2

RapidX Upload

Rapid #: -8755097

Status	Rapid Code	Branch Name	Start Date
New	UMC	Main Library	12/17/2014 5:20:01 PM
Pending	PAU	Biomedical Library	12/17/2014 5:20:31 PM
Batch Not Printed	PAU	Biomedical Library	12/18/2014 10:24:49 AM

CALL #: NO_CALL_NUMBER

LOCATION: PAU :: Biomedical Library :: Biomedical Library Periodicals

TYPE:	Article CC:CCL
JOURNAL TITLE:	Health care for women international
USER JOURNAL TITLE:	Health Care for Women International
PAU CATALOG TITLE:	Health care for women, international
ARTICLE TITLE:	Content analysis: Method, applications, and issues
ARTICLE AUTHOR:	Barbara Downe-Wamboldt
VOLUME:	13
ISSUE:	3
MONTH:	
YEAR:	1992
PAGES:	313-321
ISSN:	0739-9332
OCLC #:	1179914
CROSS REFERENCE ID:	[TN:889947][ODYSSEY:128.8.66.142/ILL]
VERIFIED:	

DEC 18 2014

BORROWER: UMC :: Main Library

RAPID

CONTENT ANALYSIS: METHOD, APPLICATIONS, AND ISSUES

Barbara Downe-Wamboldt, RN, PhD
School of Nursing, Dalhousie University, Halifax, Nova Scotia, Canada

Content analysis research methodology is detailed, its procedures are described, some examples of its application are provided, and the controversial issues surrounding its use are discussed. Unlike strictly qualitative designs, content analysis has external validity as a goal. Because of its focus on human communication, content analysis offers practical applicability, promise, and relevance for research involving the practice and education of nurses and other helping professionals.

In recent years there has been a growing recognition that both qualitative and quantitative approaches are needed for advancing nursing science. Morse (1991) has suggested, "researchers who purport to subscribe to the philosophical underpinnings of only one research approach have lost sight of the fact that research methodologies are merely tools, instruments to be used to facilitate understanding" (p. 122). The most recent controversial issue is not whether one method is intrinsically better than another, but which combination of methods is best to meet the aims of a particular study. An integral part of contemporary nursing research, content analysis methodology offers the opportunity to combine what are often thought to be antagonistic approaches to data analysis.

The intellectual basis of content analysis can be traced to the beginning of conscious use of symbols and language. Before World War II, the method was primarily restricted to critique of journalistic endeavors, to document their religious, scientific, or literary content (Krippendorff, 1980; Speed, 1893). The simplistic reliance on counting words or phrases that was characteristic of the method in its early development is attributed to these journalistic roots. According to Weber (1985), the first large-scale application of the method was during World War II by the U.S. Office of Special Services to Nazi war propaganda. Although

Health Care for Women International, 13:313–321, 1992

used widely in other disciplines as diverse as psychology, sociology, and political science, I shall discuss the use of content analysis in nursing science research and provide examples from that discipline.

Content analysis is a research method that provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena. Unfortunately, for some researchers scientific validity is equated with quantification. Content analysis is more than a counting game; it is concerned with meanings, intentions, consequences, and context. To describe the occurrences of words, phrases, or sentences without consideration of the contextual environment of the data is inappropriate and inadequate. The analyst must be cognizant of the context and must justify the findings in terms of the context or environment that produced the data. The goal of content analysis is to enhance the inferential quality of the results by relating the categories to the context or environment that produced the data. Inferences are not an integral part of the data, but rather come from the researcher and the research reader. An unobtrusive method, content analysis can be applied to existing data from one point in time or to documents that have existed over longer time frames; it can be used either alone or in conjunction with other methods.

The method can be used for several purposes, such as revealing the focus of individual, group, institutional, or societal attention; determining psychological states of persons or groups; reflecting cultural patterns and beliefs; describing themes, trends, goals, or other characteristics in communication content; analyzing open-ended survey data; and describing attributes of the sender of a communication and attitudinal and behavioral responses of the recipient(s) to the communication (Berelson, 1952; Krippendorff, 1980; Polit & Hungler, 1991; Weber, 1985). As with any research strategy, the objective of content analysis is to provide knowledge and understanding of the phenomena under study.

METHOD AND APPLICATIONS

Krippendorff (1980) disagreed with the contention that content analysis is what each of us may do in reading the morning paper, and he clearly identified it as a scientific process that differs across disciplines in terms of its focus. This set of analytic techniques facilitates the description of the manifest and/or latent content of communication by measuring the frequency, order, or intensity of occurrences of words, phrases, or sentences (Krippendorff, 1980; McLaughlin & Marascuilo, 1990; Weber, 1985). According to Weber (1985), "The rules of this inferential process vary with the theoretical and substantive interest of the investigator" (p. 9). Although there is no single set of rules and

procedures, the content analysis research method generally encompasses the following steps:

1. Selecting the unit of analysis,
2. Creating and defining the categories,
3. Pretesting the category definitions and rules,
4. Assessing reliability and validity,
5. Revising the coding rules if necessary,
6. Pretesting the revised category scheme,
7. Coding all the data, and
8. Reassessing reliability and validity.

Designing the Sampling Method and Selecting the Unit of Analysis

External validity is a goal of content analysis, so the use of probability sampling techniques is an issue. Content analysis is predictive in intent. To select a sample, the population of all sources of data must first be identified, such as all records of hospice volunteers' interactions with terminally ill patients. The researcher then chooses a plan (random, stratified, systematic, cluster, proportional, or multistage) to yield samples that are representative of the phenomena of interest (Krippendorff, 1980). Data collection is influenced by the knowledge level, experiences, biases, and perspectives of the researcher, as well as by what information the participants are willing or able to provide and what sources of data are available to the researcher. A fundamental assumption of any research endeavor is that the investigator always considers potential sources of error in the data. Brink's (1991) account of the anthropologist who spent a summer collecting data only to be told at his going-away party that the tribe had consistently lied to him throughout the summer clearly emphasizes this issue.

One of the most basic and important decisions for the researcher is the selection of the unit of analysis. As with any study, the investigator is guided by the research question to be answered. Most frequently, the unit of analysis includes words, sentences, phrases, paragraphs, or whole text such as interviews, diaries, or books; themes (entire ideas or thoughts); and the amount of space and time given to a topic. For instance, in our study involving hospice volunteers we used self-reported records of the volunteers' interactions with patients (Downe-Wamboldt & Ellerton, 1986). Our aim was to describe the role of hospice volunteers in supporting hospitalized terminally ill patients and their families. When Beaton (1990) studied the experiences of women admitted to the hospital in early labor, she used the verbal communication between the nurse and patient as the unit of analysis. Flaskerud and Rush (1990) used individual and group interview data as the unit of analysis in their

exploratory study of the health beliefs and practices of Black women.

Creating and Defining the Category System

Whose reality is the "real" one? The intent of content analysis is not necessarily to document the shared meaning between the researcher and the researched, but to describe the phenomena of interest for a particular purpose. Often, people are unable to interpret their own behavior; researchers may attempt to do so by bringing a wider range of knowledge to the context of the study when they analyze the data. I do not mean to suggest that category schemes should be the "immaculate conceptions" of the researcher. Category schemes are invented by the researcher to generate knowledge and to increase understanding of a particular phenomenon. The schemes are based on the research question, the selected unit of analysis, the relevant theories, a review of the previous research, literature, and the data. In content analysis it is acknowledged that the researcher uses a particular framework or perspective to analyze the data; what you see in the dark depends on where you choose to focus the light. This does not imply that the researcher can anticipate all of the categories before the material is obtained and analyzed. In fact, imposing such constraints on the data could impede the validity of the results. There is no single meaning to be discovered in the data; rather, multiple meanings can be identified depending on the purpose of the study. If a coding scheme can be used reliably and produce relevant results for the research question, it is appropriate (Fox, 1982).

We developed our category system for the roles of hospice volunteers (listening and responding, giving and receiving information, socializing, providing spiritual comfort, providing physical comfort, and referring) from a review of the literature and a preliminary analysis of the data (Downe-Wamboldt & Ellerton, 1986). When Beaton (1990) analyzed her data, she used a previously established category system (that of Stiles, 1978, the Taxonomy of Verbal Response Modes) that was appropriate for the purpose of her investigation.

The coding system should define the critical attributes of specific categories and distinguish the similarities and differences between categories. Problems will arise with ambiguous definitions of categories and of the rules of coding. When there is high agreement on the definitions, there are fewer problems with coding the data. In defining the categories it is essential to include attributes that are exhaustive; having a particular defining attribute does not exclude the possibility of another. Furthermore, different units may have the same attributes but to a different degree. This variation in intensity of an attribute can provide meaningful insights that deepen one's understanding of the content under investiga-

tion. Different levels of measurement can be used in the analysis to distinguish these differences, for example peaceful or afraid (nominal) and fearful or terrified (ordinal). How narrow or broad the categories should be depends on the purpose of the investigator. Flaskerud and Rush (1990), for example, used the broad categories of natural and supernatural sources of illness and remedies in their study of traditional health beliefs and practices of Black Americans.

To facilitate the application of statistical analysis and for conceptual clarity, it is most frequently recommended that the categories created be mutually exclusive (Babbie, 1986; Polit & Hungler, 1991; Weber, 1985; Wilson, 1989). If a unit of analysis can be classified in two or more categories, then most statistical procedures that require that the variables be mutually exclusive will be useless to the researcher. The total category or one or more subcategories, but not both total category and subcategories, should be used to maintain the statistical independence of the content variable (Weber, 1985). As long as the categories are mutually exclusive, computer-assisted content analysis programs are available to systematically categorize and reduce linguistic data. Ultimately the decision as to whether or not to use mutually exclusive categories is made by the researcher on the basis of what is most logical in the context of the question under investigation.

Pretesting the Category System

In the next stage, a small sample of text is carefully pretested to determine if the rules for classification are clear or ambiguous. When coding a sample of data, the researcher may discover that some of the content falls outside preestablished categories. He or she then needs to create a set of categories based on the themes that appear in the data; to some degree, all research methods involve the interaction of theoretical concerns and empirical data. Samples of text that are not easily classified will provide insights for revisions to the scheme. A benefit of content analysis is that the researcher has the opportunity to devise the most appropriate definitions of the categories based on his or her interactions with the data. Moving back and forth between text and the output of content analysis provides for progressive refining and validating of the category scheme. Some how-to suggestions for the process of analysis include clarifying ideas with other researchers in the area, constantly comparing items in the data, rephrasing questions to overcome barriers to perception, thinking of like and unlike cases, listening to others' ideas, drawing back from the data to facilitate seeing the whole, and withholding final judgments as long as possible to be open to new perspectives.

Assessing Reliability

When is a study science and when is it one person's philosophy? Controversy exists over whether reliability should be sacrificed for meaning or vice versa. Researchers frequently face a difficult choice between depth or level of understanding and repeatability or reliability. The researcher wants the most empirically meaningful information without too much loss of reliability. Often compromises are essential. Whenever possible, the best solution to the dilemma between level of understanding and specifity is to use both latent and manifest content analysis approaches to data analysis. In latent content analysis, the researcher is concerned with the underlying meaning in each passage of the text. Coding the underlying meaning or latent content focuses on the tone or implied feeling, whereas coding the manifest content describes only the visible, surface, or obvious components of communication. Field and Morse (1985) described latent content analysis as reviewing data within the context of the entire data set for each participant and manifest content as a check for specific instances of the categories. For example, when the researcher's goal is to detail the psychological status of terminally ill persons, using both latent and manifest content analysis to describe the tone, meaning, and number of references to dying will provide more insightful and meaningful results than would using either approach alone.

Stability and agreement reliability are the most pertinent types of reliability for narrative data. The extent to which the results of content classification are consistent over time when the data are coded more than once by the same coder (*intrarater reliability*) can be ascertained by using Cohen's kappa for nominal data (Weber, 1985). *Interrater reliability,* or agreement between two different raters coding the same data, can be assessed using Cohen's kappa or percentage agreement (Polit & Hungler, 1991). Detailed descriptions of methods to assess interrater reliability have been provided by Krippendorff (1980) and Berelson (1952). Test–retest reliability may be used to determine if the narrative data are consistent from one time to another. Test–retest reliability may be appropriate in coding interview data when consistency is expected; conversely, it is inappropriate when change in the data are anticipated. The larger the unit of analysis, the more difficult it is to achieve satisfactory levels of reliability in coding data.

If the researcher plans to use more than one coder for the study, the reliability of the coding process must be assessed before all of the data are analyzed and disputes among coders must be resolved (Weber, 1985). The coding rules will need to be revised if the reliability is low (a kappa of 0.8 to 0.9 is the desired level, with 0.7 being the minimum

standard). After the revisions, more pretests of the coding scheme need to be completed until an acceptable level of reliability is achieved and before all of the data are analyzed. Human errors are always possible in coding data and may be related to fatigue, personal bias, and perception. Consequently, systematic checks of accuracy of coding are necessary throughout the process. Interpretations of definitions that seemed clear at the beginning of the project may change in subtle ways as familiarity with the data increases. One of the advantages of computer programs for coding data is the opportunity to achieve perfect reliability. Once the content-coding schemes have been defined, an endeavor that requires imagination, logic, creativity, and theoretical work, a computer will consistently apply the rules to text.

Assessing Validity

Whose reality is the most accurate relative to the research question? Few people share the same social, cultural, political, or historical perspective. Thus, it is absurd to think that one person can understand the subjective experience of another person exactly as he or she has lived it. What the researcher is able to know about the lives and thoughts of other people is directly influenced by his or her personal history, areas of interest, and focus. Consider the example of an elderly woman with arthritis describing for her rheumatologist how she manages her activities of daily living under the adversity of functional losses associated with arthritis. In this interaction the elderly woman relates her problems, as she experienced them, to a medical expert. Their perspectives are assumed to be different. The rheumatologist may be interested in detailing the disease process; the elderly woman, in describing her unique difficulties. Thus meanings are always relative to the perspectives of the sender and the receiver of the message.

The strategy of taking the results to the participants to have them validate one's interpretations can be a useful approach to authenticate the experiences of the participants. Achieving intersubjective agreement would simplify the analysis; however, it is not a presupposition for content analysis (Krippendorff, 1980). The researcher, who has a broader understanding of the historical context of social structures that have influenced the actions of the players, may develop a broader understanding of what is going on, in addition to the understanding that he or she may share with the participants. Multiple meanings are always present in data—there is no right meaning, only the most accurate meaning from a particular perspective.

Validity has to do with what is being measured and how well. Validity is confirmed or denied by returning to the original text to find examples

of categories and by relating relevant theory to text. Content analysis relies heavily on face or content validity that can only be determined by the judgments of experts in the area. The validity of our category scheme was supported by previous relevant research and literature (Downe-Wamboldt & Ellerton, 1986). The conceptual congruence of Beaton's (1990) data to a preexisting category scheme provided support for its validity. Flaskerud and Rush (1990) used the relevant literature, the original data, and another nurse researcher to assist with the verification of their categories. Submitting a sample of text to an independent panel of experts for coding is another method to assess the validity of the category system. An in-depth discussion of the relative merits and limitations of the use of a panel of experts in assessing validity has been provided by Brink (1991) and Stern (1991).

Factor analysis is a method of identifying clusters of related variables that has been used in content analysis to identify themes (Weber, 1985). This statistical approach can be used to identify convergent and discriminant validity when a large set of measures is available. To help establish external validity or generalizability of the categories, the researcher can code separate samples of data to determine if the categories are valid from one sample to another. Finally, if a researcher samples texts within documents, such as one part of a taped interview, then the sample should consist of whole paragraphs rather than individual sentences to maintain the context or semantic coherence of the document.

CONCLUSION

Content analysis provides a mechanism to yield interesting and theoretically useful generalizations with minimal loss of information from the original data. "It may be applied to virtually any form of linguistic communication to answer the classic questions of who says what to whom, why, how, and with what effect" (Babbie, 1986, p. 268). Financial costs are usually minimal because content analysis essentially is a coding operation involving logical and conceptualizing work that can be completed effectively by only one researcher. Disadvantages associated with this method include its being limited to recorded communications (verbal, visual, or written data), the amount of time required to code data, and the type of statistical procedures that can be applied to data. By paying careful attention to the assessment of reliability and validity, the researcher can minimize problems associated with these issues. Because of its focus on human communication, content analysis is particularly well suited to research involving the practice and education of nurses and other helping professionals.

REFERENCES

Babbie, E. (1986). *The practice of social research* (4th ed.). Belmont, CA: Wadsworth.

Beaton, J. I. (1990). Dimensions of nurse and patient roles in labor. *Health Care for Women International, 11,* 393–408.

Berelson, B. (1952). *Content analysis in communication research.* Glencoe, IL: Free Press.

Brink, P. J. (1991). Issues in reliability and validity. In J. M. Morse (Ed.), *Qualitative nursing research: A contemporary dialogue* (pp. 151–168). Newbury Park, CA: Sage.

Downe-Wamboldt, B. L., & Ellerton, M. L. (1986). A study of the role of hospice volunteers. *Hospice Journal, 1,* 17–31.

Field, P. A., & Morse, J. M. (1985). *Nursing research: The application of qualitative approaches.* Rockville, MD: Aspen.

Flaskerud, J. H., & Rush, C. E. (1990). AIDS and traditional health beliefs and practices of Black women. *Nursing Research, 38,* 210–215.

Fox, D. J. (1982). *Fundamentals of research in nursing.* Norwalk, CT: Appleton-Century-Crofts.

Krippendorff, K. (1980). *Content analysis: An introduction to its methodology* (4th ed.). Newbury Park, CA: Sage.

McLaughlin, F. E., & Marascuilo, L. A. (1990). *Advanced nursing and health care quantification approaches.* Philadelphia: W. B. Saunders.

Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research, 40,* 120–123.

Polit, D., & Hungler, B. (1991). *Nursing research: Principles and methods* (4th ed.). Philadelphia: J. B. Lippincott.

Speed, C. J. (1893). Do news now give news? *Forum, 15,* 705–711.

Stern, P. N. (1991). Are counting and coding a capella appropriate in qualitative research? In J. M. Morse (Ed.), *Qualitative nursing research: A contemporary dialogue* (pp. 135–147). Newbury Park, CA: Sage.

Stiles, W. B. (1978). *Manual for a taxonomy of verbal response modes.* Chapel Hill, NC: Institute for Research in Social Science.

Weber, R. P. (1985). *Basic content analysis.* Newbury Park, CA: Sage.

Wilson, H. S. (1989). *Research in nursing* (2nd ed.). Redwood City, CA: Addison-Wesley.