



Contents lists available at ScienceDirect

## The American Journal of Surgery

journal homepage: [www.americanjournalofsurgery.com](http://www.americanjournalofsurgery.com)

## Burnout and gender in surgical training: A call to re-evaluate coping and dysfunction

Carter C. Lebares<sup>a,\*</sup>, Hillary J. Braun<sup>a</sup>, Ekaterina V. Guvva<sup>a</sup>, Elissa S. Epel<sup>b</sup>, Frederick M. Hecht<sup>c</sup><sup>a</sup> Department of Surgery, University of California San Francisco, San Francisco, CA, USA<sup>b</sup> Department of Psychiatry, University of California San Francisco, San Francisco, CA, USA<sup>c</sup> Osher Center for Integrative Medicine, University of California San Francisco, San Francisco, CA, USA

## ARTICLE INFO

## Article history:

Received 17 February 2018

Received in revised form

18 May 2018

Accepted 17 July 2018

## Keywords:

Surgery

Gender

Burnout

Coping

## ABSTRACT

**Background:** Physicians experience burnout and mental illness at significantly higher rates than the general population, with sequelae that negatively affect providers, patients, and the healthcare system at large. Gender is rarely considered in characterizing the problem or vetting interventions.

**Methods:** Using data from a recent national survey and a longitudinal pilot study of general surgery residents, we examined gender variation in burnout and distress.

**Results:** In the national survey, male residents had higher depersonalization and female residents had higher alcohol misuse, with a significant association between alcohol misuse, high depersonalization and low anxiety not seen in males. In the longitudinal pilot study, males' burnout scores were higher and had a greater contribution from depersonalization. Both males and females had increasing prevalence of high depersonalization over the intern year.

**Conclusions:** Residency affects males and females differently in ways that merit further investigation and better understanding to effectively address burnout and distress.

© 2018 Elsevier Inc. All rights reserved.

## Introduction

Over the past decade, a growing body of work has shown that physicians experience burnout, depression, and suicide at significantly higher rates than the general population.<sup>1,2</sup> With broad ramifications for physicians,<sup>2–4</sup> patients,<sup>5–7</sup> and healthcare at large,<sup>8–11</sup> these growing problems have generated much interest from professional societies, training programs, and the research community. To date, a variety of strategies have been proposed for mitigating the effects of burnout, including changes to workplace culture, emphasizing transparency, promoting physician autonomy,<sup>12</sup> training in stress management and isolated programs in mindfulness.<sup>13</sup> Some have shown promise,<sup>14</sup> but overall success has been limited.<sup>13,14</sup>

Burnout is a heterogeneous phenomenon that is highly correlated with stress.<sup>15</sup> It is characterized by three distinct domains: emotional exhaustion, depersonalization, and a poor sense of

personal accomplishment.<sup>16,17</sup> These subdomains are not uniformly relevant across study populations. For example, high scores in emotional exhaustion and depersonalization are considered clinically relevant to physicians, whereas low scores in personal accomplishment are not.<sup>18</sup> Burnout is widely believed to arise from chronic dissonance between one's professional expectations and reality.<sup>2,16</sup>

Professionally, women in medicine are often held to different societal standards than men<sup>19,20</sup> and experience proven inequity in promotion, retention and compensation.<sup>21–23</sup> Psychologically, men and women experience the demands of work differently, too, with well-documented differences in stress,<sup>24</sup> anxiety,<sup>25,26</sup> and coping strategies,<sup>27,28</sup> in and out of medicine. In surgical training, gender differences are seen in reports of stereotype bias,<sup>29</sup> perceived social support,<sup>30</sup> and unequal professional expectations.<sup>31</sup> As such, it is surprising that the impact of gender is rarely considered when characterizing burnout, a work-related phenomenon. If we are to address barriers in the workplace and truly promote inclusion for women within medicine, understanding gender differences should be a priority.

We recently performed two studies related to burnout in

\* Corresponding author. 513 Parnassus Avenue, HSW 1601, San Francisco, CA, 94143 - 0790, USA.

E-mail address: [Carter.Lebares@ucsf.edu](mailto:Carter.Lebares@ucsf.edu) (C.C. Lebares).

<https://doi.org/10.1016/j.amjsurg.2018.07.058>

0002-9610/© 2018 Elsevier Inc. All rights reserved.

surgery, one cross-sectional national survey of general surgery residents<sup>15</sup> and one longitudinal pilot study of surgical interns.<sup>32</sup> The purpose of this present study, was to analyze this data to explicitly explore the impact of gender on residents' experience of stress and burnout, and to identify any gender-based changes that emerge over the intern year.

## Materials and methods

### *Study 1: national survey of burnout and distress among general surgery residents*

#### *Design and measures*

In 2016, a voluntary and confidential 68-item survey was approved by the Association of Program Directors in Surgery and the UCSF IRB. It was sent to 246 ACGME-accredited general surgery training programs for distribution to all residents (clinical and lab).

Complete measures and scoring are described in detail elsewhere.<sup>15</sup> Briefly, the Maslach Burnout Inventory (9-item)<sup>33</sup> was used to evaluate three subscales of burnout (emotional exhaustion, depersonalization, and personal accomplishment). By convention these subscales are scored separately with high burnout defined as a high score in one or more subscales.<sup>34</sup> High burnout scores have been empirically determined in health care workers,<sup>35</sup> are set at the top 30% for emotional exhaustion and depersonalization and the bottom 30% for personal accomplishment. Scoring has been adjusted here for use with this abbreviated form.<sup>33</sup> Per convention, we defined clinically relevant burnout in surgeons as scoring high for emotional exhaustion or depersonalization.<sup>18</sup> Stress was evaluated with Cohen's Perceived Stress Scale,<sup>36</sup> anxiety with Spielberger State Anxiety Index,<sup>37</sup> and alcohol use with the WHO's Alcohol Use Dependence Inquiry Test, form C.<sup>38</sup>

#### *Secondary data analysis*

We assessed continuous variables such as burnout and other psychological scales in relation to gender using ANCOVA and regression methods. We also dichotomized variables such as high burnout and analyzed their association with gender using odds ratios and Fisher's exact test. Statistical significance was assessed at an alpha level of 0.05 and 95% confidence intervals are shown. All computations were performed with SAS 9.4 (2002–2012, Cary, NC).

### *Study 2: longitudinal pilot study of burnout and stress in surgery interns at a tertiary academic center*

#### *Design and measures*

In 2016, following IRB approval and informed consent, we enrolled 47% (n = 21) of in-coming surgery interns for an

exploratory longitudinal cohort study of burnout and stress. The cohort included interns from Neurosurgery, Ophthalmology, Otolaryngology, Orthopedics, Plastics, Urology and General Surgery. The study was not designed for power but rather to explore feasibility and reliability of outcome measures. Assessments were performed at baseline (before the start of internship), 3 months, and 12-months. Burnout was measured using the Maslach Burnout Inventory (9-item) and scored as described above.

#### *Secondary data analysis*

We calculated means and standard deviations of burnout and the percentage of burnout attributable to high depersonalization at three time points (baseline, three months, twelve months). We used t-tests to evaluate group differences between means at the three time points and between score changes from baseline to three months and baseline to 12 months. We used analysis of covariance (ANCOVA) to study effects of gender on scores at three months and 12 months while covarying for baseline score. All analyses are from R (R Core Team (2013). R Foundation for Statistical Computing) and SAS 9.4 software.

## Results

### *Study 1: national survey of burnout and distress*

Of the 566 general surgery trainees who participated in the survey, 51% were female, and 76% were from academic programs; the 10% response rate and training-level distribution were similar to those for other recent studies of this population.<sup>34</sup>

As reported previously,<sup>15</sup> we found that high depersonalization was significantly more prevalent in males and that alcohol misuse and abuse were significantly higher in females; there was no statistically significant relationship between gender and high emotional exhaustion, high stress or anxiety (Table 1). We do not report on personal accomplishment scores here, as the prevalence of high scores in this subdomain was exceedingly low overall (1.07% in the entire cohort) and is considered by many to be less clinically relevant in physicians.<sup>18</sup> In analyses stratified by gender, we found that alcohol misuse in females was significantly associated with higher depersonalization and lower anxiety (p = 0.02 and 0.05, respectively, Table 2).

### *Study 2: longitudinal pilot study of burnout and stress*

The pilot study cohort (n = 21) was predominantly white and Asian, and 38% (n = 8) were female (Table 3). Participating interns were followed for one year, with assessments at baseline (before internship began), at three months and at 12 months. There was no

**Table 1**  
Gender characteristics of study sample and association with alcohol use, burnout, stress and distress.

| Subgroup | n   | %     | EtOH n (%)  | EE n (%)    | DP n (%)    | PS n (%)    | Dep n (%)  | SI n (%)   | Anxiety n (%) |
|----------|-----|-------|-------------|-------------|-------------|-------------|------------|------------|---------------|
| Female   | 286 | 50.89 | 138 (57.98) | 127 (52.70) | 122 (50.62) | 144 (54.34) | 46 (19.33) | 25 (10.50) | 100 (46.30)   |
| Male     | 276 | 49.11 | 89 (40.27)  | 132 (59.46) | 138 (62.16) | 125 (52.08) | 45 (20.36) | 26 (11.76) | 82 (42.49)    |
| P-value  |     |       | <0.01*      | 0.16        | 0.01*       | 0.66        | 0.82       | 0.77       | 0.49          |

\* = p-value < 0.05.

P-values show whether a factor differs significantly by sex.

Missing data for sex: n = 4.

EtOH = Alcohol misuse and abuse as scored on AUDIT-C: high if  $\geq 3$  (females) or  $\geq 4$  (males).

EE = High emotional exhaustion, Abbreviated MBI, score  $\geq 9$ .

DP = High depersonalization, Abbreviated MBI, score  $\geq 6$ .

PS = High perceived stress, Cohen's Perceived Stress Scale, score  $\geq 17$ .

Dep = Moderate to severe depression, PHQ-9, score  $\geq 10$ .

SI = Suicidal Ideation, PHQ-9, exists if score > 0 to single item.

Anxiety = High anxiety, Spielberger STAI, score  $\geq 40$ .

Download English Version:

<https://daneshyari.com/en/article/11013287>

Download Persian Version:

<https://daneshyari.com/article/11013287>

[Daneshyari.com](https://daneshyari.com)