INTRODUCTION

The sudden death of elderly people in daily life remains a serious problem worldwide now. The causes are mainly cardiac and cerebral problems, which are induced by an unexpected cardiovascular incident, or a fall.

In this study, the mobile phone-based safety and life support system detects the person’s life-threatening physical condition from body movements produced by respiration, posture changing, walking and running. When the elderly person is in an emergency situation at home or away from home, the system automatically sends the elderly person’s location by e-mail and informs the person’s family by voice, via the mobile phone.

The overall mobile phone-based safety and life support system. The system consists of a daily living activity recorder and a personal computer placed at home. They communicate via 2.4GHz low transmitting power mobile phones (PHS), which are incorporated in the daily living activity recorder and the PC.

The the static acceleration force components, mainly generated by respiration, are detected by 0.3 Hz low-pass filters and then the slow acceleration magnitude is amplified by the 6 dB amplifiers. The dynamic acceleration force components, mainly generated by posture changing, falling and activities, are detected by 0.1 Hz high-pass filter.

The developed life-safety system is not only very applicable to elderly people living by themselves, but should also be found very useful for monitoring hospital patients and people in welfare facilities, especially wandering elderly persons.

CONCLUSION

The developed mobile-based phone safety and life support system can detect an emergency situation from recorded daily life activity and automatically inform the situation to family or other registered person. Since the system also works well away from home, and in other buildings, it encourages elderly people to maintain a beneficial outside activity level, without undue uneasiness about their health condition.

The developed life-safety system is not only very applicable to elderly people living by themselves, but should also be found very useful for monitoring hospital patients and people in welfare facilities, especially wandering elderly persons.