
Advanced Certificate in Nutritional Anthropometry

Research Methods in Nutritional Anthropometry

Anthropometry: The systematic measurement of the human body and its physical attributes, used in nutritional anthropology to assess health and nutritional status.

Bioelectrical Impedance Analysis (BIA): A method for estimating body composition, which measures the opposition of body tissues to the flow of an electrical current. Related terms: body fat percentage, phase angle, extracellular water, intracellular water.

Confounding variables: Factors that can distort the relationship between an independent and dependent variable, leading to inaccurate research findings. Related terms: systematic error, random error, bias.

Controlled study: A research design in which the investigator manipulates one or more variables to determine their effect on another variable, while keeping all other variables constant. Related terms: experimental group, control group, independent variable, dependent variable.

Cross-sectional study: A research design in which data is collected at a single point in time to compare different groups or variables. Related terms: prevalence, incidence, longitudinal study.

Dependent variable: The variable being measured or observed in a research study, which is expected to change in response to the independent variable. Related terms: independent variable, controlled study, confounding variables.

Doubly labeled water (DLW): A method for measuring energy expenditure, which involves the administration of water labeled with stable isotopes of hydrogen and oxygen. Related terms: total energy expenditure, resting energy expenditure, physical activity level.

Error: A deviation from the true value in a measurement or research study, which can be either random or systematic. Related terms: confounding variables, bias, precision, accuracy.

Experimental group: The group in a controlled study that receives the intervention or treatment being tested. Related terms: control group, independent variable, dependent variable.

Extracellular water (ECW): The fluid located outside of the cells in the body, measured by bioelectrical impedance analysis (BIA). Related terms: intracellular water, phase angle, body fat percentage.

Independent variable: The variable being manipulated or changed in a research study, which is expected to have an effect on the dependent variable. Related terms: dependent variable, controlled study, confounding variables.

Informed consent: The process of obtaining voluntary agreement from research participants to participate in a study, after they have been informed of the risks, benefits, and alternatives. Related terms: human

subjects protection, institutional review board.

Intracellular water (ICW): The fluid located inside of the cells in the body, measured by bioelectrical impedance analysis (BIA). Related terms: extracellular water, phase angle, body fat percentage.

Longitudinal study: A research design in which data is collected over a period of time to examine changes or trends in a variable or group. Related terms: cross-sectional study, prevalence, incidence.

Precision: The degree of consistency or reproducibility in a measurement or research study, which indicates the reliability of the results. Related terms: error, accuracy, validity.

Phase angle: A measure of cell membrane integrity and health, derived from bioelectrical impedance analysis (BIA). Related terms: extracellular water, intracellular water, body fat percentage.

Random error: A type of error that occurs due to chance or uncontrolled variables, leading to variability in research findings. Related terms: systematic error, confounding variables, bias, precision.

Reliability: The consistency or reproducibility of a measurement or research study, which indicates the degree to which the results can be trusted. Related terms: precision, accuracy, validity, error.

Resting energy expenditure (REE): The amount of energy expended by the body at rest, measured by indirect calorimetry or doubly labeled water (DLW). Related terms: total energy expenditure, physical activity level, basal metabolic rate.

Sample size: The number of participants or observations included in a research study, which affects the power and generalizability of the results. Related terms: power, generalizability, statistical significance.

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Systematic error: A type of error that occurs due to predictable or consistent bias, leading to inaccurate research findings. Related terms: random error, confounding variables, bias, precision.