Dental Expenditures and Source of Payment by Race/Ethnicity and Other Sociodemographic Characteristics

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Abstract

Objective: *This study presents race/ethnic-specific distributions of dental expenditures and their sources of payment by socioeconomic characteristics among US working-age adults.* ***Methods:*** *Data for persons aged 19–64 years from the 1987 National Medical Expenditure Survey (NMES) (n=18,696) were used to calculate mean dental expenditures and their 95 percent confidence intervals.* ***Results:*** *Dental expenditures were reported by 44.5 percent of participants. Non-Hispanic whites and persons with higher income were more likely to report dental expenditures than their counterparts. Among persons reporting expenditures, those with lower income had lower expenditures than higher-income persons. No differences in the amount of expenditures by race/ethnicity, sex, or employment status were observed. In all race/ethnic groups almost half the expenditures were paid out-of-pocket and one-third by dental insurance.* ***Conclusion:*** *While sociodemographic characteristics determined who had dental expenditures, they did not determine the amount or source of those expenditures. [J Public Health Dent 1999;59:33-38]*

Key Words: non-Hispanic blacks, dental expenditures, discretionary services, Hispanics, Medicaid, NMES, out-of-pocket, private dental insurance.

Cost of dental care has been identified as a major barrier to access to dental care in most subgroups of the population, particularly for race/ethnic minorities (1-3). Yet few studies have examined dental expenditures among the US population, and even fewer studies have examined dental expenditures among specific race/ethnic subgroups of the population. On the other hand, a recent study (4) reported aggregate analyses of dental expenditures among persons with expenditures for the noninstitutionalized population of the United States of all ages. According to this report, Americans received approximately $30 billion of dental care during 1987, of which approximately $10 billion was paid by insurance plans and $17 billion was paid out-of-pocket (4). In addition, while non-Hispanic blacks and Hispanics reported lower mean out-of-pocket payments for dental services than did white persons, there were no significant differences in private insurance payments.

Racial/ethnic minorities in the United States have higher prevalences of oral diseases. For example, data from the third National Health and Nutrition Examination Survey (NHANES III) indicate that non-Hispanic blacks and Mexican-Americans have a higher prevalence of coronal caries (5-7) and a higher prevalence of periodontal disease as represented by loss of attachment or deep pockets than non-Hispanic whites (8). Non-Hispanic blacks have more tooth loss than non-Hispanic whites, and Mexican-Americans have the lowest total tooth loss of all race/ethnic groups; however, tooth loss among Mexican-Americans has been explained by their very low utilization of dental care (9). Also, persons with low income, most of them racial or ethnic minorities, have poorer oral health and their oral health problems are more serious than those of persons with higher incomes (5,10).

Even though Hispanics and non-Hispanic blacks have considerable dental needs, their utilization of dental care services is lower than for non-Hispanic whites. In 1989, while 59.5 percent of non-Hispanic white persons reported a visit in the past year, only 43.2 percent of non-Hispanic blacks and 46.0 percent of Hispanics reported a dental visit (11). Moreover, in the 18- to 34-year-old age group, 7.2 percent of Hispanics and 2.3 percent of non-Hispanic blacks reported never having had a dental visit, compared with 1.3 percent of non-Hispanic whites (11).

The purpose of our study is to augment prior expenditure studies by presenting in detail ethnic/race specific dental expenditures incurred by United States working-age adults 19 to 64 years of age. For each race/ethnic group—i.e., non-Hispanic whites, non-Hispanic blacks, and Hispanics—dental expenditures and sources of payment will be presented for the total working-age population (including persons without expenditures) and for persons with expenditures by sex, income, and employment status.

Methods

Data for this study were obtained from the National Medical Expenditure Survey (NMES), which was sponsored by the Agency for Health Care Policy and Research (AHCPR). NMES is the principal and most recent source of information available on the cost

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and financing of health care of the civilian noninstitutionalized population of the United States. NMES provides detailed national estimates of dental care utilization, dental expenditures and sources of payment for January 1, 1987, to December 31, 1987. NMES was a panel study of approximately 14,000 households and 38,446 individuals including oversampled population groups of particular policy interest, such as the elderly, persons with limitations in activities of daily living, non-Hispanic blacks, Hispanics, and persons with low income (12). All survey components were designed to provide statistically unbiased estimates that are representative of the civilian noninstitutionalized population of the United States. Data on health expenditures during 1987 were gathered through household interviews four times over an 18-month period during 1987 and 1988.

Data on dental visits and/or family income were missing for 3,987 persons of all ages (10.4% of sampled persons); only participants with complete data on age, sex, dental visits, and family income were included in this study. The final study sample size included 18,696 persons 19 to 64 years of age representing 143,529,215 noninstitutionalized US civilians.

NMES provides race/ethnic classification of non-Hispanic whites, non-Hispanic blacks, Hispanics, and "other" persons. For this study persons from race/ethnic groups other than non-Hispanic white, non-Hispanic black, or Hispanic are excluded from detailed analyses because of their small sample size; however, they are included in estimates for the total population. Income level is the participant's family income status relative to the federal poverty line and was classified as low income (at or below 200% of the poverty line), middle income (between 201% and 400%), and high income (401% of the poverty line and above). Employment status was defined as having had a job or business at any time during 1987. Results of analyses of dental expenditures by educational attainment were similar to those by income level, thus educational attainment is not included in this paper.

Dental expenditure is the sum of the expenses incurred in 1987 to pay for dental care. Sources of expenditure included payments made out-of-pocket by participants or their family, payments made by private insurance, payments made by Medicaid, and other sources. "Other sources" include payments by federal, state, and local programs, workers' compensation, free from provider (including bad debt), charity, unions, and all other sources not specified. The "other sources" category will be included in the tables to provide a more complete picture; however, because of the diversity of its components, it was not included in the discussion. All monetary amounts are reported in 1987 dollars.

Race/ethnic-specific estimates of mean individual dental expenditures are provided per capita for the entire study population and for persons with expenditures for each of several sociodemographic categories; dental expenditures also are presented by source of payment. Statistical significance of the differences between groups were assessed using 95 percent confidence intervals (CI) with the formula: 95 percent CI=estimate +/- (1.96 * standard error). Age-adjusted estimates of dental expenditures and source of expenditures did not differ significantly from nonage-adjusted estimates. Sampling weights provided by NMES were included in all analyses to account for the oversampling of specific groups; thus, the estimates presented here are representative of the 19–64-year-old civilian noninstitutionalized United States population. In addition, variances used to calculate the standard errors to derive the confidence intervals were computed taking into account the complex sampling design of NMES with the use of the software package SUDAAN (13).

TABLE 1
Percent of Population 19–64 Years of Age with Dental Expenditures by Race/Ethnicity and Other Sociodemographic Characteristics, National Medical Expenditure Survey 1987

Characteristics	Percent Race/Ethnic Groups (95% CI)			
	All* (*n*=18,696)	Non-Hispanic Whites (*n*=12,196)	Non-Hispanic Blacks (*n*=3,966)	Hispanics (*n*=2,025)
Total	44.5 (43.4, 45.7)	49.1 (47.7, 50.5)	27.0 (25.2, 28.8)	28.1 (25.2, 31.0)
Sex				
Men	40.6 (39.3, 41.8)	44.8 (43.3, 46.3)	23.0 (20.4, 25.6)	24.8 (22.0, 27.6)
Women	48.3 (46.8, 49.8)	53.3 (51.5, 55.1)	30.3 (28.1, 32.5)	31.3 (27.2, 35.4)
Income†				
Low	28.1 (26.6, 29.7)	32.9 (30.6, 35.2)	20.1 (17.9, 22.3)	20.8 (17.6, 24.0)
Middle	43.5 (41.9, 45.0)	47.1 (45.3, 48.9)	29.6 (26.6, 32.6)	29.9 (25.7, 34.1)
High	56.0 (54.7, 57.4)	58.1 (56.6, 59.6)	39.4 (35.0, 45.8)	42.9 (37.3, 48.5)
Employment				
Yes	46.2 (45.0, 47.3)	50.3 (48.9, 51.7)	29.5 (27.5, 31.5)	29.3 (26.2, 32.4)
No	37.5 (35.4, 39.5)	43.7 (41.0, 46.4)	20.8 (17.9, 23.7)	23.9 (19.3, 28.5)

*Includes persons from other race/ethnic groups.
†Low, at, or below 200 percent of the federal poverty line (FPL); middle, between 201 percent and 400 percent of the FPL; high, 401 percent of the FPL and above.

Results

Overall, the proportion of persons with dental expenditures in 1987 was significantly higher among non-Hispanic whites than among non-Hispanic blacks or Hispanics (49.1% vs 27.0% and 28.1%, respectively). Table 1 shows the percent of working-age persons with dental expenditures in

1987 by sociodemographic characteristics for each race/ethnic group. Within the three race/ethnic groups, a higher percentage of women than men reported dental expenditures and the percent of persons with dental expenditures increased as income increased. Overall, a higher percentage (46.2% vs 37.5%) of employed persons had dental expenditures than did persons who were unemployed. This difference also was observed within each race/ethnic group, but was not statistically significant among Hispanic participants. Overall, race/ethnic differences in reported dental expenditures persisted within sociodemographic levels. For instance, a higher percentage of non-Hispanic whites reported dental expenditures than non-Hispanic blacks or Hispanics independent of sex, income level, or employment status.

Table 2 presents per capita mean dental expenditures for the US population overall and by race/ethnic-specific groups. Mean dental expenditures for non-Hispanic whites ($139; 95% CI=132, 147) were higher than for Hispanics ($85; 95% CI=68, 102) and almost twice that of non-Hispanic blacks ($65; 95% CI=56, 75). Within each race/ethnic group, persons with higher incomes had greater mean expenditures than those with lower incomes. No significant differences in per capita dental expenditure by sex or employment status were observed within race/ethnic groups. On the other hand, across race/ethnic groups, except among persons with higher income, non-Hispanic whites had larger expenditures than non-Hispanic blacks or Hispanics.

Table 3 displays mean dental expenditures in 1987 among persons with expenditures by race/ethnicity and other sociodemographic characteristics. On average, expenditures for dental care among persons 19 to 64 years of age who had expenditures were $282 (95% CI=269, 297). Among persons who had dental expenditures, differences in mean expenditures by race/ethnic groups were not statistically significant. Within race/ethnic-groups, mean expenditures were higher among high-income non-Hispanic black and Hispanic persons than among their lower income counterparts. For non-Hispanic whites, mean dental expenditures were similar across income levels. Differences in expenditures within race/ethnic-groups by sex or employment status were not significant.

Table 4 shows the distribution of expenditures by source of payment and by ethnicity and sociodemographic characteristics. Out-of-pocket was the most common source for dental payment. A total of 52.8 percent (95% CI=50.8, 54.8) of dental expenditures were paid by the participants or their families. The percent of expenditures paid out-of-pocket was lower among non-Hispanic blacks than among non-Hispanic whites. Differences in the percentage of out-of-

TABLE 2
Mean Per Capita Expenditures for Dental Services in US Dollars Among Persons 19–64 Years of Age by Race/Ethnicity and Other Demographic Characteristics, National Medical Expenditure Survey, 1987

	Percent Race/Ethnic Groups (95% CI)			
Characteristics	All*	Non-Hispanic Whites	Non-Hispanic Blacks	Hispanics
Total	126 (199, 132)	139 (132, 147)	65 (56, 75)	85 (68, 102)
Sex				
Men	110 (102, 118)	122 (101, 143)	54 (43, 65)	70 (48, 92)
Women	141 (131, 150)	156 (143, 168)	75 (60, 89)	100 (77, 123)
Income†				
Low	67 (57, 76)	83 (67, 99)	35 (25, 45)	45 (32, 58)
Middle	117 (106, 128)	127 (114, 139)	67 (54, 81)	99 (70, 128)
High	172 (161, 182)	175 (163, 187)	135 (106, 165)	160 (119, 202)
Employment				
Yes	131 (124, 138)	143 (134, 151)	73 (62, 84)	89 (70, 108)
No	101 (88, 114)	121 (104, 137)	46 (30, 61)	73 (48, 98)

*Includes persons from other race/ethnic groups.
†Low, at, or below 200 percent of the federal poverty line (FPL); middle, between 201 percent and 400 percent of the FPL; high, 401 percent of the FPL and above.

TABLE 3
Mean Expenditures in US Dollars for Dental Services Among Persons with Expenditures by Race/Ethnic Group and Other Sociodemographic Characteristics, National Medical Expenditure Survey, 1987

	Percent Race/Ethnic Groups (95% CI)			
Characteristics	All*	Non-Hispanic Whites	Non-Hispanic Blacks	Hispanics
Total	282 (269, 297)	283 (269, 298)	242 (210, 274)	304 (254, 354)
Sex				
Men	271 (252, 290)	273 (251, 294)	234 (195, 273)	283 (206, 360)
Women	291 (272, 310)	292 (271, 313)	247 (204, 289)	320 (265, 375)
Income†				
Low	237 (207, 267)	253 (210, 295)	175 (127, 223)	217 (168, 267)
Middle	269 (244, 295)	268 (242, 295)	227 (182, 272)	332 (229, 435)
High	306 (287, 325)	301 (280, 322)	343 (279, 407)	373 (283, 464)
Employment				
Yes	285 (269, 300)	284 (268, 301)	248 (213, 283)	303 (249, 358)
No	270 (241, 298)	277 (245, 309)	219 (154, 284)	306 (203, 409)

*Includes persons from other race/ethnic groups.
†Low, at, or below 200 percent of the federal poverty line (FPL); middle, between 201 percent and 400 percent of the FPL; high, 401 percent of the FPL and above.

TABLE 4
Percent of Expenditures for Dental Services Among Persons with Expenditures by Source of Payment, Ethnic Group, and Selected Sociodemographic Characteristics, National Medical Expenditure Survey, 1987

Characteristics	Percent Race/Ethnic Groups (95% CI)			
	All* (*n*=7,658)	Non-Hispanic Whites (*n*=5,792)	Non-Hispanic Blacks (*n*=1,108)	Hispanics (*n*=588)
Out-of-pocket				
Total	52.8 (50.8, 54.8)	53.5 (51.4, 55.6)	45.7 (41.5, 49.9)	50.9 (45.4, 56.5)
Sex				
Men	50.4 (51.2, 56.7)	54.2 (51.2, 57.1)	49.5 (30.3, 68.7)	56.3 (48.2, 64.4)
Women	52.0 (49.6, 54.3)	52.9 (50.3, 55.4)	43.4 (37.9, 48.9)	47.2 (40.5, 54.0)
Income†				
Low	55.3 (49.9, 60.8)	57.7 (50.6, 64.7)	44.7 (35.9, 53.5)	53.1 (41.6, 64.5)
Middle	52.6 (49.6, 55.7)	53.4 (50.1, 56.6)	42.2 (34.0, 50.4)	52.2 (42.7, 61.8)
High	52.2 (49.7, 54.7)	52.6 (49.9, 55.3)	49.0 (43.4, 54.8)	48.0 (40.2, 55.7)
Employment				
Yes	52.6 (50.4, 54.8)	53.2 (50.8, 55.6)	45.6 (41.5, 49.8)	50.8 (43.8, 57.8)
No	54.2 (49.7, 58.6)	55.6 (50.6, 60.5)	45.8 (35.7, 56.0)	51.5 (36.8, 66.3)
Priv. insurance				
Total	37.6 (36.0, 39.8)	37.9 (35.8, 40.0)	34.9 (30.9, 39.0)	35.5 (30.1, 41.0)
Sex				
Men	37.3 (35.1, 40.5)	37.8 (34.9, 40.7)	31.8 (25.6, 38.0)	31.9 (22.6, 41.2)
Women	37.9 (35.6, 40.3)	38.0 (35.3, 40.6)	36.8 (33.4, 40.2)	38.1 (32.1, 45.0)
Income†				
Low	21.8 (16.7, 27.4)	22.1 (15.7, 28.4)	18.4 (10.8, 25.9)	22.4 (12.1, 32.8)
Middle	39.3 (36.3, 42.9)	39.6 (36.1, 43.0)	41.3 (33.4, 49.3)	35.6 (24.0, 47.2)
High	40.7 (38.1, 42.7)	40.4 (37.9, 42.9)	40.1 (34.1, 46.0)	44.6 (37.9, 51.3)
Employment				
Yes	39.3 (37.0, 41.4)	39.2 (36.7, 41.7)	41.3 (36.9, 45.7)	37.7 (30.8, 44.6)
No	28.1 (26.6, 34.0)	30.3 (25.9, 34.6)	8.7 (4.0, 13.4)	26.3 (15.5, 37.1)
Medicaid				
Total	1.3 (1.0, 1.5)	0.8 (0.6, 1.1)	6.0 (3.8, 8.3)	‡
Sex				
Men	‡	0.3 (0.1, 0.5)	1.5 (0.7, 2.3)	‡
Women	1.8 (1.3, 2.2)	1.2 (0.8, 1.6)	8.7 (5.3, 12.0)	‡
Income†				
Low	7.1 (5.1, 9.1)	5.0 (3.2, 6.7)	17.0 (9.5, 24.5)	‡
Middle	0.5 (0.2, 0.7)	‡	‡	‡
High	‡	‡	‡	‡
Employment				
Yes	0.5 (0.3, 0.6)	0.4 (0.2, 0.5)	‡	‡
No	5.8 (4.1, 7.5)	3.5 (2.0, 4.9)	25.0 (14.1, 35.8)	‡

*Includes persons from other race/ethnic groups.
†Low, at, or below 200 percent of the federal poverty line (FPL); middle, between 201 percent and 400 percent of the FPL; high, 401 percent of the FPL and above.
‡No reliable data, relative standard error >30 percent.

pocket expenditures by sociodemographic characteristics within each ethnic group were not statistically significant. Private insurance was also an important source of payment for dental expenditures. Approximately 38 percent (37.6%; 95% CI=36.0, 39.8) of dental expenditures were paid by private dental insurance. Private insurance represented a similar percentage of total dental expenditures for each of the race/ethnic groups. Within race/ethnic-groups, persons with higher and middle incomes and those employed paid a larger percent of their dental costs with private dental insurance than their low-income and unemployed counterparts. However, similar differences were not statistically significant among Hispanics. The percentages of dental expenditures paid out-of-pocket or paid by dental insurance were similar by sociodemographic characteristics across race/ethnic groups. Only 1.3 percent (95% CI=1.0, 1.5) of dental expenditures were paid by Medicaid. As a per-

cent of expenditures, Medicaid payments were higher for non-Hispanic blacks than for non-Hispanic whites.

Discussion

Although NMES data were collected during 1987 and 1988, they are still relevant to today's dental care marketplace because the prevalence of dental visits and the utilization patterns among working adults have changed minimally over time. For example, between 1930 and 1975 dental utilization increased less than 0.75 of a percent per year (14) and has shown no significant change since 1983 (11,15,16). Also, the relationship between sociodemographic characteristics and use of dental care and dental expenditures have been stable over time (4,17). NMES provides nationally representative estimates and includes data elements that describe specific dental visits in great detail for race/ethnic and low-income subgroups. In addition, 1987 NMES is the only available data source capable of providing nationally representative estimates of dental utilization, expenditures, and sources of payments. Although self-reporting of dental visits and dental expenditures is less accurate than collection by dental record abstraction because of memory bias, the survey design included four waves of data collection during an 18-month period, thereby reducing the length of the recall period. Therefore, this analysis of 1987 NMES data provides relevant and important information on dental expenditures and sources of payment and establishes a baseline from which to compare newer data.

NMES data indicate that just under one-half of the civilian noninstitutionalized US adults 19–64 years of age had dental expenditures in 1987. Dental expenditures were more common among persons with higher income and among employed persons. A higher percent of non-Hispanic whites had dental expenditures in 1987 compared with non-Hispanic blacks or Hispanics, as well as a higher per capita expenditure. Considering that non-Hispanic blacks and Hispanic adults have a larger number of and more serious oral health problems than non-Hispanic whites (7-10), the lower proportion with expenditures for dental care might indicate that they are not getting their dental needs met.

Contrary to total per capita expenditures, analyses of persons with expenditures in 1987 indicated no race/ethnic group differences in the mean amount of expenditures (Table 3). However, the small sample size of non-Hispanic blacks and Hispanics with dental expenditures is one limitation of our results; perhaps a significant difference on dental expenditures by race/ethnicity could be uncovered in studies with larger sample sizes. Overall, mean dental expenditures among persons with expenditures was $282 in 1987. Interestingly, although not statistically significant, Hispanics had higher mean expenditures than whites. Within race/ethnic groups, while persons with the lowest income reported lower expenditures than persons with the highest income, expenditures did not differ by sex or employment status. The homogeneity of expenditures and small differences in source of payment among race/ethnic groups and groups with different socioeconomic characteristics reflect the similarity in sociodemographic characteristics of persons with expenditures. For example, the lowest income groups had to be reclassified from at or below 100 percent of the federal poverty line to at or below 200 percent to ensure a sample size large enough for meaningful statistical analyses.

Among persons with dental expenditures in 1987, non-Hispanic blacks paid a lower percent of dental expenditures out-of-pocket and a higher percent from Medicaid than non-Hispanic whites or Hispanics. However, within race/ethnic groups a similar proportion of dental expenditures were paid out-of-pocket at each income level. The lack of difference in the percent of dental expenditures paid out-of-pocket by income status indicates a disproportionate strain on the budgets of the few low-income persons who had expenditures. Regardless of income level, nearly half the dental expenditures were paid out-of-pocket in each race/ethnic group. Thus, out-of-pocket dental payments represent a higher percent of family income among lower income persons than among their counterparts with higher incomes.

Dental insurance payments also represented an important source of payment for dental expenditures. While dental insurance offsets some of the cost of dental treatment, dental insurance plans do not cover all dental treatments and for those treatments that are covered, partial reimbursement, rather than full or nearly full, is often offered (18). Dental insurance is expensive and employment-based (18), and therefore is associated with higher paying jobs. These characteristics of dental insurance are reflected in the report of higher use of private dental insurance by employed and middle- and high-income persons in our study. Unlike non-Hispanic whites, non-Hispanic blacks and Hispanic persons historically have held low-paying jobs, such as service and skilled/unskilled labor, which often do not provide health benefits (19), let alone dental benefits. Medicaid is a source of third party coverage available for some low-income persons. However, the percent of payment from Medicaid was small in all groups reflecting the paucity of dental services included in Medicaid programs (18). As expected, considering the objectives of the Medicaid program, persons with low income, women, and persons without employment reported a higher percentage of their dental expenditures paid by Medicaid.

Our findings of similar expenditures by sociodemographic indicators among persons with expenditures (Table 3) are consistent with those of a study of dental utilization among Rhode Island residents in which SES differences in per capita number of dental visits disappeared in analyses including only persons who had at least one dental visit in the past year (14). Similarly, an ADA/Gallup survey found that among persons "with a dentist" the percentage with dental visits in the past year was only slightly different between non-Hispanic white and non-Hispanic blacks (74.7% and 71.6%, respectively), and differences by education were smaller than in surveys of the general US population (standard errors to determine statistical significance were not provided) (20). These findings indicate that sociodemographic differences are important in defining who utilizes dental care, but that after getting access to dental care the amount of expenditure and utilization are independent of sociodemographic characteristics—suggesting that dental care is viewed by the public as a discretionary health service.

Previous studies have shown that discretionary health care, such as dental care, is strongly influenced by social structural characteristics, while nondiscretionary care, such as hospital care, is less affected by social characteristics (21). This differential in the effect of social characteristics by type of health care has been explained by whether the user or the provider initiates the process that will result in utilization of health care—discretionary services are initiated by the user, while nondiscretionary services are initiated by the provider (22). It follows, then, that sociodemographic characteristics should be more crucial in determining visits for preventive services than visits for treatment of a strong perceived need such as a toothache (23). Consistent with this premise, a study of adults in a rural North Carolina county found that dental utilization by non-Hispanic blacks appears to be responding to need, while non-Hispanic whites appear to utilize dental care in response to their health values emphasizing prevention (22). Moreover, analysis of data from the Health Interview Survey of 1986 indicated that while the reason for last dental visit among non-Hispanic blacks and persons with low education was to receive care for perceived dental problems, non-Hispanic white persons with higher education visited the dental provider to receive preventive services (24).

The discretionary conception of oral health is reflected in health care programs that exclude or have minimal dental care coverage (25), directly affecting persons with low income and minorities who generally have the greatest need for dental care. As a result, dental services are unavailable to large segments of the population and are perceived as a luxury item (26). The discretionary characteristic of dental care among ethnic-minority or low-income persons may reflect the prioritization of needs rather than an unwillingness to seek dental care. In the presence of limited resources, dental needs have to compete with other health and survival needs. Dental care does not have a high priority because the consequences of delaying it usually are less severe and less expensive than the consequences of delaying most medical treatments. However, a low prioritization of dental care does not mean that there is no perception of need for dental care. Actually, the rates of unmet dental needs among low-income and non-Hispanic black persons are higher than among their higher income and non-Hispanic white counterparts (1). It is more likely that the lower per capita dental expenditures among race/ethnic minority and persons with low income are more related to limited resources (10,22) than to lack of awareness of oral problems or plain refusal to seek dental care.

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