CHAPTER 5

The Semantic Network of Aging Well

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ABSTRACT

"Aging well" is a common expression used by lay people as synonymous with a set of verbal labels emerging from scientific literature attributed to a positive trajectory of aging—healthy, successful, competent, optimal, vital, active, or productive aging. These terms with tightly semantic relations conform to a semantic network.

This chapter provides a historical overview of the different terminology, followed by a review of the definitions used by researchers as well as an assessment of the extent to which older adults are aging well in different studies. Second, the lay cross-cultural concept of aging well is described. This provides a useful backdrop for dealing with potential problems and issues in operationalizing definitions of aging well (confounding outcomes and predictors, using objective and/or subjective indicators, and to what extent different definitions are required at different ages). Finally, the issue of to what extent the different labels of aging well have different nuances in their meanings is assessed.

INTRODUCTION

"Aging well" is a common expression used by lay people but which is synonymous with a set of verbal labels emerging from scientific literature attributed to a positive trajectory of aging—healthy, successful, competent, optimal, vital,

active, or productive aging. These terms with tightly semantic relations conform to a *semantic network*. All of them contrast with their respective antonyms or opposite terms, which are commonly considered characteristics of aging—bad, sick, unfortunate, incompetent, passive, or unproductive. All these terms could be seen not only as cultural images or stereotypes but also as an intrinsic view and essence of aging, if we look at aging from a pathological or impaired perspective.

In other words, from a semantic perspective, each of these terms could be considered an oxymoron because they are combining aging with contradictory terms and meaning. On the other hand, paradoxically, someone considering aging in contradiction with positive terms is falling into a simplistic overgeneralization or a stereotypic category regarding aging. Nevertheless, this set of terms is opening a new *positive* paradigm in gerontology, which is supported by psychological (e.g., P. B. Baltes & M. M. Baltes, 1990), biomedical (e.g., Fries, 2003), and biodemographical (Robine & Michel, 2004; Vaupel, 2010) research.

We start by describing some well-known facts about individual aging.

1. Across the life span, patterns of growth and decline can be found in most biopsychosocial characteristics (P. B. Baltes, 1987). More importantly, the balance between growth and decline or, in other words, how an individual is aging, does not occur at random but it depends both on living conditions and on the human being—as an agent—involved and how committed they are to their aging process (Bandura, 1986; Fernández-Ballesteros, 2008).

2. Individual differences in this person–environment equation are expressed in the broad variability in the ways people age (e.g., Schaie, 2005a, 2005b); authors classify this variability in aging as usual, pathological, and successful (Rowe & Khan, 1987).

Moreover, at the population level, it is well known that during the 20th century, developed countries gained about 30 years in life expectancy (some, such as Spain, have doubled life expectancy within the past century). In addition, there is evidence that human senescence has been delayed by a decade (Vaupel, 2010); that people may be reaching very old age in better health; and, as shown by Christensen, Doblhammer, Rau, and Vaupel (2009), there is an unprecedented and unexpected reduction in mortality at ages 80 years and older in certain regions.

Both phenomena, at population and individual levels, are expressing successful development of better conditions (socioeconomic, educational, biomedical, healthy life style, etc.) for human life as well as the expression of adaptation capacities based on the plasticity and modifiability of human beings across history and through the life cycle, including old age.

As what usually happens when a new concept in science emerges, aging well not only has a variety of verbal synonymic labels (healthy, successful, optimal, vital, competent, productive, "active aging") but still does not have a commonly accepted definition based on empirical facts both coming from older adults and from aging research.

From a lay perspective, aging well can be considered the common internationally accepted term. But although all the other terms already mentioned seem to be used interchangeably, they have very different repercussions in scientific literature. Thus, in their review of this field, Peel, McClure, and Bartlett (2005) searched for "successful" and "healthy" aging, finding 341 articles from 1985 to 2003 in medical, psychological, social, and gerontological databases. Similarly, the Depp and Jeste (2006) review (PubMed and Google Scholar; 1978–2005) found 407 studies referring to "successful aging," 490 for "healthy aging," and fewer results (12) for "productive aging," and only 1 for aging well or "robust aging." Finally, Fernández-Ballesteros (2008) in her search of scientific databases (PubMed, PsycINFO, and Sociofile from 1970 to 2007) found that the two most common labels in this field are healthy and successful aging, respectively, in biomedical and psychosocial data bases; moreover, "optimal, vital, competent, positive, and productive aging" had a very small presence in scientific literature; and finally, that "active" aging is the most recent label appearing only after 2001.

In summary, healthy and successful aging—and since 2002, active aging—are now considered as concepts of aging well. This chapter will give first a historical overview of the different terminology, followed by a review of the definitions used by researchers as well as to what extent older adults are aging well from different studies. Second, the cross-cultural lay concept of aging well is described. This provides a useful backdrop to deal, in third place, with potential problems and issues in operationalizing definitions of aging well (confounding outcomes and predictors using objective and/or subjective indicators and to what extent it is required different definition at different ages). Finally, it addressed a key issue: to what extent the different labels of aging well present in the semantic network have different meanings.

BRIEF HISTORY OF THE AGING WELL SEMANTIC NETWORK

Throughout the history of human thinking, there are two main traditions in the conceptualization of aging: Plato's positive view and Aristotle's negative perspective. Nevertheless, in the field of gerontology as the science of aging, age, and the aged (Birren, 1996), the study of aging (and related terms) has been devoted to the study of those conditions, functions, and characteristics, which are declining or are impaired during this process (Fernández-Ballesteros, Kruse, Zamarrón, &

Caprara, 2007). In fact, within scientific literature, the first trace of the aging well paradigm can be found in the biomedical context, in the Bulletin of the World Health Organization (WHO), in 1959–1960, where Roth (1959) made the following statement:

> Possibilities of prevention can be enhanced by fostering physical well-being and healthy adjustment . . . as well as by ascertaining, and remedying as far as possible, the mental and physical disorders of the aged in the early stages of their development. There is great scope for biological, medical and sociological research. (p. 527)

At that time, two main psychosocial theoretical approaches shared the scientific panorama—*disengagement* and *activity* theories—as opposing conceptions in the study of aging (for a review, see Freund & Riediger, 2003). Havighurst's (1963) "The Activity Theory of Aging," often considered the starting point of the aging well paradigm, stated that *successful aging* is the core of gerontology. In this approach, successful aging was defined as *adding life to the years* and *getting satisfaction from life*. Three years later, Williams and Wirths (1965) in *Lives Through the Years: Styles of Life and Successful Aging* offered the following definition: life satisfaction, life and social engagement, feeling well about oneself, and behaving according to one's own values and beliefs.

But it was Palmore (1979) who first listed a set of biomedical and psychological conditions for successful aging—*longevity*, *health*, and *life satisfaction*. Furthermore, he posited a multidimensional theoretical framework in which these criteria are a function of *social*, *economic*, *physical*, and *mental health systems*. Table 5.1 shows the most widely accepted theoretical definitions of healthy aging, successful aging, and active aging. Healthy aging is described mainly as the absence of illness and functional independence; successful aging integrates additional biomedical, social, and psychological condition—such as a low probability of illnesses and disability—cognitive fitness, positive affect and control, and social *participation*. Finally, active aging is the last descriptor introduced by the WHO in 2002—integrating health, participation, and security. These three terms seem to be those more commonly used by scientists and academicians in this field.

Research-Based Definitions and Determinants of Aging Well

Beginning in the 1980s, large studies on successful as well as on active and healthy aging have provided empirical results and therefore more *evidence-based* definitions, predictors, and theoretical models of aging well. Table 5.2 shows selected criteria for defining successful and healthy aging in 28 cross-sectional and longitudinal studies collected by Depp and Jeste (2006) as well as the most important predictor or determinant yielded.

TABLE 5.1
Some Relevant Definitions of Aging Well

Ryff (1982, successful aging): feeling well based in positive or ideal functioning related to developmental work over the life course.

Guralnik & Kaplan (1989, healthy aging): low chronic disease, high level of physical functioning.

Rowe & Khan (1987, successful aging): "low probability of disease and disability, high physical and mental functioning, and active engagement with life." This model has been tested through the MacArthur Studies of Successful Aging longitudinal study as well as with other population studies.

Fries (1989, aging well): "independence, healthy life styles, to be active, to be enthusiastic, to have a good image of one's self, and to be individual."

P. B. Baltes & M. M. Baltes (1990, successful aging): "length of life, biological health, mental health, cognitive efficacy, social competence and productivity, personal control, and life satisfaction." Perhaps the most important has been the Baltes and Baltes' process theory of promoting gains and preventing losses through selective optimization with compensation (SOC). Empirical evidence supports SOC as a theory of successful aging (see Freund & Baltes, 2007).

Vaillant & Vaillant (1990, successful aging): "physical health, mental health, and life satisfaction."

M. M. Baltes & Carstensen (1996, successful aging): "life satisfaction and subjective well-being, perceived social support and involvement in life; physical health, functional abilities and lifestyle; biophysical conditions, such as strength or vital capacity; and social conditions, such as social network or education."

Schulz & Heckhausen (1996, successful aging): "cardiovascular and pulmonary functioning, absence of disability, cognitive and intellectual performance, primary control, and achievements in physical and artistic domains."

Yoon (1996, successful aging): "physical health, personal income and financial stability, family dynamics and cohesiveness; social support networks, meaning of life, optimal cognitive functioning, personal control, prevention for depression; coping strategies, mastery bereavement, self-justification mechanism of negative life outcomes."

Reed et al. (1998, healthy aging): Surviving late life free of major life-threatening illness and maintaining physical and mental capacities.

World Health Organization (2002, active aging): " . . . the process of optimising opportunities for health, participation and security in order to enhance well-being and quality of life as people age . . . "

Haveman-Nies, De Groot, & Van Staveren (2003, healthy aging): maintenance of health at old age (being alive and remaining independent).

TABLE 5.2

Outcomes and Predictors or Determinants of Dimensions of Successful Aging in 28 Studies
Examined by Depp and Jeste (2006)[a]

Dimensions of Successful Aging (No. of Studies)	Predictors
• Disability/physical functioning (26)	• Younger age (10/10 L, 3/5 CS)
• Cognitive functioning (15)	• Higher income (2/5 L, 2/4 CS)
• Life satisfaction/well-being (9)	• Education (3/7 L, 1/2 CS)
• Social/productive engagement (8)	• Gender: female (4/81 L, 0/2 CS), male (1/1 L, 1/1 CS)
• Presence of illness (6)	• Lifestyles (8)
• Longevity (4)	• Creatinine protein (2/2 L)
• Self-rated health (3)	• Ankle brachial index (2/2 L)
• Personality (2)	• Presence of medical conditions (2/3 L, 2/4 CS)
• Environment/finances (2)	• Diabetes (4/6 L, 1/1 CS)
• Self-rated successful aging (2)	• Cardiovascular disease (0/2 L, 0/1 CS)
	• Cancer (1/3 L)
	• Hypertension (1/3 L, 1/1 CS)
	• Stroke (1/3 L, 0/1 CS)
	• Arthritis (2/3 L, 1/1 CS)
	• Hearing problems (4/4 L)
	• Depression (2/3 L, 3/4 CS)
	• Smoking

Note. L = longitudinal; CS = cross-sectional.

[a] Almeida, Norman, Hankey, Jamrozik, & Flicker, 2006; Andrews, Clark, & Luszcz, 2002; Avlund, Holstein, & Mortensen, 1999; Berkman, Seeman, & Albert, 1993; Burke, Arnold, & Bild, 2001; Day & Day, 1993; Ford, Haug, & Stange, 2000; Garfein & Herzog, 1995; Grundy & Bowling, 1999; Guralnik & Kaplan, 1989; Hogan, Fung, & Ebly, 1999; Jorm, Christiansen, & Henderson, 1998; Lamb & Myers, 1999; Leveille, Guralnik, & Ferrucci, 1999; Liang, Shaw, & Krause, 2003; Menec, 2003; Montross et al., 2006; Newman, Arnold, & Naydeck, 2003; Palmore, 1979; Roos & Havens, 1991; Smith & Baltes, 1999; Strawbridge, Cohen, & Shema, 1996; Strawbridge, Wallhagen, & Cohen, 2002; Tate, Lah, & Cuddy, 2003; Uotinen, Suutama, & Ruopilla, 2003; Valliant & Mukamal, 2001; Von Faber et al., 2001).

Most of the studies dealing with healthy aging include the outcomes "disability and physical functioning" and "presence of illness"; those dealing with successful aging also include "physical and cognitive functioning," "life satisfaction," and/or "well-being" and "social participation or engagement." Obviously, very few studies include outcomes such as "personality" and "environmental," which can be considered as determinants of aging well and not outcomes of this process.

Predictors or determinants including sociodemographics such as age, income, education, and gender are present in most studies as behavioral lifestyles (regular physical activity, well-balanced diet, body mass index, non-smoking); finally, specific illnesses are included as determinants as well as being considered outcomes not only in longitudinal studies but also in cross-sectional ones.

Building on prior literature (Rowe & Khan, 1997), Figure 5.1 shows the four-domain model of aging well suggested by Fernández-Ballesteros (2002, 2008): (a) *health and independence in activities of daily living* (ADL), (b) *high physical fitness and cognitive functioning*, (c) *positive affect and control*, and (d) *social participation and engagement*. The first domain of this model is health and ADL, which corresponds to healthy aging as the most used term, whereas all four domains are usually called successful aging (within a biopsychosocial scientific context) or active aging (within a sociopolitical and mass media perspective). It can also be mentioned that productive aging emerges from the last domain.

In summary, the most relevant traits characterizing successful aging arising from these reviews are the following:

1. Healthy aging refers mainly to the absence of illness and disability or ADL preservation.
2. The subject of most of these studies is successful aging, which seems to be a term referring to the full concept of aging well. In order to define successful aging, the descriptive criteria used are multidisciplinary and this is often emphasized by the authors.
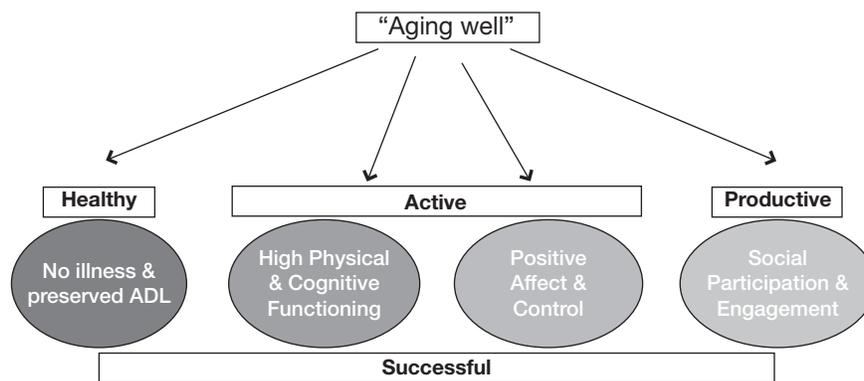

FIGURE 5.1 Four-domain model of aging well (healthy, successful, active, and productive aging; see Fernández-Ballesteros, 2002, 2008). ADL = activities of daily living.

3. Among the predictors or determinants, in addition to sociodemographics and survival, the authors emphasize lifestyles and, in a minority of studies, psychosocial characteristics.
4. It is important to mention that some conditions such as illnesses, personality, or "environment or finances" are included in some studies as dependent (as outcomes) and simultaneously as independent variables (as determinants or predictors). Thus, some problematic issues emerge from these reviews, which will be discussed subsequently.

To What Extent Are Older Adults Aging Well?

In most studies, the first question addressed is to what extent participants meet the criteria for aging well, that is, what is the prevalence of aging well evaluated as a nominal variable (although in everyday life, aging well could be considered as a continuous variable).

Table 5.3 shows the proportion of older adults classified as healthy or successful agers by different researchers. A synthesis of those results follows.

1. From the cross-sectional and longitudinal studies of healthy or successful aging reviewed by Peel et al. (2005), results yielded a broad range of successful agers—from 12.7% ("survival, high level of functioning") to 49.0% ("in old age having little or no disability prior to death").
2. Depp and Jeste's (2006) review yielded an even broader range of prevalence ranging from 0.2% to 97%. In 22 studies that included disability/physical functioning in their definitions the mean proportion was 27.2%; in 4 studies that did not include disability/physical function, the mean proportion was 63.8%; in those studies that used cognitive functioning, the mean was 25.5%; in those that did not use cognitive function, the mean was 38.2%. The mean proportion of successful agers among studies that included both cognitive and disability/physical function was 20.4%.
3. Fernández-Ballesteros et al. (2011) reported, on the baseline of ELEA (*Estudio Longitudinal sobre Envejecimiento Activo*), with successful aging defined through "simple" and "combined" outcomes. The former ran from 93% ("absence of support needed") to 27.24% ("no illness reported"). The four combined definitions reached the following values: (a) very good or good subjective health and ADL and high mental status and high satisfaction, 41.4%; (b) no illness reported and ADL and high mental status and high satisfaction, 27.9%; (c) high activity level and ADL and high mental status and high satisfaction, 19.5%; and (d) high productivity and ADL and very good or good subjective health and high mental status and high satisfaction, 15.5%.

TABLE 5.3

Percentage of Healthy, Successful or Active Aging Individuals Across Studies

Author, Publication Year		Outcome Definitions	Prevalence (%)
Guralnik & Kaplan, 1989		Survival, high level of functioning	12.7
Strawbridge et al., 1996		Survival, with high level of functioning	35
Reed et al., 1998		Surviving, free of major life-threatening illnesses; physical and mental capacities	19
Leveille et al., 1999		Old age and having little or no disability prior to death	49
Ford et al., 2000		Independent living	20.1
Vaillant & Mukamal, 2001		Survival; high level of physical, mental, and social well-being	26/29
Depp & Jeste, 2006, for review		• Studies that had disability/physical function and reported a proportion of successful aging (*N* = 22).	M: 27.2 Range: 0.4–63
		• Those studies including cognitive functioning (*N* = 4)	M: 25.5 Range: 0.4–76
		• Studies that included both cognitive and disability/ physical function (*N* = 4)	M: 20.4 Range: 0.4–49.9
Fernández-Ballesteros et al., 2011	Simple definitions	• No support needed	93
		• High or very high life satisfaction	80
		• Good or very good subjective health	57.2
		• MMSE score more than 28	47
		• No illness reported	27.24

(Continued)

TABLE 5.3

Percentage of Healthy, Successful or Active Aging Individuals Across Studies   *(Continued)*

Author, Publication Year		Outcome Definitions	Prevalence (%)						
Fernández-Ballesteros et al. (2011)	Combined definitions	• Good or very good subjective health, ADL, MMSE >28, high or very high satisfaction	41.4						
		• No illness reported, ADL, MMSE >28, high or very high satisfaction	27.9						
		• High activity level, ADL, MMSE >28, high or very high satisfaction	19.5						
		• High productivity level, ADL, good or very good subjective health, MMSE >28, high or very high satisfaction	15.5						
Hank (2011)[a]	Simple and global definitions		AT	DE	SE	NL	ES	IT	FR
		• No major diseases	59	27	45	49	40	39	39
		• No disability	88	84	86	88	85	83	83
		• High cognitive functioning	68	67	64	69	51	36	45
		• High physical functioning	64	61	68	69	51	54	60
		• Actively engaged	22	27	39	40	22	24	29
		• Successful aging (global)	**10**	**12**	**17**	**17**	**3**	**5**	**8**

Note. MMSE = Mini Mental State Examination>; BADL = basic activities of daily living>; ADL = activities of daily living.
[a]Pooled baseline interviews from Survey of Health, Ageing and Retirement (SHARE) Waves 1 and 2 (Release 2.3.0), 2004–2007; cross-sectional weights applied in selected countries: AT = Austria; DE = Germany; SE = Sweden; NL = The Netherlands; ES = Spain; IT = Italy; FR = France.

It is important to mention that multidomain definitions can be applied also within the very old, although with different standards (two or less number of illnesses reported, 24 or high Mini Mental State Examination [MMSE] score, very or rather satisfied with life, good or rather good subjective health and basic ADL conserved). In our longitudinal study of adults aged 90 years and older, 90% of individuals who died before the first follow-up (8–14 months after the baseline) were classified in the baseline as *nonsuccessful agers*. Nevertheless, 53% of individuals participating in the follow-up were classified as "successfully aging" in the baseline.

4. Hank (2011), based on Survey of Health, Ageing and Retirement in Europe (SHARE) baseline data, also reported "simple" and "combined" (global) definitions of successful aging in several selected European countries. Simple definitions run from 22% for "actively engaged" (Austria and Spain) to 88% for "no disability" (Austria and The Netherlands). Regarding "global" (combined) successful aging, measures run from 17% (Sweden and The Netherlands) to 3% (Spain).

It should be emphasized that there are many sources for *variability* in calculating the percentage of people aging well: (a) because aging well is associated with age, study sample range and age distribution are among the first factors to take into consideration; (b) also, related to sampling, criteria for inclusion are a second factor as potential source of variability, and most studies do not include individuals living in institutions or with cognitive or physical impairments, and, therefore, results yielded cannot be generalized to the whole older adult population; (c) methods for operationalizing criteria are also a source of variance in the percentage of successful agers, and objective tests and self-reports—the main instruments for data collection—have different sources of error; and (d) last but not the least, an important source of variability is the lack of consensus in the definition of aging well, which makes results difficult to compare. Moreover, as Depp and Jeste (2006) pointed out, many studies are focused on pathology or functional impairment and not on positive conditions of aging. Therefore, this is the most important source of the broad diversity observed in percentages regarding aging well. In summary, researchers and policy makers must work together toward a consensus on the operational definition of aging well if prevalence data are going to be compared across individual or population levels.

THE LAY CONCEPT OF AGING WELL

During recent decades, scientific findings about aging have been disseminated; politicians, newspapers, and lay audiences have adopted some of these ideas and scientific concepts have been embedded in people's vocabulary and in their

thinking. The lay concept of aging well is highly important because, as already stated, healthy, successful, active, and productive aging is not only a scientific concept emerging from the laboratory but also a scientific concept arising from the social world. The FUTURAGE (2011) document stated that "there is an urgent need to explore through multidisciplinary and multi-countries studies, involving qualitative and quantitative components, how older people themselves define healthy aging, including the oldest old" (p. 23). Therefore, one avenue of inquiry is to examine how lay people at different ages and in different populations conceptualize aging well.

Is Aging Well a Cross-Cultural Social Concept for Older Adults?

Some authors consider that aging well is a concept open to cultural variation (e.g., Ryff, 1989), or that it is "in the eye of beholder" as stated by Bearon (1996). But although there is no scientific consensus about whether healthy, successful, or active aging are synonymous and how these can be defined to distinguish among them, older adults do seem to agree on a definition of aging well. Several studies searching for the implicit concept of aging well in older adult populations, generally performed from a qualitative perspective and with national samples, included the following components: health (mental, psychological, physical, and social health), functional abilities, life satisfaction, sense of purpose, financial security, learning new things, accomplishments, physical appearance, productivity, contribution to life, sense of humor, and spirituality (Bowling & Dieppe, 2005), Bowling and Dieppe concluded with a critical comment that most of these domains are not considered adequately by theoretical models of successful aging.

It must be emphasized that any social concept is defined with a set of conditions more or less close to the central meaning of the concept. The question could be, "What are the central characteristics of aging well across older adults, across ages, and across cultures?" Thus, seeking to make cross-cultural comparisons, it was decided to select the research protocol (the 20-item questionnaire "Your Ideas About Growing Older") developed by Phelan, Anderson, Lacroix, and Larson (2004) and administered to White ($N = 2,581$) and Japanese ($N = 1,985$) Americans and administered also by Matsubayashi, Ishine, Wada, and Okumiya (2006) in Japan ($N = 5,207$). Thus, Fernández-Ballesteros et al. (2008) conducted a survey on 1,189 individuals (58% women), with a mean age of 68 years (age range: 50–100 years), across seven Latin American (Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, and Uruguay) and three European (Greece, Portugal, and Spain) countries. Table 5.4 shows percentages of older adults who agree with given criteria for aging well living in several regions of the world: Japan (samples from five cities), United States (Japanese and White), Latin America (seven countries), and Europe (three countries). The consensus

TABLE 5.4

Percentage of Older Adults Including Conditions for Aging Well From Phelan et al. (2004), Matsubayashi et al. (2006), and Fernández-Ballesteros et al.

Item	Japanese	Japanese American	White American	European	Latin American
1. Living a very long time	48	27	29	56	61
2. Remaining in good health until death[a]	91	93	95	99	91
3. Feeling satisfy with life[a]	81	78	84	95	93
4. Having the kind of genes helping age well	83	60	70	87	77
5. Having friends and family who are there for me[a]	83	86	90	97	95
6. Stay involved with world and people	63	77	88	92	86
7. Being able to make choices about how to age[a]	72	85	92	94	92
8. Being able to meet all my needs	59	81	92	97	94
9. Not feeling lonely or isolated	69	75	84	93	78
10. Adjusting to changes related to aging[a]	76	76	83	87	86
11. Being able to take care of myself[a]	87	93	95	98	93
12. Having sense of peace when I think in dying	74	72	75	85	85

(Continued)

TABLE 5.4

Percentage of Older Adults Including Conditions for Aging Well From Phelan et al. (2004), Matsubayashi et al. (2006), and Fernández-Ballesteros et al.   (Continued)

Item	Japanese	Japanese American	White American	European	Latin American
13. Feelings of influencing others	45	55	67	76	85
14. Having no regrets about how I lived my life	69	61	67	86	77
15. Being able to work after usual retirement	47	43	50	63	81
16. Feeling good about myself	70	79	85	98	95
17. Being able to cope with challenges	64	84	93	90	92
18. Remaining free of chronic diseases[a]	81	91	90	96	77
19. Continuing to learn new things	58	62	79	69	89
20. Being able to act according to my own values	65	81	92	94	96
Mean	69	73	80	87	86
Number of items with % ≥ 75	6	10	13	17	14

Note. From "Lay Concept of Aging Well: Cross-Cultural Comparisons," by R. Fernández-Ballesteros, L. F. Garcia, D. Abarca, L. Blanc, A. Efklides, R. Kornfeld, . . . S. Patricia, 2008, *Journal of the American Geriatrics Society*, *56*, pp. 950–952. Copyright 2008 by The American Geriatrics Society. Modified with permission.
[a] Items accepted by more than 75% in each sample.

among regions is very high, although the greatest differences in the criteria for aging well come from Japanese persons both in Japan and of Japanese origin but living in the United States. Like Phelan et al. (2004), we selected those items accepted by more than 75% in each sample; thus, the most important conditions for aging well are the following: *remaining in good health until death*, *feeling satisfied with life*, *having friends and family*, *adjusting to changes related to aging*, *being able to take care of myself*, and *remaining free of chronic diseases*.

Moreover, we explored the similarities and differences in the semantic structure of the concept (20 items) among Latin American and European countries through an exploratory factor analysis from which three factors emerged: *health*, *independence*, and *social participation and positive affect*. These three factors account for 45.7% and 47.4% of variance for Latin American and European region, respectively (Fernández-Ballesteros et al., 2010). This structure remains present in both age groups (young [younger than 65 years old] and old [65 years and older]) and in the 10 countries examined. In summary, although we compare different continents and languages, there is a relatively consistent view of aging well in the samples assessed that could be attributed to the international effort for disseminating research and practice about this concept as well as for promoting political actions for aging well (United Nations, 2002; United Nations Economic Commission for Europe, 2003; WHO, 2002).

Nevertheless, several issues remain. First, as has been mentioned, we have no answer yet to an important question: To what extent do the oldest old have the same concept for aging well as the younger old? With this purpose, a reanalysis of our primary data has been conducted, and qualitative analysis of an open question in the protocol has been performed as well.

Do the Oldest Old Have a Similar Definition of Aging Well as the Younger Old?

First of all, a reanalysis of our previous data comparing adults aged 80 years and older ($N = 152$, age range = 80–100 years, mean age = 83.53 years; 54.6 years in women) and adults aged 79 years and younger ($N = 1,037$, age range = 50–79 years, mean age = 65.93 years; 58.95 years in women) is done.

Second, Phelan et al. (2004) described their results taking into consideration those items rated as important to successful aging by more than 75% in their comparisons among American Japanese and White, and we follow these procedures in our multiple comparisons (Fernández-Ballesteros et al., 2008). However, this cutoff seems to have a very low ceiling because many items were rated as important by more than 75% of the three samples. So we decided to describe our results, paying attention to those items rated as important by more than 90% of participants. Finally, we analyzed three items included in our protocol because they were present in other lay studies but not included in that of Phelan et al.: *keep mentally well*, *keep physically well*, and *have plans and goals* (items: 21, 22, 23).

Results show a great consensus of agreement in all samples for two thirds of the items, that is, the oldest old share common concepts with the younger old; even more, the consensus was higher than 90% in almost half for both age groups (see Fernández-Ballesteros, Schettini, Santacreu, & Molina, 2012). However, the oldest old are significantly less likely to endorse some characteristics of aging well: *feeling they*

influence others' lives in positive ways, *being able to work in paid or unpaid work*, *continue to learn new things*, *keep physically well*, *keep mentally well*, and *have plans and goals*.

A reanalysis of our research protocol was performed examining a last open-ended question selected from the Phelan et al. (2004) questionnaire entitled, Your Ideas About Growing Older. As in the original study, data were collected from seven Latin American countries and two European countries—Portugal and Spain (participants in Greece did not fill in this open question). This open question asks participants to choose the 5 main aspects of growing older from a list of 13 elements. To search for differences among older old and younger old adults, the sample was divided by age into two groups: the first group includes 634 participants from 50 to 79 years old ($M = 65.82$ years, $SD = 7.04$; 63.8% were women), the second group includes 50 participants aged 80 years and older who respond to the open question ($M = 83.96$ years, $SD = 4.06$, range $= 80–100$; 60% were women). To rate the importance of the items for both samples, the percentage of younger old and oldest old adults who rate each item in the first, second, or third order was added up. Table 5.5 shows the results yielded from this analysis for both samples. Items 1, 2, 3, 4, 5, and 9 are the most important

TABLE 5.5

Percentage of Young Older and Very Old Adults Who Rate Each Item of the Open Question

Most Important Items[a]	Younger Old		Oldest Old	
	1st	Σ (2nd; 3rd)	1st	Σ (2nd; 3rd)
Having no chronic diseases	58.9	16.8	77.6	4.2
Remaining able to take care of myself	6.9	33.7	2	20.7
Feeling that my life has had and continues to have purpose and meaning	7	26.3	4.1	35.1
Having the companionship of friends and family	3.2	28.8	4.1	24.8
Feeling comfortable with the person I am	8	22.1	4.1	26.9
Being mentally well	5.3	16.2	4.1	24.7

Note. First column = first selection; Second column = second and third selection (see Fernández-Ballesteros et al., in press).

[a] All items are the following: (a) having no chronic diseases, (b) feeling comfortable with the person I am, (c) feeling that my life has had and continues to have purpose and meaning, (d) remaining able to take care of myself, (e) having the companionship of friends and family, (f) living a very long time, (g) continuing to learn new things, (h) coping well with the changes that age brings to my body, (i) being mentally well (added), (j) feeling able to cope with whatever comes my way, (k) being free to make my own choices, (l) feeling financially secure, and (m) having a sense of peace and calm about my eventual death.

but in different order; whereas old adults' rate was 1, 4, 3, 5, 2 and 9; and very old adults' rate was 1, 3, 2, 9, 5 and 4.

In summary, there is a very high consensus among the oldest old and the younger old regarding the concept of aging well, although the oldest old reported less importance of items referring to control, to learning, to feeling well, and to the future. It is highly interesting that when individuals are forced to select specific domains of aging well, *health* continues to be *the core of aging well*, with *independence* in second place (but more important for the younger old than for the very old). Finally, the third domain is composed of a set of psychological conditions linked to emotional and cognitive integrity of older adults.

SOME PROBLEMATIC ISSUES ON THE CONCEPT OF AGING WELL

Confusing "Outcome" and "Predictors or Determinants"

In several studies reviewed here, there is confusion between the description of aging well (outcomes of aging well) and its predictors or determinants. From a methodological point of view, to test predictions about aging well, most cross-sectional studies performed regression analysis, distinguishing between dependent and independent variables. When combined measures of healthy, successful, or active aging are used as dependent or outcome variables, the threat of a tautological error must be taken into consideration.

In the seminal chapter about the model on successful aging, "Selective Optimization With Compensation," P. B. Baltes and M. M. Baltes (1990) distinguished between antecedent conditions (e.g., reduction in general reserve), process (selection, optimization, and compensation), and outcomes (effective life). Kahana and Kahana (2003), in their model entitled Preventive and Corrective Proactivity, distinguished between the historical context, long-term and recent stressors and person–environment relationships, internal and external resources, proactive and corrective adaptation mechanisms, and outcomes (affective states, meaning of life, maintaining preferred relationships and activities).

In addition, the structural equation modelling performed with EXCELSA (Cross-European Longitudinal Study of Aging) data (Fernández-Ballesteros et al., 2004) coming from European individuals aged 30–85 years old ($N = 672$, selected by quota sampling in each country) fits well the distinction between biopsychosocial "distal" (such as education, socioeconomic status [SES], gender) and biopsychosocial "proximal" (healthy lifestyles, social networks, control, subjective health and fitness) determinants of *physical and cognitive competence*. This equation modelling yielded high concordance coefficients across seven European countries (Austria, Finland, Germany, Italy, Poland, Portugal, and Spain) and younger and older groups.

Objective Versus Subjective Outcomes of Aging Well

The short history of all terms used to classify aging well, from a scientific point of view, shows that subjective conditions (e.g., life satisfaction, positive affect) were added to other objective indicators such as number of chronic diseases diagnosed or level of functional dependence, even though several authors such as Lehr, Seiler, and Thomae (2000) have suggested that aging well might be reduced to subjective conditions such as life satisfaction as the core component across cultures.

Pruchno, Wilson-Genderson, and Cartwright (2010) proposed a conceptual two-factor model of successful aging with both objective and subjective measures included to integrate this multidimensional concept. The authors suggest that age is associated with more objective measures, but gender seems to be more strongly associated with the subjective component of aging well. The results in Table 5.2 support the idea that age is a predictor of both objective and subjective components of aging well. Nevertheless, the influence of gender is not clear. Much more research is needed regarding gender.

Along the same lines, the Longitudinal Study of Active Aging (ELEA) Fernández-Ballesteros (2011) supported the *multidimensionality* of five factors of successful aging (excluding age and gender), which accounted for 48% of the variance: cognitive functioning, positive affect and control, health, physical fitness, and activity. Those factors are also mentioned in most of the theoretical and empirical works about positive aging. In this study, *cognitive functioning* is measured by the MMSE, Digit Symbol and Digit Backward tests (assessing, respectively, learning and working memory), and cognitive plasticity (assessed through performance using Auditory Verbal Learning Test [AVLT]), and it accounts for the highest component of the total variance (20.6%). Cognitive and/or mental fitness is included as one of the components of successful aging by most definitions in Table 5.1, and all of them are objective measures. The second factor called *positive affect and control* (9.2% variance) is the only totally *subjective component* of aging well. It is loaded by three measures—satisfaction, emotional balance, and self-efficacy for aging—supporting the importance of positive affect and control in aging well. It has been posited as one of the criteria from Havighurst (1963), Palmore (1979), WHO (2002), and many other authors (see Table 5.1; Fernández-Ballesteros, 2008). The third factor regards *health* (5.7% variance), loaded by two objective measures (number of chronic illnesses diagnosed and medicines taken) and by two subjective measures such as subjective health (composed of three questions) and appraisal about fitness (composed of six questions about strength, speed, endurance, balance, etc.). The fourth factor is called *physical fitness* (4.9% variance) and is loaded by the three objective measures of static and dynamic balance and the body mass index. All these measures are taken into account as indicators of physical functioning and healthy aging (Cesari et al., 2009). Finally, *activity* factor (4.8% variance) is loaded by leisure and productive activities; it can be considered that activity

and productivity are also essential for successful aging because activity is a leading theory for active aging (Havighurst, 1963), as has been emphasized by many authors (Andrews et al., 2002; P. B. Baltes & M. M. Baltes, 1990; Rowe & Khan, 1997).

In summary, aging well is a multidimensional concept, embracing objective and subjective components, which cannot be reduced to any of these components, either objective or subjective. Both types of indicators must be present in any research protocol attempting to assess the components of aging well: cognitive functioning, affect and control, physical fitness, health, and activity and productivity.

Active Aging Along the Aging Process

Aging well is highly associated with age. As shown in Table 5.2, in all 10 longitudinal and 3 of 5 cross-sectional studies, age is a negative predictor of aging well; that is, higher age lower aging well. In fact, the authors not only classify aging as usual, pathological, and successful (e.g., P. B. Baltes & M. M. Baltes, 1990; P. B. Baltes & Smith, 2003; Rowe & Khan, 1987, 1997) but also as "young old" and "old old" or into the "third" and the "fourth" ages.

Thus, Neugarten (1977) distinguishes between the young old and the old old. The first group classifies people who after retirement have good health, physical strength, participate in society, and are active; whereas the old old are those who, because of their mental or physical impairment, require health and social services support. Neugarten warns that although most of the young old people are between 60 and 70 years old, most of the old old are around 80 and 90 years old but remains under the assumption that age is not a relevant factor.

Although "third age" is an older and euphemistic term referring to older adults, it was Laslett (1991) who proposed this term in the scientific literature, arguing that age should not be seen as a residual category of life cycle but rather as the chance to enjoy longer, healthier lives and time for personal enjoyment. But it was P. B. Baltes and Smith (2003) who distinguished between the third and the fourth age. From a population perspective, these authors place the transition between the third and fourth age at the time when 50% of the people who reached age 50 or 60 years have died, which is between 80 and 85 years old. From the individual perspective, the aim is to estimate the maximum life span of a given individual. In this view, individual transitions to the fourth age could begin at rather different ages, for instance, around age 60 years for some or around age 90 years for others.

For P. B. Baltes and Smith (2003), the fourth age is not a continuation of the third age, and although it would consist of people who are aging well, the fourth age is characterized largely by pathology. According to these authors, healthy and successful aging has limits of age; so in the third age, empirical evidence allows us to take a positive view of aging. Among the findings in this group, at the same time, increased life expectancy is increasing; substantial latent potential for better fitness (physical and

mental) increases as well. That is, successive cohorts show gains in physical and mental fitness and evidence of cognitive–emotional reserves of the aging mind; more and more people who are aging successfully have high levels of emotional and personal well-being and effective strategies to master gains and losses into later life. However, the study of the fourth age yields data that point to a more pessimistic view about the effects of age. Thus, the evidence includes measurable losses in cognitive potential and in the ability to learn and increase in the chronic stress syndrome, sizeable prevalence of dementia, high levels of frailty, dysfunctionality, and multimorbidity.

Third and fourth ages refer to two relatively independent characteristics: functioning and age. Age is easy to operationalize and measure, but functioning is not only dependent on age but also on other sociodemographic characteristics. As an example, we have developed two studies on the "very old" in Spain and in Mexico based on sociodemographics of the population in both countries (life expectancy and percentage of people surviving to this age); the age cutoff for selecting our sample in Spain was 90 years and older, but in Mexico it was 80 years and older. Moreover, the criteria for inclusion in both samples maintained the nonexistence of cognitive impairment (although taking into consideration the respective level of education). Taking our empirical definition of successful aging adapted to the oldest old (fairly or very satisfied with life, score equal or greater cutoff in MMSE for no cognitive impairment, basic ADL preserved, have two or less illnesses, and subjective health evaluated as fairly or very good), we found that the percentage of successful aging in Spain was 23.4%, whereas Mexico only reached 6.6%. This result emphasizes the great importance that historical, social, and cultural conditions along the life cycle, in addition to the individual characteristics of the person (including age, education, or SES), have for aging well.

In summary, aging well can be understood as a combination of conditions (low illness, basic ADL preserved, high cognitive functioning, positive affect, social activity, and participation). In principle, there is no reason for changing the concept of aging well in the oldest old because this is in accordance with the opinion of older adults as already mentioned. Nevertheless, this combination of characteristics does not mean that, from a quantitative point of view, aging well may be considered the same across the life span, with different cutoff points depending on age, which is in line with our expectations. The scientific community must arrive at an agreement on which standards should be applied across old age.

DO DIFFERENT LABELS FOR AGING WELL MEAN THE SAME?

Throughout the history of the aging well concept, as well as in the field of its lay conceptualization, we find several similarities and differences among these three more common verbal labels: healthy aging has been used mainly from a

biomedical perspective, being operationally defined through illnesses and functional abilities; successful aging has been a broader conceptualization, embracing biopsychosocial components of aging well; finally, active aging has emerged into a sociopolitical arena as a health concept to offer a framework for sociopolitical policies, programs, and actions (WHO, 2002).

Supporting some of these conclusions, the FUTURAGE (2011) *Road Map* is a document containing a research agenda developed from the Seventh Framework Programme of the European Commission, with the aim of enabling Europe to respond successfully to the unprecedented demographic challenge of population aging. In this document, active aging is considered as a foundational paradigm upon which key priorities for research on aging are organized. Healthy aging is considered as one of these but in the same way as others such as mental capacities, participation, protection, inequality, biogerontology, and home and community (FUTURAGE Group, 2011). Therefore, active aging is emerging as a political keyword for inspiring policies, programs, and actions within a vast space including healthy aging, *mental capacity*, and participation among other domains. As Walker (2009) stated, "Active aging is established as the *leading global policy strategy* in response to population aging. In practice, however, the term active aging serves as a convenient shelter for a wide range of policy discourses and initiatives concerning demographic change" (p. 75).

In summary, active aging could be considered as a *mantra* within a political discourse; but can it be adopted and adapted for scientific discourse? In our opinion, active aging can be considered as a synonym for successful aging that is much more accepted from a lay perspective than successful aging. Thus, as mentioned earlier, healthy aging is a low-level concept referring to health status and functionality inserted in a broader configuration of other multidimensional concepts such as successful and active aging.

Nevertheless, although successful aging is one of the most used concepts within the field of aging well, at least from a scientific and academic perspective, in none of these (let us say "political") documents is successful aging considered. From a historical point of view, successful aging emerged as a multidimensional new concept trying to overcome healthy aging, which researchers had reduced to health (low probability of illness) and preserved ADL. But, without doubt, successful aging is a very close concept to the others with low occurrence such as optimal, vital, competent, and productive aging. Nevertheless, successful aging is not used in other linguistic contexts or mass media tradition or in common literature.

As already stated, aging well can be considered as a semantic network in which several verbal labels are grouped: successful, active, productive, optimal, vital, and competent aging are very close terms with very close meaning. Only healthy aging seems to have a specific meaning, comprising the main conditions for aging well.

All aging well definitions (successful, active, productive, optimal, vital, competent) seem to have a multidimensional conceptualization which incorporate a set of domains to successful aging, which can be grouped as follows: (a) health and ADL (low probability of illness and disability), (b) physical and cognitive fitness, (c) positive affect and control, and (d) social participation and engagement. It must be emphasized again that this conceptualization attempts to complete that formulated by Rowe and Khan (1987), with affect and control, a domain considered by many authors throughout the history of aging well (e.g., Hank, 2011) as well as cross-culturally lay concepts. This four-domain model has been recently tested through empirical data, both from lay conceptualizations of aging well (Fernández-Ballesteros et al., 2008, 2011; N = 1,189, 58% women, mean age = 68 years, age range = 50–100 years) and from our research project ELEA using a research protocol with 412 measures assessing 55 variables grouped in nine domains (see Fernández-Ballesteros et al., 2011; N = 458, 62% women, mean age = 66.47 years, age range = age 55–75 years) through structural equation modelling. Fernández-Ballesteros, Schettini, Molina, and Santacreu, (2012) confirmed this four-domain multidimensional model of aging well through multiple data, collected from multiple methods, in the databases of our lay and ELEA projects. We offer a brief description of these analyses (for an extensive description, see Fernández-Ballesteros, Schettini, Santacreu, & Molina, 2012).

First, we fitted the four-factor model through structural equation modelling with LISREL 8.80 (Jöreskog & Sörbom, 2006; unweighted least squares [ULS] estimation and polychoric correlations because of the ordinal nature of our data), with the database from our "lay concept study" sample (Fernández-Ballesteros et al., 2008) described earlier. We found four weighting factors on health, seven on cognitive and physical functioning, six on affect and control, and five on social participation. All weights were over .4, between-factor correlations were above .5, model fit indices were acceptable (root mean square error of approximation [RMSEA] <1 and standardized root mean square residual [SRMR] <.9; Hu & Bentler, 1999); hence, this four-domain model fits our data.

Next we fitted the same model to the ELEA sample database (see Fernandez-Ballesteros et al., 2012) to obtain a multimethod, multicontent scope. We used the same software but different estimation methods (maximum likelihood [ML] estimation and Pearson correlations) because measures from ELEA are continuous. At baseline, this sample contains 412 objective and subjective variables, assessing 23 functions, and grouped into nine domains: anthropometry, health, physical and physiological functions, lifestyle, cognitive functioning, emotional-motivation functioning, personality, social functioning and participation, and sociodemographics. We decided to include cognitive and physical functioning separately but defining them as a domain because of their great number of weighting items

and the very different types of measures they include. These two factors have weights of .83 and .97 and were defined by four and six items severally. For health, affect and control, and social participation, we have four, three, and four measures, respectively, weighting with values above .2 with the only exception of number of illnesses that has a value of .10, which we consider low but necessary. Finally, we again obtained between-factor correlations larger than almost .5, with the difference that health is a negative domain because it is defined by the number of illnesses, number of daily medicaments, self-perception of health, and ADL. Model fit indices were as good with RMSEA (<.06) and SRMR (<.9; Hu & Bentler, 1999); therefore, this four-domain model of aging fitted our data well.

Figure 5.2 shows both graphic representations of our four-domain model of aging well and those mathematical fit of the model. The model is very close to
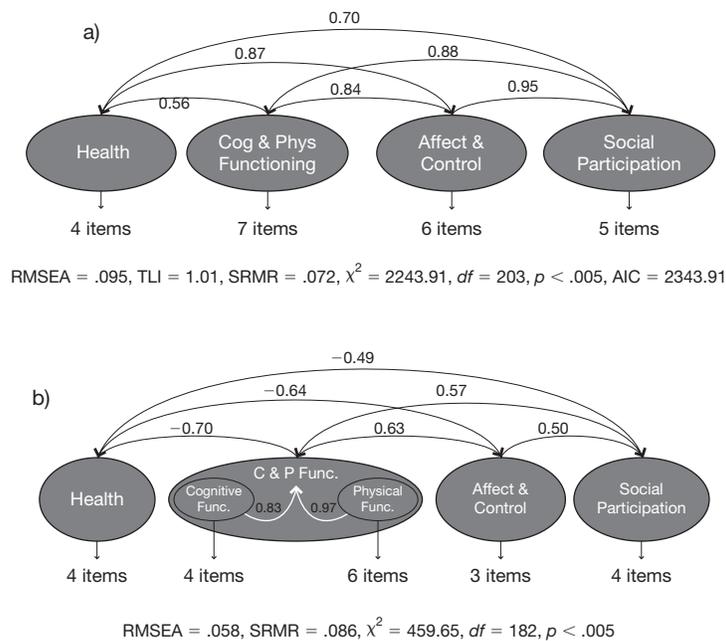

FIGURE 5.2 Structural equation modeling of four-domain model of aging well (a) from lay conceptualizations ($N = 1,189$), RMSEA = .095, TLI = 1.01, SRMR = .072, χ^2 = 2243.91, df = 203, $p < .005$, AIC = 2343.91; and (b) from ELEA Project multimethod database ($N = 458$), RMSEA = .058, SRMR = .086, χ^2 = 459.65, df = 182, $p < .005$. RMSEA = root mean square error of approximation; TLI = Tucker-Lewis Index; SRMR = standardized root mean residual; AIC = Akaike information criterion; Cog & Phys = cognitive and physical; ELEA = *Estudio Longitudinal sobre Envejecimiento Activo* (Longitudinal Study of Active Aging); Cognitive func. = cognitive functioning; C & P func. = cognitive and physical functioning; Physical func = physical functioning.

this proposed by Rowe and Khan (1987), with an important addition: the emotional and evaluative component of aging well, which is integrated by positive mood, life satisfaction, life control, and perceived self-efficacy for aging. We must emphasize the associations of those four domains as well as the entity of each one of them. Finally, healthy aging is one of the four domains considered in both structural equations, and it could be considered the core of aging well.

CONCLUSIONS

Aging well is a common verbal level grouping a set of words used over the last decades as the expression of a new paradigm in the science of aging and qualifying the process of aging as healthy, successful, active, optimal, competent, vital, and productive. These terms are used interchangeably being considered synonymous, but they have specific semantic specifications.

After a brief review of this field, the most evident conclusion is that there is no commonly accepted definition of aging well or a common meaning with use of the same verbal labels. The only clear consensus is that all definitions (with exception of healthy aging) seem to be multidimensional and integrate biopsychosocial components. Therefore, a scientific consensus on a definition could help establish reliable prevalence of this new paradigm and even using a set of words to name it.

On the contrary, cross-culturally, there is a strong consensus regarding what aging well is for lay older adults and, comparing the younger old with the very old, there are only minor differences because of age in the ingredients considered important for aging well.

Although there is not a consensus on the definition of aging well, authors and laypersons do coincide on the main four domains for this way of aging; health maintenance and ADL preservation, high physical fitness and cognitive functioning, positive affect and control, and social participation and engagement seem to be the most accepted domains. After several analyses through structural equation modelling, these four domains emerge as a conceptual structure both from the lay opinion about aging well and from the empirical data emerging from multimethods and multiconstructs. Therefore, the semantic field of aging well, which groups several terms, cannot be reduced to any single one of its components.

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