Living well into old age: What can we learn about healthy ageing from the Japanese experience?

Introduction

In a globally ageing population Japan leads on longevity, having the greatest life expectancy at birth and with the highest and most clearly increasing number of centenarians (Shirahase 2015, Robine and Cubaynes 2017). This significant and growing proportion of the oldest old within the population means that Japan is no longer ageing – it has aged. Low fertility and rising life expectancy have led from having one of the lowest dependency ratios (the proportion of working people paying tax, to the proportion relying on this for benefits) to one of the highest, projected to increase further (Debroux 2016). Traditional family structures are changing, and even though most older people live in three generation households, this number is reducing, more elderly people live alone or with a spouse (Shirahase 2015) and 20% of older people in Japan live in relative poverty. These factors are associated with poor health and low mood, particularly for women (Otaki et al 2018). Younger women are more likely to work and there are fewer adult children able to take on traditional caring roles (Kikuzawa 2015).

Gopinath et al (2018) identify increasing 'the quality and years of healthy life' as the main challenge of ageing demographics. In this article, the authors explore the factors that underpin the story of successful ageing in Japan, while also considering the subsequent challenges of the 'super-ageing crisis' (Tokudome, Hashimoto and Igata 2016) for policy makers, families and individuals. Successful ageing is comprised of more than just good health and absence of disease or disability, it involves strong social engagement and mental health too (Gopinath et al 2018). After attending a conference and visiting the 'Ageless Centre' in Osaka, we were inspired by the positive focus on 'living well' into old age in Japan. Our aim is to raise awareness of potential transferable solutions for practice and for an ageing society. The Japanese experience of increasing both quality and length of life using 'Me-byo' (acknowledging body-state fluctuations) healthy living strategies (Soares 2017) may offer learning opportunities for those in high-income countries experiencing similar demographical changes, such as the UK.

Lifestyle characteristics

The 'blue zones', geographical areas where longevity is remarkable, share lifestyle characteristics of valuing connections with others, high levels of social engagement, a purpose in life, a diet high in vegetables, fish and legumes, low levels of smoking and use of alcohol, and ongoing physical activity (Buettner 2012). Blue zone lifestyles result in lower levels of cancer, heart disease and dementia, as in the Japanese island of Okinawa (Buettner 2012). Japanese people are less likely to be addicted to alcohol (World Health Organisation 2014).Other factors that may affect longevity in Japanese people include faster walking speed (Ando and Kamide 2015), a dietary pattern that is protective against depression and obesity (low fat, fresh, seasonal food) (Suzuki et al 2013) and effective community health promotion programmes (Tokudome et al 2016). In addition Japanese society is relatively egalitarian, a factor associated with emotional well-being (Wilkinson and Pickett 2018).

However, there are differences between men and women in health-related behaviour in Japan, and between rural and city dwellers. Older women are less likely to smoke, but as elsewhere, are more prone to health-related consequences, including cognitive decline (Hotta et al 2015, Umesawa et al 2017). Women eat a more diverse diet, which is associated with lower risk of obesity, while rural men were more likely to eat two, rather than three meals a day, to have fewer teeth and to be obese (Ishikawa, Moriya and Yokoyama 2017). Rural Japanese people had higher rates of disability,

but were less likely to become depressed, perhaps because of stronger social and family networks (Tanaka and Johnson (2010).

Well-being in old age is not just about chronological age; more significant is quality of life and compressed morbidity, in which frailty and illness are postponed to a relatively short period of time at end of life (Lu et al 2018). At present in the UK, the average number of years spent in poor health before death is 16-19 years (Public Health England 2017) while in Japan it is 5-6 years (Tokudome et al 2016). Both quality and length of life are related to happiness (Lawrence Rogers and Wadsworth 2015), and data from 'super-aged nations' demonstrates that happiness is associated with good health, better sleep and work productivity (Moriyama et al 2018).

The importance of social connections

Wada (2015) compared Japanese and English approaches to decision-making for older people, finding that when there were disagreements the English approach was to focus on the perspective of the older person (eg Department of Health 2012) whereas the Japanese approach was more family-orientated. Most Japanese older people prefer to live with family members (Wilinska and Anbacken 2013). Other factors that protect mental health include occupation, 'ikigai' (a sense of meaning in life), social acceptance, friendships with peers (Wilinska and Anbacken 2013) and the nature of the neighbourhood in which they live (Muramaya et al 2015). Social cohesion in physical or virtual communities has the potential to improve mood and provide a buffer against stress (Wilinska and Anbacken 2013, Muramaya et al 2015).

Use of Technology

Technology has been used in Europe, the United States and Australia for safety monitoring, promoting rehabilitation, automating home functions and increasingly as a response to isolation and loneliness among older people (Morris et al 2014). Social connections promote well-being, yet many older people lack opportunities to engage with others sufficiently to meet relationship-centred needs (Morris et al 2014). Technology can be used to simulate the presence of others (Abraha et al 2016). An example we were shown at the 'Ageless Centre' in Osaka, was 'Paro' a lifelike 'smart-robot' baby seal designed to simulate characteristics of a pet or baby (see photo). A Paro seal is an expensive investment: the current cost is £3,500 plus tax. Robotic therapy cats and puppies have also recently become available in the UK at around £100-150 each. Paro has been evaluated and found to improve mood, improve engagement reduce stress (Rabbitt, Kazdin and Scassellati 2015) and improve quality of life (Joranson et al 2016). Concerns about infection control in clinical environments are unfounded; a recent study concluded that the Paro seal could be kept clean using biocide wipes (Dodds, Martyn and Brown 2018). Our experiences confirm that knowing Paro was artificial had no bearing on the perception that he was real. Toddler sized, cuddly and responsive, (he wriggles, opens his eyes, blinks and makes little mewing sounds) the Paro seal was both stimulating and comforting, and we could imagine how he would be a fantastic resource for people living with dementia who had limited language and potentially unmet needs for connections with others, or as Kitwood (1997) suggests, needs for inclusion, attachment, comfort and occupation. Other technologically advanced resources available in Japan included a range of aids to assist with easy access into baths (eg electronic rail systems for home bathrooms), almost invisible gel-based hip protectors incorporated into underwear, an oven-like device that measured the specific calories of a meal on a plate and computerised home-access management systems.

Soares (2017) explains how technological solutions for the difficulties of old age are stimulating economic growth through development of the 'Me-byo industry'. Examples in development include a mobile phone application that provides feedback on mental health and heart disease using voice analysis, and a device which can be fitted to toilets to analyse flatulence, urine and excrement and advise whether a person should be tested for diabetes or colon cancer. Visitors to Japan often comment on the sophisticated nature of the generally available toilets – please see separate box for points about the potential of Japanese toilets to promote the well-being of people with dementia.

It is also common practice for Japanese people to wear surgical facemasks at work and in public. The masks are intended to reduce the spread of infection, protecting both the self and others, but Burgess and Horii (2012) suggest mask wearing has become a ritualistic means of demonstrating individual and collective responsibility for managing health, rather than having any real impact on infection control.

The role of work

In Japan, working into old age is encouraged and people stay employed for longer than in European countries, many preferring to do so because they acknowledge the benefits for their financial and social well-being (Debroux 2016). Cultural values of respect for experience and wisdom associated with old age reinforce this and older workers are perhaps perceived more positively in Japan (Debroux 2016).

We observed older people in urban areas working in paid and unpaid roles in shops, restaurants, religious shrines and tourist centres. In rural areas older peoples' work involves farming and fishing (Minami et al 2015). Unemployment is associated with worse health outcomes in both European and East Asian states (Chuang et al 2011). Work both promotes social inclusion and may relate to 'ikigai' or purpose in life (Wilinska and Anbacken 2013). Rapid cultural changes in Japan have seen the position of older people change from traditionally expected 'withdrawal from life' and dependency within family-orientated care based on values of filial responsibility, to that of 'active ageing', more nuclear families, flexible approaches to eldercare and the role of older family members as a form of 'safety net' in an economic crisis (Wilinska and Anbacken 2013).

Minami et al (2015) found that retirement had a damaging effect on both mental health and activities of daily living and suggested that work of any form has health promoting benefits, mainly due to its impact on social inclusion. In Japan voluntary work is currently promoted through rewards including vouchers and holidays, while future policy will promote work opportunities as central to a range of solutions designed to encourage social participation (Minami e al 2015). As in Europe, the age at which a person is eligible for a pension is gradually rising (Debroux 2016). Japanese perceptions of when 'old age' begins are shifting too, with many believing that 70 or 75 is a more accurate threshold (Ishii, Ogawa and Akishita 2015).

Healthy life expectancy in Japan is also attributed to successful public health programmes that raise awareness of health lifestyles and changed behaviour (e.g. reducing smoking and increasing exercise), resulting in reduced disability and mortality (Ishii et al 2015). However, the absolute numbers of older people mean chronic medical conditions (including stroke, joint disorders, dementia and cardiac disease) and other forms of disability are still rising (Ishii et al 2015). This has implications for the insurance-based health and social care systems (Ishii et al 2015).

Policy overview

The relatively low proportion of working people to dependent elders, with anticipated further decline in the working age population, will result in declining tax revenues while expenditure on social security and medical insurance need to increase, meaning that current policy may be unsustainable (Kitao 2018). At present Japanese policy emphasises that care of older people is a state rather than a family responsibility; long term care insurance (LTCI) pays for care but does not provide it (Wilinska and Anbacken 2013). The policy promotes care at home rather than institutionalisation (Nagaya and Dawson 2014). Family input is expected to focus on psychological and social care, rather than practical or physical care which is provided by paid workers (Wada 2015), but even so it can be difficult for family carers to find the support that they need because of a shortage of care workers (Nagaya and Dawson 2014).

Policies designed to promote health (eg 'Healthy Japan 21') include an initiative to encourage people to eat three meals a day to reduce obesity (Ishikawa et al 2017). Further initiatives drawn from this policy include programmes to promote physical, nutritional and social health to reduce development of frailty. Community groups, health check-ups and advice had positive outcomes in extending active ageing among participants (Shinkai et al 2016). Specialist 'kakaritsuke' doctors encourage active ageing by providing person-centred advice and treatment and liaising with health and social care providers. Their services enable older people with co-morbidities to continue contributing in their communities (Fleck 2018).

Older people themselves are directed to take an active role in promoting their own health, (particularly through strength training and cognitive stimulation) both to 'age in place' (Wilinska and Anbacken 2013) and to extend healthy life in care facilities (Annear Otani and Sun 2016). We met older people who were playing Mah-Jong, doing traditional crafts, cycling and walking. (*Please put photos near here)* There are plans to adjust future insurance premiums to allow those who are active in improving their health to pay less (Soares 2017).

The universal health insurance system was designed in part to address the concerns raised by women's movements about the impact of previous family-orientated caring expectations (Wilinska and Anbacken 2013). The system is also designed to enable women to contribute to the workforce (Curry 2012). Nevertheless, caring still frequently becomes the responsibility of female relatives who increasingly provide care single-handedly because the low birth rate means fewer (or no) siblings to share the role (Kikuzawa 2015). Moriyama et al (2018) reported that Japanese women's well-being was undermined by becoming a carer for a family member; Greenwood and Smith (2015) had similar findings in the UK. A future policy designed for better health outcomes, sustainability and equality is outlined in the report 'Japan Vision: Healthcare 2035' (World Health Organisation 2018).

Conclusions

Japanese people do not only live longer, they maintain 'successful ageing' for over a decade longer than older people in the UK. In aiming for quality of life, longevity and compressed morbidity we could emulate characteristics of Japanese society in our own communities. Examples could include promoting small group support networks for older people in local hubs in natural environments (eg community cafes) that are within walking distance for all. These hubs could be arranged to include opportunities for gardening, social interaction, part-time work and activities that encourage cognitive stimulation and mutual support. Technology should be integrated to enable members unable to contribute in person to connect with their peers online. Health promotion initiatives could emphasise the impact of dietary diversity on reducing obesity.

Policy initiatives in the UK, as in Japan, should acknowledge and aim to challenge the unfair impact of caring roles on women and promote intergenerational and gender equality. Those who choose to care should be supported to combine caring with work outside the home for the protective effects on social connections and financial equality.

Japanese older people have heard the health promotion messages and changed their behaviour accordingly. The gains associated with healthy longevity can be as accessible to future generations in the UK and other countries if health professionals can articulate the information clearly and harness personal motivation for change. Environmental 'nudges' could encourage faster walking and greater social interaction. For example, older volunteers could lead 'swift walking groups' in local parks. Communal adjustments could include design for improved 'walkability' in urban areas (Carter 2015). Public toilets should be available and accessible so that people with concerns about continence are not further isolated (Knight and Bichard 2011).

Paro seals and Japanese toilets would involve initial financial outlay, but could be a worthwhile investment for emotional well-being, reduction in carer stress, delay in admission to care and savings in staff time and so quickly pay for themselves. At present there is no research into the impact of Japanese toilets on the well-being of people with dementia. We recommend two investigations into the impact of Japanese toilets. Firstly, research into the outcomes of using a Japanese toilet post-diagnosis of dementia may identify reduced carer stress and delayed transfer to a care home. In care homes, impact could be evaluated by monitoring prescribing for constipation and urinary tract infections, and incident forms recording injury to staff while assisting people with dementia in using the toilet. Qualitative research could explore experiences and perceptions of older people themselves, family carers and nursing staff.

Our recommendations may involve challenging embedded cultural values. However, improved happiness and well-being in old age have far reaching consequences, not only for older people themselves, but for younger people, family caregivers, healthcare budgets and health and social care providers.

Japanese Toilets (box)

Japanese toilets are connected to an electricity supply and have a range of sophisticated features. The toilet can sense the approach of a person and warms the seat. When the person sits, sound effects are played, either the sound of running water, birdsong or music. After urination and/or defecation, the user can choose how they would like their bottom to be washed. The choice is for gender, front or rear of the bottom and strength of the spray pressure. The water is warm. Afterwards warm air dries the area.

We anticipated several potential benefits for older people, particularly those with dementia:

- Assistance in the bathroom is an area associated with distress for the person with dementia and stress and potential injury for nurses and carers. The experience of undressing in front of a stranger and potential fears of assault due to misunderstanding can lead people with dementia to resist care and lash out at those trying to help them. With some additional reassurance a Japanese toilet could alleviate some of the main flashpoints in this process.
- The shower effect of the Japanese toilet would reduce the need for service users to have an actual shower if they have an episode of diarrhoea. This too would save distress and staff time (particularly if showering a service user means the staff member also gets wet).

- Possible reduction in urinary tract infections
- Many people hate to open their bowels in the company of other people and this may be a factor in constipation, particularly in care homes. The sounds of running water may prompt urination but also be useful in providing a perception that the sounds of using the toilet are less audible to other people.
- Reduction in prescription of anti-biotics and laxatives
- Savings on toilet paper
- Requiring help with personal care, particularly if this is resisted, can be a factor in triggering admission to long-term care. If a Japanese toilet was to be provided in the person's home at the time of diagnosis, allowing them to become accustomed to it, this could delay or even prevent admission later in the dementia journey.
- The cost of a Japanese toilet in the UK ranges from around £300 for a seat (with the functions mentioned) which attaches to the existing toilet, to over £3000. A typical example costs around £1000. The toilet could potentially pay for itself many times over. (In addition, the person with dementia could well find themselves more socially included, given the number of curious visitors who would arrive to try it out).

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