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Healthcare utilization for psoriasis in the United States differs by race: an analysis of the 2001–2013 Medical Expenditure Panel Surveys

Alexander H. Fischer, MD, MPH¹, Daniel B. Shin, PhD², Joel M. Gelfand, MD, MSCE^{2,3}, and Junko Takeshita, MD, PhD, MSCE^{2,3}

¹Department of Dermatology, Johns Hopkins University School of Medicine, Baltimore, MD

²Department of Dermatology, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

³Department of Biostatistics Epidemiology and Informatics, Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

To the Editor

Racial/ethnic differences in general healthcare utilization exist in the U.S.¹ Little is known about healthcare utilization among racial/ethnic groups for skin diseases including for psoriasis, the most prevalent immune-mediated disease.² Thus, we aimed to evaluate healthcare utilization for psoriasis by race/ethnicity using population-based data derived from the Medical Expenditure Panel Surveys (MEPS), the most complete source of information on healthcare utilization, cost, and health insurance coverage in the U.S.³ This study was granted exempt status by the University of Pennsylvania Institutional Review Board.

We conducted a cohort study using MEPS data pooled from years 2001–2013. The study population was limited to subjects who reported having psoriasis. The primary explanatory variable was race/ethnicity categorized as non-Hispanic white (reference), Hispanic white, and non-Hispanic minority (black, Asian, Native Hawaiian, Pacific Islander, Native American, Alaskan Native, and multiracial); Hispanic non-whites were excluded due to small numbers. Healthcare utilization outcomes included number of ambulatory visits (with any provider), number of prescriptions, and any ambulatory dermatology visit for psoriasis. Additional characteristics of interest included age, sex, the presence of a spouse in the household, census region of residence, highest level of education, health insurance type, household income, medical comorbidity, systemic psoriasis treatment, duration of psoriasis

Correspondence: Junko Takeshita, MD, PhD, MSCE, University of Pennsylvania Perelman School of Medicine, 3400 Civic Center Boulevard, 7th Floor, South Tower, Office 728, Philadelphia, PA 19104, Office: 215-349-5551, Fax: 215-615-3127, Junko.Takeshita@uphs.upenn.edu.

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follow-up, and survey year. Multivariable regression was performed to assess the independent association between race/ethnicity and each healthcare utilization outcome. All analyses accounted for the complex survey design and population-based weights.

A total of 842 respondents reported having psoriasis, corresponding to over 1.6 million individuals with self-reported psoriasis in the U.S. Baseline characteristics of the study population are summarized in Table I. In adjusted analyses, non-Hispanic racial minorities reported fewer ambulatory visits for psoriasis than non-Hispanic whites (incidence rate ratio 0.54; 95% CI 0.38–0.77; Table II). This relative difference equates to an absolute difference of 1.24 (95% CI 0.62–1.85) fewer visits per person per year and a total of over 3 million fewer visits per year among non-Hispanic racial minorities versus non-Hispanic whites with psoriasis. Non-Hispanic minorities were also less likely to report having seen a dermatologist for psoriasis than non-Hispanic whites (odds ratio 0.59; 95% CI 0.36–0.95; Table II). In contrast, the number of prescriptions obtained for psoriasis was not significantly different among racial/ethnic groups (Table III). All findings were robust to a sensitivity analysis that excluded individuals with reported oral systemic or biologic use (7.1% of the study population).

Study limitations include: self-reported information which may be subject to error, small sample size precluding analysis of certain minority populations and evaluation of systemic therapies as an outcome, and lack of direct information on psoriasis severity.

Our new identification of disparities in ambulatory healthcare utilization for psoriasis among non-Hispanic minorities is particularly notable in light of prior data suggesting that racial/ethnic minorities have more severe psoriasis^{4,5} and poorer quality of life⁵ due to their skin disease compared with whites. Additional studies to understand why differences in healthcare utilization exist are necessary to achieve equitable care for all patients with psoriasis.

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References

1. Centers for Disease Control and Prevention. [Accessed July 4, 2017] Health Care Access and Utilization Among Adults Aged 18–64, by Race and Hispanic Origin: United States, 2013 and 2014. 2015. <https://www.cdc.gov/nchs/products/databriefs/db208.htm>
2. Rachakonda TD, Schupp CW, Armstrong AW. Psoriasis prevalence among adults in the United States. *J Am Acad Dermatol.* 2014; 70(3):512–516. [PubMed: 24388724]

3. Agency for Healthcare Research and Quality. [Accessed March 9, 2017] U.S. Department of Health and Human Services. Medical Expenditure Panel Survey. <https://meps.ahrq.gov/mepsweb/>
4. Gelfand JM, Stern RS, Nijsten T, et al. The prevalence of psoriasis in African Americans: results from a population-based study. *J Am Acad Dermatol.* 2005; 52(1):23–26. [PubMed: 15627076]
5. Shah SK, Arthur A, Yang YC, et al. A retrospective study to investigate racial and ethnic variations in the treatment of psoriasis with etanercept. *J Drugs Dermatol.* 2011; 10(8):866– 872. [PubMed: 21818507]

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Table I

Baseline characteristics by race/ethnicity

Medical Expenditures Panel Surveys, 2001–2013, unweighted N = 842, weighted N = 1,676,778				
	Race/Ethnicity			P-value^b
	Non-Hispanic white 82.8% Weighted % (95% CI)	Hispanic white 7.5% Weighted % (95% CI)	Non-Hispanic minority^a 9.7% Weighted % (95% CI)	
Age (years)				
0–17	7.1 (5.2–9.7)	11.5 (6.4–19.9)	14.8 (8.6–24.4)	
18–40	27.0 (22.9–31.5)	47.1 (35.3–59.3)	31.0 (22.0–41.8)	
41–64	42.9 (38.4–47.4)	34.4 (23.9–46.7)	40.9 (31.5–51.1)	
65+	23.0 (19.6–26.8)	7.0 (3.3–14.1)	13.2 (7.6–22.0)	<0.001
Female	50.8 (46.7–54.8)	39.9 (29.6–51.1)	60.3 (50.5–69.3)	0.03
Spouse in household	57.9 (53.6–62.1)	30.9 (21.7–41.9)	44.9 (35.7–54.4)	<0.001
Census region				
Northeast	21.1 (17.2–25.6)	15.4 (8.4–26.4)	10.3 (5.8–17.7)	
Midwest	24.5 (20.8–28.5)	10.5 (4.6–22.4)	13.4 (7.9–21.7)	
South	34.4 (29.9–39.1)	33.7 (20.7–49.8)	53.1 (43.8–62.2)	
West	20.1 (16.3–24.4)	40.4 (27.5–54.8)	23.2 (16.1–32.2)	<0.001
Education level				
Less than high school diploma	14.4 (11.6–17.7)	31.5 (21.2–43.9)	23.7 (17.2–31.8)	
HS diploma, vocational school	52.6 (47.8–57.4)	52.6 (40.6–64.3)	45.1 (36.2–54.4)	
Bachelor's degree	21.5 (17.7–24.9)	12.1 (6.1–22.6)	18.5 (10.9–29.8)	
Masters/Doctorate	11.5 (8.7–15.1)	3.9 (1.7–8.7)	12.6 (6.9–22.0)	0.003
Health insurance type				
Any private	80.5 (76.7–83.8)	62.2 (50.5–72.7)	78.2 (67.9–85.9)	
Public only	14.2 (11.5–17.3)	27.7 (18.8–38.7)	19.0 (11.8–29.0)	
Uninsured	5.3 (3.7–7.7)	10.1 (5.4–18.1)	2.8 (1.0–7.8)	0.004
Income level				
Low (<200% poverty line)	21.0 (17.7–24.7)	29.9 (20.2–41.8)	34.7 (25.4–45.4)	
Middle (200–400% poverty line)	27.2 (23.6–31.2)	27.7 (19.3–38.2)	34.7 (25.3–45.5)	
High (>400% poverty line)	51.8 (47.2–56.4)	42.4 (30.3–55.4)	30.6 (22.7–39.8)	0.003
Comorbidity score				
0 points	65.9 (61.8–69.7)	71.0 (59.9–80.0)	60.9 (50.3–70.6)	
1 point	10.7 (8.3–13.7)	8.9 (4.1–18.1)	16.3 (10.0–25.4)	
2 points	13.2 (10.4–16.6)	12.2 (5.8–23.8)	8.4 (4.6–14.9)	
3+ points	10.2 (7.7–13.5)	8.0 (3.4–17.4)	14.4 (8.5–23.4)	0.38
Duration of psoriasis follow-up				
One round	10.4 (7.9–13.6)	8.1 (3.5–17.7)	11.9 (6.4–21.1)	
Two rounds	11.4 (8.7–14.8)	7.8 (4.1–14.4)	16.3 (10.1–25.3)	
Three rounds	16.2 (13.1–19.9)	22.5 (13.4–35.3)	16.6 (10.0–26.4)	
Four rounds	20.7 (17.3–24.5)	29.5 (20.3–40.7)	26.3 (17.5–37.5)	

Medical Expenditures Panel Surveys, 2001–2013, unweighted N = 842, weighted N = 1,676,778

	Race/Ethnicity			P-value ^b
	Non-Hispanic white 82.8% Weighted % (95% CI)	Hispanic white 7.5% Weighted % (95% CI)	Non-Hispanic minority ^a 9.7% Weighted % (95% CI)	
Five rounds	41.3 (36.6–46.3)	32.1 (21.1–45.5)	28.9 (21.6–37.4)	0.21
Panel number				
Panels 6–9	29.6 (25.5–34.0)	25.3 (15.6–38.3)	32.1 (24.1–41.4)	
Panels 10–13	33.5 (29.1–38.3)	24.6 (15.5–36.6)	32.2 (22.8–43.5)	
Panels 14–17	36.9 (32.2–41.9)	50.1 (37.2–63.0)	35.6 (25.6–47.1)	0.33

^aNon-Hispanic minority includes black, Asian/Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, and multiracial.

^bP-values were calculated using the Rao-Scott design-based chi-squared test.

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Table II

Ambulatory visit outcomes for psoriasis by race/ethnicity: number of all ambulatory visits (A) and any dermatology visit (B)

A. Number of all ambulatory visits for psoriasis			
Medical Expenditures Panel Surveys, 2001–2013, unweighted N = 842, weighted N = 1,676,778			
	Mean per year (95% CI)	Unadjusted IRR (95% CI)	Adjusted IRR^a (95% CI)
Overall	2.51 (2.00–3.02)	-	-
Race/ethnicity			
Non-Hispanic white	2.69 (2.09–3.28)	Reference	Reference
Hispanic white	1.87 (1.18–2.56)	0.76 (0.46–1.25)	0.78 (0.49–1.24)
Non-Hispanic minority ^b	1.30 (0.91–1.70)	0.43 (0.29–0.65)	0.54 (0.38–0.77)
B. Any ambulatory dermatology visit for psoriasis			
Medical Expenditures Panel Surveys, 2002–2013, unweighted N = 744, weighted N = 1,547,003			
	Yes, Weighted % (95% CI)	Unadjusted OR (95% CI)	Adjusted OR^c (95% CI)
Overall	49.2 (45.0–53.4)	-	-
Race/ethnicity			
Non-Hispanic white	50.8 (45.9–55.6)	Reference	Reference
Hispanic white	46.7 (32.7–61.2)	0.85 (0.45–1.62)	1.03 (0.53–2.00)
Non-Hispanic minority ^b	38.3 (28.8–48.9)	0.60 (0.38–0.95)	0.59 (0.36–0.95)

^a Adjusted incidence rate ratios (IRR) and 95% confidence intervals (CI) were calculated using negative binomial regression adjusting for age, sex, household income, census region, marital status (spouse in the household), education level, and health insurance type, accounting for the duration of psoriasis follow-up.

^b Non-Hispanic minority includes black, Asian/Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, and multiracial.

^c Adjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated using logistic regression, adjusting for age, sex, household income, census region, marital status (spouse in the household), education level, and health insurance type.

Table III

Number of prescriptions obtained for psoriasis by race/ethnicity

Medical Expenditures Panel Surveys, 2001–2013, unweighted N = 842, weighted N = 1,676,778			
	Mean per year (95% CI)	Unadjusted IRR (95% CI)	Adjusted IRR^a (95% CI)*
Overall	2.03 (1.85–2.22)	-	-
Race/ethnicity			
Non-Hispanic white	2.07 (1.86–2.28)	Reference	Reference
Hispanic white	1.81 (1.43–2.18)	0.84 (0.63–1.13)	0.89 (0.64–1.24)
Non-Hispanic minority ^b	1.86 (1.43–2.28)	0.88 (0.65–1.21)	0.90 (0.68–1.19)

^a Adjusted incidence rate ratios (IRR) and 95% confidence interval (95% CI) were calculated using negative binomial regression adjusting for age, sex, poverty level, census region, marital status (spouse in household), education level, and health insurance type, accounting for the duration of psoriasis follow-up

^b Non-Hispanic minority includes black, Asian/Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, and multi-racial.

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