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Healthcare Disparities for American Indian Veterans in the United States:

A Population-Based Study

Pamela Jo Johnson, MPH, PhD^{*,†}, Kathleen F. Carlson, MS, PhD[‡], and Mary O. Hearst, MPH, PhD[§]

^{*} Division of Health Policy and Management, School of Public Health, University of Minnesota, Minneapolis, MN

[†] Center for Healthcare Innovation, Allina Hospitals & Clinics, Minneapolis, MN

[‡] Center for Chronic Disease Outcomes Research, Minneapolis VA Medical Center, Minneapolis, MN

[§] Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, Minneapolis, MN

Abstract

Objective—To examine healthcare coverage and access disparities for American Indian/Alaska Native (AIAN) veterans compared with non-Hispanic white veterans.

Methods—We examined national survey data for honorably discharged veterans in the United States using National Health Interview Survey (NHIS) data between 1997 and 2006. NHIS data were obtained from the Integrated Health Interview Series, a web-based data resource containing harmonized NHIS data from 1969 to the present. Our sample included AIAN and White veterans aged 18 to 64 years ($n = 34,504$). We used multivariate logistic regression models to estimate the odds of being uninsured, reasons for delayed care, and types of foregone care.

Results—In multivariate analysis, AIAN veterans have 1.9 times higher odds of being uninsured compared with non-Hispanic white veterans (95% CI: 1.6–2.7). Compared with white veterans, AIAN veterans are significantly more likely to delay care due to not getting timely appointments (OR = 2.0, 95% CI: 1.1–2.6), not getting through on the phone (OR = 3.0, 95% CI: 1.6–5.8), and transportation problems (OR = 2.9, 95% CI: 1.1–7.3). In unadjusted models, AIAN veterans have significantly higher odds of having foregone 4 of 5 types of care compared with non-Hispanic white veterans. Adjusting for sociodemographic characteristics and insurance eliminated all significant relations.

Conclusions—AIAN veterans have considerable disparities in healthcare coverage and access compared with non-Hispanic whites. Although barriers to care due to cost are nominal for AIAN veterans, barriers to care due to navigating the healthcare system and due to lack of transportation remain substantial.

Keywords

access to healthcare; American Indians/Alaska Natives; disparities; veterans

Reprints: Pamela Jo Johnson, MPH, PhD, Center for Healthcare Innovation, Allina Hospitals & Clinics, 2925 Chicago Ave, Mail Route 10105, Minneapolis, MN 55407. johns245@umn.edu.

Pamela Jo Johnson is currently at Center for Healthcare Innovation, Allina Hospitals & Clinics, 2925 Chicago Ave, Mail Route 10105, Minneapolis, MN 55407.

When it comes to healthcare coverage and access, 2 misconceptions continue to flourish. First, it is widely believed that all American Indian/Alaska Natives (AIAN) receive free healthcare through the Indian Health Service (IHS). Second, it is commonly believed that all veterans have free healthcare through the US Department of Veterans Affairs (VA). Not only are these mistaken beliefs, but these 2 groups may be at increased disadvantage for healthcare coverage and access. The issue is especially compelling as AIAN are disproportionately represented in the US military.¹

Although IHS plays an important role in providing access to healthcare for AIAN on or near reservations, many AIAN reside in urban areas or other places not served by IHS.² There is no single set of criteria for access to IHS. Eligibility and health services available vary across tribes and service areas.³ Moreover, IHS is woefully underfunded, which has led to rationing of healthcare even among eligible AIAN.⁴ VA also has eligibility criteria for enrollment including minimum service requirements and honorable discharge status.^{5,6} Enrolled veterans are assigned a priority group, which the VA uses to balance healthcare demand with available resources. Reductions in resources may reduce service availability for lower priority groups.⁷

Previous research shows restricted healthcare access among AIAN and veterans. In one study, AIAN were more likely to be uninsured and have difficulties accessing health-care than other groups.⁸ Another study estimated that, for 18-to 64-year-old AIAN, uninsurance may be as high as 43%, a 3 times higher rate than non-Hispanic Whites (Johnson PJ, Blewett LA, Davern M, Call KT. American Indian uninsurance disparities: different survey, different story?, unpublished data).⁹ Although research indicates that veterans are more likely to be insured than nonveterans, it also shows that uninsured veterans have more problems accessing healthcare than uninsured nonveterans.^{10,11} Since AIAN are more likely to be uninsured and veterans who are uninsured are more likely to have problems accessing healthcare, AIAN who are veterans may have compounded risk.

Little is known about healthcare access for AIAN veterans. Veteran healthcare studies are often based on the VA user population. Recent studies have even described dual use of VA and IHS healthcare among the IHS user population.^{12,13} These studies exclude veterans that do not access VA services or AIAN that are not IHS service users. Our study is a population-based study that focuses on AIAN veterans in the US population, without the constraint of being a recent VA or IHS system participant. We use nationally representative survey data to examine potential healthcare coverage and access disparities for AIAN compared with non-Hispanic white veterans.

METHODS

Data

This study is a population-based analysis of national survey data for US veterans using National Health Interview Survey (NHIS) data between 1997 and 2006. NHIS data were obtained from the Integrated Health Interview Series, a web-based data resource containing harmonized NHIS data from 1969 to the present.¹⁴ Veterans were those who reported having been honorably discharged from armed forces active duty. The sample was restricted to AIAN and non-Hispanic white veterans aged 18 to 64 years (n = 35,050). Those with missing data (1.6%) were excluded, leaving an analytic sample of 34,504. Data between 1997 and 2006 were pooled to obtain a sufficient sample size. Sampling weights were adjusted to account for pooling 10 years of data by dividing weights by the number of years pooled, as recommended by the National Center for Health Statistics.¹⁵

Measures

Indicators of interest are measures of healthcare coverage and access to care. Healthcare coverage was defined as health insurance status at time of survey (insured/uninsured). The following coverage types were included Private, Public (Medicaid, Medicare, SCHIP, other state-sponsored, or government programs), and Military/VA coverage (military, VA, CHAMPUS, TRICARE, CHAMP-VA). Although access to IHS is reported, IHS alone is not considered health insurance coverage. IHS provides healthcare services to eligible AIAN; it is not comprehensive health insurance.^{3,8} Beginning in 1998, respondents reporting access to IHS but no reports of any other insurance are universally considered uninsured by federal agencies conducting surveys on health insurance.^{16–18}

Healthcare access was examined using measures representing barriers to care and foregone care. Barriers to care were defined as reported reasons for delaying care in the past 12 months (cost, unable to get timely appointment, limited office hours, unable to get through on phone, or no transportation). Foregone care was defined as healthcare that was needed but not received in the past 12 months due to cost. Types of foregone care included: medical, mental health, dental, prescription medications, and glasses.

Additional covariates included sex, age groups, marital status, educational attainment, employment status, region of residence, and poverty status. All covariates were defined as shown in Tables 1 to 4. Activity limitation was defined as any report of a physical or mental health condition that limited usual activities. Finally, because we used data from a 10-year period, which encompassed the current conflicts in Afghanistan and Iraq, we used a period indicator to account for the potential change in healthcare needs for postwar veterans. This was dichotomized as pre-conflict (1997–2001) and conflict period (2002–2006).

Analysis

We assessed whether AIAN and non-Hispanic white veterans differed in background characteristics potentially associated with healthcare coverage and access using cross-tabulations and design-based F tests to account for the complex sample design.

We used multivariate logistic regression to estimate the odds of being uninsured for AIAN compared with non-Hispanic white veterans after adjusting for demographics and economic status. To examine barriers to care, we used a series of multivariate logistic regression models to examine the odds of each reported reason for delaying care by race group adjusted for the same variables as mentioned earlier with the addition of insurance coverage. Finally, to examine restricted access to care due to financial concerns, we estimated the odds of each type of foregone care by race group with separate logistic regression models, adjusted for all covariates including insurance.

Analyses were conducted with Stata SE version 10.1, which produces unbiased estimates from data collected through complex sampling designs.^{19,20} Stata survey techniques account for the unequal probabilities of selection and the stratified/clustered sampling design of the NHIS.

RESULTS

Table 1 shows selected characteristics of the study population. The 2 groups are significantly different on most demographic characteristics and all socioeconomic factors. For insurance coverage, AIAN veterans are significantly less likely to report private coverage and significantly more likely to report public coverage, military coverage, and be uninsured. In multivariate analysis, AIAN veterans have 1.9 times higher odds of being

uninsured compared with non-Hispanic white veterans (95% CI: 1.6–2.7) even after adjusting for sociodemographic and economic characteristics (Table 2).

Table 3 presents the odds of reporting barriers to receiving timely care in the preceding 12 months. Compared with non-Hispanic white veterans, AIAN veterans are significantly more likely to delay care because of not getting a timely appointment, not getting through on the phone, and transportation problems. AIAN veterans are no more or less likely to delay care due to cost or availability of office hours than non-Hispanic white veterans.

Table 4 presents the odds of foregone care in the past year. In unadjusted models, AIAN veterans are significantly more likely to have foregone 4 of the 5 types of care compared with non-Hispanic white veterans (unadjusted and sequential results not shown in the table). AIAN veterans are more likely to need but not get medical care (OR = 1.6, 95% CI: 1.1–2.4), dental care (OR = 1.8, 95% CI: 1.2–2.7), prescription medications (OR = 2.0, 95% CI: 1.1–3.4), and glasses (OR = 2.3, 95% CI: 1.3, 4.1). After adjusting for demographic characteristics, AIAN veterans are still significantly more likely to need but not get dental care (OR = 1.6, 95% CI: 1.0–2.4) and glasses (OR = 2.1, 95% CI: 1.2–3.8) because of cost in the past 12 months compared with non-Hispanic white veterans. Adjustment for employment status and poverty status eliminated the significant relation for foregone dental care, although AIAN veterans were still more likely to need but not get glasses (OR = 1.9, 95% CI: 1.0–3.4). Additional adjustment for insurance coverage eliminated the relation for foregone glasses.

DISCUSSION

AIAN veterans have considerable disparities in health-care coverage and access compared with non-Hispanic white veterans in a population-based sample. Our results showed that AIAN veterans were nearly twice as likely to be uninsured than white veterans, which is consistent with a previous population-based survey of veterans that found a higher percentage of AIAN compared with white veterans lacked health insurance.²¹

Although insurance coverage is important, it is only one component of access to care. Our findings also indicate that although barriers to care due to cost are nominal for AIAN veterans, barriers to care due to navigating the health-care system, and due to lack of transportation remain substantial. Similarly, Washington et al found that AIAN veterans were significantly more likely to have unmet healthcare needs than white veterans.²² These findings are consistent with studies indicating that, in general, AIAN have substantial barriers accessing healthcare. Call et al examined barriers to care for a low-income insured population and found that AIAN adults were significantly more likely to report problems accessing care due to racial discrimination, cultural misunderstandings, family/work responsibilities, and transportation difficulties compared with non-Hispanic white adults.²³

AIAN veterans are imbued with a strong sense of veteran identity. Although they have disproportionate levels of service-related medical conditions they are more likely to use IHS for healthcare than VA, even though VA has expertise in treatment of service-related physical and mental health disorders.²⁴ AIAN focus group participants reported that while IHS was not well equipped to address special needs of veterans such as posttraumatic stress disorder and substance use disorders, they preferred IHS since the VA system was inconvenient.²⁴ AIAN veterans were prescient to suggest that VA and IHS coordinate care to better meet the comprehensive healthcare needs of AIAN veterans.^{24,25} In 2003, IHS and VA signed a memorandum of understanding to “encourage cooperation and resource sharing” and “to deliver quality health care services and enhance the health status of American Indian and Alaska Native veterans.”²⁶

Implementation of these collaborative efforts are underway, but it is too soon to say whether there has been an effect for the broader AIAN veteran population. To understand how AIAN veterans are currently using the 2 systems, Kramer et al conducted an investigation of linked IHS-VA administrative databases.^{12,13} They found 25% were dual users, 28% used only VA services, and 46% used only IHS services.¹³ Although these investigations provide important insights into how IHS and/or VA users access the 2 systems for healthcare, an important group of AIAN veterans are still missing: those who do not access services through VA or IHS. Our study provides a population perspective on healthcare coverage and access disparities among AIAN veterans most of whom do not report access to IHS or VA services.

Our findings should be considered in light of potential limitations. First, NHIS is a nationally representative survey of the noninstitutionalized civilian population.²⁷ By design, NHIS excludes active duty military personnel, and we can only identify honorably discharged veterans by self-report in the NHIS data. It is possible that some who report being honorably discharged do not meet minimum service requirements or other eligibility criteria, as we are not able to verify veteran status. Second, AIAN tend to be underrepresented in national surveys.^{28,29} AIAN are both geographically clustered in reservation areas and geographically dispersed across other areas. Consequently, national surveys more often include AIAN from urban areas who are systematically different than AIAN in reservation and rural areas. Our findings may not be representative of all AIAN veterans. Finally, NHIS questions about foregone care ask specifically about unmet healthcare needs due to cost. It is possible that some veterans had unmet healthcare needs due to other reasons. Since our findings on reasons for delayed care suggest that cost was less of a barrier than other systemic issues related to accessing care, AIAN unmet needs may have been underestimated due to the explicit focus on cost as the barrier.

The 2001 National Survey of Veterans provided preliminary evidence of racial and ethnic disparities in health-care access among veterans. The majority of veterans' health-care access research has been based on the VA user population. Yet, in our research few veterans reported having military coverage, which means that studies restricted to the VA user population may be missing a large group of veterans that do not access VA services. Given higher enlistment among racial minorities and increasing numbers of veterans with medical needs due to recent and current conflicts, a more complete understanding of healthcare coverage and access for all veterans is needed.

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TABLE 1

Characteristics of US Veterans by Race, 18- to 64-Year-Old, NHIS 1997–2006

	AIAN		Non-Hispanic White		P
	%	SE	%	SE	
Sex					
Male	89.1%		91.7%		
Female	10.9%	1.7%	8.3%	0.2%	0.0892
Age group					0.0003
18–24 yr	2.3%	0.9%	2.0%	0.1%	
25–34 yr	15.1%	1.9%	11.0%	0.2%	
35–44 yr	24.3%	2.6%	18.2%	0.2%	
45–54 yr	32.4%	2.9%	31.1%	0.3%	
55–64 yr	26.0%	2.7%	37.7%	0.3%	
Marital status					0.0017
Married	65.3%	2.6%	73.6%	0.3%	
Separated, divorced, widowed	24.5%	2.1%	17.5%	0.2%	
Never married	10.3%	1.8%	9.0%	0.2%	
Educational attainment					0.0001
Less than a H.S. diploma	11.5%	1.8%	6.4%	0.2%	
High school diploma	33.0%	2.7%	32.9%	0.3%	
Some college	38.2%	2.7%	35.3%	0.3%	
College degree	17.3%	2.1%	25.4%	0.3%	
Employment status					0.0001
Employed	68.8%		78.6%		
Unemployed	31.2%	2.4%	21.4%	0.3%	
Poverty status					<0.001
Below 100% FPL	13.3%		5.2%		
At or above 100% FPL	86.7%	2.1%	94.8%	0.2%	
Census region					<0.001
Northeast	9.5%	3.0%	17.7%	0.4%	
Midwest	17.4%	3.0%	26.8%	0.4%	
South	39.0%	3.9%	36.4%	0.5%	

	AIAN		Non-Hispanic White		P
	%	SE	%	SE	
West	34.1%	4.0%	19.1%	0.4%	
Insurance coverage					<0.001
Insured	76.3%		89.3%		
Uninsured	23.7%	2.4%	10.7%	0.2%	
Insurance types [*]					0.001
Military	18.1%	2.3%	11.8%	0.3%	
Private	54.7%	3.4%	77.5%	0.3%	<0.001
Public	12.0%	2.0%	5.9%	0.2%	<0.001
Indian health service	18.6%	3.8%	—	—	
Activity limitation					<0.001
No activity limitation	71.5%		84.2%		
Any activity limitation	28.5%	2.5%	15.8%	0.3%	
Survey time period					0.5145
Pre-conflict (1997–2001)	51.4%		53.3%		
Conflict (2002–2006)	48.6%	2.5%	46.7%	0.3%	
Unweighted sample size	364		34,140		
Weighted population	110,447		11,601,731		

May not total 100% due to rounding

^{*} Insurance types are not mutually exclusive.

TABLE 2

Odds of Uninsurance Among AIAN and Non-Hispanic US Veterans 18- to 64-Year-Old, NHIS 1997–2006

	Uninsured	
	OR	95% CI
Self-reported race		
Non-Hispanic white	1.0	
American Indian/Alaska Native	1.9	(1.6, 2.7)*
Sex		
Male	1.0	
Female	0.8	(0.7, 0.9) [†]
Age group		
18–24 yr	3.7	(3.0, 4.6)*
25–34 yr	2.9	(2.6, 3.3)*
35–44 yr	2.2	(1.9, 2.5)*
45–54 yr	1.4	(1.3, 1.6)*
55–64 yr	1.0	
Marital status		
Married	1.0	
Separated, divorced, widowed	3.1	(2.8, 3.3)*
Never married	3.2	(2.9, 3.6)*
Educational attainment		
Less than a H.S. diploma	3.4	(2.9, 4.1)*
High school diploma	2.6	(2.3, 2.9)*
Some college	1.7	(1.5, 2.0)*
College degree	1.0	
Employment status		
Employed	1.0	
Unemployed	1.5	(1.3, 1.7)*
Poverty status		
At or above 100% FPL	1.0	
Below 100% FPL	2.8	(2.4, 3.2)*
Census region		
Northeast	1.0	
Midwest	1.2	(1.0, 1.3) [‡]
South	1.6	(1.5, 1.8)*
West	1.6	(1.4, 1.9)*
Activity limitation		
No activity limitation	1.0	
Any activity limitation	0.6	(0.5, 0.7)*

	Uninsured	
	OR	95% CI
Survey time period		
Pre-conflict (1997–2001)	1.0	
Conflict (2002–2006)	1.0	(1.0, 1.1)

* $P < 0.001$,

† $P < 0.01$,

‡ $P < 0.05$.

TABLE 3

Odds of Delayed Care in the Past Year Among AIAN and Non-Hispanic White US Veterans 18- to 64-Year-Old, NHIS 1997–2006

	Due to Cost		Appointment		Office Hours		Phone		Transportation	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Self-reported race										
Non-Hispanic white	1.0		1.0		1.0		1.0		1.0	
American Indian/Alaska Native	0.9	(0.6, 1.4)	2.0	(1.1, 3.6)*	1.0	(0.3, 3.0)	3.0	(1.6, 5.8)*	2.9	(1.1, 7.3) [†]
Sex										
Male										
Female	1.3	(1.2, 1.5) [‡]	1.4	(1.1, 1.8)*	1.9	(1.4, 2.6) [‡]	1.8	(1.3, 2.4) [‡]	1.4	(0.8, 2.3)
Age group										
18–24 yr	1.3	(1.0, 1.8) [‡]	1.5	(0.9, 2.6)	0.7	(0.3, 1.7)	2.2	(1.0, 4.7) [‡]	2.6	(0.8, 8.5)
25–34 yr	1.7	(1.4, 1.9) [‡]	1.5	(1.1, 1.9)*	1.3	(0.9, 2.0)	1.6	(1.1, 2.4) [‡]	1.6	(0.8, 3.2)
35–44 yr	1.7	(1.5, 1.9) [‡]	1.7	(1.4, 2.1) [‡]	1.4	(1.0, 2.0) [‡]	1.5	(1.1, 2.2) [‡]	2.0	(1.2, 3.5)*
45–54 yr	1.3	(1.2, 1.5) [‡]	1.3	(1.1, 1.6)*	1.2	(0.9, 1.7)	1.5	(1.1, 2.0) [‡]	2.1	(1.4, 3.2) [‡]
55–64 yr	1.0		1.0		1.0		1.0		1.0	
Marital Status										
Married	1.0		1.0		1.0		1.0		1.0	
Separated, divorced, widowed	1.8	(1.6, 1.9) [‡]	1.1	(0.9, 1.3)	1.1	(0.8, 1.4)	1.3	(1.0, 1.6)	3.4	(2.3, 4.9) [‡]
Never married	1.4	(1.2, 1.6) [‡]	1.1	(0.9, 1.4)	1.1	(0.8, 1.6)	1.2	(0.9, 1.7)	2.6	(1.5, 4.5)*
Educational attainment										
Less than a H.S. diploma	1.5	(1.3, 1.8) [‡]	0.9	(0.7, 1.3)	1.1	(0.7, 1.8)	0.8	(0.5, 1.2)	2.4	(1.2, 4.8) [‡]
High school diploma	1.2	(1.0, 1.3) [‡]	0.8	(0.6, 1.0) [‡]	0.7	(0.5, 1.0)	0.7	(0.5, 0.9) [‡]	1.7	(0.9, 3.1)
Some college	1.4	(1.3, 1.6) [‡]	1.0	(0.8, 1.3)	0.9	(0.9, 1.2)	0.9	(0.6, 1.2)	1.8	(1.0, 3.1)
College degree	1.0		1.0		1.0		1.0		1.0	
Employment status										
Employed	1.0		1.0		1.0		1.0		1.0	
Unemployed	1.0	(0.9, 1.2)	1.1	(0.9, 1.4)	0.7	(0.5, 1.1)	1.1	(0.8, 1.5)	3.4	(2.2, 5.3) [‡]
Poverty status										

	Due to Cost		Appointment		Office Hours		Phone		Transportation	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
At or above 100% FPL	1.0		1.0		1.0		1.0		1.0	
Below 100% FPL	1.5	(1.3, 1.7) [‡]	1.0	(0.7, 1.3)	1.2	(0.8, 1.9)	1.1	(0.7, 1.7)	2.3	(1.5, 3.4) [‡]
Census region										
Northeast	1.0		1.0		1.0		1.0		1.0	
Midwest	1.1	(0.9, 1.2)	1.1	(0.8, 1.5)	1.7	(1.1, 2.8) [‡]	1.1	(0.8, 1.6)	1.0	(0.6, 1.9)
South	1.2	(1.0, 1.3) [‡]	1.1	(0.8, 1.4)	1.1	(0.7, 1.5)	1.2	(0.9, 1.7)	1.1	(0.6, 1.8)
West	1.2	(1.0, 1.4) [‡]	1.5	(1.1, 2.1) [*]	1.6	(1.0, 2.6)	1.7	(1.2, 2.5) [*]	1.4	(0.8, 2.6)
Type of insurance										
Insured	1.0		1.0		1.0		1.0		1.0	
Uninsured	6.2	(5.7, 6.9) [‡]	0.7	(0.6, 0.9) [*]	0.9	(0.7, 1.3)	0.6	(0.4, 0.9) [‡]	0.8	(0.5, 1.4)
Activity limitation										
No activity limitation	1.0		1.0		1.0		1.0		1.0	
Any activity limitation	3.3	(2.9, 3.6) [‡]	2.8	(2.3, 3.5) [‡]	2.2	(1.6, 3.1) [‡]	3.4	(2.6, 4.5) [‡]	4.5	(3.0, 6.7) [‡]
Survey time period										
Pre-conflict (1997–2001)	1.0		1.0		1.0		1.0		1.0	
Conflict (2002–2006)	1.3	(1.2, 1.4) [‡]	1.1	(0.9, 1.2)	1.1	(0.8, 1.3)	1.1	(0.9, 1.4)	1.5	(1.1, 2.2) [‡]

^{*} $P < 0.01$,

[‡] $P < 0.05$,

[‡] $P < 0.001$.

TABLE 4

Odds of Foregone Care in the Past 12 Months Among AIAN and Non-Hispanic White US Veterans 18- to 64-Year-Old, NHIS 1997–2006

	Medical		Mental		Dental		Medications		Glasses	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Self-reported race										
Non-Hispanic white	1.0		1.0		1.0		1.0		1.0	
American Indian/Alaska Native	0.8	(0.5, 1.2)	0.4	(0.1, 1.4)	1.1	(0.8, 1.7)	1.2	(0.7, 2.1)	1.6	(0.9, 2.7)
Sex										
Male	1.0		1.0		1.0		1.0		1.0	
Female	1.4	(1.2, 1.6)*	2.6	(1.9, 3.6)*	1.5	(1.2, 1.8)*	1.8	(1.4, 2.3)*	2.2	(1.7, 2.8)*
Age group										
18–24 yr	1.3	(0.9, 1.9)	3.3	(1.4, 7.8) [†]	1.7	(1.1, 2.7) [†]	3.7	(2.1, 6.5)*	1.3	(0.7, 2.4)
25–34 yr	1.8	(1.5, 2.2)*	3.3	(2.1, 5.1)*	2.1	(1.7, 2.7)*	2.7	(2.0, 3.7)*	1.2	(0.8, 1.7)
35–44 yr	1.8	(1.6, 2.1)*	3.6	(2.5, 5.3)*	2.2	(1.8, 2.7)*	3.0	(2.3, 3.9)*	1.6	(1.2, 2.0) [†]
45–54 yr	1.4	(1.1, 1.6)*	2.9	(2.0, 4.2)*	1.8	(1.5, 2.1)*	1.8	(1.4, 2.3)*	1.8	(1.4, 2.3) [†]
55–64 yr	1.0		1.0		1.0		1.0		1.0	
Marital status										
Married	1.0		1.0		1.0		1.0		1.0	
Separated, divorced, widowed	1.8	(1.6, 2.1)*	1.8	(1.4, 2.4)*	1.6	(1.4, 1.8)*	1.4	(1.2, 1.7) [†]	1.3	(1.0, 1.5) [†]
Never married	1.3	(1.1, 1.5) [†]	1.3	(0.9, 1.9)	1.2	(1.0, 1.4)	0.9	(0.7, 1.2)	0.9	(0.7, 1.2)
Educational attainment										
Less than a H.S. diploma	1.6	(1.3, 2.0)*	1.2	(0.8, 2.0)	1.7	(1.3, 2.2)*	2.4	(1.8, 3.3)*	2.1	(1.4, 2.9)*
High school diploma	1.1	(1.0, 1.3)	1.2	(0.8, 1.6)	1.7	(1.4, 2.1)*	1.7	(1.4, 2.2)*	1.7	(1.3, 2.2)*
Some college	1.4	(1.2, 1.6)*	1.3	(0.9, 1.8)	1.9	(1.6, 2.3)*	1.7	(1.3, 2.1)*	2.1	(1.6, 2.7)*
College degree	1.0		1.0		1.0		1.0		1.0	
Employment status										
Employed	1.0		1.0		1.0		1.0		1.0	
Unemployed	1.1	(1.0, 1.3)	1.6	(1.2, 2.2) [†]	1.2	(1.0, 1.4) [†]	1.3	(1.0, 1.6) [†]	1.4	(1.1, 1.8) [†]
Poverty status										
At or above 100% FPL	1.0		1.0		1.0		1.0		1.0	

	Medical		Mental		Dental		Medications		Glasses	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Below 100% FPL	1.8	(1.5, 2.1)*	1.5	(1.0, 2.1) [‡]	1.5	(1.2, 1.8)*	2.1	(1.7, 2.7)*	1.6	(1.2, 2.1) [‡]
Census region										
Northeast	1.0		1.0		1.0		1.0		1.0	
Midwest	0.9	(0.7, 1.0)	0.8	(0.5, 1.2)	0.9	(0.7, 1.1)	0.9	(0.7, 1.2)	1.0	(0.7, 1.3)
South	1.1	(1.0, 1.3)	0.9	(0.6, 1.2)	1.0	(0.8, 1.2)	1.0	(0.7, 1.2)	0.9	(0.7, 1.2)
West	1.2	(1.0, 1.4) [‡]	0.8	(0.6, 1.2)	1.2	(0.9, 1.4)	1.0	(0.8, 1.3)	0.9	(0.7, 1.3)
Type of insurance										
Insured	1.0		1.0		1.0		1.0		1.0	
Uninsured	7.3	(6.4, 8.3)*	4.2	(3.1, 5.6)*	4.3	(3.7, 5.1)*	5.2	(4.3, 6.2)*	4.0	(3.2, 5.0)*
Activity limitation										
No activity limitation	1.0		1.0		1.0		1.0		1.0	
Any activity limitation	3.6	(3.1, 4.1)*	5.0	(3.7, 6.6)*	3.4	(2.9, 4.0)*	4.5	(3.6, 5.6)*	3.6	(2.8, 4.5)*
Survey time period										
Pre-conflict (1997–2001)	1.0		1.0		1.0		1.0		1.0	
Conflict (2002–2006)	1.4	(1.2, 1.5)*	1.3	(1.0, 1.7)	1.3	(1.1, 1.5)*	1.5	(1.3, 1.8)*	1.3	(1.0, 1.5) [‡]

* $P < 0.001$,

[‡] $P < 0.01$,

[‡] $P < 0.05$