

ABSTRACT

Digital Sphygmomanometer is a measuring device that used to measure the blood pressure. Generally the blood pressure measurement still use mercury sphygmomanometer. Considering that the mercury has bad effects for skin like irritation, red effect, itchy, hot, dematitis and skin allergy, the writer want to create an Automatic Digital Sphygmomanometer Used Microcontroller ATmega8 to ease users on the measurement.

The model research plan for this device used pre-experimental method with One Group Pre-Post Test Design type of research. Systole and Diastole measurement used 2 comparator devices on 5 respondents with 5 times measurement. The first comparator device is Digital Sphygmomanometer DrCare HL-888. The difference value of systole-diastole about $\pm 8\text{mmHg}$, and the average of highest error value about 3,62% for systolic pressure and also -4,03% for diastolic pressure. The second comparator device is Digital Sphygmomanometer Omron HEM-7203. The difference value of systole-diastole about $\pm 10\text{mmHg}$, and the average of highest error value about 1,36% for systolic pressure and also 3,98% for diastolic pressure. The writer analyzed for the error value, especially on diastolic pressure, is the decrease of patient's condition that caused the patient is unstable because of the duration of manset pressing the arm is too long.

Keywords : *Sphygmomanometer, Pressure, MPX5050GP*