



Special Series

Risk of physician burnout in the North American allergist-immunologist workforce

A report from the American College of Allergy, Asthma and Immunology Physician Wellness Taskforce

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Introduction

Physician burnout has been increasingly recognized as a public health crisis.^{1,2} North American physicians have higher burnout rates than age-, sex-, and lifestyle-matched adults who do not practice medicine. North American physicians currently experience a higher suicide rate (mean of approximately 1 suicide per day) than any other group of professionals.^{3,4} More than 200 studies have been published in health-related journals on the topic of physician burnout, with additional news, articles, and research published almost daily. This large number of studies indicates the level of national interest in this developing crisis.

The most widely endorsed definition of burnout combines the features of emotional exhaustion, depersonalization, and a sense of

reduced personal accomplishment.⁵ Reported causes and contributing factors to physician burnout risk include mandated use of electronic health records, hospital acquisition of medical practices, financial effect of the Patient Protection and Affordable Care Act, steadily increasing prescription prices, loss of physician autonomy, and perceived excessive governmental regulation.⁶ Additional factors are undoubtedly contributing to the burnout risk, some more generalized and others specific to certain segments of the physician workforce.

Review of the literature has provided little concrete data to address the incidence, prevalence, or risk burnout in the North American allergist-immunologist workforce. In light of this lack of data, beginning in 2017, the American College of Allergy, Asthma and Immunology (ACAAI) convened a Physician Wellness Taskforce charged with investigating the incidence and risk of burnout among ACAAI physician members. Addressing this knowledge gap would allow the ACAAI leadership to determine whether specific energy and resources should be expended to develop strategies to deal with this risk among our members. The following report details how these questions were addressed, findings to date, and our interpretation of the data.

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Table 1
Components Assessed in the MBI

Emotional exhaustion measures feelings of being emotionally overextended and exhausted by one's work. It is a depletion of emotional energy distinct from physical exhaustion or mental fatigue.
Depersonalization measures an unfeeling and impersonal response toward recipients of one's service, care treatment, or instruction.
Personal accomplishment measures feelings of competence and successful achievement in one's work and emphasizes effectiveness and success in having a beneficial effect on people.

Abbreviation: MBI, Maslach Burnout Inventory.

Methods

Origin of Physician Wellness Taskforce

At the 2016 ACAAI Annual Meeting held in San Francisco, California, the Keynote Session entitled “Preserving the Essence of Practicing Allergy” addressed the challenges of physician wellness, risks to satisfaction and productivity, and potential solutions to increase and maintain happiness and wellness. Lectures included “Why Reinvention of the Doctor-Patient Relationship is the Key to Physician-Led Health Care Reform” by Mark O'Hollaren, MD, and “The Care in Caring: Finding What is Timeless in an Era of Change” by Abraham Varghese, MD. There was an enthusiastic audience response from the many attendees for this session. In January 2017, Stephen A. Tilles, MD, president of the ACAAI (2016–2017), formed the ACAAI Physician Wellness Taskforce, which was charged with addressing wellness and burnout risk among ACAAI physician membership. Task Force members include Michael Blaiss, MD; Amar Dixit, MD; Daniel Ein, MD; Tracy Fausnight, MD; Gailen D. Marshall, MD, PhD (chair); Travis Miller, MD; Anil Nanda, MD; Maeve O'Connor, MD; Tammy Peng, MD; Wanda Phipatanakul, MD; Michael Rupp, MD; and William Silvers, MD. Jennifer Pfeifer, MBA, CMPE, practice management manager of the ACAAI, is the executive administrator of the taskforce.

Assessment of Physician Burnout Among Physician Members

An ACAAI-sponsored “Finding Balance” webinar focusing on issues of wellness and burnout was presented by Gailen D. Marshall, MD, PhD, on June 22, 2017, to introduce the wellness assessment program to be administered to ACAAI member volunteers. The Maslach Burnout Inventory Human Services Survey (MBI-HSS)⁷ was introduced to the ACAAI members during this webinar and was subsequently offered for completion to US-based, North American, practicing allergists-immunologists (pAIs) from September 1 through November 13, 2017. A second round was offered to the ACAAI fellow-in-training (FIT) members from January 23 to April 3, 2018. The MBI-HSS is a proprietary, 22-question, validated tool that measures respondent perception of 3 components that are often altered in individuals experiencing burnout: levels of emotional exhaustion, depersonalization, and personal accomplishment. These components are described in Table 1. Each question was scored from 0 to 6, using a defined scale (Table 2).

Table 2
Frequency Scores on the MBI

Score	Definition
0	Never
1	A few times a year or less
2	Once a month or less
3	A few times a month
4	Weekly
5	A few times per week
6	Daily

Abbreviation: MBI, Maslach Burnout Inventory.

Table 3
Age and Time in Practice Distribution Among Respondent to the Maslach Burnout Inventory

Variable	No. (%) of respondents	
	Physician members	FIT members
Age, y		
<30	1 (0.003)	12 (19.7)
31–40	57 (16.0)	48 (78.7)
41–50	69 (19.3)	0
51–60	101 (28.2)	1 (1.6)
61–70	99 (27.7)	0
≥71	31 (8.7)	0
Time in practice, y		
<5	36 (10.1)	55 (91.7)
5–10	39 (11.0)	3 (5)
11–20	71 (20)	1 (1.6)
21–30	108 (30.4)	1 (1.6)
≥31	101 (28.5)	0

Abbreviation: FIT, fellow-in-training.

The web-based survey was administered confidentially to volunteer participants. E-mail addresses of respondents were neither recorded nor tracked. The administered survey included the 22 questions of the MBI-HSS and demographics questions (age, sex, and number of years in practice) (Table 3). The complied survey results were compared with a general population of more than 11,000 people in the health services profession (not only physicians).

Data from both surveys were collected by Mind Garden Inc (<https://www.mindgarden.com/117-maslach-burnout-inventory>), which administered the online survey. Data were reported as frequency scores, with SDs being reported separately. Descriptive statistical analysis was performed and reported as mean frequency scores. Their reports were presented to the taskforce in a tabulated, deidentified format.

Results

Survey Response Rates

Invitations to complete the MBI-HSS were distributed to 2495 pAI ACAAI members and 318 FIT ACAAI members by multiple blast e-mail announcements during 10- and 12-week spans as described above. A total of 358 pAI members (14.3% of those invited) and 61 FIT members (16.9% of those invited) completed the survey.

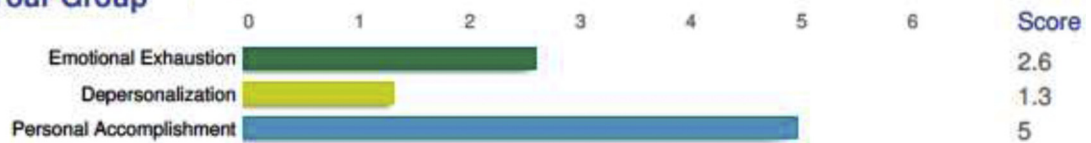
Demographics of Respondents

Table 3 lists the characteristics of the pAI and FIT members. Physician members were more likely to be male, older than 51 years, and in practice for more than 20 years, whereas the FIT members were more likely to be female, 31 to 40 years of age, and in practice for less than 5 years.

Physician Members Responses to Maslach Burnout Inventory Human Services Survey

For pAI members, mean frequency scores (Table 2) were 2.6 for emotional exhaustion, 1.3 for depersonalization, and 5.0 for personal accomplishment, with varying SDs (Fig 1). Compared with a general health services (GHS) population, pAIs had a slightly higher mean frequency of emotional exhaustion than the GHS population (2.6 vs 2.3). The pAIs had a higher mean frequency of personal accomplishment than the GHS population (5.0 vs 4.3). Furthermore, pAIs also reported a lower mean frequency of depersonalization than the GHS population (1.3 vs 1.7).

MBI-HSS Frequency Scores Mean for Your Group



Group SD

The variation in response to the MBI-HSS scales measures the group SDs of the individual frequency of burnout. The smaller the SD, the higher the agreement among group members. A value of 0.0 would mean complete agreement among group members.

SDs of the Group's Frequency on the MBI-HSS

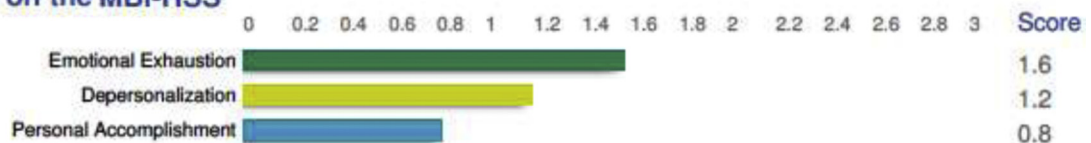


Figure 1. Frequency of response scores among responders in practice. MBI-HSS, Maslach Burnout Inventory Human Services Survey.

Effect of Demographic Categories on Frequency Scores

Data were also categorized by sex and age. First, respondents were divided into male ($n = 233$) and female ($n = 124$). Women had slightly higher scores for emotional exhaustion and depersonalization (Fig 2). For emotional exhaustion, the mean frequency score for male participants was 2.5 vs 2.8 for females. For depersonalization, the mean frequency score for both male and female participants was 1.3, slightly less frequent when compared with 1.7 for the general population. Both male and female participants had comparable mean frequency scores for personal accomplishment that were notably higher than that of the general population (5.1 for males, 5 for females, and 4.3 for the general population).

Respondents were also divided by age range into 6 categories: younger than 30 years ($n = 1$), 31 to 40 years ($n = 57$), 41 to 50 years ($n = 69$), 51 to 60 years ($n = 101$), 61 to 70 years ($n = 99$), and older than 71 years ($n = 31$). There were slightly higher frequency scores for emotional exhaustion and depersonalization in the 41- to 50-year age group but no substantial between-group differences (Fig 3). Mean frequency scores for emotional exhaustion ranged from 1.7 to 3, with the lowest mean frequency scores in those older than 71 years, and the highest mean frequency scores in participants aged 41 to 50 years. A similar pattern for mean frequency scores were seen for depersonalization, with the highest mean frequency scores in participants aged 41 to 50 years, and the lowest scores again in participants older than 71 years. Scores ranged from 0.6 to 1.8. The mean frequency scores for personal accomplishment were similar across all age groups (range, 4.9–5.2 years).

When considering years in practice (Fig 4), mean frequency scores for emotional exhaustion ranged from 2.2 to 3.0. Higher mean frequency scores were noted in participants in practice for 5 to 20 years. Higher mean frequency scores for depersonalization were also noted in this same group (range, 0.8–1.8). Mean frequency

scores for personal accomplishment did not vary drastically with the number of years in practice (range, 4.9–5.2).

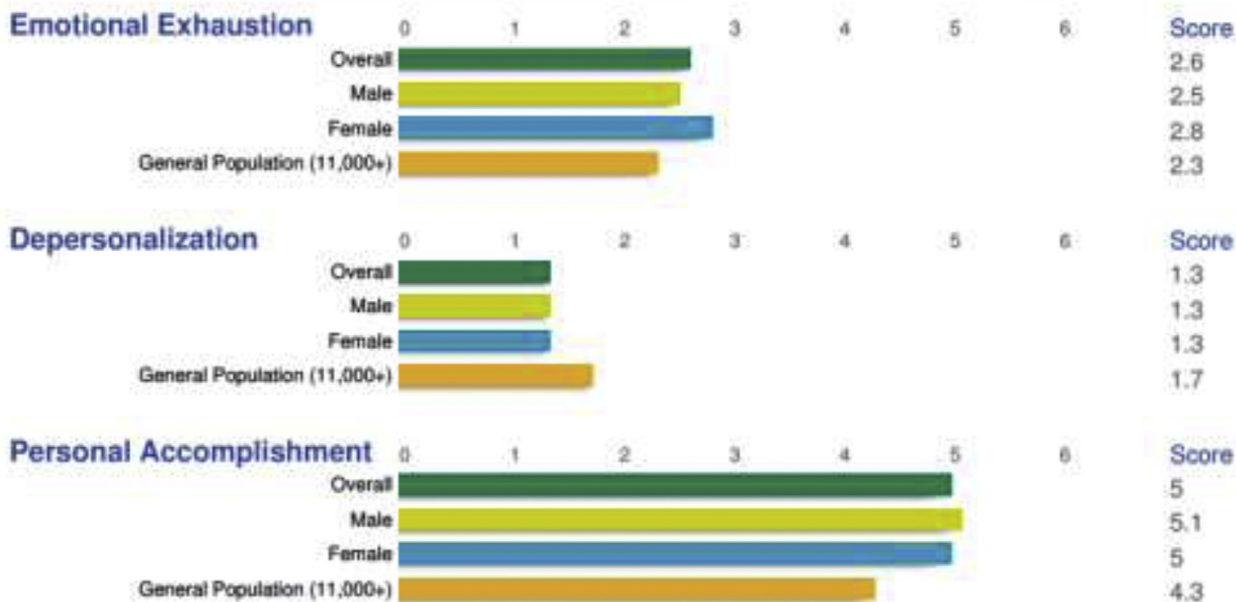
Fellow-in-Training Members' Responses to Maslach Burnout Inventory Human Services Survey

Mean frequency scores for FIT members were similar to pAI responses (Fig 5), with mean scores of 2.7 for emotional exhaustion, 1.8 for depersonalization, and 4.4 for personal accomplishment. Scores for emotional exhaustion, depersonalization, and personal accomplishment did not vary significantly with sex. Compared with the GHS population, FIT members also reported a slightly increased frequency of emotional exhaustion (2.7 vs 2.3 for the GHS population) but had a similar frequency of personal accomplishment (4.4 vs 4.3 for the GHS population). The pAIs had a similar mean frequency of depersonalization (1.8 vs 1.7 for the general population). Similar findings for sex were seen in the FIT group when compared with the pAI group (Fig 6). There were no remarkable differences in any of the indicators based on years in practice. It was difficult to compare FIT members by age and years in practice because of less variability (only 1 participant aged 51–60 years and 5 participants in practice >5 years) (data not shown).

Discussion

Burnout among physicians, including residents and fellows, is an increasing crisis in the United States.^{1,2} According to MEDSCAPE's 2019 National Physicians Burnout and Depression Report⁸ of more than 15,000 physicians surveyed in more than 29 specialties, 44% reported that they felt burned out. Specialties with the highest level of reported burnout were urology followed by neurology, physical medicine and rehabilitation, and general internal medicine. Allergy-immunology reported a burnout rate of 37%. However, this survey

Scores by Sex



SDs by Sex

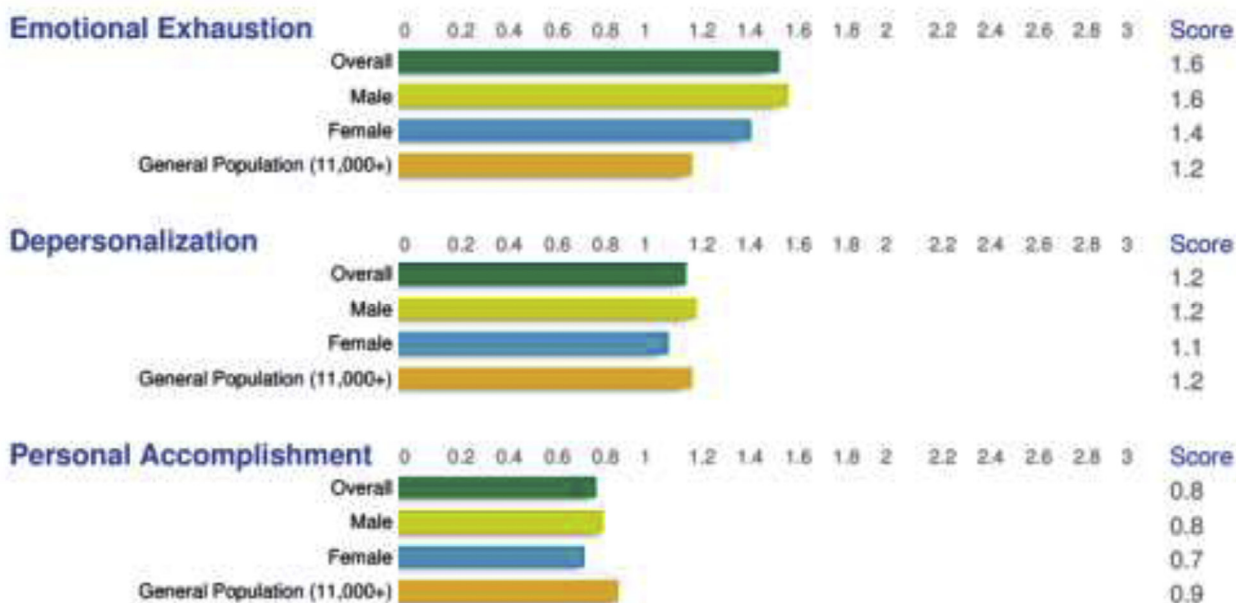


Figure 2. Response frequency among physician members categorized by sex.

did not use a scientific validated instrument to diagnose burnout, and only 150 allergists were questioned. More information was needed to understand the degree of burnout by the entire allergist-

immunologist community from practicing clinicians to FITs. The ACAAI through the Physician Wellness Taskforce sought to develop a more accurate assessment of the burnout rate in our specialty

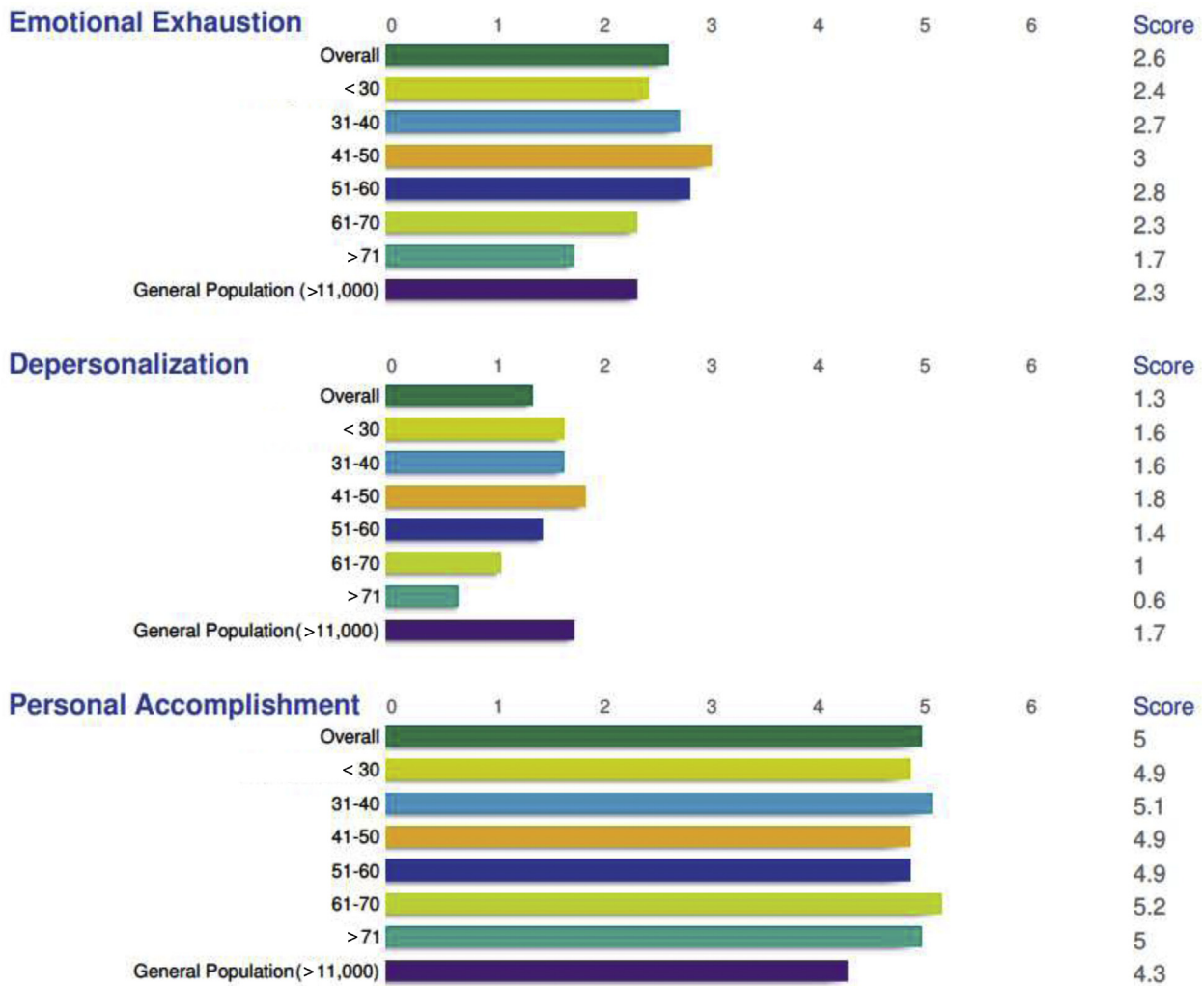


Figure 3. Response frequency among physician members categorized by age.

and surveyed the US-based American Board of Allergy and Immunology–certified pAIs and US-based FITs using the MBI-HSS.

More than 14% of the invited practicing US and Canadian allergists and more than 19% of invited FITs completed the questionnaire. Both groups reported slightly more emotional exhaustion than the GHS population. The pAIs had a lower depersonalization score (Fig 1), whereas the FITs reported depersonalization equal to that of GHS population (Fig 2). The pAIs and FITs felt a stronger sense of personal accomplishment than the GHS population. Examining the pAI group scores by sex, age, and years in practice did not reveal any notable differences in the scoring on any of the 3 different scales. However, when the data were examined by number of respondents in each frequency category (range, 1–6) from pAIs and 61 FITs, several interesting signals were detected. Figures 7 and 8 show that emotional exhaustion was reported several times per month or more in 179 of 360 pAIs (49.7%) and 36 of 61 FITs (59.1%). When further focused to at least weekly, 109 of 360 pAIs (30.3%) and 18 of 61 FITs (29.5%) still reported episodes of emotional exhaustion. Depersonalization was less frequently reported but still present at least monthly in 55 of 360 pAIs (15.2%) and 20 of 61 FITs (32.7%). These are clearly signals for possible burnout or burnout risk in both groups. Whether these signals are

true indicators of increased burnout risk among rather substantial subgroups in our own numbers will require further investigation.

When the overall results are examined in toto, the data suggest that as a group, US-based pAIs and FITs have lower levels of burnout than a similarly surveyed overall health services population. The emotional exhaustion scale suggests that at least some pAIs experience somewhat regular distress, which manifests as emotional exhaustion in their emotionally demanding work. They experienced less on the depersonalization scale, which may indicate less risk of unfeeling or impersonal responses to patients compared with a composite of others in the health services profession. The higher scores on the personal accomplishment scale point out value that pAIs and FITs put into their professional efforts, which add value to their own perceived worth and self-esteem.

It was somewhat unexpected to find that pAI and FIT respondents had higher levels of emotional exhaustion as a group. Only a few of pAIs and FITs indicated that they experienced emotional exhaustion with an alarming frequency (at least several times monthly). The major demographic that seemed of most interest was age, with the eldest of the pAIs experiencing the lowest rate of emotional exhaustion (Fig 3). However, this finding may be affected by the low number of respondents in this category.

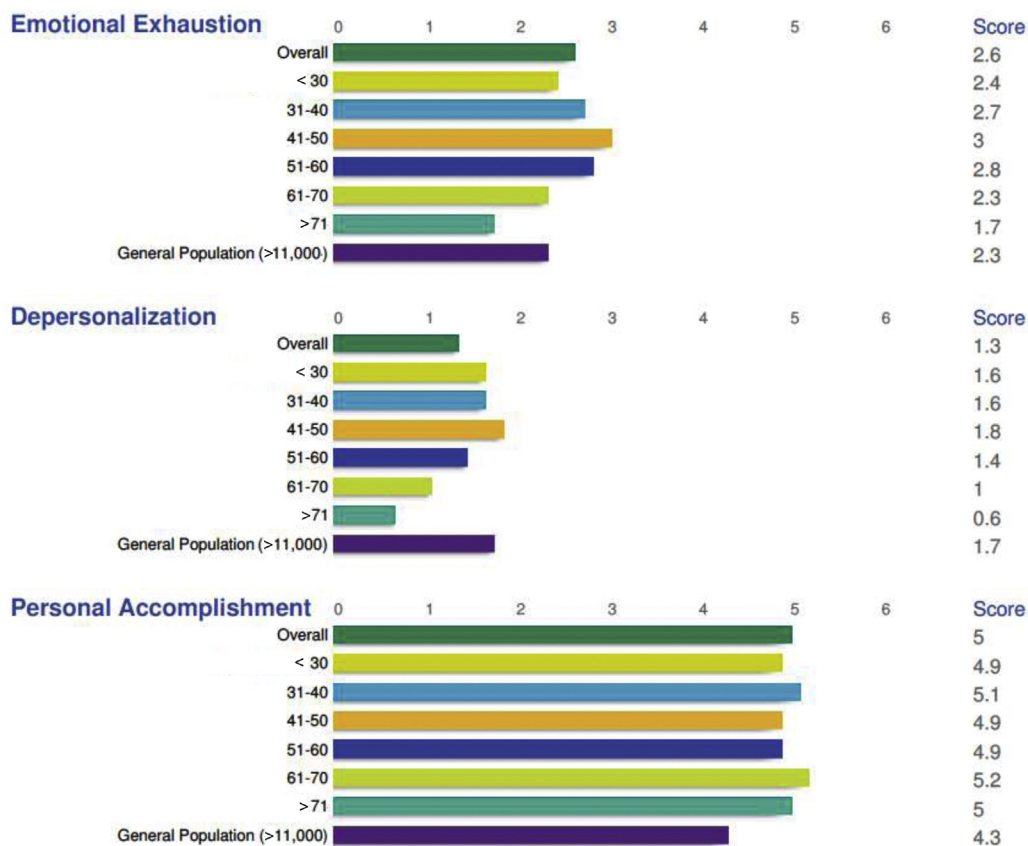
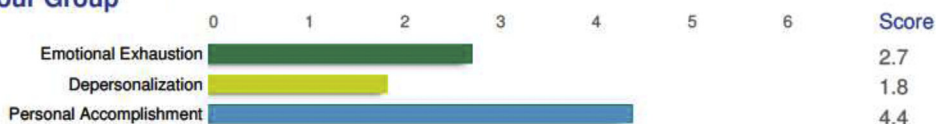


Figure 4. Response frequency among physician members categorized by years in practice.

MBI-HSS Frequency Scores Mean for Your Group



Group SD

The variation in response to the MBI-HSS scales measures the group s_d s of the individual frequency of burnout. The smaller the SD, the higher the agreement among group members. A value of 0.0 would mean complete agreement among group members.

SDs of the Group's Frequency on the MBI-HSS

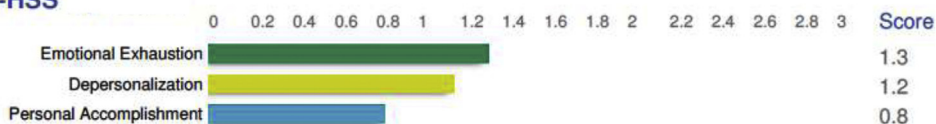
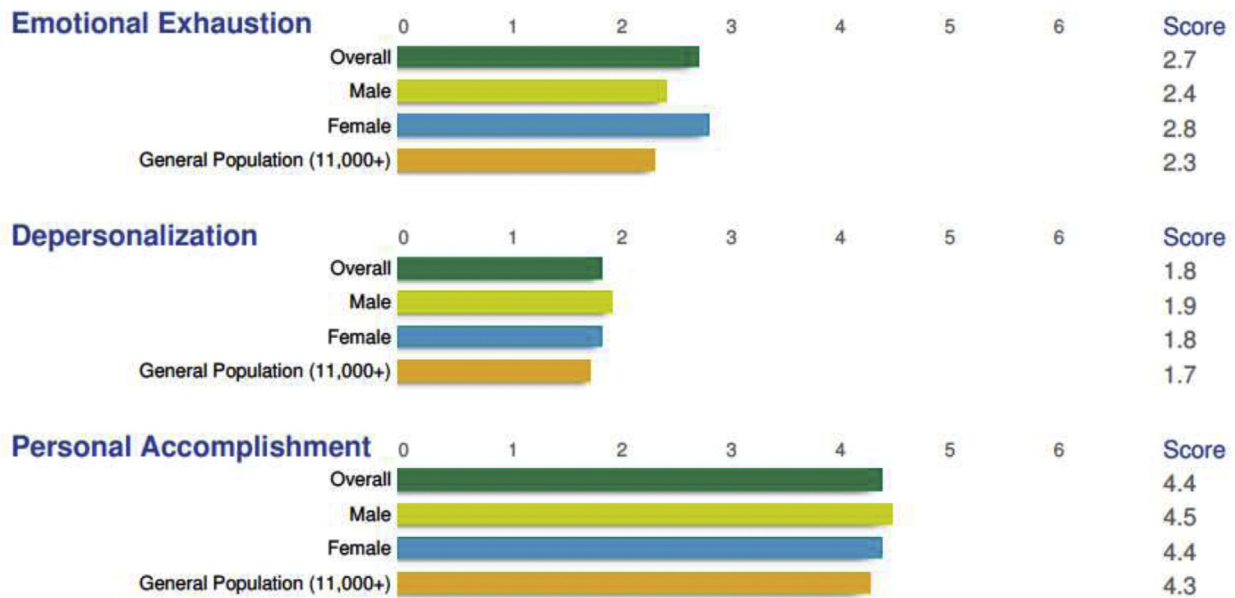


Figure 5. Response frequency among FIT members. FIT, fellow-in-training; MBI-HSS, Maslach Burnout Inventory Human Services Survey.

Scores by Sex



SDs by Sex

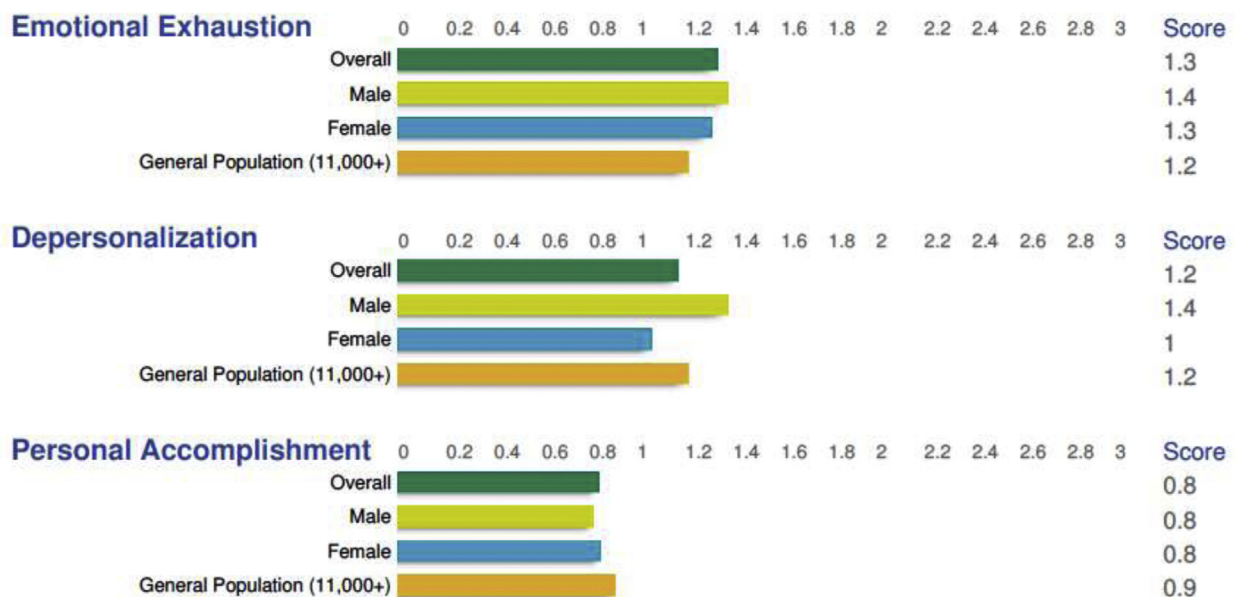


Figure 6. Response frequency among FIT members categorized by sex. FIT, fellow-in-training; MBI-HHS, Maslach Burnout Inventory Human Services Survey.

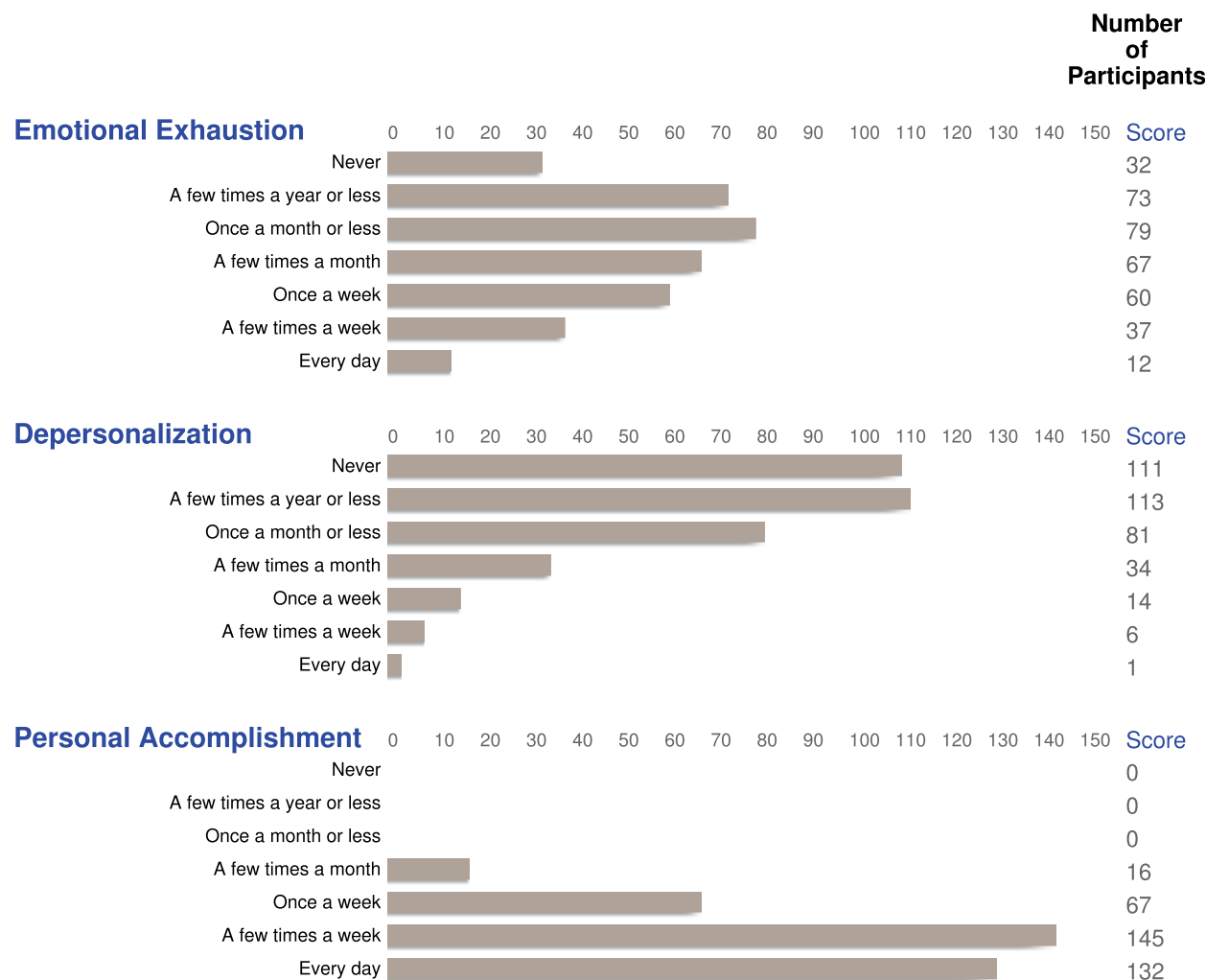
Whether this is a signal of increased burnout risk in these individual physicians is currently unknown but deserving of further investigation.

Burnout and burnout risk are not stagnant processes and likely represent a continuum rather than distinct categories.^{9,10} The point at which a physician can be accurately categorized as burned out

varies with the individual but usually results in varying degrees of personal and professional dysfunction.¹¹ This point can change because of a variety of personal and professional influences, which further bolsters the needs for additional investigation into ourselves and our own specialty members. With the continued pressures in the health care delivery system, particularly in the United

This Group

Number of participants in this norm: 360

**Figure 7.** Frequency score distribution among responders in practice.

States, it is vital to know the prevalence of burnout in the allergy-immunology community. Surveying FITs sequentially before and after they enter practice may provide information on whether entering academic or community practice has an effect on burnout symptoms. In addition, it would be of interest to understand whether burnout is worse in academic or community allergists-immunologists so measures can be taken to help each group deal with common vs practice environment-specific issues. Looking at subgroups of pAIs would give important insights into whether employed vs owner-based and group vs solo situations have differing adverse effects on burnout risk.

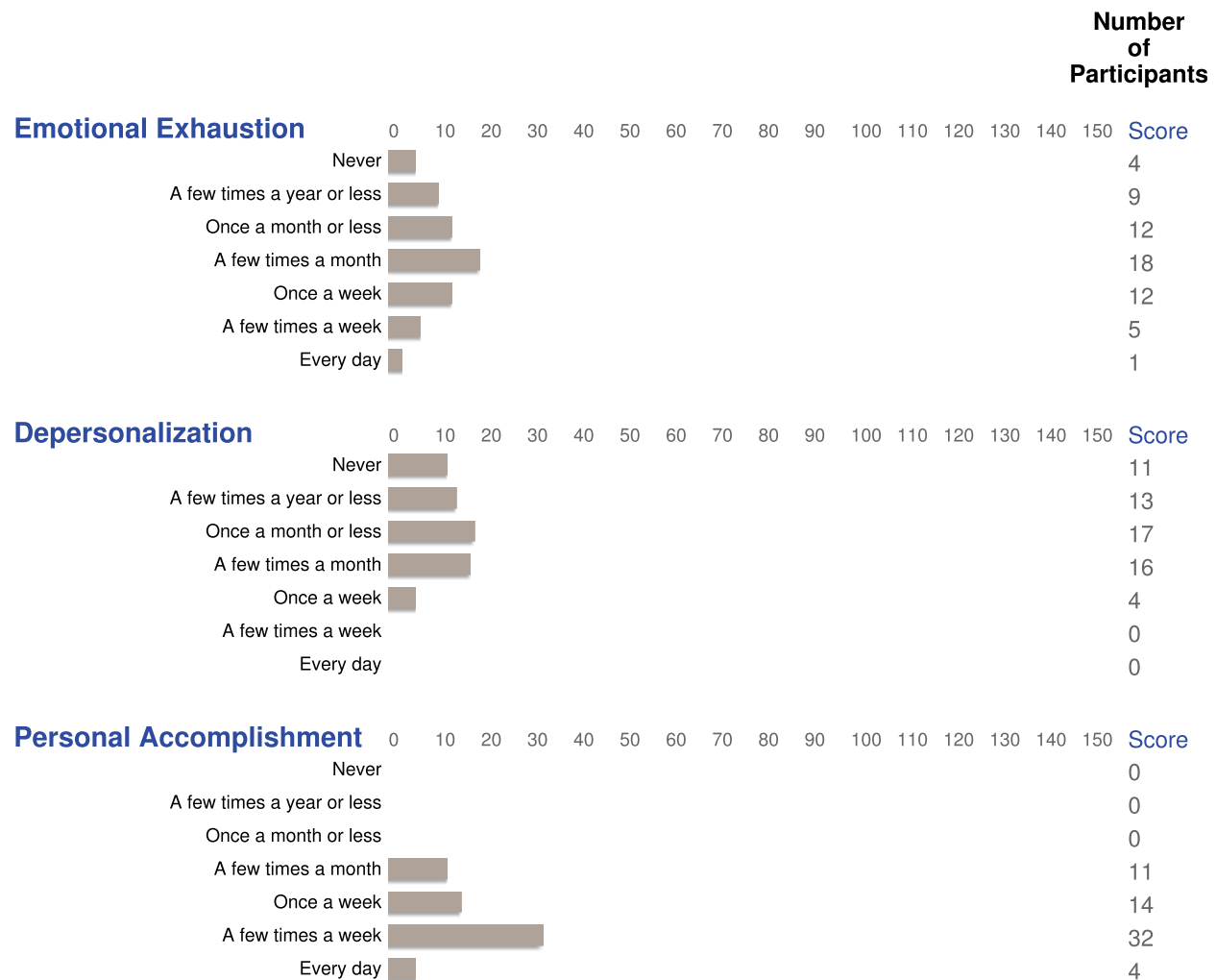
Burnout not only affects physician health but also can lead to lower quality care for the patient and increased cost to the health care system, with reduced physician productivity and higher physician turnover.¹⁰ The relatively lower reported levels of burnout of the pAI than the GHS population may be viewed as cautiously optimistic. However, efforts to keep the burnout rate low and identify those in our numbers who need additional support to minimize their risk for burnout are imperative. The ACAAI has taken steps to help all allergists-immunologists by forming the Physician Wellness Taskforce to develop programs to help those experiencing burnout and those who are at increased risk. At the ACAAI annual meetings, programs on how to move from burnout to

wellness have been conducted. The closed Facebook page by the ACAAI on Physician Well-Being gives pAI members a venue to learn about coping with burnout risks. There are ongoing focus workgroups with allergists-immunologists on burnout and wellness. To help with coping strategies for stressors associated with office issues that can lead to burnout, the ACAAI has a Practice Management Toolkit, with items such as prior authorization letter generators and shared decision-making aids to lessen the workload. The ACAAI Advocacy Council conducts frequent webinars on coding and billing to help the pAIs with these frustrating issues. In collaboration with the American Board of Allergy, the ACAAI is committed to make certain that the Maintenance of Certificate is a true learning experience and not merely a stressful bureaucratic exercise.

There are several limitations to the results reported from this survey that should provide appropriate caution to optimal interpretation of these findings. This study had more than 14% of allergists and 19% allergy fellows in training respond, which, although a typical percentage for an external survey, may not be a totally accurate representation of burnout risk for the entire allergy-immunology community. Only US-based, North American pAIs were surveyed. Other groups may have similar or different risk profiles. In addition, pAIs and FITs who are experiencing active burnout symptoms may be underreported because of concerns

This Group

Number of participants in this norm: 61

**Figure 8.** Frequency score distribution among FIT responders. FIT, fellow-in-training.

about security of survey results. This finding may hold even though the ACAAI assured the respondents of confidentiality and indeed had no ability to obtain the results of individual respondents. This limitation could be even more concerning to FITs because they may have been worried about the possibility of their results being accessed by their program director and/or future employer. Steps to relieve concerns are being developed as the taskforce seeks to use the most effective methods for generating greater amounts of additional data while reassuring confidentiality and discretion to our membership.

In summary, burnout is an increasing risk for physicians, and allergists-immunologists are not immune from this risk. The data from these surveys have potentially good news and bad news content. The prevalence of obvious burnout (assessed as a summary of the 3 indicators of the MBI-HSS) is relatively low, yet signals suggest distinct subgroups are already experiencing burnout or at increased risk. In addition to burnout from work-related issues, many physicians, including those in our specialty, deal with personal stressors that can adversely affect not only their practice of medicine but also their personal well-being. The ACAAI is committed to the continued development of wellness resources to help with personal and group efforts to decrease risk levels for burnout and increase resources to help

those at risk with moving back from burnout to wellness wherever and whenever possible.

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