

TECHNICAL NOTES

Using a Grid for Interpreting and Presenting Qualitative Data

Carl Wise

Lisa Ann Plowfield

David L. Kahn

Richard H. Steeves

A difficulty often encountered in analyzing and reporting qualitative data is finding ways of representing the data that convey an overall sense of the phenomenon under study and its interpretation without loss of salient details. A detail that is often missing is information about who and how many among the informants contributed to each substantive data category. A substantive data category is a statement of the meaning of a phenomenon derived from the data that is usually produced in analysis as an intermediary step before construction of the final theme, theory, or metaphor. For example, Olshansky (1987) constructed a grounded theory of the process that couples go through as they struggle with the identity of "infertile." As part of her analysis she identified four substantive categories that represented the possible outcomes of working toward fertility: overcoming infertility (conceiving), circumventing infertility (adopting), reconciliation with infertility, and remaining in limbo.

Information concerning which informants contributed to substantive categories is useful in two ways. First, the information may demonstrate that subgroups of informants differ. Even though they may belong to the same speech community and can be presumed to experience the same phenomena (Eastman, 1980), certain subgroups may tell different stories about their experience. For example, older informants may contribute to some of the substantive categories and not to others, and female informants may contribute to categories of meanings that males do not.

Second, this information could be useful in helping identify patterns in the data. For instance, if it becomes apparent that those informants who contributed to substantive Category 1 also contributed to Categories 7 and 9 but not to Categories 3 and 8,

Carl Wise, Lisa Ann Plowfield, School of Nursing, University of Virginia, Charlottesville; David L. Kahn, School of Nursing, University of Michigan, Ann Arbor; Richard H. Steeves, School of Nursing, University of Virginia, Charlottesville.

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it may become useful to think of these categories as falling into constellations. It would then become important to discover how the categories related in this way are also related in meaning, that is, discover the meaning characteristics of the constellations.

THE DATA GRID

One simple method of displaying the relative contributions of informants to data categories is through the use of a data grid. Each informant is listed along the y-axis of the grid, and as substantive categories are discussed, developed, and named, they are listed along the x-axis. The appropriate box is marked for each informant who responds to a category; if an informant responds more than once, that box receives additional marks. In this way, although the details have disappeared, there remains a sense of the story told by each informant captured in the categories to which she or he contributed.

Once a grid has been established it immediately yields some interesting information. For instance, the marks in each column can be added to give an idea of the robustness of each substantive category. The marks in the rows can be added to determine the informants who contributed the most and may indeed be referred to as culture bearers. Also columns and rows can be rearranged to identify patterns. The rows may be rearranged to split the informants into different groupings based on an a priori scheme, such as demographic information, or based on similar patterns of response. Likewise, the columns may be rearranged according to an a priori scheme (i.e., in order to shed light on a theoretical speculation about how the informants "should" have responded) or according to constellations of similar responses.

AN EXEMPLAR GRID

The idea of a data grid was first developed in a study of the language that nurses used to talk about their practice (Kahn & Steeves, 1988; Steeves, Kahn, & Benoliel, 1990). However, the present example was drawn from an ongoing study of the attitudes of oncology physicians, oncology nurses, and patients with cancer and their families about how discussions about end-of-life medical treatments should take place. As a part of the study, all the informants were asked what they believed were the barriers that prevented useful discussions of end-of-life treatments. Table 1 and Figure 1 represent the responses of physicians to this question.

When first categorizing the data, the researchers developed a list of codes or categories and frequency listing of categorized responses; these are displayed in Table 1. This listing may be interesting, but because it does not record the density of responses per informant or the relative contributions of informants to substantive categories it is difficult to identify possible patterns and constellations of data or informants.

TABLE 1: Listing of Physicians' Responses

| <i>Category</i> | <i>Number of Responses</i> |
|--------------------------------------|----------------------------|
| Patient's stress will increase | 4 |
| Protects emotional self | 3 |
| Mandatory legislation | 3 |
| Legal issues | 1 |
| Too busy | 2 |
| Lack of education | 1 |
| Uncertainty of situation | 2 |
| MDs don't share with patient | 2 |
| Patient avoidance of topic | 7 |
| Lack of patient/family knowledge | 6 |
| Society believes "life at all costs" | 4 |
| Family disagreement | 2 |

As a next step in the analysis, the researchers constructed a data grid (Figure 1). The informants were arranged according to their practice settings: oncology attendings at a large university medical center, residents in the same setting who had recently finished an oncology rotation, and oncologists who admitted their patients to a small community hospital. Many different groupings of the substantive categories of codes were attempted, offering a variety of insights. Figure 1 represents a grouping of codes based on the sources of the barriers to discussions of end-of-life medical treatment. Eight of the codes identified the physician as the barrier and four of the codes placed the blame on patients and/or families.

As a result, some patterns became apparent. For example, the university attending physicians tended to report physician-related barriers more often than patient-related ones, whereas the house staff, who were often the students of these attendings, identified both patient- and physician-related barriers. The community physicians present a unified if rather curious picture. They had little to say on the topic of barriers except that their patients avoided the topic of end-of-life medical treatments. These observations would have been difficult if not impossible to obtain from the listing of responses in Table 1. Clearly, data grids do not tell a complete story. An explanation of why the attendings and house staff are different is not given, nor is there an explanation of why the community physicians were so different from either group. An examination of the details of the stories told by each group may give some answers.

CONCLUSION

Stern's (1989) discussion of the use of counting in qualitative data analysis is important in an evaluation of the data grid proposed here. As she put it, there are both appurtenant and dubious uses of numerical measures in qualitative analysis. The

| | Physician-Related Barriers | | | | | | | | Patient-Related Barriers | | | |
|--------|--------------------------------|-------------------------|-----------------------|--------------|----------|-------------------|--------------------------|-------------------------------|----------------------------|----------------------------------|--------------------------------------|---------------------|
| | Patient's Stress Will Increase | Protects Emotional Self | Mandatory Legislation | Legal Issues | Too Busy | Lack of Education | Uncertainty of Situation | MD's Don't Share With Patient | Patient Avoidance Of Topic | Lack of Patient/Family Knowledge | Society Believes "Life at All Costs" | Family Disagreement |
| Univ 1 | • | | • | | | | | | | | | |
| Univ 2 | | | | | | | • | • | | | | |
| Univ 3 | | | • | | | | • | • | | | | |
| Univ 4 | | • • | • | • | | | | | | | | • |
| CH 1 | | | | | | | | | • | | | |
| CH 2 | | | | | | | | | • | | | |
| CH 3 | | | | | | | | | • | | | |
| Res 1 | • | • | | | | • | | • • • | • • | | | |
| Res 2 | • | | | | • • | | | | | | | |
| Res 3 | | | | | | | | • | | • • | • | |
| Res 4 | • | | | | | | | | • • • | • • | | |

Figure 1: Data Grid

NOTE: UNIV = oncologists who work in a university medical center, CH = oncologists who admit their patients to a community hospital, and Res = second-year residents in a university medical center.

difference between the two is that one use enhances the researcher's ability to determine the meaning of linguistic data and the other supplants that search for meaning with a search for numerical significance. The data grid, as it is proposed, is to some degree a numerical device as well as a visual one. In both cases, it is intended to help researchers understand the context of substantive categories, that is, where they lie in the field of possible meanings in relation to each other: an appurtenant intention.

The written presentation of findings in qualitative research often includes narratives, synopses of exemplar cases, and bits of conversation and exposition in the words of the informants. The goal is to give the reader a sense of the context from which the general points or themes emerge. By understanding the thematic context, the reader might make some judgment about the researcher's analysis. A data grid also provides, within a flexible and compact format, an alternate look at the context from which the themes arose by making clear the differential ways that information was provided by various groups of informants. Clearly, this simple tool has some benefits to offer qualitative researchers and the consumers of their findings.

REFERENCES

- Agar, M. H. (1986). *Speaking of ethnography*. London: Sage.
- Eastman, C. M. (1975). *Aspects of language and culture*. Novato, CA: Chandler & Sharp.
- Kahn, D. L., & Steeves, R. H. (1988). Caring and practice: A construction of the nurse's world. *Scholarly Inquiry for Nursing Practice*, 2(3), 201-216.
- Olshansky, E. F. (1987). Identity of self as infertile: An example of theory generating research. *Advances in Nursing Science*, 9(2), 54-63.
- Steeves, R. H., Kahn, D. L., & Benoliel, J. Q. (1990). Nurses' interpretation of the suffering of their patients. *Western Journal of Nursing Research*, 12(6), 714-730.
- Stern, P. N. (1989). Are counting and coping *a cappella* appropriate in qualitative research? In J. M. Morse (Ed.), *Qualitative nursing research: A contemporary dialogue* (pp. 135-148). Rockville, MD: Aspen.