
Research

Research Design: Descriptive Research

Helen L. Dulock, RN, DNS

RESearch DESIGN is a blueprint or plan specifically created to answer the research question and to control variance.¹ Answering the research question or testing the research hypothesis is the central purpose of all research. Control of variance means the researcher must consider factors that might systematically contribute to the research results or confound the interpretation of the results, but that are not part of the research question or hypothesis. For example, the results of a descriptive study of women's feelings in response to initially being diagnosed with breast cancer could be influenced if there was national media attention focused on breast cancer in women during the study.

Research designs are generally categorized into one of four groups depending on the purpose of the research: descriptive, correlational, quasiexperimental or experimental. However, there is no universal agreement or standard for categorizing research designs or for grouping them into a set number of categories. Each of these four major types of research design have some generally agreed on characteristics that differentiate them from each other. In addition, it is often necessary for the researcher to create or build in specific design features in a study to answer the research question or test the hypothesis and control variance.

The design of the research will be influenced by the available knowledge in the specific area being researched. This relationship between the study design and the available knowledge or the kind of question being asked has been discussed in a previous research column.²

Definitions of Descriptive Research

Several definitions or purposes of descriptive research have been identified in the literature: (1) to describe systematically and accurately the facts and characteristics of a given population or area of interest³; (2) to provide an accurate portrayal or account of characteristics of a particular individual, situation or group; these studies are a means of discovering new meaning, describing what exists, determining the frequency with which something occurs and/or categorizing information⁴; (3) to portray the characteristics of persons, situations, or groups and the frequency with which certain phenomenon occur⁵; these studies observe, describe, and document aspects of a situation as it naturally occurs; (4) to discover associations or relationships between or among selected variables⁶; (5) to answer questions based on the ongoing events of the present.⁷

These definitions, taken together, offer a fuller explication of the purposes of descriptive research than any one of them alone might offer. Accurate and systematic description of "something" or "someone" is the cornerstone of this research design. The "something" may be an event, phenomena (physiological, psychosocial, or cultural), or characteristics (such as voting preference, feelings, or attitudes). The "someone" may be an individual, group, or community. There may be only one variable of interest (such as the frequency of nausea among an identified group of patients receiving chemotherapy) or the research interest may be to determine whether there is an association among two or more variables (such as the use of patient controlled analgesia and the total amount of analgesia received by a patient).

Characteristics of Descriptive Research

Characteristics of descriptive research include, but are not limited to, the following: (1)

From the Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA.

Address reprint requests to Helen L. Dulock, RN, DNS, Assistant Professor, Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA 30322.

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There is no manipulation or control of variables and thus no independent variable. There may be one or more outcome variables. (2) The purpose is to describe one or more variables and/or determine if there is an association between two or more variables. Determining cause and effect (causal) relationships is not the goal. (3) The current status of the phenomenon in a naturalistic setting is usually what is being observed, described, or documented. However, data collected in the past, such as data from a review of medical records, might also be the variable of interest in a descriptive study. (4) A hypothesis is usually not stated. The end result of a good descriptive study is to develop the data base from which hypotheses may be generated and tested in future studies. (5) Subjects are selected on the basis that they possess the information or characteristics (such as feelings, values, attitudes, or health-illness status) that are the focus of the study.

Descriptive designs are most useful for describing phenomena or events about which little is known or for identifying new or emerging phenomena. In addition, the results of descriptive studies are usually used as the basis for further research. Thus, it is extremely important that descriptive studies be well designed and implemented. Limitations of these designs include the lack of generalizability of the data and the potential for multiple interpretations of the data. This is why it is so important that the "right" data be collected from the "right" subjects in the "right" setting. These three characteristics—data, subjects, and settings—are the criteria by which the external validity of the descriptive study will be assessed.

The data collected should be valid and reliable. The instruments used (interviews, questionnaires, or equipment that measures physiological variables) should be standardized instruments (previously tested and shown to have instrument validity and reliability with the population under study). Newly developed instruments should be pilot tested before initiating the study. Design validity is also an important concept and refers to the truth or value one can place in the study's findings. The target population must be clearly specified and described and the subjects must be representative of the target population. Subjects should possess the infor-

mation, characteristics, or condition and be willing and able to impart that information to the researcher. The degree to which the subjects possess the characteristic or condition also needs to be considered by the researcher. For example, patients with mild (degree of severity) asthma (condition) who have just been diagnosed (time) may be very different in relation to the research question compared with subjects with severe, chronic asthma. The setting in which data collection occurs will influence the data collected. For example, interview data or physiological measures, such as vital signs, may differ considerably when performed in a home setting compared with an inpatient setting.

The most commonly used tools or techniques to gather descriptive data include questionnaires, interviews, observations, rating scales, checklists, and instruments for measuring physiological variables.

Common Types of Descriptive Research

Descriptive Survey

This research design collects information from a portion of a target population to describe preferences, practices, characteristics, commonalities, or differences. The strengths of a survey are that it is possible to gather data on a limited number of variables from a large number of subjects and it can be used for many different topics and populations. An example of a descriptive survey would be a questionnaire or interview to solicit information from pediatric oncology nurses regarding their practice of administering analgesics to their patients.

Descriptive Longitudinal Study

This research design uses repeated data gathering points (repeated measures) to document and describe stability, change, or trends over time. The advantage of this design is that it has multiple observations or data points versus only one observation at one point in time. The disadvantage is dropout or attrition of subjects.

Descriptive Correlational Study

The purpose of this design is to describe how one variable is related or associated with another

variable. Cause and effect relationships are not determined.

Case Studies

This design is useful for studying phenomena or life events over time in one or more subjects.

Data Analysis in Descriptive Research

Based on the research question or purpose, qualitative and/or quantitative data will be generated from a descriptive study⁸. Numerical data generated from a descriptive study will be organized and presented using one or more descriptive techniques. Descriptive statistical techniques have three purposes: (1) to describe variables; (2) to describe relationships between variables; and (3) to describe distributions. Variables are described using measures of central tendency (mean, median, or mode) and measures of variability (range and standard deviation). Correlations are used to describe relationships between two or more variables. Distributions are described using frequency or percentage distributions; these are generally shown with bar graphs or pie charts.

Example of Descriptive Research

An example of a published descriptive research article is described in Table 1. This research study was the third in an ongoing program of research. The first study described coping strategies in adolescents with cancer. The second study described intraindividual changes in coping strategies used by adolescents experiencing cancer treatment-related pain. In these previous studies, hand holding was identified as a coping strategy used by adolescents to cope with cancer treatment-related pain. The purpose of the third study was to build on the knowledge gained in the previous two studies. The specific aims of the third study were to describe the essential components of hand holding as a coping strategy and to determine whether hand holding as a coping strategy occurred in adolescents other than those with cancer. Thus this third descriptive study included a comparison group; half of the sample were adolescents with cancer and half were adolescents

TABLE 1.
Example of Descriptive Research Article

Study	The phenomenon of hand holding as a coping strategy in adolescents experiencing treatment-related pain. ⁹
Design	Exploratory descriptive with one comparison group.
Purpose	Understand the phenomenon of hand holding as a coping strategy to deal with treatment-related pain.
Instruments	Structured observational tool during painful procedures and semistructured interview guide to ask questions. Examples of questions asked: What is it like for you to get this treatment? What kinds of things do you think about before, during and after the treatment that helps you to deal with them?
Data analysis	Descriptive statistics for demographic data on subjects and constant comparison techniques using both observational and interview data.
Conclusions	Subjects in both groups perceived hand holding to be an effective coping strategy in ameliorating treatment-related pain. Hand holding functioned to reduce tensions associated with impending treatments, as a source of distraction, and as a source of security.
Implications for future research	Further study across the life span with different chronic illness groups and studies that use combined qualitative and quantitative methods.

with renal disease. The use of the comparison group extends and supports the knowledge that adolescents with a different chronic disease use a similar coping strategy. One of the recommendations for further study was to investigate the phenomenon of hand holding in groups with different ages and different chronic diseases. This descriptive study is an excellent example of descriptive research. The questions asked were based on what was known from previous research. The data collection tools were well described and appropriate for the purposes of the study. The interview guide was pilot tested and validity issues were addressed. The subjects were representative of the target population, and the setting was the same for both groups during data collection.

Conclusion

The Social Policy Statement of the American Nurses Association states that the phenomena of concern to nurses are human responses to actual or potential health problems. These phe-

nomena are not static, but continuously evolving, changing, and new ones emerging. A description of these phenomena is an essential first step in developing research-based clinical practice.

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