

CHAPTER SEVEN

Quantitative Research Designs

THIS CHAPTER WILL FOCUS ON THE process of conducting quantitative research, or using research designs that attempt to explain the relationship between two or more variables. In this chapter we will look at developing a testable hypothesis, the differences between correlation and causation, cross-sectional and longitudinal designs, and group research designs.

Getting Started

We know that all social work research should be subjected to the “so what” rule (So what does this have to do with social work or what is the value to social work?). Provided you can adequately answer this question, you then proceed to the second issue—ethical considerations. In chapter 2, we reviewed ethical considerations, and you may recall there was one overarching principle—all research must be careful to ensure that no harm is done to human subjects. This extends to protecting subjects’ anonymity and their confidentiality. Once these considerations have been satisfied, you are ready to proceed with the literature review.

When researchers start their literature review, they must address several questions. These questions are:

1. What is known about this subject? What research has been conducted to date? What has been discovered thus far?
2. What level of knowledge exists? Are we at a level that suggests exploratory studies are needed (because little is known about something)? Or has enough information been acquired that we

- can draw some tentative conclusions (i.e., conduct descriptive research)?
3. Have enough studies been published that we can begin to postulate research questions about the relationships between variables (i.e., conduct explanatory research)? Moreover, do the studies agree or disagree on how one variable influences another variable or even which variables are important?

Let us assume that after conducting our preliminary literature review and answering these questions, we have discovered that enough information exists for us to design a quantitative research study. Based upon our search of the existing literature, we have been able to develop some tentative research questions. These questions are designed to address a gap in the existing knowledge.

Developing a Testable Hypothesis

You may remember from chapter 1 that hypotheses are generally defined as testable statements that predict a relationship between at least two variables. In later chapters we will discuss how to test our hypotheses and examine some statistical methods for determining whether our hypotheses are indeed supported (i.e., whether they can be accepted or rejected). In the meantime, let us discuss the issue of establishing research hypotheses for a quantitative study.

When researchers are developing a research hypothesis, they turn to the existing literature. Quantitative research is deductive; that is, it is driven by the findings of other studies (either qualitative or quantitative) and what is already known. You, as a researcher, should not be developing hypothesis statements based on a guess or opinion; rather, you should be guided by what other researchers have found. For instance, some studies found that people who accept racial stereotyping are less inclined to support increased funding of welfare. With that in mind, you can develop a hypothesis about the relationship between these variables with different sample characteristics (e.g., "Does this apply to all races?"). Then you will read more research to build more hypotheses.

Since human behavior is usually driven by numerous factors, each explanatory study can have several independent variables. For example, a married couple may get a divorce because of boredom with each other, fights over money, arguments over how to deal with children or in-laws, or infidelity. If researchers want to examine each of these variables, they

should write a hypothesis for each independent variable, for instance, "Couples who bicker over finances are more likely to divorce" and "Divorce occurs more frequently when one of the spouses has a sexual encounter outside the marriage."

What Is Descriptive Research?

The concept of description has a much different meaning in a quantitative design than when it is employed in a qualitative design. Description is used in qualitative or inductive research to help the reader understand the lived experience of people experiencing a phenomenon. Description is used to convey the feeling of being there and to help the reader understand the experience from the person's own perspective. In qualitative research, one of several **non-standardized methods**, or informal methods of collecting data, such as the use of broad and open-ended question (recorded for accuracy) or a journal or field notes, may be used to do this.

Descriptive research is used to obtain information concerning the current status of a phenomenon in order to describe variables or conditions in a situation. The quantitative methods that can be used range from correlational studies that describe the relationship between variables and surveys, which are used to describe the status quo (both discussed later in this chapter), to evaluative studies (discussed in chapter 8), which can evaluate specific characteristics of a program within an agency. Quantitative research methods handle descriptive data by systematically recording information that describes characteristics about the population or phenomenon being studied. This may involve the use of standardized methods of data collection, such as surveys in which data are recorded in a quantifiable fashion or are collected from case records.

Correlation versus Causation

When you are conducting quantitative research, you are attempting to determine whether any relationship exists between variables, and if so, what kind. The relationship can be causal (one variable is causing a change in the other), which tends to be difficult to demonstrate, or it can be a **correlational relationship**, in which two (or more) variables are linked. A change in one variable may be associated with some degree of change in the other variable. For example, husbands who embrace traditional gender roles may be more likely to hit their wives than husbands who embrace

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nontraditional gender roles. Likewise, social work students whose parents are politically active usually find their policy classes more pertinent than do their peers whose parents are not politically active. However, to say that one variable is correlated with another does not mean one caused the change in the other. When a study finds associations or correlations between its variables, one cannot automatically conclude that the independent variables produced the change in the dependent variable. A **causal relationship** requires three conditions to be met: (1) the independent variable must come before the dependent variable (known as temporal ordering), (2) the independent and dependent variables must be correlated, and (3) the correlation between the independent and dependent variables cannot be explained by the impact of another variable. Absence of one of these conditions destroys the chance of causation. Thus, to demonstrate causality, one must show that traditional gender roles affect abuse by themselves and that there are no hidden (confounding) variables. For instance, we must rule out the possibility that other factors such as having an abusive father, working in a male-dominated occupation, and taking classes on domestic violence may also have an effect on spousal abuse. In addition, we must prove temporal ordering—that is, were traditional gender roles embraced before the men hit their wives? It is possible that husbands hit their wives before they espoused traditional gender roles and that they began to use the statement “Wives, obey your husbands” after the fact as justification. One truism in research is the axiom that “Correlation does not imply causation.” The fact that two things are correlated does not mean that one is causing the other.

Data Collection

Once you have created a working research hypothesis, then the next step is to begin developing the data collection method. Two common methods of collecting quantitative data are through archives and other preexisting data and through surveys.

Archival or Retrospective Research

Archival or retrospective research, sometimes referred to as secondary research, relies on preexisting data or records. This research method often involves content analysis, a qualitative analysis of material in which the content of the data is examined and themes are identified. In quantitative

research, researchers use archival research to determine what information they want to collect, or what the variables in the study will be.

Perhaps you are a caseworker for Child Protective Services and are interested in conducting a descriptive study of therapeutic foster care placements during the last twelve months. You would create a sample study employing a quantitative descriptive design from case files over the past twelve months. You would begin by identifying some data that you want to collect, such as each child's age, sex, race, reason for placement (defined as type of maltreatment), length of placement, and placement upon discharge from foster care. These and other variables begin to form the basis of your research to describe therapeutic foster care placements during the last twelve months.

Surveys

Surveys pose closed-ended statements or questions to which subjects are asked to respond. They are a relatively inexpensive way to reach a large number of people quickly as well as to describe a small population or an individual. Suppose, for example, that you wanted to find to what extent subscribers are satisfied with a quarterly newsletter published by your agency. You may choose to interview them in person or by phone, using a survey tool. Unfortunately, interviews are often difficult to arrange because people's schedules do not always coincide and their time is limited. Also, interviewers must be trained—a costly and time-consuming process—if they are to obtain reliable information. Even with printing and mailing charges, surveys cost considerably less than interviews administered to the same number of people. Many people are familiar with surveys and are accustomed to completing them. Mailed surveys may be particularly easy to complete, since people are under no pressure to finish all the questions within a certain amount of time, but can fail to provide a good response rate of return.

Constructing surveys for a large sample or population is not easy and requires many skills. The directions and the questions should be written clearly and easy to read, and the survey should be easy to complete and return. Piloting the survey with a small number of people enables researchers to examine reliability and validity issues on the instrument before giving it to a larger sample. Telephone surveys, mail-out and Internet surveys, and face-to-face interviews are the most convenient collection methods. Each has positive and negative aspects that will be discussed in turn.

TELEPHONE SURVEYS

Telephone surveys are relatively easy to conduct and are cost effective. One individual can call many people in a short amount of time and thus collect a large amount of data. For this reason, telephone surveys are quite popular. On the downside, telephone surveys are inherently limited to those individuals who have a telephone, who are at home when the surveyor calls, and who are willing to spend the time to answer questions. For this reason, the people who take a survey may not be representative of the group the survey is intended to describe. For example, a telephone survey was conducted on people's perceptions of the presence of police officers within the community. The person conducting the survey missed those people who either didn't have a phone or were unwilling or unavailable to take the call. It could be argued that those who were willing to respond to the interviewer's questions had strong opinions concerning the presence of police in the community and wanted to be heard.

MAIL-OUT AND INTERNET SURVEYS

Another way to conduct surveys is to use mail-out or Internet surveys. These are also popular because they are relatively simple, and if administered correctly, they can be an effective way to collect data. When you are conducting a mail-out or Internet survey, you should develop a brief cover letter or statement that describes the purpose of the survey, who is conducting the survey, and why it is important to fill out and return it. Make sure that all ethical considerations discussed in chapter 2 are covered, and include information on the approximate amount of time it will take to complete the survey. Finally, make sure to provide a self-addressed and stamped return envelope (for snail mail) so that respondents can simply drop the completed survey in the mail.

INTERVIEWS

Face-to-face (in-person) interviews have several advantages. For instance, the interviewer can clarify questions on the survey, thereby reducing the number of unanswered questions, which are common with mailed surveys. Another advantage is that face-to-face interviews are relatively easy to administer. One individual can stand in one spot (for example, a crowded shopping center on a weekend) and collect information from many individuals. The downside of face-to-face interviews is that they can be labor intensive, and depending on how much information is needed, a large number of people may be needed to get a reasonable sample size.

Cross-Sectional and Longitudinal Designs

A cross-sectional design is a research design that looks at a cross-section or subset of a population at one point in time. For example, let us assume that you are conducting a study on the attitudes toward illegal drug use among two groups—one group with members ages sixty-five to seventy, and one group with members between the ages of twenty and twenty-five. You may find that the older group has stronger opinions about drug use and feels that it is detrimental to individuals who engage in it. However, one cannot assume that the younger group will have the same attitudes when they are older.

The cross-sectional method of investigation is useful when the research goal is to compare developmental levels of people at various ages or from various backgrounds. Many children at different ages are studied in groups according to their age, and the results on the same sets of measures are compared for the groups. For example, one can determine the approximate age at which an infant can be expected to roll over, creep, crawl, pull him- or herself up to a standing position, and walk unaided by observing the behavior of groups of children from birth until the age of about fifteen months. If we study a group of one-month-old infants, another group of two-month olds, and so forth, up to the age of fifteen months, we will have a cross-sectional research design.

One must be careful not to infer too much from the results of cross-sectional research designs. For instance, cross-sectional research cannot deal with the issue of temporal ordering. If a researcher finds a correlation between independent and dependent variables in a one-time study, he or she cannot determine which factor precipitated the other. For example, a social worker may find that delinquent teenagers often have delinquent friends. This may be true, but it is impossible to know if the friends' behaviors motivated the teenagers to engage in illicit activities or if the teenagers only chose friends who supported their illicit behaviors.

A longitudinal design is a research study that follows one cohort over a period of time (usually several years or even decades). Whereas the cross-sectional design looks at one group at one point in time, the longitudinal design is interested in how the same person or group changes over time. Longitudinal research can address issues and support methods in ways that are not possible with traditional cross-sectional approaches. It is particularly valuable in a number of research areas:

- when the focus is directly on change and the phenomenon being studied is itself inherently longitudinal—for example,

the dynamics of poverty, employment instability, social mobility, and changing social attitudes

- when causal processes are being investigated—for example, the effects of unemployment on mental health or of child poverty on later life chances of poverty
- when social change is being studied and the researcher needs to separate age, period, and cohort effects
- when one is establishing the effect of a treatment by following participants involved in an experimental or quasi-experimental design (discussed later) or comparing periods before and after the introduction of public policy, such as a ban on smoking in public buildings

For obvious reasons such as cost, time commitment, and the difficulty of tracking a group over time, these types of studies are rarely undertaken. Some examples of this research are studies looking at people's attitudes toward rape, marijuana use, and the division of labor in families, all of which have changed over the past fifty years

Group Research Designs

Social workers practice with a variety of types of groups in multiple settings. Since research always deals with comparisons of patterns within groups of people or things, researchers must rely on different types of group research designs. There are three major types of group research designs: pre-experimental, quasi-experimental, and experimental designs. Each involves a different type of research, and a researcher's decision as to which to use depends on the purpose and resources available.

Pre-experimental Designs

Pre-experimental research designs can be useful when the research question is fairly simple, and it is impossible to set up experimental conditions. Many social scientists rely on this design because they want to study human habits in the setting in which they occur without using a comparison group. That is, rather than taking a person to a structured environment, researchers study people in the schools, agencies, and places of religious worship where the behavior they are studying actually occurs. In fact, many social scientists believe that this is the best way to study human

behavior because these naturalistic approaches allow them to capture information in situations that are closest to real life. But it is important to note that a limitation of this research design is that it may pose many threats to internal validity.

This approach is used frequently in social work practice. Let us imagine for a moment that you are offering a class to sixth graders on the effects of alcohol on the body. As a researcher, you can develop the following hypothesis: "Sixth-grade students who attend an alcohol awareness course will increase their knowledge of the effects of alcohol on the body." This is a testable hypothesis; therefore, it is possible to design a study to accept or reject it. Your first task is to develop a lecture that will convey information about alcohol and its effects on the body. Then you explore the factors that may either facilitate or block students' understanding of the material, for instance: "Is the material age appropriate?" "Will the presentation be too lengthy?" "Will there be interruptions?" Next, you develop a short quiz that will measure the information covered in your presentation. You include in the quiz questions on the factors that may affect the students' learning (i.e., confounding variables). For instance, you may ask the students if they understood the material, if they thought the lecture was too short or too long, or if there were interruptions during the lecture that distracted them. Next, you present the material about drinking and how it affects the body over the course of about forty minutes. At the end of the class period, you give the students the quiz to measure what they have learned. This would be a *one-group posttest-only design*. In research notation this would be described as:

X O

Here the X represents the service or intervention, and the O represents the observation, or the response of the participant. In this case, the X represents the lecture content on the effects of alcohol, and the O represents the quiz score at the end of the class. It is simply measuring what the students learned post-intervention (i.e., after the intervention). It could be argued that perhaps these students had an exceptional amount of knowledge about the subject before the class started.

Another pre-experimental design is the *one-group pretest-posttest design*. Let us imagine that you administered the quiz before the start of the class to measure their baseline level of knowledge, you then presented the material over the next forty minutes and then you tested them again with the same quiz (this is classical educational methodology). You could then compare the pretest scores with the posttest scores. If their scores improved, it

could be logically argued that the improvement was due to what they learned in class. Research notation would diagram this design as:

O X O

It should be clear at this point that the first O represents the pretest and the X is the class lecture. The second O represents the posttest. The most obvious limitation to this design is the fact that there is no comparison group. Critics could argue that perhaps these students' scores were random or occurred by chance. Thus, it is difficult to determine the true effect of the intervention on students.

Quasi-Experimental Designs

Quasi-experimental designs are designs in which there is a comparison group but it is either not possible or not feasible to use random assignment to assign participants to groups. Random assignment, discussed in chapter 5, increases internal validity and reduces the likelihood of bias because each subject has non-zero probability of being placed in each group. For example, it would not be ethical to recruit a group of volunteers for a study about homelessness and then randomly assign one group to a condition of homelessness for a period of time. You might, however, be able to find a group of individuals who are currently homeless and compare them to a group of people who are living in permanent housing.

Thus without a comparison group of students who did not have the alcohol education class in our example, we would be unsure if the class itself led to the results on the quiz. To deal with this, you might also give the quiz to several other students who did not participate in the class. In other words, you would use a comparison group that had no access to the material to control for these issues. This would be an example of a slightly more sophisticated design known as the *posttest-only with non-equivalent group design*. In research notation it would be:

X O
O (different group)

Again, X would represent the class lecture and O would represent the posttest. Now, if the students in the class who received the lecture scored much higher on the quiz, you could assert that *maybe* it was due to the lecture. We cannot be certain, however, that there are not inherent differences between the two groups. Confounding variables such as family experience with alcohol abuse, religious beliefs, and sex may have an impact

on the level of knowledge each group has concerning the effects of alcohol on the body.

Let us imagine for a moment that you are a case manager working in a community mental health agency with adults. You have been offering a support group for your consumers in which you discuss issues such as daily living skills, money management, and other skills necessary for independent living. The group begins every eight weeks and meets once a week for the two-month period. You have noticed that several of your consumers seem to feel better about themselves after participating in the group. Perhaps you review the literature and find several studies that suggest that support groups are an effective way to increase the self-esteem of your consumers. After completing your literature review, you develop the following hypothesis: "Participants will report an increase in self-esteem following an eight-week support group."

To test this hypothesis, you ask the participants who begin the next eight-week period to complete a self-esteem measurement instrument before the beginning of the first class. As a comparison, you ask an equal number of participants (who are not attending the group, but who are consumers at your agency) to complete the same instrument. Then at the end of the eight weeks, you ask both your support group and the comparison group to complete the self-esteem questionnaire again. In research notation this would be:

$$\begin{array}{ccc} \text{O} & \text{X} & \text{O} \\ \text{O} & & \text{O} \end{array}$$

The Os represent the pretest and posttest, and the X represents the support group (the intervention). We could argue that if the experimental group (the group that participated in the support group) had remarkably higher scores on their self-esteem scale after completing the support group (compared to the scores on the pretest), then the difference may be attributed to the support group itself. The scores of the comparison group would strengthen this argument if the comparison group's scores remained similar from the pretest to the posttest (i.e., their scores did not increase or decrease over time).

All research designs have inherent limitations, and the pretest-posttest non-equivalent comparison group design is no exception. Logic would dictate that we could not rule out any alternative explanations for the perceived changes in the experimental group. How do we know, for example, that something else outside the group did not happen to cause the group to feel better about themselves? Perhaps all the members of the group suddenly found new jobs, received promotions, or felt that the climate at

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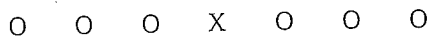
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their places of work became friendlier toward them. Any number of variables could account for a change in the group outside the influence of the support group itself.

Time series designs are slightly more rigorous than simple quasi-experimental designs such as the pretest-posttest non-equivalent group design outlined above. Imagine again that you are working as a case manager at a community mental health agency. You are working with adults who participate in your support group. This time, instead of recruiting other consumers to serve as a comparison group, let us imagine that all the consumers in your agency are participating in your support group—effectively eliminating the chance to have a comparison group. One solution is the *time series design*. To use this design, you as the researcher would simply give the same self-esteem questionnaire at several points in time before the support group begins. Perhaps you would ask respondents to complete the questionnaire every other day for a week. Then the support group would begin, and after its completion, you would ask them to complete the same questionnaire again every other day for a week. The three pretests could be compared to the posttests. In research notation, this research design would look like this:



Again, the Os represent the self-esteem questionnaire and the X represents the support group. Because there is no comparison group, the researcher uses the self-esteem questionnaires at various points in time as a comparison group by comparing the groups' overall scores over time. If, over the course of a week, the pretests seem to reflect a low level of self-esteem and then the group's level of self-esteem dramatically improves after they complete the support group, you could argue that the intervention may be correlated with the increase in self-esteem. Notice, however, that we are not saying that the intervention *caused* a change in self-esteem; we are simply stating that there is a correlation.

The next design we will examine is the *time series design with non-equivalent comparison group*. This is simply a variation of the time series design discussed above. Perhaps you are able to find a group of consumers who are not willing to participate in your support group but are willing to serve as a comparison group. You may ask both groups to fill out the self-esteem questionnaire a total of three times over the course of seven days before the support group begins and then again three times over seven days after the end of the support group. In research notation, this would look like this:

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The Os represent the self-esteem questionnaire and the X represents the intervention. We said that the strength of the time series design was that the questionnaire repeated over time served as its own comparison group. When you include the additional component of the comparison group, your design is strengthened. You can now compare the pretest scores with the posttest scores, and these can be evaluated against those of the comparison group. Let us assume for a moment that the comparison group's scores stayed fairly similar over time. Logic would tell us that there is a strong possibility that the support group was effective (assuming that the scores of the experimental group increased after the intervention, of course).

Like all research designs, quasi-experimental designs have both strengths and weaknesses. On one hand, they are methodologically stronger than pre-experimental designs because they use a comparison group with pre- and posttests and/or test the findings at several points in time. However, they cannot rule out alternative explanations for any observed changes in groups. For instance, the members of one group may have much higher IQs than the other group or might be more motivated to participate in the study. These could be alternative explanations for observed changes in groups.

Experimental Designs

The one aspect that differentiates the experimental design from the quasi-experimental designs is the assignment of subjects to groups. In true experimental designs, subjects are randomly assigned to either the experimental group or the control group. Up to this point, we have been discussing the use of a *comparison group*. In quasi-experimental research, the group that receives no treatment (the intervention) is referred to as the comparison group (or sometimes as the nontreatment group). The term *control group* is used only for experimental research.

It is often difficult to randomly assign subjects to one group or the other, for a variety of reasons. For one, there are ethical considerations. Much of what is done in social work research precludes the social worker from assigning subjects to a particular group (that might mean they are not receiving services that could benefit them). Secondly, random assignment of subjects can increase the cost of a study (and many researchers have limited resources). Thirdly, researchers might be studying an event that has already transpired (such as the effects of the 9/11 terrorist attacks),

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which makes a random assignment impossible. However, for discussion's sake, let us pretend for a moment that you are continuing with your support group study. Let us also assume that we have the luxury of assigning participants to the experimental group and to the control group. Your research design then would be:

R	X	O
R		O

In this design, the Rs represent random assignment of subjects (all subjects have an equal chance of being in either group). As before, the Os represent the self-esteem questionnaire and the X represents the intervention. Since all consumers have an equal chance of being in either group, you can compare the posttest scores of the experimental group with those of the control group, and if they are vastly different, the argument could be made that the intervention must have worked (even without a pretest for the control group). However, adding a pretest for the control group makes our design even stronger. This is the classic research design known as the *pretest-posttest control group design*:

R	O	X	O
R	O		O

In this design, the Rs represent random assignment of subjects, the Os represent the pretest and posttest questionnaire (the self-esteem instrument), and the X represents the intervention (the support group).

The last research design we will discuss, called *Solomon's four-group design*, is the highest standard in experimental group research designs in that the researcher can feel confident that a change between the pretest and the posttest is truly due to the intervention. In research notation, this is described as:

R	O	X	O
R	O		O
R		X	O
R			O

As you can see, this complex design combines the pretest-posttest control group design and the posttest-only control group design. The major advantage of the Solomon design is that it can tell us whether changes in the dependent variable are due to some interaction effect between the pretest and the treatment. For example, let's say we wanted to assess the effect of positive information about a group of child welfare workers' community service work (the independent variable) on people's attitudes about child

protection workers (the dependent variable). During the pretest, the groups are asked questions regarding their attitudes toward child protection workers. Next, they are exposed to the experimental treatment: newspaper articles reporting on the civic deeds and child rescue efforts of child protection workers. If treatment group 1 scores lower on the posttest than control group 1, it might be due to the independent variable. But it could also be that filling out the pretest questionnaire has sensitized people to the difficulties of being a child protection worker. The people in treatment group 1 have been alerted to the issues and they react more strongly to the experimental treatment than they would have without the pretest. If this is true, then experimental group 2 should show less change than experimental group 1. If the independent variable has an effect separate from its interaction with the treatment, then experimental group 2 should show more change than control group 1. If control group 1 and experimental group 2 show no change but experimental group 1 does show a change, then we know that change is produced only by the interaction of pretesting and treatment.

The Solomon design is often bypassed because it requires twice as many groups. This effectively doubles the time and cost of conducting the experiment. Many researchers decide that the advantages are not worth the added cost and complexity.

Applied Learning Activities

Activity #1

Your agency provides emergency food and used clothing to clients. You are tasked with describing how satisfied the clients at your agency feel about the services that they have received.

1. List the questions that you would ask in order to collect information on clients' satisfaction with these services.
2. How would you collect data using a quantitative method?
3. If you were to use a survey to collect this information, which survey collection methods would you use, and why?

Activity #2

You are interested in describing individuals involved in intimate partner violence. You decide to send a survey to several shelters in several states. You collect data on the following information:

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3. Type
4. Race
5. Age
6. Sex
7. Average

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1. Average length of the relationship
2. Number of times the individual has tried to leave the relationship
3. Type of abuse
4. Race of the victim
5. Age of the victim
6. Sex of the victim
7. Average family income

What other information would you collect, and why?

Activity #3

You are a case manager at an outpatient treatment facility. You teach a class on the effects of alcohol, methamphetamines, and other drugs on the body. Clients volunteer to attend your classes, but once they sign up to attend, attendance is expected. Your classes are held once a week, for one hour, and last for eight weeks. You give everyone a test the night before classes begin and again at the end of the eight-week period. You then compare their scores.

1. Would this type of research be considered pre-experimental, quasi-experimental, or experimental? Why?
2. What type of group research design is this?
3. Are there ways that the research design could be made stronger? If so, what could be done to change the research design to make it stronger?

Activity #4

You are a hospital social worker who has been asked to start a support group for people who are attempting to quit smoking. Because the size of the group is limited, you randomly assign people to the group or to a waiting list for the next group, which will start in four weeks. To randomly assign people, you place everyone's name in a bowl and draw names until you have filled the group. Everyone agrees, knowing they have an equal chance of being in the first support group or on a waiting list for the next one. Before the group begins, you ask both the people in the support group and the people on the wait list to fill out a questionnaire about the number of cigarettes they smoke per day. At the end of the four-week support group, you ask both groups to fill out the same survey.

1. Would this type of research be considered pre-experimental, quasi-experimental, or experimental? Why?
2. What type of group research design is this?
3. Identify the independent and dependent variables in this study.

Key Points

- Causal relationships exist when one variable is causing a change in the other, and correlational relationships exist when one variable may be associated with some degree of change in the other variable.
- Cross-sectional research looks at a slice of the population at one point in time.
- Longitudinal studies follow the same cohort of individuals over time. Three commonly used types of surveys are telephone surveys, mail-out and Internet surveys, and interviews.
- There are three main types of group research designs: pre-experimental, quasi-experimental, and experimental designs.
- A comparison group is used in quasi-experimental research. Sometimes called the nontreatment group, it is the group that receives no treatment (intervention).
- A control group is used in experimental research. In studies that use a control group, subjects have been randomly assigned to either the experimental group or the control group.

Additional Resources

Ellis, L. (1994). *Research methods in the social sciences*. Madison, WI: WCB, Brown & Benchmark.

Ellis focuses on research in psychology, sociology, social work, and other human sciences. He utilizes a straightforward approach to explain both research methodology and statistics.

Orcutt, B. (1990). *Science and inquiry in social work practice*. New York: Columbia University Press.

While this text may be a bit advanced for some readers, it presents a strong argument for the use of empirical methods in social work.

York, R. (1997). *Br*
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York, R. (1997). *Building basic competencies in social work research: An experiential approach*. Boston: A. B. Longman.

York uses assignments and other hands-on approaches to turn students into active learners. York uses more of a holistic approach than other texts, as he introduces concepts in each chapter and then returns to and elaborates upon them throughout the rest of the book.

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