

# **Module 4: Pie Charts and Component Band Charts**

This module discusses the circumstances for which graphs may be preferred to tables and provides some general information about graphs. It then discusses pie charts and component band charts

# Graphs versus Tables

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- Advantages :
  - Simplicity, clarity
  - Easily remembered visual image
  - Picture of complex relationships
  - Emphasis
  - Popular
- Disadvantages :
  - Lack of precision
  - Lack of flexibility
  - Provide for distortion

# Axes of Reference

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- Rectangular (cartesian)
- Circular (polar, angular)
- Geographical

# Types of Graphs

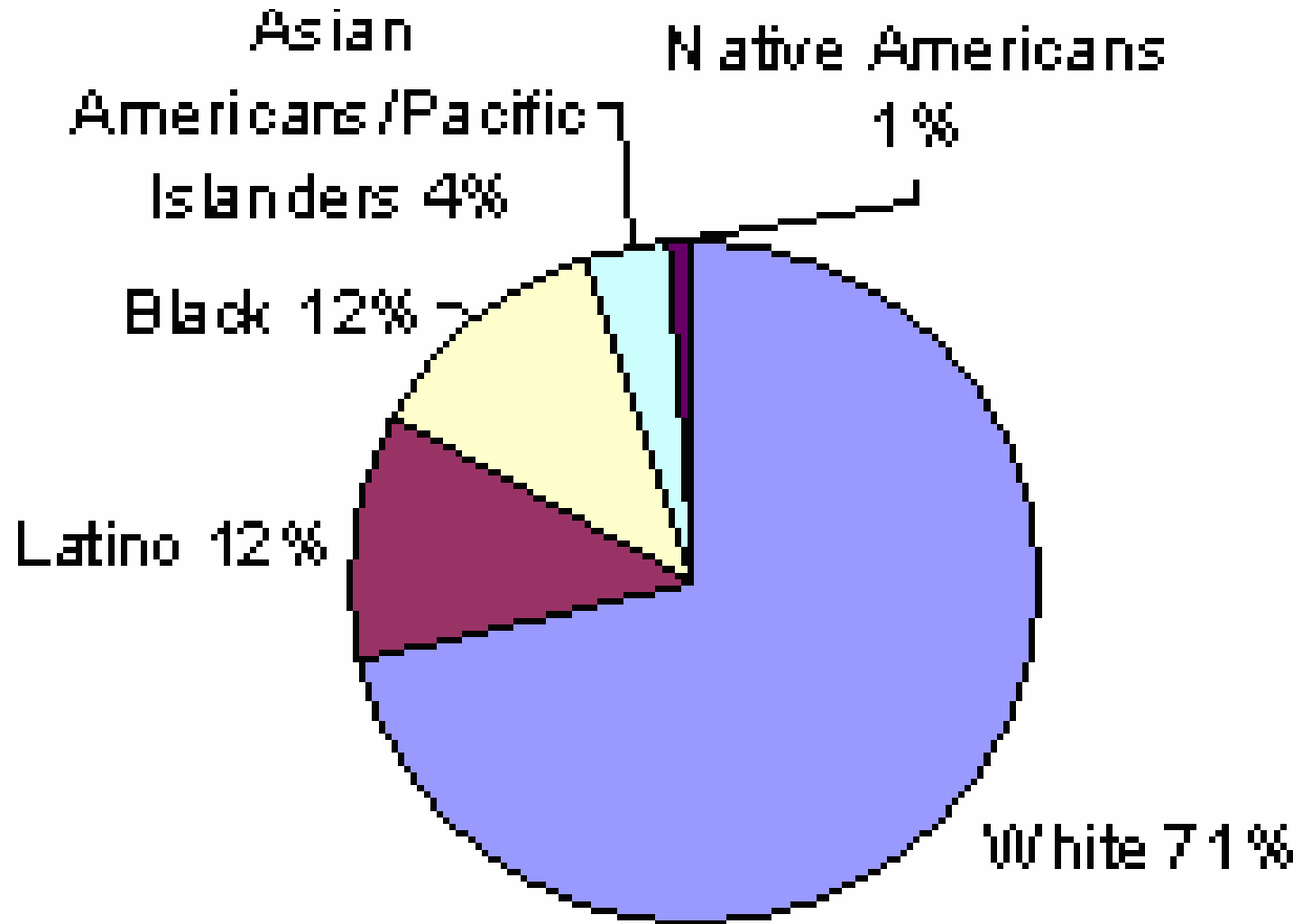
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- Pie Chart
- Component Band Chart
- Bar Chart
- Spot Map
- Rate Map
- Arithmetic Scale Line Graph
- Semi-Logarithmic Scale Line Graph
- Histogram
- Frequency Polygon

# Circular: Pie chart

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Figure - US Population by Race/Ethnicity: 2000



Source: *Am J Public Health, Dec.2003; 93:2094*

Data are from the US Bureau of the Census

# Circular: Pie chart

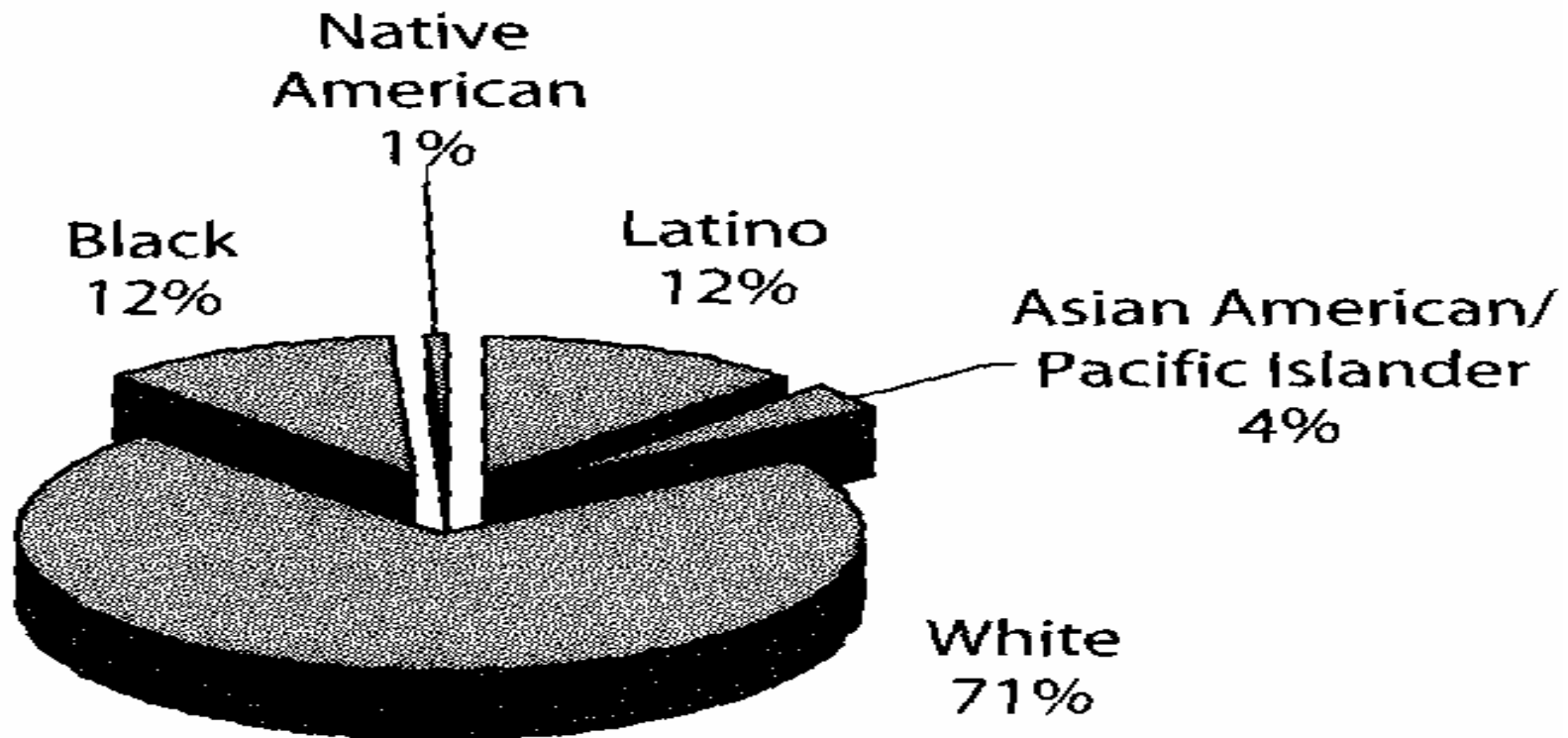
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**Frame of reference: Circle of 360 degrees**

- **Use:** Show how a whole circle is divided into parts
- **Rules:** Start at 12 o'clock and include segments in descending order of magnitude
- **Title :** State what, how classified, where and when in reference to slices
- **Source:** Reference for data published elsewhere
- **Caution:** Using two or more pie charts side by side to depict the relative magnitude of the parts of two or more entities generally does not work well. The component band chart is a much better graphical device for this situation.

Source: *Am J Public Health, Dec.2003;93:2094*

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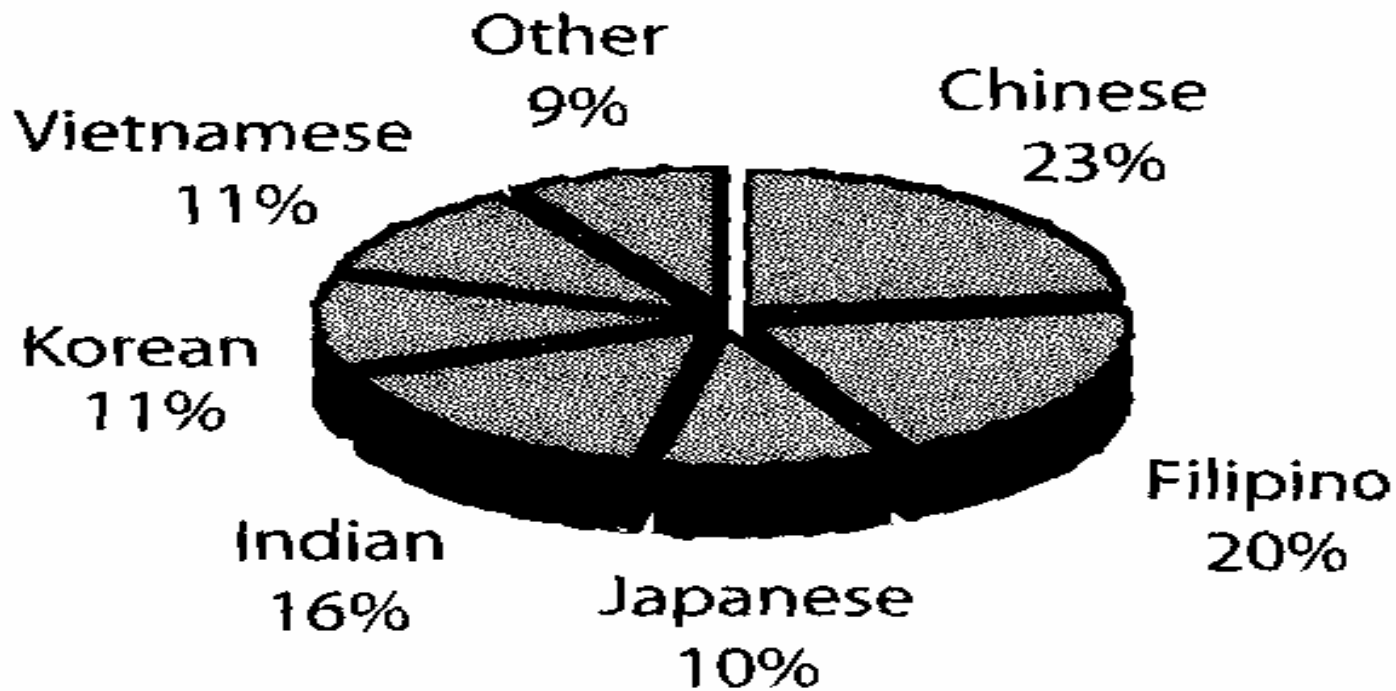
Source. Data are from the US Bureau of the Census.<sup>1</sup>

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**FIGURE 1—US Population by Race/  
Ethnicity: 2000.**

Source: *Am J Public Health, Dec.2003;93:2094*

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Source. Data are from Barnes JS, Bennett CE.<sup>11</sup>

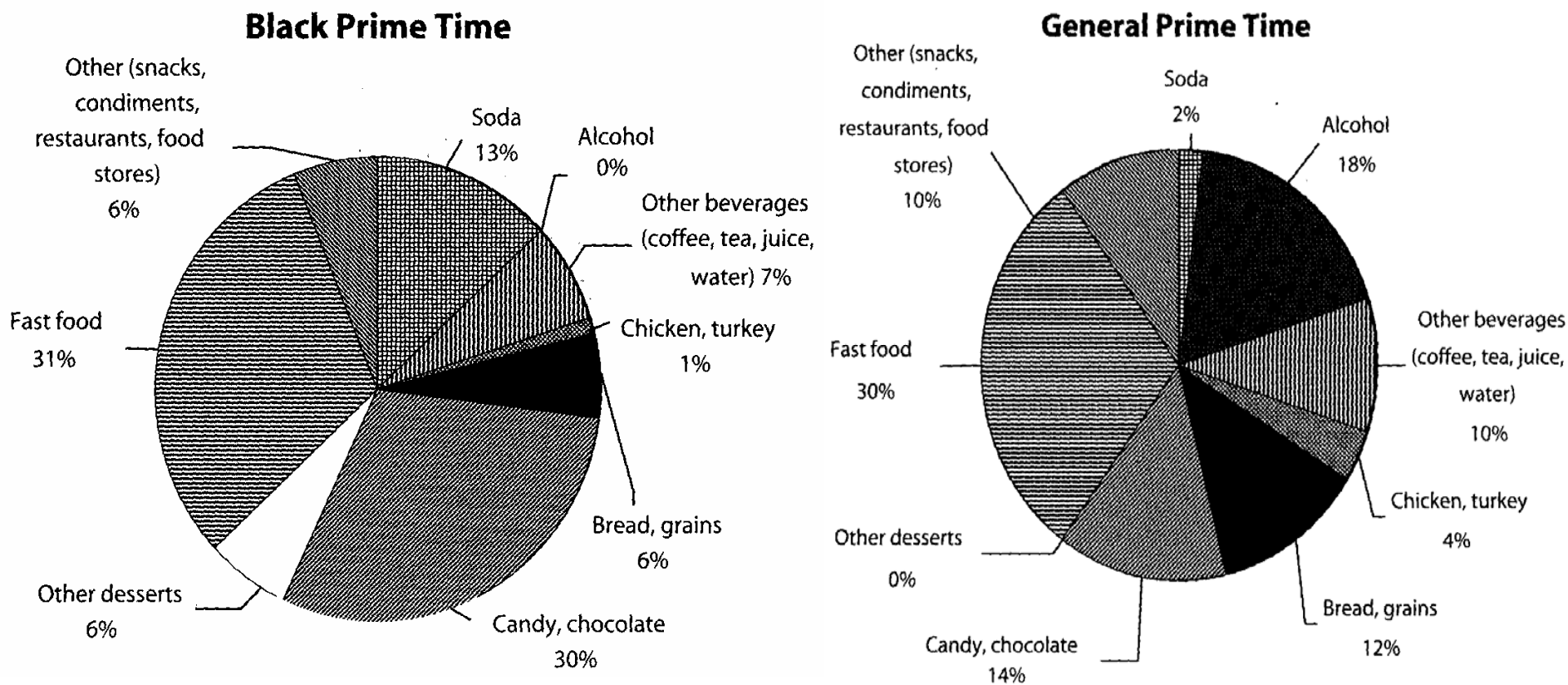
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**FIGURE 3—US Asian American and Pacific Islander Population by Race/Ethnicity: 2000.**



**Source: *Am J Public Health, March 2003;93:440***

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**FIGURE 1—Composition of food commercials on Black prime time and general prime time.**

Source: *Am J Public Health, Dec.1999;6:830*

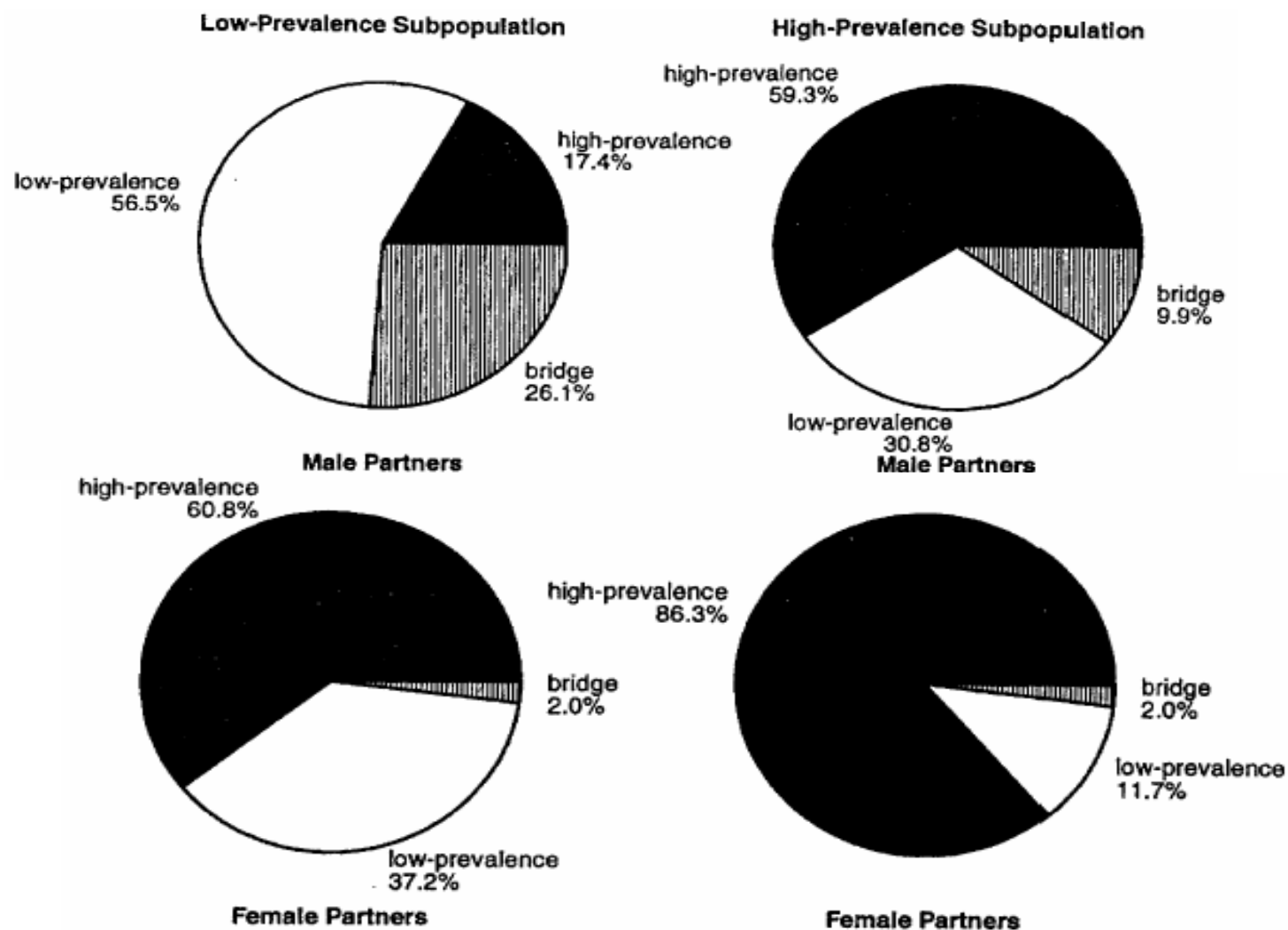
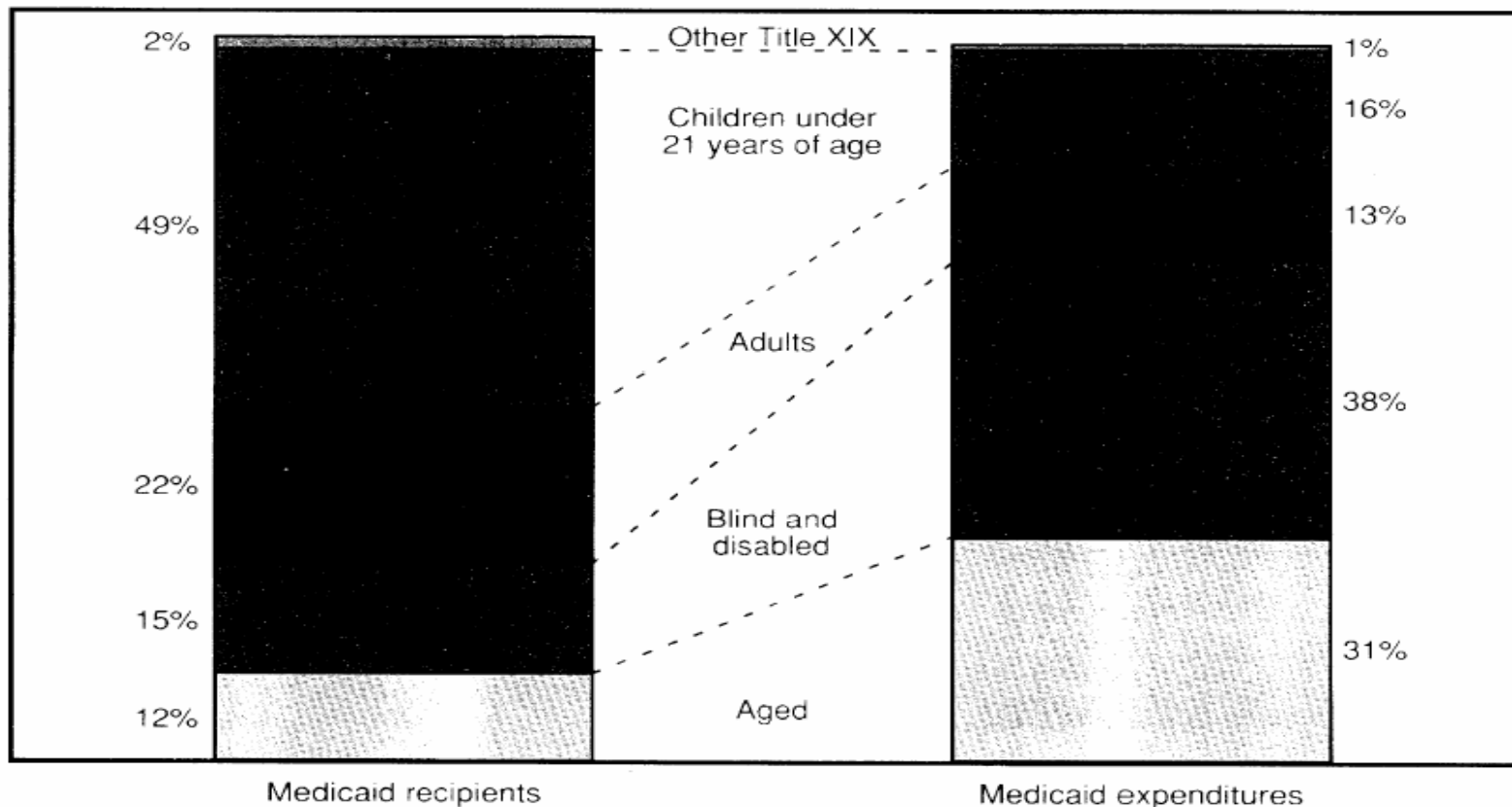


FIGURE 2—Proportions of partners in designated subgroups named by high-prevalence, low-prevalence, or bridge individuals with gonorrhea.

# Component Band Chart

## Medicaid

Figure 28. Medicaid recipients and expenditures by basis of eligibility: United States, fiscal year 1993



NOTES: Other Title XIX includes some participants in the Supplemental Security Income program and other people deemed medically needy in participating States. Children under the age of 21 years includes children in the Aid to Families with Dependent Children (AFDC) program. Adults are those in families with dependent children and include those in the AFDC program. Percents do not add to 100 because of rounding.

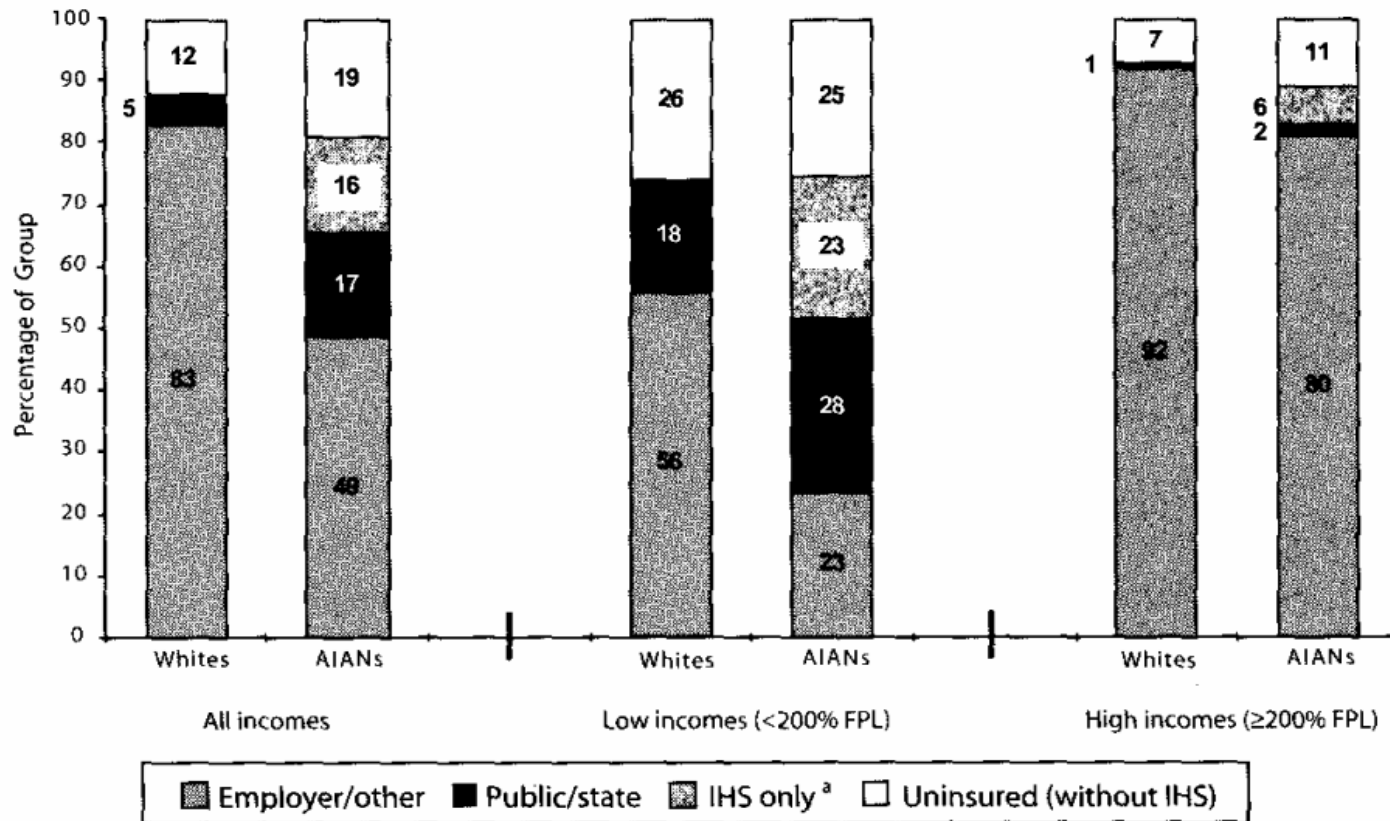
SOURCE: Health Care Financing Administration. See related *Health, United States, 1994*, tables 140 and 141.

# Component Band Chart

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- A type of bar chart
- Ideal for comparing two or more sets of percentages
- A pie chart is generally better for one set of percentages

Source: *Am J Public Health, Jan. 2004;94:56*

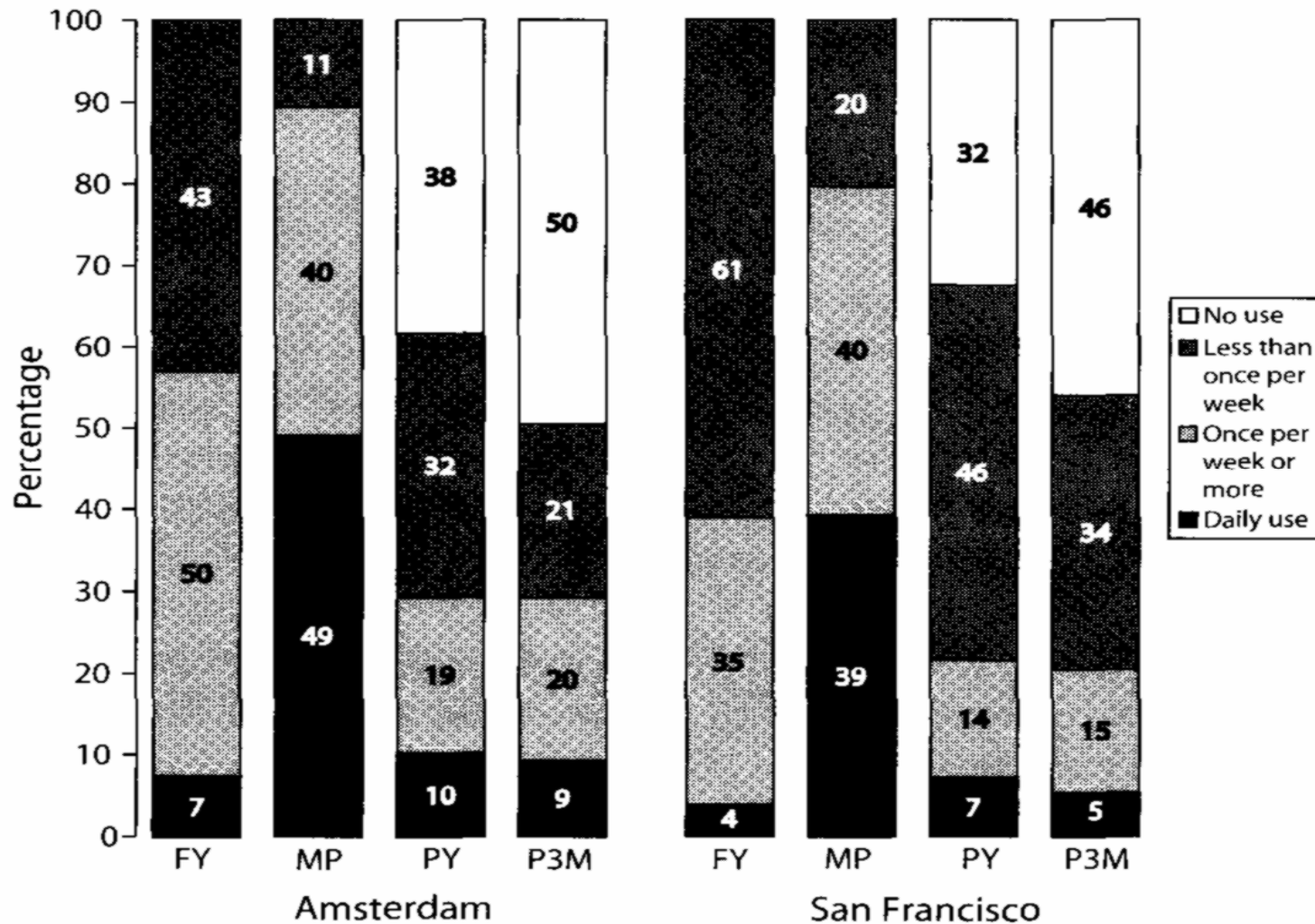


Note. FPL = federal poverty level; AIANs = American Indians/Alaska Natives; IHS = Indian Health Service.

<sup>a</sup> "IHS only" includes American Indians/Alaska Natives who are uninsured and indicated that the Indian Health Service (IHS) was their only source of coverage.

**FIGURE 1—Sources of Coverage and Care, by Income, Whites and American Indians/Alaska Natives, 1997 and 1999.**

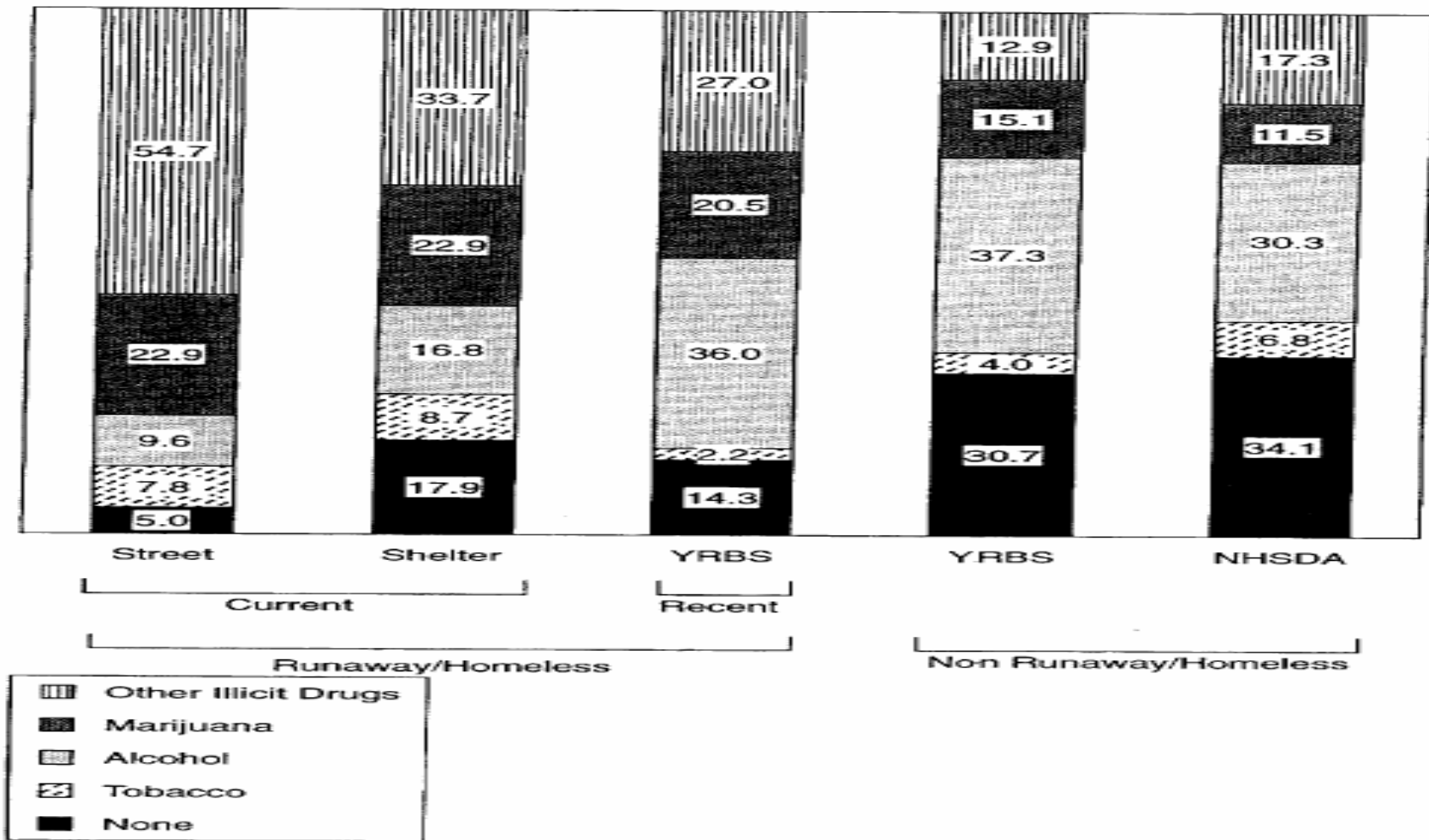
Source: *Am J Public Health, May 2004;94:838*



Note. FY = first year of regular use ( $\geq$  once per month); MP = maximum-use period; PY = past year; P3M = past 3 months.  
<sup>a</sup>All respondents.

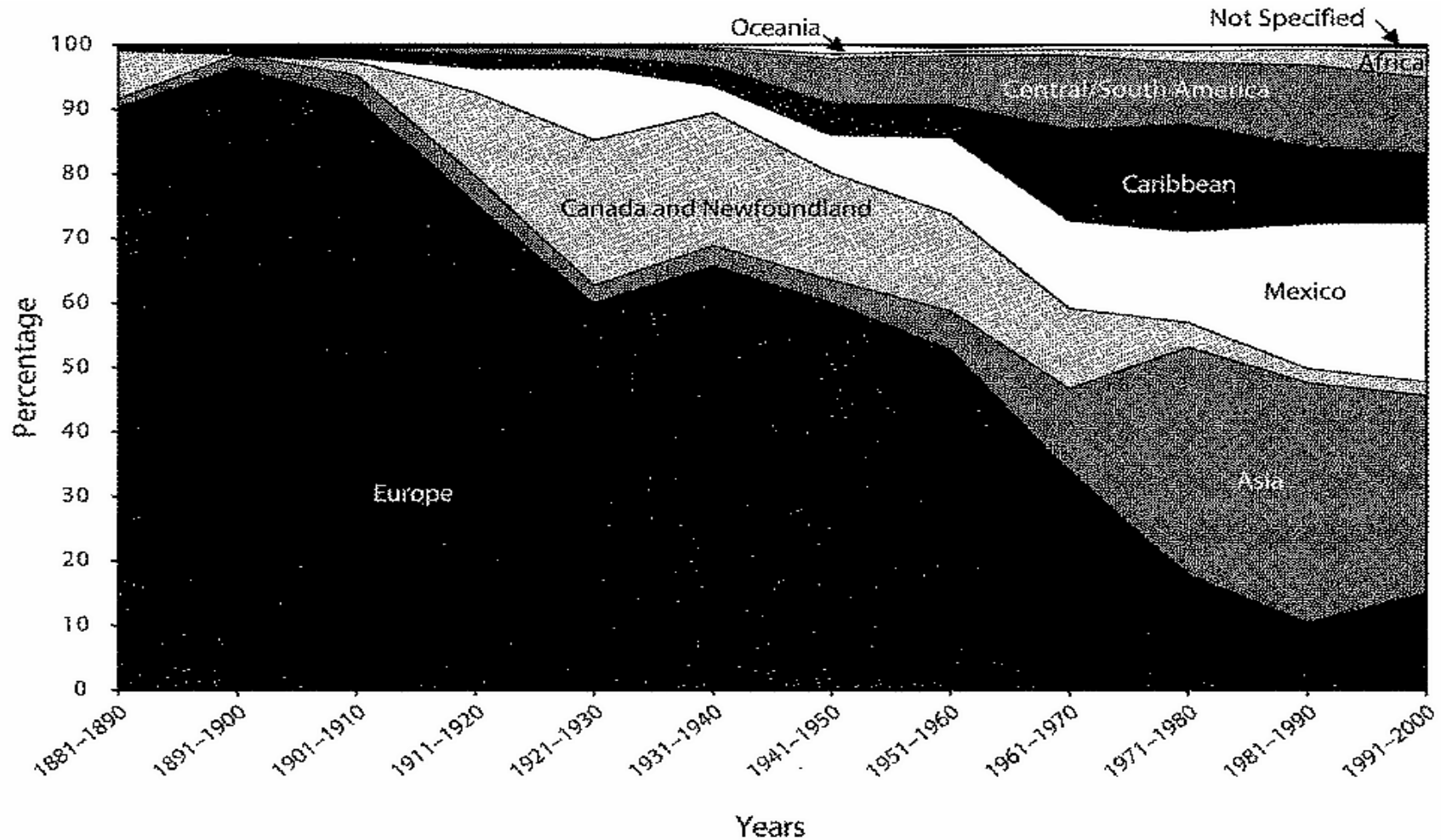
**FIGURE 1—Frequency of cannabis use for 4 periods, by city (%).<sup>a</sup>**

Source: *Am J Public Health, Dec. 1999;89:1859*



Note. Estimates for shelter and NHSDA samples are weighted. Additionally, estimates from the street and shelter surveys are standardized to the NHSDA survey on the following variables: age group (i.e., 12–17 and 18–21), gender, and race/ethnicity (i.e., White, Black, and other). The reference periods for substance use in the street and shelter surveys covered the period from 30 days before the youth left home until the day of the interview; the reference period for the NHSDA survey was lifetime.

Source: *Am J Public Health*, April 2004;94:534

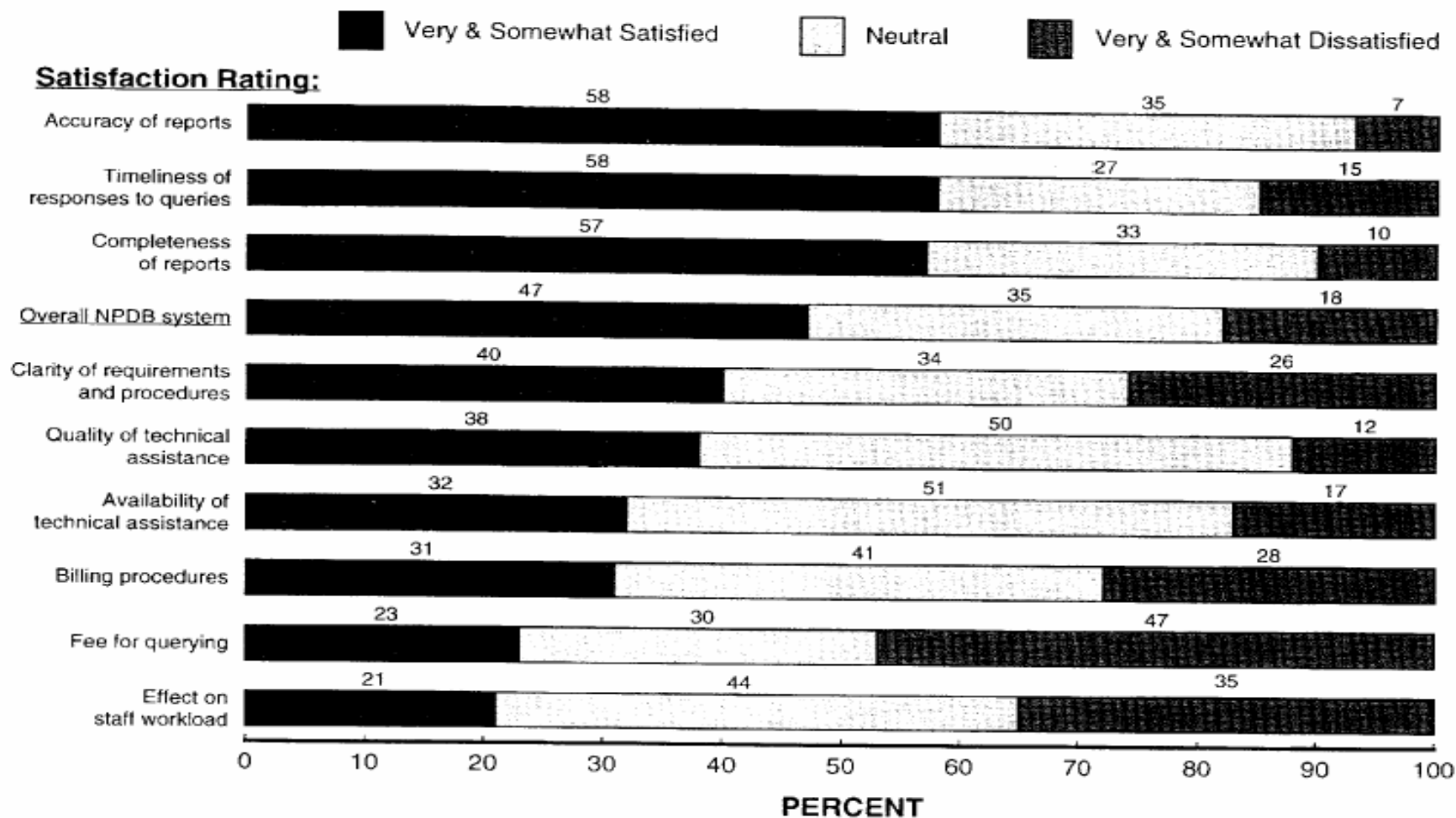


Source. 2000 Statistical Yearbook of the Immigration and Naturalization Service. Available at <http://uscis.gov/graphics/shared/aboutus/statistics/imm00yrbk/imm2000list.htm>. Accessed February 25, 2004.

**FIGURE 1—Immigration by region, expressed as a percentage of total immigration, 1891 through 2000.**



Source: *Am J Public Health, Feb. 1997;87:665*

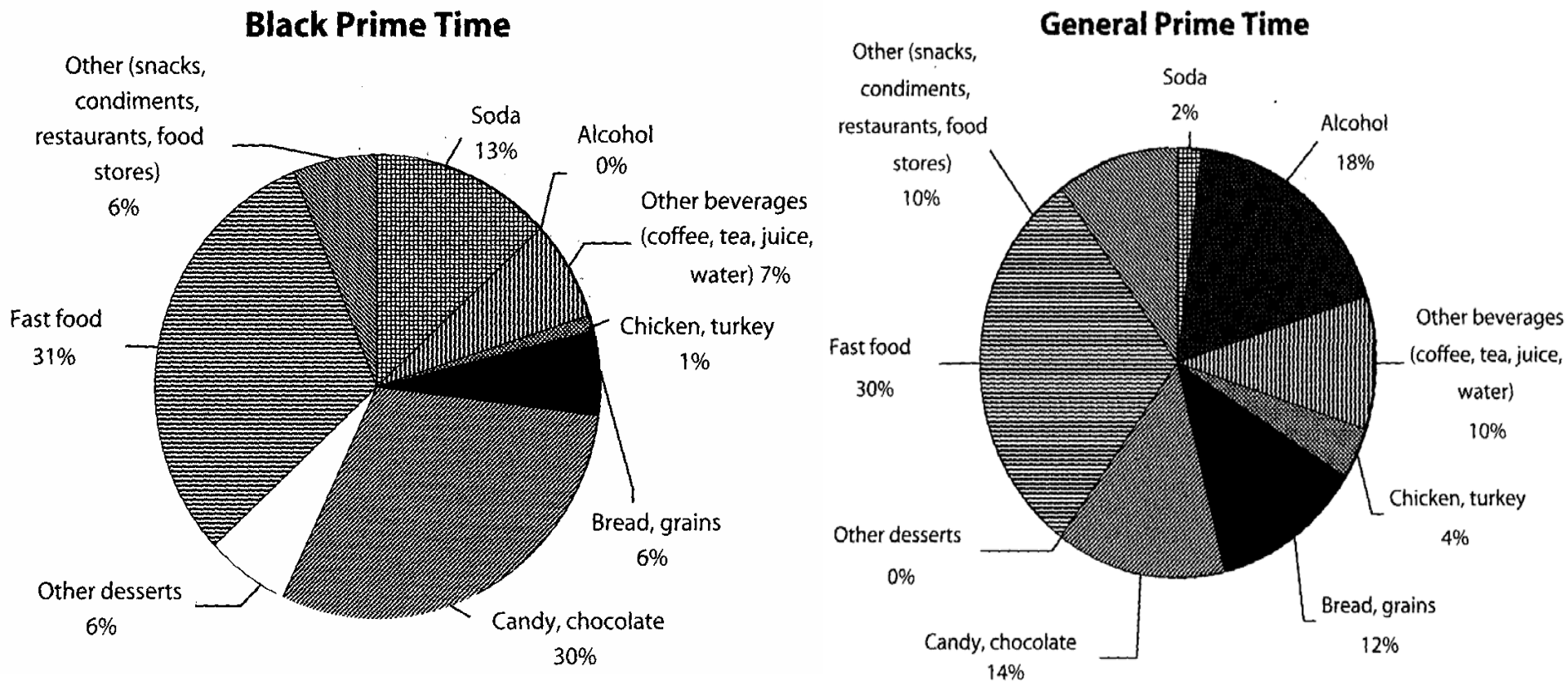


Number of Responses (top to bottom): 137, 137, 137, 135, 136, 137, 136, 138, 138, and 138.

FIGURE 1—Rural hospital administrators' satisfaction with aspects of the National Practitioner Data Bank (NPDB).

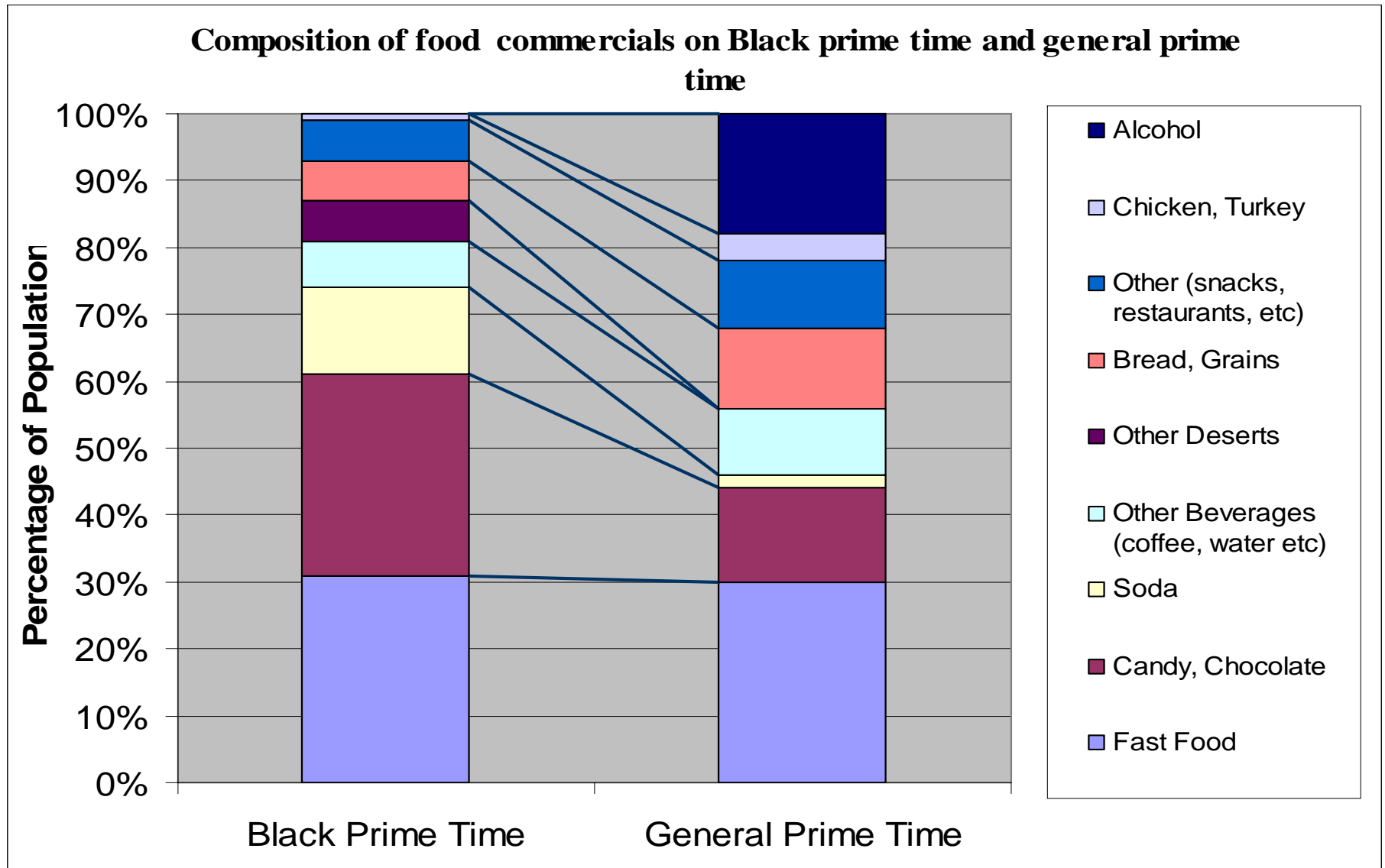
**Source: *Am J Public Health, March 2003;93:440***

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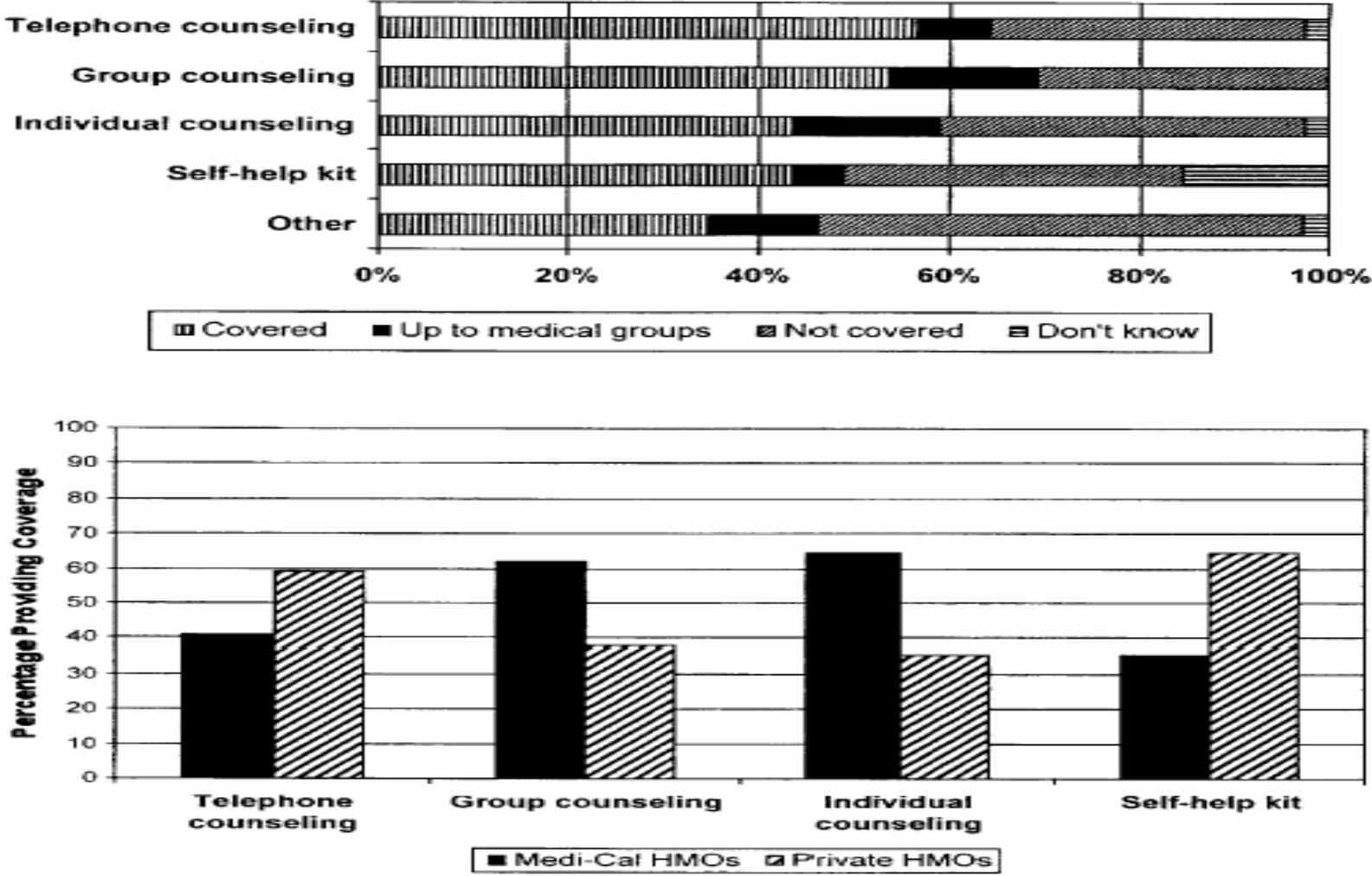


**FIGURE 1—Composition of food commercials on Black prime time and general prime time.**

**Source: *Am J Public Health, March 2003;93:440***



Source: *Am J Public Health, Sept. 2001;91:1393*



**FIGURE 1—Coverage of prenatal smoking cessation services among California health maintenance organizations (N = 39).**