ABSTRACT

Breathing is the most important part of human life. Changes in oxygen values and negative respiratory rates. Respiratory rate <12 which leads to bradyypnea while Respiratory rate> 30 causes tachypnea. Therefore, measuring Respiration Rate is very important clinically. The purpose of this study is to design a tool that can increase the patient's breathing speed with an affordable distance to the patient's position. The contribution of this research is a system that can display the plot of automatic respiration value assessment on PC. To make monitoring tools easier and more practical to use, respiratory rate monitoring tools are made by sending wireless data and planning charts automatically on a PC. The design of this tool uses piezoelectric sensors which have analogue output, RTC as a delivery time setting, then Arduino is processed and sent data on a PC with Bluetooth HC-05 and displays respiration values and automatically plans graphs to a PC on Excel display. Measurement of respiration value is carried out directly on the human body and an average respiration value of 14-17 times is obtained in the reading module of the instrument and results that correspond to the value of human respiration are from a range of 12-20 times per minute. Tests carried out on Bluetooth, Bluetooth can send at a distance of 1-5 meters without data return. The results of this study can be applied to respiratory monitoring systems to improve patient breathing safety.

Keywords : Wireless Respiratory Monitoring, Sensor Piezoelectric, Arduino, Bluetooth HC-05.