

# Robot Patient for Nursing Training

In nursing care, there are many tasks involving moving the patient's body, such as bathing, giving assistance in dressing, etc. For the safety of nurses and patients, it is critically important for the nurses to accurately acquire these skills.

In order to improve the skills for nurses in such tasks, the mock patient is generally utilized in simulated training to reproduce the patient's performance. Generally, the mock patients are acted by the stationary manikins or the healthy people. However, such mock patients cannot precisely reproduce the real patients. For example, the stationary manikins cannot reproduce the movements of human's joints. On the other hands, for the healthy people, it is difficult to simulate the movements of the patient with decline of muscle strength and paralysis. From this viewpoint, developing a robot patient which could accurately reproduce the patients' limb movements and interact with the trainee would be great help for the nurses to improve their nursing skills.

Two types of robot patients were developed for the patient transfer and dressing training respectively. The former one was target on reproducing the patients' body limbs movement and interacting with the trainees during patient transfer (Fig. 1 and Fig. 2). The later one was targeted on reproducing the patients' upper limbs' joint's DOF and rotation range, in addition, measuring the joint's rotation angle for evaluating the trainees' skill performance (see Fig. 3 and Fig. 4).

**Keywords:** robot patient, nursing skill, skill acquisition

## Reference

- [1] Zhifeng Huang, et. al. "Design of a robot for patient transfer training," *In Proceeding of 2013 SICE Annual Conference*, Nagoya, 2013, pp. 246–254.
- [2] Ayanori Nagata, et. al. "Mannequin robot to measure movement of patient's arm by nurse during exchange of the patient's wear on bed," *In Proceeding of 2014 JSPE Spring Conference*, Tokyo, 2014, pp. 895-896.

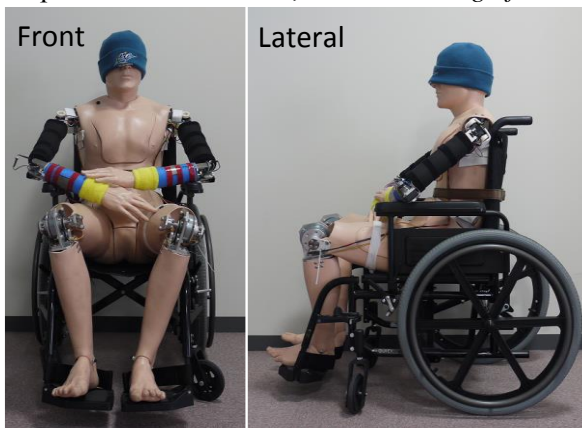


Fig. 1 Robot patient for patient transfer training



Fig. 2 Using robot patient in patient transfer training

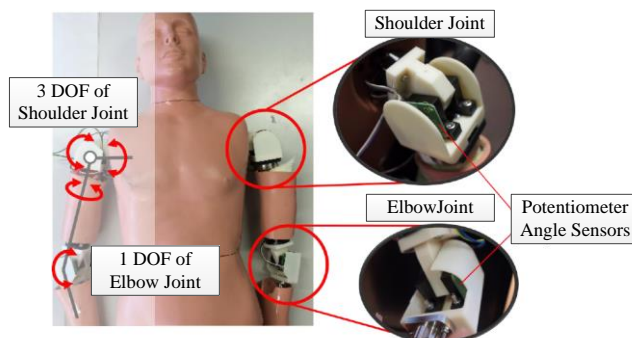


Fig. 3 Robot patient for dressing training

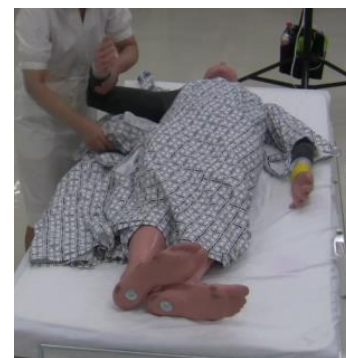


Fig. 4 Using robot patient in dressing training