

# Investigation of work–life integration on burnout symptoms in women physician runners: a cross-sectional survey study

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## ABSTRACT

**Objective** To investigate which factors, from demographics to work–life integration, are associated with burnout symptoms among self-declared active women physicians practising in the USA.

**Methods** Cross-sectional study of those actively engaged in a social media group for women physician runners. Electronically surveyed using 60 questions covering demographics, compensation, debt and domestic responsibilities with burnout assessed by the Mini-Z Burnout Survey.

**Results** Of the 369 women meeting inclusion criteria as attending physicians practising in the USA, the majority reported being White (74.5%) and at least 6 years out from training (85.9%). There was a significant association of increased burnout level with working more hours per week and being responsible for a greater percentage of domestic duties ( $p < 0.0001$  and  $p = 0.003$ , respectively). Both factors remained significant in a multivariable model ( $p < 0.0001$ ).

**Conclusion** By exploring burnout in the physically active, we are better able to investigate contributors to burnout despite healthy exercise habits. Increased burnout was significantly associated with greater domestic responsibility and hours working. These findings in women physician runners suggest that exercise alone may not control burnout. Poor work–life integration deserves attention as a burnout contributor in women physicians, potentially serving as a target for burnout prevention strategies.

## INTRODUCTION

The prevalence of physician burnout is estimated to be near or exceeding 50%, much greater than the general working population in the USA even after adjusting for work hours and other factors.<sup>1–4</sup> Defined as a work-related syndrome consisting of emotional exhaustion, depersonalisation and a reduced sense of personal efficacy or accomplishment, burnout is associated with negative consequences personally and professionally. Patients are at risk of experiencing lower quality care, reduced satisfaction and medical

## What are the new findings?

- ▶ Increased burnout was significantly associated with greater domestic responsibility and greater hours working.
- ▶ These findings in self-reported physically active women physicians suggest that aerobic exercise alone may not control burnout symptoms.
- ▶ Poor work–life integration deserves attention as a burnout contributor in women physicians.

errors while the physician's own mental and physical health and safety are threatened.<sup>5</sup> Combined, these effects increase health-care system costs, having adverse impacts on physician productivity and turnover as well as patient access to high quality care.<sup>5,6</sup> Burnout affects both men and women, although not necessarily equally. While gender is not a consistently independent predictor of burnout, in some studies, women physicians and physicians-in-training appear to have a higher incidence of burnout symptoms related to depersonalisation and emotional exhaustion compared with their male counterparts which could result in the loss of women from the physician workforce.<sup>1,4,7</sup>

With the number of women becoming physicians increasing, burnout in this population warrants further investigation as there is limited existing literature on this. Exercise is a frequently proposed strategy to combat burnout and improve physical and mental health. Studies have shown that physical activity is associated with lower risk of employee and medical student burnout.<sup>8–10</sup> By exploring burnout in a physically active sample of women physicians, we are better able to investigate contributors to burnout despite healthy exercise habits. Qualitative studies report that attention to work–life integration and self-care behaviours are two of the most commonly employed tactics by

physicians to address burnout.<sup>8</sup> As such, we included questions related to these themes in our investigation.

We aimed to investigate which factors, from demographics to finances and work–life integration, were associated with burnout among self-declared active women physicians in the USA. We hypothesised that more demanding occupational hours and poor work–life balance would contribute to burnout. To our knowledge, this is the first study to survey a cohort of self-declared active women physicians and analyse how burnout symptoms are affected by work–life integration.

## METHODS

### Objectives

The primary outcomes were to determine the level of physical activity and prevalence of burnout symptoms in this cohort of women physicians. Secondary outcome was to evaluate associations of demographics and work–life integration with burnout.

### Participants

All group members belonging to an exercise-related social media group for women physicians were invited to participate through an online posting containing the survey hyperlink. To reduce the role of non-response bias, only those members actively engaged in the group, per the metrics provided by the platform's engagement insights, were considered when assessing response rate. Written informed consent was obtained by all participants.

### Design

This cross-sectional study consisted of an electronic survey comprising 60 questions about exercise, demographics, finances and domestic responsibilities. To evaluate work satisfaction and burnout, questions from the American Medical Association's Mini-Z Burnout Survey (MZBS) were included.<sup>11</sup> Anonymous survey responses were collected over a 3-week period in February and March 2020.

The University of Texas Health Science Center at Houston Institutional Review Board classified this study as exempt.

### Analysis

Surveys included in the analysis belonged to women attending physicians practising in the USA. Missing data were excluded from analysis but accounted for in the summary tables accordingly. One-way analysis of variance was conducted to assess the relationship between the average MZBS Score and demographic factors as well as work–life integration factors, current and maximum compensation, current and maximum educational debt, and current household debt. Linear regression was then conducted using the variables that reached significance in univariate testing. Analysis was conducted in R.<sup>12</sup>

## RESULTS

Of the 1000 actively engaged social media group members, 382 (38.2%) completed the survey. There were

369 respondents who met inclusion criteria by identifying themselves as attending women physicians practising in the USA, many at least 6 years out from training (85.9%), with 74.5% White, 13.8% Asian, 6.8% Hispanic, 2.4% multiple races and 0.8% Black. Group demographics are shown in [table 1](#). Burnout symptoms were reported in 42.1% of respondents.

### Physical activity

The median amount of time spent exercising per week was 5–6 hours with the majority (69%) being aerobic exercise. One hundred and eighty-one (60.1%) of the 301 respondents reporting step counts achieved at least 10 000 steps daily.

### Work–life integration

Only 29.5% of respondents reported having adequate time for work activities while 58.6% have enough time for their personal and family life. Nearly 41% reported having reduced their work hours to offset home responsibilities. There was a significant association between higher scores on the MZBS (indicating lower levels of burnout) and agreement that one's work schedule left enough time for personal and family life ( $p<0.0001$ ).

Significantly associated with higher levels of burnout were more hours worked per week ( $p<0.0001$ ) and a greater per cent of domestic duties for which the respondent is responsible ( $p=0.003$ ). These associations remained significant ( $p<0.0001$ ) in the multivariable model ([table 2](#)). This relationship is illustrated in [figure 1](#).

## DISCUSSION

### Burnout and work–life integration

In this group of self-declared active women attending physicians in the USA, we found greater degrees of burnout to be significantly associated with performing a higher percentage of domestic duties and working more hours per week. Our findings suggest that these women physicians reporting burnout may be experiencing a work–life imbalance. This is consistent with other studies, one of which found that work–home conflict had a stronger predictive effect for burnout in women physicians.<sup>13 14</sup> This same study found that work–home facilitation had a significantly protective effect on exhaustion in women.<sup>13</sup>

### Strengths and limitations

A strength of our study is its originality in investigating burnout in the setting of a physically active lifestyle. By assessing commonly employed tactics by physicians to combat burnout such as work–life integration and health behaviours, we can begin to understand their associations with burnout. However, we only assessed exercise and nutrition practices while other self-care behaviours, like meditation and sleep habits, went unmeasured.

We incorporated validated survey questions where possible, such as the MZBS. However, a remaining limitation of this survey-collected data is that it is

**Table 1** Demographic factors

Category	n (%)
<b>Race</b>	
White	275 (74.5)
Asian	51 (13.8)
Hispanic	25 (6.8)
Multiple races	9 (2.4)
Other	4 (1.1)
Black or African American	3 (0.8)
Native Hawaiian or Pacific Islander	1 (0.3)
American Indian or Alaska Native	1 (0.3)
<b>Years out of training</b>	
5 years or less	48 (13.0)
6–10 years	137 (37.1)
11–20 years	151 (40.9)
More than 20 years	29 (7.9)
Other	4 (1.1)
<b>Primary practice setting</b>	
Private practice	141 (38.2)
Academic	106 (28.7)
Combination or other	105 (28.5)
Military or VA	17 (4.6)
<b>Clinical work</b>	
Outpatient	181 (49.2)
Inpatient	62 (16.8)
Equal mix (inpatient/outpatient)	96 (26.1)
Other	18 (4.9)
Non-clinical administrative	6 (1.6)
Research	5 (1.4)
No response	1 (0.3)
<b>Specialty</b>	
Obstetrics and Gynaecology	49 (13.3)
Family Medicine	43 (11.6)
Internal Medicine Subspecialty	42 (11.4)
Paediatrics	39 (10.6)
Paediatric Subspecialty	35 (9.5)
Internal Medicine	28 (7.6)
Emergency Medicine	20 (5.4)
Surgical Subspecialty	18 (4.9)
Psychiatry	14 (3.8)
Other	14 (3.8)
Anaesthesiology	13 (3.5)
Dermatology	12 (3.3)
Physical Medicine & Rehabilitation	10 (2.7)
Radiology	8 (2.2)
Neurology	8 (2.2)
Pathology	6 (1.6)
Ophthalmology	3 (0.8)

Continued

**Table 1** Continued

Category	n (%)
Allergy and Immunology	3 (0.8)
General Surgery	2 (0.5)
Preventive Medicine	2 (0.5)
<b>Hours worked per week</b>	
None	1 (0.3)
1–10	4 (1.1)
11–20	22 (6.0)
21–30	26 (7.0)
31–40	85 (23.1)
41–50	114 (31.0)
51–60	71 (19.3)
61–70	31 (8.4)
71–80	9 (2.4)
>80	5 (1.4)
No response	1 (0.3)
<b>Share home with spouse/partner</b>	
Yes	345 (93.8)
No	19 (5.2)
Other	4 (1.0)
No response	1 (0.3)
<b>Number of children</b>	
0	0 (0)
1	39 (10.6)
2	208 (56.4)
3	86 (23.3)
4	27 (7.3)
5 or more	8 (2.2)
No response	1 (0.3)
<b>Per cent responsibility for domestic duties and/or childcare</b>	
0%–25%	28 (7.6)
26%–50%	94 (25.5)
51%–75%	182 (49.3)
76%–100%	65 (17.6)

VA, Veterans Affairs.

self-reported and thus subject to biases relating to recall and social desirability.<sup>15</sup> Another important consideration is that of participation, or non-response, bias. Non-respondents may not have participated because they had less time to do so or perhaps they had less motivation to participate because they were experiencing symptoms of burnout. On the other hand, it may be that non-responders are not experiencing symptoms of burnout and thus are less interested in filling out a survey on the topic. These differences in responders and non-responders may have important implications, biasing the results.

**Table 2** Factors associated with burnout from MZBS

Factor	P value		
<i>Univariate results</i>			
Hours worked per week	<0.00001		
Per cent of domestic duties	0.0003		
Factor	P value	Coefficient	95% CI
<i>Multivariable model</i>			
Intercept	<0.00001	43.9	40.7 to 47.1
Hours worked per week	<0.00001	-1.39	-1.79 to -1.00
Per cent of domestic duties	<0.00001	-1.78	-2.50 to -1.07

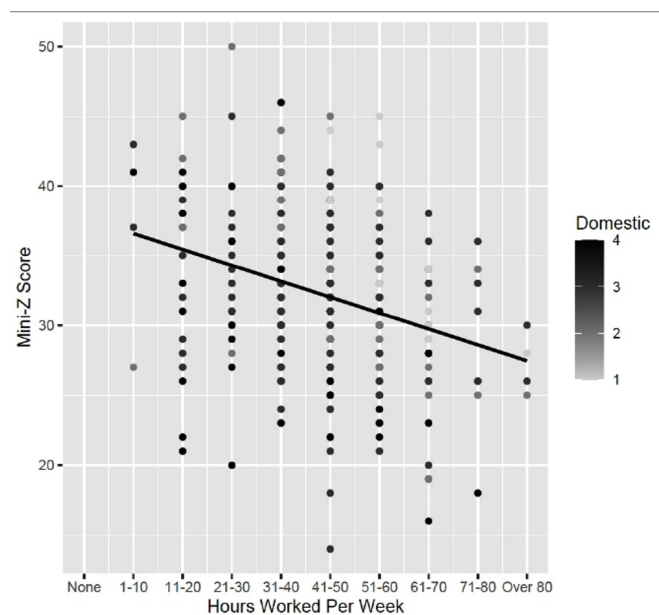
MZBS, Mini-Z Burnout Survey.

### Generalisability and future studies

Our findings are specific to women attending physicians in the USA who participate in mostly aerobic exercise. Applying this investigation to a larger, more heterogeneous sample including diverse fitness practices, men physicians, physicians-in-training and even women in the general population would allow for important comparisons and enhanced generalisability.

### CONCLUSION

These findings in self-reported physically active women physicians suggest that aerobic exercise alone may not control burnout symptoms. Poor work-life integration deserves attention as a burnout contributor in women physicians. Potentially serving as a target for burnout prevention strategies, the improvement of work-life



**Figure 1** Trend of MZBS Score with weekly hours worked and percentage of domestic responsibility. Mini-Z Scores decreased, indicating a greater degree of burnout, with increasing hours worked and increasing percentage of domestic duties performed. MZBS, Mini-Z Burnout Survey.

integration through consideration of aspects like work hours and domestic duties may reduce burnout in women physicians.

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