character.

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