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Graceful Aging: Addressing Cognitive and Emotional Challenges in Later Life

Khadija Kamene

ABSTRACT

Graceful aging encompasses more than the mere absence of disease; it reflects the ability to age with dignity, resilience, and well-being by maintaining physical health, cognitive function, emotional stability, and engaging in purposeful social interactions. This scoping review aims to synthesize the existing literature on cognitive and emotional aging, elucidating key factors that contribute to mental wellness in older adults and identifying effective interventions and cultural considerations. A systematic search was conducted across PubMed, PsycINFO, Google Scholar, and Scopus for peer-reviewed studies published between January 2000 and March 2025. The findings reveal that cognitive resilience sustains mental functioning despite age-related changes, and emotional well-being, characterized by positive affect, emotional regulation, and life satisfaction, is central to maintaining quality of life and autonomy in later years. Interventions such as cognitive training, social engagement, purposeful activity, and psychological therapies demonstrate efficacy in promoting mental health and delaying cognitive decline. Moreover, emotional well-being is closely intertwined with social connectedness and a sense of purpose, which buffer against stress and contribute to healthier aging trajectories. Cultural and demographic factors, including gender disparities, urbanization, and socioeconomic challenges in low- and middle-income countries, significantly influence aging experiences and the effectiveness of interventions. As the global population ages rapidly, addressing cognitive and emotional health through holistic, culturally sensitive approaches is imperative to reduce the societal burden of age-related cognitive decline and mental health disorders. This review underscores the importance of integrating biological, psychological, and social dimensions to foster successful and graceful aging.

Keywords: Cognitive resilience, Emotional well-being, Aging interventions, Social connectedness, Cultural considerations

Introduction

Graceful aging has garnered increasing scholarly attention as populations worldwide live longer. While earlier models, such as those of Rowe and Kahn, emphasized physical and cognitive performance and active life engagement, newer perspectives incorporate emotional and social dimensions. This review builds on these evolving frameworks to explore how cognitive and emotional factors intersect in later life and to identify interventions that can support well-being.¹ Phelan et al.² conducted a foundational study revealing a more nuanced, multidimensional understanding of successful aging. Their findings showed that older

adults prioritize not only physical and cognitive health but also emotional well-being, adaptability, independence, and a positive attitude.

Similarly, Montross et al. found that self-rated successful aging among community-dwelling older adults strongly correlated with psychological and social dimensions such as emotional regulation, life satisfaction, and social support. These findings highlight the pivotal role of subjective experience and mental well-being in shaping how aging is perceived and experienced. Taken together, these perspectives illustrate that graceful aging is not a one-size-fits-all phenomenon but rather a complex interplay of psychological, biological, and social factors. It is defined as much by external indicators of health and function as by internal experiences of growth, connection, and purpose.^{2,3} In line with evolving academic standards, this manuscript adheres to the TITAN 2025 reporting guideline for the use of artificial intelligence (AI) in scientific writing and research transparency.⁴

The Importance of Cognitive and Emotional Well-Being in Later Life

As individuals age, maintaining well-being becomes increasingly essential for fostering independence, enhancing quality of life, and achieving what is often termed “graceful” or “successful” aging. Cognitive well-being forms the foundation of independent living. Cognitive health refers to the ability to learn, think clearly, and make informed decisions, which are vital functions for performing daily activities and maintaining autonomy. While some cognitive decline is a natural part of aging, the concept of cognitive resilience emphasizes the ability to maintain mental faculties despite age-related changes. When cognitive function is maintained, older adults are better equipped to manage tasks, live independently, and adapt to new situations.⁵

Studies from the National Institute on Aging emphasize that mental stimulation through activities such as reading, problem-solving, and learning new skills can delay cognitive decline and reduce the risk of dementia. These activities support neuroplasticity, the brain’s ability to adapt and reorganize itself.⁵ Moreover, research shows a reciprocal relationship between cognitive performance and physical health, where improved cerebral blood flow, neurogenesis, and elevated mood all contribute to sustaining cognitive functioning.⁶

Emotional well-being is equally fundamental to psychological resilience and adaptation. It is characterized not merely by the absence of negative emotions such as depression and anxiety but by the presence of positive affect, effective emotional regulation, and

life satisfaction. Older adulthood presents emotional challenges such as health limitations, bereavement, and social role transitions, which can threaten psychological resilience. Yet many older adults demonstrate a remarkable ability to cope with adversity. Research indicates that older adults often possess more refined emotional regulation skills compared to younger individuals, likely due to the accumulated life experiences that come with age.⁷ These skills help buffer against stress, which is known to accelerate physical aging and increase the risk of chronic illness.

Additionally, emotional well-being is closely tied to social connectedness. Engagement with family, friends, or community groups provides emotional support, combats loneliness, and enhances a sense of belonging, which are factors protective against both emotional distress and cognitive decline.

A growing body of evidence also underscores the significance of purpose and meaning in promoting emotional well-being. Older adults who maintain a strong sense of purpose tend to experience better sleep, stronger immune function, and lower stress levels. This sense of purpose also motivates engagement in health-promoting behaviors and social interactions, further reinforcing both emotional and cognitive well-being.⁸

Cognitive and emotional well-being do not operate in isolation; rather, they exist in a dynamic and reciprocal relationship with one another. Positive emotional states enhance cognitive performance by supporting neural growth and reducing stress, while cognitive resilience bolsters emotional health by improving problem-solving, adaptability, and the capacity to regulate emotions in the face of challenges. Prioritizing cognitive and emotional well-being in later life is essential not only for individual flourishing but also for reducing the broader societal burden of age-related mental health conditions and cognitive decline.⁶⁻⁸

Methodology

This manuscript employed a scoping review methodology to synthesize existing literature on cognitive and emotional aging. The primary aim was to map the current state of knowledge, identify effective interventions, and examine cultural influences on mental wellness among older adults. The review was conducted in alignment with TITAN 2025 guidelines, which advocate for the responsible and transparent integration of AI in scientific research. AI tools were used under human supervision to support literature mapping, key clustering, and citation organization, while manual screening, thematic synthesis, and interpretation remained central to the review process.

A comprehensive search was conducted in PubMed, PsycINFO, Scopus, and Google Scholar for peer-reviewed literature published between January 2000 and March 2025. Keywords included “cognitive decline,” “emotional well-being,” “aging,” and “intervention.” Priority was given to systematic reviews, meta-analyses, longitudinal studies, and intervention trials involving adults aged 60 and above. Eligi-

ble studies were published in English and focused on cognitive, emotional, or psychological aspects of aging. Excluded were studies unrelated to aging, those involving pediatric or non-human subjects, and grey literature.

All articles were screened in two stages: title and abstract review, followed by full-text assessment, with duplicates removed beforehand. Although PRISMA-ScR diagrams and summary tables are common in scoping reviews, they were omitted here to maintain a flexible, narrative approach. Key details, such as study design, population, interventions, and findings, were synthesized thematically. Given the exploratory nature of this review, no formal risk-of-bias assessment was conducted. This is acknowledged as a limitation, with future reviews encouraged to include quality appraisal frameworks.

Demographic Trends of the Aging Population

The demographic shift toward an aging population represents one of the most profound global transformations of the 21st century. According to the World Health Organization and United Nations, the proportion of individuals aged 60 and above is projected to nearly double from 12% in 2015 to 22% by 2050.⁹ The number of older persons is expected to rise from 1.1 billion in 2023 to over 2.1 billion by mid-century, and further to 3.1 billion by 2100.¹⁰

This trend is most pronounced in low- and middle-income countries, which are experiencing accelerated aging without a corresponding development of healthcare and social support systems. This mismatch places immense pressure on the public health infrastructure. Notably, in 2020, older adults outnumbered children under five for the first time in recorded history, signaling a major shift in population structure and an increasing old-age dependency ratio.¹⁰

Urbanization compounds this challenge, as an increasing number of elderly individuals relocate to or remain in cities, necessitating that urban environments become age-friendly. Many older adults live with multiple chronic conditions, such as dementia, cardiovascular diseases, diabetes, and arthritis, often without a parallel increase in healthy life expectancy.¹¹

The aging trend also reveals significant gender disparities. Women generally live longer, consequently facing higher risks of poverty, widowhood, and social isolation in later life. Migration patterns, wherein younger generations move to urban centers or abroad, often leave aging populations behind in underserved areas, weakening traditional family support structures.^{10,11}

Literature Review

Biological Theories of Aging

Biological theories of aging aim to explain the physiological and molecular mechanisms underlying the aging process by examining changes that occur at the cellular, tissue, and systemic levels. These theories are generally grouped into three main categories: programmed theories, damage or error theories, and evolutionary theories.¹²

Programmed theories propose that aging is a genetically regulated process governed by an internal biological clock. In this perspective, certain genes are activated in a time-dependent manner to initiate cellular senescence and functional decline. A prominent model within this framework is the telomere theory, which posits that the progressive shortening of telomeres, which are protective DNA-protein structures at the ends of chromosomes during cell division, eventually limits the replicative capacity of cells and triggers senescence.¹³

A landmark contribution to this field came from Leonard Hayflick, who, in 1965, identified the “Hayflick limit,” demonstrating that normal human somatic cells divide only a finite number of times before becoming senescent.¹⁴ This discovery challenged the then-prevailing belief in the limitless replication potential of cells and established aging as a biologically determined process. Senescent cells, while no longer capable of division, remain metabolically active and secrete pro-inflammatory factors through the senescence-associated secretory phenotype (SASP). SASP has been implicated in various age-related pathologies, including Alzheimer’s disease (AD), atherosclerosis, and cancer, due to its role in chronic inflammation and tissue dysfunction.¹⁵

In contrast, damage or error theories suggest that aging results from the cumulative impact of environmental stressors and metabolic byproducts. The free radical theory asserts that reactive oxygen species, byproducts of normal cellular metabolism, cause oxidative damage to DNA, proteins, and lipids, thereby accelerating cellular aging. Similarly, the wear-and-tear theory likens the human body to a machine that deteriorates over time due to continuous use, with accumulated micro-damage eventually overwhelming the body’s repair mechanisms.¹⁶

Evolutionary theories offer an adaptive perspective on aging. The Disposable Soma Theory suggests that organisms prioritize energy investment in reproduction over long-term somatic maintenance. From this standpoint, aging emerges as a byproduct of evolutionary trade-offs between reproductive success and bodily upkeep.

Integrating these views, Zhang and Zhang classify biological theories of aging into three principal models: genetic programming theories, damage-based theories, and integrative frameworks. They emphasize that aging is best understood as a multifactorial process involving both intrinsic genetic programming and extrinsic environmental influences. Notably, molecular pathways such as IGF-1, mTOR, and FOXO are highlighted for mediating the interface between programmed aging and damage response. This integrative understanding not only refines theoretical models of aging but also opens promising avenues for biomedical interventions, such as caloric restriction mimetics and Senolytic therapies aimed at promoting healthy longevity and mitigating age-related diseases.¹²

Psychological Theories of Aging

Psychological theories of aging provide critical insights into the cognitive, emotional, and developmental

processes that shape individuals’ experiences in later life. Erik Erikson’s psychosocial theory culminates in the stage of Integrity vs. Despair, where older adults reflect on their lives to achieve ego integrity, a sense of fulfillment, coherence, and acceptance of mortality. Failure to resolve this stage may lead to despair, characterized by feelings of regret, dissatisfaction, and a fear of death.¹⁷

Building on the theme of adaptation, Baltes and Baltes’ Selective Optimization with Compensation (SOC) model conceptualizes successful aging as a dynamic process that involves three key strategies: selecting meaningful goals, optimizing available resources, and compensating for age-related losses through adaptive methods. This model emphasizes resilience, autonomy, and psychological flexibility.¹⁸

The Activity Theory, proposed by Havighurst, suggests that continued engagement in social roles and activities promotes life satisfaction and emotional well-being in older adults. However, it has been critiqued for not sufficiently accounting for those who disengage voluntarily or due to health-related limitations. In contrast, Atchley’s Continuity Theory posits that older adults seek to maintain consistent patterns of behavior, identity, and relationships over time. By drawing on past experiences and internal structures, they navigate age-related transitions while preserving a coherent sense of self.¹⁹

Disengagement Theory, introduced by Cumming and Henry, presents aging as a natural and gradual withdrawal from societal roles, enabling reflection and preparation for the end of life. Although foundational, this theory has been widely criticized for its deterministic stance and its failure to account for the agency and vitality many older adults maintain. Subsequent research has underscored the importance of sustained social engagement for promoting emotional and psychological well-being.²⁰

Collectively, these psychological frameworks underscore that aging is not merely a process of cognitive or emotional decline but a complex journey shaped by meaning-making, resilience, and the ongoing negotiation between personal history and changing capacities.

Social Theories of Aging

Social theories of aging emphasize the significant influence of societal structures, cultural norms, and interpersonal relationships on shaping the aging experience. These frameworks underscore that aging is not solely a biological or psychological phenomenon, but also a deeply social process.

Modernization Theory posits that the declining social status of older adults in industrialized societies stems from the erosion of traditional roles and the increasing emphasis on youth, productivity, and technological adaptation. While this theory elucidates structural marginalization, it has been criticized for overlooking contemporary shifts that recognize the contributions of older adults, such as caregiving, volunteering, and intergenerational mentorship.²¹

Social Exchange Theory explores how aging-related declines in health, income, and energy can affect the reciprocity of social relationships. As older adults may have fewer tangible resources to offer, their social interactions can be perceived as less valuable. However, this theory has been critiqued for underestimating the emotional and non-material contributions, such as wisdom, emotional support, and mentorship, that older adults continue to provide.²²

Disengagement Theory, revisited here from a sociological perspective, frames aging as a mutually beneficial withdrawal from social roles. Yet, this perspective has been widely challenged for promoting passivity and overlooking the diversity of aging experiences.²³ Many older adults remain actively engaged in family, community, and civic life, challenging the assumption that they are socially withdrawn.

In contrast, more recent perspectives emphasize the importance of active aging and social integration as essential components of overall well-being. As discussed in *The Handbook of the Psychology of Aging*,²⁴ aging is shaped by the complex interplay of biological change, psychological adaptability, and social context. The volume addresses key areas, including cognitive decline, personality development, and the importance of sustained social relationships in promoting successful aging.

Similarly, Blazer,²⁵ in *Aging and Mental Health: Positive Psychosocial and Biomedical Approaches*, explores how psychological models, including Erikson's theory and the SOC model, help explain how older adults adapt to age-related challenges. He advocates for an integrative approach to aging that emphasizes purpose, psychosocial resilience, and adaptability.

Together, these social theories, when considered alongside biological and psychological perspectives, offer a comprehensive and nuanced understanding of aging as a dynamic process influenced by both individual agency and societal context.

Normal vs. Pathological Aging: Cognitive and Emotional Distinctions

Distinguishing between normal and pathological aging is essential for accurately identifying and responding to age-related cognitive and emotional changes. Normal aging involves gradual, non-disruptive transformations in mental functioning that are considered a natural part of the lifespan. These changes typically include mild declines in processing speed, occasional memory lapses, such as misplacing items or forgetting names, and diminished multitasking efficiency, none of which significantly interfere with daily life.²⁶ Emotionally, older adults often demonstrate improved emotional regulation, a phenomenon supported by Socioemotional Selectivity Theory, which posits that as individuals age, they increasingly prioritize emotionally meaningful goals and relationships. This shift often leads to increased life satisfaction and psychological well-being.²⁷

In contrast, pathological aging refers to clinically significant cognitive and emotional impairments

that stem from underlying neurodegenerative or vascular conditions, such as AD, Parkinson's disease, or vascular dementia. Affected individuals may experience profound memory loss, confusion, impaired decision-making, language difficulties, and mood disturbances such as depression and anxiety. These symptoms often reflect underlying neuropathological changes, including the accumulation of amyloid plaques and neurofibrillary tangles, which disrupt neural communication and cognitive function.²⁸

While normal aging entails manageable and adaptive shifts, pathological aging represents a deviation from the expected trajectory, requiring comprehensive medical evaluation and intervention. Recent literature from sources such as *PubMed Central* and the *UCSF Memory and Aging Center* emphasizes the importance of distinguishing between typical aging and disease-related changes.²⁹ These resources also highlight early detection and intervention strategies to support quality of life and delay cognitive deterioration. Recognizing the nuanced boundary between normative and pathological aging is critical for developing effective, person-centered care strategies.

Cultural Perspectives on Aging

Cultural values play a pivotal role in shaping how aging is perceived and experienced globally. In collectivist cultures, prevalent in many Asian, African, and Latin American societies, aging is often associated with wisdom, respect, and social interdependence. Older adults are valued as bearers of tradition, family advisors, and caregivers, which enhances their social status and emotional well-being. In contrast, individualistic societies such as those in North America and Western Europe often emphasize autonomy and productivity, which can marginalize older adults and foster ageist attitudes, especially when aging is equated with social or economic decline.³⁰

These cultural orientations also influence intergenerational dynamics and caregiving norms. Collectivist cultures frequently encourage co-residence and intergenerational caregiving, whereas Western societies tend to rely more on institutionalized elder care that promotes individual independence. Cultural frameworks further shape health beliefs, including perceptions of what constitutes normal versus pathological aging, trust in healthcare systems, and the use of traditional remedies versus clinical interventions.

Gender dynamics intersect with cultural norms in meaningful ways. In many societies, older women may face compounded marginalization due to age-related stigma and beauty standards, whereas older men may gain social authority. Moreover, Western ideals of "successful aging" often emphasize physical fitness and cognitive sharpness, inadvertently excluding individuals with chronic illnesses or disabilities. In contrast, other cultures may define success in aging in terms of spiritual fulfillment, familial closeness, or emotional peace.³¹

Empirical research supports these distinctions. Löckenhoff et al.,³⁰ in a study of over 3,400 participants

across 26 countries, found that although physical and cognitive decline were universally acknowledged aspects of aging, collectivist cultures viewed aging more positively, particularly in terms of emotional regulation and perceived wisdom. Bengtson et al.³² demonstrated that societal-level modernization correlated with more negative attitudes toward aging, whereas individual exposure to modernity did not necessarily diminish respect for elders. These findings suggest that cultural systems, rather than personal experience alone, play a decisive role in shaping attitudes toward aging.

Further evidence comes from qualitative studies, such as Lagacé et al.,³¹ who explored the perceptions of aging among Somali Canadian elders. While both men and women expressed positive views, male participants reported greater difficulty adapting to Western cultural expectations, highlighting the emotional toll of migration and cultural dissonance. Collectively, these findings underscore the importance of developing culturally sensitive frameworks for aging research, healthcare delivery, and psychosocial support.

Cognitive Changes in Normal Aging

Normal aging is accompanied by gradual cognitive shifts that, although noticeable, typically do not significantly interfere with daily life. Among the most consistent findings is a decline in processing speed, which can slow reaction times and affect complex tasks such as decision-making and reading comprehension. Memory changes are often domain-specific: while episodic memory (recalling recent events) and working memory (holding and manipulating short-term information) may decline, semantic memory, which includes general knowledge and vocabulary, often remains stable or even improves.³³

Attention also shows mixed age-related effects. Older adults may experience difficulties with selective attention (focusing on specific stimuli) and divided attention (juggling multiple tasks), while sustained attention tends to remain relatively intact. Similarly, executive functions, including planning, inhibition, and task switching, can become more effortful, partly due to structural changes in the prefrontal cortex, a brain region responsible for higher-order cognitive control.

Despite these declines, many language functions, such as grammar and vocabulary, remain well-preserved; however, older adults may occasionally experience difficulties with word retrieval. Visuospatial abilities, including navigation and depth perception, often decline, but compensatory mechanisms, such as recruiting additional brain regions during tasks, can help maintain functional performance.³⁴

These cognitive patterns are supported by neuroimaging studies that reveal reduced gray matter volume, loss of synaptic density, and compensatory changes in neural activation. Encouragingly, lifestyle factors such as regular physical activity, cognitive engagement, and social interaction have been shown to mitigate cognitive decline. For instance, even brief bouts of moderate-to-vigorous physical activity can enhance processing speed and executive function, likely due to

increased cerebral blood flow, improved neuroplasticity, and reduced neuroinflammation.³⁵

Taken together, these findings highlight the heterogeneous and modifiable nature of cognitive aging. Distinguishing between normal and pathological cognitive changes is crucial for timely intervention, personalized support, and promoting cognitive resilience in later life.

Neurodegenerative Diseases

Neurodegenerative diseases, particularly AD and related dementias, represent a marked departure from normal aging, characterized by progressive cognitive decline and behavioral impairments. Unlike the subtle changes observed in healthy aging, these conditions involve widespread neuronal degeneration, resulting in deficits in memory, executive function, language, and visuospatial abilities.³⁶ AD, the most common form of dementia, is characterized by the accumulation of amyloid- β plaques and tau tangles, which disrupt neuronal communication, causing synaptic dysfunction and brain atrophy, particularly in the hippocampus.³⁷ Other dementias, such as vascular, Lewy body, and frontotemporal dementia, present distinct pathologies but similarly lead to cognitive and behavioral deterioration.

Age remains the strongest risk factor for neurodegenerative diseases, with genetic factors like the APOE $\epsilon 4$ allele further increasing vulnerability. Additionally, cardiovascular disease, diabetes, physical inactivity, and low cognitive reserve significantly contribute to disease onset and progression.³⁸ Advances in neuroimaging and cerebrospinal fluid biomarkers have enhanced early detection, while emerging therapies targeting amyloid- β show promise but require further validation.

Research on neuroplasticity has challenged the assumption that cognitive decline in aging is inevitable. Intellectual engagement, such as lifelong learning and cognitive training, has been shown to improve brain efficiency, preserve structural integrity, and promote neural adaptation, particularly in brain regions vulnerable to aging, including the hippocampus and prefrontal cortex. The Scaffolding Theory of Aging and Cognition proposes that as cognitive function declines, the brain recruits additional neural circuits to compensate, a process strengthened through lifelong learning.³³ Intervention studies support the idea that cognitive engagement slows decline, underscoring its value as a modifiable and cost-effective strategy to promote healthy aging. Table 1 provides an overview of evidence-based cognitive training interventions, summarizing their target domains, effect sizes, and methodological quality.

Prevalence of Depression, Anxiety, and Loneliness in Older Adults

Mental health issues such as anxiety, depression, and loneliness are prevalent among older adults, profoundly impacting quality of life, autonomy, and healthcare utilization. These conditions are shaped

Table 1 | Effectiveness of cognitive training programs in older adults: evidence summary

Intervention	Target Domain	Effect Size (Cohen's <i>d</i>)	Study Quality	Key Findings
Computerized Cognitive Training	Working memory, attention	0.20–0.35	Moderate to High (RCTs)	Enhances executive functioning and speed of processing; effects are domain-specific.
Strategy-Based Memory Training	Episodic memory	0.30–0.45	High (Meta-analyses)	Improves recall through the use of mnemonics, imagery, and elaborative encoding.
Speed of Processing Training	Processing speed	0.50+	High (ACTIVE trial)	Sustained cognitive benefits up to 10 years; associated with lower dementia risk.
Multi-domain Cognitive Training	Memory, attention, and reasoning	0.40–0.60	Variable (RCTs, longitudinal)	Broad improvements; stronger effects in cognitively intact or mildly impaired individuals.
Video Game-Based Training	Executive function	0.25–0.40	Moderate	Mixed evidence; gamification may enhance adherence and motivation.
Lifelong Learning/Adult Education	General cognition	Not always	Moderate	Associated with delayed cognitive decline and higher cognitive reserve.

by psychosocial factors and gendered experiences and are often exacerbated in institutional care settings. Loneliness, in particular, is a critical risk factor for mental health deterioration in later life. Cacioppo et al.³⁹ highlighted loneliness's deep impact on emotional regulation and perceived social support, establishing its central role in late-life psychopathology. Gender differences also emerge, with women more prone to comorbid depression and anxiety, while men more commonly exhibit anxiety alone.

Elias,⁴⁰ in a systematic review of 18 studies from nursing homes, assisted living, and long-term care facilities, reported that loneliness affected up to 95.5% of older adults in some regions. Anxiety and depression prevalence ranged widely from 3.6% to 38% and 11% to 85.5%, respectively, reflecting environmental deprivation, loss of autonomy, and diminished social interaction. These findings underscore the urgent need for psychosocially enriched care environments. Supporting this, Curran et al.⁴¹ analyzed data from the Irish Longitudinal Study on Ageing. They identified four mood symptom classes: 'low,' 'anxiety-only,' 'anxiety with subthreshold depression,' and 'comorbid anxiety and depression.' Anxiety was common across sexes, but women were significantly more likely to experience comorbid conditions (12% vs. 8%). Lower education, poor self-rated health, and low social participation predicted higher symptom severity.

Role of Life Transitions: Retirement, Bereavement, and Caregiving

Later life is characterized by significant transitions, such as retirement, bereavement, and caregiving, that profoundly influence psychological well-being and identity. While often normative, these transitions can trigger distress, especially when abrupt, involuntary, or cumulative.

Retirement, commonly viewed as a time for rest, can instead lead to a loss of identity and purpose, particularly when work has served as a central social role. Wang et al.⁴² found that involuntary retirement and limited financial or social resources correlated with depressive symptoms and decreased cognitive engagement. Bereavement, especially spousal loss, is linked to increased risks of depression, anxiety, loneliness, and cognitive decline, often compounded by concurrent health challenges.

Caregiving represents another major life transition. Though meaningful, it imposes chronic emotional and physical burdens that elevate depression risk. Waldrop et al. emphasized the unique challenges of end-of-life caregiving, including acute care demands, complex decision-making, and existential strain. While some caregivers find meaning through faith and social support, many experience intense stress and isolation, highlighting the need for comprehensive psychosocial care.

The transition from caregiving to bereavement is especially complex for women, who often face dual losses: the death of a loved one and the erosion of their caregiving identity. Orzeck⁴³ found that this shift leaves many feeling disoriented and purposeless, revealing gaps in bereavement support concerning identity reconstruction. Alves et al.⁴⁴ observed that bereaved caregivers of the oldest-old suffered significant mental health declines 6 months post-loss, contrasting with ongoing caregivers, whose well-being improved over time.

In a systematic review, Vrkljan et al.⁴⁵ evaluated psychosocial interventions for transitions such as bereavement, retirement, and relocation. Group-based programs were particularly effective in enhancing coping, emotional expression, and social connectedness. However, small sample sizes, inconsistent outcome measures, and a lack of diverse populations limited generalizability.

Collectively, these studies indicate that life transitions in later adulthood pose substantial mental health risks, especially when multiple roles are disrupted simultaneously. Yet, resilience can be fostered through structured psychosocial support, identity-sensitive interventions, and opportunities for meaning-making and social integration.

Positive Emotional Development: Wisdom, Emotional Regulation, and Resilience

Positive emotional development is a vital aspect of psychological well-being in older adults. Constructs such as wisdom, emotional regulation, and resilience contribute to emotional stability, cognitive vitality, and adaptive functioning during later life. Contrary to stereotypes of inevitable decline, empirical evidence suggests that emotional growth and psychological flourishing are possible well into old age.

Older adults often exhibit enhanced emotional regulation, characterized by improved management of negative emotions and a greater emphasis on positive experiences. This shift is attributed to accumulated life experience, refined priorities, and an enhanced ability to take others' perspectives, enabling better coping with adversity and everyday stressors. Wisdom, defined as the ability to navigate life's complexities with compassion, reflection, and balance, increases with age and correlates positively with life satisfaction, sound decision-making, and meaningful social relationships. Similarly, resilience, the capacity to recover from adversity, often strengthens with age due to the accumulation of coping skills and experience.

Research highlights the interrelatedness of these traits and their importance for healthy aging. Naseri and Azizisaeid⁴⁶ demonstrated, using structural equation modeling, that emotional stability and openness facilitate adaptive emotion regulation strategies such as reappraisal and acceptance, which in turn promote wisdom development. This suggests that targeted emotion regulation interventions may foster wisdom in older adults.

Supporting the modifiability of these traits, Golestanibakht et al.⁴⁷ showed that positive psychology training enhanced wisdom, resilience, and cognitive flexibility in university students, insights that can inform interventions across the lifespan. Even brief training can improve reflective thinking, emotional regulation, and problem-solving skills, which are vital for successful aging.

Building on this, Jeste et al.⁴⁸ proposed a comprehensive biopsychosocial framework positioning wisdom and resilience at the core of healthy aging. Their review integrates psychological strengths with social connectedness and neurobiological health. They identify modifiable psychosocial interventions, such as mindfulness, community engagement, cognitive-behavioral strategies, and intergenerational programs, as effective pathways to enhance these traits. Empirical evidence, including studies of centenarians, highlights the protective role of wisdom and resilience in mitigating loneliness, fostering emotional well-being, and enhancing life satisfaction.

Psychological Interventions: Cognitive Behavioral Therapy (CBT), Reminiscence Therapy (RT), and Mindfulness

As individuals age, psychological interventions such as CBT, RT, and Mindfulness-Based Interventions

(MBIs) have proven effective in promoting emotional well-being, resilience, and cognitive vitality. CBT, in particular, is highly beneficial for treating depression and anxiety among older adults, especially for those who are unable or unwilling to use medication. Group-based CBT not only reduces symptoms but also encourages social interaction, thereby addressing loneliness, a common challenge in later life. RT, which involves structured reflection on meaningful past experiences, has been shown to enhance self-esteem, life satisfaction, and cognitive functioning.⁴⁹ Innovative programs such as the "Recall Initiative" and AIM WARM integrate RT with physical activity, demonstrating the value of holistic approaches that support both memory and mood regulation. Similarly, MBIs like Mindfulness-Based Cognitive Therapy (MBCT) and Mindfulness-Based Stress Reduction (MBSR) have demonstrated moderate but meaningful reductions in depression and anxiety, especially when adapted to meet the cognitive and physical capacities of older adults. The integration of these interventions into accessible community settings, such as senior centers and places of worship, further amplifies their benefits by reducing stigma and logistical barriers while fostering social connectedness. Collectively, these evidence-based approaches provide a comprehensive framework for enhancing psychological resilience, emotional regulation, and overall mental health in later life, advancing not only symptom relief but also thriving in older adulthood.^{50,51} Table 2 presents a comparative overview of evidence-based psychological interventions for older adults, including their delivery modalities, target outcomes, and observed effectiveness.

Social and Environmental Influences

Social support, community engagement, and intergenerational relationships play a crucial role in promoting mental health and emotional well-being among older adults. These social factors serve as protective buffers against depression, loneliness, and cognitive decline. Robust support systems encompassing emotional, informational, and practical assistance from family, friends, and community networks are strongly linked to greater life satisfaction and resilience. Reciprocal relationships, in which older adults both give and receive support, foster a vital sense of purpose and belonging that is essential for psychological well-being. Active community participation through volunteering,

Table 2 | Psychological interventions for older adults: therapeutic focus and effectiveness

Intervention	Core Focus	Delivery Mode	Effectiveness	Study Quality
CBT	Challenging negative thoughts; behavioral activation	Individual or group, in-person or virtual	Large reduction in depression and anxiety ($d = 0.70-0.90$)	High (RCTs, meta-analyses)
RT	Life review, identity integration, mood enhancement	Individual, group, or intergenerational	Moderate improvement in life satisfaction, self-esteem, and mood ($d = 0.40-0.65$)	Moderate to High
MBSR	Present-moment awareness, stress reduction	Group-based, 8-week program	Moderate reductions in anxiety and depressive symptoms ($d = 0.30-0.50$)	High
MBCT	Combines CBT with mindfulness to prevent relapse	Group, often adapted for older adults	Effective for relapse prevention and improving emotional regulation	Moderate to High
Integrated Programs (e.g., AIM WARM)	Combines RT, physical activity, and cognitive stimulation	Community-based programs	Promising outcomes on mood and memory; culturally adaptable	Emerging Evidence

hobbies, or local organizations not only combats isolation but also enhances cognitive functioning, self-esteem, and autonomy, empowering older adults to shape their social environments and contribute to their communities. Intergenerational relationships further enrich this ecosystem; programs that unite older and younger generations, such as mentorship initiatives and collaborative projects, cultivate mutual understanding, reduce ageist stereotypes, and promote emotional vitality. While older adults gain renewed purpose, younger individuals acquire perspective and emotional grounding. Policies that promote inclusive community design, support caregivers, and encourage intergenerational exchange build a holistic framework for healthy aging. Such approaches are crucial for combating ageism and ensuring that older adults feel connected, respected, and valued throughout all stages of their lives.

Ageism and Its Impact on Mental Health

Ageism, defined as stereotyping, prejudice, and discrimination based on age, poses a significant threat to the mental health and well-being of older adults. This societal bias affects both external perceptions and individuals' self-concepts, influencing their interactions with healthcare, community, and family. Extensive research documents the psychological toll of ageism, linking it to elevated depression, anxiety, social isolation, and even suicidal ideation. Internalized negative stereotypes reduce self-esteem, increase chronic stress, and discourage engagement in health-promoting behaviors. For example, Lyons et al.⁵² found that experiences of ageism among older Australians were strongly associated with poorer mental health outcomes, with certain subgroups, such as younger-old adults, men, and heterosexual individuals, experiencing more pronounced effects. Similarly, Levy et al.⁵³ highlighted the detrimental effects of internalized

ageism, which exacerbates feelings of inadequacy and isolation, heightening vulnerability to psychological distress. Ageist attitudes within healthcare settings further compound these issues, often resulting in underdiagnosis or dismissive care and reducing older adults' willingness to seek help. Morrow-Howell et al.⁵⁴ showed that perceived ageism from healthcare providers correlates with lower self-care engagement and increased mental health risks. While some older adults employ adaptive coping strategies, such as reframing their experiences to mitigate ageism's impact, societal normalization of ageist attitudes continues to create significant barriers. Addressing ageism requires a multifaceted approach that includes public education to dismantle stereotypes, policy reforms to eliminate discrimination, inclusive healthcare training, and promotion of positive narratives around aging. By addressing both external and internalized ageism, societies can create environments where older adults feel respected, supported, and empowered, ultimately enhancing mental health outcomes and quality of life.

Living Arrangements: Aging in Place Versus Institutional Care

Aging in place, defined as remaining in one's home or community, and institutional care represent two central paradigms shaping later-life living arrangements. Aging in place has gained prominence due to its association with autonomy, emotional well-being, and continuity of identity. However, it is neither universally accessible nor inherently preferable. Its feasibility often depends on material resources, social networks, and supportive policy infrastructure. Structural barriers such as inadequate housing design, limited income, and fragmented care coordination can make aging in place challenging, particularly for marginalized groups. Hybrid models, such as co-housing and supported independent living, offer promising alternatives that blend autonomy with accessible care. Notably, the term "aging in place" varies in meaning—from simply avoiding institutionalization to receiving progressive care within a stable environment—highlighting definitional ambiguities. Cultural contexts further shape eldercare preferences and outcomes; for example, studies from Korea and Japan⁵⁵ show how familial expectations and national policies influence care choices. European comparative analyses⁵⁶ underscore that the viability and quality of aging in place are mediated by national care regimes and the balance of formal and informal support. Longitudinal research suggests that personal preferences can protect against institutionalization; however, without adequate public investment, these preferences remain aspirational. Gender and socioeconomic disparities, especially among widowed, low-income women, emphasize the need for equity-focused policies addressing cumulative disadvantage. As the literature increasingly frames aging in place not merely as physical residence but as thriving within one's environment, scholars and policymakers are urged to develop integrated, culturally sensitive, and socially inclusive frameworks to support healthy aging (Figure 1).



Fig 1 | An integrative framework illustrating the interplay between biological aging, psychological and social factors, digital tools, and public policies in promoting healthy aging

Interventions and Public Health Implications

Preventive Care and Early Detection

Preventive care and early detection are essential for enabling older adults to age in place by addressing health issues before they escalate. This proactive approach reduces the need for hospitalization and long-term institutional care, both of which are linked to physical decline and loss of autonomy. Routine screenings for chronic conditions like hypertension, diabetes, and osteoporosis, alongside assessments for age-related cognitive decline and sensory impairments, facilitate timely interventions. When combined with community health outreach, these screenings become more accessible, particularly for seniors who face mobility or transportation challenges.⁵⁷ Additionally, fall risk assessments, gait evaluations, balance training, and physical therapy help prevent falls, the leading cause of hospitalization and institutionalization among older adults. Early identification of cognitive impairments, such as mild cognitive impairment or early dementia, supports timely care planning and decision-making about legal, financial, and housing issues, all while preserving individual autonomy. Preventive measures, including vaccinations against influenza, pneumonia, and shingles, further reduce avoidable hospitalizations, helping seniors stay in their communities. During public health emergencies, home-based vaccination programs have proven particularly effective.⁵⁸ Moreover, mental health screening, often neglected in geriatric care, is vital for identifying depression, anxiety, and social isolation, key factors in successful aging, especially for those living alone or with limited family support. Integrated preventive care models, such as the U.S. Program of All-Inclusive Care for the Elderly (PACE), offer comprehensive home- and community-based services, reducing fragmented care and improving outcomes for frail older adults. From a public health perspective, shifting from reactive to preventive care can ease pressure on long-term care facilities, emergency departments, and informal caregivers. To support this, governments and health systems must invest in community screening programs, train health-care workers in geriatric prevention, and launch public awareness campaigns that encourage proactive health management among older populations. This strategy enhances quality of life while respecting autonomy and dignity, making preventive care both cost-effective and indispensable for aging in place.

Community-Based Programs

Community programs are essential to aging-in-place strategies because they promote social integration, enhance access to services, and foster local engagement. These initiatives reduce dependence on institutional care by supporting the physical, emotional, and cognitive well-being of older adults through localized, person-centered approaches. Senior centers and adult day services serve as hubs, providing structured activities, meals, exercise, and social interaction, which have been proven to improve mood, cognition, and physical health, while offering respite for informal

caregivers.⁵⁹ Volunteer and intergenerational programs engage seniors as active community members, fostering a sense of purpose, combating loneliness, reducing ageism, and enhancing mental well-being, especially for those living alone or who are widowed. Services such as home-delivered meals, mobile pharmacies, and subsidized transportation help seniors meet essential needs without leaving home, ensuring continuity in managing chronic diseases and lowering avoidable hospitalizations. Community health workers and navigators, who are trained local aides conducting home visits and coordinating care, bridge the gaps between clinical services and home environments, particularly in underserved or rural areas. Neighborhood watch groups and age-friendly initiatives enhance safety and inclusion by providing monitoring, accessible infrastructure, and community response networks. Faith-based and cultural organizations also play a vital role by offering companionship, spiritual care, and informal support, especially where formal services are limited or culturally mismatched. Together, these community programs create supportive environments that empower older adults to maintain independence. Their success depends on strong cross-sector collaboration between public health agencies, nonprofits, local governments, and private stakeholders. Sustainable funding, community involvement, and culturally tailored delivery are crucial to maintaining the relevance and effectiveness of these programs. To ensure longevity and scalability, programs must adapt to demographic changes and regional needs. Policymakers should incorporate these services into national aging strategies and allocate health and social service budgets to reflect their long-term benefits in reducing reliance on institutional care.⁶¹

Role of Policy: Age-Friendly Environments and Access to Mental Health Services

Public policy plays a pivotal role in creating environments that support aging in place by promoting inclusive planning, legislation, and funding. Policymakers can reduce health disparities, delay premature institutionalization, and uphold the dignity of older adults through targeted actions. The World Health Organization's Global Age-Friendly Cities Framework calls for adapting housing and services to meet the needs of older adults. Key priorities include affordable, adaptable housing designs featuring single-floor layouts, grab bars, and wide doorways, as well as senior-friendly public transportation that maintains mobility and social engagement. Urban planning policies that prioritize walkability, green spaces, and well-lit streets encourage physical activity and reduce the risk of falls.⁶² Civic policies that support senior councils and cultural inclusion foster social participation and lessen isolation. Research demonstrates that age-friendly features improve quality of life, lessen caregiver burdens, and enhance self-reported health. Mental health, often overlooked in aging policies, requires urgent attention. Older adults face high rates of depression, anxiety, grief, and cognitive decline, yet stigma, inadequate

Table 3 | Digital tools supporting aging in place: technology readiness, cost, and accessibility

Tool/Technology	Primary Function	Technology Readiness Level (TRL)	Estimated Cost	Accessibility Notes
Fall Detection Sensors (e.g., wearables)	Emergency response, safety monitoring	TRL 9 (Market-ready)	\$\$ (Moderate, one-time + subscription)	Widely available; requires digital literacy and device charging
Automated Pill Dispensers	Medication adherence	TRL 8–9	\$\$\$ (Moderate to High)	Easy to use; auditory/visual reminders; needs minimal setup
Smart Home Assistants (e.g., Alexa, Google Nest)	Voice-activated environment control	TRL 9	\$\$ (Affordable)	High usability for mobility-impaired users; privacy concerns in some regions
Telehealth Platforms	Remote medical consultations	TRL 9	\$\$–\$\$\$ (Depends on access)	Accessible in urban areas challenges in rural zones, and for low digital literacy users
Digital Mental Health Apps (e.g., Woebot, Headspace)	Mood tracking, self-guided CBT, mindfulness	TRL 7–9	\$ (Often free or low-cost)	Requires smartphones; older adults benefit from training and caregiver guidance
Remote Monitoring Systems (e.g., IoT wearables, vitals tracking)	Chronic condition management	TRL 7–8	\$\$\$ (Device + data plans)	Most useful for chronic illness; accessibility improves with caregiver and provider support

screening, and limited resources persist. Policy efforts must expand the geriatric mental health workforce, integrate mental health into primary care and community initiatives, and ensure equitable access to teletherapy and mobile mental health tools. Insurance coverage should include mental health parity. Coordinated care that addresses both physical and mental health improves outcomes for aging in place, reducing the need for emergency interventions and institutional transfers. With an increasing global emphasis on aging in place as a rights-based and economically sound strategy, initiatives such as the UN Decade of Healthy Ageing⁶³ and national plans in countries like Canada, Japan, and the Scandinavian nations underscore the need for interdisciplinary, evidence-based, and culturally responsive policies. These efforts promote well-being and ensure that aging in place is safeguarded for future generations.

Technological Aids and Digital Literacy for Seniors

Technology offers transformative potential to support the independence, safety, and well-being of older adults in their homes. However, success depends on access and effective use, making digital literacy a public health priority. Assistive and smart home technologies, including fall detection systems, medication management devices, home automation, and remote monitoring, enhance daily functioning and safety. For instance, fall detection devices alert caregivers or emergency services immediately, reducing response times. Automated pill dispensers address common challenges to medication adherence among seniors with chronic conditions. Smart home features such as voice-controlled lighting and thermostats reduce physical strain and adapt environments to individual needs. Telehealth devices enable the ongoing monitoring of vital signs, such as blood pressure and glucose, facilitating early detection of issues and minimizing the need for hospital visits. Research indicates that seniors who utilize such technologies experience improved health outcomes, reduced hospitalizations, and increased safety and autonomy.⁶⁴ Table 3 summarizes key digital tools supporting aging in place, highlighting their technology readiness, estimated costs, and accessibility considerations.

Telehealth and virtual care also bridge healthcare gaps for seniors with mobility limitations or in rural areas, offering video consultations, remote therapy, and digital mental health services. The COVID-19 pandemic accelerated the need to improve technological competency among older adults. Yet digital literacy remains a major barrier. Programs that provide basic ICT training, personalized digital coaching, simplified user interfaces, and culturally relevant education empower seniors to confidently use technology, reducing fear and building skills. Community centers, libraries, and NGOs play a crucial role in closing the digital divide.⁶⁵ To maximize impact, governments should subsidize technology for low-income seniors, incentivize age-friendly tech development, integrate digital literacy into lifelong learning policies, and ensure broadband access in underserved regions. International frameworks, such as the WHO Digital Health Strategy,⁶² emphasize the development of equitable, inclusive, and ethical digital health tools for aging populations. While technology cannot replace human care, thoughtfully implemented, it becomes a powerful tool to promote independence, safety, and quality of life. Strengthening digital engagement among older adults is no longer optional but essential for public health preparedness in aging societies.

Conclusion

As global populations age, addressing cognitive and emotional challenges in later life is both a clinical and public health imperative. This review highlights the complexity of aging, revealing vulnerabilities to cognitive decline and emotional distress, while also highlighting the resilience and adaptability that can be supported by targeted interventions. Evidence-based therapies, ranging from cognitive training and psychotherapy to digital health solutions, demonstrate meaningful improvements in quality of life. Cultural context and individual differences significantly shape aging trajectories, underscoring the need for inclusive, personalized approaches. By identifying knowledge gaps and emerging trends, this review lays a foundation for future research, clinical practice, and policy aimed at promoting graceful, mentally healthy aging.

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