

Material

A Preliminary Report on Investigations at Institutions for the Elderly in Shanghai, China and Okayama, Japan — What is Becoming Old? —

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This report only describes the scheme of the preliminary investigations done at the home for the aged in Shanghai and Okayama. The full text of the investigations will appear in another report.

The preliminary investigation was undertaken to obtain information on the elderly at the home for the aged (上海市第三福利院) in Shanghai city. The home connected to the hospital for the aged, was built in 1958 and opened for public use in 1987. The home is under the direct control of the Shanghai Civil Affairs Bureau, and has 250 beds. The home is a popular choice among the elderly of Shanghai and is open to men over 60 years old and women over 55. The rooms of the home had four beds each, and were kept clean. A group of women were playing mah-jong in a recreation room when we visited there. It seemed to be useful to keep them active even in growing senility.

The investigation was consisted of three

parts: personal consciousness of aging, diet for health, and microbes on the fingers.

Twenty-nine elders participated in the study. Their ages were between 63 and 92, and the mean age was 79.2. They were grouped by age into 60s (n=3), 70s (n=11), 80s (n=13) and 90s (n=2). They were 14 men, 14 women and one not identified.

Analysis of personal consciousness of aging

Aging in humans has been the focus of intensive study in medical research since the 1960s. Also, there are many references for research on the psychological aspects of aging. Here, the possibility of a philosophical study on aging will be suggested, especially on the personal "spectrum" of consciousness in aging.

The personal "spectrum" means the list of basic aspects of life consciousness as shown in Table 1. The items on the list are mostly arbitrary, but each has its own value in view-

ing an individual in a holistic perspective. In the Table, a single item by itself has no relevance in the evaluation. What matters is the "spectrum" obtained from the respondent's answers to all the enquete questions as shown in Table 2.

A spectrogram derived from the answers to the enquete can take many forms according to the manner of analytical treatment. It is important to say that the personal spectrogram did not indicate anything about the psychological makeup of the person. It only shows the general personality of the person as represented by his answers to the enquete questions. Therefore, the enquete has no experimental characteristics as most scientific research does.

The preliminary analysis showed that difference of spectra between the group of Chinese elder respondents (almost all over 60 years old) and the group of younger Japanese respondents (early 20s). For example, to the question "Is there anything impossible for human capacity?", over 80% of the elderly respond "yes" compared to 25% for the young adults (Data not shown.).

A practical use for the spectrogram is still under consideration. But personal spectra derived from the analysis shown in Table 1 reflect changes of life consciousness during aging from a holistic viewpoint.

Table 1 List of basic items for analysis

Actual state of sense of interest and profit for life
Sensitivity to contradictory situations in daily life
Responsibility for personal relation to others
Attitude for artistic human practice
Attitude for what metaphysics matters, for example, religion

Health and diets

In Shanghai, twenty-two of the subjects (75.9%) had some sort of illness. The major diseases were: high blood pressure (27.6%), heart disease (24.1%), rheumatism (13.8%) and diabetes (10.3%). Similar diseases were found in the elderly in Okayama. Fifty-two elders in Okayama also participated in the same preliminary investigation (mean age, 79.2). Sixty-nine percent of them had some: 30.8% had high blood pressure and 19.2% had heart-disease.

Milk, egg and soybean are major protein rich foods. Therefore, we investigated how often these foods were eaten and when the practice of eating them had begun. Soybean was eaten often by 79% of Shanghai's elders, and 69% had eaten it before entering elementary school. About 60% scarcely ate milk

Table 2 List of questions for Enquete used in the pilot probing. The selection of questions are arbitrary. Questions can be any type of questionnaire which is classified to five generic areas according to the list shown in Table 1.

Is there anything impossible for human capacity?
yes no
Is there anything independent in daily world of relations?
Do you think that nature is a gratuitous gift for you?
Do you like traditional arts?
Do you like an urban life?
Do you take much care for your appearance?
Are you anxious about neighbors' doings?
Do you like a variety of animals?
Do you want to do yours by yourself?
Do you want leave your property for your children?
Do you have a kind of anticipation for your after life?
Is there anything you desire imminently?
Do you feel jealous about the success of others?
Are you embarrassed much when your opinion do not go along with others?
Do you feel easy to express your opinion against others?
Do you feel to follow what is decided in group?

products, some had not eaten milk products until graduation from junior high school. Eighty-three percent of the elders in Okayama (this investigation was carried out with 23 elders) ate milk products regularly, but half had begun as late as Shanghai's elders (Fig. 1). Milk and milk products were unpopular in Asia when persons more than 60 years-old were in their childhood.

We felt that the aged in the Shanghai home looked healthier and had better body posture than the Japanese subjects. It is interesting how good health was maintained. We obtained the well-prepared menu at the home in Shanghai for research analysis. A comparison of the diets of the two groups may reveal factors which are important for good health and posture during aging.

Microbes stuck on the fingers

The kinds of microbes found on the fingers of people are considered to change depending on various environmental or physical conditions. Microbes were isolated from 29 elders in Shanghai (mean age, 79.2) and from 29 elders in Okayama (mean age, 64.8). The isolated microbes were identified, characterized and compared to verify that hypothesis.

Microbes were isolated by direct finger-press culture on potato-dextrose agar plates, which were supplemented with kanamycin at the concentration of 100 μ g/ml. Seven days incubation at room temperature revealed 9 strains of yeast (31.0%) and 13 strains of kanamycin-resistant-*Staphylococcus epidermidis* (KRSE) (44.8%) from the 29 elders in Shanghai. Only 4 strains of yeast (13.8%) and strains of KRSE (27.6%) were isolated from the 29 elders in Okayama. Moreover, the concentration of both types of microbes was higher in the Shanghai samples.

Isolated yeasts were classified by the ability to utilize 20 kinds of carbohydrates as the

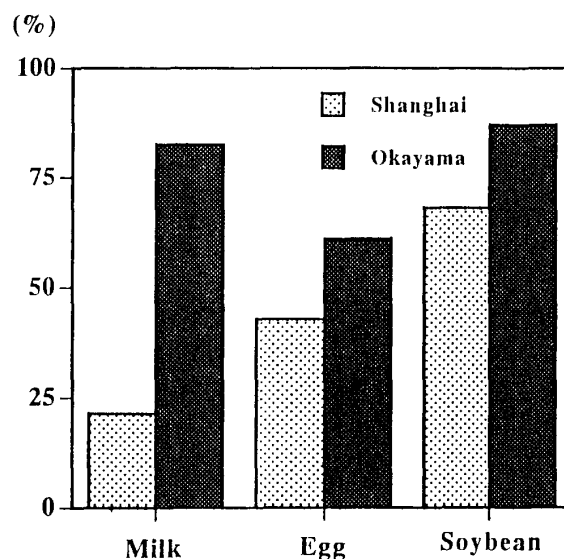


Fig. 1 Comparison of the frequency of taking milk, egg and soybean between elders in Shanghai and in Okayama.

sole carbon-source. In Okayama, three of 4 isolated yeasts were identified as *Candida albicans*, which is known to be an opportunistic pathogen and one strain was identified as *Candida guilliermondii*. On the other hand, none of the 9 strains of yeasts isolated in Shanghai were classified into *Candida albicans*. They were identified as *Candida guilliermondii* (2 strains), *Candida tropicalis* (2 strains), *Candida parapsilosis*, *Candida kefyr*, *Candida famata*, *Rhodotorula rubra* and *Rhodotorula minuta*.

Sensitivities of the KRSE strains to 20 antibiotics were tested, and it was found that the KRSE strains from Shanghai had a tendency to be resistant to erythromycin, bacitracin, PCG, ABPC and tobramycin. KRSE strains derived from Okayama did not show such a high resistancy to those 6 antibiotics but they were resistant to tetracycline and oxytetracycline, which were effective against KRSE strains from Shanghai.

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