

Successful Ageing in Singapore—A Viable Goal?

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Ageing is a complex process.¹ Achieving it successfully has implications and significance not only for individuals on a personal level but for society at large, where demographic changes and population consequences pose significant clinical and public health issues.^{2,3}

In Singapore, the proportion of residents aged 65 years and above has increased from 7.2% in 2000 to 9.3% in 2011.⁴ By 2030, it is projected to reach 19%. The World Health Organization defines an aged society as one where 14% or more of the population is aged 65 years and above. By this definition, Singapore is forecasted to become an aged society in less than 5 years with the population ageing at a faster rate than populations in Australia, South Korea, the United Kingdom (UK) and the United States of America (USA).⁵ From the 1 in 10 who are over 65, it will become 1 in 5.

The majority of those above 65 years old in Singapore are the young-old aged 65 to 74 years (60.27%). The old-old aged 75 to 84 years formed 30.91% while the oldest-old, aged 85 years and over, formed 8.82%.⁶ Comparing data from 2009, the oldest-old is gradually increasing. In fact, international data projects that globally by 2050, there will be 16 times more centenarians than in 1998 (2.2 million vs 135,000).

Accessible and quality healthcare, community support and resources as well as socioeconomic security have contributed to the increasingly ageing population in Singapore. As the country provides the life years, there is also the need to ensure that those life years are “quality” years or as Havighurst⁷ described it “adding life to the years”. The World Health Organization and the National Institute of Aging stress that healthy ageing is more than the absence of disease and disability. But to date, there is no consensus on what constitutes or what the outcomes should be of an ideal ageing process.^{8,9} Even the terminology for this from “healthy ageing” and “successful ageing” to “productive ageing” and “ageing well” has variable nuances. While from a research perspective, it would be ideal to have a commonly accepted definition, the variability and

implications makes it a daunting task. As evidenced in recent studies, the vast majority of elderly consider themselves as ageing successfully, even though they did not meet the physical, emotional and cognitive research criteria.^{10,11}

Rowe and Kahn¹² in 1987 recommended that researchers should focus on physiological and psychosocial characteristics. However, they gradually expanded this model to include physical and cognitive functioning and subsequently, engagement in social and productive activities.¹³ This concept was used in the MacArthur Research Network on Successful Aging, the findings of which reveal a picture of happiness and life satisfaction rather than negativity, disability and difficulties with longevity.¹⁴ A recent comprehensive review of quantitative studies has shown that components of successful ageing definitions in the research today include disability and/or physical functioning, activities of daily living (ADL), instrumental activities of daily living (IADL) and objective performance. To a lesser extent, other components used include cognitive functioning and social and productive functioning.¹⁵ This raises a significant difficulty in comparing research findings.

The Singapore Longitudinal Ageing Study (SLAS), a community based research undertaken by the Department of Psychological Medicine, National University Hospital has involved 2804 subjects aged 55 years and above. A preliminary analysis of those aged 75 to 79 years (N = 252) and those 80 years and above (N = 160) showed significant reductions ($P < 0.001$) in quality of life (QOL) and leisure time activities, increased disability and instrumental disability in ADL and increased cognitive impairment in the latter group. While these findings are stark, a closer review indicates that up to 90% of the 75 to 79 years age group did not have disability in activities of daily living compared to 75% of those aged 80 years and above. Fifty-five percent of the 75 to 79 years age group had no disabilities in instrumental activities of daily living compared to 38% of those over 80 years. Seventy-one percent of the younger

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group had the mini mental state exam (MMSE) score above 24 compared to 56% of those 80 years and above.

To determine what contributed to successful ageing in those 80 years and above, we used a definition of intact cognition (MMSE >24), high QOL (using the SF12) and low depressive symptoms (geriatric depression scale (GDS) <5). These are widely used components of criteria to define successful ageing in studies. Depp et al¹⁵ in a comprehensive review of 28 studies found that the most common component was physical function and/or disability in daily living and less frequently IADL. Cognitive functioning as determined by MMSE was used in half the studies with social functioning and life satisfaction in a third of studies.¹⁵

Of the 152 Chinese subjects aged 80 and above, 27 subjects (17.8%) met the criteria for successful ageing. Their mean age was 82.1 years (range, 80.2 to 89 years) and 59.3% were males. Younger age and higher education were protective factors in this cohort. So too were less medical comorbidity and IADL disability and general satisfaction with life. Leisure time activities did not feature as important factors of successful ageing. One possibility is that those with education were able to pursue their own leisure activities and were “self-sufficient”.

While there are no data to compare these preliminary findings, an earlier study amongst Chinese elderly 65 years and above found that 28.6% had aged successfully.¹⁶ Although the studies are not methodologically comparable, the finding provides a perspective. In the 28 studies reviewed by Depp et al¹⁵ involving 250,000 subjects, our finding of 17.8% is in the last quartile. Generally studies that do not include physical functioning or disability in their definitions report higher proportions of successful agers.

Gerontologists suggest that as the elderly are a heterogeneous group, one particular lifestyle cannot be advocated for all—an important consideration for our elderly where volunteerism and active socialisation may not be applicable to all. It appears that many elderly tend to “gradually withdraw from social roles and activities as they age” similar to findings suggested in Cumming and Henry’s “disengagement theory”.¹³ This mindset and behaviour need to be studied and understood.

This data on the old-old is preliminary and from just one part of the country (south-western). It is clear that the population as a whole should be surveyed and the elderly assessed prospectively as they age to enable good lifestyle practices to be introduced earlier. The scientific literature on those aged 60 to 80 is extensive but limited for those aged 80 years and above. There are several directions for research on successful ageing in Singapore. Foremost amongst which is the need to focus on the octogenarians, the nonagenarians and the centenarians. Secondly, a broader biopsychosocial perspective in the definition of successful

ageing for research is warranted. Issues such as spirituality and resilience have not been sufficiently explored amongst the old-old in our local population. Neither have we studied the socioeconomic, cultural and religious perspectives and how they impact ageing. Finally, the many scientific advances in genetic research have not been garnered to study those who have achieved longevity in Singapore. Our unique geographic catchment would allow studies amongst octogenarians and nonagenarians similar to the Okinawa Centenarian Study.¹⁷ The research would benefit policy makers in service planning. We should endeavour to keep the old-old happy-well, not sad-sick if we are to add quality to their longevity.

REFERENCES

1. Lacruz ME, Emeny RT, Bickel H, Cramer B, Kurz A, Bidlingmaier M, et al. Mental health in the aged: prevalence covariates and related neuroendocrine cardiovascular and inflammatory factors of successful aging. *BMC Med Res Methodol* 2010;10:36.
2. Gavrilova NS, Gavrilov LA. Search for mechanisms of exceptional human longevity. *Rejuvenation Res* 2010;13:262-4.
3. Fielding RA, Rejeski WJ, Blair S, Church T, Espeland MA, Gill TM, et al. The Lifestyle Interventions and Independence for Elders Study: design and methods. *J Gerontol A Biol Sci Med Sci* 2011;66:1226-37.
4. Singapore Department of Statistics, Ministry of Health, Ministry of Manpower, Registry of Births and Deaths. Updated April 2012. Available at: <http://www.singstat.gov.sg/stats/themes/people/elderly.pdf>. Accessed 27 April 2012.
5. A Profile of older men and older women in Singapore 2011. International Longevity Centre – Singapore, A Tsao Foundation initiative. Available at: www.tsaofoundation.org/pdf/Profile_Older_Singaporeans_rev5.pdf. Accessed 27 April 2012.
6. Population Trends 2011 Department of Statistics, Singapore. Available at: <http://www.singstat.gov.sg>. Accessed 28 April 2012.
7. Havighurst RJ. Successful Aging. *The Gerontologist* 1961;1:8-13.
8. Active ageing a Policy Framework. Geneva, World Health Organization: 2003.
9. Action Plan for Aging Research. US Department of Health and Human Services: 2001.
10. Montross LP, Depp C, Daly J, Reichstadt J, Golshan S, Moore D, et al. Correlates of self-rated successful aging among community-dwelling older adults. *Am J Geriatr Psychiatry* 2006; 14:43-51.
11. Depp C, Vahia IV, Jeste D. Successful aging: focus on cognitive and emotional health. *Annu Rev Clin Psychol* 2010;6:527-50.
12. Rowe JW, Kahn RL. Human aging: usual and successful. *Science* 1987;237:143-9.
13. Rowe JW, Kahn RL. Successful aging. *Gerontologist* 1997;37:433-40.
14. Rowe JW, Kahn RL. Successful aging. New York: Pantheon/Random House, 1998.
15. Depp CA, Jeste DV. Definitions and predictors of successful aging: a comprehensive review of larger quantitative studies. *Am J Geriatr Psychiatry* 2006;14:6-20.
16. Ng TP, Broekman BF, Niti M, Gwee X, Kua EH. Determinants of successful aging using a multidimensional definition among Chinese elderly in Singapore. *Am J Geriatr Psychiatry* 2009;17:407-16.
17. Suzuki M, Wilcox BJ, Wilcox DC. Successful aging: secrets of Okinawan longevity. *Genetics and Gerontology International* 2004;4:S180-1.