

TABLE 13-7		
VARIABLE TYPE		
VARIABLE TYPE	DEFINITION	EXAMPLE
Nominal	Data that can only be in one category	Colors
Ordinal	Data that can be placed in a natural order (i.e., 1 to 10); however, the distinction between values is not always the same	Ranking of hospitals (i.e., #1, #2, #3, etc.)
Interval or discrete	Data that are in order and where difference between values is equivalent	Temperature
Ratio or continuous	Data that are in order and <u>have</u> a meaningful zero	Number of falls per 1000 patient days

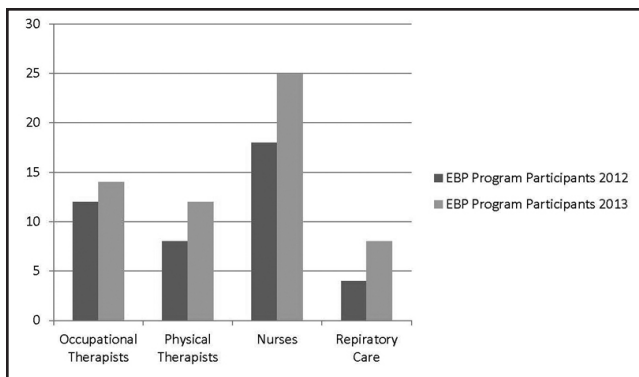


Figure 13-1. Participants in EBP program.

Visual Representation

A quick and easy way to summarize reduced data is to generate a frequency distribution or “the frequency of occurrence of each observation or group of observations” (Petrie, 2006, p. 1125). See Figure 13-1 for a bar chart representing the frequency in each categorical variable. A pie chart is another way to visually present frequency data. A histogram in Figure 13-2 shows the frequency of each score on the Y-axis and the measured variable—in this case a depression score—on the X-axis. The histogram shows the shape of the data. In Figure 13-2, the data are symmetrical and is a bell-shaped curve or a normal distribution. In other words, most of the scores fall in the middle of the scale, while fewer scores are on either end of the curve. A curve can be asymmetrical, where a positive skew (i.e., skewed to right) shows the data falling mostly on the left with fewer scores on the right. A negative skew (i.e., skewed to left) would show most of the data on the right with fewer scores on the left. Whether the distribution of a variable is normal is important in determining the type of statistic to use to complete the data analysis.

Scatterplots provide an excellent way to display the relationship between numerical variables (Green & Salkind, 2008). By simply plotting two variables against one another, relationships can be quickly identified when the data points approximate a diagonal line, such as in Figure 13-3. In this

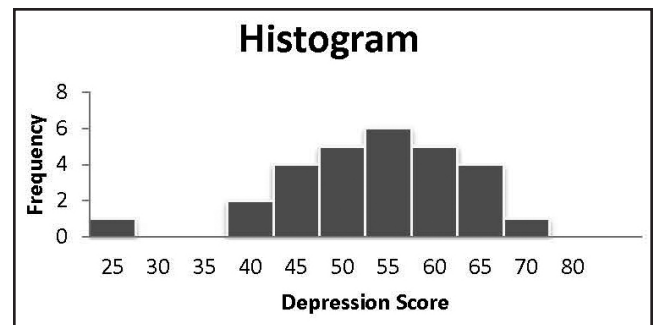


Figure 13-2. Histogram of scores on depression scale.

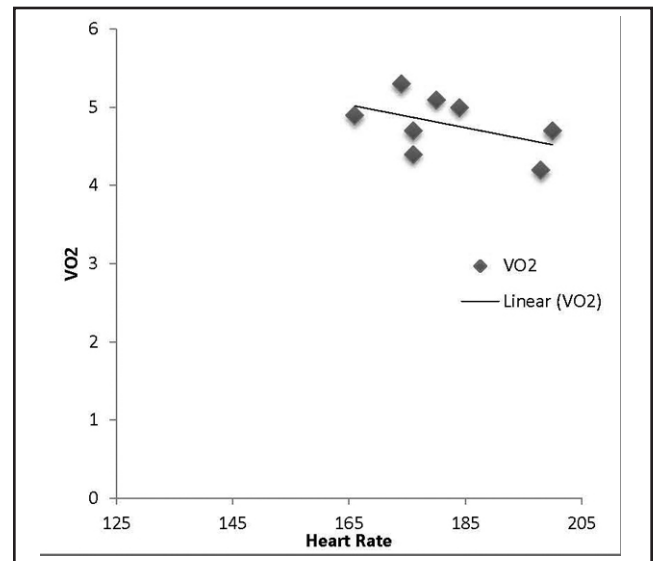


Figure 13-3. Scatterplot showing relationship between two variables.

example, the relationship between heart rate and maximum rate of oxygen consumption (VO₂) during incremental exercise shows an inverse relationship, as one variable goes up (heart rate), the other variable, VO₂, goes down. A positive relationship shows that both variables increase together. A negative relationship between two numbers is one in which a decrease in the value of one number results in a decrease in the value of the other number.