

Table I. Median (interquartile range) of the main outcomes of the study (n = 64)

Outcome	CT	T	M	MT
mMASI				
T0	3.6 (4.2)	5.0 (5.3)	6.5 (4.2)	5.4 (8.1)
T30	4.0 (4.7)	3.1 (2.1)*	4.4 (3.0)	2.2 (3.1)*
T60	3.2 (4.0)	1.8 (2.0)*	3.5 (2.6)	2.6 (2.5)*
T120	2.9 (3.5)	2.9 (2.7)*	3.4 (2.9)	2.7 (3.6)
MELASQoL				
T0	60.0 (21.0)	56.0 (11.5)	49.0 (24.5)	52.5 (26.5)
T30	46.0 (19.0)	43.5 (17.5)*,†	34.5 (26.5)*	28.0 (39.0)*
T60	41.0 (32.5)	32.5 (20.5)*	20.0 (20.0)	10.0 (8.5)
T120	40.0 (45.5)	30.5 (16.0)†	19.0 (13.0)	13.0 (16.5)
DifL				
T0	18.0 (18.1)	16.8 (13.9)	15.4 (20.1)	15.7 (13.0)
T30	16.2 (18.8)	13.7 (12.0)	15.7 (22.6)	12.9 (14.6)*
T60	13.7 (15.4)	13.0 (13.6)*,†	14.3 (23.1)*	12.1 (14.6)*
T120	13.0 (3.2)	14.6 (4.4)	12.6 (2.7)	12.3 (2.6)

CT, Control; DifL, difference between colorimetric luminosity (*L) from perilesional skin to melasma; M, microneedling; MELASQoL, Melasma Quality of Life Scale; mMASI, modified Melasma Area Severity Index; MT, microneedling + tranexamic acid; T, tranexamic acid; T0, baseline; T30, 30 days; T60, 60 days; T120, 120 days.

* $P \leq .05$ compared with CT by analysis of covariance.

† $P \leq .05$ compared with MT by analysis of covariance.

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Dermatologist burnout: Contribution of gender and impact of children



To the Editor: Physicians are twice as likely to experience burnout compared with the general working population, and dermatologists have the fastest growing rate of burnout.¹ Women physicians experience more burnout than men, with burnout in women triggered by emotional exhaustion, while depersonalization affects men.²

We distributed an anonymous electronic survey to dermatologists using a combination of the Association of Professors of Dermatology email list manager and personal contacts within academic institutions from June 11, 2019, to July 25, 2019. The survey included the Maslach Burnout Inventory Human Services Survey for Medical Professionals (MBI-HSS MP), a validated

Table I. Demographic information of survey respondents

Category	No. (%) (N = 108)		P value*
Sex [†]			
Male	56 (52)		
Female	52 (48)		
Age, y			
<35	10 (9)		
35-44	43 (40)		
45-54	20 (19)		
55-64	20 (19)		
>65	15 (14)		
Years in practice			
<5	18 (17)		
5-9	28 (26)		
10-14	12 (11)		
15-19	8 (8)		
≥20	41 (38)		
Practice setting [‡]			
Academic	58 (53)		
Urban	52 (48)		
Group practice	35 (32)		
Solo practice	16 (15)		
Rural	11 (10)		
No longer in practice [§]	1 (0)		
Locum tenens	0 (0)		
Hours spent during an average week			
At work	Male	Female	
<30	7 (10)	7 (9)	.22
30-40	14 (21)	23 (30)	
41-45	10 (15)	16 (21)	
46-50	17 (25)	13 (17)	
51-55	7 (10)	12 (16)	
56-60	9 (13)	3 (4)	
> 60	3 (4)	3 (4)	
At home on any activity related to work or training			
<1	5 (9)	5 (10)	.32
1-4	19 (34)	13 (25)	
5-9	9 (16)	18 (35)	
10-14	13 (23)	7 (13)	
15-19	4 (7)	4 (8)	
>20	6 (11)	5 (10)	
Race/ethnicity ^{‡§}			
White	83 (77)		
Asian/Pacific Islander	15 (14)		
Other	6 (6)		
Hispanic or Latino	4 (4)		
Black or African American	2 (2)		
Prefer not to say	3 (3)		
Relationship status			
Married	95 (88)		.75
Single	6 (6)		
Partnered	3 (3)		

Continued

Table I. Cont'd

Category	No. (%) (N = 108)	P value*
Divorced	3 (3)	
Widowed	1 (1)	
Children living at home		
Yes	67 (62)	.03
No	41 (38)	
Ages of children at home, y		
0-2	20 (30)	
3-5	21 (31)	
6-11	28 (42)	
12-17	25 (37)	
18-21	4 (6)	
21	2 (3)	
Any self-reported psychiatric diagnosis [‡]		.71
Anxiety or panic disorder	17 (16)	
Depression	16 (15)	
Insomnia/sleep disorder	5 (5)	
Psychiatric disorder, unspecified	3 (3)	
Eating disorder	2 (2)	
Stress or trauma related disorder	2 (2)	
Substance use or addiction disorder	1 (1)	

No., Number.

*The P values were calculated using the Fisher exact test for differences between sexes and location of hours worked, and the χ^2 test was used to assess for differences in burnout depending on marriage status, any reported psychiatric diagnosis, or having children.

[†]Nonbinary, transgender man, transgender woman, other, and prefer not say were included but not selected.

[‡]These questions asked respondents to select all that apply. The percentage represents how many participants of 108 selected each answer choice once. Therefore, the sum exceeds 100%.

[§]Native American or American Indian were included but not selected.

^{||}These values are nonzero, but the percentages are represented without decimal places.

22-item questionnaire considered the gold standard for determining workplace burnout.^{1,2} Study data were collected and managed using REDCap (Research Electronic Data Capture) electronic data capture tools hosted at the University of Washington.³ From the 166 responses that were collected, 18 were excluded because of an incomplete MBI-HSS MP, as were 36 responses by dermatology trainees and 4 nonphysician responses. The final analysis included 108 responses.

Table I summarizes the demographics of the 108 included respondents. Respondents included slightly more men (52% [56 of 108]) than women

Table II. Maslach Burnout Inventory, self-perceptions, and activities among dermatologists

Variable*	Male	Female	P value [†]
Number of respondents	56 (52)	52 (48)	
Maslach Burnout Inventory [‡]			
Burned out	24 (43)	22 (42)	.96
Emotional exhaustion	20 (12-31)	23 (15-33)	.29
Low (0-18)	25 (48)	18 (37)	.64
Intermediate (19-26)	7 (14)	14 (28)	
High (≥ 27)	20 (38)	17 (35)	
Depersonalization	6 (2-15)	6 (3-11)	.56
Low (0-5)	26 (48)	22 (44)	.92
Intermediate (6-9)	9 (17)	14 (28)	
High (≥ 10)	19 (35)	14 (28)	
Personal accomplishment	43 (39-45)	42.5 (37-45)	.32
High (40+)	38 (72)	29 (60)	.2
Intermediate (34-39)	11 (21)	12 (25)	
Low (0-33)	4 (8)	7 (15)	
Self-perceptions: Do you feel/consider yourself...			
Spiritual?	20 (36)	20 (38)	.76
Fairly compensated for your work?	39 (70)	42 (81)	.18
Maintain a good work/life balance?	32 (57)	34 (65)	.38
Get enough sleep?	23 (41)	21 (40)	.94
Average hours slept each night, h			.49
≤ 5	4 (7)	5 (10)	
6	21 (38)	14 (27)	
7	24 (43)	23 (44)	
8	6 (11)	10 (19)	
≥ 9	1 (2)	0 (0)	
Have a good support system at home?	45 (80)	44 (85)	.56
Engages in			
Mindfulness and meditation practices?	19 (34)	17 (33)	.89
Has a creative outlet	28 (50)	21 (40)	.31
Regular meetings with a mentor(s)?	28 (50)	31 (60)	.31
Constructive feedback?	18 (32)	25 (48)	.09
Frequency of meeting with mentor			.34
Never	21 (45)	16 (35)	
At least annually	9 (19)	8 (17)	

Bold numbers represent the difference in EE, DP, and PA between women and men. P value is bold for constructive feedback because it neared statistical significance.

*The scores are presented as the median (interquartile range) and categorical data as number (%).

[†]The P values were calculated for differences between sexes using the Fisher exact test for contingency tables, the χ^2 test for 2×2 tables, and Kruskal-Wallis test for ordinal data in the emotional exhaustion, depersonalization, and personal accomplishment rankings.

[‡]As assessed using the full Maslach Burnout Inventory. We scored physicians in the same manner as other published reports that used the Maslach Burnout Inventory-Human Services Survey for Medical Personnel.^{1,4} Physicians with scores of ≥ 27 on the emotional exhaustion subscale, ≥ 10 on the depersonalization subscale, or ≤ 33 on the personal accomplishment subscale were considered to have a high degree of burnout in that dimension. On the basis of this categorization, respondents who qualified as burned out in at least 1 of the 3 dimensions were considered "burned out" overall.

(48% [52 of 108]). Most respondents felt fairly financially compensated, maintained a good work-life balance, slept ≥ 7 hours a night, and reported a strong support system at home.

Of those who responded, 42% to 43% reported at least 1 symptom of burnout as defined by a high score in emotional exhaustion or depersonalization or a low score in personal accomplishment (Table II).^{1,4} There was no significant difference in overall burnout ($P = .96$)

or in emotional exhaustion, depersonalization, or personal accomplishment between men and women. Dermatologists with children living at home had significantly higher levels of burnout ($P = .03$). Having a self-reported psychiatric diagnosis or being married were not related to burnout status. Women reported receiving constructive feedback from a mentor more than men, but this did not reach statistical significance ($P = .09$).

Major limitations of our study include the small sample size and the inability to calculate a response rate because of the sources leveraged to distribute the survey link. Our methods replicate those of several of the largest studies measuring burnout in dermatologists, including the Medscape study, which sampled a similar number of dermatologists.⁵ In addition, our respondents were predominantly academic dermatologists and self-identified as white, which may limit the generalizability of our findings.

Our findings support that burnout among this sample of dermatologists affects men and women similarly. This is in contrast to other studies.¹ Although some limitations (small sample size, academic focus) may impact our findings, the generally high levels of burnout we found are equivalent to national averages, supporting the general validity of our results.^{1,2} Women are inequitably affected by the impact of raising children, and women physicians spend an additional 8.5 hours per week on family life.⁴ Additional support for all with young families may be an important factor in mitigating burnout. We conclude that when addressing burnout among dermatologists, it is important to consider the impact of children and take work-life balance into account, regardless of sex.

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Enhancing the process for care delivery in a dermatology specialty clinic



To the Editor: Dermatology specialty clinics provide access to disease-oriented specialists who enhance research and the care of people with complex skin conditions. The referral process is a critical facet of care delivery for patients with complex dermatologic conditions. Although previous research has revealed inefficiencies in the specialty-referral process,¹⁻³ interventions to improve referrals to dermatology specialty clinics are lacking, particularly those designed to address the needs of referring providers.

We conducted a quality improvement study, exempt from institutional review board approval, to optimize the referral process at a specialty clinic at the Massachusetts General Hospital that focuses on care delivery to patients at high risk of developing keratinocyte carcinomas (KCs). Prior studies have supported the value of specialized skin cancer clinics in dermatology care delivery,⁴ supporting the selection of the high-risk skin cancer clinic for an intervention aimed at improving the referral process.

We gathered 24 months of information on referring practices (2014-2016), including the numbers and reasons for referral. We conducted semistructured, open-ended qualitative interviews with providers in the top 2 referring practices (2016-2017) to understand provider needs and barriers. Qualitative analysis of the interviews identified several barriers, including lack of understanding of how to initiate a specialty clinical referral and a lack of knowledge