



## Original Research

## Burnout and resiliency in Mohs surgeons: A survey study

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## ABSTRACT

**Background:** Physician burnout is a response to chronic work stress characterized by emotional exhaustion, depersonalization, and reduced sense of personal accomplishment. Resiliency is the ability to respond to chronic stress in a healthy and adaptive manner. No prior studies have specifically examined the prevalence of burnout and resilience in Mohs surgeons.

**Objective:** This study aimed to assess the current well-being of Mohs surgeons and specific resilient behaviors that can protect against burnout.

**Methods:** A cross-sectional electronic survey was sent to members of the American College of Mohs Micrographic Surgery. The survey combined the validated Maslach Burnout Inventory and The Resilience Profile ©.

**Results:** Of the 1450 surgeons registered with the American College of Mohs Surgery listserv, 137 (9.4%) participated in the survey. Of those who participated, 46% of surgeons had at least 1 symptom of burnout based on a high emotional exhaustion and/or high depersonalization score. Female surgeons (56%) were found to have higher levels of burnout compared with male surgeons (40%). Individual resilient behaviors protective of burnout include the ability to pivot and exhibition of self-control.

**Conclusion:** Compared with all physicians and general dermatologists, Mohs surgeons have a lower rate of burnout. Similar to other surgical specialties, women report higher rates of burnout. Individual resilience factors that may be protective of burnout include ability to pivot and self-control.

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## Introduction

Physician wellness and burnout have garnered much attention. Previous studies established high levels of emotional exhaustion or depersonalization as a hallmark of physician burnout (Maslach et al., 1996). The prevalence of burnout among physicians increased from 45.5% in 2011 to 54.4% in 2014 (Shanafelt et al., 2015). Interestingly, among dermatologists, the increase was even more significant, rising from 31.8% in 2011 to 56.5% in 2014 (Shanafelt et al., 2015). This 24.7% increase was higher than any other specialty reported. Despite this trend, limited studies have examined burnout in dermatologists and, more specifically, Mohs surgeons. Given the difference in work settings and responsibilities, burnout may differ between general dermatologists and Mohs surgeons.

High levels of resiliency have been associated with lower burnout rates (Epstein and Krasner, 2013; Zwack and Schweitzer, 2013). Factors that contribute to resilience include the ability to pivot, balanced goal setting, cultivating support, engaging others in a higher purpose, fact-based decision making, focus, grit, pragmatic optimism, and self-control. With the exception of grit, these factors may be personally developed to improve one's resilience. The purpose of this study was to assess the current well-being and resiliency of Mohs surgeons and to identify particular components of resilience that may lower burnout rates.

## Methods

An anonymous RedCap survey was approved by the human research subjects committee and sent to all members (N = 1450) registered with the American College of Mohs Surgery (ACMS) through e-mail directly from the organization. Responses (n = 137) were collected from October 2017 to January 2018.

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The 22-item Maslach Burnout Inventory (MBI) is considered the gold standard for burnout assessment, but its length limits its practicality in surveys. Therefore, burnout was assessed using two single-item questions, adapted from the full MBI (Epstein and Krasner, 2013). Physicians with a high score in either emotional exhaustion or depersonalization were categorized as having burnout (Maslach et al., 1996; Zwack and Schweitzer, 2013). In addition to emotional exhaustion and depersonalization, we also assessed personal accomplishment using the full seven-item MBI scale (Maslach et al., 1996). Resiliency was measured with The Resilience Profile © based on 67 questions that assessed 12 resilience factors, including ability to pivot, balanced goal setting, building empathy, engaging in a higher purpose, fact-based decision making, focus, grit, pragmatic optimism, self-control, and self-reflection. Factor analysis was used to verify and refine the factor structures. The following demographic information was also collected: sex, age, race, years since training, region of practice, community of practice, practice type, and cases per year.

Descriptive summary statistics were used to characterize the physicians. Differences in burnout between the demographic categories were evaluated using a z-test for proportions. All tests were two-sided with type I error rates of 0.05. Multivariate analysis of the impact of resilience on burnout was performed using logistic regression. All subscales of resilience were included in the logistic regression using forward entry. Finally, the association between personal achievement and cases per year was evaluated with the Pearson correlation. All analyses were performed using SPSS, version 24.0 (IBM Corp., Armonk, NY).

**Results**

Of the 1450 Mohs surgeons registered with the ACMS listserv, 137 (9.4%) completed the survey. There was no definitive way to confirm receipt of the e-mail. The characteristics of the responding surgeons are summarized in Table 1. The distribution of the char-

acteristics of the responding surgeons (e.g., sex, age, years since training, and cases per year) are similar to those of current ACMS members. The only characteristic that differed in our participants compared with current ACMS members was the distribution of academic/university-based versus private/community-based practices. From our participating surgeons, 42.3% were university-based and 57.7% were community-based, whereas only 20% of ACMS members are solely academic, 62% are solely private, 1.5% are mostly academic, 1.5% are half academic and half private, and 15% are mostly private. Of those who participated in the survey, 46% suffer from burnout based on high emotional exhaustion and/or depersonalization scores (Table 2). Rates of burnout are higher among female (56%) versus male (40%) participants ( $p < .05$ ; Table 2). Significantly lower burnout exists among sur-

**Table 2**  
Mohs surgeons with burnout in different subsets of participants.

Sex	Burnout		Burnout, %
	No, n	Yes, n	
Male	49	33	40
Female*	20	25	56
Total	69	58	46
Race			
Asian	6	5	45
African American	4	0	0
Hispanic	0	1	100
White	57	49	46
Other	2	2	50
Region of practice			
New England	3	6	67
Mid-Atlantic	14	14	50
East North Central	11	8	42
West North Central	6	6	50
South Atlantic	16	6	27
East South Central	4	3	43
West South Central	3	5	63
Mountain	5	2	29
Pacific	7	7	50
Community of practice			
Urban	33	19	37
Rural	10	7	41
Suburban	26	32	55
Age, years			
30–39	22	15	41
40–49	16	24	60
50–59	18	17	49
60–69*	11	2	15
>70*	2	0	0
Years since training			
1–5	19	13	41
6–10	12	14	54
11–15	6	14	70
16–20	10	6	38
21–25	8	10	56
26–30	9	0	0
>30	5	1	17
Practice description			
University-based	34	20	37
Community-based*	35	38	52
Cases per year			
100–299	2	1	33
300–499	6	10	63
500–699	12	8	40
700–999	20	12	38
1000–1499	17	18	51
>1500	12	9	43
Trains fellows			
No	41	36	47
Yes	28	22	44

\*  $p < .05$ .

**Table 1**  
Characteristics of participants.

Characteristic	Participants (n = 137), n (%)
Sex	
Male	88 (64.2)
Female	48 (35)
Missing	1 (<1.0)
Age, years	
30–39	38 (27.7)
40–49	47 (34.3)
50–59	36 (26.3)
60–69	13 (9.5)
>70	2 (1.5)
Missing	1 (<1.0)
Years since training	
1–5	33 (24.1)
6–10	28 (20.4)
11–15	23 (16.8)
16–20	19 (13.9)
21–25	19 (13.9)
26–30	9 (6.6)
>30	6 (4.4)
Practice description	
University-based	58 (42.3)
Community-based	79 (57.7)
Cases per year	
100–299	3 (2.2)
300–499	18 (13.1)
500–699	20 (14.6)
700–999	35 (25.5)
1000–1499	39 (28.5)
>1500	22 (16.1)

geons age  $\geq 60$  years, although this age group comprised only 15 of the 137 participants ( $p < .05$ ; Table 2). Significantly lower burnout rates exist in academic-based compared with community-based practices ( $p < .05$ ; Table 2).

Number of cases per year did not correlate with burnout or the separate dimensions of emotional exhaustion and depersonalization. Cases per year, however, did correlate with personal achievement ( $r = 0.22$ ;  $p < .05$ ). Surgeons who performed more cases per year experienced a greater sense of personal accomplishment.

Logistic regression was used to test the impact of resilience on burnout. Two resilience factors had significant impact on burnout: ability to pivot and self-control ( $p < .05$  for both).

## Discussion

Overall, the findings of this study suggest that 1) burnout is lower among Mohs surgeons compared with dermatologists and physicians in general, 2) academic-based practice environments may be protective against burnout, 3) burnout is higher among women and lower in older physicians, 4) higher case volume is correlated with a higher level of personal achievement, and 5) the ability to pivot and self-control are resilience factors associated with lower rates of burnout.

Lower rates of burnout among Mohs surgeons (46%) compared with all physicians (54%) and dermatologists (56%; Shanafelt et al., 2015) are reassuring but should not foster complacency. In our sample, 41% of Mohs surgeons exhibited emotional exhaustion and 39% experienced depersonalization. The inherent nature of a Mohs surgeon's workday, with multiple ongoing surgeries and prompt determination of clear histologic margins, requires a high level of task-switching, interruptions, and stress. The number of cases per year positively correlated with sense of achievement. Most surgeons increase their case volume with time and experience, which, in turn, may lead to a higher sense of achievement. Other factors that may drive case volume, such as financial or institutional demand, access to care, ambition, or competition, were not explored in this study. The results suggest that older age may be protective against burnout. A previous study confirmed that mid-career physicians are more at risk for burnout compared with early or late-career physicians (Dyrbye et al., 2013). However, selection bias may exist because those who were burned out and retired early may no longer participate in professional society activities.

Interestingly, Mohs surgeons in academic settings reported less burnout, which may be counterintuitive given the perceived bureaucracy and reduced autonomy associated with academic health systems. A study evaluating surgical specialties found that community-based surgeons were more likely to experience burnout compared with those in academic settings (Balch et al., 2011). Surgeons in academic settings are often involved with tasks such as educating and mentoring (McKenna et al., 2016). This engagement in a higher purpose may serve as protection from burnout. Academic environments may also allow surgeons to connect with colleagues, thereby avoiding isolation, which may protect against burnout.

Finally, female surgeons (56%) had higher levels of burnout compared with male surgeons (40%). Other studies have similarly identified sex as a risk factor for burnout (Burnham et al., 2019; Dyrbye et al., 2011). Dyrbye et al. found that despite similar hours worked per week, female surgeons experience higher emotional exhaustion and have more depressive symptoms and lower mental quality of life scores compared with male surgeons (Dyrbye et al., 2011). Furthermore, this study suggests that work-home conflicts, which are more common among female surgeons, appear to be a major contributor to burnout (Dyrbye et al., 2011). However, there may be a gender disparity in the inclination to report certain symp-

toms that may skew results (Burns et al., 2019). Nevertheless, strategies to reduce or resolve work-home conflicts in a manner that meets both work and home responsibilities may ultimately reduce burnout and increase work satisfaction in female surgeons.

Mohs surgeons who have the ability to pivot and demonstrate self-control were found to have lower rates of burnout. The ability to pivot signifies the capacity to change the course of action when faced with challenges. Accepting and acknowledging change as inevitable is an important mindset, and having the flexibility to adapt is an important skill (Zwack and Schweitzer, 2013). Self-control, or the intentional decision to refrain from acting on an inner response (Frieese et al., 2017), can be associated with an array of positive outcomes, including academic success, stable relationships, financial security, and health. In addition to individual factors, resiliency is dependent on institutional and community factors.

Limitations of this study include potential selection bias and low participation rate, leading to a small sample size. Although the participation rate was low, this may have been an underestimation because it is unknown whether all 1450 members received the e-mail with the survey link. There are factors we could not fully account for, such as incorrect or out-of-date e-mail addresses registered with ACMS or whether the e-mail was accidentally categorized as spam. The major characteristic that significantly differed between our participating surgeons and the ACMS members was the type of practice (academic/university-based vs. private/community-based). The percentage of participants practicing in an academic/university-based practice was higher than the percentage of members of ACMS who practice in an academic/university-based practice. Nevertheless, this survey study serves as an important pilot study to gain an initial understanding of burnout in Mohs surgeons so that we can delve deeper into qualitatively identifying factors that may contribute to professional fulfillment and burnout. The cross-sectional nature of the survey prevents the determination of causality. Furthermore, this survey did not include non-fellowship-trained Mohs surgeons and did not assess the impact of a blended practice of Mohs surgery and general dermatology on burnout.

## Conclusion

The results of this study indicate that incidence of burnout is lower among Mohs surgeons compared with general dermatologists, but aggregate percentages are irrelevant in the setting of individual burnout. Nearly half of respondents suffer from emotional exhaustion and/or depersonalization. Recognizing burnout in yourself or in a colleague is the first critical step. Identifying strategies to address burnout is a challenge, especially when the evidence suggests sex discrepancies (Gillman et al., 2015). We suggest not only honing individual factors, but also incrementally improving the surrounding systems and controls of our health care environment to overcome burnout.

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## Study approval

Pennsylvania State University Institutional Review Board approved (Study ID: 00006970).

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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