9

Writing about Distributions and Associations

SOLUTIONS

1. "Table 6.3 shows the demographic composition of the study sample. Just over half of the 2,058 respondents were female (51.4%). Persons aged 40 to 64 years were the largest single age group in the sample (41.4%), just edging out persons aged 18–39 (37.8%). Elderly persons (aged 65 and older) made up about one-fifth of the sample.

   The most common racial/ethnic group was non-Hispanic whites, with 2½ times as many respondents as the second largest racial/ethnic group, non-Hispanic blacks (55.6% and 22.1%, respectively). Hispanics comprised the third-largest group (15.9%), followed by Asians (4.2%) and persons of other racial/ethnic origin (2.2%)."

3. "In 1996, age-specific death rates in the United States traced the familiar J-shape, with a substantial decline between infancy and early childhood, slowly increasing rates until middle age, and then an accelerating increase into old age. The lowest death rate was observed among children aged 5–9 years (19.4 deaths per 100,000 persons)—a 50-fold decrease from the death rate among infants (755 per 100,000). From age 50 onward, the death rate increased about 50% for each successive 5-year age group. Approximately one out of every six persons aged 85 or older died in 1996—the highest death rate of any age group."

5. Referring to figure 9A.
   a. Both the percentage of adults who are obese in 2002 and the percentage change in obesity rates between 1992 and 2002 are continuous variables. Percentage obese is a ratio variable; percentage change is an interval variable (no absolute zero point).
   b. A scatter chart is used in this case because many *X* values have more than one *Y* value. Also, using a scatter chart conveys the almost complete lack of an association between obesity rate and percentage change in obesity rate.
   c. "In 2002, at least 17%, and as many as 28% of adults in each of the 50 United States were obese. Obesity rates increased by 40% to 114% between 1992 and 2002. Somewhat surprisingly, there was virtually no correlation between the obesity rate in 2002 and the percentage change in obesity over the preceding decade. Large percentages changes were observed across the full range from low- to high-obesity-rate states."
   d. The Pearson correlation is the usual measure of association between two continuous variables.