

A Task Analysis of Nursing Activities Using Spoken Corpora

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Abstract. This paper illustrates our examination of the “E-nightingale Project,” reports the results manually obtained from task analyses of nursing activities using spoken corpora, and describes the possibility of automated task analyses using natural language processing technologies. Recently, medical malpractice has become a serious social problem and safety measures to prevent and decrease medical malpractice are being taken in some hospitals, for example, by building computerized database in new systems.

The Japanese Nursing Association states in its guidelines that nurses are encouraged to make nursing reports, including medical malpractice reports, and to analyze the cause of accidents, which is helpful for preventing recurrences.

However, it is very difficult for nurses to produce detailed records during their working hours except for malpractice reports. Furthermore, it is hard work for nurses on duty to analyze the recorded data in detail.

As a solution, we have launched the “E-nightingale Project,” in which some systems using wearable computers are being developed for the purpose of preventing and reducing medical malpractice.

As part of this project, we built spoken corpora using voice data that were monitored and recorded daily nursing assignments in hospitals with our developed devices. 800 hours of voice data were accumulated, and 70 hours of those were transcribed as the spoken corpora. Then we started analyzing nursing tasks using the spoken corpora, and considered the possibility of automated task analysis using natural language processing technologies.

1 Introduction

Recently, medical malpractice has become a serious social problem [1]. The Japanese Ministry of Health, Labor and Welfare has reported that nursing teams are most frequently involved in medical accidents in hospitals [2]. The Japanese Nursing Association also states in its guidelines that nurses are encouraged to make nursing reports and to analyze the cause of accidents by comparing medical malpractice reports, which is helpful for preventing recurrences. Some nursing