

Diversity in Dermatology: Dermatology Resident Exposure to Skin of Color

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INTRODUCTION

Due to increasing diversity of the United States, with an estimated 50 percent of the population identifying as non-white by the year 2050,¹ it is imperative to improve medical knowledge regarding specific conditions affecting this population as well as medical trainees' confidence when caring for these patients. Disparities in dermatologic training regarding skin of color (SOC) pathology have been observed.^{2,3} Dermatologic health inequalities in ethnic minorities have also been reported.¹ This study evaluates current trends in SOC residency curricula and assesses confidence in caring for this population, from the standpoints of both the program director (PD) and resident.

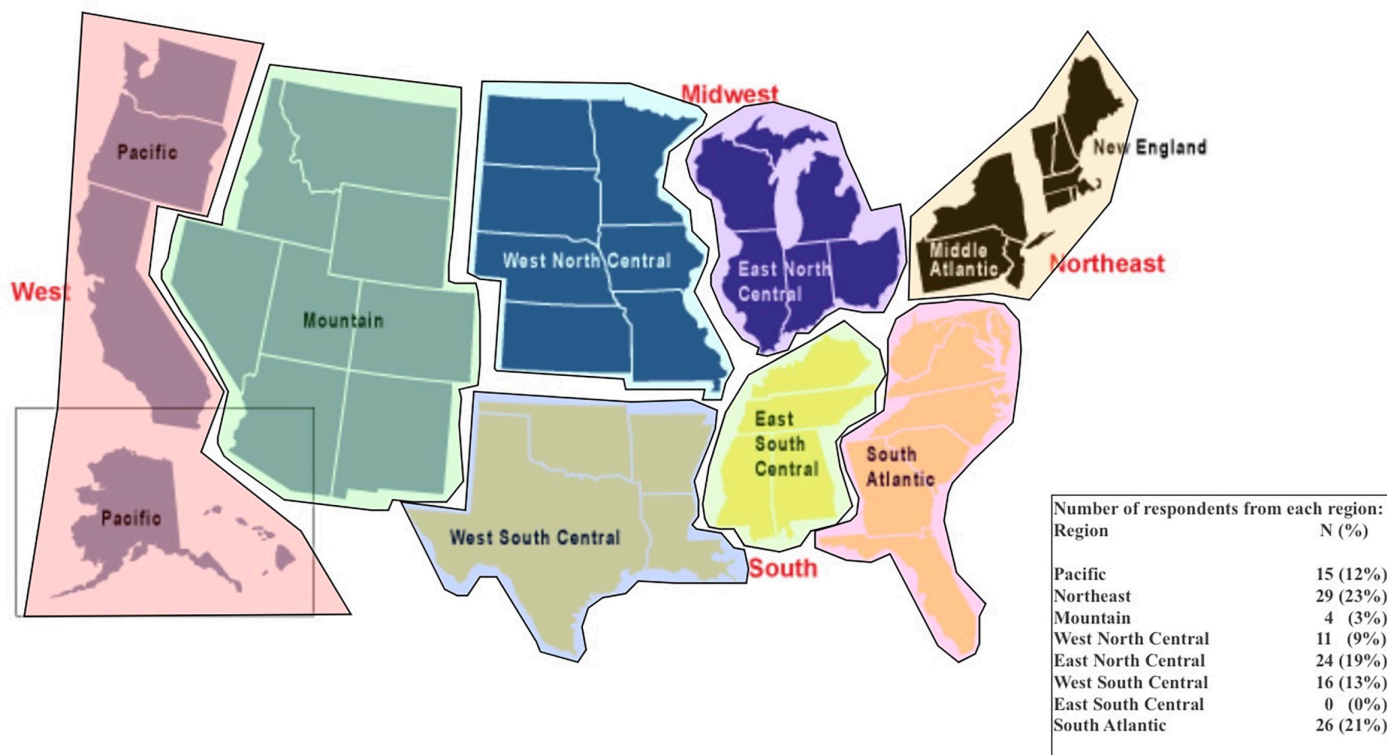
An anonymous survey approved by the Institutional Review Board at the University of Florida was distributed to dermatology postgraduate year (PGY) 2–4 residents and program directors (PDs) through the Association of Professors of Dermatology e-mail listserv. The number of questions varied based on respondent answers. The survey evaluated SOC pathology exposure via lectures, on-site clinics, electives, or instruction by SOC experts. Additional questions were asked regarding resident confidence level in treating affected patients of color. PDs also received questions regarding their assessment of resident confidence levels.

Demographics and geographic distribution of respondents are displayed in Supplementary Table and Figure 1, respectively. The anonymous survey received 137 responses (summarized in Supplementary Table) from over 50 residency programs, with 54 PD, 33 PGY-2, 26 PGY-3, and 24 PGY-4 respondents. A Pearson's χ^2 test was used to analyze the relationship between SOC specific experiences and residents' confidence level in diagnosis and treatment in SOC compared to Caucasian patients (Table 1). Our study found that residents with an expert in SOC in their program are 3.08 (95% CI, [1.12, 8.5]) times more likely to feel equally/more confident in diagnosing skin disorders in SOC versus Caucasian patients compared to residents without an expert attending. However, a statistically significant relationship was not shown when analyzing resident confidence level and SOC clinics, lectures, or electives. The

TABLE 1.

Statistical Analysis of SOC Experiences and Resident's Confidence Level				
Residents				
SOC Experience	Diagnosis or Treatment	Odds Ratio ^a	95% CI	p-value for χ^2 test
Clinic	Diagnosis	0.83	0.25-2.73	0.7632
Didactics	Diagnosis	1.62	0.63-4.13	0.3152
Electives	Diagnosis	1.61	0.3-8.66	0.5771
Expert	Diagnosis	3.08	1.12-8.5	0.02719
Clinic	Treatment	0.86	0.28-2.65	0.7829
Didactics	Treatment	1.09	0.44-2.72	0.852
Electives	Treatment	1.37	0.23-8.09	0.7264
Expert	Treatment	2.28	0.87-6.01	0.09266
Program Directors				
SOC Experience	Diagnosis or Treatment	Odds Ratio ^a	95% CI	p-value for χ^2 test
Clinic	Diagnosis	1.32	0.3-5.77	0.7068
Didactics	Diagnosis	0.76	0.22-2.67	0.666
Electives	Diagnosis	0.59	0.15-2.26	0.4383
Expert	Diagnosis	1.08	0.32-3.64	0.897
Clinic	Treatment	0.44	0.11-1.87	0.2617
Didactics	Treatment	0.63	0.17-2.35	0.4945
Electives	Treatment	0.39	0.1-1.49	0.1653
Expert	Treatment	0.71	0.22-2.36	0.5804
Combined (Residents and PDs)				
SOC Experience	Diagnosis or Treatment	Odds Ratio ^a	95% CI	p-value for χ^2 test
Clinic	Diagnosis	1.01	0.41-2.5	0.982
Didactics	Diagnosis	1.33	0.64-2.78	0.4423
Electives	Diagnosis	1.02	0.37-2.82	0.9696
Expert	Diagnosis	1.84	0.86-3.91	0.113
Clinic	Treatment	0.66	0.28-1.6	0.3607
Didactics	Treatment	0.92	0.44-1.91	0.8247
Electives	Treatment	0.6	0.22-1.62	0.311
Expert	Treatment	1.45	0.69-3.05	0.3256

SOC: skin of color; CI: confidence interval
^aThe odds ratios reflect confidence of residents with SOC specific experiences compared with confidence of residents without SOC specific experience.

FIGURE 1. Regional geographic distribution of survey respondents.

relationship between SOC experiences and PD's perception of resident confidence level in diagnosis and treatment in SOC compared to Caucasian patients did not reveal any significant correlations, even when combining responses with resident responses.

Limitations of this study include a small sample size, survey-based data, and assessment of resident confidence rather than knowledge. Due to anonymity, we are unable to identify individual respondents to further investigate their location. Our survey did not collect information about the patient population demographics cared for by each participant, which may influence residents' confidence and need for SOC specific experiences. However, better identification of participants' patient demographics could be pursued in a follow-up survey that analyzes residents' confidence and exposure to SOC pathology.

The responding residents were notably equally/more confident in diagnosing skin disease in SOC if they had an expert at their program. Further efforts should be made to improve resident confidence in diagnosing pathology in SOC in order to adapt to an increasingly diverse patient population. Based on this study, increased clinical instruction by SOC experts may address this knowledge gap.

DISCLOSURES

The authors have no conflicts of interest to report.

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REFERENCES

1. Buster KJ, Stevens EI, Elmets CA. Dermatologic health disparities. *Dermatol Clin.* 2012;30(1):53–viii.
2. Nijhawan RI, Jacob SE, Woolery-Lloyd H. Skin of color education in dermatology residency programs: does residency training reflect the changing demographics of the United States? *J Am Acad Dermatol.* 2008 Oct;59(4):615–8.
3. Ebade T, Papier A. Disparities in dermatology educational resources. *J Am Acad Dermatol.* 2006 Oct;55(4):687–90.

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SUPPLEMENTARY TABLE.

Survey Questions and Responses	
Survey Questions	n (%)
Does your program have a specialty clinic dedicated to skin of color (SOC)?	
Yes	33 (24%)
No	76 (76%)
Does your program offer didactics focused on skin of color?	
Yes	69 (53%)
No	58 (44%)
I don't know	4 (3%)
Does your program offer electives focused on skin of color?	
Yes	20 (16%)
No	94 (73%)
I don't know	14 (11%)
How confident do you feel in diagnosing skin disease in patients of color, compared to skin disease in Caucasian patients?	
More confident	3 (4%)
Equally confident	27 (34%)
Less confident	50 (63%)
Unsure	0 (0%)
How confident do your residents feel in diagnosing skin disease in patients of color, compared to skin disease in Caucasian patients?	
More confident	5 (10%)
Equally confident	17 (35%)
Less confident	22 (46%)
Unsure	4 (8%)
How confident do you feel in treating and managing skin disease in patients of color, compared to skin disease in Caucasian patients?	
More confident	2 (3%)
Equally confident	42 (53%)
Less confident	34 (43%)
Unsure	2 (3%)
How confident do your residents feel in treating and managing skin disease in patients of color, compared to skin disease in Caucasian patients?	
More confident	5 (10%)
Equally confident	20 (42%)
Less confident	19 (40%)
Unsure	4 (8%)
Does your program have an expert in skin of color**?	
Yes	50 (39%)
No	71 (55%)
I don't know	7 (5%)
In your opinion, what percentage of your faculty identify as members of a minority group?	
Average % of minority faculty based on 127 responses	19%
What is your race? Check all that apply	
American Indian or Alaska Native	2 (1%)
Asian or South Asian subcontinent	20 (14%)
Black or African American	14 (10%)
Native Hawaiian or Pacific Islander	0 (0%)
Caucasian	92 (67%)
Other	6 (4%)
Choose not to answer	4 (3%)
What is your ethnicity?	
Hispanic or Latinx	6 (5%)
Not Hispanic or Latinx	115 (91%)
Choose not to answer	6 (5%)

PGY: postgraduate year; PD: program director

*Percentages are rounded to the nearest whole number

**A skin of color expert is defined as an individual who has chosen to dedicate their time to educating others on skin of color pathology, treats mostly disease in skin of color patients, and/or is specifically interested in research pertaining to skin of color.