

# UC Davis

## Dermatology Online Journal

### Title

Correlation of well-being during dermatology residency with future career plans

### Permalink

<https://escholarship.org/uc/item/26v1h7qc>

### Journal

Dermatology Online Journal, 26(12)

### Authors

Brown, Ashley E  
Drozd, Brandy  
Nguyen, Christopher  
et al.

### Publication Date

2020

### DOI

10.5070/D32612051352

### Copyright Information

Copyright 2020 by the author(s). This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Peer reviewed

# Correlation of well-being during dermatology residency with future career plans

Ashley E Brown<sup>1</sup> MD, Brandy Drozd<sup>1</sup> MD, Christopher Nguyen<sup>2</sup> PhD, Leon Chen<sup>3</sup> MD, Tony T Nguyen<sup>3</sup> MD

Affiliations: <sup>1</sup>McGovern Medical School, University of Texas Health Science Center at Houston, Houston, Texas, USA, <sup>2</sup>Logistics Management Institute, Tysons, Virginia, USA, <sup>3</sup>Department of Dermatology, University of Texas Health Science Center at Houston, Houston, Texas, USA

Corresponding Author: Ashley E Brown MD, 6431 Fannin Street, Houston, TX 77030, Tel: 713-553-0581, Email: [Ashley.brown@uth.tmc.edu](mailto:Ashley.brown@uth.tmc.edu)

## Abstract

Burnout is increasingly common in the medical field. In dermatology, burnout is attributed to high patient volume and excessive time spent on electronic medical record system activities. The shortage of the dermatology workforce in academic medicine is well-known. Studies have yet to examine the relationship between well-being during dermatology residency and the pursuit of academia.

**Objective:** To assess the well-being of dermatology residents in the United States, identify barriers/enablers to well-being, and determine the implications of these measures.

**Methods:** A cross-sectional survey was distributed to program coordinators of 136 accredited dermatology programs with instructions to forward to their current dermatology residents. Residents provided self-reported ratings on validated scales measuring burnout, depression, anxiety, fatigue, and quality of life. Descriptive statistics and correlations were examined.

**Results:** Residents with higher levels of burnout reported they were significantly less likely to pursue academia, full-time work, clinical research, and fellowships after residency. The results showed opposite effects for residents with higher qualities of life.

**Conclusions:** This study showed that resident well-being can have a significant impact on residents' future career plans, including pursuing academic dermatology, clinical research, and fellowship. Addressing burnout in the field of dermatology offers an opportunity to increase the academic dermatology workforce.

*Keywords: resident education, burnout, wellness, residency, academic medicine, well-being, education*

## Introduction

Burnout is a psychological syndrome in response to chronic stressors that lead to emotional exhaustion, depersonalization, and lack of accomplishment [1]. Evidence suggests that medical training is the time of peak incidence of distress among United States physicians and studies show significant rates of burnout, regardless of specialty [2]. Burnout rates in academic dermatology are on par with other specialties and attributed to frustrations with the electronic medical record (EMR) system, lack of protected academic time, and increasing patient load [3].

The academic workforce shortage in dermatology was first recognized in 1973, and the percentage of dermatology residents pursuing academia has progressively decreased since then [4,5]. Although previous studies have evaluated factors for pursuing and leaving academia, studies have yet to examine the relationship between well-being during dermatology residency and the pursuit of academia. This manuscript examines the relationship between well-being during residency and future career plans.

## Methods

The University of Texas Health Committee for the Protection of Human Subjects reviewed this study,

which qualified for exempt status. A cross-sectional survey was distributed to program coordinators at 136 dermatology residency programs with instructions to forward the survey to all Post-Graduate Year-2, -3, and -4 residents. Data collection took place across two months.

Survey items were determined by literature review, plus expert and resident consultation. Previously validated scales were employed to measure burnout (Oldenburg Burnout Inventory [OLDI]), depression (Patient Health Questionnaire-2 [PHQ-2]), anxiety (Generalized Anxiety Disorder 2-item [GAD-2]), fatigue, and quality of life. Certain scales were modified to fit the purpose of our study (PHQ-2, GAD-2); all were measured on varying Likert scales [6]. Implications for career plans and residency experiences were rated on Likert-scales. Residents also selected potential barriers and enablers to well-being.

Statistical analysis included producing correlation coefficients (R) between scores for well-being and future career plans.

### Results

Twenty-four program coordinators forwarded the survey to 348 residents, with 87 survey respondents (25% response rate). **Table 1** displays correlations of residency burnout, depression, anxiety, fatigue, and quality of life with implications. Individuals with higher burnout were significantly less likely to choose academia ( $P < 0.001$ ), apply for fellowship ( $P < 0.01$ ), work full time ( $P < 0.001$ ), and pursue clinical research ( $P < 0.001$ ). Similar findings were reported with depression, anxiety, and fatigue. In contrast, the results showed opposite effects for residents with higher qualities of life ( $P < 0.01$ ).

**Table 1.** Means, standard deviations, and correlations of study variables.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Burnout <sup>a</sup>	2.24	0.51	1.00												
2. Depression <sup>b</sup>	1.06	0.97	0.71	1.00											
3. Anxiety <sup>c</sup>	0.94	0.74	0.62	0.72	1.00										
4. Fatigue <sup>d</sup>	3.95	2.22	0.63	0.48	0.47	1.00									
5. Quality of life <sup>e</sup>	5.40	1.40	-0.65	-0.62	-0.46	-0.57	1.00								
6. Academics <sup>f</sup>	2.87	1.41	-0.39	-0.37	-0.33	-0.26	0.41	1.00							
7. Fellowship <sup>f</sup>	2.99	1.39	-0.30	-0.33	-0.36	-0.14	0.28	0.51	1.00						
8. Full-time employment <sup>f</sup>	3.47	1.18	-0.63	-0.47	-0.52	-0.31	0.36	0.36	0.35	1.00					
9. Early retirement <sup>f</sup>	2.52	1.19	0.72	0.58	0.52	0.31	-0.46	-0.55	-0.46	-0.71	1.00				
10. Board exam preparation <sup>f</sup>	2.90	1.16	-0.42	-0.28	-0.19	-0.28	0.42	0.52	0.38	0.38	-0.42	1.00			
11. Clinical research <sup>f</sup>	2.94	1.29	-0.42	-0.30	-0.33	-0.25	0.39	0.65	0.41	0.32	-0.47	0.46	1.00		
12. Social life <sup>f</sup>	3.20	1.19	-0.63	-0.34	-0.37	-0.41	0.55	0.26	0.33	0.50	-0.48	0.41	0.40	1.00	
13. Specialty change <sup>f</sup>	1.57	0.94	0.37	0.25	0.39	0.26	-0.29	-0.16	-0.25	-0.41	0.36	-0.27	-0.19	-0.36	1.00

Correlation coefficients (R) are displayed for each variable and their corresponding numbers. R greater than |0.20| correspond to P values less than the 0.05 statistical significance level, R greater than |0.27| correspond to P values less than the 0.01 statistical significance level, and R greater than |0.36| correspond to P values less than the 0.001 statistical significance level (two-tailed); N=87. Variables 1-5 correspond to resident responses to validated well-being indices, while variables 6–13 correspond to resident responses to items related to implications for future career plans and past residency experiences. Column numbers correspond to the number next to the variables in the first column. R values between variables are found at the intersections of the rows and columns.<sup>a</sup> Variable measured on a 1-to-4 Likert Scale with higher scores indicating higher burnout.

<sup>b</sup> Variable measured on a 0-to-4 Likert Scale with higher scores indicating greater likelihood of depression.

<sup>c</sup> Variable measured on a 0-to-3 Likert Scale with higher scores indicating higher anxiety.

<sup>d</sup> Variable measured on a 0-to-10 Likert Scale with higher scores indicating higher fatigue.

<sup>e</sup> Variable measured on a 0-to-10 Likert Scale with higher scores indicating greater quality of life.

<sup>f</sup> Variable measured on a 1-to-5 Likert Scale with higher scores indicating greater likelihood for pursuit of an academic career, fellowship, full-time employment, early retirement, clinical research, and specialty change; or a less negative impact on board examination preparation and one’s social life based on past residency experiences.

**Table 2** lists the barriers and enablers to well-being. The top three hindrances were identified as charting/documentation responsibilities (66%), time spent on patient communication outside of clinic hours (43%), and clinic hours (37%). The top three recommendations for promoting well-being were more ancillary staff (63%), protected education time (64%), and protected research time (49%).

## Discussion

The presence of burnout during medical training is becoming an increasingly apparent phenomenon. A recent meta-analysis showed an aggregate prevalence of burnout of 51.0% in 22,778 residents, with a range of 35.97% (family medicine) to 77.16% (radiology); dermatology was reported at a 51.89% burnout rate [2]. Although burnout in dermatology is

**Table 2.** Barriers/enablers to well-being. Items were selected from listed options for hindrances to well-being and items that would be beneficial to well-being. Residents were allowed to select multiple items, so total percentages will not add up to 100.

Barriers/Enablers to Well-being	Percentage of Total Residents N=87
<b>Items listed as "Hindrance to resident wellness"</b>	
Lack of access to confidential counseling and behavioral health services	6 (7%)
Fears of dermatology licensure being affected by mental health status	19 (22%)
Minimum In-Training Exam percentile score required by program	10 (12%)
Research requirement	13 (15%)
Clinic hours	32 (37%)
Call schedule	25 (29%)
Patient load	27 (31%)
Understaffing at clinical sites	30 (35%)
Maternal leave/paternal leave policies	21 (24%)
Negative faculty/resident relationship	20 (23%)
Peer competition	11 (13%)
Charting/documentation responsibilities	57 (66%)
Time spent on patient communication outside of clinic hours	37 (43%)
Time spent on insurance prior authorization	18 (21%)
Fear of making errors that result in patient injury	12 (14%)
Discrimination based on gender or race	2 (2%)
There are no hindrances	5 (6%)
<b>Other</b>	
Restrictions on vacation; lack of support from faculty; tension or conflict with other residents/faculty members; dehumanization during residency experience; poor quality lectures; lack of support for resident wellness	6 (7%)
<b>Items listed as "Beneficial for promoting resident wellness"</b>	
Access to confidential counseling and behavioral health services	19 (22%)
Access to more board certification aimed teaching	27 (31%)
Limitation on overbooking patients	42 (48%)
More flexible call schedules	15 (17%)
More ancillary staff to assist with prior authorization and patient communication	55 (63%)
Social events to promote faculty and resident bonding	27 (31%)
Wellness programming	22 (25%)
Protected education time	56 (64%)
Protected research time	43 (49%)
Protected lunch break	40 (46%)
Increased size of residency program	28 (32%)
<b>Other</b>	
More faculty help with call; Increased gratitude for work; Less vacation restrictions; resident retreat; more control over general block scheduling; use of scribes; paid maternity leave	2 (2%)

frequently overlooked owing to milder call schedules and less critically-ill patients than other specialties, dermatologists still face the same daily frustrations of EMR, high patient volumes, and insurance struggles [1]. A study on the effect of inbox-messaging systems in EMR showed that increased messaging was correlated with greater burnout in dermatology [7]. Lack of protected time for pursuing academic interest and examinations have also been identified as added stressors for academic dermatologists and residents, respectively [3,8].

Previous studies evaluating resident pursuit of academia have assessed sources of lost interest in academic careers, factors affecting career decision, and characteristics of residency programs that graduate a large number of academic dermatologists. Residents who reported losing interest attributed this to bureaucracy, salary/finance issues, lack of effective mentorship, and location or practice environment preference [9]. Program characteristics of institutions with a high number of graduates pursuing academic medicine include high faculty/resident ratio, large number of full-time faculty, large number of faculty publications, high number of faculty lectures given at society meetings, large number of faculty members on editorial boards, and presence of NIH funding [10].

Even so, the connection of burnout during dermatology residency and pursuit of academic medicine has not yet been explored. A study of family medicine residents identified “work-life

balance and burnout” as an important factor in residents’ decisions to not pursue academic medicine [11]. This study proposed wellness interventions including implementing a resident wellness curriculum, reducing the documentation burden with scribes, and monitoring well-being with periodical metrics. Similarly, our study and others have identified documentation as a significant source of burnout in dermatology [3]. Scribe implementation in dermatology has been shown to significantly decrease documentation time, leading to increased job satisfaction and reduction of physician burnout factors [12]. Furthermore, academic dermatologists in this study were enabled to take on additional patients, offsetting the hospital’s scribe costs.

Our study is limited by response rate, unknown career plan baseline, and possible selection bias.

## Conclusion

This study suggests that resident well-being is correlated with career plans. Addressing burnout in dermatology could offer an opportunity to increase the academic dermatology workforce. Studies establishing baseline career goals with a higher response rate would further elucidate the effect of burnout on career plans.

## Potential conflicts of interest

The authors declare no conflicts of interests.

## References

1. de Moll EH. Physician burnout in dermatology. *Cutis*. 2018;102:E24-e5. [PMID: 30138507].
2. Low ZX, Yeo KA, Sharma VK, et al. Prevalence of burnout in medical and surgical residents: A meta-analysis. *Int J Environ Res Public Health*. 2019;16. [PMID: 31027333].
3. Dorrell DN, Feldman SR, Huang WW. The most common causes of burnout among US academic dermatologists based on a survey study. *J Am Acad Dermatol*. 2019;81:269-70. [PMID: 30682395].
4. Hinchman KF, Wu JJ. Decisions in choosing a career in academic dermatology. *Cutis*. 2008;82:368, 71. [PMID: 19090342].
5. Wheeler CE, Jr., briggaman RA, Caro I. Shortage of full-time faculty in dermatology. *Arch Dermatol*. 1977;113:297-301. [PMID: 843095].
6. Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med*. 2014;89:443-51. [PMID: 24448053].
7. Bittar PG, Nicholas MW. The burden of inbox-messaging systems and its effect on work-life balance in dermatology. *J Am Acad Dermatol*. 2018;79:361-3.e1. [PMID: 29258864].
8. Shoimer I, Patten S, Mydlarski PR. Burnout in dermatology residents: A Canadian perspective. *Br J Dermatol*. 2018;178:270-1. [PMID: 28374946].
9. Reck SJ, Stratman EJ, Vogel C, Mukesh BN. Assessment of residents' loss of interest in academic careers and identification of correctable factors. *Arch Dermatol*. 2006;142:855-8. [PMID: 16811111].

- 16847200].
10. Aquino LL, Wen G, Wu JJ. Factors affecting the pursuit of academic careers among dermatology residents. *Cutis*. 2015;95:231-6. [PMID: 25942025].
  11. Lin S, Nguyen C, Walters E, Gordon P. Residents' perspectives on careers in academic medicine: Obstacles and opportunities. *Fam Med*. 2018;50:204-11. [PMID: 29537463].
  12. Nambudiri VE, Watson AJ, Buzney EA, et al. Medical Scribes in an Academic Dermatology Practice. *JAMA Dermatol*. 2018;154:101-3. [PMID: 29094159].