

ABSTRACT

The continuous use of fetal Doppler allows to misdiagnoses. Therefore, fetal Doppler should be calibrated periodically using fetal simulator. Fetal simulator consists of two parts, fetal maternal and mechanical fetal heart. This study aims to determine the effect of sound source distance on the fetal simulator with the measurement point. The functions of solenoid in the fetal simulator as a producer of the fetal heart. There is a rotary switch that functions for solenoid selection, namely 2 cm, 5 cm, and 10 cm. And there is a solenoid with a distance of 50 cm filled with water. This design module can be used to determine the effect of sensor location on measurement accuracy using a fetal simulator. The research and manufacture of this module uses a pre-experimental method with the type of research "After Only Design" where the author only sees the results of BPM with the control group, namely fetal doppler as a comparison. Data were collected on each solenoid as well as by placing the Doppler probe position perpendicular and tilted. Collecting data on two Doppler brands, it is known that there is no significant difference in values and the largest error value is 2.67%. Measurements using a solenoid with a distance of 50 cm at all measurement points obtained deviations.

Keywords: Fetal simulator, Solenoid, Fetal Doppler