

Betsy Ng
Gloria Ho *Editors*

Self-Determination Theory and Healthy Aging

Comparative Contexts on Physical
and Mental Well-Being

 Springer

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Part I
Understanding Healthy Aging

Chapter 1

Healthy Aging: Concepts and Chronological Relevance



Betsy Ng and Gloria Ho

Abstract This first chapter introduces various terms related to aging, namely successful aging, active aging, and healthy aging. The key objective of this opening chapter is to recognize the variations of aging terms and operationalize healthy aging that is used throughout the book. With an increasing aging population across the world, healthy aging is a multifaceted concept that is relevant in today's global context. Three aspects of healthy aging herein include physiological, psychological and social factors, which will support the quality of life among individuals as they age. These physiological, psychological and social factors are discussed with specific elements and examples in the context of healthy aging. The capacity for healthy aging is also discussed.

1.1 Introduction

Population aging is increasingly becoming a concern in many countries. There is an emphasis on the need for active and healthy aging, with policy agendas focusing on the unharnessed potential of older people for continued societal contributions (Zaidi et al., 2013). It is evident that there is a need for a high quality, independent evidence base to address how the experiences of aging at an individual level can combine with relevant activities to improve health and autonomy of senior adults. The present book aims to highlight evidence and strategies to promote healthy aging, thereby educating the public about the benefits and need to adopt healthy aging practices. This book provides the research evidence for advocacy of policy reforms. In doing so, it hopes to engage and influence key stakeholders to implement programs and reforms that can improve the quality of life of older people.

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The core endeavor of the present chapter is to introduce the various terms used in the field of gerontology research and to operationalize the multidimensional concept of healthy aging. The purpose is to highlight the importance of healthy aging, to develop the potential of older people, and to boost positive experiences in later life, which can be an asset for societal progress. The subsequent sections discuss the definitions of different terms of aging, namely successful, active, and healthy, in chronological order. These terms are discussed with relevance to the process and experiences of aging at an individual level.

1.2 Successful Aging

Since its conception about fifty years ago, there have been several approaches to defining successful aging. For instance, Ryff's (1982) model of successful aging has six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. These six dimensions refer to positive functioning (Baltes & Carstensen, 1996). Positive functioning, which relates to well-being, places a strong emphasis on health and physical functioning. Examples of factors that act as moderators of the aging process are nutrition, education, exercise, and social support (Schulz & Heckhausen, 1996). However, it was Rowe and Kahn's (1987) successful aging model that proposed to focus on promoting well-being in later life.

Successful aging is a multidimensional concept that is associated with a state of complete physical, mental, social, and spiritual well-being (Ng, Broekman, Niti, Gwee, & Kua, 2009). Successful aging is thus defined as a developmental and maintenance process of personal well-being that is consistent with normal aging (Baltes & Baltes, 1990; Baltes & Carstensen, 1996). Personal well-being includes mental well-being, maintenance of an active lifestyle, good supportive relationships, and life satisfaction. Effective mastery of personal well-being yields autonomy and independent living, which are integral to successful aging. Besides the acquisition of survival skills, successful aging is also intricately interwoven with a sense of meaning and purpose in life (Baltes & Carstensen, 1996; Cole, 1984).

In a recent successful aging model, García-Lara, Navarrete-Reyes, Medina-Méndez, Aguilar-Navarro, and Avila-Funes (2017) identified five criteria: (1) absence of disease; (2) absence of disability; (3) preserved cognitive performance; (4) appropriate physical performance; and (5) active social participation. Likewise, a study based in Singapore captured two major components of successful aging, namely good health and social engagement (Feng & Straughan, 2016). This study suggested that elderly individuals in Singapore perceived successful aging with a strong focus on children or family support. Rowe and Kahn (2015) proposed Successful Aging 2.0 that is more objective than the earlier version, focusing on physiological followed by psychosocial characteristics (i.e., autonomy and social support). In relation to the self-determination theory

(SDT; Deci & Ryan, 2000), these two factors are similar to the basic psychological needs for autonomy and relatedness. Social support also relates to connectedness and relatedness. However, Successful Aging 2.0 is a proposed conceptual model without any measures or indicators for successful aging.

Despite the abovementioned variations of successful aging, there seems to be a common emphasis on social factors that may influence the capacity for successful aging. The concept of successful aging also proposes greater attention toward an individual's perceptions of aging and the effects of earlier life experiences (Rowe & Kahn, 2015). As such, the antecedent events of an individual's life may be determinants of successful aging, suggesting that this model incorporates a life-course perspective. The life-course perspective involves individuals recognizing that changes within an earlier stage of life may alter the needs and opportunities at other stages. Through this life-course perspective, new roles and responsibilities could be created for older adults, thereby promoting the capacity for successful aging.

Finally, the term "successful" implicitly suggests that those who are disabled or diagnosed with chronic diseases are "unsuccessful" in their process of aging. Moreover, "successful aging" is considered problematic as it insinuates that well-being in old age requires individuals to have the capacity for managing themselves, precluding those with reduced capacity due to age-related functional declines or chronic diseases (Strawbridge, Wallhagen, & Cohen, 2002). In the new millennium, an alternative term used by researchers is active aging, as described subsequently.

1.3 Active Aging

According to the World Health Organization (WHO, 2002), active aging is a societal responsibility that is shaped by several factors such as social, political, and economic influences. WHO further defined active aging as the "process of optimizing opportunities for health, participation, and security in order to enhance quality of life as people age" (WHO, 2002). Active aging is thereby a process occurring throughout life that comprises physical and mental activities, and should be achievable by older people (including the frail, disabled, and those in need of care). The key purpose of active aging is to enhance the quality of life in older people who continue to live healthily and independently as they age (São José & Teixeira, 2014; Zaidi et al., 2013).

Active aging refers to the "situation where people continue to participate in the formal labor market as well as engage in other unpaid productive activities (such as care provision to family members and volunteering) and live healthy, independent and secure lives as they age" (Zaidi et al., 2013, p. 6). The Active Aging Index (AAI) is a multidimensional concept with 4 domains and 20 indicators. The four domains are employment, participation in society (e.g., volunteering), independent living, as well as capacity and enabling environment for active aging. Table 1.1 shows the 20 indicators for all 4 domains (Zaidi et al., 2013, p. 13).

Table 1.1 Domains and indicators active aging index (AAI)

(1) Employment	(2) Participation in society	(3) Independent, healthy and secure living	(4) Capacity and enabling environment for active and healthy aging
Employment rate for the age group 55–59	Voluntary activities	Physical exercise	Remaining life expectancy achievement of 50 years at age 55
Employment rate for the age group 60–64	Care to children, grandchildren	Access to health and dental care	Sharing of healthy life years in the remaining life expectancy at age 55
Employment rate for the age group 65–69	Care to older adults	Independent living arrangements	Mental well-being (for older population aged 55)
Employment rate for the age group 70–74	Political participation (e.g., trade union, political action group)	Financial security	Use of ICT
		Physical safety	Social connectedness
		Lifelong learning	Educational attainment of older persons

The indicators listed in Table 1.1 were based on the activities of older adults from the age group of 55 and above. The WHO’s definition about active aging is the process to enhance quality of life as people age (WHO, 2002), the indicators were not measured at a population before the age of 55. If the focus of active aging is on the “quality of life as people age,” then the concept of active aging should not be limited to older adults above the age of 55. Future research should consider measuring the indicators with a population before the age of 55.

In summary, with 4 domains and 4–6 indicators in each domain, active aging is a better defined concept as compared to successful aging. The term “active” is also less problematic than “successful,” as it does not imply a “winner” or “loser.” Furthermore, it would be helpful to have a tool that measures the dimensions of active aging and positive outcomes in old age. The AAI is a tool or measure that captures diverse and specific aspects of active aging (see Table 1.1). Although successful aging or active aging has been used interchangeably by some researchers and policymakers, healthy aging is a more well-defined and multifaceted concept that includes healthy lifestyle, psychosocial factors, and socio-demographics (Sowa, Tobiasz-Adamczyk, Topór-Mądry, Poscia, & La Milia, 2016). It is also a term officially defined by WHO (2015) and hence, we used “healthy aging” throughout the context of this book. Healthy aging herein is considered as an individual and community approach to maintain and improve the physical, emotional, and mental well-being of individuals through their lives and later years.

1.4 What is Healthy Aging?

Aging is a natural event whereby individuals acknowledge it by continually adapting to physical changes with autonomy, independence and resilience (Bryant, Corbett, & Kutner, 2001). WHO (2015) defines healthy aging as “the process of developing and maintaining the functional ability that enables well-being in older age.” Functional ability is about an individual’s intrinsic capabilities to think and do what the individual has reason to value. Intrinsic capabilities comprise all mental and physical functions such as the abilities to move, think, respond, and remember. However, intrinsic capabilities can be influenced by factors such as diseases, injuries, and age-related changes. Relevant environmental characteristics (e.g., home) and their interactions with the individual’s functional abilities can also influence healthy aging. In summary, functional abilities include an individual’s ability to:

- meet their basic needs;
- learn, grow and make decisions;
- be mobile;
- build and maintain relationships; and
- contribute to society (WHO, 2015).

Before understanding the environmental characteristics that support healthy aging, it is necessary to define the term “environment.” According to WHO (2015), an environment is considered as the social aspect of healthy aging which includes the home, community, and society, as well as factors within them (i.e., built environment; people and their relationships; attitudes and values; health and social policies; the systems that support them, and the services that are implemented). The key of healthy aging is to provide the relevant environment that supports and maintains individual intrinsic capacity and functional ability. Hence, environmental characteristics play very important roles in promoting well-being and sustaining positive functioning in the aging population.

Healthy aging is viewed as the journey but not the end of it (Hansen-Kyle, 2005; Schulz & Heckhausen, 1996). It is also viewed as positive aging whereby individuals can develop and maintain their optimal cognitive, social and physical well-being (Thanakwang, Soonthornhada, & Mongkolprasoet, 2012). Based on a qualitative study (Thiamwong, McManus, & Suwanno, 2013), seven attributes of healthy aging were identified and listed as follows:

- (1) continuous process of change and adaptation;
- (2) self-defined and individualistic;
- (3) slowing down of body processes;
- (4) acceptance and movement toward death;
- (5) desire to continue to actively participate in life processes;
- (6) ability to function physically, cognitively, and socially; as well as
- (7) continual modification, self-assessment, and redefinition of self and abilities (Thiamwong et al., 2013).

Peel, Bartlett, and McClure (2004) described healthy aging as “a lifelong process optimizing opportunities for improving and preserving health and physical, social and mental wellness, independence, quality of life and enhancing successful life-course transitions” (p. 115). In short, healthy aging can be depicted as a complex process of adaptation to physical, social and psychological changes across the lifespan.

1.5 Conceptual Framework for Healthy Aging

In this book, healthy aging is operationalized as a lifelong process of sustaining independence and quality of life through developing and maintaining health and physical, social, and mental wellness. We propose a conceptual framework for healthy aging, as shown in Fig. 1.1. The proposed framework aims to provide the knowledge base of a healthy aging model and policy implications for promoting appropriate strategies for enhancing the well-being of individuals.

Healthy aging is a complex process of adaptation to physiological, psychological, and social changes across the lifespan. These factors allow individuals to stay physically and mentally healthy, thus enabling well-being in older age. Physiological, psychological and social factors that depict this healthy aging framework are described subsequently.

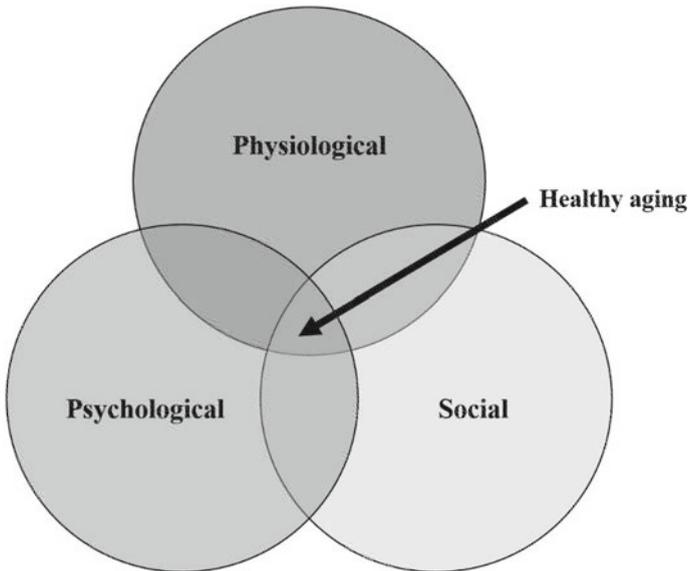


Fig. 1.1 Proposed conceptual framework for healthy aging

1.5.1 Physiological

The physical state of an individual serves as a foundation for many body's daily functions in life. Healthy physiological state is defined as the normal functioning of an individual, with sufficient levels of physical activity, sufficient sleep, and a well-balanced diet (Lazarus, Lord, & Harridge, 2019). Any physiological changes within an individual may have an impact on his or her perceptions of competence and access to resources in the community. An important aspect of physiological factors is that of access to learning and training. For example, older learners who are weak physically may feel distant toward learning and have low motivation to learn (Chang & Lin, 2011). Living well, sleeping well, and eating well are also important in the context of physiological and mental well-being. When older adults perceived the absence of chronic diseases as physical well-being, they could better manage self-care in daily living (Thanakwang et al., 2012).

First, sleep is an important physiological aspect of healthy aging. Sleep is important as it restores our body, fosters the consolidation of memories, and promotes emotion regulation (Kubzansky & Boehm, 2016; Walker, 2009). A recent study by Becker et al. (2018) showed that sleep plays a role in preventing premature aging, as sleep deprivation has a detrimental effect on metabolism, endocrine, and cognitive functions, as well as general well-being. Sleep strongly influences many aspects of health including physical, cognitive, and emotional functions. In short, the lack of sleep can worsen chronic health problems related to age. Sleep insufficiency in older adults may lead to attention impairments, slowed response time, memory and concentration impairments, decreased ability to accomplish daily tasks, and increased risk of falling (Becker et al., 2018). Thus, sleep is considered an important physical factor of healthy aging.

Diet and health are strongly linked (Heshmati, 2018). Diet or nutrition is an antecedent to healthy aging. For instance, Willcox, Scapagnini, and Willcox (2014) found that traditional Okinawa diet could mitigate health risks and promote healthy aging. The traditional Okinawa diet includes low-calorie food, vegetables, legumes, fish, and fruits, as well as low intakes of meat and dairy products. On a daily basis, Okinawans typically eat 7 types of fruits and vegetables, with 18 different foods (Gupta, 2019). Okinawa is well known for having the world's greatest and oldest centenarians. Hence, it is evident that a healthy diet contributes to healthy aging, as it plays an important role in maintaining physical health in an advanced age.

Physical activity refers to any bodily movement that results in energy expenditure (Caspersen, Powell, & Christenson, 1985). Physical activity such as walking promotes physical health and mental well-being. A recent meta-analysis study showed a significant positive relationship between physical activity and healthy aging (Daskalopoulou et al., 2017). Physical activity has positive impacts on the healthy aging process. When participants engaged in physical activities, their odds of living a healthy life in older age and maintaining well-being in later life were increased, as compared to those who were less physically active or inactive (Daskalopoulou et al., 2017).

1.5.2 Psychological

Despite increased physiological and cognitive dysregulation (or abnormality), psychological well-being does not decrease significantly over later adulthood (Lara et al., 2013). This psychological “paradox” is likely related to an individual’s self-regulation to accommodate the challenges of aging. As a result, this psychological attribute is considered essential in optimizing or adapting individual mechanism in relation to aging.

Emotion and cognition are examples of the psychological aspect of healthy aging that are fundamental to human behaviors. Human psychology plays an important role in developing thoughts and translating them into action. For instance, if an older adult lacks motivation to step out of the house, he or she will gradually become isolated from the public or outside world. Being isolated, he or she will not have any driving factor to engage in physical activity. Simple physical activities like walking can help in keeping one’s body and mind active. Therefore, it is essential to start with basic exercises such as walking which could branch out to involvement in other physical activities. Older adults can play an active role in their own psychological well-being, thus enhancing their satisfaction in life and engagement in enacting preventive and healthy behaviors (Menichetti, Cipresso, Bussolin, & Graffigna, 2016). The physiological and psychological aspects of healthy aging are intricately intertwined, suggesting that individual self-regulation is thus essential for optimizing physical functioning and accommodating challenges of aging. Some of the key psychological factors are discussed in subsequent sections.

1.5.2.1 Emotions

Positive emotions such as humor and happiness promote mental well-being (Cann & Collette, 2014). On the other hand, negative emotions such as fear or anxiety can influence individual functioning and may be detrimental to health. For instance, in the aging population, affective factors such as the fear of burdening loved ones may cause declines in functioning and cognitive abilities (Shogren, Wehmeyer, Lassmann, & Forber-Pratt, 2017).

Negative emotions such as anxiety is associated with an increased risk of morbidity, impairments in physical, cognitive, and social functioning, as well as a decline in psychosocial health (Menichetti et al., 2016). Anxiety is common in the older adult population (Kim, 2013). This means that older adults are likely to experience anxiety in the process of aging. Experiencing intense anxiety may thwart the process of healthy aging. It is thereby important to address this negative emotion, among others, in order to promote health and well-being in older adults. Kim (2013) examined an art therapy intervention that had significantly reduced the anxiety level in Korean-American older adults, promoting emotional well-being.

Appropriate interventions and emotional regulation strategies could enhance the psychological aspect of healthy aging, contributing to a positive psycho-emotional outlook important to promoting health and well-being (Thanakwang et al., 2012).

1.5.2.2 Cognitive Functions

Cognitive functions are an important aspect for the aging population (Fechner, Pachur, & Schooler, 2019). Many cognitive resources that are required for functional ability tend to peak in early adulthood and then decline across the adult lifespan (Hartshorne & Germine, 2015). Numerous facets of cognitive processing usually decline over the stages of an adult lifespan (Lara et al., 2013). Cognitive processing speed in terms of visual inspection time and reaction time could be indices of healthy aging. For instance, individual cognitive processing speed or reaction time is likely to decline in the later stage of lifespan, and early physical activity intervention could aid in healthy cognitive aging (Condello et al., 2017). Other cognitive functions such as episodic memory, decision-making, and executive control may contribute to patterns of cognitive change with age. Memory and executive functions are of particular significance to cognitive health in later life. Diminishing memory and executive functions may increase morbidity and mortality rate. Dementia and cognitive frailty are examples of diminishing memory and executive functions in older people, resulting in poor quality of health and well-being (Wu, Prina, & Brayne, 2015).

As more countries move toward a knowledge-based society, older adults should embrace the mindset to continue learning with avidness and a keen subject interest. Cognitive levels of older adults can influence their participation in continuing educational activities. For instance, older adults with higher levels of education tend to continue learning (particularly females) and participate in educational activities with personal interest (Narushima, Liu, & Diestelkamp, 2013).

Besides having a positive mindset to learn, older adults also often engage in cognitive-behavioral strategies, motivational goal selection, and capitalization of existing resources to maintain their well-being (Charles, Leger, & Urban, 2016). Compared to younger adults, they tend to use more than one cognitive strategies (e.g., problem-focused strategy) across different types of social problems. Motivational goal selection such as life satisfaction is a psychological goal that can enhance older adults' engagement in enacting preventive and healthy behaviors (Menichetti et al., 2016). Besides being vital for achieving successful health outcomes, life satisfaction may also act as an antecedent for older adults to capitalize their existing resources, thus maintaining their functional abilities and well-being.

1.5.2.3 Self-compassion

Self-compassion could be an antecedent to healthy aging as well as an avenue to shape positive attitudes toward aging (Brown, Bryant, Brown, Bei, & Judd, 2016). Self-compassion is defined as a positive, healthy attitude toward the self when facing struggles (Neff, 2003). It is considered as a multifaceted factor, comprising three positive aspects: self-kindness, common humanity, and mindfulness. Self-kindness is defined as being understanding toward oneself when facing pain or failure; common humanity refers to perceiving one's experiences as part of a shared life experience, rather than an isolated individual experience; and mindfulness relates to "holding painful thoughts and feelings in balanced awareness" (Neff, 2003, p. 85). Self-compassion relates positively to life satisfaction, social connectedness, and subjective well-being, thus protecting an individual against negative consequences of self-judgment, isolation, and depression (Allen & Leary, 2010). Self-compassion may be a precursor to positive attitudes toward aging. A recent study showed that self-compassion is indirectly linked to physical and mental well-being through physical change (Brown et al., 2016). The physical change due to aging was related to the attitudes toward physical functioning (i.e., health, exercise, and experience of physical change). This study's findings suggest that self-compassion could be one way to help shape positive individual attitudes toward aging.

1.5.3 Social

Besides good physiological and psychological functioning, social well-being is also very important in later life. Social factors such as social bonds and interpersonal relationships are critical for physical health (Charles, Leger, & Urban, 2016). Research that examined social well-being in later life included indicators such as social integration, social engagement, social ties, social networks and connections, and social connectedness (Lara et al., 2013). Social relationship is a broadly defined term that encompasses the abovementioned indicators. Having active and healthy social relationships is associated with better health outcomes and reduced morbidity (e.g., Dattilo, Mogle, Lorek, Freed, & Frysinger, 2018).

Social factors may act as motivators or stressors in our daily lives. Older adults are more likely to use passive regulation strategies in response to interpersonal conflict and engage in more avoidance behaviors over time (Yeung, Fung, & Chan, 2015). However, a recent study contradicted this point, revealing that older adults used maladaptive strategies (i.e., hiding one's outward expression of emotion) less frequently than young adults in situations that elicit anxiety and sadness (Schirda, Valentine, Aldao, & Prakash, 2016). This contradictory point could be due to the differences in contextual elements or given situations. Likewise, personality and socio-emotional experiences may vary across older adults.

Wu et al. (2015) identified that community environment has influences on cognitive functions of older adults. Poor quality of environmental features is associated with poorer cognitive functions and illness in old age such as dementia. In addition, an environment with age-friendly infrastructure is essential to facilitate older adults' access to healthcare, community involvement, and social engagement. An example of age-friendly modification in the physical environment is the installation of ramps and rails along walkways, assisting the older adults with balance, and reducing the possibility of falls (Niu et al., 2017). Hence, age-friendly infrastructure could create a safe community environment with a sense of autonomy and independent living, promoting physical, cognitive, and social functions. The two main social variables that are discussed subsequently are interpersonal relationships and social support.

1.5.3.1 Interpersonal Relationships and Social Support

Healthy aging involves active engagement in life and sharing of experiences (Thanakwang et al., 2012). Interpersonal relationships are important in making life meaningful for older adults and increasing their self-esteem. For example, the presence of a lifetime partner is important for undergoing social learning activities (Chang & Lin, 2011). Likewise, positive family relationships and social support systems act as a buffer against negative self-views, and negative mental and physical health outcomes in older persons (Nelson, 2016). Family relationship is a significant domain of the social network of older adults (Thang, 2015). In Asian societies, psychosocial support may be shaped by moral values, which in turn may influence healthy aging. It is thus necessary to build a strong social support network and motivate one another toward active engagement in life.

Social support can be distinguished between family and non-family social network. Family social network includes family members, mostly spouses and children. For single elderly people or those who live alone, family support ranging from siblings to nieces and nephews also contributes to the well-being of the elderly (Thang, 2015). On the other hand, non-family social network includes friends and neighbors. Besides family relations, building a social network with non-family relations constitutes an important part of one's life domain as well. In addition, older adults can be actively engaged in socialization by getting involved in a social activity (e.g., outing or attending a cooking class) or volunteering in a community service. In fact, non-family social networks can play a more significant role than the family domain, especially for older adults living alone.

Empirical findings have shown that adequate social support promotes better physical, psychological and social well-being among elderly people (e.g., Stewart, Auais, Bélanger, & Phillips, 2019; Wright & Brown, 2017). Based on Rowe and Kahn's successful aging model (1987), a recent study investigating perspectives on successful aging showed that older adults in Singapore placed an emphasis on positive relationships with family members (Feng & Straughan, 2016). Their

research study recommended strategies to foster interpersonal relationships that include sustaining familial ties with family members and friends. Nevertheless, it is also important to consider individual capacity for healthy aging among older adults.

1.6 Capacity for Healthy Aging

In considering the idea of healthy aging, the physiological, psychological and social factors discussed thus far should not be treated simply as static in nature. While empirical observations typically conducted for these factors are necessarily “snapshots” and contingent on the point in time these observations are collected, they provide insights to an individual’s capacity for healthy aging in the days to come. There is a need to account for this potentiality as it concerns whether one is able to access valuable resources and activities to live a meaningful life.

Aligned with the WHO’s definition of intrinsic capacity, the capacity for healthy aging includes physical and mental functioning capacities. In the context of healthy aging, physical capacity is defined as the functional capacity of an individual to carry out activities of daily life successfully (Lara et al., 2013). Physical capability can be an indicator of healthy aging. It has the potential to include measures, ranging from handgrip strength to walk endurance, as markers of current and future health status. Other potential indicators of healthy aging include autonomy, self-acceptance mastery, and purpose in life. With the empowerment of autonomy and self-acceptance, older adults will thrive in the face of age-related challenges.

The social aspect is important, as it can be a capacity-enabling environment to promote the physical and mental well-being of the older population. According to the AAI, there are numerous indicators to measure one’s active aging capacity, such as a healthy life expectancy, mental well-being, and social connections (Zaidi et al., 2013). Social participation outcomes within the older population are strong associates of active aging, which are also likely applicable for healthy aging evaluations. As discussed earlier in this chapter, it is crucial that the social factor of healthy aging is intimately tied to the physiological and psychological aspects.

1.7 Conclusion

The present chapter provided an understanding of the variations in terms used to describe aging in the field of gerontology, and to operationalize the concept of healthy aging. Healthy aging is a multifaceted concept that includes physiological, psychological, and social factors, enabling individuals to age actively and healthily. Research of healthy aging using both theoretical inquiry and empirical evidence is still in its infancy. Moreover, there are also challenges associated with the population aging and the individual’s life-course perspective. Aging societies with varied problems and potentialities may have different implications on healthy