Adams C, Burke V, Beilin LJ. *Accuracy of blood pressure measurement and anthropometry among volunteer observers in a large community survey.* *Journal of Clinical Epidemiology* 2002; 55(4):338-44.

**Abstract**

The Busselton Survey is a population survey that is held about every three years. In 1994-1995 a re-survey was held of all past participants and 8,502 attended. Financial constraints precluded employing staff for data collection for blood pressure and anthropometry, these therefore were collected by unpaid lay volunteers. Quality control by a health professional was critical to the assessment and maintenance of accuracy in these measurements. For blood pressure three readings were taken simultaneously by a quality control person and the volunteer using a dual stethoscope. Duplicate anthropometric measurements were taken by a criterion anthropometrist and the volunteer. Inter and intra-observer technical errors of measurement (TEM) were calculated. Sixty-two volunteers were trained to take BP measurements; of these, 38 collected data, and 63 were trained in anthropometry; of these, 30 were suitable as measurers. Training was conducted on a group and individual basis by the quality assurance person for the study both in the Perth metropolitan area and rural Busselton. The TEM for SBP was 1.6 mm Hg (SD 1.0 mm Hg) and 1.5 mm Hg (SD 0.8) for DBP. For skin-folds intra-observer TEM ranged from 0.6 mm to 1.0 mm. Between-observer TEM ranged from 2.1 mm to 5.4 mm. For limb and waist circumferences, intra-observer TEM ranged from 0.3 cm to 1.6 cm. Between-observer TEM for circumferences ranged from 0.5 cm to 1.9 cm. Unpaid volunteer measurers can, if carefully trained and supervised, provide acceptable blood pressure data and anthropometry in large population surveys.