

# Physician Satisfaction and Burnout at Different Career Stages

Liselotte N. Dyrbye, MD, MHPE; Prathibha Varkey, MBBS, MHPE; Sonja L. Boone, MD; Daniel V. Satele, BA; Jeff A. Sloan, PhD; and Tait D. Shanafelt, MD

## Abstract

**Objective:** To explore the work lives, professional satisfaction, and burnout of US physicians by career stage and differences across sexes, specialties, and practice setting.

**Participants and Methods:** We conducted a cross-sectional study that involved a large sample of US physicians from all specialty disciplines in June 2011. The survey included the Maslach Burnout Inventory and items that explored professional life and career satisfaction. Physicians who had been in practice 10 years or less, 11 to 20 years, and 21 years or more were considered to be in early, middle, and late career, respectively.

**Results:** Early career physicians had the lowest satisfaction with overall career choice (being a physician), the highest frequency of work-home conflicts, and the highest rates of depersonalization (all  $P < .001$ ). Physicians in middle career worked more hours, took more overnight calls, had the lowest satisfaction with their specialty choice and their work-life balance, and had the highest rates of emotional exhaustion and burnout (all  $P < .001$ ). Middle career physicians were most likely to plan to leave the practice of medicine for reasons other than retirement in the next 24 months (4.8%, 12.5%, and 5.2% for early, middle, and late career, respectively). The challenges of middle career were observed in both men and women and across specialties and practice types.

**Conclusion:** Burnout, satisfaction, and other professional challenges for physicians vary by career stage. Middle career appears to be a particularly challenging time for physicians. Efforts to promote career satisfaction, reduce burnout, and facilitate retention need to be expanded beyond early career interventions and may need to be tailored by career stage.

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From the Division of Primary Care Internal Medicine (L.N.D.), Division of Preventive, Occupational and Aerospace Medicine (P.V.), Division of Biomedical Statistics and Informatics (D.V.S., J.A.S.), and Division of Hematology (T.D.S.), Mayo Clinic, Rochester, MN; and the American Medical Association, Chicago, IL (S.L.B.). Dr Boone is currently with the Office of the Associate Vice President, Health Affairs, University of Chicago, Chicago, IL.

Understanding factors that affect physician career satisfaction is important because it is associated with quality of care,<sup>1-3</sup> patient satisfaction,<sup>4,5</sup> and patient adherence to medical treatments.<sup>6</sup> Furthermore, dissatisfied physicians are more likely to reduce their clinical work hours, leave their current practice, or retire early—all of which disrupt patient-physician relationships and affect access to medical care.<sup>7</sup> Dissatisfied physicians are also at higher risk for professional burnout,<sup>8</sup> which is a potential barrier to successful health care reform.<sup>9</sup>

Although most physicians are satisfied with their careers,<sup>10</sup> career satisfaction varies by specialty, income, region, and age.<sup>11</sup> Data from the 1996-1997 Community Tracking Physician Survey suggest that there is a U-shaped relationship between age and career satisfaction, with younger physicians and older physicians having greatest career satisfaction and middle

career physicians having lowest satisfaction.<sup>11</sup> Nearly a quarter of today's physicians are in the challenging middle career stage.<sup>12</sup> We conducted a study to (1) further evaluate the work lives of US physicians by career stage, (2) explore the relationship between career stage and multiple dimensions of professional satisfaction and burnout, and (3) examine whether these relationships by career stage persist across sexes, specialties, and practice settings.

## PARTICIPANTS AND METHODS

### Study Population

As previously described,<sup>13</sup> in June 2011 we selected a diverse sample of 89,831 physicians from all specialty disciplines from the American Medical Association Physician Masterfile. These physicians were sent an e-mail inviting them to participate in an anonymous, voluntary study. In accordance with established survey methods,<sup>14</sup>

the 27,276 physicians who opened at least one invitation e-mail were considered to have received an invitation to participate in the study.

### Study Measures

The survey included items that inquired about demographic characteristics, hours worked per week, frequency of overnight call, specialty area, years in practice (beyond residency and fellowship), primary practice setting, burnout, work-home conflicts, and career satisfaction. We collapsed specialties into primary care (ie, general pediatrics, general internal medicine, and family medicine), surgical specialties, medicine and pediatric subspecialties, and other (ie, anesthesiology, dermatology, emergency medicine, radiology, neurology, pathology, physical medicine and rehabilitation, psychiatry, and other).

**Burnout.** Burnout was measured using the Maslach Burnout Inventory, which is considered the criterion standard tool for measuring burnout.<sup>15-18</sup> Burnout encompasses 3 domains (emotional exhaustion [EE], depersonalization [DP], and low sense of personal accomplishment), which have been confirmed in factor analyses.<sup>15</sup> Reliability evidence is supported by a Cronbach coefficient  $\alpha$  of 0.90 for EE, 0.79 for DP, and 0.71 for personal accomplishment in large population samples.<sup>15</sup> Scores within individual burnout domains were categorized into low, intermediate, and high scores using established cutoffs.<sup>15</sup> Because high scores on either the EE ( $\geq 27$ ) or DP ( $\geq 10$ ) scales can distinguish clinically burned out from non-burned out individuals<sup>19</sup> and because many studies have identified high levels of either EE or DP as the underpinning of burnout in physicians,<sup>20-22</sup> we considered physicians with a high EE or DP score as having at least one manifestation of professional burnout.<sup>15</sup>

**Work-Home Conflict.** Consistent with our prior approach,<sup>23,24</sup> physicians were asked whether they had experienced a conflict between work (clinical or administrative) and personal responsibilities within the past 3 weeks and how the most recent work-home conflict was resolved (ie, in favor of work responsibilities, in favor of personal responsibilities, or in a manner that met both responsibilities).

**Career Satisfaction.** The survey included comprehensive measures of professional satisfaction

in 6 different dimensions, including career satisfaction, specialty satisfaction, satisfaction with work-life balance, intent to reduce clinical work hours, intent to leave current practice, and whether they would recommend medicine as a career option to their children (only asked of those with children). On the basis of similar measures from previous physician surveys to assess career satisfaction,<sup>8,21,25-28</sup> physicians were asked if given the opportunity to revisit their career choice whether they would choose to become a physician again (career choice). Another item asked if given the opportunity to revisit their specialty choice whether they would choose the same specialty again (specialty choice). Response options included “definitely not,” “probably not,” “not sure, neutral,” “probably,” and “definitely yes.” Responses of “probably” or “definitely yes” were considered to indicate greater career satisfaction.

Satisfaction with work-life balance was ascertained by asking physicians their level of agreement with the statement that their work schedule leaves them enough time for their personal or family life. Physicians who answered “agree” or “strongly agree” were considered to be satisfied with their work-life balance.

Physicians were asked the likelihood that (1) they would reduce their work hours devoted to clinical care during the next 12 months or (2) leave their current practice within 2 years (none, slight, moderate, likely, or definite).<sup>24</sup> Physicians who indicated a moderate or higher likelihood of reducing their clinical work hours were asked to indicate their primary reason for doing so (ie, frustration with Medicare and insurance reimbursement issues, desire to spend more time with family, decreasing reimbursement for clinical care, desire to pursue administrative or leadership opportunities, desire to pursue research or medical education opportunities, and other). Similarly, physicians who indicated a moderate or higher likelihood of leaving their current practice were asked what they would do if they left their current practice (ie, look for a different practice opportunity and continue to work as a physician, look for a different job in medicine and no longer work as a physician, leave the practice of medicine altogether to pursue a different career, retire, and other).

**Career Stage.** We classified a priori physicians who had been out of training and in

practice for 10 years or less as early career, 11 to 20 years as middle career, and 21 or more years as late career. We opted to use years in practice rather than age because of variation in training lengths of residencies or fellowships and to accommodate those who had a career before medicine. Our definitions are generally consistent with those of the US Office of Personnel Management.<sup>29</sup>

### Statistical Analyses

We used standard descriptive summary statistics and applied the Kruskal-Wallis test (continuous variables) or  $\chi^2$  test (categorical variables) to explore for associations among variables. We performed basic forward-stepping logistic model with backwards stepping<sup>30</sup> to confirm the findings to evaluate associations of the independent variables with burnout, career satisfaction, specialty satisfaction, and work-life balance satisfaction. The independent variables used in the burnout model included demographic characteristics (ie, age, sex, children, and relationship status [married or partnered vs single or widowed as the referent]), personal work characteristics (ie, years in practice [0-10, 11-20,  $\geq 21$ ], work hours, nights on call, and specialty [primary care, surgical, medicine and pediatric specialties, or other], practice setting [private practice, academic medical center, veterans' hospital, or active military practice]), recent work-home conflict, and how the most recent work-home conflict was resolved. The independent variables used in the career, specialty, and work-life balance satisfaction models also included burnout. All tests were 2-sided, with type I error rates of .05. All analyses were performed using SAS statistical software, version 9 (SAS Institute Inc).

### RESULTS

As previously reported,<sup>13</sup> 7288 of the 27,276 physicians who received an invitation to participate (26.3% cooperation rate) completed surveys. Participating physicians had similar demographic characteristics as the 814,022 US physicians listed in the Physician Masterfile, although participants were slightly older and further removed from medical school graduation. Early and later responders (a measure of response bias) were statistically similar with respect to age, sex, and specialty.

Of the 7288 physicians who completed the survey, 1583 (22.2%) were early career,

1634 (22.9%) were middle career, and 3906 (54.8%) were late career; 165 did not indicate their years in practice and were excluded from the analysis. Demographic and practice characteristics of responding physicians by career stage are summarized in Table 1. Practice characteristics, work-home conflicts, burnout, and career satisfaction by career stage and sex can be found in the Supplemental Appendix (available online at <http://www.mayoclinicproceedings.org>).

### Work Hours, Call, and Work-Home Conflicts

Middle career physicians reported working more hours and taking more nights on call than early or late career physicians (both  $P < .001$ ; Table 1). Despite working fewer hours, early career physicians were more likely to have experienced a recent work-home conflict and were least likely to have been able to resolve the conflict in a manner that allowed both home and work responsibilities to be met (both  $P < .001$ ).

### Burnout

Statistically significant differences were found in the prevalence of high EE, high DP, and overall burnout by career stage (all  $P < .001$ ; Table 2). Middle career physicians were more likely to have high EE and be burned out than early or late career physicians. In contrast, high DP was greatest among early career physicians and decreased incrementally in prevalence at middle and late career. The higher prevalence of burnout among middle career physicians persisted when analyzed by sex (Figure, A), across specialties (Figure, B), and by practice setting (Figure, C). Table 3 indicates that higher rates of burnout among middle career physicians persisted after adjusting for a variety of personal and professional factors. Interestingly, when we repeated multivariate analysis, including those who had retired or were not in practice, we found that being retired or not in practice remained independently associated with burnout (odds ratio, 1.93; 95% CI, 1.03-3.59), suggesting burnout may have contributed to the decision to leave practice in these individuals.

### Career Satisfaction

Satisfaction with overall career choice (being a physician) was lowest among early career physicians, higher in middle career, and highest in late career ( $P < .001$ ; Table 2). Satisfaction with

TABLE 1. Demographic Characteristics, Practice Characteristics, and Work-Home Conflicts by Career Stage<sup>a</sup>

Characteristic	Career stage, No. (%) <sup>b</sup>			P value
	Early (0-10 y) (n=1583)	Middle (11-20 y) (n=1634)	Late (≥21 y) (n=3906)	
Sex				<.001
Male	858 (54.2)	1055 (64.6)	3208 (82.1)	
Female	725 (45.8)	579 (35.4)	698 (17.9)	
Age (y), median	38	49	61	<.001
Children				<.001
Yes	1120 (70.8)	1375 (84.2)	3520 (90.1)	
No	463 (29.2)	258 (15.8)	386 (9.9)	
Specialty				<.001
Surgical	360 (23.1)	416 (26.2)	1035 (27.2)	
Primary care <sup>c</sup>	410 (26.3)	350 (22.1)	817 (21.5)	
Internal medicine and pediatric subspecialty	243 (15.6)	272 (17.1)	714 (18.8)	
Other	546 (35.0)	549 (34.6)	1238 (32.5)	
Primary practice setting				<.001
Private practice	801 (51.9)	962 (60.2)	2235 (58.9)	
Academic medical center	425 (27.6)	320 (20.0)	716 (18.9)	
Veterans' hospital	36 (2.3)	33 (2.1)	112 (3.0)	
Active military practice	27 (1.8)	23 (1.4)	14 (0.4)	
Not in practice or retired	5 (0.3)	5 (0.3)	68 (1.8)	
Other	248 (16.1)	255 (16.0)	649 (17.1)	
Hours worked per week, mean (SD)	52.5 (16.2)	54.6 (16.0)	50.2 (16.5)	<.001
Nights on call per week, mean (SD)	1.9 (2.1)	2.5 (2.4)	2.3 (2.5)	<.001
Experienced work-home conflict in past 3 wk				<.001
Yes	921 (58.5)	839 (51.7)	1377 (35.5)	
No	654 (41.5)	783 (48.3)	2502 (64.5)	
How most recent conflict resolved				<.001
Resolved in favor of work	552 (36.7)	533 (34.4)	887 (24.3)	
Resolved in favor of personal	191 (12.7)	176 (11.4)	355 (9.7)	
Able to resolve to meet both	763 (50.7)	840 (54.2)	2405 (65.9)	

<sup>a</sup>Percentages account for missing values not included in the table.

<sup>b</sup>Data are presented as No. (percentage) of study participants unless otherwise indicated.

<sup>c</sup>Primary care specialties include general internal medicine, general practice, family medicine, and general pediatrics.

overall career choice was lowest among early career physicians for both sexes ( $P < .001$ ) and for those who worked in private practice ( $P < .001$ ), academia ( $P < .001$ ), and veterans' hospitals ( $P = .09$ ). Career satisfaction was lowest among early career physicians for primary care physicians and surgeons but lowest among middle career physicians for internal medicine and pediatric subspecialty physicians and other specialists (all  $P < .001$ ).

Middle career physicians had the lowest satisfaction with specialty choice and work-life balance (both  $P < .001$ ) and were the least likely to recommend medicine as a career option to their children ( $P = .002$ ). Satisfaction with specialty choice was lowest among middle career physicians for both women ( $P = .004$ ) and men

( $P = .0015$ ), across all specialties (all  $P < .001$  except for primary care [ $P = .08$ ] and subspecialty internal medicine and pediatric practice [ $P = .98$ ]), and within all practice settings (all  $P < .01$ , except for private practice [ $P = .0009$ ], academic medical centers [ $P = .0001$ ], and veterans' hospitals [ $P > .99$ ]). After adjustment for a variety of personal and professional factors, physicians in late career had greater odds of being satisfied with their career than those in middle career (Table 4), but the relationship between career stage and specialty satisfaction was no longer statistically significant (data not given). Physicians in early and late career had greater odds of being satisfied with their work-life balance than middle career physicians after adjusting for personal and professional factors.

TABLE 2. Burnout and Career Satisfaction by Career Stage

Variable	Career stage, No. (%)			P value
	Early (0-10 y) (n=1583)	Middle (11-20 y) (n=1634)	Late (≥21 y) (n=3906)	
Burnout indices				
High emotional exhaustion	629 (39.9)	763 (47.0)	1289 (33.4)	<.001
High depersonalization	569 (36.2)	557 (34.4)	933 (24.2)	<.001
Burned out <sup>a</sup>	798 (50.5)	876 (53.9)	1566 (40.4)	<.001
Dimensions of professional satisfaction				
Satisfied with work-life balance				<.001
Yes	695 (44.0)	638 (39.3)	2101 (54.0)	
No	883 (56.0)	986 (60.7)	1791 (46.0)	
Satisfied with choice to become a physician				<.001
Yes	986 (62.4)	1037 (63.9)	2955 (76.1)	
No	594 (37.6)	585 (36.1)	928 (23.9)	
Satisfied with specialty choice				<.001
Yes	1098 (69.4)	1075 (66.3)	2847 (73.4)	
No	483 (30.6)	547 (33.7)	1033 (26.6)	
Recommend career in medicine to children <sup>b</sup>				.002
Yes	594 (53.3)	711 (51.9)	1982 (57.0)	
No	520 (46.7)	659 (48.1)	1494 (43.0)	
Moderate or greater likelihood of reducing clinical hours within next 12 mo				<.001
Yes	178 (20.8)	219 (20.9)	1004 (31.6)	
No	677 (79.2)	831 (79.1)	2176 (68.4)	
Primary reason for considering reducing clinical work hours <sup>c</sup>				<.001
Missing/No/Slight chance of reducing hours	1229	1301	2784	
Frustration w/Medicare and insurance issues	25 (7.1)	62 (18.6)	170 (15.2)	
Spend more time with family	190 (53.7)	109 (32.7)	327 (29.1)	
Declining reimbursement for clinical care	29 (8.2)	32 (9.6)	108 (9.6)	
Pursue admin/leadership opportunities	29 (8.2)	47 (14.1)	106 (9.4)	
Pursue research/education opportunities	42 (11.9)	15 (4.5)	43 (3.8)	
Other	39 (11.0)	68 (20.4)	368 (32.8)	
Moderate or greater likelihood of leaving current practice within 2 y				<.001
Yes	539 (34.1)	405 (24.9)	1541 (39.6)	
No	1041 (65.9)	1222 (75.1)	2350 (60.1)	
What the physician would do if he/she left the current practice <sup>d</sup>				<.001
Missing/No/Slight chance of leaving current practice	1048	1234	2393	
Look for diff practice and continue to work as	423 (79.1)	202 (50.5)	355 (23.5)	
Look for diff job in medicine and leave medicine	41 (7.7)	75 (18.8)	167 (11.0)	
Leave medicine altogether to pursue different	26 (4.9)	56 (14.0)	81 (5.4)	
Retire	4 (0.7)	22 (5.5)	736 (48.6)	
Other	41 (7.7)	45 (11.3)	174 (11.5)	

<sup>a</sup>High score on emotional exhaustion and/or depersonalization scale (see "Methods").

<sup>b</sup>Only asked of those with children.

<sup>c</sup>Only asked of physicians who indicated a moderate or higher likelihood of reducing hours.

<sup>d</sup>Only asked of physicians who indicated a moderate or higher likelihood of leaving current practice.

### Intent to Reduce Clinical Work Hours or Leave Medicine

Late career physicians were the most likely to report that they intended to reduce their clinical hours within the next 12 months, whereas similar rates were reported among early and middle career physicians ( $P<.001$ ; Table 2). The reasons for planning to reduce clinical hours, however, varied by career stage. Younger

physicians were most likely to report doing so to spend more time with family or to pursue research- or medical education-related work, whereas middle career physicians were most likely to report doing so out of frustration with Medicare or insurance reimbursement.

Middle career physicians were the least likely to be seriously considering leaving their current practice within the next 2 years ( $P<.001$ ;

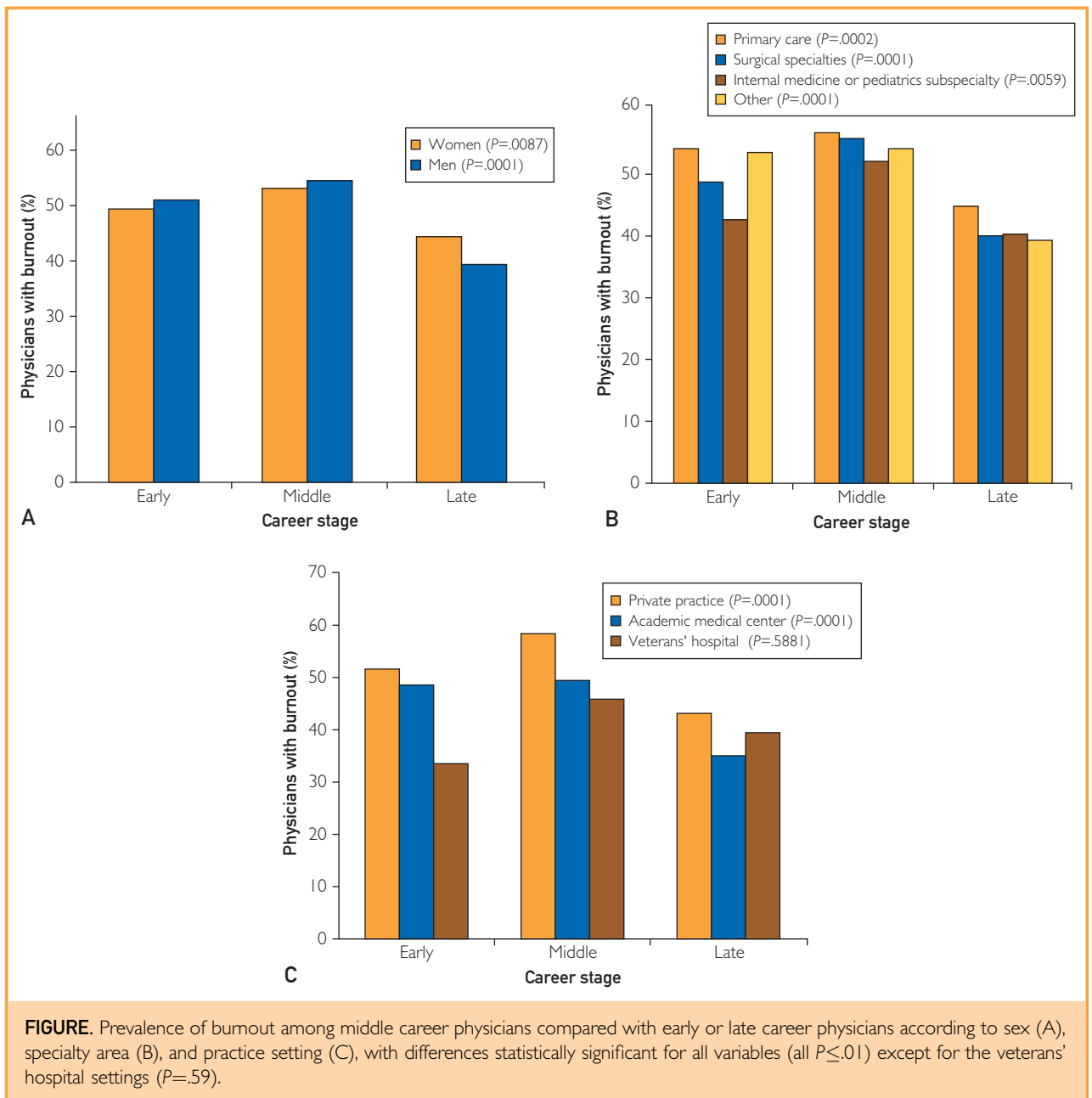


Table 2). Early career physicians who intended to leave their current practice were the most likely to be planning to relocate to a new practice to work as a physician. Middle career physicians were more likely to be contemplating leaving to pursue a different career in medicine (but no longer practicing clinical medicine) or intending to leave medicine altogether for another career. As expected, late career physicians were the most likely to report they were leaving their practice to retire.

### DISCUSSION

In this national sample of US physicians, we identified several notable differences in the work lives, burnout, and career satisfaction of physicians by career stage. Physicians early in their career had the lowest career satisfaction, greatest rates of work-home conflicts, more difficulty resolving work-home conflicts in a manner that allowed both work and home responsibilities to be met, and greater DP. The prevalence of these issues decreased among



TABLE 3. Multivariable Analysis for Burnout<sup>a</sup>

Variable	Odds ratio (95% CI)	P value
Early career (0-10 y) <sup>b</sup>	0.75 (0.64-0.89)	<.001
Late career (≥21 y) <sup>b</sup>	0.74 (0.65-0.85)	<.001
Have children	0.63 (0.54-0.73)	<.001
Hours worked per week (for each additional hour)	1.02 (1.01-1.02)	<.001
Nights on call per week (for each additional night)	1.03 (1.002-1.05)	.03
Surgical specialty <sup>c</sup>	0.71 (0.60-0.83)	<.001
Internal medicine or pediatrics subspecialty <sup>c</sup>	0.72 (0.60-0.86)	<.001
Academic practice <sup>d</sup>	0.63 (0.55-0.73)	<.001
Recent work-home conflict	2.47 (2.20-2.77)	<.001
Most recent work-home conflict resolved in favor of personal responsibility <sup>e</sup>	1.29 (1.07-1.54)	.006
Most recent work-home conflict resolved in favor of work responsibility <sup>e</sup>	2.13 (1.87-2.43)	<.001

<sup>a</sup>The independent variables used in the model included demographic characteristics (ie, age, sex, children, and relationship status [married or partnered vs single or widowed]), personal work characteristics (ie, years in practice [0-10, 11-20, or ≥21], work hours, nights on call, specialty [primary care, surgical, internal medicine and pediatric specialties, or other], practice setting [private practice, academic medical center, veterans' hospital, or active military practice]), recent work-home conflict, and how the most recent work-home conflict was resolved.

<sup>b</sup>Referent was middle career.

<sup>c</sup>Referent was primary care.

<sup>d</sup>Referent was private practice.

<sup>e</sup>Referent was resolved in a manner that allowed meeting both work and personal responsibilities.

middle career physicians and was lowest among late career physicians. In contrast, middle career physicians worked more hours, took more call duty, reported the lowest specialty satisfaction, were more dissatisfied with work-life balance, and struggled more with EE and burnout than their early or late career colleagues. Late career physicians were generally the most satisfied and had the lowest rates of distress.

One notable finding of this analysis is the distinct challenges experienced by middle career physicians. Long hours and frequent call duty likely contribute to worse work-life balance, greater EE and burnout, and more professional dissatisfaction. Middle career physicians were more likely to be planning to leave their current practice out of frustration and to pursue a career that involved no direct patient care or was outside medicine altogether. These findings are particularly concerning because middle career is often the most productive time of a physician's career in terms of the amount of patient care provided.<sup>31</sup> Although leaving the practice of medicine may have personal benefits for the individual physician, from a societal perspective it amplifies the

physician workforce shortage<sup>32</sup> and may create access problems in many specialties and smaller communities. In addition, organizational costs for a hospital or practice group to replace a physician can be staggering, with some studies suggesting that replacing a single physician can cost \$115,000 to \$587,000, depending on specialty.<sup>33</sup> Practice turnover also leads to disruptions to patient care that may adversely affect quality metrics.

Our study also illustrates some unique challenges for early career physicians. Even though early career physicians worked fewer hours and took less call duty, they were more likely to experience work-home conflicts. Because early career physicians overall are younger, their children may also be younger, which may increase the likelihood of work-home conflicts. Also, a greater proportion of early career physicians in our cohort were women, and previous data suggest that women experience more work-home conflicts than men.<sup>23</sup> When work-home conflicts occur, early career physicians were the least likely to report being able to resolve the conflict in a manner that allowed both home and work responsibilities to be met. Whether this is due to personal characteristics, a lack of experience, or greater practice-related restrictions (eg, more junior members in a practice often have less autonomy and flexibility than their more senior colleagues) cannot be determined from this study. The experience of work-home conflicts and how they are ultimately resolved when they occur have been reported to influence career decisions, career satisfaction, and burnout.<sup>23,24</sup>

Our findings on the challenges of middle career are consistent with the Community Tracking Study of physicians conducted in the 1990s<sup>11</sup> and with studies conducted in other fields.<sup>34</sup> Given that the nadir in satisfaction during middle career is not a new phenomenon, it appears unlikely that the findings of our study are due to generational effects alone. Middle and late career physicians who have experienced previous health care systems have to adapt to ongoing changes in the work environment. That phenomenon is likely to be as true in the past, because the health care system has been undergoing tremendous structural changes for decades (eg, health maintenance organizations in the 1980s and early 1990s), as in the future, when the changes during the next

TABLE 4. Multivariable Analysis for Career Satisfaction and Satisfaction With Work-Life Balance<sup>a</sup>

Variable	Odds ratio (95% CI)	P value
Career satisfaction		
Late career ( $\geq 21$ y) <sup>b</sup>	1.56 (1.35-1.81)	<.001
Have children	1.33 (1.13-1.57)	<.001
Academic practice <sup>c</sup>	1.63 (1.39-1.92)	<.001
Recent work-home conflict	0.78 (0.68-0.89)	<.001
Most recent work-home conflict resolved in favor of personal responsibility <sup>d</sup>	0.79 (0.65-0.97)	.02
Most recent work-home conflict resolved in favor of work responsibility <sup>d</sup>	0.79 (0.69-0.91)	<.001
Burned out	0.24 (0.21-0.28)	<.001
Satisfaction with work-life balance		
Male (vs female)	1.37 (1.18-1.60)	<.001
Married or partnered (vs single or widowed)	1.33 (1.08-1.63)	.007
Early career (0-10 y) <sup>b</sup>	1.33 (1.10-1.60)	.003
Late career ( $\geq 21$ y) <sup>b</sup>	1.24 (1.06-1.46)	.007
Hours worked per week (for each additional hour)	0.95 (0.94-0.95)	<.001
Nights on call per week (for each additional night)	0.94 (0.92-0.97)	<.001
Recent work-home conflict	0.34 (0.30-0.38)	<.001
Most recent work-home conflict resolved in favor of work <sup>d</sup>	0.43 (0.37-0.50)	<.001
Burned out	0.33 (0.29-0.37)	<.001

<sup>a</sup>The independent variables used in the model included demographic characteristics (ie, age, sex, children, and relationship status [married or partnered vs single or widowed]), personal work characteristics (ie, years in practice [0-10, 11-20, or  $\geq 21$ ], work hours, nights on call, specialty [primary care, surgical, medicine and pediatric specialties, or other], practice setting [private practice, academic medical center, veterans' hospital, active military practice]), recent work-home conflict, how the most recent work-home conflict was resolved, and burnout.

<sup>b</sup>Referent was middle career.

<sup>c</sup>Referent was private practice.

<sup>d</sup>Referent was resolved in a manner that allowed meeting both work and personal responsibilities.

several decades may be even more profound as the nation reforms the health care system. Those in middle and late career will always be adapting to changes that are, to the earlier career physician, the only way of doing things they have experienced. The differences in work hours, satisfaction with work-life balance, and other factors by career stage likely also contribute to some of the observed differences. Other unmeasured aspects not unique to the practice of medicine, such as unrealized career expectations, new roles at home or work, and psychosocial development (ie, Erikson's stage of middle adulthood—generativity vs stagnation<sup>35</sup>) may also have a role, particularly at the individual level. However, the data presented represent the average experience of a large sample of physicians and are unlikely to be affected by personal factors that influence only a small subset of physicians. In contrast, greater challenge with a given issue (such as work-life balance) at a given career stage likely implies there are common factors at that stage (eg, age of children) that lead, on average, to more challenge for individuals at that point in their career. It has also been postulated that the recovery in

career satisfaction among later career physicians is due to self-selection among older physicians and exit from practice of those who are least satisfied.<sup>11</sup> This theory is supported by our finding that physicians not currently in practice or retired had a more than 2-fold greater odds of burnout on multivariate analysis after controlling for other personal and work-related factors. Our analysis also identifies some factors independent of career stage that relate to burnout and career satisfaction. For example, individuals in academic practice had lower burnout and greater career satisfaction than those in private practice. Work-home conflict (and how it is resolved) is also a powerful driver of both burnout and career satisfaction independent of career stage.

This study has a number of limitations. First, the design is cross-sectional; thus, conclusions about causation and the potential direction of the effects seen cannot be made. Second, we relied on self-reported intent to reduce clinical hours or leave current practice rather than actual behavior. Such intentions, however, are necessary antecedents of staying or leaving behavior and are the greatest predictor of actual voluntary



turnover.<sup>36,37</sup> Third, our response rate of 26.7% raises the possibility of response bias. Because substantial differences between responding and nonresponding physicians have not been found in previous studies,<sup>38</sup> existence of such extreme bias is unlikely. The similarity between the demographic characteristics of early and late career responding physicians (a standard approach to evaluate for response bias) further suggests that responders were representative of US physicians. Fourth, the work-related factors we assessed are not comprehensive. For example, in this study we did not ask physicians to report their income or their primary method of compensation. Income is an important part of overall career satisfaction.<sup>11,39</sup> However, in our previous study of approximately 8000 US surgeons, the primary method of compensation (salaried, incentive-based pay, or mix) was not independently related to satisfaction with overall career choice (being a physician) or specialty choice (being a surgeon).<sup>8</sup> Nonetheless, physician income is linked to practice setting, specialty, and work hours, and adjustment for these variables likely accounts for a large proportion of physician income. Other unexplored factors in these domains may also affect career satisfaction at various career stages.

Strengths of our study include obtaining a large sample of physicians from the Physician Masterfile, which is a complete registry of all US physicians (regardless of American Medical Association membership). Participating physicians were similar to US physicians. Furthermore, we used a validated instrument to assess burnout and well-established items to explore career satisfaction across multiple dimensions.

## CONCLUSION

Physicians face different challenges at different stages of their career. Middle career is a particularly challenging career stage characterized by high work effort, a higher prevalence of burnout, and greater career dissatisfaction regardless of sex, practice setting, and specialty. Strategies to improve the work experience of middle career physicians are needed to maintain productivity, minimize turnover, and improve patient care.

## SUPPLEMENTAL ONLINE MATERIAL

Supplemental material can be found online at <http://www.mayoclinicproceedings.org>.

**Abbreviations and Acronyms:** DP = depersonalization; EE = emotional exhaustion

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**Correspondence:** Address to Liselotte N. Dyrbye, MD, MHPE, Division of Primary Care Internal Medicine, Mayo Clinic, 200 First St SW, Rochester, MN 55905 ([dyrbye.liselotte@mayo.edu](mailto:dyrbye.liselotte@mayo.edu)).

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