NHANES 2001-2002 Data Release
May 2004
MEC Examination

Body Measurements (BMX_B)

Survey Years Included in this File: 2001-2002

Component Description:

The purpose of this component is to collect high quality body measurement data on survey participants. The NHANES body measurement component procedures are outlined in the NHANES Anthropometry Procedures Manual which is posted on the NHANES website (URL: http://www.cdc.gov/nchs/data/nhanes/bm.pdf).

The body measurement assessments performed on survey participants varied according to the age of the survey participant. The body measurement protocol used age at the time of the screening interview. In some instances, several weeks elapsed between the initial screening interview and the health examination visit. The Demographics Data File includes an age variable for age at examination. The target samples for the body measurement assessments are as follows:

Body weight:	All ages
Recumbent length:	0 through 47 months
Standing height:	24+ months
Upper leg length:	8+ years
Upper arm length:	2+ months
Head circumference:	0 through 5 months
Mid-upper arm circumference:	2+ months
Waist circumference:	24+ months
Mid-thigh circumference:	8+ years
Maximal calf circumference:	8+ years
Triceps skin fold:	2+ months
Sub scapular skin fold:	2+months

Occasionally circumstances arose when it was not possible to complete the component on participants due to lack of time. At a minimum, weight and standing height or recumbent length were measured.

Eligible Sample and Component-Specific Exclusions:

There were no medical, safety, or other exclusions for the body measurements protocol. For persons who used a wheelchair, the health technicians used their discretion to obtain as many measures as practical. Height and weight were not typically measured in persons who

used wheelchairs.

Arm and leg measurements were made on the right side of the body. If an examinee had an amputation, medical condition, or medical appliance such as a cast that prevented measurements from being taken on the right side of the body, the examiner took measurements on the left side. The body measurements file does not identify persons with amputations due to data disclosure concerns. Body weight data for individuals who had limb amputations were excluded from the release file. A small number of measurements could not be obtained because of physical problems such as spine deformities, measures that exceeded the capacity of the measuring device, or when objects such as clothing (e.g., if a subject refused to change into an examination gown, remove their shoes, etc.) or hair decorations made it impossible to obtain accurate measurements.

This data set includes body measurements for women who were pregnant at the time of the exam. Analysts should determine if it is appropriate to exclude data for pregnant women in a particular analysis. Pregnancy status information is denoted by the Demographic Data File variable, RIDPREG

Examination Protocol:

The data collection methods, examination protocol, and data collection forms are fully documented in the NHANES Anthropometry Procedures Manual. In addition, for general guidelines on standard procedures that were followed for the anthropometric measures, please refer to the Anthropometric Standardization Reference Manual (Lohman, 1988). The actual measurement techniques used in the survey are illustrated in the NHANES III Anthropometric Procedures Video. The video demonstrates the NHANES III anthropometric procedures in detail, and illustrates all of the measures except the calf circumference. This video may be obtained from the U.S. Government Printing Office (http://www.cdc.gov/nchs/about/major/nhanes/avideo.htm). Please note that some of the measurements that were taken in NHANES III are not included in the protocol for the current survey.

All body measures were obtained by trained health technicians. The body measurement component was performed in a specially equipped room in the mobile examination center (MEC). The health technician was assisted by a trained recorder. The technician and recorders worked as a team to position, measure, and record the body measurement data accurately.

Quality Control during Data Collection:

The first line of quality control was provided by the automated data collection system. For weight, standing height, and recumbent length, all data were captured electronically from the measuring instruments to minimize potential data entry errors. Range edits, based on the 1st and 99th percentiles of the NHANES III distributions for age and gender categories were programmed into the automated data collection system. The data entry system generated

messages that prompted the health technicians to verify or re-check measures that were outside the 1st and 99th percentile limits for a particular measurement.

Experienced trainers, NCHS staff, contractor staff, and gold standard examiners monitored health technician performance in the field. Retraining sessions were conducted with the technicians periodically and annually to reinforce the proper protocols and technique. Replicate examinations were performed by the gold standard examiners during visits to the field. Routine calibration of the body measures equipment was a part of the quality control plan for this component. The NHANES Anthropometry Procedures Manual details the equipment calibration procedures.

Data Processing and Editing:

The data recorded in the MEC were not modified during file preparation.

The data were edited for values that exceeded the capacity of the measuring equipment. Biologically implausible values were identified by examining age and sex-specific measurements that exceeded the 1st and 99th percentile values of the NHANES III distributions for each measure. A small number of observations that were implausible were set to missing.

Component-Specific Analytic Notes and File Variables:

During the data editing process, outlier values were examined. When there was insufficient information to conclude that values were invalid, they were left in the data set. Analysts should examine the data spread and consider whether or not it is appropriate to include or exclude extreme values in a given analysis.

NCHS Research Data Center:

No data related to this component are in the Research Data Center.

Reference:

Lohman TG, Roche AF, Martorell R, eds. 1988. Anthropometric Standardization Reference Manual. Abridged edition. Champaign, IL: Human Kinetics Books.