



**Daily Affect Across Adulthood and Into Old Age: Recent Advances from
Ambulatory Research**

Michaela Riediger and Antje Rauters

Friedrich Schiller University Jena, Department of Developmental Psychology

Michaela Riediger  <https://orcid.org/0000-0001-5206-3626>

Antje Rauters  <https://orcid.org/0000-0003-3499-9011>

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Corresponding Author

Michaela Riediger, Friedrich Schiller University Jena, Department of Developmental Psychology, Am Steiger 3/1, 07743 Jena, Germany,

Abstract

Ambulatory research—such as daily-diary or experience sampling studies—captures experiences as they naturally occur in people’s daily lives. It shows that older adults’ daily affective experiences, on average, are more positive and more stable, compared to younger age groups. Recent advances in ambulatory research contribute a more refined understanding beyond the valence dimension, demonstrating that the arousal of affective experiences matters as well, and that discrete emotions, such as sadness, may be differently prevalent and adaptive in different phases of adulthood. Another recent contribution is evidence that cross-sectional adult age differences in daily affect may not map onto within-person change over time. While longitudinal improvement in daily affect is observed across young and into early middle adulthood, stability and decline in affective well-being are typical throughout late middle and older adulthood, respectively. Likewise, empirical support for the claim that emotion regulation is a prime reason for age differences in daily affect remains mixed. Older as compared to younger adults are indeed more motivated to feel better, and more confident that their affect-regulation is successful. However, there is no consistent support that older adults’ daily affect-regulation strategies, effectiveness, or flexibility differ from younger age groups.

Keywords: daily affect, adult development, ambulatory assessment

Highlights

- We review recent diary and experience-sampling studies on adult age differences in daily affect
- Older versus younger adults report more positive and more stable everyday affect
- Age differences in daily affect also pertain to affect arousal and discrete emotions
- Cross-sectional age differences partly diverge from patterns of longitudinal change
- The role of emotion regulation for age differences in daily affect remains unclear

1 Introduction: Why Bother with Adult Age Differences in Daily Affect?

Affective states – such as feeling joyful, downcast, content, or stressed – are fundamental to human experience. Not only do they determine a central aspect of individuals' well-being. They also are closely intertwined with other domains of functioning, such as motivation, cognition, or health. For example, burgeoning evidence demonstrates that more positive, and less negative, affect is associated with higher physical functioning, reduced symptom severity, lower morbidity, and even lower mortality risk [1-3]. Research suggests that these affect-health links derive from bidirectional influences: Dealing with health impairments is detrimental to individuals' affective well-being, but affective states can also influence individuals' health in return, both indirectly via supporting individuals in adhering to a healthier lifestyle [e.g., 1] and directly via physiological processes. There is converging evidence, for example, that positive affect attenuates the intensity and duration of inflammatory responses to immune challenges, thus causing less wear and tear on the body (i.e., lower allostatic load), which protects individuals' health in the long run [for a review, see 4]. Furthermore, evidence is accumulating that affect-health links may be stronger in older adults than in younger individuals, possibly due to the age-related increase in physiological vulnerabilities [e.g., 3, 5-8].

In sum, affective experiences matter above and beyond individuals' subjective happiness, perhaps particularly in older age. This may have contributed to the considerable research interest in adult affective development. The finding that older adults, on average, report comparable or even better affective well-being than younger individuals was initially appraised with skepticism. How could this be possible given the many aging-associated losses, such as declines in sensory functioning and health, or the increased risk of losing loved ones? Initial evidence stemmed from research using global or retrospective measures of participants' "average" affective well-being "in general" or in a certain period of time (e.g.,

“during the past year”). Critics argued that such reconstructions of affective experiences may be particularly positively biased among older adults. In response to this potential problem, there was an upsurge in ambulatory (i.e., daily-diary or experience-sampling) studies that capture affective experiences in the moment of, or close to, their spontaneous emergence in participants’ natural life contexts. These studies have the additional advantage of enhancing the ecological validity of the assessments. These studies replicated the adult age differences in daily affective experiences even more clearly. Older adults’ daily affective well-being is, on average, more positive and more stable compared to younger age groups; a pattern that continues to be replicated by recent studies [9-16]. This average trend does not, of course, apply to each and every older adult. For example, it is not observed or even reversed when older adults experience complex stressors or severe health problems, approach death, or desire to be much younger than they actually are [16-18].

Overall, ambulatory research on daily affective experiences across adulthood is not new. Building on earlier research in this tradition, this article highlights several noteworthy advances over the last few years, focusing primarily on studies published since 2020. We start out with studies that contributed a more fine-grained understanding of age differences in specific dimensions and facets of daily affect. We then address the question whether the known pattern of cross-sectional age differences in daily affect is also reflected in long-term within-person change as people grow older. Finally, we turn to studies that investigated the potential role of emotion regulation for age differences in daily affect.

2 Towards a More Fine-Grained Understanding of Adult Age Differences in Daily Affect

Much of the earlier research investigated aggregate constructs of affective experiences, such as individuals’ positive and negative affect or their affective well-being. Several recent ambulatory studies contributed to a more nuanced picture. One line of research

proceeded from the idea that affective experiences are characterized not only by their valence (i.e., how positive or negative they are), but also by their arousal [i.e., how activating or deactivating they are; 19]. The Strength-and-Vulnerability-Integration theory [20, 21] proposes that age-related declines in physiological flexibility render the regulation of high-arousal states increasingly difficult with older age. Consequently, aging individuals should become increasingly motivated to avoid or downregulate high-arousal affective experiences; which thus should be less prevalent in older adults' daily lives, regardless of their valence, compared to younger age groups. Consistent with this idea, Wang et al. [22], recently found that older as compared to younger workers reported experiencing less excitement, but more relaxation in their daily lives. Similarly, Hamm et al. [23], showed that older adults experienced more calmness than excitement, compared to younger adults. In older adults who perceived low control over their life circumstances, such feelings of calmness buffered against longitudinal declines in psychological well-being and physical health throughout 10 years. Other ambulatory studies, however, did not find support for the assumed age differences along the arousal dimension [e.g., 12, 14]. Hence, more research is needed to fully understand the role of arousal for adult age differences in daily affective experiences.

Another line of research goes beyond dimensional characterizations of affective experiences. Discrete Emotions Theory of Affective Aging [24] maintains that there are specific emotions – in particular, anger and sadness – that are differentially adaptive in different life phases: Anger can support tenacious goal pursuit in the face of obstacles, which is a typical challenge of younger adulthood. In contrast, sadness can help with challenges that accrue in older adulthood, like managing losses and disengaging from unattainable goals. Hence, the frequency and adaptiveness of these emotions should differ between individuals from different age groups. This notion has received evidence from laboratory studies [24, 25], panel data [26], and ambulatory research [27]. Recent support comes from a longitudinal

daily-diary study covering an interval of 12 years [28]. Here, older adults with higher cortisol levels who increased in sadness over time became better at disengaging from unattainable goals. The study also showed that goal disengagement when feeling sad protected from longitudinal decreases in positive affect. These findings are in line with the idea that the discrete emotion sadness can serve adaptive functions in late life.

3 Being Old Versus Growing Old: Comparing Cross-Sectional and Longitudinal Findings

An important question is whether the well-known cross-sectional finding of more positive average daily affect in older adulthood maps onto similarly positive long-term within-person change. A recent longitudinal study warrants first doubt in this regard. Charles et al. [10] analyzed data from three daily-diary waves across up to 20 years. Results replicated previously reported cross-sectional age differences: Older participants evinced lower levels of psychological distress and negative affect, and higher levels of positive affect, compared with younger participants. These cross-sectional age differences, however, did not fully map onto how daily affective experiences changed throughout the study interval. For initially younger adults, levels of psychological daily distress and daily negative affect decreased over time as they moved towards middle adulthood, while their positive affect remained comparable. Initially middle-aged adults had less favorable trajectories, with a somewhat weaker decrease in negative affect, retained levels of distress, and decreases in positive experiences as they grew older. The least favorable trajectory emerged for participants who already were older adults at the start of the study. They experienced increased levels of daily distress and negative affect, and decreased levels of positive affect over time. Overall, this suggest that being old (assessed cross-sectionally) is related to higher levels of affective well-being. However, changes in daily affect while growing older (assessed longitudinally) may be related to average improvements in affective well-being

only across younger and into early middle adulthood. In later phases of adulthood, particularly in old age, daily affective well-being may remain stable or decrease over time. The authors emphasize that historical time and chronological age were confounded in this study, and that period effects may thus have contributed to the results. In fact, another analysis of the same dataset suggests that participants experienced more stressors, perceived them as more severe, and reported higher stress reactivity in the 2010s than in the 1990s [29]. This exemplifies that historical time may affect the context in which affective experiences unfold, which needs to be better understood by future investigations.

4 The Still Unresolved Role of Affect Regulation for Age Differences in Daily Affect

A prominent claim in the literature is that more positive daily affectivity among older adults, as observed in cross-sectional comparisons between age groups, derives from older adults' higher motivation to regulate affective states and their better competence to do so. This idea has been influential, and adult improvement in affect regulation is sometimes asserted as a well-established fact. Empirical evidence, however, unveils a more nuanced picture.

4.1 Affect-Regulation Motivation

Socioemotional selectivity theory [e.g., 30] proposes that with age, as awareness of one's finite lifetime increases, adults become increasingly motivated to optimize their affective experiences in the here and now. Recent evidence from ambulatory studies largely aligns with this tenet. For example, a daily-diary study with young, middle-aged, and older adults showed that older adults used more emotion regulation when they currently experienced more negative affect [15], which is in line with the notion that older adults' affect-regulation motivation is geared towards creating more positive affective experiences. An experience-sampling study by Livingstone and Isaacowitz [13] assessed affect-regulation

goals more directly and found that older adults were less likely to report contra-hedonic motivation of wanting to decrease positive or increase negative affect. This study did not, however, replicate previous findings of an age-related increase in pro-hedonic motivation [wanting to maintain or enhance positive, or to dampen negative experiences; 31, 32]. Furthermore, despite age differences in people's daily affect and affect-regulation motivations, there were no age differences in the general frequency of emotion regulation, nor any pronounced age difference in the specific strategies used. This points to a gap in understanding if and how older adults' self-reported higher affect-regulation motivation translates into age differences in actual attempts to regulate daily affective experiences.

4.2 Use and Effectiveness of Affect-Regulation Strategies

Older adults tend to report higher effectiveness in regulating their emotions, compared to younger adults. For example, older participants in an experience-sampling study by Burr et al. [9] were more likely to report that they successfully resisted temptations to yield to a desire. However, it is yet unclear how these subjective perceptions align with other, more objective, indicators of affect-regulation competence. For example, it has been hypothesized that older adults should be more likely to use emotion-regulation strategies that are cognitively frugal and better suited for the problem at hand, and that they are more flexible in tailoring their affect-regulation attempts to situational requirements. None of these hypotheses have received consistent support to this date, neither from laboratory nor from ambulatory research [for a review, see 33]. For example, experience-sampling studies found either no age differences in affect-regulation flexibility [34] or even lower affect-regulation flexibility among older adults [35]. In essence, there is no consistent ambulatory evidence suggesting that daily affect-regulation strategy use or effectiveness differs with age.

Conclusions

Older adults' daily affective experiences, on average, are more positive and more stable, compared to younger age groups. This pattern has been found across years of research, and continues to be replicated to this date. Recent advances in ambulatory research contribute a more fine-grained picture. They demonstrate that adult age differences in daily affective experiences are best understood when considering not only valence, but also arousal levels, and that discrete emotions like sadness may be differently prevalent and adaptive in different phases of the adult lifespan.

Another important recent contribution is the insight that the often-replicated pattern of cross-sectional adult age differences does not necessarily map onto within-person change over time. While longitudinal improvement in daily affect is characteristic across young and into early middle adulthood, stability and decline in affective well-being are typical for growing older in late middle and older adulthood. The currently available evidence, however, cannot disentangle cohort-related differences from age-related changes in daily affect. Doing so will require ambulatory research with cohort sequential designs in the future.

The role of affect regulation for age differences in daily affect is still unresolved. Evidence suggests that older adults are more motivated than younger age groups to feel better, and more confident that their affect-regulation efforts are successful. However, there is no consistent evidence to date that older adults' daily affect-regulation strategies, nor their effectiveness or flexibility, differ from younger age groups. This could be due to the complexity of everyday situations. Everyday life hosts a multitude of factors that influence how effectively people are able to act on their affect-regulation motivation. Future research should identify such boundary conditions. This promises to yield a better understanding of how affect regulation and other factors contribute to age-related differences in everyday affect.

To date, ambulatory evidence on age-related differences in everyday affective experiences and regulation typically stems from relatively homogeneous samples. Another open avenue for future research therefore is to investigate the extent to which these findings can be generalized across different groups of individuals, such as across cultures or ethnic groups.

5 References

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This study investigated everyday emotion regulation in the daily lives of younger, middle-aged, and older adults using experience sampling. Compared with younger age groups, older adults reported less motivation for contra-hedonic emotion regulation. In contrast, there was hardly any evidence of age differences in other aspects of everyday emotion regulation, like emotion-regulation frequency, effectiveness, or particular strategies used.

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This study combined a 1-week daily diary study in a sample of younger and older adults with a 10-year follow-up. Results suggest that age differences in daily affect also pertain to the dimension of valence (although the evidence for this notion is mixed across studies). It also provides evidence for links between the valence of daily affective experiences and long-term health implications.

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This study analyzed historical changes in daily affective experiences over the course of 20 years. It shows that people in the 2010s experienced more stressors and perceived them as more severe, compared to the 1990s. This suggests that historic contexts shape affective experiences, above and beyond possible effects of ontogenetic change.

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