

a Caregiver and a Terminally Ill Parent-in-law

40 families who had lost a family member older than 65 were interviewed. In 13 cases, the daughter-in-law had cared for one of her husband's parents throughout the illness. There are many difficult problems to overcome when caring for aged terminally ill parents. Also, after the patients died, the care giver must cope with her own grief as well as the grief of other family members.

One patient had expressed a desire to die in her own home. The son and daughter-in-law wanted to grant her final wish, but members of the community expressed the opinion that the patient should be cared for in a hospital because she could no longer take nourishment by mouth. As a result, the daughter-in-law ended up caring for the patient in the hospital.

During the process of giving care, the relationship between daughter-in-law and mother in-law underwent a great change. The atmosphere in the home prior to the illness had been tense at times. The situation changed into one in which the patient preferred to be cared for by the daughter-in-law rather than other members of the immediate family. On the other hand, the daughter-in-law grew to love her parent although this was a very difficult period for her because she had to deal with the complex issues of illness, death and grief.

If nurses could foster better relationships among family members, as has happened in this case, the family would be able to deal with the grief better when the terminally ill patient dies.

Masaaki TANAKA and Yoshimitsu SHINAGAWA : Analysis of Heart Rate Fluctuations I

The human heart rate has been known to fluctuate, apparently in a random manner. An elaborate investigation has revealed that the power spectrum of the fluctuation depends on the frequency f as $1/f$. Such a fluctuation is called a $1/f$ fluctuation and appears in various phenomena, including traffic on a highway and the internet. In this paper a fractal model is proposed which associates a fractal structure with the $1/f$ fluctuation. The model is ascertained numerically. This model, however, describes only a local $1/f$ fluctuation accompanied by a ventricular contraction. In order to explain the global $1/f$ fluctuation, that is, the heart rate $1/f$ -like fluctuation observed experimentally, a phase model is also introduced.

Hiroshi FUJINO and Jun TANEMURA : Relation of Word Comprehension Establishment and Pre-Verbal Behavior in Developmental Language Disorder

This study was designed to investigate the development of pre-verbal behavior related to acquisition of word comprehension ability in infants with a developmental language disorder. Eighteen cases were evaluated by Taguchi's "Scale of Language Development." First, we stud-