

ABSTRACT

Pressure ulcers are diseases that occur due to pressure that the body receives over a long period of time. In this case, the patient with the greatest likelihood of developing pressure ulcers occurs in the elderly with an age range of 70 - 80 years. In addition to maintaining skin quality, a change in sleeping position is highly recommended for patients who are on prolonged bed rest to prevent pressure ulcers. The point of occurrence of pressure ulcers is at a temperature of 38°C and skin humidity of 29.8%. However, the lack of attention to the occurrence of pressure ulcers in Indonesia causes the prevalence of pressure ulcers to reach 33.3%.

In this final project, a system is designed for monitoring the temperature and humidity values of the body press on the back area of the patient in the prevention of pressure ulcers. This design uses an SHT 20 sensor which is placed on the patient's upper back and lower back. The data obtained will be displayed on a 128×160 TFT LCD and there is a buzzer indicator that is useful as a patient alarm to the patient nurse.

The results of measurements from subjects that have been carried out show the temperature to bed values in the upper back area ranging from 34.4-34.9°C and in the lower back area ranging from 33.3 - 34.0°C. The humidity to bed measurement on the upper back shows values ranging from 75 - 77%RH and on the lower back it ranges from 75 - 78%RH. For the visualization results, the average pressure is in the upper back area and the average pressure generated in the back area is $4,3 \times 10^6 - 1,04 \times 10^7 \text{ N/m}^2$.

Keyword : *pressure ulcer, pressure, temperature, humidity, bed rest*