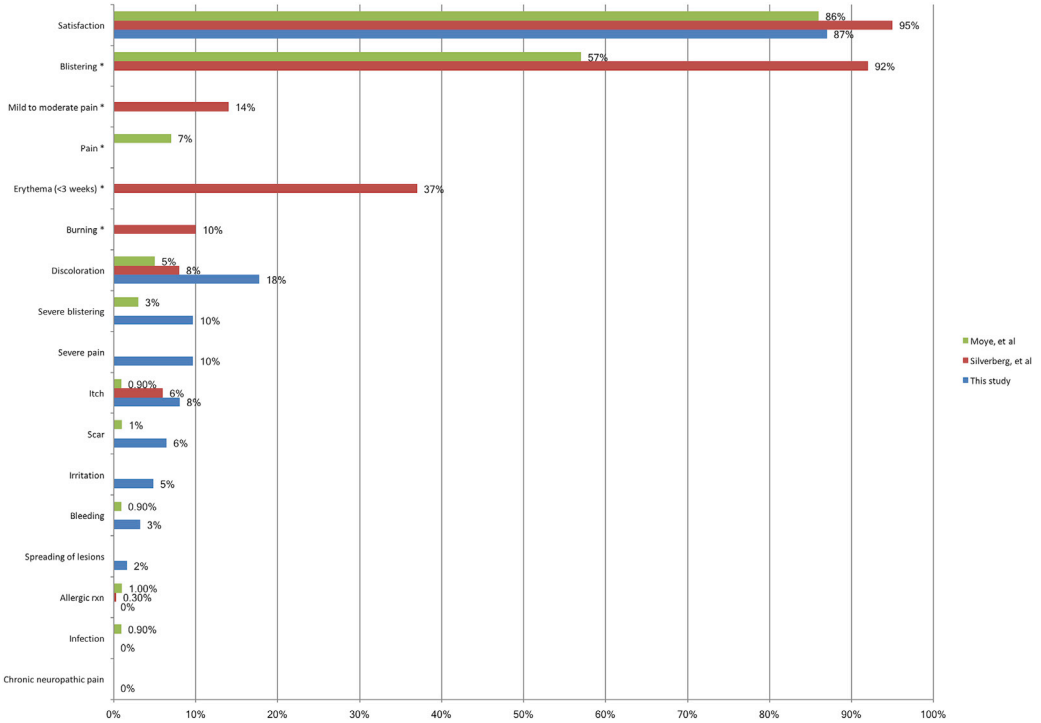

Fig 2. Caregiver-reported adverse effects and overall satisfaction of cantharidin treatment—a comparison with the literature. Symptoms that were not included in this study are noted with an asterisk.

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Health care utilization for psoriasis in the United States differs by race: An analysis of the 2001-2013 Medical Expenditure Panel Surveys

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

We conducted a cohort study using Medical Expenditure Panel Survey data pooled from the years 2001 to 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);

Table I. Baseline characteristics by race/ethnicity*

	Race/Ethnicity			
	Non-Hispanic white 82.8% Weighted % (95% CI)	Hispanic white 7.5% Weighted % (95% CI)	Non-Hispanic minority† 9.7% Weighted % (95% CI)	*P* value‡
Age, years				<.001
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)	
Female	50.8 (46.7-54.8)	39.9 (29.6-51.1)	60.3 (50.5-69.3)	.03
Spouse in household	57.9 (53.6-62.1)	30.9 (21.7-41.9)	44.9 (35.7-54.4)	<.001
Census region				<.001
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)	
Education level				.003
Less than high school diploma	14.4 (11.6-17.7)	31.5 (21.2-43.9)	23.7 (17.2-31.8)	
High school 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)	
Master's degree/doctorate	11.5 (8.7-15.1)	3.9 (1.7-8.7)	12.6 (6.9-22.0)	
Health insurance type				.004
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)	
Income level				.003
Low (<200% federal poverty level)	21.0 (17.7-24.7)	29.9 (20.2-41.8)	34.7 (25.4-45.4)	
Middle (200-400% federal poverty level)	27.2 (23.6-31.2)	27.7 (19.3-38.2)	34.7 (25.3-45.5)	
High (>400% federal poverty level)	51.8 (47.2-56.4)	42.4 (30.3-55.4)	30.6 (22.7-39.8)	
Comorbidity score, points				.38
0	65.9 (61.8-69.7)	71.0 (59.9-80.0)	60.9 (50.3-70.6)	
1	10.7 (8.3-13.7)	8.9 (4.1-18.1)	16.3 (10.0-25.4)	
2	13.2 (10.4-16.6)	12.2 (5.8-23.8)	8.4 (4.6-14.9)	
≥3	10.2 (7.7-13.5)	8.0 (3.4-17.4)	14.4 (8.5-23.4)	
Duration of psoriasis follow-up, no. of rounds				.21
1	10.4 (7.9-13.6)	8.1 (3.5-17.7)	11.9 (6.4-21.1)	
2	11.4 (8.7-14.8)	7.8 (4.1-14.4)	16.3 (10.1-25.3)	
3	16.2 (13.1-19.9)	22.5 (13.4-35.3)	16.6 (10.0-26.4)	
4	20.7 (17.3-24.5)	29.5 (20.3-40.7)	26.3 (17.5-37.5)	
5	41.3 (36.6-46.3)	32.1 (21.1-45.5)	28.9 (21.6-37.4)	
Panel no.				.33
6-9	29.6 (25.5-34.0)	25.3 (15.6-38.3)	32.1 (24.1-41.4)	
10-13	33.5 (29.1-38.3)	24.6 (15.5-36.6)	32.2 (22.8-43.5)	
14-17	36.9 (32.2-41.9)	50.1 (37.2-63.0)	35.6 (25.6-47.1)	

*Medical Expenditure Panel Surveys 2001-2013 (unweighted total N = 842, weighted total N = 1,676,778).
†Non-Hispanic minority includes black, Asian/Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, and multiracial.
‡*P* values calculated using the Rao–Scott design-based chi-squared test.

Hispanic nonwhites were excluded because of small numbers. Health care utilization outcomes included the 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 follow-up, and survey year. Multivariable regression was performed to assess the independent association between race/ethnicity and each health care utilization outcome. All analyses accounted for the complex survey design and population-based weights.

A total of 842 respondents reported having psoriasis, corresponding to more than 1.6 million individuals with self-reported psoriasis in the United