

age and the certainty of death. How to spend one's terminal stage of life is an important consideration for every person.

Therefore, in this study, the necessity for educating people about the problems associated with death are considered along with changes in the caregiving process for the terminally ill. Two important reasons for the changes are considered : (1) People know less about the death process. People do not witness death as much as before because more people are dying in hospitals instead of at their homes. (2) In the past, treatment was determined by the doctor, but at present, patients have more say in the care they receive.

Development of Teaching Materials for Basic Rehabilitation Nursing Students Keiko SEKIDO and Ko UTSUMI

Rehabilitation nursing is one of the most important subjects in basic nursing education. However, it is a difficult subject for basic nursing students to understand. Therefore, teaching materials were developed for use in lectures. They consisted of three tables explaining the general function of body and mind and the nursing care to be used with patients who need rehabilitation.

The educational materials developed were very effective in enabling basic nursing students to understand rehabilitation nursing.

Evaluation of a Tele-Consultation System between Clinics and Hospitals Masaaki TANAKA and Yukiko UEMATSU

Our research team developed and implemented a tele-consultation system which electronically exchanges a patient's clinical data between a medical practitioner and a hospital specialist. Two months after the start of the experiment, we were able to assess the system by examining 17 clinical data exchanges completed by the system. The result showed that the average data length was 152KB, and the average number of images attached was 1.6. The average size of the image data was 169KB, which is 64KB per image.

Since the size of the image data file is large, it was compressed using the JPEG format. We also investigated the most suitable relationship between resolution of the image and the compression ratio. The size of image data increases in proportion to the square of the resolution. However, it was found that the compression ratio decreases with an increase of resolution. Since the JPEG compression is non-invertible, its efficiency for recovering original image data was examined. As a result, it was found that more than 90% of pixel data of the compressed image data differs in brightness by only 2 degrees or less from the original in the case of standard-compressed gray scale X-ray images at 96dpi, 256 degrees of brightness.

The dependency of transfer time on data amount was also investigated through E-mail experiments. We found that data of 200KB to 400KB size reaches the destination within about a minute. However, there were differences in transfer time depending on the day of the week or the time of day. In fact there was a case that took 45 minutes to transfer 100KB of data.

A Health Monitoring System for the Aged Living Alone (I)

Yoshimitsu SHINAGAWA, Tomohiro TANIGAWA, Katsuji NANBA and Shigeru OHTA

Because Japan has the longest life expectancy and lowest birthrate in the world, it is destined to become an extremely aged society. Therefore, many laboratories have done research on health monitoring systems

for the aged living alone. However, most of them are not commercially available yet. For several years, we have been developing such a system, and we have been doing frequent field experiments for more than 2 years. In a previous paper, we reported on a system which can send the health information of the aged to family members living separately via the Internet. However, that system had some problems concerning methods of analysis and cost. This paper reports on attempts to make the system more practical utilizing actual experiences.

A Modification of Voice-Stimulation Tapes for Dichotic Listening Tests and its Application: Measuring Hemispheric Cognitive Lateralization of Speech and Size of the Corpus Callosum

Kana KOBAYASHI, Kaori NAKAMURA, Yutaka YOSHIOKA and Jishu ITO

Cognitive laterality of speech and melody in the cerebral hemispheres was studied in 30 right-handed normal adults (18 to 26 years of ages, 16 females and 14 males) using the Dichotic listening test (DLT). The stimulation tapes for the DLT were comprised of sets of monosyllables, numerals, and melodies. The monosyllable and numeral tapes used were versions modified with a digital recording editing apparatus. Mid-sagittal MRI images through the corpus callosum were taken of all subjects and a word fluency test (WFT) was also performed. The relationship between DLT or WFT values and regions of the corpus callosum were examined in both female and male subjects.

With monosyllables, DLT results of female subjects indicated a left-ear (right hemispheric) predominance ($p < 0.05$), while there was no significant lateral difference in males. With numerals, DLT values showed no significant lateral differences in both males and females. With melodies, DLT results indicated a left-ear (right hemispheric) predominance ($p < 0.05$) in males, while there was only a tendency toward left-ear predominance in females. WFT values, however, revealed no sexual differences.

Relative ampullary sizes of the corpus callosum through the midsagittal plane disclosed a negative correlation with the left hemispheric predominance found with monosyllable-DLT in the male subjects, but showed a positive correlation with the left predominance in females. The ampullary sizes also correlated positively with WFT values in females and with left hemispheric predominance in melody-DLT.

These findings suggest sexual differences in lateral predominance with respect to hemispheric cognitive functions and the relationships between those functions and ampullary size of the corpus callosum.

Properties of Protease Produced by *Staphylococcus epidermidis*

Kenji NINOMIYA, Hiroko MINE

Ninety strains of *Staphylococcus epidermidis* were isolated from the right forefingers of healthy people. The amount of protease activity produced by those 90 strains was measured by the calcium-casein agar plate method. Eighty-four out of 90 strains tested (93.3%) showed protease activity, and the most active strain, UNO67, was selected for use in future experiments. Some biochemical properties were examined by using the culture supernatant of the UNO67 strain as a protease solution. The heat tolerance was tested first. Protease activity completely disappeared when it was heated for 10 minutes at 70 °C. As a result, this protease was classified as a heat labile enzyme. Next, pH dependency was measured and it was shown that the optimal pH had a wide neutral range (pH 5 to 9).

Protease activity was inhibited by EDTA, phosphoramidon, phenanthroline and HgCl_2 but NEM, pepstatin A and SBTI had no effect. This indicated that the protease was a metaroprotease. According to the