

Abstract

Original Article

## Does Errors Made during Indirect Blood Pressure Measurement affect the Results?

**Ülkü Yapucu Güneş, PhD**

Associated Professor, Ege University Faculty of Nursing, Bornova, Izmir, Turkey

**Elçin Ülker Efteli, MSc**

Research Assistant, Ege University Faculty of Nursing, Bornova, Izmir, Turkey

**Correspondence:** Ülkü Yapucu Güneş, Associated Professor, Ege University Faculty of Nursing, Bornova, Izmir, Turkey E-mail: ulku.gunes@ege.edu.tr

### Abstract

**Aim:** The aim of this study is to determine the extent to which errors such as not supporting the arm during blood pressure (BP) measurement, deflation of the cuff at a rate faster than 2-3 mmHg/sec and placement of the stethoscope's diaphragm beneath the cuff affect blood pressure measurement.

**Methods:** This study used repeated measures design with 116 nursing students. A single investigator was measured the BP in the direction of the guidelines of Turkish Cardiology Association, with the cuff deflated as a rate of 6-7 mmHg/sec., by holding the arm at the level of heart without support and placing of the stethoscope's diaphragm beneath the cuff using a sphygmomanometer in 116 healthy subjects.

**Results:** While the mean systolic BP was higher in measurements performed without providing any support beneath the arm, it was lower when the cuff was deflated at a rate of 6-7 mmHg/sec. If the cuff was deflated at a rate of 6-7 mmHg/sec., diastolic BP increased significantly.

**Conclusion:** This study has shown that arm support and deflating the sphygmomanometer cuff faster than the recommended rate have effects on BP measurements.

**Keywords:** Vital signs, blood pressure measurement, error