

8. Enter, Review and Analyze the Data

The purpose of converting responses from the survey to data files is to compile the responses in a single place for use during analysis. However, regardless of the survey method:

- record responses in an electronic database,
- check the accuracy of recorded responses and records (data),
- reduce responses to manageable units for analysis,
- analyze and interpret the data, and
- address data storage and security.

While generally conducted sequentially, these steps will likely overlap if the survey is administered over a period of time.

Recording and Coding Responses into the Data Entry Utilities

The POMP website contains a data entry utility for each of the five service-specific survey instruments, with the databases for the cross-cutting modules embedded in each of the service-specific utilities. The database utilities are posted on the POMP website and are easily downloaded.

After administering the survey, the responses from each question are entered into the customized data entry utilities for each survey instrument. The data entry utilities have drop down menus for the user to enter the responses to the close-ended questions. There are fields in the database to enter verbatim responses to the open-ended questions.

Once all of the responses are entered into the data entry utility, the responses from each open-ended question are collated. This provides an opportunity for the data analyst to review the responses and to identify codes. The codes are textual or numerical representations of themes. For instance, there is an open-ended question on the caregiver survey instrument that asks how the service has helped the caregiver. When all of the survey instruments have been entered into the database, and all of the responses to the open-ended question have been collated, the analyst then examines the responses to the question for themes. After a theme is identified, it is given a specific code. Use of the new code gives the analyst an opportunity to identify groups of responses that reflect a particular theme.¹

1 A good guide to quantitative analysis is Miles, M, & Huberman, A.M. (1994). *Qualitative Analysis: An Expanded Sourcebook*, Thousand Oaks, CA: Sage Publications.

Check Data Accuracy

Before analyzing and interpreting the data, ensure the accuracy of the data entered. First make sure that the respondents answered each question properly and that responses in the database are correct.

1. Check all responses from all returned survey instruments.
2. Confirm that the number of respondent records in the data set is the same as the number of returned surveys to ensure that no data were omitted or duplicated.
3. Check the accuracy of all numeric codes for each variable name in the data file. For example, if only codes 1-4 are applicable for question 1, ensure that a code of 6 is not inadvertently entered into the data file.
4. A basic frequency run for each variable name will reveal data entry errors by showing whether the values are within the parameters.

Analyze Data and Interpret Results

Data Analysis

Once the responses are converted into a data file and checked for accuracy, analysis of the data can begin. Some basic statistical measures to consider for analysis include measures of central tendency, frequencies and percentages, and cross-tabulations. As an introduction, it is good to summarize key demographic characteristics of the respondents to give readers an understanding of who completed the survey. For example, include the mean and range of the age of respondents, the percentage of males and females, and different races.

Measures of Central Tendency

Measures of central tendency give an indication of where the center of the response distribution is located. The most common measure of central tendency is the mean (or average). Another measure of central tendency is the median. The median is the middle value when data are arranged from the lowest value to the highest value. Last, the mode is the value that appears most frequently in the data set. For example, suppose you asked five service recipients their age, and these were their responses:

68, 72, 75, 82, 82.

Based on these responses, the mean is 75.8, the median is 75, and the mode is 82.

Frequencies and Percentages

Frequencies and percentages are useful statistics to analyze the responses to items that ask service recipients to rate programs and services. These statistics will tell how many and what percentage of people responded with each answer. For example, if a person conducted a survey of congregate meals, calculate the number and percentage of service recipients who rated the program excellent, very good, good, fair, and poor. For simplicity, group certain responses together. In the above example, rather than report on the five possible answers, provide statistics on the number and percentage who rated the service excellent, very good, and good and the percentage who rated the service fair and poor.

Cross-Tabulations

Analyze two or more variables simultaneously by running cross-tabulations. Cross-tabulations allow a comparison of the responses of different groups of service recipients. For example, do men and women rate the services similarly? With a cross-tabulation table, an analyst can see the distribution of respondents' ratings by sex. If the sample size is sufficient, the analyst may opt to conduct statistical tests to ascertain if differences did not occur by chance alone.



Data Storage and Security

Survey staff need to ensure that the completed survey instruments and electronic data files are properly stored to protect the confidentiality of service recipients. A data storage and security protocol is determined before obtaining IRB approval to conduct the survey. The protocol includes clear instructions on where to store the completed survey instruments and data files and who can have access to this information. Any additional security measures must be detailed in the protocol, including the use of locked file cabinets to store completed survey instruments and password-protected data files, to ensure that only those with permission can access confidential information. The data storage and security protocol includes guidelines on the use of portable devices such as laptop computers and flash drives.

In addition, check with the legal department or other appropriate department regarding how long data files and paper questionnaires must be kept. Public document retention laws differ by state, but five to seven years is a general “rule of thumb.” If the completed survey documents have been scanned, shred the paper version because the scanned documents are generally considered the “legal entity.”