

## COVER STORY

# Disparities in dental care associated with disability and race and ethnicity

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Good oral health is an integral part of a healthy life, yet recent estimates suggest nearly one-quarter of adults aged 20 to 64 years in the United States have untreated dental caries.<sup>1</sup> Black and Hispanic adults consistently have more untreated caries than do non-Hispanic white adults.<sup>1,2</sup> Timely dental care is essential for decreasing disparities in oral health. Untreated oral health problems can result in pain, difficulty eating, speech problems, and reduced self-esteem and quality of life.<sup>2</sup> Increasing evidence also suggests links between poor oral health and other health problems, including cardiovascular disease and adverse pregnancy outcomes.<sup>2-8</sup>



A substantial body of research indicates there are racial and ethnic disparities in receipt of dental care in the United States. These disparities affect people in underserved racial and ethnic groups across the life span<sup>9-12</sup> and have persisted over time.<sup>13</sup> Racial and ethnic disparities are associated with socioeconomic characteristics, including income, education, and dental insurance.<sup>14</sup> In-

vestigators in some studies have found that racial and ethnic disparities in dental care are no longer apparent after controlling for these characteristics,<sup>15,16</sup> whereas investigators in other studies have found that disparities remain even when taking such differences between groups into account.<sup>10,14,17</sup>

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## ABSTRACT

**Background.** Both racial and ethnic and disability-related disparities in dental care exist, yet little is known about the cumulative effect of these 2 characteristics. The purpose of this study was to determine how the combination of disability and race and ethnicity is associated with dental examinations, delays in receiving needed care, and inability to obtain needed care among noninstitutionalized working-age adults in the United States.

**Methods.** The authors conducted cross-sectional analyses of Medical Expenditure Panel Survey data pooled across the years 2002 to 2012, yielding a sample of 208,548. Multivariable logistic regression analyses were used to examine the association of disability (including physical, sensory, and cognitive limitations) and race and ethnicity with each of the dependent variables.

**Results.** Compared with non-Hispanic whites, other racial and ethnic groups were less likely to receive annual dental examinations. There were significant disparities for people with disabilities in receipt of examinations, delays in obtaining needed care, and being unable to obtain needed care. The combination of disability status and membership in an underserved racial or ethnic group was associated with a greater magnitude of disparity in all 3 areas, especially for American Indian, Alaska Native, and multiracial people with disabilities.

**Conclusions.** Community-dwelling adults with disabilities in underserved racial and ethnic groups have higher levels of delayed and unmet needs for dental care and lower receipt of routine dental examinations.

**Practical Implications.** As the United States population ages and grows more diverse, the population of people with disabilities in underserved racial and ethnic groups will expand. Dentists need to be aware of, and be prepared to address, the needs of these people.

**Key Words.** Dental care use; people with disabilities; race; ethnicity.

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Investigators also have documented oral health care disparities for people with disabilities. Data from population-based surveys indicate that community-dwelling adults with disabilities are less likely to have visited a dentist within the past year.<sup>18</sup> Furthermore, people with disabilities are significantly more likely to report cost as a barrier to dental care, even when controlling for income differences between people with and those without disabilities.<sup>19</sup> In these surveys, participation is limited to noninstitutionalized respondents, and disability is defined broadly via activity or functional limitations encompassing a range of physical, sensory, and cognitive restrictions. Investigators in another body of research, specific to people with intellectual and developmental disabilities, have assessed the relationship between place of residence and receipt of routine dental care. Results of these studies have shown relatively high receipt of routine care for people living in institutional settings but significantly less frequent care among those living with family or on their own.<sup>20-22</sup>

Given that underserved racial and ethnic groups and community-dwelling adults with disabilities each experience disparities in obtaining dental care, the combination of the 2 could result in especially poor receipt of routine care and high levels of unmet need. However, there has been little consideration of the potential additive effect of disability and race and ethnicity in relation to dental care. The purpose of the present study was to determine how functional disability in combination with membership in an underserved racial or ethnic group is associated with receiving dental examinations, experiencing delays in receiving needed dental care, and being unable to obtain needed dental care in a community-based population. We hypothesized that the magnitude of disparities associated with both having a disability and being in an underserved racial or ethnic group would be greater than the disparities associated with being in either category alone.

## METHODS

**Data source.** We analyzed data from the Household Component of the Medical Expenditure Panel Survey

TABLE 1

<b>Characteristics of adults aged 18 to 64 years, 2002-2012 Medical Expenditure Panel Survey.</b>			
<b>CHARACTERISTIC</b>	<b>NO DISABILITY, N (%)<sup>*</sup></b>	<b>DISABILITY, N (%)</b>	<b>TOTAL, N (%)</b>
<b>Race and Ethnicity<sup>†</sup></b>			
White	78,336 (65.19)	22,656 (72.37)	100,992 (66.57)
Black	27,947 (11.66)	7,527 (12.19)	35,474 (11.76)
AHPI <sup>‡</sup>	11,578 (5.70)	1,195 (2.57)	12,773 (5.09)
AIAN <sup>§</sup>	795 (0.51)	342 (0.86)	1,137 (0.58)
Multiracial	1,878 (1.06)	874 (2.14)	2,752 (1.27)
Hispanic	48,614 (15.88)	6,806 (9.87)	55,420 (14.73)
<b>Mean Age (Standard Error), y</b>	38.77 (0.08)	47.01 (0.12)	40.35 (0.08)
<b>Female</b>	89,066 (50.32)	22,583 (53.38)	111,649 (50.91)
<b>Family Income<sup>¶</sup></b>			
≥ 400%	55,757 (43.71)	9,816 (33.29)	65,573 (41.71)
200% to < 400%	52,005 (31.21)	10,720 (29.17)	62,725 (30.82)
125% to < 200%	26,536 (11.73)	6,368 (13.85)	32,904 (12.14)
100% to < 125%	8,961 (3.32)	2,556 (5.01)	11,517 (3.64)
< 100%	25,889 (10.03)	9,940 (18.68)	35,829 (11.69)
<b>Employed</b>	124,510 (78.05)	20,650 (59.13)	145,160 (74.42)
<b>Education</b>			
Bachelor's degree or higher	38,630 (29.28)	6,229 (19.96)	44,859 (27.49)
Other degree	15,512 (10.24)	3,835 (11.20)	19,347 (10.42)
GED <sup>#</sup> credential or HS <sup>**</sup> diploma	76,818 (45.78)	20,320 (52.83)	97,138 (47.14)
No GED credential or HS diploma	38,188 (14.70)	9,016 (16.01)	47,204 (14.95)
<b>With Dental Insurance</b>	74,828 (51.61)	13,594 (41.00)	88,422 (49.57)
<b>Total</b>	169,148 (80.81)	39,400 (19.19)	208,548 (100.00)
* Unweighted number and survey weighted percentage, except as marked otherwise.			
† Except for Hispanic, all race and ethnicity categories are ethnically non-Hispanic.			
‡ AHPI: Asian, Native Hawaiian, Pacific Islander.			
§ AIAN: American Indian, Alaska Native.			
¶ Family income as a percentage of the federal poverty guideline.			
# GED: General Educational Development.			
** HS: High school.			

(MEPS). The MEPS is conducted by the Agency for Healthcare Research and Quality and provides nationally representative data on the use of various forms of health care among noninstitutionalized people. The MEPS uses an overlapping panel design with a new panel selected each year from the previous year's National Health Interview Survey sample.<sup>23,24</sup> Racial and ethnic minorities, as well as low-income respondents, are oversampled to increase the precision of estimates for these groups.<sup>23</sup> Data are gathered through 5 in-person interviews over 2 years. The Agency for Healthcare Research and Quality creates full-year consolidated files weighted to provide annualized US population estimates. Since 2002, data files have had a

**ABBREVIATION KEY.** AHPI: Asian, Native Hawaiian, Pacific Islander. AIAN: American Indian, Alaska Native. GED: General Educational Development. HS: High school. MEPS: Medical Expenditure Panel Survey. NA: Not applicable.

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