

Dressed-down Research Terms:



A Glossary for Non-researchers

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In Memoriam

This glossary is dedicated to Teresa Rittenhouse who died in July of 1999.

As the COSP Coordinating Center's intern, Ms. Rittenhouse served as the primary author of this document.

She is truly missed.

About the Glossary

We have tried to identify terms commonly used in academic, technical, and/or clinical writing about mental health research and to define these terms in language that will be accessible to a broader audience, particularly including consumers/ex-patients/survivors who have not had specialized training in research. In doing so, we hope to expand the pool of information available to consumers and to facilitate further, more productive communication among consumers, researchers, and providers. The definitions we offer here are not attempting to take the place of technical definitions. They are meant to be simple and introductory, allowing a general first reading rather than a detailed and specialized one. We have given examples frequently, and have cross-referenced other items wherever possible. We have made plain, basic language a high priority because we want the glossary to be useful to as many people as it can be, whatever their backgrounds, levels of education, or levels of functioning. It has often been difficult to balance this priority with the need for accuracy and focus, but the difficulty itself has shown us how important workable lay definitions of research terms could be.

PROCESS:

A short glossary of research terms was created as part of a Center for Mental Health Services (CMHS) contract with Jean Campbell, Ph.D., Director, Program in Consumer Studies and Training at the Missouri Institute of Mental Health (**DHHS SAMHSA 97M00010401D**) to produce a monograph on "Exemplary Practices for Measuring Consumer Satisfaction." Since the intended audience of this monograph was not researchers, selected terms were defined in language that was simpler than most reference books.

In 1998, the Program in Consumer Studies and Training was awarded a cooperative agreement by the Substance Abuse and Mental Health Services Administration (SAMHSA) to become a Coordinating Center for Consumer-Operated Service Program (COSP) Multisite Research Initiative (**SM52328**). It soon became clear to the Coordinating Center that the successful involvement of consumers in the study would require extensive technical assistance in research methodology and analysis. In particular, researchers spoke a technical language that created barriers to the exchange of ideas and information. The original glossary was expanded by Teresa Rittenhouse who further simplified definitions, added examples, and identified additional research terms. Drs. Debbie Zand and Richard Evenson at MIMH and Anika Keens-Douglas at ROW Sciences reviewed that draft. The reviewers' comments, corrections, and additions were incorporated (sometimes after being further simplified) wherever possible. Dr. Maricelly Daltro revised the glossary again in December, 2001 to include additional analytical terms.

HOW TO USE THE GLOSSARY:

You can look up acronyms as well as terms. Acronyms are cross-referenced and defined after their expansions. If you see a word or phrase in quotation marks within a definition, that word or phrase is also defined elsewhere in the glossary. We recommend that you use this glossary when reading through a clinical, technical, or academic text related to research and some of its language is not familiar to you. We recommend that you consult a standard reference book if you want more detail. For further information about *Dressed Down Research Terms: A Glossary for Non-Researchers* contact:

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A priori: Latin for "from what comes before". Typically, conclusions drawn from self evident or deductive propositions that a researcher decides to make before collecting the data or examining the results.

ACT – See “assertive community treatment.”

Advocate – A person who argues for a cause or a group of people; for example, a lawyer who works for “patients’ rights.” Often, but not always, the advocate is a member of that group.

Aggregated statistics – Information, written as numbers, about whole groups, not individuals in the groups; the term can also mean the study of this information.

Alpha Spending: A rule that constrains how widely one can search for effects in the data when looking at several things at once. Accordingly, the researcher must find larger significant results every time he/she looks at the data.

Analysis of variance (ANOVA) – A statistical test showing the effects of an “independent variable” on a “dependent variable”; a technique to determine whether there are “statistically significant” differences of “means” between two or more groups.

Analytic Strategies: The choices in statistical procedures made by the investigators based on their values or what they consider important in a study.

Anecdotal evidence – What people say about something; not proven by “hard” (experimental) research.

Anonymity – The state of having your individual identity protected, especially from researchers. For example, someone would be anonymous who answered a mail survey that didn’t ask for the person’s name or any other ID.

ANOVA – See “analysis of variance.”

Applied research – A kind of study that tries to make sense of the real world and to change what people actually do in the real world.

Assertive Community Treatment (ACT) – A form of treatment that encourages people to stay in the community rather than the hospital, and that tries to bring together different types of approaches, services, and professionals. For example, an ACT team might include a social worker who helps a person with housing, a doctor who gives the person medication, a substance abuse specialist who helps the person to stop drinking, and a vocational counselor who helps the person to find a job.

Assessment – A test or other way of measuring something, such as a person’s mental health or goals or needs; often the first test in a series of tests, or a test given before treatment starts.

Association (statistical) – A measure of whether and how closely certain values (numbers, amounts) in a study go up or down at the same time.

Attrition – The “drop-out” rate among people who are being studied. People may quit because they want to, or they may not be able to stay in the study group (because of illness, lack of time, moving to another city, etc.), or they may not fit into the study anymore (if they get a job or marry, for example, in a study about single people who are not working).

Bar graph – A drawing that uses bars for various groupings. The height of the bar shows how many things or people are in that grouping.

Baseline analysis: An analysis of data collected before a treatment or intervention is applied.

Bell Curve – See “normal frequency distribution curve.”

Benchmark – A standard, test, or point of reference (often a number).

Bias – Something that may lead a researcher to wrong conclusions; for example, mistakes or problems in how the study is planned, or how the information is gathered or looked at. If two different interviewers had different styles that caused people with the same thoughts to give different answers, but the answers were all put together in one pool, there would be a bias. It is impossible to conduct completely bias-free research.

Biased-coin randomization: Assigning more people to one group to increase the total number of people participating in a specific program.

Bimodal distribution – A range of scores that has two most frequent scores instead of one.

Bivariate analysis – The study of two things (amounts, values, “variables”) and how they are connected.

Bottoms-up pooling A statistical method that combines data from different groups by first comparing data across individual groups and then across the whole set. See “tops down pooling”.

Cannibalize: When the investigator chooses to eliminate or sacrifice “variables” or “cases” being studied to simulate earlier phases of clinical trials.

Case study method – The close study of one person, group, process, event, etc. (most often, one person). The one chosen (for example, Lauren Slater, who takes Prozac) is seen as like others in a larger group (for example, the larger group of all people taking Prozac) who are not being studied.

Case: A single person, thing, or event being studied for which attributes have been assigned.

Catchment area – The place near a certain organization, like a center or hospital, which includes a set of clients (patients, participants).

Categorical variable – A piece of information that can be put in a single category, instead of being given a number: for example, the information about whether a person owns a car or about whether the person belongs to a certain race can be put in the category of “yes” or the category of “no.”

CATI – See “computer-assisted telephone interviewing.”

Causality – The link between causes and their effects. For example, smoking (the cause) leads to lung cancer (the effect), and studying how often this happens and why would be studying causality. In most research about how people behave, causality can’t be proven, and ideas are tested by whether things (“variables,” amounts) change together.

Ceiling effects: A term used to describe what happens when a group of subjects in a study have scores that are close to or at the upper limit (ceiling) of a variable. For example, the majority of subjects score 100% correct because the task is too easy.

Census – A count and record of how many people live in a certain area. A census taker often asks for information like address, age, birth date, sex, etc., for each person.

Center for Mental Health Services (CMHS) – A part of the “Substance Abuse and Mental Health Services Administration” (within the federal government’s Department of Health and Human Services). CMHS focuses on mental health services, evaluation, and exchanging knowledge and information.

Chemical dependence – The habit of using alcohol or drugs; usually separated from “substance abuse” or “addiction,” in which the habit is more severe.

Chi-square – A statistical test that measures “significance” in the study of “frequency distributions.”

Classification – A way of putting facts, things, people, etc. into groups based on something they have in common.

Close-ended questions – Questions that list the possible answers; for example, “multiple-choice” questions or “true-false” questions.

Cluster analysis – A study that puts people or things into a small number of separate groups, so that there will be as much likeness within each group, and as much difference among the groups, as possible.

Cluster sampling: To select naturally occurring groups within a population (e.g. classes within a school).

CMHS – See “Center for Mental Health Services.”

Coding – Putting answers into groups (usually numbered groups), so the answers can be counted and studied more easily.

Cohort analysis – A study of a group of people who stay in that group over a long time. For example, all people born in 1960 are a cohort; or all students who will graduate from high school in 1999. The study follows this group over time, rather than looking at them once.

Co-morbidity – The state of having more than one disease, “diagnosis,” or “disorder” at the same time; for example, the same person might have “depression” and “panic attacks” during the same period.

Comparability – A measure of whether things can really be compared in a way that is fair and helpful. For example, oranges and grapefruits, because they are both citrus fruits, would have comparability in a study of vitamin C content, but oranges and sausages would not.

Comparison group – See “control group.”

Composite index: A combination of scores made of distinct factors or fundamental dimensions.

Computational formulas: A mathematical equation, of a fact or other logical relation, which helps to convey the conceptual basis of statistical tests.

Computer-Assisted Telephone Interviewing (CATI) – A way of interviewing people over the phone; CATI uses a computer to choose the interviewees and to ask questions and record answers, as well as to keep track of information.

Concept mapping – Grouping ideas or results based on how alike they are and showing the groups in picture form.

Concepts – Thoughts or ideas, especially about how to organize things or about how things are alike or different.

Concurrent validity – The measure of how well the test being studied and the “gold standard” test measure the same thing at the same time.

Confidence interval – A number (range) that shows how likely it is that the true amount is inside the listed range of amounts; for example, a 95% confidence interval of 25-45 would mean there is a 95% chance that the right amount (number, score, measurement) is somewhere between 25 and 45.

Confidentiality – A promise from the interviewer to the person being interviewed that no information will be given to anyone except the researchers if it can show who the person being interviewed is. For example, an interviewer could promise an ex-patient that complaints the ex-patient makes about a doctor would never reach anyone not working on the study, unless the complaint were completely separated from the ex-patient who made it. There are almost always some limits to confidentiality; for example, if the person being interviewed is thought to be a

“danger to self or others,” then that information could be given after all. If an interviewer thinks a person is suicidal, the interviewer could tell a doctor so, even if the interview is confidential.

Confounding Factors : The inability to tell between the separate impacts of two or more factors on a single outcome. For example, one may find it difficult to tell between the separate impacts of genetics and environmental factors on depression.

Constituency-Oriented Research and Dissemination – A type of “participatory action research,” developed by NIDRR to encourage more cooperation in research within their agency.

Construct – A general idea that tries to explain something; for example, social status is a construct.

Construct validity – The measure of how well the test fits the ideas behind the study and the way the topic has been set out. Usually such a test separates 2 groups that are known to be opposite extremes.

Content analysis – A kind of study that picks out themes by noticing the details of books, newspapers, movies, speeches, etc.; for example, counting the number of times a word or phrase is used in President Clinton’s speeches.

Content validity – The measure of how fully the whole topic of the study is covered by the test . For a test to have content validity, every piece of the topic should also be part of the test. This is sometimes called “**Face validity**.”

Continuous quality improvement – The use of data from “evaluation research” to make sure that mental health services and processes keep improving over time.

Continuous variable – Something that has an unlimited number of possible values; for example, height, weight, and age are all continuous because a person’s height, weight, or age could be measured in smaller and smaller fractions between the numbers of the whole inches, pounds, or years.

Control group – The people being studied who are not getting the treatment or other “intervention”/change that the people in the “experimental” group are getting; for example, in a study testing a medication, the control group would not take the medication.

Convergent validity – The measure of how well the test matches up with other tests of the same thing.

CORD – See “constituency-oriented research and dissemination.”

Correlation – A measure ranging from 0.00 to 1.00, of how well two or more things (“variables,” values, scores, etc.) change together. Both things may get higher at the same time, or lower at the same time, or one may get higher while the other gets lower. For example, saving money and spending money are correlated (inversely), because the more money you save, the less you spend.

Cost Study Databases: New or pre-existing data sources that contain information about desired economic indicators of a project or study.

Covariance: When changes in one variable are accompanied by changes in another variable. For example, if a person takes a vocabulary test and a reading comprehension test, changes in scores on one test might be accompanied with changes in scores on the other test.

Covariate: A variable that may affect the relationship between two variables of interest, but is not of intrinsic interest itself. The researcher may choose to control for or statistically reduce the effect of a covariate.

CP – See “common protocol.”

CQI – See “continuous quality improvement.”

Criterion validity – The measure of how well the test matches an accepted test (“gold standard”) outside the study. There are two types of criterion validity:

Cronbach’s Alpha – A number showing whether all the items on a scale or test are related and pulling in the same direction.

Cross site analyses: A type of analyses that integrates data from a variety of sources, representing measurement at multiple levels (e.g. data on population, program model, local environment contexts, cost, etc.)

Cross-comparability – The degree in which similarities and differences in the characteristics of participants from different groups can be assessed.

Cross-cultural method (comparative method) – A way of studying different cultural groups (for example, Eskimos and Mennonites) to see how they are the same and how they are different.

Crossed Factors. Some experimental designs are said to be "crossed", that is, each level of each factor appears with each level of all others. For example, if you were trying to test 2 types of drugs on 2 types of virus, each type of drug would be used with each type of virus.

Crossover participants: A type of intervention assignment in which participants may receive different interventions during the life of the study.

Crossover study design: The administration of two or more experimental therapies one after the other in a specified or random order to the same group of people.

Cross-sectional study – Research that compares people at one time only. Cause and effect can’t be seen in this kind of study.

Cross-sectional: Studies in which participants are evaluated over short periods of time.

Cross-validation: A method used to prove the validity of a test by administering it a second time on a new selected group from the same population.

CSP – See “Community Support Program.”

Cultural competence – Skills that help researchers to understand and appreciate cultural differences among different groups. Cultural competence requires that researchers draw on values and customs within the community they are studying and that they work with people of and from that community [Adapted from SAMHSA definition.]

Cultural diversity – Differences (for example, in race, language, or religion) in one community, organization, or nation. [Adapted from SAMHSA definition.] A city would be called culturally diverse if African-American, Hispanic, white, Italian, and Asian groups all lived there.

Culture – Shared beliefs, values, goals, norms, traditions, arts, history, religion, folklore, experience, and institutions of a group of people. [Adapted from SAMHSA definition.]

Data – Information taken from the study records, questionnaires, interviews, etc.

Data collection – The gathering of information through surveys, tests, interviews, experiments, library records, etc.

Data matrix: A table where the variable name is entered at the tops of the columns that will contain the data for that variable, and the case records are entered across the rows.

Data processing – Recording, storing, calling up, and analyzing information with a computer program.

Data repository: A centralized data storage system containing the data collected from different sites.

Databases – Groups of information recorded in a standardized (set, official) way.

Degrees of freedom (df) – The number of values/amounts that are free to vary in one calculation. Degrees of freedom are used in the formulas that test hypotheses statistically..

Demography – The study of a group of people, including its size, how old different members are, what sex and race different members belong to, how many people are married, how many years they went to school, etc.

Dependent variable – The “effect” that depends on changes in the “cause” (or “independent variable”). In an experiment, the dependent variable is the one the researcher measures. For example, better sleep might be dependent and a change in medication would be independent.

Descriptive statistics – A way of sharing information by putting numbers into words so the information is easier to understand.

Descriptive study – Research that finds out how often and where something (like a race or an age or a behavior) shows up; this kind of study doesn't look at "cause" and "effect," and is not "experimental."

Determinant – Something that makes something else change. For example, what you eat can make you have more red blood cells, and if red blood cells were being studied, the food you ate would be a determinant.

Df – See "degrees of freedom."

Diagnosis – A name of an illness and a description of the illness; usually taken from the "Diagnostic and Statistical Manual" of the American Psychiatric Association, which tries to group clients by their symptoms and the course of their illness.

Diagnosis variables: Variables designed to identify a disease or illness.

Diagnosis-Related Group (DRG) – A group of people who have been given the same "diagnosis" and who need similar health care; for example, a group of people who have been called "depressed" or a group of people who have been called "sleep-disordered." These groups are put together by insurance companies to help settle questions about payment.

Diagnostic and Statistical Manual (DSM) – A book that lists the American Psychiatric Association definitions of mental disorders (illnesses); usually coordinated with the International Classification System.

Differential scale – A kind of measurement in which possible answers or things are ordered from lowest to highest; for example, if possible answers ranged from "1—completely agree" to "10—completely disagree," someone taking the survey could choose any number from 1 to 10.

Direct observation – The study of things you have actually seen, rather than things you have heard about or read about.

Discrete variables – Separate values or groupings, with no possible values (numbers, measurements) between them. The only choices are separate categories; for example, "male" and "female" are discrete variables.

Distractors : Any questions or events, which diverts attention from what is being tested. Usually, items in a questionnaire to keep subjects from understanding what's being tested.

Distribution – The measure of how often something (for example, an age or a hair color) is found in the group being studied; or the range of those measures.

Domain – An area or topic or focus of a study.

Double-barreled questions – Two different questions asked as if they were only one question; for example, “Did you take this medication and was it helpful?” which should be “Did you take this medication?” (first) and “Was it helpful?” (second).

DRG – See “Diagnosis-Related Group.”

Drop-out – A person who was being studied but who couldn’t keep on with the study or didn’t want to.

DSM – See “Diagnostic and Statistical Manual.”

Dual diagnosis – Two different “diagnoses” given to the same person. This term is used most often for a “severe” mental illness combined with some form of “chemical dependency” (for example, schizophrenia combined with dependence on marijuana).

Dummy variable – A piece of information that has only one of only two possible values. For example, the answer to “Do you own a car?” would be either “1” for yes or “0” for no.

ECA – See “Epidemiological Catchment Area Study.”

Ecological Fallacy – A mistake based on believing that what is true for a group must also be true for each individual in the group.

Effect – A result, usually of a “cause.” Feeling tired is a common effect of not sleeping.

Effect size: A measurement of the strength of a relationship between two variables. A statistical test may tell the researcher that a significant relationship may exist, but the effect size answers the question on how much one variable impacts the other (e.g., diet explains 80% of variance in weight gain).

Effectiveness – The measure of how well something does what it’s supposed to do for a certain group of people under normal conditions.

Effectiveness study – A measure of change after treatment; not an “experimental” study having a “control group.”

Efficacy – The measure of how well something does what it’s supposed to do under ideal conditions, for example in a lab instead of in the patients’ everyday lives.

Efficacy study – A study comparing an “experimental group” (who receives the treatment or whatever is being tested) to a “control group” (who does not receive the treatment).

Elaboration – A way of studying or thinking about other causes that may also change an effect, instead of looking at only one cause.

Eligibility criteria – The detailed rules for what kind of people a researcher will let into a certain study; for example, being over 60 and having a diagnosis of anxiety disorder could be eligibility criteria for a study about how a new medication works for elderly, anxious people.

Empirical method – A kind of research that is based on believing that all real facts must come through the senses or a practical experiment, not just through reasoning. A conclusion must be proven by facts (results that can be measured, like blood pressure or body weight) rather than just “following” or “making sense.”

Empirical: Anything that is based on observation and experimentation.

Empowerment – The act of gaining power (such as the power to make decisions, to question, to communicate, or to act) that often belongs only to a “higher” group; or of helping other people who are not in the “higher” group to get this power.

Engagement: When an institution becomes "engaged" in human subjects research when its employees or agents intervene or interact with living individuals for research purposes. The same idea of "engagement" is true for individuals who actively participate in a study.

Enrollment: When a subject enters a particular study and is assigned to a condition.

Epidemiological Catchment Area Study (ECA) – A major study that explored mental illness in certain geographical communities.

Epidemiology – The study of how common a disease or state is among a group of people.

Equivalency data: When there is more than one group (e.g. control and experimental) in a study, the researcher must ensure that both groups are equally represented by using equivalency data to avoid discrepancies (e.g. an equal number of females in both groups).

Ethics of research – Questions and opinions about whether what the researcher is doing or trying to do, and how, are morally right. Some of these issues are confidentiality, human rights, and fair reporting.

Ethnic group – A group of people, usually linked by race, who share a culture. [Adapted from SAMHSA definition.]

Ethnography – A kind of study that looks at and describes a society’s culture.

Etiology – The cause, often the medical cause, of a disease.

Evaluation research – A study to see whether a program or a project is doing what it set out to do.

Exclusion Criteria: When a subject does not meet the basic parameters for participation within the study because she/she doesn't have a certain characteristic or trait, they may be excluded from the sample.

Expected Outcome: The effects and unique contributions attributed to an intervention or specific treatment that the investigator expects to find.

Experimental design – A kind of study that controls the circumstances of the research and measures the results exactly.

Experimental group – The people who receive the treatment being studied. This group is compared with the “control group,” in which people are as much like the experimental group as possible, except that the control group does not receive the treatment.

Explanatory study – A type of study that tries to understand causes and effects and relationships among them, instead of just reporting them.

Exploratory analysis – A type of analysis that is used to understand an observable fact or event when there are no assumptions or expectations about the outcomes.

Exploratory factor analysis: A type of analysis conducted to discover what underlying factors are behind a set of variables or measures. For example, amount of "television watched", "radio listened", and "newspaper read" might be grouped together in a factor called "mass media exposure".

Exploratory study – A beginning study of what will be looked at later in a more important, usually larger study.

External validity – A measure of how well the results of a study apply to other people in other places.

Face validity – A measure of whether a study’s results seem to make sense and whether they are clear.

Face-to-face interview– A meeting to ask and answer questions in person, not over the phone or by mail.

Factor– Something that causes a change in something else; a factor is also called an “independent variable” or a “cause.”

Factor analysis – A type of study used to find the underlying causes and characteristics of something. The general purpose of this test is to take the information in a large number of “variables” and to link it with a smaller number of “factors” or causes.

Factor validity – The measure of whether a test or scale based on a factor analysis makes sense for working with real patients in a clinical setting (not an experimental setting).

Feasibility study – A first, small study to see if the larger study will be possible and to see what problems the larger study might have; also called a pilot study.

Feedback – Comments, reviews, ratings, or other responses, often from the people who are being studied or from the people who will get the results of the study.

Fidelity: The observance of the actual treatment delivery to the set of rules originally developed; fidelity assessment considers to what degree the program was implemented as planned. Alternatively referred to as "treatment integrity".

Field notes – Reports about things, people, or conversations being studied in the everyday world, not in a lab or other situation set up by the researcher. The everyday world is the “field.”

Field research – A kind of study that looks at people in their everyday world, not in a laboratory or other special setting. The everyday world is the “field.” This research is usually not “experimental.”

Floor effects: A term used to describe what happens when a group of subjects in a study have scores that are close to or at the lower limit (floor) of a variable. For example, the majority of subjects score very poorly because the task is too difficult.

Focus group – A group of people who have shared an experience (for example, who have all taken the same medication or who have all been sexually harassed) and who are asked about that experience.

Follow-up – Contact with a person being studied, made after the first stage of the study, to see if there have been changes since then, and to see how long changes last. The term can also mean the length of time a person is studied, or the length of time between stages in the study.

Frequency distribution – A scale, drawing, or graph that shows how often something (a number, answer, percentage, score) is found in the total pool of information being studied.

F-test: A statistical test (also known as Analysis of Variance) used to compare two or more groups for significance of the statistical difference between/among them. See ANOVA.

Gatekeeper – A person or group who decides which people receive a service, usually some kind of health care service.

Gender – A category of “male” or “female” as defined and created by society; not the same as the biological sex of male or female. Sometimes “sex” and “gender” are both used to mean biological sex, but “gender” really means how a society teaches a person to look, act, and think, based on whether the person is biologically male or biologically female.

Generalization – A conclusion (statement) based on only a few examples.

GFA – “Guidance for Applicants.” A set of instructions for how to apply for funding.

Global – Covering everything.

Government project officer—A federal employee who is assigned to oversee a grant, contract, or cooperative agreement.

GPO – See “government project officer.”

Graph: A diagram that shows the relationship between two variables.

Help-seeking behavior – Ways of trying to find and get help from other people, groups, or places.

HHS – Health and Human Services; a major branch of the executive government, including many agencies and organizations, such as SAMSHA, related to mental health services..

Hill and valley effect: The occurrence of several extreme scores when looking at the data, usually when there's excessive variability within groups or individuals (i.e. some individuals may score extremely high while others score extremely low).

Hit-rate – A measure of how often the cause (the “independent variable”) predicts the effect (the “dependent variable”).

HSRI – Health Services Research Institute; a private nonprofit research institute in Boston, specializing in policy and services research, especially mental health research. This institute is the home of the evaluation center funded by CMHS.

Human subjects protections – Rules and laws to make sure the people being studied in a research project or experiment are treated fairly.

Hypothesis – An idea that needs to be tested in an experiment; a hypothesis may or may not be true. For example, “The sun causes rain” and “The sun causes sunburn” are both hypotheses.

Hypothesis Testing: A hypothesis is a declarative sentence stating the best guess the investigator has as to what will happen when the research is completed. The steps in hypothesis include problem statement, a null hypothesis, an appropriate alpha level; assumptions about the data; and calculation using appropriate statistics.

IAPSRs – International Association of Psychosocial Rehabilitation Services; a professional organization of providers, consumers, and researchers.

Independent variable – Something that causes change in something else (the “dependent variable”). The independent variable is the one changed by the researcher to see what will happen to the dependent variable(s).

Index – A measure of something or how strong something is, how often it happens, or when it changes. The darkness of circles under a person’s eyes can be an index of how he or she is sleeping.

Indicator – A characteristic something has that lets you tell that thing apart from something else. For example, pregnancy is an indicator that a person is female, but having long hair is not.

Inductive method – A way of making general statements based on individual examples, rather than starting with the general statements and drawing examples from those.

Infer – To predict something based on what is true about a smaller group of people or about parts of the larger whole; building a larger idea or conclusion from blocks of smaller examples.

Inferential statistics – A method that allows researchers to make judgments about a whole “population” by using examples from a smaller part (a “sample”) of that population.

Informed consent -- Agreement of a person being studied, based on the person’s knowledge about the goals, methods, benefits, and risks of the study. Informed consent is given with the understanding that the person can change his or her mind about the study at any time.

Institutional Review Board (IRB) – The group who looks at the ethical standards of all research that involves studying people.

Instruments – Ways to find and measure information; for example, surveys, tests, scales, or ratings.

Interaction effects – Changes in a “dependent variable” that are caused by two or more “independent variables” that act together.

Internal consistency – A measure of how well items of a scale or test are linked to each other, whether they belong together and are pulling in the same direction.

Internal consistency reliability: A type of reliability estimation based on the scores obtained during one test administration. See reliability.

Internal validity- A measure of how well a study accounts for and controls all the other differences (that are not related to the study question) among the people being studied. An internally valid study usually requires a “control group” and “random assignment.” In an experiment, this kind of validity means the degree to which changes that are seen in a “dependent variable” can be linked to changes in the “independent variable.”

Interpretation – The way researchers explain results of a study, or the information found in the study.

Interval scale – A scale with points that are equally distant from each other, but without an absolute zero point; for example, the Celsius temperature scale.

Intervention – A planned change; for example, a new therapy or a new medication; or the act of making this change.

Interview schedule – Set questions used in an interview.

Intra-class correlation – The best measure of “inter-rater reliability.”

IRB – See “institutional review board.”

Item-Scale correlation – Usually the first step in drawing up a test or scale. The researcher gives the test to a number of people and then sees how well their responses to each item match their overall responses to the whole scale. This shows the researcher whether each item belongs in the scale.

Jack-knifing: A "sensitivity" analysis involving the removal of one site at a time to determine whether the results can be generalized to all sites.

Kappa – A measure of how well different raters agree when using groupings rather than numbered scales; used to correct for chance in “prediction studies.”

Legitimate peeking: When researchers agree to analyze data before stating their "hypothesis" in an effort to maximize the likelihood of finding statistical significance.

Likert Scale – A scale to show how a person feels about something; it usually includes a range of possible answers, from “strongly agree” to “strongly disagree,” which each have a number. The total score is found by adding all these numbers.

Linear relationship: A relationship between two variables that are directly related.

Logistics Committee: Panel responsible for the purposes, problems, and strategies of the research process, including hypothesis formulation, operationalization, research design, data collection techniques, data processing, and data analysis.

Longitudinal data: Data collected overtime from a variable or group of subjects.

Longitudinal research design – A study lasting a long time (usually years), because the researcher is seeing how time affects the main question of the research.

Mail survey – A questionnaire mailed to people or groups who fill out the form and mail it back to the researcher.

Mainstream – the “general market”; usually white and middle class.

Managed Care Organization – A private organization, system, or structure that provides health care.

Management Information System (MIS) – A way of storing, accessing, and managing data in electronic form; also the database of that information.

Matching – Choosing a “control group” (the group who doesn’t receive the treatment or other thing being tested) who is like the “experimental group” (who does receive the treatment); the groups would be alike in gender, age, race, and severity of disability, for example.

Matrix of Categories: A method of displaying relationships among themes in analyzing case study data that shows whether changes in categories or degrees along one dimension are associated with changes in the categories of another dimension.

MCO – See “Managed Care Organization.”

Mean (arithmetic) – The average of a group of values (numbers, scores); the number you would get if you added the score of each person, for example, and then divided that by the total number of people.

Measure – A test; or how an amount or a thing is shown.

Measure of central tendency – A way of showing the values (numbers, scores, amounts) at or near the middle of a group of values; for example, the “mean” and the “median” are measures of central tendency.

Measurement scales -Measurement of a trait or event by assigning a number or category to represent it. The methods used to display data will depend on the type of scale used to measure the variable(s). There are four scales of measurement: nominal, ordinal, interval or ratio.

Median – The exact middle; the point which divides a set of values (numbers, scores, amounts) so that exactly half the values are higher than the point and exactly half are lower.

Mediating factors : Factors that explain how and why an event will occur. For example, a "mediator variable" may explain how external physical events take on internal psychological significance.

Meta-analysis : A technique that allows one to combine the findings from existing research studies on a particular topic to determine whether significant trends can be found.

Methods – Ways of finding and studying information.

MIS – See “management information system.”

Mode – The most frequent value (number, score, amount) in a group of values. For example, the mode in the group of “3, 5, 3, 100” is “3.”

Morbidity – Sickness, or a measure of how frequent sickness is.

Multicultural – Having to do with two or more different groups of people, when each group has their own traditions, history, norms, and often language. [Adapted from SAMHSA definition.]

Multiple outcome domains : When the results of a study generate multiple areas of discussion and topics. Examples of multiple domains include mental health status; living situation; satisfaction with services, etc.

Multivariate analysis – The study of two or more effects (“dependent variables”) at one time.

N – A measure of how many people or things in a group were studied by the researcher; followed by an equal sign and a numeral.

National Association of State Mental Health Program Directors (NASMHPD) – A national organization that represents the policy interests of state departments of mental health.

National Institutes of Mental Health – A federal institution for research (especially biomedical research) related to causes and treatments of mental illness.

Nationality – A label showing the country where someone lives or which someone calls a homeland; for example, American and Mexican are nationalities, and a woman who was born and raised in Mexico could give her nationality as Mexican even if she is legally an American citizen.

NIDRR – National Institute of Disability Rehabilitation and Research; a federal organization within the Department of Education.

NIMH – See “National Institutes of Mental Health.”

Nominal scale – A scale that uses groupings instead of ranking (scoring, numbering). For example, eye color could be grouped by “blue,” “brown,” or “green,” not given different numbers. Other groupings used on a nominal scale could be by diagnosis, age, sex, or race.

Non-linear relationship: A relationship between two variables that are not directly related to each other.

Non-parametric statistical procedures – Tests that don’t need to make strong assumptions about characteristics of the people who take the tests.

Non-probability sampling – Choosing people from a larger group in a way that doesn’t show what chance each person in the larger group had of being chosen.

Non-response bias – A research fault based on the people who didn’t agree to be studied, although they were chosen. People who didn’t agree may have been different in other important ways from people who did, and so the study’s results might be true for only part of the chosen group. For example, if the chosen group is depressed people and the more depressed ones were too tired or hopeless to answer a survey, then any answers about the amount of energy or hope in depression would not be giving a full picture.

Normal frequency distribution curve – A bell-shaped curve of values (amounts, numbers, scores) in which the average, the midpoint, and the most frequent score are all the same.

Null hypothesis – The idea that the causes, effects, amounts, or changes in question (the study “variables”) are not really connected to each other at all. This hypothesis is the opposite of the research hypothesis.

Objective inclusion scales: A set of items in a questionnaire designed to measure objective and impartial information about the participant (e.g. how often do you feel sad?).

Objective measures: Any measure that is based on fact rather than opinion.

Observational Research: A type of research design in which there's no interaction between the investigator and the subject. Compare to "Participant observation".

Observational study: A study that records events occurring in a defined population without any intervention by the researcher.

Open-ended questions – Questions which let people answer in their own words instead of having to choose from set answers like “a” or “b” or “true” or “false.”

Operational definition – A way of showing something which can't be seen or measured, like social class, by something that can be measured, like the amount of money you make or how many years you have gone to school. This kind of definition explains an idea by telling how the idea is measured.

Ordinal scale – A ranking of values (amounts, numbers, scores) from greatest to least, lowest to highest, first to last, etc., but by a category instead of a number. For example, social class could be grouped and ordered as lower class, working class, middle class, and upper class. Items (groupings) on this kind of scale are not equally spaced.

Outcome – The way something, often a treatment or a program or a study, turns out; the effect it has on people; or the record or measure of the effects.

Outcome measure – The measure of a change (usually the difference in scores before and after treatment).

Outcome variables: Variables that are used to measure the overall impact of the study.

Outliers: Abnormal values in the data that are unusually large or unusually small compared to the others.

Paper and pencil – Written (used to describe a test, survey, or rating); not automated.

PAR – See “participatory action research.”

Parameter – Something that sets a group of people apart from other groups.

Parametric statistical procedures – Ways to study information that is taken from a group of people who fit a “normal” range like the bell curve.

Participant observation – A way of gathering information by becoming part of the group you are studying. Other members of the group may or may not know about the research.

Participant Observation: Investigation in which a researcher participates as a member of the group. The researcher may choose to inform the group of his role or in some cases omit his identity and act as an ordinary member of the group.

Participatory Action Research (PAR) – A type of study in which a researcher becomes a member of the group being studied and finds out information by doing what the group is doing.

Percentage – A part of a whole, when the whole is divided in hundredths.

Percentile – A number showing how many cases, out of every hundred, fall below the point (score, amount) in question.

PI – See “principal investigator.”

Pie chart – A drawing of a circle that is divided into pieces like a pie. Each piece shows how much of the whole is taken up by that group, thing, process, etc.

Pilot study – A small first study using the same methods that a researcher wants to use for a larger study; the pilot study shows how well those methods work.

Pioneer dialogues – Meetings that bring together people from different parts of the mental health system (consumers as well as professionals) to solve problems, make plans, give feedback, and learn about each other’s points of view. Often the dialogues focus on a certain issue, like homelessness.

Plot: A way of summarizing data and to illustrate the major characteristics of the distribution of the data in a convenient form.

Poll – A survey that asks people questions about certain issues, topics, or candidates, either face-to-face, by mail, by phone, or by computer.

Pooling: Term used to describe the act of combining data from more than one group of subjects or combining scores from different variables to produce a single score.

Population – The total number, usually of people, in the group being studied. In some studies, the population may be organizations, records, or events instead of people.

Power: The odds that you will observe a treatment effect when it occurs.

Predictive validity -- The measure of how well the test being studied predicts some practical result that the “gold standard” will find later.

Pre-post testing – Giving the same test before treatment and just after treatment.

Pretest – A test given to a small group of people to see how well the test works before giving it to more people.

Principal Investigator (PI) – The main person running a research study.

Probability – A measure of how likely something is. For example, probability could be written as “ $p < .05$,” which means that based on chance alone this thing should happen fewer than 5 times in 100.

Probability sampling – Also known as “random sampling.” Choosing people to be studied, in such a way that each person (or thing, place, etc.) in the total pool has an equal chance of being chosen.

Probe: To study subjects using comprehensive interview methods and asking several questions.

Propensity scores: Measure of an individual's predicted probability of being a program participant given his/her observed characteristics.

Process measure – A measure of things that matter during actual treatment. These might include whether the client had easy access to services, whether the client was involved in treatment planning, etc.

Protocol – The way a study should be done or how it was done; sometimes the test or other measurement used.

Provisional hypothesis: A temporary hypothesis that is constantly being interpreted in light of new facts.

Psychometrics – Psychological tests that are standardized (formal, set); for example, an IQ test.

Psychosocial rehabilitation – A kind of therapy that tries to improve a person’s mental health by looking at how the person acts with other people and how the person can be happier and more skillful in social settings. The therapy often includes group living, group recreation, and other group projects.

QOL – See “quality of life.”

Quadratic Model: A curve estimation "regression" model used when there's curvilinear a relationship between two variables. An example of a curvilinear relationship would be as dose of medicine rises, severity of illness goes down. But at some point, the patient begins to experience

negative side effects associated with too high a dosage, and the severity of illness begins to increase again (in a graph the relationship is pictured as a curve).

Qualitative Methods: Methods used in research involving detailed, verbal descriptions of characteristics, cases, and settings. Qualitative research typically uses observation, interviewing, and document review to examine the quality, meaning, and context of people's answers.

Qualitative studies – Research using what people say or write in words, rather than numbers or people's numbered answers; for example, studies based on short answers or personal histories.

Quality of life (QOL) – A person's well-being (physical, mental, emotional, social) looked at as a whole, usually by that person.

Quantitative studies – Studies of information that people give in numbers or in a way that can be numbered.

Quasi-experimental design – A study that seems like an “experimental study” and is designed to be almost as powerful a test as if it were experimental, but the people studied are not put into their groups randomly and there is no “comparison or control group.”

Questionnaire – A set of questions written on a form.

Quota sample – A set number of people chosen for something being studied (for example, their religious practices or their work history) who all belong to one place (for example, one city neighborhood) that is chosen at random.

Race – A group of people who share certain inherited physical characteristics [adapted from SAMHSA definition]; for example, African-Americans and Native Americans are usually called races, but Southern Baptists are not.

Random assignment – The process of putting study participants into groups (“experimental” or “control”) purely by chance.

Random numbers – Numbers that allow a researcher to choose participants purely by chance; usually generated by a computer.

Random sample – A group of people (or animals or things) chosen from a larger group by chance. Sometimes this kind of sampling is done with a table of random numbers, or with a computer giving out random numbers, or by drawing lots.

Randomized Complete Block Design: A design in which the subjects are put into groups (blocks) of the same size as the number of treatments. The members of each block are then randomly assigned to different treatment groups.

Range – All the values (amounts, numbers, scores) from lowest to highest; the distance the whole group covers.

Rank order – Putting items or people in order from lowest to highest, without numbers. For example, putting children in an order from shortest to tallest without including their heights measured in feet or inches.

Ranking scale – A way of ordering groupings from “more” to “less” or “low” to “high,” but not by numbers; also called an “ordinal scale.”

Rating scale – A way of ordering groupings from “more” to “less” or “low” to “high,” with a number attached to each point on the scale.

Ratio scale – A scale with an absolute zero point and equal space between each point; for example, weight or height is measured on a ratio scale.

Recidivism – A return to an earlier state or behavior; or a lack of improvement; for example, a “rehabilitated” criminal who commits another crime, or a “stabilized” client who needs treatment again.

Regression analysis – A way of predicting one value/amount (the “effect” or “dependent variable”) from other values/amounts (the “causes” or “independent variables”); predicting the effect by what the cause looks like.

Reliability – A measure of whether the answers or results will be the same if the test or experiment is repeated.

Replication – Repeating a study to check the results; or a study that repeats an earlier one.

Report card – A rating of performance in health services, grouped by general categories, as a school report card is divided into subjects with a grade for each subject. This kind of rating is used to help consumers to choose health care providers.

Representative sample – People chosen because they can stand for a larger group, so that the researcher can link the findings about the sample to the larger group.

Request for proposal – An announcement that a grant or other funding is available; it also asks for responses (applications, descriptions of projects) from people who want to get that funding.

Research design – A plan for gathering and studying information.

Research question: A clear statement in the form of a question of the specific issue that a researcher wishes to answer in order to address a research problem.

Respondent – A person who is being interviewed or studied or who answers a questionnaire.

Response rate – A number showing how many questionnaires were filled out, usually written as a percentage (of the total questionnaires sent or given).

RFP – See “request for proposal.”

Risks and benefits – What might go wrong because of a study and what good might come of a study (or treatment, program, etc.)

SAMHSA – See “Substance Abuse and Mental Health Services Administration.”

Sample – A part of a larger group of people. The sample may or may not be chosen by chance. This term can also be a verb, meaning to choose this smaller group.

Sample frame – The methods for choosing the group of people to be studied; or the larger group from which that group is chosen.

Scale – A test; a group of linked questions that can be added together to form a measure of one thing.

Scale respondent – The person filling out the survey or taking the test; for example, a parent, spouse, relative, or teacher of the participant.

Scaling – Giving numbers, in order, to information which was in words or ideas; for example, showing a person’s opinion by a number from this list: 1) strongly agree; 2) agree; 3) disagree; 4) strongly disagree. Scaling always uses numbers.

Secondary analysis – A way of studying information that has been found or written about by someone else.

Secondary Data: The term refers to data that was collected for other studies. For the first researcher they are primary data, but for the second researcher, they are secondary data.

Self-administered questionnaire (self-report) – A set of written questions which the person being studied fills out and returns to the researcher.

Self-selection – A way of choosing the people for a study by letting them set themselves apart from a larger group in some way; for example, by responding to a questionnaire or by going to a program.

Sensitivity – A measure of how well a scale shows differences among people.

SEP – See “socioeconomic status.”

Service utilization – The use (or rate of use) of health services or social services.

Services research – The study of places or groups, like a mental health center, that offer services to people. The research usually focuses on how well the services work.

SES – See “socioeconomic status.”

Significance – A mathematical test of whether a study’s results could be caused by chance or whether they really show what they seem to show.

Simpson paradox A problem created when one combines small data sets from different sites into a large one. The paradox is that conclusions from the large data set are exactly the opposite of conclusion from the smaller sets.

Skewness: Refers to a lack of symmetry in a distribution represented in a "bell curve". Data from a positively skewed (skewed to the right) distribution have values that are bunched together below the average (lower scores are prevalent). Data from a negatively skewed (skewed to the left) distribution have values that are bunched together above the average (higher scores are prevalent).

Snowball sampling – A way of finding people to study by asking them about each other; for example, choosing one person who was born in Germany, then asking that person for the name of a second person born in Germany, and so on, in a chain.

Socioeconomic status (SES) – Also called “socioeconomic position” (SEP). A measure that combines a person’s education, work history, income, etc. into a single rating that tries to show where that person is placed in his or her society, and what larger group (for example, the “middle class”) that person is part of.

Special populations – Groups of people that can’t be studied in the same way and by the same rules as other groups, for some reason.

Specificity – The measure of how well a scale shows whether a certain person is a member of a certain group; for example, how well it shows whether a client has a phobia of books, rather than showing only whether that client has a high level of general anxiety.

Split-half reliability – A measure of how well the different parts of a scale are working together; found by comparing half the items with the other half (for example, the odd-numbered items with the even-numbered items).

Spurious correlation – What looks like a link between two things, when the “link” is really caused by a third thing. For example, doctors often own houses, but that is not just because doctors are doctors; it is also because doctors earn a lot of money.

SSD – Social Security Disability – Monthly payments from the U.S. government to disabled citizens who have worked in the past and have paid into the Social Security system.

SSI – Social Security Insurance – Monthly payments from the U.S. government to disabled citizens who have not worked and have not paid into the Social Security system.

Stability – A kind of “reliability”; it shows how alike measurements are at different times with the same test or scale.

Stakeholders – People who have a share or an interest in something; for example, people who receive some of the profits of a hospital because they have helped to set up the hospital or have given money to it in the past. Stakeholders can be clients, relatives, professionals, community leaders, agency administrators, volunteers, etc.

Standard deviation – A measure of how widely the values (amounts, numbers, scores) in a group of values are spread around the “mean” (midpoint). For example, all the scores may be very close to the midpoint, or many of them may be much higher or lower.

Standardized – A term that describes a way of giving, scoring, or reading tests or surveys; if a test is standardized, it is like other tests and the information taken from all of them can be compared.

Standardized scales: Any scale or testing instrument that has been proved to be valid and reliable through experimentation and trial.

Statistics – The study (usually mathematical analysis) of information that is in the form of numbers or can be given numbers; the term can also mean that information itself.

Stratification – A way of ordering individual people within a social system. The different rungs of the ladder depend on, for example, income, education, work, or power. The term can also mean ranking anything on different levels, by group or category.

Stratified sample – A group of people or things chosen so that certain levels or smaller groupings (like certain ages, incomes, or diagnoses) are kept together and a set number of people or things from each level are in the larger group. A stratified “random sample” chooses the people or things within each grouping or level by chance, but decides ahead of time how many people or things there will be within each level and what the levels will be.

Structured interviews – Interviews that use a set list of questions the interviewer asks every person. The interviewer writes down each person’s answers on the form with the questions.

Study blind policy: Guidelines designed to limit or prohibit access of data by non-authorized users in a study.

Subjective inclusion scales: A set of items in a questionnaire designed to measure personal impressions or feeling about a subject. An example of a question would be: "how do you feel about other people?"

Subjective measures: Any measure that is based on the researcher's feelings of intuitions about the topic being studied.

Substance abuse – Addiction to alcohol or drugs. Sometimes this term is separated from “chemical dependence,” which is less severe.

Substance Abuse and Mental Health Services Administration (SAMHSA) – An organization of the federal government, within U.S. Health and Human Services, which focuses on substance abuse (issues related to drug or alcohol dependence) and on mental health.

Survey research – A type of study that uses phone questions, mailed questions, interviews, or self-completed forms, and that does not use the “experimental method.”

Swindles: Strategies used to maximize your chances to observe a treatment effect when it occurs (e.g. reducing the number of hypothesis; looking at issues separately; and combining scores from multiple levels).

TA – See “technical assistance.”

Technical assistance – Manuals, instructions, consultations, etc. that give information or support for learning any technical task (such as how to use email or the internet).

Temporal sequence of effect: A causal reasoning found in psychotherapy stating that things do not generally precede what we believe to have caused them. For example, if "dieting" occurs before "weight loss", then one may reason that "dieting" is the cause of weight loss.

Test-retest method – A way of measuring something by first giving a test and then, after waiting a set time, giving the same test again to the same group of people.

Test-retest reliability A way of assessing the consistency of a research instrument by calculating the correlation between scores obtained on repeated administrations.

Theory – A way of explaining or trying to explain a set of facts.

These are also called “nominal variables.”

Time series design – A way of studying what researchers have noticed at set times; for example, studying how many cavities a group of children have every 6 months.

Tools – Ways of testing or measuring; for example, questionnaires, rating scales, etc.

Tops down pooling: A statistical method that combines data from different groups by exploring the data downwards – that is first comparing data from the whole set and then looking at individual sites or groups. See "Bottom up pooling".

Tracking databases: Monitoring databases to select information randomly about subjects over a period of time in a consistent fashion so reports can be generated for further analysis.

Transformed variables: A change made to the scores of all cases on a variable by the application of the same mathematical operation(s) to each score (common operations include addition, multiplication, and ranking).

Trend – A steady change in one direction over time; for example, more and more parents letting their children have later and later bedtimes over several years would be a trend.

T-test – A statistical test of the difference between two “means.”

Type I error – A mistake based on saying there is a difference when there is not.

Type II error – A mistake based on saying there isn’t a difference when there is.

Typology – A system that groups information into different types.

Unit of analysis – What size or number is being counted as separate within a larger group in a study; for example, an individual person, a family, a city, or a school. This unit will be different for different studies.

Univariate analysis – The study of only one thing that might change, not a group of different things that might each change.

Validity – The measure of how well a scale or test shows what it’s supposed to show. There are several different types of validity and each type must be tested separately:

Value (statistical) – An amount written in numbers, not in words, pictures, etc.

Variable – Anything that can have different values (be different sizes or amounts) at different times; what is being measured in a study.

Variance – The measure of how wide the range of values (amounts, sizes, or scores written in numbers) is; of how far apart these numbers are. It is a number found by multiplying the “standard deviation” by itself.