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AGEING AND HEALTH IN JAPAN

ABSTRACT. The paper identifies several specific factors related to health in old age which in Japan appear to be different from other developed countries. These factors are explored in the context of Japanese culture and social change. In the context of the high Japanese level of longevity, the paper presents data on life span and improvements of average life expectancy and the major causes of death among middle-aged and older persons, emphasizing international comparisons and traditional culture. Attention is drawn to the high proportion of bedfast elderly people and the effects of filial piety. Differences in the prevalence of dementia and suicide in old age are also discussed.

Key Words: Japan, life expectancy, health, causes of death, filial piety, dementia, suicide, social change.

1. THE AVERAGE LIFE SPAN AND AVERAGE LIFE EXPECTANCY AT AGE 60

(1) International Comparison

Both the average life span and average life expectancy at age 60 of Japanese people are now among the longest in the world, as shown in Table I. Until recently the sex difference of our average life span was less than other industrialized countries. But, since 1982, it has been widening year by year, and now it is about the same as that of North European countries, such as Sweden, Iceland, and England. This seems to be mainly due to the faster reduction of the female death rate after age 80, and to the faster increase of the male death rate due to malignant neoplasm and cardiovascular disease (Kouseishou Toukei-Jouhoubu, 1986).

Historically speaking, the average life span of Japanese was not very long until recently. In 1965, 20 years ago, the average life span was 67.7 for men, and 72.9 for women, about 7–8 years shorter than now. At that time, though our life span was much longer than that of other Asian countries, it was a little shorter than the average of Western industrialized countries.

There are no specific age brackets which made any significant contribution to the rapid improvement of the life span during these twenty years. The death rate has been improved in all age brackets almost at the same pace.

(2) Possible Causes of Recent Extension of Longevity

What, then, caused the fast improvement of the death rate in all age brackets in Japan?

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TABLE I

International Comparison of Average Life Span and Average Life Expectancy at age 60

Country	Average Life Span		Average Life Expectancy at age 60	
	male	female	male	female
Japan	75.23 (1986)	80.93 (1986)	19.70 (1986)	23.62 (1986)
Canada	71.88 (1980–82)	78.98 (1980–82)	17.96 (1980–82)	22.85 (1980–82)
U.S. (non-colored)	71.8 (1984)	78.78 (1984)	18.0 (1984)	22.6 (1984)
Austria	70.07 (1984)	77.25 (1984)	16.98 (1984)	21.06 (1984)
Denmark	71.50 (1983–84)	77.50 (1983–84)	17.20 (1983–84)	21.60 (1982–84)
France	70.86 (1982–84)	78.99 (1982–84)	17.69 (1982–84)	22.73 (1982–84)
West Germany	71.18 (1983–85)	77.79 (1983–85)	16.92 (1983–85)	21.36 (1983–85)
Sweden	73.79 (1985)	79.68 (1985)	18.34 (1985)	22.70 (1985)
England-Wales	71.61 (1982–84)	77.59 (1982–84)	16.68 (1982–84)	21.28 (1982–84)
Australia	72.59 (1984)	79.09 (1984)	17.95 (1984)	22.53 (1984)

Source: Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau), 1987.

TABLE II

International Comparison of the Number of Physicians and Hospital Beds (per 10,000 population)

Country	No. of Physicians (per 10,000)		No. of Hospital Beds	
	about 20 years ago	latest available	about 20 years ago	latest available
Japan	11.2 (1964)	14.9 (1984)	85.8 (1964)	147.0 (1985)
Canada	11.1 (1963)	18.2 (1979)	148.0 (1964)	77.8 (1978)
U.S.	14.4 (1963)	18.2 (1980)	114.2 (1963)	58.6 (1980)
Austria	18.0 (1963)	22.7 (1981)	108.4 (1964)	112.3 (1981)
Denmark	13.2 (1963)	20.7 (1978)	90.6 (1964)	81.8 (1979)
France	11.5 (1963)	17.2 (1977)	161.0 (1963)	106.9 (1977)
West Germany	16.0 (1963)	22.6 (1980)	110.4 (1964)	115.0 (1980)
Sweden	10.4 (1963)	22.0 (1980)	165.8 (1964)	148.1 (1980)
England-Wales	10.4 (1963)	16.0 (1979)	99.4 (1964)	85.6 (1974)
Australia	13.6 (1963)	17.8 (1980)	118.0 (1964)	?

Source: Kousei Toukei Kyoukai (Health and Welfare Statistics Association), 1966, 1967, 1968, 1987-a.

Improvement of Health and Medical Services

The first possible factor seems to be an effect of the improvement of health and medical services. During these twenty years, health and medical services have been improved significantly not only due to the development of knowledge and

technique in the sciences of medicine and pharmacology, but also due to economic development. But, was the development in these two aspects faster than in other countries? Are their present levels higher than in other countries? Table II shows the international comparison of the increase of the number of physicians (excluding dentists) and hospital beds. In 1964, the number of hospital beds per 10,000 population was 86, which was one of the lowest of developed countries, as is shown in the table. Since then hospital services have improved greatly. By 1985 hospital beds increased to 147 per 10,000 population, which seems to be one of the highest among developed countries.

The increase in the number of physicians was also significant. During the twenty years between 1964 and 1984 it increased from 12 per 10,000 population to 15 per 10,000 population. Comparatively speaking, however, the increase in the number of medical doctors is not so significant as that of hospital beds. It should also be noted that, in the same period of time, the number of physicians in other developed countries increased faster than that of Japan, as shown in Table II. As a result, the ratio of physicians to population is now one of the lowest among developed countries.

These data show that probably the increase of hospital beds contributed more greatly to the reduction in the death rate in all age brackets. Owing to this development, highly developed hospital services are now available to all the Japanese people. Generally speaking, there is always a vacant hospital bed anywhere in Japan. Except for cases of very rare illensses which need the service of a hospital with specially advanced medical technology, patients in need of hospitalization can be admitted immediately. As a result, regional differences in average life span and life expectancy at the age of 60 are very small.

The improvement in public medical insurance also gave a great impact to the prolongation of life expectancy. Japan's universal medical insurance system was completed by 1961. In 1974, the public medical insurance system was further improved. Since then, the proportion paid by patients when a dependent of the insured was reduced from 50 percent to 30 percent of total medical care cost. In addition, the medical services for senior citizens aged 70 and over have been subsidized 100 percent except for nominal fixed fees. Before the initiation of this program, senior citizens, when they were a dependent of the insured (for example, a wife of the insured, or a retired person covered by public medical insurance of one's grown child), had to pay 50 percent of medical care expenses, which frequently prevented them from seeing a physician early enough.

Another possible factor is the free mass health screening program for senior citizens aged 60 and over which was initiated in 1963. This program, together with the universal medical insurance program and free medical care services for those aged 70 and over, seems to have made a great contribution to the reduction in the death rate among older persons.

Effects of Rapid Economic Development

It should be pointed out that the improvement of health and medical services as well as medical insurance was made possible by rapid economic development since 1960. In 1965 per capita national income was US $779, one of the lowest among developed countries as is shown in Table III. By 1985 it had increased to US $8,712, which seems to be approximately equal to the average among developed countries. Another important factor to be pointed out is that in Japan the benefit of economic development has been quite evenly distributed. Thus, even those who belong to the lowest income brackets can enjoy the benefits of highly developed medical technology.

Economic development also made it possible to construct new roads and bridges all over Japan which improved access to medical services. In addition, the national government has actively promoted a special service system to a small number of residents living in mountain areas or on isolated atolls. This also contributed greatly to the reduction in the death rate of all age brackets in geographically less privileged areas.

Many people also point out the positive effect of well-established health education services, along with the very cooperative attitudes of the mass-media to it. It should also be pointed out that the highly developed compulsory education system has contributed greatly to making the health education services very effective.

With the combination of economic development and the effective health education program, the nutrition of Japanese people has improved very quickly. Nowadays, Japanese people eat more animal protein and drink more milk, this replacing part of the traditional Japanese diet of rice, salted vegetables and a small amount of fish. This improved and more balanced food intake has increased not only the bodybuild of Japanese children, but also resistance against infections and recovery potential from pathology.

The decrease of intake of salt is said to be one of the major causes of the decline of death from cerebrovascular disease, which once seemed like a national epidemic. At the same time, ischemic heart disease, so common in Western industrialized countries, has not yet increased to a noticeable degree. Many people attribute the low death rate from ischemic heart disease to a well-balanced diet brought about by the public health education program.

The improvement of heating in the northern part of Japan was made possible by economic development and seems to be a contributing factor in the reduction in the death rate from stroke and pneumonia among older people during winter time.

TABLE III

International Comparison of Per Capita GNP (U.S. Dollar)

Country	Per Capita GNP	
	1965	1985
Japan	779	8,712
Canada	2,278	10,254
U.S.	3,232	13,467
Austria	1,176	
Denmark	1,970	8,081
France	1,840	6,927
West Germany	1,751	7,923
Sweden	3,369	8,928
England-Wales	1,711	6,045
Australia	1,799	7,888

Source: Sourifu Toukeikyoku (Prime Minister's Office, Statistics Bureau), 1974, 1987.

TABLE IV

Death Rates of Three Major Causes of Death
(International Comparison)

(per 100,000 population)

Country	year	Malignant Neoplasm	Cerebro-Vascular Disease	Cardio-Vascular Disease
Japan	1986	158.4	106.9	117.8
U.S.A.	1983	189.3	66.5	319.0
England-Wales	1984	278.0	143.6	367.5
Italy	1981	216.3	131.1	255.2
Sweden	1984	232.0	112.5	419.1
Denmark	1984	284.2	101.2	365.1
West Germany	1985	266.3	153.0	379.9
France	1984	238.3	111.6	203.1
Australia	1984	166.0	81.4	238.2

Source: Sourifu Toukeikyoku (Prime Minister's Office, Statistics Bureau), 1987.

2. MAJOR CAUSES OF DEATH AMONG MIDDLE-AGED AND OLDER JAPANESE

Before the latter part of 1950s, the leading cause of death in Japan was tuberculosis. Due to drastic improvement in nutritional conditions and preventive measures, the number of deaths caused by tuberculosis decreased rapidly. Since the 1960s, cerebrovascular disease has become the leading cause of death

followed by malignant neoplasm and cardiovascular disease. This mortality pattern continued until around 1980, when malignant neoplasm took the place of cerebrovascular disease and became the leading cause of death in Japan. Cerebrovascular disease was second and cardiovascular diseases third. However, this pattern lasted only five years. In 1985, cardiovascular disease took the place of cerebrovascular disease becoming the second most important cause of death.

Among industrialized countries, the Japanese pattern of mortality seems to be rather unique. As is shown in Table IV, the general pattern of mortality in Western Europe and North America is that the first cause is cardiovascular disease, the second neoplasm, and the third cerebrovascular disease. The difference between Japan and other industrialized countries is the relative importance of cardiovascular disease among the three major causes of death. That is, in Japan, cardiovascular disease, is still only the second most important cause of death, while in most of the other industrialized countries, it is literally the leading cause of death (See Table IV).

As was pointed out in the previous section of this paper, many people attribute this to the difference in eating habits. That is, Japanese people still consume much less animal meat than Europeans and Americans and consume much more fish and vegetables. Thus, despite similar life-styles and social conditions in other areas such as smoking, stressful daily life, advanced medical services and so forth, cardiovascular disease is only the second cause of death in Japan. Although cardiovascular disease has increased since the 1960s, it seems quite unlikely that it will increase to the same level as other industrialized countries in the foreseeable future.

3. COMPARATIVELY HIGH DEATH RATE OF MEN WHO WERE BORN BETWEEN 1927–1932

Among Japanese demographers and public health experts, the comparatively high death rate of men who were born between 1927–1932 has recently been given intense attention. Though the differences of yearly death rate between this age group and those closely preceding or succeeding are very small and statistically non-significant as a phenomena of a single year, this difference has been consistently observed from the early 1970s to the present. It should also be noted that the difference of death rate is only observed for men, but not for women in the same birth cohorts. In the year 1975, people who belonged to this specific age group were aged between 42 and 47, and in 1988 they are aged between 55 and 60. Table V illustrates this phenomenon clearly. The upper half of the table is for men, and the lower half is for women. The ages in the second column from the left mean those in the year 1975. Each cell denotes the death rate by age and by sex in the year designated at the top row. The extreme right-hand column denotes the decrease of death rate of each age cohort between 1970 and 1976. As you see in this column, the decrease is significantly smaller for the age group born between 1927 and 1932.

TABLE V

Death Rate of Age Cohorts Born Between 1925–1934

			(per 1,000 population)	
year of birth	age in 1975	1970	1976	decrease between 1970–1976
Male				
1925	40	3.02	2.50	0.52
1926	41	3.32	2.73	0.59
1927	42	3.38	2.94	*0.44*
1928	43	3.69	3.52	*0.17*
1929	44	4.03	3.58	*0.45*
1930	45	4.20	4.14	*0.06*
1931	46	4.61	4.20	*0.41*
1932	47	4.81	4.54	*0.27*
1933	48	5.48	4.75	0.73
1934	49	6.12	5.14	0.98
Female				
1925	40	1.72	1.31	0.37
1926	41	1.97	1.42	0.40
1927	42	1.93	1.55	0.38
1928	43	2.22	1.74	0.33
1929	44	2.45	1.82	0.45
1930	45	2.54	2.03	0.41
1931	46	2.69	2.22	0.55
1932	47	3.08	2.38	0.38
1933	48	3.43	2.55	0.48
1934	49	3.91	2.89	0.63

Source: Ookubo, M. and Kubo, Y., 1980

This phenomenon was first reported by Dr. Masakazu Ookubo of Nippon University Medical School (Ookubo, M. & Kubo, Y. 1980). According to Dr. Ookubo, deaths caused by the following six diseases have been contributing to this phenomenon: liver cirrhosis, cerebral hemorrhage, subarachinoidal hemorrhage, ischemic heart disease, gastric ulcer, and diabetes mellitus. He stresses that the direct cause of death from these diseases is the hemorrhaging or fatal degeneration of a blood vessel due to its defective composition. Dr. Ookubo also points out that the death rate from suicide of this male age group seems to be higher than the preceding or subsequent age groups if one observes the difference for a long period. In short, except for malignant neoplasm, the disease-specific death rates of this age group are higher for most of the major causes of death in middle-age and early in old age. According to Dr. Ookubo, the actual death rate of this male age group is approximately 9 percent higher than the hypothetical death rate which was calculated on the assumption that the death

rate for this age group would have been reduced at the same pace as the age groups just preceding and succeeding it. In the case of people who were born in the year 1930, the difference is the most conspicuous, being approximately 11 percent higher.

Dr. Ookubo stresses the uniqueness of this Japanese phenomenon. According to him, in other industrialized countries such as the United States and France, a comparatively smaller improvement in the death rate for the similar age group was observed, but no significant relative increase of death rate could be found. That is, in industrialized countries, owing to the development of medical services, the death rate of a specific age cohort tends to improve year by year compared to that of a preceding age cohort. In the case of the age group born between 1927 and 1932, however, their death rates tend to be kept at the same level of the preceding age group.

Though no clear-cut explanations have been presented for this phenomenon, many hypotheses can be proposed. For example, Dr. Ookubo points out the impact of malnutrition, especially the lack of animal protein, when those who belong to this age group were in the most critical stage of physical growth, i.e., at the age approximately between 10 and 18. This corresponds to the years between 1942 to 1946, when Japan was economically most distressed because of the Second World War and its aftermath. However, this hypothesis alone cannot explain why this phenomenon is not observed among women of the same age group.

Others point to the very severe psychological stresses these people have been experiencing since their middle-age. That is, since middle-age they have always been in the midst of the socio-cultural changes that Japan has been experiencing as the result of technological innovation, changes in administration systems in business, changes in family life, changes in human relations in and out of business, and so forth.

The authors would like also to point to the effects of rapid economic improvement and medical advancement after the end of the Second World War as one of its possible causes. That is, many in this age group who would have died due to poor economic conditions and medical services, were saved by the improved nutrition, environmental conditions, and medical services after the end of the Second World War. But, improved environmental conditions and medical services could not alter their basically weak physical body. So, when they reached the age of 40 and afterwards, their relative death rate began to increase. In the case of the preceding age group, as most of the physically weak persons had been actually selected out before the end of War, it did not show the occurrence of relatively high death rate in their middle-age. In the case of the age group just after it, as their most critical time for growth was after the end of the War, they do not show such relative increase of death rate in the middle-age. However, these are all hypotheses that are very difficult to prove with concrete evidences.

Some public health professionals stress the possible correlation between this

comparatively high death rate of present middle-aged persons and the recently recognized comparatively high death rate of middle-aged persons in the downtown areas of large metropolitan cities, such as Tokyo, Osaka, and Nagoya (Asakura, R. & Sonoda, K. 1986; Mashiko, T. & Yamagata, R. 1980; Oosaka, T. & Asakura, S. 1980; Yamazaki, Y., Hishiyama, Y., Asakura, R. & Sonoda, K. 1986). Are these two phenomena independent of each other, or are they caused, at least partially, by the same factor? To answer this question, we need to do large-scale investigations and extensive statistical analyses including regional comparison of vital statistical data.

4. COMPARATIVELY HIGH PROPORTION OF BEDFAST OLD PEOPLE

It is frequently pointed out that though Japan's average life expectancy both at birth and at age 60 are one of the longest of the world, the proportions of bedfast and severely impaired older persons are higher than in other industrialized countries. So far no international comparative study on this issue has been conducted, but many Japanese gerontologists interested in this issue have been expressing such views according to their personal observations in other industrialized countries. The first author of this paper believes that this is true. In nursing homes in Western industrialized countries he has visited, there were very few bedfast (including chairfast) persons, while in Japan at least one fifth of the patients in nursing homes seems to be bedfast. According to a recent research report on the patients of Itabashi Nursing Home, which is one of the typical nursing homes in Japan, 11 percent of patients were unable to sit up by themselves, 10 percent were unable to keep sitting without help, and 16 percent were totally bedfast and unable to sit up even with help (Toukyouto Youikuin, 1986). In addition, in Japan there are many bedfast older persons cared for by family members in their own homes. According to a nation-wide survey done in 1984, 3.1 percent of older persons aged 65 and over living in the community (including those who are hospitalized) had been bedfast for six months or more (Kousei Toukei Kyoukai, 1987-b).

Parenthetically, it should be noted that the operational definition of "bedfast" used in this nation-wide study is "those who are in bed for most of the day". That is, according to this definition of the concept "bedfast" includes those who are in bed most of the day but can use a toilet oneself and/or can sit up for taking meals, etc. Therefore, it can rightfully be said that this definition shows the conditions of daily living rather than the ability. The authors of this paper believe, however, that even if the vagueness of the definition is taken into account, the prevalence of "bedfast older persons" in Japan seems to be much higher than in other industrialized countries.

What then are the causes of the higher prevalence of such persons in Japan? Firstly, it should be pointed out that there are more stroke-victims in Japan. As was pointed out in section 2 of this paper, cerebrovascular disease was the leading cause of death in Japan until recently. Naturally the number of patients

who are suffering from the sequelae of stroke, such as paralyzed limbs, impaired speaking ability, emotional incontinence, and so forth, are substantially greater in Japan. Some of them are so severely paralyzed that they cannot help but be in bed all day. There are also many older persons who have to be in bed except for going to toilet and/or sitting up just for meals because of their serious impairment.

Poor rehabilitation services for these patients may be a contributory factor. Due to the lack of physicians specialized in this field as well as the serious shortage of physical and occupational therapists, and finally the inadequate remuneration system of our public medical insurance programs which put more emphasis on pure clinical medicine, many stroke patients are discharged from hospitals without adequate rehabilitation services.

Secondly, Japanese stroke patients have comparatively less incentive to be independent in their daily living than similar patients in Western developed countries, as most of them live with the family of grown children, and can be dependent upon them in various aspects of daily living. According to the 1985 National Census, 64.6 percent of older persons aged 65 and over live with their children in Japan. Even in the very industrialized and Westernized Metropolitan areas, like Tokyo, still more than 50 percent of them do so.

It should also be pointed out that the Japanese people are educated to accept the Confucian ethic of "filial piety and respect for the elderly," a value, in short, that suggests that one must sacrifice oneself for one's parents and/or ancestors representing the family lineage. In this traditional culture, personal preference and ambition should be subordinated to the common good of the family and the society. Thus, individuals are taught to respect and obey their parents, and serve them as much as possible. To give orders to one's parents or to argue with them is something to be carefully avoided. Generally speaking, it is very difficult for grown children caring for aging parents to tell them to be independent and to help themselves.

When the elderly are still in good health, generally speaking, grown children and their spouses living together try to serve them as though the parents are their feudal lords. In most multi-generation families in Japan, aging parents are only expected to eat themselves and to go to toilet by themselves. Needless to say, in reality, most Japanese older persons are not so lazy or dependent. In most cases, they are active and making a contribution to the family of their children. But it seems obvious that our culture of "filial piety and respect for the elderly" tends to produce more bedfast as well as inactive older persons than in other countries, even if the effect of stroke is taken into account. Many stroke stricken older persons, in fact, easily give up efforts to become independent again.

In spite of the fact that there are many bedfast older persons in Japan, the number of institutions for such persons is comparatively small. In 1987, only 1.7 percent of persons aged 65 and over are institutionalized, while in other industrialized countries, approximately 4 percent or over are institutionalized. In the last ten years the proportion of institutionalized elderly people (excluding those who are hospitalized) has only increased 0.1 or 0.2 percent in Japan,

though the Government has been appropriating subsidies for the construction of approximately 100 additional nursing homes every year. Needless to say this is due to the very fast increase of the population aged 65 and over.

The increase of bedfast older persons raises the problem of family care of the elderly. Many Japanese people believe that family care is the best way to care for bedfast older persons. But in reality, the number of families who are able to provide adequate care to their bedfast or seriously impaired parents is gradually decreasing due to the effect of industrialization and/or urbanization. That is, industrialization and/or urbanization brought about increased geographical mobility of younger persons. Thus more and more older persons live separately from their grown children these days. It should also be pointed out that the improved health of Japanese older persons ironically raised a new problem. As their better health resulted in retarded occurrence of illness and physical deterioration, the spouse or children who are expected to provide needed care are older. The increasing number of middle-aged married women who are employed full-time is also an important cause of decreased capability of the family to care for aging parents. In addition, attention should be paid to the awakening of a sense of selfhood among the general public, especially among young and middle-aged women, which were aroused by higher education, higher living standards, and the influence of Western industrialized countries. Due to the effects of the decreased capability of the family resulting from these factors, the living arrangement and the family care of the elderly in Japan is changing slowly and steadily these days. For example, when a wife is working full-time, especially as career woman, such a couple usually does not live with aging parents of the husband. (When the wife is a daughter of the parents, sometimes they do so. In these cases the parents usually help the young couple with the care of children and/or housekeeping.) When the health of aging parents is deteriorated and when they have come to need outside help, wives working full-time seldom quit jobs to care for them these days. Instead, they apply for their admission into a nursing home or a geriatric hospital.

The decreased capability of the family on the one hand and the shortage of nursing home beds on the other, have resulted in two serious social problems in Japan. One is the increasing number of bedfast older persons who live in the community without receiving adequate care from their family. The other is the increasing number of hospitalized bedfast persons who actually need not to be hospitalized. Such phenomenon is called "social hospitalization" in Japan. This seems to be one of the reasons why the ratio of hospital beds per 10,000 population is very large in Japan as was shown in Table I in section 1 of this paper.

Thus, in present day Japan the rapid development of both institutional care and community services for impaired older persons is one of the most important goals for government at all levels. The need for preventive measures to decrease at least the proportion of such persons is also regarded to be a very important task for the government to tackle.

5. SUICIDE OF THE ELDERLY IN JAPAN

The high suicide rate of the Japanese elderly, especially that of *older women*, has long been drawing the attention of social gerontologists in Japan. As shown in Table VI, the suicide rate of Japanese older women aged 65 and over is the

TABLE VI
International Comparison of Suicide Rate of Older Persons (1984)

(per 100,00 population)

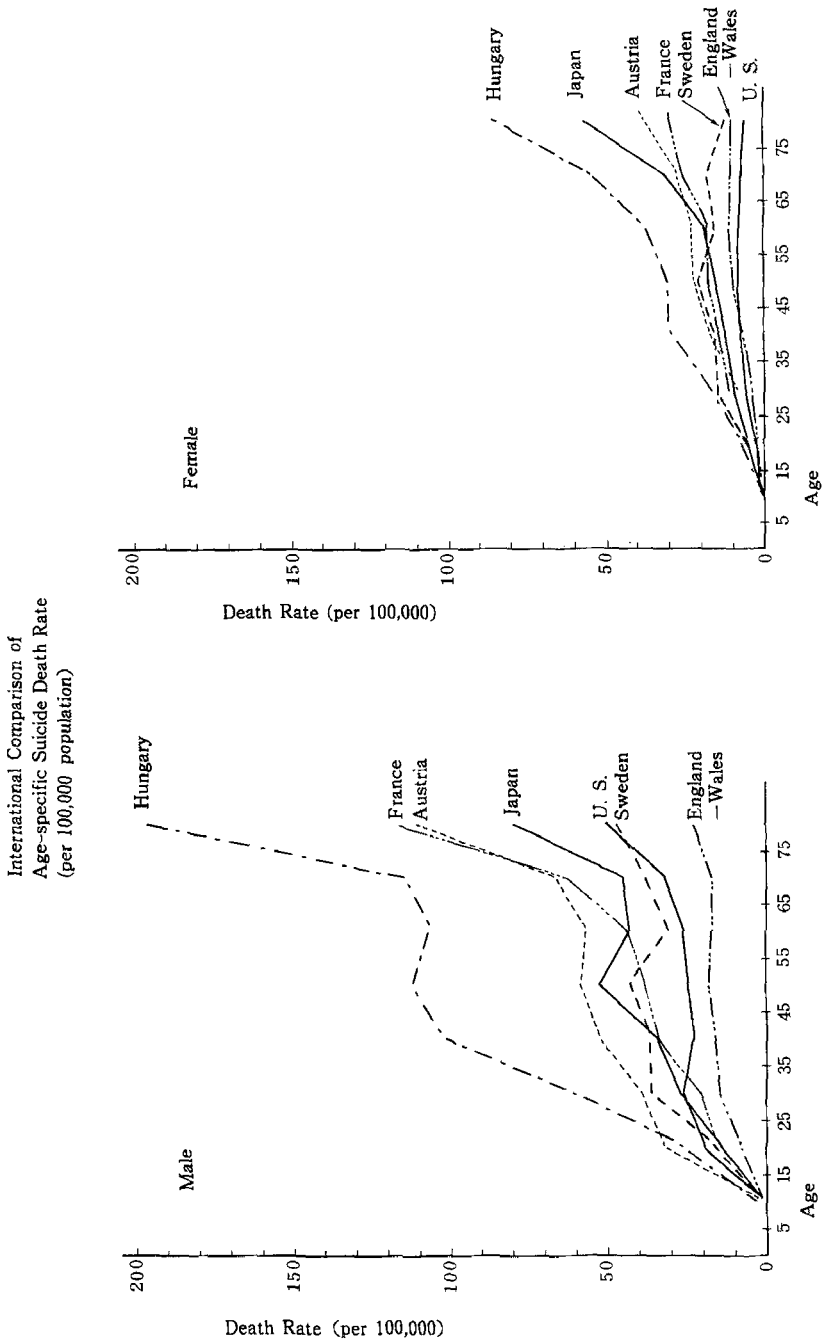
Country	Male 65–74	75–	Female 65–74	75–
Japan	45.2	79.1	31.4	57.0
U.S. (1983)	31.7	50.0	7.3	6.1
Austria	67.1	111.8	26.3	35.9
France	64.9	116.7	25.3	28.8
West Germany	48.2	76.0	24.4	27.9
Italy (1981)	24.9	36.4	9.5	7.7
Hungary	113.7	196.0	55.1	85.6
Denmark	48.8	67.3	37.7	32.2
Finland	55.7	70.9	13.5	12.9
Sweden	37.9	47.5	17.9	11.1
England-Wales	17.0	22.5	10.6	10.0
Australia	24.7	30.4	6.5	5.7

Source: Kousei Toukei Kyoukai, 1987-a.

TABLE VII
Trends in Suicide Death Rate of Older Persons
(both sexes, per 100,000 population)

year	65–79	80 and over
1935	73.1	101.2
1940	59.5	89.9
1950	80.6	116.1
1955	68.8	101.0
1960	61.3	80.3
1965	55.5	87.5
1970	58.5	80.3
1975	54.2	87.4
1980	47.2	73.8
1982	42.4	66.0

Source: Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau), 1984.



Source : Kousei Toukei Kyoukai, 1987—a

Figure 1.

second highest among industrialized countries listed in the table. Comparatively speaking, the suicide rate of Japanese *older men* is not very high. As is shown in the same table, it is approximately average among industrialized countries. It should be noted, however, that since 1950 the suicide rate of Japanese older persons of both sexes has been decreasing significantly (Table VII). In 1950 the suicide rate of those aged 65–79 was 80.6 per 100,000. In 1982, it was 42.4 per 100,000, a decrease of approximately one half in about 40 years. The suicide rate of older persons of both sexes aged 80 and over also reduced remarkably during the same period from 116.1 to 66.0 per 100,000, also a decrease of approximately one half.

The age difference of the suicide rate of Japanese *men* is not very remarkable compared with other industrialized countries, as is shown in Figure 1. That is, in case of *men* the rate of suicide goes up gradually as they age, though in some countries there exists a low mountain in the middle age, and in some other countries the increase of the rate after age 75 is a little sharper than other countries. But in case of Japanese *women* the pattern of age difference is quite unique except for Hungary whose pattern is very similar to that of Japan. That is, the suicide rate goes up suddenly at age 65 and over.

The very high suicide rate of Japanese older women and the unique age difference have been consistent in the past several decades. They were more or less similar even before the Second World War. But still no adequate hypotheses have been presented to explain the reasons. If the suicide rates and the patterns of age differences are similar for both sexes, it will be somewhat easier to guess possible causes. But it is very hard to explain why the suicide rate of *older women only* is higher in Japan. It does not seem to the authors that any of the hypotheses so far presented as possible socio-cultural factors are adequate to explain them. For example, some stress the lowered status of the elderly after the end of the Second World War. Others think that decreased family cohesiveness and the loss of the sense of filial piety are the main causes. Still others point out the influence of Buddhism and/or Shintoism. But these hypotheses do not seem to be adequate, as the suicide rate of the Japanese elderly before the World War II was much higher than now. It should also be pointed out that the hypotheses cited above seem to exert an effect not only on females but also on males. In addition, as was pointed out earlier in this section, the suicide rate of Japanese older persons has been reduced significantly in these 40 years, while the possible causes cited above seem to persist, contrary to the fact that the rate has increased after the end of the War.

Here let us discuss the general attitude of the Japanese people toward suicide. Unlike Western Christian culture, suicide is not regarded as a sin in Japan. Rather it is sometimes tacitly seen as an honorable alternative in some contexts. This attitude is regarded to be the influence of the philosophy among "samurai" in the feudal ages before the modernization of the Japanese society approximately 120 years ago. In present day Japan, nobody openly praises a person who committed suicide. But it is also true that nobody blames a person,

because he committed suicide. Still, research into the possible causes of suicide, especially when the deceased is their parent, is very difficult in Japan, as the children tend to keep silent about it. When they comment, they generally say that they cannot think of any special cause of suicide except for the fact that the deceased had been suffering from a serious disease. This is because they fear that people might blame them about their attitude or behavior toward the deceased parent. As pointed out elsewhere in this paper, filial piety and respect for the aged is the most important virtue in Japan. The fact that the parents committed suicide might make people think that their children's attitude or behavior might be inadequate. In cases where the cause of suicide is regarded to be mental disorder, people still tend to be silent, since having a person with mental disorder is thought to be shameful for a family in Japan.

Although there is a great gap between the highest prefectural rate of suicide of the elderly and the lowest – approximately 5:1 – the only factor influencing it seems to be the difference of climate. That is, generally speaking, in northern prefectures the rate tends to be higher while it tends to be lower in southern prefectures. The degree of industrialization or the level of per capita income do not explain a significant part of variance of the suicide rate. Although there is no dependable large-scale social research on the family background of the elderly who committed suicide, many social gerontologists think that there will be no significant difference between the elderly who lived in traditional multi-generation family and those who lived independently from their children.

It is frequently pointed out by geriatric psychiatrists that the suicides of older persons in most cases are caused at least partially by psychopathology including depression. If this is so, the only logical hypothesis to be presented might be that the prevalence rate of psychopathology among older Japanese women was and is higher than those of the same sex in other industrialized countries. Although there is no large scale scientific research on the prevalence rate of depression among the elderly, it is believed that it is higher among *older women* than among *older men* in Japan. However, since this is also true in other developed countries, the prevalence rate of depression cannot explain the sex difference of suicide rate in Japan. As for international comparison, no such research has so far been tried.

In order to identify the causes of the very high suicide rate of Japanese women and thereby to find effective counter-measures, we feel that scientific research should be carried out by an interdisciplinary team of scientists, including international comparative study.

6. PREVALENCE RATE OF SENILE DEMENTIA IN JAPAN

The first large-scale scientific study of the prevalence rate (excluding hospitalized and institutionalized persons) of senile dementia in Japan was performed in 1973 in Tokyo by a team of specialized psychogeriatricians organized by Dr. Kazuo Hasegawa, at that time Director of the Department of Psychiatry and

Psychology, Tokyo Metropolitan Institute of Gerontology. Since then, several large-scale prevalence rate studies have been done as is shown in Table VIII. It

TABLE VIII
Prevalence Rate of Senile Dementia (65 and over)

Area	Year	Principal Researcher	Sample Size	Prevalence Rate
Tokyo Metropolitan Area (First Survey)	1973	Hasegawa	4,716	4.5
Tokyo Metropolitan Area (Second Survey)	1980	Karasawa	4,502	4.6
Yokohama City	1982	Karasawa	2,287	4.8
Kanagawa Prefecture (excl. Yokohama City and Kawasaki City)	1982	Hasegawa	1,507	4.8
Osaka Prefecture (excl. Osaka City)	1983	Nishimura	1,844	4.3
Aichi Prefecture (including Nagoya City)	1983	Kasahara	3,106	5.8
Fukuoka City	1984	Suetsugu	3,883	3.4
Kawasaki City	1985	Hasegawa	1,607	4.7
Toyama Prefecture (Second Survey)	1985	Survey Committee	1,327	3.0
Hokkaido Prefecture	1986	Survey Committee	9,274	3.4

Source: Karasawa, A., 1987.

is to be noted that the results of the two studies done in Tokyo with seven years' interval are quite similar. These two studies were actually carried out by teams composed of almost the same members except for their leaders. The leader of the second study, Dr. Karasawa, was the deputy leader of the first study. Naturally the methods they used were identical, and the sample size was the same. In addition, the studies done in Yokohama, Kawasaki, and Kanagawa Prefecture (excluding Yokohama City and Kawasaki City) which are all located around Tokyo Metropolitan area yielded almost the same prevalence rate. Thus it can rightfully be said that the prevalence rate of senile dementia in urban areas at around 1980 in and around Tokyo metropolitan area was between 4.5 and 4.8 percent of the population aged 65 and over. As these studies did not cover hospitalized or institutionalized elderly, the total prevalence rates were a little higher than these figures. As no studies on prevalance rate of senile dementia in hospitals and institutions have so far been tried in Japan, it is impossible to calculate an accurate total prevalence rate. But it can roughly be estimated from several small-scale studies done in geriatric hospitals and in nursing homes that

the total prevalence rate in hospitals and institutions might be between 0.5 and 1.0 percent of the total population aged 65 and over.

Dr. Karasawa, one of the prominent leaders in this field in Japan, points out that the total Japanese prevalence rate of senile dementia in urban areas in and around Tokyo Metropolitan area seems to be somewhat lower than that of Western industrialized countries (Karasawa, 1987).

Another point to be specially noted here is the compartively smaller proportion of Senile Dementia of Alzheimer Type (SDAT) in Japan than in other industrialized countries (Karasawa, 1987). It seems to us that a large-scale, well-designed international comparative study on this difference might give us at least a hint with regard to the possible socio-cultural factors affecting the difference of the prevalence rate of SDAT, one of the most tragic diseases affecting the elderly.

As pointed out earlier in this section, the proportion of institutionalized or hospitalized patients suffering from senile dementia is estimated to be between 0.5 and 1.0 percent of total population aged 65 and over, which seems to be much lower in other industrialized countries. This means that most of such patients are cared for by their families in their own homes. In 1987, a nationwide survey on the opinion of middle-aged persons (couples) about later life and the care of the elderly was performed (Seimei-Hoken Bunka Center, 1987). According to this survey, 46 percent of husbands aged 50 to 59 and 50 percent of wives of the same age bracket answered that they were caring for or had cared for an elderly person with serious mental symptoms of senile dementia. Among these elderly the following mental symptoms were observed.

Symptoms	*% of the elderly*
Disorientation for person	45%
Disorientation for time	35%
Delusion	29%
Hallucination	25%
Delirium	24%
Wandering	21%

Generally speaking, care of such mentally impaired elderly imposes very heavy burdens on caretaking families. According to a study on these family burdens (Tokyo Metropolitan Institute of Gerontology, Sociology Department, 1989), major burdens expressed by primary family caregivers of the demented elderly are as follows:

Burdens	*% of caregivers*
Anxiety about one's own health	78%
Anxiety about care in the future	77%
Mental exhaustion	76%
Lack of time for hobbies, learning, etc.	64%
Desire to place the elderly in an institution	61%

This study also revealed that significantly heavier burdens were laid on primary family caregivers when they were in poor health, when they did not have any assistant caregivers in the same households, and when delirium and aggressive behaviors were more frequently observed on the part of the elderly.

The results reported above might seem to suggest that social tolerance of senile dementia in Japanese society is very high. But the reality is more complicated. For example, the majority of children caring for demented parents try to hide the fact as much as possible, as it is a stigma for the family to have a mentally ill member. Due to this feeling of shame in most cases, families caring for such patients seldom take them to psychiatrists. Another important reason why they do not do so is the belief that nothing can be or *should be done* for such patients by medical science, as senile dementia is just a natural and inevitable outcome of aging. Making the situation worse is the fact that there are only a very small number of psychiatrists specialized in senile dementia in Japan. Thus, even if families want to see a specialized psychiatrist, it is very difficult to find him within any easy access.

As far as the authors know, there is no scientific research on social tolerance of senile dementia in Japan. With the very complicated conditions reported above in mind, it seems to us that such research, including international comparative studies, will contribute greatly to the advancement of the understanding of and the social services for the problems of senile dementia in Japan.

SUMMARY

We have explored several specific factors related to health in old age in Japan which are different from other developed countries, showing how cultural factors have contributed to these differences. Some aspects of old age are inevitable and must be planned for, but some aspects are cultural and in these areas change is possible.

It has been shown how longevity has been extended by improvements in health services and changes in health related behavior, notably diet, brought

about by improved economic circumstances and public response to health education. However, the paper also points out that changes in behavior or cultural patterns cannot overcome all problems and that cohort effects may be irreversible, as the effects of World War II on one cohort of men has shown. However, the overall effect of changes in cultural patterns, such as diet, is demonstrated.

The paper also discusses the effects of the philosophy of filial piety on the care of elderly people. Many more elderly parents are cared for at home. This is particularly marked, in comparison with other developed countries, in the context of senile dementia, where most sufferers receive home care. Because of expectations requiring adult children to serve their parents, rehabilitation from such health problems as strokes, of which there is a high incidence in Japan, can be affected and Japan has a high level of bedfast elderly people. However, in the present climate of social change resulting in the greater likelihood of married women going out to work, it is anticipated that a trend towards institutional care will continue. Although the evidence is inconclusive, some researchers have suggested that the high suicide rate among elderly women may be related to conflict within the family. However, the fact that suicide is a culturally acceptable behavior for the individual in the face of poor health is likely to be a contributing factor. Cultural factors and social change interact to affect the lives of elderly people but also the direction of social change itself is affected by cultural considerations.

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REFERENCES

Asakura, R. and Sonoda, K., *Kawasaki-shini okeru Chuunenki Danshi Shibouritsuno Chiikisa Keisei Youinni tuite* (Study on the Cause of Geographical Difference in the Death Rate of Male Middle-aged Persons in Kawasaki City), In Sonoda, K. (ed.) *Daitoshi-chiikini okeru Chuu-Kounensouno Seikatsuto Kenkouni kansuru Kenkyu* (Study on the Way of Living and Health Conditions of Middle-aged and Older Persons in Large Cities), (Report of Scientific Research Grant-1985; printed and distributed by Health Sociology Section of the Tokyo University Medical School), pp. 10–19, Tokyo, 1986.

Karasawa, Akihide, *Chihouno Ekigakuto Rinshou* (Epidemiological and Clinical Study of Senile Dementia) In Orimo, H. and Tomonaga, M. (eds) *Chihouo Kangaeru* (Study of Senile Dementia), pp. 14–38, Koudansha, Tokyo, 1987.

Kousei Toukei Kyoukai (Health and Welfare Statistics Association), *Kokumin Eiseino Doukou, Shouwa 41-nenban, Shouwa 42-nenban, Shouwa 43-nenban, Shouwa 62-nenban* (Trends in Public Health in Japan, 1966, 1967, 1968, 1987), Kousei Toukei Kyoukai (Health and Welfare Statistics Association), Tokyo, 1966, 1967, 1968, 1987-a.

Kousei Toukei Kyoukai (Health and Welfare Statistics Association), *Kokuminno Fukushino Doukou, Shouwa 62-nenban* (Trends in Social Welfare Services in Japan, 1987), Kousei Toukei Kyoukai (Health and Welfare Statistics Association), Tokyo, 1987-b.

Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau), *kousei Toukei Youran, Shouwa 62-nenban* (Handbook of Health and Welfare Statistics, 1987), Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau), Tokyo, 1987.

Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau (ed.), *Jisatsu Shibou Toukei* (Statistical Data on Suicide), Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau), Tokyo, 1984.

Kouseishou Toukei-Jouhoubu (Ministry of Health and Welfare, Statistical Information Bureau), *Sengo Nihonno Jumyou Enchouno Doukou* (Trends in the Extension of the Average Life Span of Japanese People after the End of World War II), *Kouseino Shihyou* (Journal of Statistics on Health, Welfare, and Public Insurance), Vol. 33, no. 1, 1986.

Mashiko, T. and Yamagata, R., *Toukyouto 23-kuno Hoken-mondaino Kentou* (Study on Health Problems in Inner City Area of Tokyo), *Shakai Igaku Kenkyu* (Journal of Social Medicine), No. 1, pp. 48–60, 1980.

Ookubo, M. and Kubo, Y., *Chuunen Shibouno Zouka Genshou* (Relative Increase in Death Rate of Middle-aged Persons), *Kouseino Shihyou* (Journal of Statistics on Health, Welfare, and Public Insurance), Vol. 27, No. 2, pp. 19–28, 1980.

Oosaka, T. and Asakura, S. *Daitoshi Sprawl-Chiikino Juumin-Seikatsuto Kenkou* (Study on the Way of Living and Health Conditions of the Residents in the Sprawled Areas of a Large City), *Shakai Igaku Kenkyu* (Journal of Social Medicine), No. 1, pp. 67–80, 1980.

Seimei-Hoken Bunka Center (Center for Life Insurance and Culture), *Rougo Seikatsuto Kaigoni Kansuru Chousa,* (Survey on Later Life and the Care to be Given), Tokyo, 1987.

Sourifu Toukeikyoku (Prime Minister's Office, Statistics Bureau), *Kokusai Toukei Youran, 1974-nenban, 1987-nenban* (Handbook of International Statistical Data, 1974, 1987), Ookurashou Insatsukyoku (Ministry of Finance, Government Printing Office), Tokyo, 1974, 1987.

Tokyo Metropolitan Institute of Gerontology (Sociology Department), *Chihousei Roujinno Kazoku Kaigoga Motarasu Eikyou Oyobi Futanni Kansuru Chousa* (Survey on the Burdens of Families Caring for the Demented Elderly); Several Papers on the findings of this survey will be published in Shakai Rounengaku (Journal of Social Gerontology) No. 29, in February, 1989.

Toukyouto Youikuin (Tokyo Metropolitan Gerontology Center), *Toukyouto Youikuin Riyousha Jittai-Chousa Houkokusho–Roujinhoumu-hen–* (Report of Research on Users of Institutions for the Elderly), Toukyouto Youikuin (Tokyo Metropolitan Gerontology Center), 1986.

Yamazaki, Y., Hishiyama, Y., Asakura, R., and Sonoda, K., *Chuu-Sounenki Shibouto Chiiki Juumin Tokuseitono Kanrenkara Mita Shutokenno Kouzou* (The Structure of Tokyo Megalopolice Area from the Standpoint of Correlation between High Death Rate of Middle-aged Persons and the Characteristics of its Residents), In Sonoda, K. (ed.) *Daitoshi-Chiikini okeru Chuu-Kounensouno Seikatsuto Kenkouni kansuru Kenkyu* (Study on the Way of Living and Health Conditions of Middle-aged and Older Persons in Large Cities), (Report of Scientific Research Grant-1985; printed and distributed by Health Sociology Section of the Tokyo University Medical School), pp. 1–9, Tokyo, 1986.