A mixed methods study on factors that promote and ameliorate burnout in academic dermatologists

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Received: 26 September 2022 / Accepted: 20 October 2022 / Published online: 9 November 2022 © The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature 2022

Abstract
The burnout literature is replete with burnout score results from quantitative surveys. There is a paucity of qualitative research that seeks to understand the impact of physician stressors on work–life balance and burnout. This study aimed to identify factors that support and disrupt work–life balance, drivers of burnout, and potential solutions among academic dermatologists. The objective was to better understand factors that promote wellness and ameliorate burnout. Concurrent explanatory mixed methods consisted of scores on the Abbreviated Maslach Burnout Inventory and open-ended semi-structured telephone interviews. The results were that positive factors, such as supportive home life and satisfaction derived from academic endeavors, compete with ongoing feelings of exhaustion, frustration, and apathy. Negative stressors include the electronic medical record, insufficient staffing, administrative and clinical task burden, and perceived lack of interest from mid-level and senior health system leadership in addressing clinicians' needs. This was a single-center academic study. As with all qualitative studies, these results may not be generalizable to all dermatologists. In addition, some participants were concerned about their anonymity. Modifiable root causes of burnout require institutional commitment to sustain the pace required by academic dermatologists.

Keywords Burnout · Work–life balance · Dermatologists · COVID-19 · Workplace change

Introduction
Dermatologists are perceived to have a less burdensome clinical experience than other faculty members in a health system. However, burnout rates in dermatology increased from 31.8% in 2011 to 59.6% in 2014; therefore, it is rising faster than in other specialties [11, 16]. The demand for dermatologic services is often out of proportion to the number of faculty, thus creating a high-pressure environment to see more tertiary care patients.

One year into the COVID-19 pandemic, researchers began examining its impact on health care professionals’ mental health and the resultant burnout. The prioritization of patient experience has led to direct and immediate access to any clinician, at a date and time of patients’ choosing, and to interactions that end when the patient is satisfied, irrespective of the amount of provider time it takes [2, 4]. Providers are publicly evaluated without consideration to workforce shortages or the patient’s effect on the interaction. Finally, regulatory agencies do not account for burnout when evaluating health systems or when benchmarking payment related to performance [19].

The voice of the physician must be at the center of any solutions [13]. The goal of this study was to use a mixed methods approach to assess burnout, qualitatively understand the causes of burnout, and identify factors that support work–life balance among a group of dermatologists in academic practice. The research team did not anticipate conducting this study during the pandemic; nonetheless, the investigation commenced when participants were
coping with emergency conditions. This inquiry examines how worldwide events and academic practice changes during emergency conditions magnify the existing stressors on dermatologists.

Methods

Data collection

Two faculty members (DM and CV) recruited their peers via email (N = 19) from a large academic department of dermatology. Researchers (EA, MN) trained in qualitative interviews conducted semi-structured telephone interviews with the participants between April and December 2020. An interview guide was designed to explore perceptions of the challenges and rewards of practice in academic medical centers. Owing to the timing of the study, questions about the impact of COVID-19 were included. Thus, thematic saturation was achieved. The interviews were audio-recorded, transcribed, de-identified, and entered into NVivo 12 Plus for coding and analysis.

Concurrent with the qualitative interviews, participants completed the Abbreviated Maslach Burnout Inventory (AMBI). Demographic information was not collected to ensure confidentiality. None of the authors was interviewed. This study was approved by the institutional review board of the University of Pennsylvania (Protocol #843992). See Supplement 1 for additional methods.

Data management and analysis

A codebook was created using a priori codes derived from concepts related to burnout and emergent ideas from close readings of the transcripts. Two researchers (EA and MN) applied the codebook to the transcripts and periodically refined it to capture particular themes. The coding outputs were examined to identify patterns in the data.

Consistent with the standard AMBI measurement, the research team categorized participants’ responses as high, medium, or low for this sample only and did not use cutoff scores [5, 15]. Participants’ burnout scores were summed for each of the three subscales. Participants with ‘high burnout’ had scores that fell in the top third of the response range for emotional exhaustion (12–17) and depersonalization (5–7) and the bottom third for personal accomplishment (9–12). Participants with ‘low burnout’ had scores in the bottom third of the response range for emotional exhaustion (2–7) and depersonalization (0–3) and the top third for personal accomplishment (15–18). Those who did not meet either the high or low burnout criteria were described as ‘mid-range.’ Frequencies for each of the three AMBI subscales are described, and the respondents’ burnout level is presented in parentheses with their comment(s).

Results

There were 33 eligible faculty members, of which 22 completed the AMBI and 19 completed the interview. The average interview length was 45 min (range 24–87 min). Participants had high (n = 5), mid-range (n = 6), or low (n = 11) levels of burnout (Tables 1, 2, 3). Coding consistency was assessed using inter-rater reliability tests (κ = 0.78) in NVivo 12 Plus. We identified three major themes that are described below in alignment with each burnout subscale: (1) a collegial and supportive academic environment contributes to a positive work experience; (2) chronic issues related to the EMR, inadequate staffing, and administrative task burden cause distress; and (3) while institutional responses to dramatic external issues such as the pandemic and social justice are deeply appreciated, some participants expressed frustration that chronic stresses are not addressed. See Supplement 1 for the additional results.
Burnout

Clinicians described burnout as a web of feelings, including exhaustion, apathy, and frustration around working conditions that remain unresolved, including overworking, poor work–life balance, and organizational inefficiency. The participants agreed that when physicians experienced burnout, the quality of their work and non-work relationships suffered (Table 4).

Most of the participants experienced burnout. The causes of burnout were specific to tasks that participants felt had little to do with their mission of treating patients. Some described the conditions or sensations of burnout, but remained adamant that they did not experience burnout. See Table 4 for the supporting quotes.

Participant experiences of burnout by subscale

Emotional exhaustion

This subscale most closely aligns with symptoms of depression [18] with an average score of 8.77/18 and a range between 2 and 17. See Table 5 for additional support quotations.

Contributing factors to emotional exhaustion

Institutional culture

Some participants felt that the overall culture of the health system contributed to their emotional exhaustion.

Some felt that they were not worthy of membership in a prestigious department, expressing symptoms of imposter syndrome. Others perceived that colleagues in other dermatology practices were more content with their work. A minority of the participants identified that a culture of fairness and equity was not always part of their work experience, particularly with regard to gender equity.

Contributing factors to emotional health

Healthy work–life balance

Participants’ ideal work–life balance would allow them to complete work responsibilities and pursue professional interests during the workday while having protected time for personal priorities. However, the respondents agreed that the optimum work–life balance was subjective. Strategies for maintaining balance included using paid time off for travel, setting hard stops for answering work communications, and coordinating schedules with partners to meet home obligations. Workplace support is crucial for striking an appropriate balance, particularly for reliable staffing and manageable administrative duties. A healthy relationship with work is closely tied to maintaining job satisfaction and avoiding burnout.

Stable and supportive home life

Respondents with stable and supportive home lives believed that it helped create healthier work expectations. Components of a supportive home life include a dependable relationship with a partner, the ability to split parenting responsibilities, and meaningful bonds with children. Several studies have described how the level of stability and support at home changes with age. Financial security was another facilitator of participants’ stable home lives.

Depersonalization

This subscale is related to dissociation from compassion in patient–provider interaction. The average depersonalization score was 2.41/18, ranging between 0 and 7 [18] with

| Table 3 Maslach abbreviated Burnout Inventory domain averages and ranges |
|-------------------------------------------------|-----------------|-----------------|
| Emotional exhaustion | Depersonalization | Personal achievement |
| Mean | 8.77 | 2.41 | 14.64 |
| Range | 2–17 | 0–7 | 9–18 |

| Table 2 Maslach abbreviated Burnout Inventory tertile distribution |
|------------------------------------------------|
| High burnout | 6 (27.2%) | 6 (27.2%) | 5 (22.7%) |
| Mid-level burnout | 9 (40.9%) | 2 (9.1%) | 4 (18.2%) |
| Low burnout | 7 (31.8%) | 14 (63.6%) | 13 (59.1%) |
Table 4  Burnout

| Theme                      | Representative quotes                                                                                                                                                                                                 |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Burnout**               |                                                                                                                                                                                                                      |
| Defining burnout          | “Burnout is a mental state where you don’t have the capacity to function at your peak, that you have so many pieces that you’re not effective at any of them and it affects your mood, you’re miserable.” (Low burnout) |
|                           | “Kind of a feeling of treading water, where you’re not quite sure how long you can sustain your current activity, where you feel it affects your patient care and overall outlook on the future … Burnout, I think, leads to a lack of empathy, and it puts somebody in more of a survival mode, which isn’t good when your job is patient care.” (High burnout) |
|                           | “I’ve certainly experienced, just like anybody else, moments of burnout. I would describe it as a sense of apathy, where you’re doing everything maybe just as well as before, but you’re not gaining the same degree of satisfaction from it. Yeah, those moments usually happen when you have so much going on that you don’t feel that you’re as good as you want to be at most of them or all of them because you’re overextended.” (Low burnout) |
|                           | “In general, I don’t experience burnout. That’s not normally something I would describe it as a sense of apathy, where you’re doing everything maybe just as well as before, but you’re not gaining the same degree of satisfaction from it. Yeah, those moments usually happen when you have so much going on that you don’t feel that you’re as good as you want to be at most of them or all of them because you’re overextended.” (Low burnout) |

Table 5  Emotional exhaustion

| Theme                               | Representative quotes                                                                                                                                                                                                 |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Contributors to emotional exhaustion** |                                                                                                                                                                                                                      |
| Institutional culture              | “And I will say that the culture is definitely more stressful here. I know I work a whole lot more here than I would probably anywhere else, I work longer hours, my patients are more difficult, but the stresses of [my work] are somewhat self-imposed [because of my goals].” (Mid-range burnout) |
|                                     | “I do think there’s a difference in the way men and women are treated at work and it’s disappointing, but I think it’s a persistent issue. I don’t think it’s imagined, especially by those of us who are women who are dealing with it.” (Mid-range burnout) |
| **Contributing factors to emotional health** |                                                                                                                                                                                                                      |
| Healthy work–life balance          | “My approach is to try to have some defined time to engage in other activities like hobbies, exercise, playing music, trying to read or catch up on the news, trying to definitely set aside time for some of that every day. I mean, I try to do that. And I think the other thing—a lot of it is overwhelming and it’s, I’ve tried to not procrastinate, which I generally don’t do … as soon as something comes across, I try to address it right away. That’s to alleviate the pressure of having an overwhelming volume of things to do.” (Mid-range burnout) |
|                                     | “Work-life balance to me means doing things outside of work that bring me happiness or bring me relaxation or calm me—whatever that thing may be. So, I think that it’s really trying to have dedicated time for whatever you want to do. You dedicate a time at work. You have your dedicated times at home where you do work. And then, there should be dedicated time that you choose to have it for yourself. And that can be spending it with friends, spending time with friends, spending time with family, working out, meditating, whatever the case may be.” (High burnout) |
|                                     | “My ideal is that you have some free time during the week, and you just don’t feel your work is a burden. Once it feels that you’re really burdened by it, then you’re doing too much.” (Mid-range burnout) |
| Stable and supportive home life     | “I’m fortunate to have a healthy family and a stable home and financial life, so that’s a rare luxury. The family has stayed healthy throughout [the pandemic]. That’s been great. I’ve stayed healthy throughout [the pandemic], and I’ve dealt with the uncertainty about how we’re going to work, where the kids are going to go to school by recognizing these are issues that I cannot control, and I’m not going to try to control them.” (Low burnout) |
|                                     | “…At this stage of my career, I fashioned my schedule so that it’s very different from when I was [younger]. I don’t see nearly as many patients as I previously did, and that’s by choice. I spend more time with research, and that’s by choice. [I don’t have to worry about caring for family].” (Low burnout) |
a lower score indicating less depersonalization. See Table 6 for additional support quotations.

### Contributing factors to depersonalization

#### Electronic medical record

Participants found that using the electronic medical records (EMR) was stressful. Issues included the number of “clicks” required to create orders, insufficient or inappropriate features for patient needs, and time wasted on login. Some participants felt that the EMR system workarounds lessened their utility by creating alert fatigue or additional work.

“As a doctor, I want to focus on the patient in front of me, what their problem is and how I can help them with it. However, when you are in the clinic, the focus ends up being on the electronic medical record and determining where the staff is. Those are things that I want to fix.” (Low burnout)

#### Administrative duties and clinical support staff shortages

The respondents were challenged by administrative duties, including scheduling and documenting patient encounters. The participants felt that these tasks were a poor use of their time and made their jobs less fulfilling. Notably, some participants felt that calling attention to this problem or proposing a solution may ultimately result in more work; one participant felt the culture of the institution was such that “no good deed goes unpunished.” Participants also noted the chronic problem of retaining adequate clinical support staff, including nurses and administrative and medical assistants.

### Table 6 Depersonalization

| Theme                                | Representative quote(s)                                                                                                                                                                                                 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contributing factors to depersonalization | “Would I be happier if it was less painful? Yeah, [if I had] the exact same job but I never had to touch Epic—I would do that. If it would be the exact same job and they paid you X less and you never had to touch Epic. There’s research looking at the impact of diseases, and you can basically say which disease is most impactful because they ask people standard questions. There’s something about quality-adjusted life years. If they say how many years off the end of your life would you give up to have never had this disease, there’s some diseases that people would be like, ‘Oh, I’d die ten years earlier if I never had to live with this disease.’ There’s some things that people are like, ‘No, I wouldn’t even give up one year of life.’ There are also things like payment, right? How much money will you pay to never have this disease? If my salary is, I don’t know, let’s say $10,000, how much would I take to have the exact same job and no Epic? Would I take $8,000? I mean, yeah, probably. …What’s the first thing I would say should change to make me happier? The first thing is Epic.” (High burnout) |
| Administrative duties and staffing   | “In clinic, we’re frequently short-staffed. We have been for at least a year or two. And again, it gets back to this issue that there’s always been a little bit higher turnover for some of those clinical positions, like the medical assistants and to some extent the nurses, but it feels like we’ve been cycling through them more rapidly. It’s a little bit of a vicious cycle and certainly, there are times when we’re pretty short-staffed, and we get relatively little notice about how little staffing we have.” (Mid-range burnout) “I mean, I have assistants. What I really need is another faculty member. We’re just a big enough group that one person like myself can’t handle all the demands. I need another person who is interested in being part of the [certain type of] research or heading the research team.” (High burnout) “For me, [burnout] is the administrative support side … I feel like someone else could do it other than me. That would be more efficient for everyone overall. Whether it’s helping with all the administrative things, the prior authorizations, or how certain patients can receive different phone calls.” (Mid-range burnout) |
| Impact on patient care              | “They do dramatically. I pride myself in my patient care and taking as great of care of patients as I possibly can, but when there’s a lot of outside pressures, including burnout from prepping charts or closing charts, it changes how I practice. If I know that adding on a new patient is going to add an hour of additional outside work, I’m gonna be less apt to want to add them on. I don’t ever want to think of patient care in a very selfish way, in a very self-preserving way is, ‘Hey, if I add this person on, I’m going to have X more outside work to do,’ but that’s the reality.” (High burnout) “Stressors in the workplace impact patient care because they make me stressed out, and when I am stressed out, I know my personal interactions with other people are less than ideal. It can make me distracted, or it can make me less patient, or I think it can make me not interact in the way that I would ideally like to interact with patients all the time.” (High burnout) |
Personal accomplishment

This subscale measures providers’ satisfaction with their work [18]. The average personal accomplishment score was 14.64/18, with a range between 9 and 18. In this sample, personal accomplishment scores were high, even for those categorized as ‘burned out’ based on their other two subscale scores. See Table 7 for additional support quotations.

Contributing factors to personal accomplishment

Mentorship and institutional community

Several participants described how strong mentorship and a sense of community at their institutions improved job satisfaction. Both early career and late career faculty described workplace culture as a collegial, intellectually stimulating environment, and identified mentors who were integral to their career development. Participants referenced colleagues, research teams, laboratories, and support staff as support for addressing stressors and promoting job satisfaction. For many, the work environment at their institution was preferable, despite stressors, because of opportunities for professional camaraderie and access to specialty-specific research opportunities.

Job satisfaction

It was vital for participants to derive an intense level of satisfaction and purpose from clinical and academic practice to maintain a healthy work–life balance. Satisfying elements of work were closely tied to practicing dermatology at an academic medical center. However, interviewees described a delicate balance between feeling invigorated and motivated by a relatively high-stress, high-expectation work environment, and feeling overwhelmed and apathetic.

Detracting factors to personal accomplishment

Impact of COVID-19

The stay-at-home orders and mitigation efforts initially required almost all participants to work from home; these changes were aligned with the initiation of the project. Participants’ supportive home lives facilitated their transition to work from home. Most cited using telemedicine in their practice as a benefit, although its utility was limited to certain sub-specialties.

Work-related stressors resulting from the pandemic included uncertainty about the future, including financial stress, difficulty maintaining self-worth and structure derived from regular patient interactions, and exacerbation of longstanding staffing issues. Participants who had to balance work duties with home schooling and care of children were especially aware of the demanding nature of a mixed home–work life.

Lack of leadership transparency

Regarding problem solving and addressing clinicians’ needs, participants pointed to the health system culture as a cause of concern. Interviewees felt that institutional leaders were not fully aware of or interested in addressing dermatologists’ concerns with their day-to-day work. The deficits in accountable and transparent decision-making, prioritization of clinician concerns, and problem-solving were antithetical to positive changes. Furthermore, the available institutional support focused on improving personal wellness as opposed to institutional stressors, which participants did not find helpful in eliminating burnout.

“Isn’t think [health system leadership] [understands] our clinical volume and our lack of support, because we’re told that we don’t need the support.” (Mid-range burnout)

Discussion

Dermatology departments are microcosms of academic medical centers in that they include medical, surgical, and pathology groups, as well as bench and clinical scientists. The findings from this study indicate that more than half of the participants had moderate to high levels of burnout in the AMBI. Thirty-two percent of the participants scored in the upper tertile of emotional exhaustion. Simultaneously, an intellectually stimulating environment was seen as highly rewarding; close to 60% of the participants scored in the upper tertile of personal accomplishment. Professional camaraderie within the department is important for supporting dermatologists in a high-pressure work environment. However, participants could oscillate between feeling energized and overwhelmed.

Similar to our work, a survey-based study of dermatologists identified the top contributors to burnout as the excessive amount of time spent on the EMR, lack of protected academic time, increased demand for productivity from administrators, and bureaucratic tasks [6]. Among
### Table 7  Personal accomplishment

| Theme                                               | Representative quote(s)                                                                                                                                                                                                 |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Contributing factors to personal accomplishment**  |                                                                                                                                                                                                                      |
| Mentorship and institutional community              | “I can only say just incredibly positive things about how I feel in general about going into the workplace and even though, I could have left a while ago, I just find it’s such a wonderfully stimulating and enjoyable place to be, and I find that I am so fortunate I find, that I have had such good support systems and I have such wonderful colleagues in my own program, I could not have asked for better, so what more can I say—not much. We all have people we can turn to in time of distress and I have some really good close colleagues that hear me out, sometimes they have to scold me which happens not infrequently, and so it's really a fine place, and so I have not a complaint.” (Low burnout)  |
|                                                     | “I wanted to be someone that became an expert in this [field]…And being here has really allowed that to occur because of my great mentorship, having [mentors] in my corner to push me …” (Mid-range burnout)                                                                                                                                                                                                                           |
| Job satisfaction                                    | “[Research is] a constant source of stress, keeping the research enterprise fed and running, but I think that it’s not necessarily going to be worse than it was before because it was always a very high level of stress, but it’s a welcome stress because it’s what I love …” (Mid-range burnout)                                                                                                                                                                                                 |
|                                                     | “I think the other part is just trying to juggle all of the different responsibilities that we have. One of the good and bad things about being in an academic practice is I think that the good part is I think that you have a lot more say in how you’re spending your day compared to someone who’s only seeing patients, for example, but I think the bad part is that I think that you have a lot of different hats you have to wear. You have to try to find a way of trying to keep so many different balls in the air at once, like doing the best for the patients as well as trying to be academically productive, trying to get research done, trying to teach the residents, trying to do publications and give talks and things like that. There’s a lot of different things on the plate without necessarily clear boundaries about them, so that part is difficult.” (Mid-range burnout) |
|                                                     | “The patient care part is extremely gratifying. I really like getting to help people. I primarily do research, so I really value the variety of things I’m involved in, the variety of people locally, nationally, internationally who reach out to me for my opinion and my input on things. The fact that I get to think about things I want to think about like grants and people pay me to think about things I want to think about, which is unusual in this world. Usually, people pay you to think about what they want to think about. All of those things are really gratifying … [Research is] really exciting. I also really enjoy mentoring and helping younger, smart people do well in the world and help them develop their own careers.” (Low burnout) |
| **Detracting factors to personal accomplishment**    |                                                                                                                                                                                                                      |
dermatologists in a single academic setting, worse work–life balance is correlated with increased inbox messages per encounter [3].

Recommendations from this study to support academic dermatologists reflect what has been previously cited in dermatology and other medical disciplines: relieving the burden of EMR via scribes [10], support staff to effectively deal with inbox tasks [3, 4], and the hiring and retention of adequate high-quality staff to support clinical activities. This is not surprising, as dermatology provides a broad spectrum of different areas of practice. Although cost is a consideration, the costs of not implementing these interventions are higher: loss of productivity, lower patient care quality, increased medical errors, and increased recruitment and replacement costs [18]. It would be preferable for hospitals and health systems to effectively reduce the drivers of burnout as a safety and quality mission and provider wellness initiative than to have regulatory agencies intervene with a benchmark metric [19].

Underlying these requisites is the desire to be heard and implement workplace changes. Institutional interventions addressing workload are more effective at reducing
burnout than individual stress reduction initiatives, but remain rare [14]. The COVID-19 pandemic presents an opportunity for the US health system to reset itself to align with the needs of physicians, nurses, and healthcare professionals [8].

As with all qualitative studies, these results may not be generalizable to all dermatologists. In addition, some participants were concerned about their anonymity. This was a voluntary study, and participants who were interested in sharing their experiences with burnout may have had a special interest in the topic, thus impacting the results. This exploratory study aimed to identify the range of issues affecting academic dermatologists’ levels of burnout; however, the themes identified suggest important areas for additional quantitative follow-up to characterize the frequency and distribution of the themes in other academic dermatology departments [6].

The contributors to burnout identified by participants in this study align with those cited by other academic medical faculty and are independent of the increased stressors of 2020 [7, 9, 12, 17], when data collection took place. Three main factors in the medical environment disproportionately and adversely affect physicians’ perceived well-being: asymmetrical rewards, loss of autonomy, and cognitive scarcity [1]. Escalating control of how physicians spend their time, including automated surveillance of the EMR, contributes to loss of autonomy. Some argue that the practice of medicine is now viewed as a fixed-people production line that focuses on micromanaging physicians’ time [1]. Health systems have prioritized instituting secondary interventions addressing physician wellness, which seek to provide resources to manage stress, mitigate the pressures of a high-intensity work environment, and build resiliency. However, this approach emphasizes that the problem is with the individual physician, who is not sufficiently effective or resilient to use secondary interventions to mitigate burnout. Without understanding and eliminating the fundamental drivers of stress at work, emphasizing coping mechanisms and resilience alone will not resolve burnout. The major drivers of emotional exhaustion are wasted time doing tasks not directly related to one’s medical practice, inefficiencies in daily work life, and a perceived lack of support by the health system. While positive factors included family life and academic interactions with colleagues, The COVID-19 pandemic was a stressor that was added to multiple established stressors. Ameliorating factors, such as job satisfaction related to collegial support and a stable home life, may have been impacted by the pandemic. Future attempts to eliminate burnout should prioritize institutional engagement to establish interventions that address workload and encourage collegiality.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s00403-022-02441-0.

Acknowledgements This study was funded in part by National Institute of Arthritis and Musculoskeletal and Skin Diseases NIH-NIAMS P30-AR069589.

Author contributions D.M. and C.V. recruited subjects. M.N. and E.A. conducted semi-structured telephone interviews and data analysis. M.N. and C.V. wrote the main manuscript. F.B., D.M., and C.V. provided research design, analysis, and oversight. All authors reviewed the manuscript.

Declarations

Conflict of interest None of the authors declare any conflicts of interest related to this research or its presentation.

IRB approval This study was approved by the University of Pennsylvania Institutional Review Board (Protocol #843992).

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