Chapter 1
Population Aging and Health of Older People in Japan: Introduction of Health Issues and Care System for the Elderly

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Abstract Population aging is due to the increased number of older people living longer as well as the decreased birthrate. The improvement of public health and advances in medicine after World War II have given Japan one of the highest life expectancies in the world, while the emancipation of women following World War II has increased opportunities for higher education and gainful employment outside of the home, which may lead to advancing of late marriages and late birth and may influence the lower birthrate in Japan. Population aging has increased the costs of health and social care for older people, which have led to an interest in how to promote health in older people as well as how to define successful aging. Since the Confucian norm is shared among Japan and other East Asian countries, the experience of Japan may give readers useful information about how to cope with the population aging in other non-Western countries. In this chapter, we would like to introduce the experience of Japan and consider the public health problems in the aging society.

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1.1 Introduction

Decline in death rates and fertility have resulted in population aging [1]. Improvement of public health and advances in medicine after World War II have increased life expectancy as well as costs of health and social care for older people in Japan, which have led to an interest in how to promote health in older people as well as how to define successful aging.

Concepts of aging vary across societies and settings. In the past, the United Nations and other international agencies defined "older people" as 60 years and over, but recently there is a growing consensus that "older people" are persons who are 65 years old and over [1]. However, older people are not homogeneous, but very heterogeneous [1]. Some senior citizens are very frail and need care in their daily lives, while others play an active part in society, enjoy healthy retirement, or care for disabled relatives. The distinction between successful and usual aging was first raised by Rowe and Kahn [2]. Older people with successful aging are those without overt disease and who remain essentially independent until they experience a suddenly apparently natural death, while older people with usual aging are those who suffer from potentially preventable serious chronic diseases resulting in frailty and dependency. Their model of successful aging includes the following three components: (1) to prevent diseases and disabilities, (2) to maintain high physical and cognitive capacity, and (3) to continue social and productive activities in one's daily life [2]. In their model, only older people with high levels of function in these three components are considered to be aging "successfully," and this group may include only a small part of old-older people (80 years and over).

On the other hand, Baltes PB and Baltes MM proposed an alternative model [3]. In Baltes' model, the personal experience of aging is subjective and unique, and each person can remain mentally strong in spite of disability or frailty and can adapt to limitations as the result of one's own aging [3–5]. A personal opinion on one's health as well as one's health status varies between individuals in the elderly population. Therefore, it is important to recognize this heterogeneity when we define their needs, offer health and welfare services for senior citizens, and make a health plan for the future.

Population aging is not only due to the increased number of older people living longer but also due to the decreased birthrate, leading to a decline in young people [1]. In addition, the falling birthrate decreases the future population in the long term [1]. In this chapter, we would like to introduce the phenomenon of population aging in Japan and consider the public health problems in the aging society.

1.2 Population Aging in Japan: Demographics, Projections, and Causes

Before World War II, the average life expectancy at birth was shorter than 50 years in Japan (i.e., 46.9 years for men and 49.6 years for women in 1935–1936) (Table 1.1) [6]. However, improvement of public health and advances in medicine after World War II has given Japan one of the highest average life expectancies at birth in the world (i.e., 80.8 years for men and 87.0 years for women in 2015) (Table 1.1) [7]. On the other hand, the live birthrate (per every 1000 Japanese people) decreased from 28.1 in 1950 to 8.0 in 2015 (Table 1.2) [7]. Similarly, total fertility rate, gross reproduction rate, and net reproduction rate decreased from 3.65, 1.77, and 1.50 in 1950 to 1.45, 0.71, and 0.70 in 2015 (Table 1.2) [7].

The emancipation of women from Japanese household legal structure after World War II gives Japanese women an increased opportunity for higher education, gainful employment outside of home, and later age at marriage (i.e., advancing of late marriages). Age at first marriage of women increased from 23.0 years old in 1950 to 29.4 years old in 2015 [8, 9], which is one of the latest ages at first marriage in the

Table 1.1 Trend in life expectancy at birth in Japan

Year	Males (year)	Females (year)
1891–1898	42.80	44.30
1899–1903	43.97	44.85
1909–1913	44.25	44.73
1921–1925	42.06	43.20
1926–1930	44.82	46.54
1935–1936	46.92	49.63
1947	50.06	53.96
1950–1952	59.57	62.97
1955	63.60	67.75
1960	65.32	70.19
1965	67.74	72.92
1970	69.31	74.66
1975	71.73	76.89
1980	73.35	78.76
1985	74.78	80.48
1990	75.92	81.90
1995	76.38	82.85
2000	77.72	84.64
2005	78.56	85.52
2010	79.55	86.30
2015	80.75	86.99

Source: Trend of national health 1976, Trend of national health 2017–2018

Table 1.2 Trend in live birthrates, total fertility rates, and reproduction rates in Japan

Year	Live birthrate (per 1000)	Total fertility rate	Gross reproduction rate	Net reproduction rate
1950	28.1	3.65	1.77	1.50
1960	17.2	2.00	0.95	0.92
1970	18.8	2.13	1.03	1.00
1980	13.6	1.75	0.85	0.83
1990	10.0	1.54	0.75	0.74
2000	9.5	1.36	0.66	0.65
2010	8.5	1.39	0.67	0.67
2015	8.0	1.45	0.71	0.70

Source: Trend of national health 2017–2018

world. Late age at first marriage (i.e., 29.4 years old for women and 31.1 years old for men [9]) may shorten the reproductive span of married couples in Japan [8]. Furthermore, the proportion of never-married Japanese women at age 50 (i.e., the rate of never-married women in their reproductive span) increased from 1.4% in 1950 to 14.1% in 2015 [9, 10]. Since much fewer children are born out of marriage in Japan (2.1%) than in Western countries (France 52.6%, the UK 43.7%, Sweden 54.7%, Germany 32.7%, the USA 40.6%) [11], the increase in the rate of never-married women may contribute to the drop of birthrate in Japan. Therefore, we should provide social systems in which young married couples can bring up their children without a heavy burden so that young couples can marry at an early age.

On the other hand, industrialization, urbanization, and social mobility after World War II influenced Japanese family structure. The proportion of three-generation family households decreased from 19.2% in 1970 [12] to 5.9% in 2016 [7], while the proportion of nuclear family households (i.e., married couples, parents and children, a parent and children) increased from 45.4% in 1955 [12] to 60.5% in 2016 [7]. Most young Japanese women care for their infants and children without any help of their mothers or mothers-in-law in their households, which may cause some young mothers to refrain from having further children.

According to a 2010 report of the National Institute of Population and Social Security Research, over 80% of Japanese married couples have two or fewer children (i.e., 13.6% have no child, 22.3% have one child, and 45.6% have two children), while only 17.7% of married couples have three or more children (i.e., 15.7% have three children, 1.7% have four children, and 0.3% have five or more children) [11]. One-third of first married Japanese couples have smaller numbers of children than the desired number of children they would like to have [11], and about 60% of them answer that they do so because of expensive child-raising and child-education costs [11]. When young couples, who do not live with their mothers/mothers-in-law, cannot leave their child with a licensed nursery school, most young Japanese women are obliged to decide whether they stop working to care for their child or leave their child with a costly unauthorized nursery school.

The combination of the increased life expectancy (i.e., decreased age-adjusted death rate) and decreased reproduction rate has brought an increase in the proportion

Table 1.3 Trends in population structure in Japan

Year	Population composition by major group (%)			Dependency ratio			Elderly to children ratio
	0–14 years old	15–64 years old	65+ years old	Total dependency ratio	Children dependency ratio	Old-age dependency ratio	
1930	36.6	58.7	4.8	70.5	62.4	8.1	13
1940	36.1	59.2	4.7	69.0	61.0	8.0	13
1950	35.4	59.6	4.9	67.7	59.4	8.3	14
1960	30.2	64.1	5.7	55.9	47.0	8.9	19
1970	24.0	68.9	7.1	45.1	34.9	10.3	29
1980	23.5	67.4	9.1	48.4	34.9	13.5	39
1990	18.2	69.7	12.1	43.5	26.2	17.3	66
2000	14.6	68.1	17.4	46.9	21.4	25.5	119
2010	13.2	63.8	23.0	56.8	20.7	36.1	174
2015	12.6	60.7	26.6	64.7	20.8	43.9	211

Source: Trend of national health 1998 [12], Trend of national health 2017–2018 [7]
Note: Total dependency ratio = (children population + aged population)/working age population
Children dependency ratio = children population/working age population
Old-age dependency ratio = aged population/working age population

of older people (i.e., 65 years and over) in Japan, where the proportion of older people increased from 4.9% in 1950 to 26.6% in 2015 (Table 1.3) [7]. As shown in Table 1.3, the old-age dependency ratio increased from 8.3 in 1950 to 43.9 in 2015 [7]. According to the medium variant projections of the National Institute of Population and Social Security Research, the population of Japan is estimated to decrease from 127 million in 2015 to 88 million in 2065 [13].

The public pension system for senior citizens is operated with the premium burden on the working generation [10]. In 2015, 40 million Japanese people (i.e., 30% of the population) receive public pension, which accounts for 70% of the income of the elderly households in Japan [10]. In this system, working generations do not store funds for themselves in the future, but support older people living in the same time period. This system can avoid loss of funds due to price listing in future [10]. However, the revision of the system will be needed in order to adapt the advanced aging society to the falling birthrate and declining population.

1.3 Measures to the Declining Labor Force

1.3.1 Population Aging and the Labor Force

Although the labor force population increased from 51.53 million in 1970 to 65.98 million in 2015 [14], it is estimated that the total population will decrease from 127 million in 2015 to 88 million in 2065 due to the lower birthrate in Japan [13].

Because population aging associated with declining population will result in a decreased labor force population, securing the labor force is important for Japan to maintain its national strength.

1.3.2 Support for Women Not to Lose Gainful Employment Outside of the Home After the Delivery

In 2016, 25.3 million women work outside of the home and are 44.2% of total employees in Japan [10]. However, there are still many young women who stopped working outside of the home in order to care for their child because of the shortage of nursery schools. Nearly half of women (47%) lost gainful employment outside of the home after the delivery of their first child in 2010–2014 [10]. In order to support young women so that they can keep working outside of the home even after delivery, the Japanese government promotes the "Plan for accelerated elimination of children on waiting lists to get in nursery schools" [10, 15], which may also help young couples to marry at a younger age as well as to have additional children in their families (i.e., increase the birthrate in Japan).

1.3.3 Ensuring Employment Until Age 65 and Supporting Reemployment

In order to ensure employment until age 65, the Japanese government settled a law to oblige the companies to employ all applicants until age 65. In 2015, 99.2% of companies with 31 workers or more provided either of the following three measures: (1) raising of the retirement age to age 65, (2) introduction of a continued employment system, or (3) abolition of a retirement age [14]. In addition, 54.4% of companies provided a continued employment system for those 65 years old and over, 15.5% of companies raised the retirement age to 65 and over, and 2.6% of companies abolished their retirement age [14].

Among 35,000 workers who wanted to work after the retirement age, 82.1% were continuously hired after the retirement age of 65 [14]. However, there were only 20.1% of older workers who continued to be hired until the age 70 and over [14].

Since older people are not homogeneous but very heterogeneous [1], reemployment for work that matches personal experience and remaining capacity seems to be important for older people so that they can adapt to limitations as the result of their own aging [3–5]. In 2015, 74.4% of older workers aged 65 and over were non-regular employment workers [14]. The reason why they work as non-regular

employment workers was because (1) they wanted to work at their convenient time (31.7%), (2) they wanted to receive a household subsidy or tuition (20.1%), (3) they wanted to use their professional skills (14.9%), (4) they had no chance to obtain a regular employment job (8.8%), (5) they wanted shorter commuting time (i.e., the workplaces near to home) (4.0%), or (6) they wanted to balance work with housework, childcare, or elderly care (3.2%) [14].

In 2016, the Japanese government revised a law in order to support older persons who want to continue working at the age of 65 and over [14]. The aims of the law are (1) to maintain the working environment which support older people to continue working without anxiety and (2) to target newly hired older workers at the age of 65 and over for employment insurance [14]. Since older people are not homogeneous but very heterogeneous [1], reemployment for work that matches personal experience and remaining capacity seems to be important so that older people adapt to limitations due to aging and undergo successful aging [3–5].

1.3.4 Health Promotion and Prevention of Chronic Disease for Working Ages

Our health status in the later life is influenced by our life experiences throughout life. Therefore, health promotion and prevention of chronic diseases during the working years are important to prevent a decline in the labor force as well as to obtain healthy aging.

In 1978, the Ministry of Health and Welfare (currently the Ministry of Health, Labour and Welfare) started the first phase of Japan's national plan for health which focused on secondary prevention at working ages (e.g., health checkup, screening for cancer) [16]. In 1988, the second phase of Japan's national plan for health began, which included secondary prevention as well as health promotion (e.g., health education to prevent lifestyle-related diseases) [16].

In 2000, the Ministry of Health and Welfare (currently the Ministry of Health, Labour and Welfare) announced a new approach campaign called "Healthy Japan 21" (i.e., the third phase of Japan's national plan for health) to promote better health of each citizen who will live in Japan in the twenty-first century [16], which covers specific areas in lifestyles and lifestyle-related diseases (e.g., tobacco smoking, alcohol drinking, nutrition and dietary habits, leisure time physical activity and exercise, rest, dental and oral health, obesity and diabetes, stroke and ischemic heart disease, cancer) [16].

Targets for "Healthy Japan 21" include the prevention of lifestyle-related diseases (e.g., cancer, stroke and ischemic heart disease, diabetes, chronic obstructive lung disease) as well as the maintenance of functions necessary for engaging in social life (e.g., mental health) [16].

1.4 Health Problems of Older People

1.4.1 High Prevalence of Chronic Disease and Multiple Diagnoses

Aging increases chronic diseases in the elderly. More than half of older people (65 years and over) who live in the community attend hospitals as outpatients in Japan (68.2% for men and 69.1% for women), and the proportion of those who attend hospitals increased in old-older people (75 years and over) (72.5% for men and 73.0% for women), which is greater than the proportion of those who attend hospitals among the general population (i.e., 37.2% for men and 40.7% for women) [7].

Multiple diagnoses are common in older persons, which may be explained in by the following ways [17]. First, common disorders (e.g., hypertension, osteoarthritis, diabetes mellitus, vascular disease, and dementia) increase with aging [17]. Second, disturbance of the immune system as well as lifelong exposure to carcinogens during their long lifetime brings an increased risk of cancer [17]. Third, compared with young- or middle-aged persons, an illness (e.g., respiratory infection) affecting one system is more likely to lead to disorders in another in the elderly [17]. Fourth, a vascular event (e.g., stroke) may develop at any time in older people although vascular diseases may develop gradually [17]. Last, immobility associated with neurological or musculoskeletal disorders may increase the risk of complications such as falls, deep vein thrombosis, and pulmonary embolism [17].

Therefore, it is important for older people to prevent an acute illness which may worsen underlying chronic diseases. The Japanese Ministry of Health, Labour and Welfare recommends influenza vaccinations for older people [7]. In Japan, older people (i.e., 65 years old and over) have been subsidized by their municipality since 2001 for influenza vaccination under the Preventive Vaccination Law. The aim of influenza vaccination is not only to prevent the development of influenza infection but also to prevent severe complications following influenza infection (e.g., pneumonia, heart failure, stroke, falls, and death) [7]. Ozasa et al. [18] reported that influenza vaccination was effective for high fever (i.e., 38.0 °C and over) during the influenza season among the non-institutionalized Japanese elderly population (OR = 0.77, 95% confidence interval: 0.40–1.47). On the other hand, Washio et al. [19] reported that influenza vaccination reduced the risk of pneumonia acquired outside hospitals among the Japanese elderly during the winter months (OR = 0.33, 95% confidence interval: 0.13–0.90).

1.4.2 Hypoalbuminemia and Frailty

Population aging increases not only the elderly with chronic diseases but also the elderly with decreased mental and physical function, which brings increase in older people who need care [20]. Therefore, in 2017, the Japanese Ministry of Health,

Labour and Welfare announced a new health-care approach for the elderly called "Tentative Health business guidelines on the basis of characteristics of elderly persons" in order to prevent the aggravation of chronic diseases as well as to prevent a decrease in the mental and physical function in older people [20].

The prevalence of hypoalbuminemia is reported to increase with age in Japanese elderly [21, 22], and Kitamura et al. [23] reported an inverse causal association between serum albumin and activities of daily living (ADL) among senior citizens with frailty in Japan. Hypoalbuminemia increases the risk of the development of pneumonia in Japanese elderly (OR = 9.25, 95% CI = 4.04–21.14), while an impaired ability to perform one's daily living (i.e., ADL without limitation) reduces the risk of pneumonia in the elderly (OR = 0.34, 95% CI = 0.12–0.80) [19]. Pneumonia is the third leading cause of death among Japanese elderly (65 years old and older) [7]. Therefore, public health services directed toward maintaining nutritional status and ability to carry out ADL are helpful for the elderly to age successfully.

1.4.3 Prevalence and Number of Dementia Among the Older People in Japan

Dementia presents with a progressive loss of cognitive function from any of several domains (e.g., memory impairment, language deficits, disinhibition, deficits in executive function, sleep disorders, hallucinations) [24, 25]. Among the neurodegenerative dementia, Alzheimer's disease (AD), dementia with Lewy bodies (DLB), frontotemporal lobular degeneration dementia (FTLD), and dementia in Parkinson's disease predominate with aging [24, 25]. Cerebrovascular disease, which may cause vascular dementia (VaD), may coexist with neurodegenerative dementia [24, 25].

In Japan, the prevalence of dementia is estimated to be 15% (95% confidence intervals: 12–17%) among the older people (65 years old and over), and the number of older persons with dementia is estimated to be 4,390,000 persons (95% confidence intervals: 3,500,000–4,970,000) in 2010 [26, 27]. Among them, 2.8 million older persons with dementia used care services (e.g., home visiting nursing service) under the public long-term care insurance system (LTCIS) for the elderly [26, 27]. In 2015, the Japanese government made a new national plan in order to support the older persons with dementia and their family caregivers as well as to prevent the development and progression of dementia [7].

In an ecological study by Shigeta [28], there was a positive association between the year of the survey and the ratio of the prevalence of AD to that of VaD, and the prevalence of AD shows a positive relation to the year of the survey. The findings of this ecological study may suggest that the number of AD patients increased with the number of older persons with dementia although the number of VaD patients did not increase according to the increase in the number of older person because of the prevention of cerebrovascular diseases with blood pressure control through various public health activities (e.g., lifestyle modification including weight control, exercise, and diet [29]) or drug treatment such as antihypertensive agents.

Dementia symptoms may also occur in psychiatric disorders other than dementia (e.g., anxiety, depression), metabolic disorders, infections, autoimmune disorders, nutritional disorders, pharmaceutical drug effects, or normal-pressure hydrocephalus [25]. Although these conditions may be treatable in the early phase, dementia symptoms will become irreversible dementia if these conditions persist long. Therefore, education for health-care workers to distinguish "treatable dementia" from dementia as well as education for citizens to reduce risk of VaD (e.g., prevention and control of VaD risk factors such as hypertension [30]) is important to reduce the development of dementia other than neurodegenerative dementia.

On the other hand, maintaining an active life is believed to be effective for senior citizens to preserve their physical and mental health [31]. An active and social integrated lifestyle in later life is suggested to protect against dementia including AD [31].

Cerebrovascular disease ranks as one of the major causes of death in industrialized countries (e.g., the fourth major cause of death in Japan [7]), and it is also a major contributor of disability [32]. Therefore, the prevention of cerebrovascular disease as well as the early rehabilitation for patients with cerebrovascular disease to reduce their disabilities is important to prevent dementia among older people.

1.5 Speed of Population Aging

Table 1.4 illustrates international comparison of the speed of population aging among selected countries in Europe, North America, and East Asia with respect to the year that they either attained or expected to attain from 7% to 14% level in terms

Table 1.4 Speed of population aging in selected countries

Country	Years attaining the specified percentage of older people (65 years old and older) among the total population		Years required to increase the proportion of older people from 7% to 14%
	7%	14%	
Japan	1970	1994	24
South Korea	1999	2017	18
Taiwan	1995	2020	25
China	2002	2025	23
Singapore	2000	2020	20
Thailand	2010	2030	20
Germany	1932	1972	40
U K	1929	1975	46
USA	1942	2014	72
Sweden	1887	1972	85
France	1864	1979	115

Source: White paper (Japanese Ministry of Health, Labour and Welfare), 2016 [14]
Wakabayashi K. Aziya Kenkyu (Asian Studies), 2006 [33]

of the population of the older people (65 years old and over) [14], [33]. The rapidity of population aging in East Asia is very impressive [14, 33]. It took only 24 years in Japan for the proportion of older people to increase from 7% to 14% [14]. On the other hand, compared with Japan, the period of doubling of the proportion of older people (i.e., from 7% to 14%) is longer in the Western countries (e.g., France 115 years, the UK 46 years, and the USA 69 years) [14]. On the other hand, it was estimated to take 23 years in China and 20 years in Singapore for the proportion of older people to increase from 7% to 14% [14, 33].

In a country, where social security programs have been scarce and care for the elderly has largely depended on the family, it remains a question whether younger generations will be able to take care of the increasing elderly population [34]. In China, a young married couple has to take care of four old parents because of the one-child policy [34]. Although nations are different between Japan and other East Asian countries, the Confucian norm of frail piety (i.e., ancestor worship and respect for the elderly) is shared among East Asian countries [34].

Since a rapidly progressing population aging gives a greater impact on society and economy than slowly progressing one, the experience of Japan may provide readers useful information about how to face the population aging in other Asian countries with the rapidly progressing population aging.

1.6 Discussion

Aging is a lifelong process and continues throughout life, and for each person, our health status in later life is influenced by our different life experiences throughout life. The functional capacity of our biological systems increases during the first years in life, reaches its peak in early adulthood, and naturally declines thereafter [35]. The prevention of diseases and disabilities is closely related with maintenance of high physical and cognitive capacity and continuation of social and productive activities in our later life. The model of successful aging proposed by Rowe and Kahn [2] includes all of these three components.

In a large scale of prospective cohort study in Taiwan [36], five lifestyle risk factors (i.e., smoking, alcohol consumption, insufficient fruit/vegetable intake, insufficient physical activity, and non-ideal body mass index) are responsible for 25 % of cancer incidence and 40% of cancer death, while two chronic diseases/markers (i.e., cardiovascular disease and chronic kidney disease) are responsible for 20% of cancer incidence and 40% of cancer death.

"Healthy Japan 21" focuses on the importance of primary prevention because lifestyle factors are related to development and progression of chronic diseases [16]. With respect to tobacco smoking, "Healthy Japan 21" decreased the rates of current smokers (i.e., adults who have smoking habits) from 47.4% for men and 11.5% for women in 2000 to 30.1% for men and 9.7% for women in 2016 [7]. Since tobacco smoking increases the risk of chronic diseases (e.g., cancers, stroke, ischemic heart disease, chronic obstructive lung disease, and type 2 diabetes) [7], it is very impor-

tant to reduce the rate of current smokers as well as to avoid the exposure of tobacco smoke for nonsmokers. In addition, secondary prevention (e.g., health checkups and screening for cancer) and tertiary prevention (e.g., rehabilitation for patients with stroke, ischemic heart disease, or lung disease) are also important to prevent decline in labor force as well as to achieve successful aging in the later life.

Population aging is caused by the combination of increased life expectancy (i.e., decreased death rate in young- and middle-aged people) and decreased birthrate, and the dropped birthrate decreases future population in the long term [1]. Conditions, such as an increase in the number of unmarried people and late marriages may have a direct impact in creating low fertility. On the other hand, there are many young couples who hesitate to have another child because of expensive child-raising and child's education costs. If there is neither a licensed nursery school for their child nor a family member who can care for their child (e.g., their mother), young women may lose gainful employments outside of the home after delivery, due to the fact they must care for their child, as women are assumed to be the main source of support for family members in Japan [37]. Otherwise, they are obliged to pay high expenses for leaving their child with an unauthorized nursery school. However, nearly half of women (47%) lost gainful employment outside of the home after delivery of the first child in 2010–2014 [10]. Therefore, benefit-in-kind (e.g., nursery school, day-care center for children, baby-sitter, accommodation postpartum care, grandmother/grandmother-in-law in the same household) seem to be more helpful than cash-benefit for young women to maintain their gainful employments outside of the home after delivery. In order to weaken the negative impact of the rapid population aging in Japan, we should provide enough numerical licensed nursery schools and other childcare services for young couples and their children. In addition to these social services, we should provide effective education programs from a primary school in order to create a new culture in which both fathers and mothers participate in child-rearing because the participation of fathers in child-rearing is still smaller in Japan than in Western countries [11, 38].

With respect to the child's education, Japanese parents spend much more money on university education than primary school and secondary school education, which may influence the number of children in young couples, because they must save money not only for their own living expenses of the old age but also for their child's university education. The Ministry of Education, Culture, Sports, Science and Technology estimates that educational expenses account for half of the averaging disposal income of the workers in a family of parents and two children when both children go to private university [39]. Furthermore, when two children room and board at a private university, educational expenses account for 80% of the averaging disposal income of the worker [39].

Although many university students receive scholarships, most funds are obtained through loans with a return duty, which may influence marriage at a late age among university graduates. In order to reduce the marriage at late age among university graduates, it may be time to discuss whether Japan should make the tuition of national universities free or increase the number of university students who receive scholarships without the return duty regardless of household income.

Population aging is associated with declining population. It is estimated that the total population will decrease from 127 million in 2015 to 88 million in 2065 [13]. There are some efforts to minimize the negative impact of the population decline on economic activities in Japan. First, the Japanese government promotes the "Plan for accelerated elimination of children on waiting lists to get in nursery schools" so that young women can keep working outside of the home even after delivery [10, 15]. The women' labor force participation rate is tending to increase in Japan. Dividing the labor force by age-group, the transition showed an M-shaped curve in the 1970s, with the age bracket of 25–34 being the bottom, suggesting that women tend to terminate the employment during the periods of childcare [40]. Recently, however, an M-shaped curve is changing to a reverse U-shaped curve, suggesting the increase in the proportion of women who continues working outside of the home all through their life [40].

Second, the Japanese government revised a law in order to support older persons who want to continue working at the age of 65 and over [14]. Third, the Japanese government announced a new national plan which covers specific areas in lifestyles and lifestyle-related diseases in order to prevent the development and progression of chronic diseases [16].

However, some recommends the acceptance of the foreign workers with a view to compensating for the shortage in our labor force. The technical intern training program was started in 1993, in order to transfer technical skills, techniques, and knowledge to developing countries, which is the system to accept the foreign workers in the short term, although it does not allow them to be permanent residents [41]. Although technical intern trainees have come to provide essential labors for Japan, they are not completely protected as employees under the Labor Standards Acts [41]. Since the declining young workers means decreased successors of traditional technologies, it may be time to choose whether to abandon some traditional skills and technologies or to accept foreign workers as successors of traditional skills and technologies. A review of the technical intern training program is necessary in order to work with foreign workers as permanent co-workers in Japan. When accepting foreign workers, the Japanese government should provide opportunities for their children to learn at elementary school and junior high school in Japan.

Although 2.8 million older Japanese with dementia used care services under the public long-term care insurance system (LTCIS) for the elderly in 2010 [26], population aging causes a shortage of labor for elderly care. When we ask foreign care workers or foreign nurses to care for the Japanese elderly, we should ask them to learn Japanese culture as well as Japanese language. At that time, we should enhance the educational system to support foreign candidates of care workers/nurses so that they can surely learn the minimum knowledge necessary for caring for Japanese elderly. First, we should teach students only important things and should not teach them too many things. Second, we should teach them in a way that they come to consider why they must act in certain ways when they care for Japanese elderly persons. Third, we should show them how they will be treated at their workplaces after their training when they care for Japanese elderly. It may be time to discuss

about how we can provide an education system to support their study without having to bear a heavy financial burden in Japan.

The improvement of public health and advances in medicine after World War II reduced the death from infectious diseases, such as pulmonary tuberculosis, and increased life expectancy in Japan [7], while industrialization, urbanization, and social mobility after World War II influenced Japanese lifestyles and family structures. Westernized dietary habits (e.g., increased consumption of beef, pork, and butter) and decrease of physical activities due to car ownership and spread of electric household appliances (e.g., electric washing machine) may have increased the proportion of obesity, which brings an increased risk of death from lifestyle-related diseases (e.g., cancer, stroke, and ischemic heart disease). Therefore, "Healthy Japan 21" focuses on the importance of primary prevention of lifestyle-related diseases [16]. On the other hand, the emancipation of women from the traditional Japanese household legal structure and the decreased proportion of young couples who live with their mothers/mothers-in-law in the same households may influence the falling birthrate in Japan.

The rapidity of population aging in Japan is very impressive. It took only 24 years in Japan for the proportion of older people to increase from 7% to 14% [14]. Compared with Western countries, the period during which the proportion of older people had doubled was much shorter in Japan and is estimated to be much shorter in other East Asian countries as well. Since the Confucian norm is shared among Japan and other East Asian countries [34], the experience of Japan (i.e., both success experiences and failure experiences) may give readers useful information about how to cope with the population aging in other Asian countries.

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