

ABSTRACT

Bed rest is a condition that requires a person to rest in bed so that he cannot carry out normal activities. This incident occurred due to interference with the patient's organs in the long term. This situation risks an increase in temperature in the area that is in direct contact with the bedding. An increase in body temperature between the patient and the sleeping pad results in swelling, redness of the skin, and the skin peels off easily. Decubitus is tissue damage, anatomical structure damage, and normal skin function due to bed rest for a long time without periodic changes in sleeping position. To overcome this problem, a system is designed that can monitor and reduce the temperature between the patient's body and the bedding. This system can work automatically when the temperature between the patient's body and the bed sheet is detected $\geq 33^{\circ}\text{C}$ and cooling will automatically turn off when the temperature between the patient's body and the bed sheet drops to $\leq 30^{\circ}\text{C}$. The system is designed to cool the surface of the mattress so that it lowers the temperature between the patient's body and the surface of the bed. The comfort temperature of the bed sheet used by patients in tropical climates is around $33^{\circ}\text{C} - 35^{\circ}\text{C}$ at room temperature around $25^{\circ}\text{C} - 27^{\circ}\text{C}$.

Keywords: Bed rest, Decubitus, Refrigeration, Temperature increase, Bedding temperature