

GUEST EDITORIAL

Aging successfully and healthfully

The vast market of anti-aging products from skin serums to ingestible supplements highlights the widespread interest in maintaining youthful appearances and energy levels. While fighting age-related changes is difficult, if not impossible at the present time, there is growing interest in learning how to embrace aging in a healthful manner – i.e., how to age *successfully*. Clearly, one of the core questions in this quest is, what exactly constitutes successful aging?

The 2006 review by Depp and Jeste set out to examine the differing definitions of successful aging presented in the scientific literature (Depp and Jeste, 2006). Most commonly, policymakers and researchers have used Rowe and Kahn's model – living without disability and maintaining high levels of cognitive, physical, and social functioning (Rowe and Kahn, 1987; 1997). Indeed, Depp and Jeste found that nearly 90% of the studies reviewed had used a lack of physical disability and/or unimpaired physical functioning as the benchmark for successful aging. Modern medical innovations have increased longevity over the past century, yet it is not clear that people are also aging more successfully in terms of physical and cognitive functioning. There are studies reporting rising rates of dementia. Perhaps it is time to shift our focus to other facets of aging. Some studies have defined successful aging using measures of well-being, e.g., life satisfaction, happiness, social engagement, and positive personality traits such as resilience, optimism, and self-efficacy. These understudied positive constructs may be better markers of successful aging than physical functioning.

Three studies in this issue of *International Psychogeriatrics* focus on important aspects of successful aging, beyond avoidance of physical disability and disease. First, Martin *et al.* (2019) present a unique comparison of populations with exceptional longevity — centenarians living in the US and Japan. The US centenarians had better cognition and were more likely to have hypertension, heart disease and myocardial infarction compared to the Japanese centenarians. While stroke was associated with worse cognitive functioning, hypertension was associated with better cognitive functioning. Furthermore, the relationship between heart disease and cognitive functioning differed in the two populations, i.e., heart disease was associated with worse cognitive

functioning in the US and better cognitive functioning in Japan. As eloquently discussed in the Commentary by Flint and Bingham, longevity is only 25% heritable, and is largely subject to environmental and behavioral influences including exercise, diet, and positive psychological traits (Flint and Bingham, 2019). Also, the paradoxical relationship between cognition and blood pressure in centenarians has important clinical implications for this subpopulation, as we strive to personalize medical care for each individual.

Next, Fung *et al.* (2019) examines loneliness in older Chinese adults and the links with different types of relationships and cognitive functioning. Loneliness is an important social aspect of successful aging, with a number of studies emphasizing its influence on mental and physical health (Aanes *et al.*, 2011; Boss *et al.*, 2015; Cacioppo *et al.*, 2002; Tabue Teguio *et al.*, 2016; Yu *et al.*, 2016). While exploratory, the findings from the Fung *et al.* paper indicate that the interaction between loneliness and a non-confiding social network (i.e., the participants did not feel they could express their inner feelings with their social contacts) were significantly associated with poor cognitive functioning. The authors reported that these interactions were significant for non-confiding family networks (as opposed to non-confiding friend networks), which may reflect the cultural importance of family unity among this population of Chinese adults living in Hong Kong. As aptly described in the Commentary by Palmer, social isolation is distinct from loneliness, and the cognitive effects of the interaction between loneliness and social network size and quality have not been examined previously (Palmer, 2019). Palmer also noted how the Fung *et al.* article takes much needed first steps toward empirical and concept-driven research on loneliness to aid policymakers and clinicians in understanding the interrelations and consequences of loneliness and social isolation, and personalizing and targeting interventions for this growing social epidemic.

Last, Ardelt and Ferrari (2019) examine the relationships between wisdom and well-being, specifically the mediating roles of mastery and purpose in life. Religiosity was also found to be associated with well-being. The authors compared a younger (ages 21–30 years) and older (ages 62–99 years)

sample and found that wisdom was more strongly associated with mastery in the older group, while purpose in life was more strongly associated with mastery in the younger group. The older group reported greater purpose in life but lower mastery than the younger group. As noted by Ziedonis in his Commentary, understanding the underlying mechanisms of inner strengths (i.e., wisdom, religiosity) will further our ability to improve well-being of older adults (Ziedonis, 2019).

Together, these studies propose a number of important changes to how we understand and promote successful aging. First, we need to broaden the definitions of successful aging to include other aspects of healthy living besides physical and cognitive functioning. Positive psychological traits and inner strengths have important roles in how older adults face adversity and disability (Lee *et al.*, 2018a). Physical disability alone may not solely define successful aging for a highly resilient and wise individual. Similarly, individuals with low resilience and wisdom levels may be more susceptible to the negative health effects of loneliness (Lee *et al.*, 2018b). Incorporating these aspects into research study design and clinical practice may help us better target vulnerable adults and promote successful aging holistically.

Older adults may be particularly vulnerable to the loneliness epidemic, especially when living alone or in institutions (Lee *et al.*, 2018b). Promotion of social engagement among older adults is more difficult in the context of dementia and institutional living situations. It should be stressed that loneliness arises from the *perceived* discrepancy between actual and desired social relationships, thus the individual's perspective is likely colored by positive psychological traits and inner strengths. The majority of interventions for loneliness have focused on increasing social network size or increasing communication with known social contacts using social media or other means (Cohen-Mansfield and Perach, 2015). However, the solution to loneliness lies, not necessarily in availability of larger social groups, but rather in reducing the dissonance between desired and actual social engagement. Enhancing wisdom through increased self-reflection, emotional control, and prosocial attitudes and behaviors is likely to be more helpful for reducing loneliness (Jeste and Lee, *In Press*).

Sleep, in particular, has the potential to greatly improve health and functioning in older adults. Studies have linked sleep disturbances with increased amyloid burden and subsequent memory impairments (Brown *et al.*, 2016; Kincheski *et al.*, 2017). Poor sleep has been linked with poor mental and physical health outcomes as well as increased systemic inflammation. In addition to age-related changes like advanced sleep phase, older adults

have increased risk for insomnia, restless leg syndrome, and obstructive sleep apnea (Ancoli-Israel, 2005; 2009). Addressing sleep problems may be one key way to help older adults age successfully.

Finally, technology has the potential to widely disseminate interventions to aid successful aging. The increasing availability and accessibility of mobile and home-based technologies can connect older adults in a variety of residential settings to services, family and friends, as well as other older adults. Such technologies could support healthy lifestyle habits including regular physical activity, a balanced diet, and better sleep.

In summary, successful aging encompasses multiple aspects of a fulfilling and healthy life. Physical and mental well-being are closely intertwined with healthy lifestyle habits, personal relationships, meaning and purpose in life, and positive psychological traits. While simplistic to reduce these varied and multilayered constructs to a single measure of successful aging, we are only beginning to understand the complex relationships between these aspects of aging. Only through targeted research similar to those reported and discussed in this issue can we further our understanding of how to age successfully.

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