Identification of the Best Societal Measurement of Healthy Aging

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Almost six decades after the first proposals to define and evaluate the quality of individual aging, the first indexes for assessing the aging process at the societal level have appeared. Moreover, in five years, three different scores for measuring societal aging have been developed and tested in different areas. The Global AgeWatch Index focused on 96 countries from around the world, while the Active Ageing index is limited to the European Union countries and the Ageing Society Index targets Organization for Economic Co-operation and Development countries. This paper analyzed and compared the results of these three indexes. The rankings vary little at the bottom end of the scale, with the same countries consistently ranked among the lowest scores (for example, Poland ranked last among the European countries in the three indexes). The same is true at the top of the rankings, with Sweden, the Netherlands, and Ireland consistently among the high-scoring countries. However, the three indices tend to differently rank the countries in the middle. The United States, for example, is ranked ninth in the Global Age Watch 2015 and third in the Ageing Societal Index 2018. In cases in which the results are not consistent, it is difficult for politicians and policymakers to adequately identify needs and orient the policy to promote active and healthy aging. There is clearly a compelling need for wide-scale debate to reach a consensus on a comprehensive score or index at the societal level. (*Ann Geriatr Med Res* 2019;23:45-49)

Key Words: Healthy aging, Successful aging, Aging indexes, Aging scores, Ageing

INTRODUCTION

Confusion persists between the multiple definitions used heretofore to describe a successful aging process. Unfortunately, the multiplicity of approaches to the same phenomenon results in a range of definitions using diverse terms, such as “successful aging”, “active aging”, “active and healthy aging” or simply “healthy aging”, with the terms chosen depending on the background of the promoters of the definition. Too often, these definitions are used without the necessary distinction intended by the authors (Table 1).¹⁻⁹⁾

Due to these successive and diverse definitions, no consensus criteria yet exist to measure the quality of the aging process at the individual level. This can easily be understood, as aging results from the interaction between individual capacity (intrinsic capacity) and the many components of the person’s life environment (cultural, political, societal, and socio-economic).⁸⁾ Two exhaustive reviews of the literature, one performed in 2006 including 28 longitudinal studies¹⁰⁾ and a second in 2018, based on 50 different longitudinal studies,¹¹⁾ bear testimony to the diverging opinions of researchers with regard to individual aging outcomes.

The same confusion is now also starting to appear in attempts to extend the concept of “good” aging to the societal level. As mentioned above, the multiple interactions existing within any society are extremely complex and can be only approached from a life-course perspective, which is not yet totally possible. Since 2012, three main societal indices have been proposed to attempt to achieve a global overview of the aging challenges faced by the world to help politicians and public health decision-makers focus on the main aging-related issues. These indices are:

- The Global AgeWatch Index,¹²⁾
- The Active Ageing index,¹³⁾ and
- The Societal Index of Ageing¹⁴⁾

The goal of the present paper is to briefly introduce and critically analyze these three societal approaches to aging (Table 2).

THE GLOBAL AGEWATCH INDEX

The Global AgeWatch Index (“the Index”) was developed by Zaidi for HelpAge International with the overarching purpose of promoting “the development of policies and programs that will improve the quality of life and well-

being of current and future generations of older people". It includes 13 items covering four different domains chosen to capture the multidimensional nature of older people's

well-being; namely:

- Income security (using direct indicators of personal well-being)

Table 1. A history of the most widely used definitions of aging concepts¹⁾

Aging concept (y)	Definition	Reference
Successful aging (1961)	Conditions promoting maximum satisfaction and happiness	2
Successful aging (1963)	Having inner feelings of happiness and satisfaction with one's present and past life	3
Successful aging (1987, 1998)	The interplay between social engagement with life, health, and functioning for a positive aging experience (low probability of disease and disease-related disability)	4, 5
Active aging (2002)	Active aging is the process of optimizing opportunities for health, participation, and security to enhance the quality of life as people age	6
Healthy aging (2007)	Optimizing opportunities for good health so that older people can take an active part in society and enjoy an independent and high quality of life	7
Healthy and active aging (2011)	The process of optimizing opportunities for health to enhance the quality of life as people age and grow old	8
Healthy aging (2015)	Healthy aging is more than just the absence of disease. It is the process of developing and maintaining the functional ability that enables well-being in older age	9

Table 2. Comparisons of the domains included in the three healthy aging societal indexes (commonalities and differences between the chosen indicators)

Global AgeWatch Index 2013 (n=13)	Active Ageing Index 2013 (n=22)	Ageing Society Index 2018 (n=20)
Employment of older people	Employment rate 55–59 years Employment rate 60–64 years Employment rate 65–69 years Employment rate 70–74 years	Labor force participation Effective retirement age
Ø	Voluntary activity Care for children Care for infirm and disabled	Time spent volunteering, age 65+ years
Civic freedom	Political participation	Ø
Ø	Lifelong learning	Retraining: non-formal education, age 55–64 years
Ø	Physical exercise	Ø
Ø	Independent living Access to health care services	Ø
Life expectancy at 60 years	Remaining life expectancy at 55 years	Ø
Healthy life expectancy at 60 years	Share of healthy life expectancy at 55 years	
Psychological well-being	Mental well-being	Objective well-being at age 65 years Subjective well-being at age 50 years
Gross national income per capita	Ø	Degree of inequality: Gini coefficient, age 65+ years
Education status of older people	Education attainment	High school education, age 55–64 years Tertiary education, age 55–64 years
Ø	Use of information communication technologies	Ø
Social connectedness	Social connectedness	Social support, age 65+ years Trust neighbor, age 50+ years Intergenerational transfers to other age groups, age 65+ years Intergenerational co-residence, age 65+ years
Pension income coverage	Relative median income	Income, age 65+ years
Poverty rate	No poverty risk No material deprivation	Poverty risk, age 65+ years Food security
Relative welfare of older people	Ø	Net pension wealth Public expenditure on long term care
Physical safety	Physical safety	Feeling safe walking alone at night
Ø	Ø	External government debt
Access to public transport	Ø	Ø

Ø, not applicable.

- Health status (using direct indicators of personal well-being)
- Employment and education (used as a proxy for the coping capacities of older people)
- Enabling environments (using indicators of enabling features of communities in which older people live)

A worldwide report considering 91 countries was published by HelpAge International in 2013.¹²⁾ According to the overall ranking in the Index, the top five rated countries were (in descending order): Sweden, Norway, Germany, the Netherlands, and Canada. The bottom five countries, which ranked lowest in terms of well-being in the world, were Rwanda, Jordan, Pakistan, Tanzania and lastly, Afghanistan.

Reevaluation of the Index at regular intervals has shown changes in the rankings of both high-performing and lowest-scoring nations. In the Report for 2015,¹⁵⁾ which incorporated data for 96 countries, the top five ranking countries were Switzerland, Norway, Sweden, Germany, and Canada. In this classification, the United States (US) was in 9th position, down from 8th in the 2013 report. At the bottom of the 2015 Index were Pakistan, West Bank/Gaza, Mozambique, Malawi and again, in the 96th position, Afghanistan.

In the 2015 report,¹⁵⁾ HelpAge stressed that only 11 of the 54 African countries were included, 10 of which were classified towards the bottom of the list of the 96 ranked countries. This testifies to the urgent need for actions to promote aging and health policy that is mindful of the well-being of older people in this part of the world. Similar remarks were true for the Caribbean, Pacific, and Middle Eastern regions.

Repeated evaluations of the Index suggest that the observed changes in the rankings are pursuant to the adoption of favorable aging policies in different countries. However, this is difficult to affirm since a wide range of interconnecting factors contributes to a country's Index value, including political, social, or economic aspects, as well as unmeasured or unpredictable events.

Unfortunately, the regular repetition of worldwide reports is burdensome and difficult. For this reason, the 2018 report focused only on a few low- and medium-resource countries.

THE ACTIVE AGEING INDEX (2013)

The Active Ageing Index (AAI) was developed by a European panel of experts under the leadership of Ziani, in the context of the European Year for Active Ageing and Solidarity between Generations 2012 and with the aim of establishing and tracking progress towards active aging in European Union (EU) countries.¹³⁾ The AAI measures the level to which older people live independent lives and participate in paid employment and social activities as well as their capacity to actively age. The AAI is based on a multidimensional concept including 22 indicators grouped

into four domains referring to a situation where people:

- Continue to participate in the formal labor market (employment);
- Engage in unpaid productive activity (care provision for family members or volunteering; participation in society);
- Live healthy, independent, and secure lives (independent, healthy, and secure living); and
- Remain socially connected, have an adequate life expectancy and mental well-being (capacity and enabling environment for active aging)

All indicators are expressed as positive values ranging from 0 to 100, with higher values corresponding to better active aging outcomes. Using the weighted average of each indicator, the index for each of the four domains can be calculated; the weighted average takes considers the employment and participation in society (both valued at 35), while the independent, healthy and secure living and capacity and enabling environment for active aging domains are weighted 10 and 20, respectively.

In the first report of the AAI in 2012, which described the methodology and initial results,¹³⁾ two Nordic countries (Sweden and Denmark), topped the classification, followed by Ireland, the United Kingdom, and the Netherlands among the EU Member States. At the bottom of this first classification were Central and Eastern European countries and Greece.

Regular evaluation of the AAI showed that Sweden, Denmark, and Italy were the EU leaders in 2017, while Hungary, Slovakia, and Poland were at the bottom of the ranking. The contribution of domains to the overall index for men and women varied considerably in 2017, mainly regarding employment (from 20% in Italy to more than 35% in Estonia), which was well compensated by the social participation domain (from 20% in Italy to less than 10% in Estonia), while capacity building and the favorable active aging environment domains were similar across EU countries. According to the AAI, women fared worse than men in all EU countries except for Estonia and Latvia.

The AAI has also been calculated in other parts of the world. In the Rajshahi District, Bangladesh, 477 rural and 419 urban individuals over 60 were ranked according to the AAI developed in the EU. A strong and significant correlation was found with disability-free life expectancy in this population.¹⁶⁾ These clues from outside the EU underscore the unsuspected advantages and wider potential for application of the AAI.

THE AGEING SOCIETY INDEX¹⁴⁾

Developed by The Research Network on an Aging Society, a 14-member interdisciplinary group of geriatricians, demographers, sociologists, economists, psychologists, and policy experts, the Ageing Society Index is an evidence-based model of a successful aging society that incorporates five major components; namely:

- Productivity and engagement of older persons in society (either through paid employment or volunteering),
- Well-being: health care provision underpinned by a sophisticated understanding of the care needs of older persons,
- Equity: equitable distribution of resources across the older population, thereby lessening the gap between the “haves” and the “have nots”,
- Cohesion: social connectedness and solidarity, within and between generations, and
- Security: economic and physical security for older persons

Each of the five domains is weighted in the overall index (the weights are 22%, 25%, 18%, 17%, and 19% respectively for the domains listed above); each indicator within each domain also carries a relative weight.

When applied to the Organisation for Economic Cooperation and Development (OECD) countries, the countries with the highest Ageing Society Index were Norway, Sweden, and the US, while Estonia, Poland, and Hungary had the lowest indices. Among the domains of the index, only well-being and security showed a significant correlation (Spearman correlation coefficient $r=0.59$, $p=0.011$). Although cohesion had positive correlations with productivity and engagement ($r=0.34$) and well-being ($r=0.30$), and productivity and engagement and well-being had the second highest correlation ($r=0.44$), they did not reach statistical significance, underlining the multidimensional nature of this metric.

DISCUSSION

The first proposals for a score to assess the quality of the aging process at the societal level appeared more than half a century after the first attempts to define and evaluate the quality of individual aging. It is also noteworthy that in five years, three different scores for measuring societal aging have been developed and tested in different areas. The Global AgeWatch Index focused on 96 countries worldwide, while the Active Ageing index is limited to the EU countries and the Ageing Society Index targeted OECD countries.

An additional difference between these three metrics is the varying number of indicators they include, ranging from 13 in the Global AgeWatch Index to 20 in the Ageing Society Index and 22 in the Active Ageing Index. A comparison of the indicators included in the three societal indices of the quality of aging is shown in Table II and testifies to their shared approach, with five quite similar indicators (healthy life expectancy at 60 or 50 years, psychological or mental well-being, education, social connectedness/support, and physical safety), although there are also some divergent points.

Indeed, the Global AgeWatch Index is mainly socially based and quite vague (seven of the 13 indicators, employment, civic freedom, social connectedness, gross national

income per capita, pension income coverage, poverty rate, and relative welfare of older people), with only two questions not replicated in the other indices (life expectancy at 60 years and access to public transport). Conversely, the AAI is extremely detailed regarding employment (with age ranges and types of voluntary work) and includes questions that do not appear elsewhere (e.g., political participation and use of information communication technologies). Moreover, the AAI is the only index to consider sex differences, which may be related to disability-free life expectancies and health inequities, although the data on this point stem from low- and medium-resource countries. Finally, the Ageing Society Index stresses the importance of economic societal parameters (Gini coefficient and country debt), basic and lifelong educational training, trust in one's neighbors (age 50+ years), and intergenerational relationships (transfer to other age groups and co-residence).

The main issue with the use of indices that are only applied to selected countries is that it is difficult to compare results and to compare them within appropriate time ranges. The rankings vary little at the bottom end of the scale, with the same countries consistently ranked among the lowest scores (for example, Poland ranked last among European countries in the Global AgeWatch 2015, Active Ageing 2017, and Ageing Society Index 2018). The same is true at the top of the rankings, with Sweden, the Netherlands, and Ireland consistently among the high scoring countries. For other countries, rankings vary, with the US, for example, ranked 9th in the Global Age Watch 2015 and 3rd in the Ageing Societal Index 2018. Similarly, the UK ranked 11th in the Global AgeWatch Index 2015, 4th in the Active Ageing Index 2017, and 11th in the Ageing Society Index 2018. These conflicting results require explanation, as they can be disturbing and perhaps even misleading for politicians and policymakers.

CONCLUSION

With the multiplicity of definitions of “good” or “successful” aging that have emerged in the last 50 years, we now have at our disposal three different indices to evaluate the quality of the aging process at country or society level. Each of these indices has been applied in different parts of the world. However, the countries in the middle ground tend to be ranked differently by all three indices, whereas those at the very top and the very bottom of each index tend to be the same. In cases where the results are not consistent, it is difficult for politicians and policymakers to adequately identify needs and orient policy to promote successful, active, and healthy aging.

The only way using the current indices for one country is to choose one of them, stick on it and evaluate its variation over time to follow the impact of aging policy in that country. However, there is clearly a compelling need for a wide scale discussion to reach a consensus on a comprehensive score or index to summarize the quality of

the aging process between countries. Such debate across societies could be advantageously led by a powerful health organization that has an international mandate, which is not yet involved in the debate surrounding the measurement of the quality of aging at the societal level.

CONFLICTS OF INTEREST DISCLOSURES

The researcher claims no conflicts of interest.

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