

Why women live longer than men: Lifestyle, the gender gap and public health policy implications for longevity in Okinawa

The Institute of Policy Studies and the Faculty of Arts and Social Sciences, National University of Singapore, jointly organised a seminar on “Why women live longer than men: Lifestyle, the gender gap and public health policy implications for longevity in Okinawa” on 28 March 2014. The seminar featured a presentation by Prof. Craig Willcox, Professor at the Department of Human Welfare, College of Global and Regional Culture, Okinawa International University. Prof. Willcox is also Visiting Professor at the Department of Geriatric Medicine, University of Hawaii. The report summarises key points from the seminar.

Demography

1. Japan is well known for longevity — there were only a hundred centenarians in 1960 but this number has grown to 50,000 today and is projected to expand further to one million by 2050. For Okinawa, the southernmost prefecture of Japan, the proportion of centenarians is higher than the overall average for Japan, at 50:100,000 compared to 23:100,000, respectively, in 2006.¹
2. Okinawa has the largest gender gap in life expectancy of all 47 prefectures in Japan. Female average life expectancy in Okinawa has always been above Japan’s national average but has converged recently, falling from first to third place in Japan. The gender gap widened from 1975 to a peak gap in 2000, before narrowing once again in the last twelve years.

Achieving longevity

3. There is still an ongoing debate on the “causes” of longevity. In 1987, Prof. Makoto Suzuki was the first to publish a paper identifying a list of longevity genes such as the human leukocyte antigen gene. Another explanation for Okinawa’s disproportionate number of centenarians is that natural selection in the aftermath of World War II — where people with the most resistant genes were most able to survive communicable diseases — could have resulted in “stronger” people now living to 100 years old.
4. The phenotype of healthy ageing in Okinawa includes high functionality, few chronic diseases, low body mass index, low blood sugar, few type-2 diabetes, high HDL, low cancer rate, among others. Traditional Okinawan diet is anti-inflammatory,² with many foods containing anti-oxidants. The traditional Okinawan diet features tofu, green leafy vegetables and seaweed with high nutrient density and which are phytonutrient-rich but

1. The figure for Okinawa was obtained from Okinawa Centenarian Study’s website <http://www.okicent.org/cent.html> (accessed on 14 April 2014), and the figure for the whole of Japan was obtain from Population Estimates 2006, Statistics Bureau, Japan, <http://www.stat.go.jp/english/data/jinsui/2.htm> (accessed on 14 April 2014).

2. Inflammation drives the ageing process at the cellular level.

low in carbohydrates and fats. When tested on a small group of Americans, the diet produced DASH-like³ effects, reflecting reduced blood pressure.

5. Apart from physical activity and lifestyle, one question was how Okinawa and Japan on the whole managed to reduce stroke mortality. According to Prof. Willcox, the key element is sodium reduction in dietary habits. There is a correlation between the regions in Japan with high mortality due to cerebrovascular disease and high consumption of sodium. People with high consumption typically consume 30g to 40g a day whereas the Health Ministry's recommendation is a maximum of 10g of sodium a day.

Longevity risk factors and the gender gap

6. The lifestyle risk factors for Okinawan males include smoking, obesity, high blood pressure, poor cholesterol profiles and inactivity.
7. There is a gender difference in smoking rates: 50% of males under 50 years old are current smokers compared to only 15% for females, and there is no difference between Okinawa and Japan in this regard. Nevertheless, there is an increasing number of female smokers while the number of male smokers has declined, perhaps portending a future reversal in the Japanese gender life expectancy gap. In comparison, the Okinawa Centenarian Study found that there is an abnormally high proportion of males (50%) who have never smoked whilst 45% of the cohort are former smokers.
8. On why Okinawan men are less healthy compared to the rest of Japan, Prof. Willcox reckoned that it was due to inactivity. Part of the problem is that Okinawans drive everywhere as the public transport system is poor. Compared to other Japanese cities with more extensive public transport infrastructure where people usually walk or cycle to the subway, Okinawans tend to be more sedentary. Additionally, Okinawan males frequently socialise in the evenings, spending time drinking and eating and thus leading unhealthier lifestyles.
9. For a healthy lifestyle, Prof. Willcox highlighted Breslow's seven health habits: (i) do not smoke, (ii) consume alcohol in moderation, (iii) sleep seven to eight hours a day, (iv) exercise at least moderately, (v) eat regular meals, (vi) maintain a moderate weight, and (vii) do not skip breakfast. In Okinawa, women in their 30s follow less than three of the seven health habits while men on average follow 3.6 out of the seven.

Morbidity and mortality

10. Whilst there has been a decline in the number of disabilities in the total elderly population in Okinawa, the number of unhealthy centenarians has also been increasing over the last few decades. The compression of morbidity is evident when the elderly are considered in aggregate, but there appears to be an expansion of morbidity amongst the oldest old.

3. DASH = Dietary Approaches to Stop Hypertension

11. On mortality, the biggest change in age-adjusted death rates was cerebrovascular disease (CVD), which results in strokes. On the whole, Japan has managed to bring down the mortality rates of heart disease and CVD to similarly low levels as Okinawa. As cancer is the number one cause of death, life expectancy could be raised markedly by reducing the incidence rate.
12. In response to a comment on ethics in the forced extension of life, Prof. Willcox observed that many centenarians are not independently functional by the time they reach a hundred years old. However, it was pointed out that in Japan, the cultural preference is to keep people alive for as long as possible, with the elderly person's views seldom taken into account. Therefore, one of the participants suggested that the aim in this situation should be to delay the onset of disability — hopefully shortening the period of disability — thus reducing the burden on society.

Policymaking

13. Policymaking and guidelines in the different prefectures of Japan are partly imposed centrally by the Japanese government, with the prefectures adapting national directives to suit their local contexts. Thus, there might be variations in healthcare policies implemented in different prefectures. As Okinawa has the highest metabolic syndrome and obesity rates, special measures must therefore be taken to control these problems.
14. There are major social factors that will determine the effectiveness of an implemented policy, for example, having a no-smoking policy in restaurants and bars. Due to the high prevalence of smoking, business owners often lose clients as a result of a smoking ban.
15. In 2008, Japan introduced Metabo, where waistlines of adults between the ages 40 and 74 are measured as part of their annual check-ups. The goal was to decrease lifestyle-related diseases and diabetes in this at-risk group by 25% by 2015. Companies and local governments that do not manage to achieve the goal will be financially penalised. There are also follow-ups by the public health nurses at the individual level. For those with high risks, nurses will try to contact the individuals by sending letters and making home visits.