Association Between Physician Burnout and Identification With Medicine as a Calling

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Abstract

Objective: To evaluate the association between degree of professional burnout and physicians' sense of calling.

Participants and Methods: US physicians across all specialties were surveyed between October 24, 2014, and May 29, 2015. Professional burnout was assessed using a validated single-item measure. *Sense of calling*, defined as committing one's life to personally meaningful work that serves a prosocial purpose, was assessed using 6 validated true-false items. Associations between burnout and identification with calling items were assessed using multivariable logistic regressions.

Results: A total of 2263 physicians completed surveys (63.1% response rate). Among respondents, 28.5% (n=639) reported experiencing some degree of burnout. Compared with physicians who reported no burnout symptoms, those who were completely burned out had lower odds of finding their work rewarding (odds ratio [OR], 0.05; 95% CI, 0.02-0.10; $P<.001$), seeing their work as one of the most important things in their lives (OR, 0.38; 95% CI, 0.21-0.69; $P<.001$), or thinking their work makes the world a better place (OR, 0.38; 95% CI, 0.17-0.85; $P=.02$). Burnout was also associated with lower odds of enjoying talking about their work to others (OR, 0.23; 95% CI, 0.13-0.41; $P<.001$), choosing their work life again (OR, 0.11; 95% CI, 0.06-0.20; $P<.001$), or continuing with their current work even if they were no longer paid if they were financially stable (OR, 0.30; 95% CI, 0.15-0.59; $P<.001$).

Conclusion: Physicians who experience more burnout are less likely to identify with medicine as a calling. Erosion of the sense that medicine is a calling may have adverse consequences for physicians as well as those for whom they care.

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The practice of medicine has long been considered a calling.[1,2] Defined as committing one's life to work that is personally meaningful and has a prosocial purpose,[3] *medicine as a calling* is consequential not only for physicians but also for patients whom they are expected to serve. At an individual level, physicians who identify with medicine as a calling are more engaged with and turnover less often at work.[4-6] They also experience greater professional satisfaction when caring for patients with challenging clinical presentations. For example, primary care physicians who saw medicine more as a calling reported greater satisfaction in treating patients who struggle with substance dependence (nicotine and alcohol) and obesity.[4] At a societal level, the public benefits from having a group of individuals who are motivated to do work that goes beyond satisfying personal self-interest.[7] In many ways, the trust that society has in the medical profession depends on confidence that physicians hold the interests of patients and the public as paramount.[8]

Given the personal and collective level consequences of medicine as a calling, concerns have been raised that the changing physician workplace may be eroding such a professional identity.[9] Over the past decade, the rapid adoption of electronic health records and the proliferation of pay-for-performance metrics have markedly altered how physicians experience their everyday work lives.[10] A recent study[11] found that for every hour physicians provide direct clinical face time to patients during the ambulatory practice day, nearly 2 more hours are spent in front of the computer or doing paperwork. These changes in the structural and relational dimensions of providing patient care are engendering growing frustration among physicians about how their time and skills are being utilized

as well as contributing to the increasing rate of professional burnout.[12,13] Between 2011 and 2014, the prevalence of burnout increased by nearly 10%, with a national study[14] reporting that more than half of US physicians experience at least 1 symptom of burnout. Given that burnout is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, professional burnout may erode a physician's sense of calling. If so, a work environment that promotes physician well-being is likely to foster physicians' sense of calling and contribute to the delivery of patient-centered care.

This study reports results of a national survey of US practicing physicians that evaluated the association between professional burnout and sense of calling. We hypothesized that physicians with more burnout are less likely to see the practice of medicine as a calling.

PARTICIPANTS AND METHODS

Ethical Review

This study protocol was reviewed and deemed exempt by the Office for the Protection of Research Subjects, University of Illinois at Chicago.

Study Sample

Using the American Medical Association (AMA) Physician Masterfile, we selected a random sample of 4000 physicians listed as currently practicing, including all specialties but excluding resident physicians. Between October 24, 2014, and May 29, 2015, we conducted 3 rounds of a self-administered survey that were mailed to physicians in the study sample by using the tailored design method.[15] A $10 bill was included in the second round to encourage participation. Subsequent to the survey mailings, 411 physicians were found to be study ineligible (no longer practicing medicine [71], no longer at the clinical practice on record [54], or survey returned as undeliverable [286]) and were excluded from the sample, resulting in a study sample of 3589.

Survey Instrument

Calling. On the basis of a review of published measures, we identified a set of 8 true-false items designed to assess an individual's perceptions about their work as a calling[16]—a social construct that is generally considered to be multidimensional.[4,17-19] Initial validation performed on various occupations including medicine and nursing found correlations between these items and a paragraph describing work as a calling (Pearson coefficient range, 0.33-0.59; $P<.05$).[16] To further ensure consistent interpretation of these items, we conducted cognitive interviews with 13 practicing physicians who had personal and work-related characteristics (such as age, sex, race/ethnicity, medical specialty, and practice type) that would be reflected in our main study sample. Based on these interviews, no wording changes were made to the 8 items. Finally, we correlated each of the 8 items with a validated single-item measure of calling ("To me, the practice of medicine is a calling")[4] that was defined in the study survey as "a strong desire to commit your life to doing a certain kind of work." Two items from the original 8 calling items were excluded because of weak correlations with the single-item measure of calling. For study analyses, 3 attitudinal items and 3 behavioral items were retained that had a Pearson coefficient greater than 0.2 ($P<.001$).

Physician Burnout. Physician burnout was measured using a validated single-item measure that uses a 5-point response scale allowing respondents to indicate varying degrees of burnout.[20] For multivariable logistic regression, physicians who selected the 2 response options that reflect a lack of burnout ("I enjoy my work. I have no symptoms of burnout" and "Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out") were grouped together and served as the reference category for those who reported varying degrees of burnout.

Personal and Work-Related Characteristics. Age, sex, race/ethnicity, and medical specialty were obtained from the AMA Physician Masterfile. Respondents' practice setting (solo, group, hospital, medical school, and other), primary compensation (billing only, salary only, salary plus bonus, and other), and employment type (full or part owner, employee, and independent contractor) were collected in the study survey.

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Statistical Analyses

All survey data were double entered, and analyses used SPSS version 21 (IBM Corp.). We assessed differences between respondents and nonrespondents in terms of age by using the *t* test and in terms of sex, race/ethnicity, and medical specialty by using the Pearson chi-square test. Associations between professional burnout and identification with medicine as a calling were assessed using a series of 6 multivariable logistic regressions in which each calling item served as the dependent variable. Other independent variables in the models included the personal and work-related characteristics of physician respondents. Missing data, which ranged from 2.8% to 4.0% in the models, were excluded listwise.

RESULTS

Surveys were returned by 2263 physicians, with a response rate of 63.1%. Respondents were more likely to be white than nonrespondents, but no other statistically significantly differences were observed between respondents and nonrespondents (Table 1).

The rate of "true" responses to each of the 6 calling items (Table 2) ranged from 93.2% (n=2103) ("I find my work rewarding") to 44.4% (n=994) ("If I were financially secure, I would continue with my current line of work even if I were no longer paid"). Individual item correlations for the retained items with the single-item measure of calling, as measured by Pearson coefficients, ranged from 0.22 ("My work makes the world a better place") to 0.29 ("I would choose my current work life again if I had the opportunity"), with all correlations significant at $P<.001$. Two items with Pearson coefficients less than 0.2 ("I tend to take my work with me on vacations" and "I feel in control of my work life") were excluded from the present study. In aggregate, the 6 retained items displayed a Pearson correlation of 0.44 ($P<.001$) with the single-item measure of calling.

"True" responses to the calling items varied by the degree of physicians' self-reported burnout (Figure). Among the items assessing behaviors related to a sense of calling, 92.9% (n=392) of those who have "no burnout symptoms," and "enjoys [their] work" said they would choose their work life again if given the opportunity, whereas 31.9% (n=15) of those who were "completely burned out" said the same. Among the items assessing attitudes related to a sense of calling, of those with no burnout symptoms 98.1% (n=416) said they find their work personally rewarding, whereas 64.6% (n=31) of highly burned out respondents reported "true" responses to this item.

TABLE 1. Characteristics of US Physicians Selected From the AMA Physician Masterfile Who Received a Mail Survey, Including Respondents and Nonrespondents[a,b]

Characteristic	Respondents (n=2263)	Nonrespondents (n=1326)	*P* value[c]
Age (y)	52.6±11.2	52.4±11.6	.59
Sex			
Female	735 (32.5)	407 (30.7)	.27
Male	1528 (67.5)	919 (69.3)	
Race/ethnicity			
White or Caucasian	1339 (59.2)	685 (51.7)	<.001
Nonwhite	924 (40.8)	641 (48.3)	
Medical specialty			
Family medicine	302 (13.3)	165 (12.4)	
Internal medicine	256 (11.3)	184 (13.9)	
Obstetrics and gynecology	115 (5.1)	63 (4.8)	.22
Pediatrics	158 (7.0)	84 (6.3)	
All other specialties	1432 (63.3)	830 (62.6)	
Practice setting (n=2237)			
Group	1055 (47.2)		
Solo	369 (16.5)	NA	
Hospital	388 (17.3)		
Medical school	178 (8.0)		
Other	247 (11.0)		
Primary compensation (n=2233)			
Billing only	612 (27.4)		
Salary only	566 (25.3)	NA	
Salary plus bonus	911 (40.8)		
Other	144 (6.4)		
Employment type (n=2233)			
Employee	1186 (53.1)	NA	
Independent contractor	150 (6.7)		
Full or part owner	897 (40.2)		
Physician-reported degree of burnout (n=2239)			
No burnout symptoms, enjoys work	425 (19.0)		
Occasionally under stress, not burned out	1175 (52.5)		
Have ≥1 burnout symptoms	436 (19.5)	NA	
Burnout symptoms won't go away and think a lot about work frustrations	155 (6.9)		
Feel completely burned out and wonder if I can go on	48 (2.1)		

[a]AMA = American Medical Association; NA = not applicable.
[b]Data are presented as mean ± SD or as No. (percentage).
[c]χ^2 test (and *t* test for age variable) for differences between respondents and nonrespondents.

TABLE 2. Distribution of Responses to Survey Items Assessing Sense of Medicine as a Calling

Item	"True" response
Attitudinal items	
I find my work rewarding	2103 (93.2)
My work is one of the most important things in my life	1738 (77.3)
My work makes the world a better place	2037 (91.3)
Behavioral items	
I enjoy talking about my work to others	1623 (72.1)
I would choose my current work life again if I had the opportunity	1560 (70.1)
If I were financially secure, I would continue with my current line of work even if I were no longer paid	994 (44.4)

Values are presented as No. (percentage).

Multivariable logistic regression revealed a significant association between the degree of professional burnout and each of the 6 calling items (Table 3). Compared with experiencing no burnout, experiencing at least 1 symptom of burnout was associated with lower odds of identification with each of the 6 calling items (odds ratio [OR] range, 0.20-0.57; $P<.001$). Respondents who were completely burned out had even lower odds of identification with work providing patient care as rewarding (OR, 0.05; 95% CI, 0.02-0.10; $P<.001$); work as one of the most important things in their lives (OR, 0.38; 95% CI, 0.21-0.69; $P<.001$); work making the world a better place (OR, 0.38; 95% CI, 0.17-0.85; $P=.02$); enjoying talking about their work with others (OR, 0.23; 95% CI, 0.13-0.41; $P<.001$); choosing the same work life again, if given the opportunity (OR, 0.11; 95% CI, 0.06-0.20; $P<.001$); and if they were financially secure, continuing with their current work even if they were not paid (OR, 0.30; 95% CI, 0.15-0.59; $P<.001$).

Medical specialty was unassociated with the calling items, with the exception of

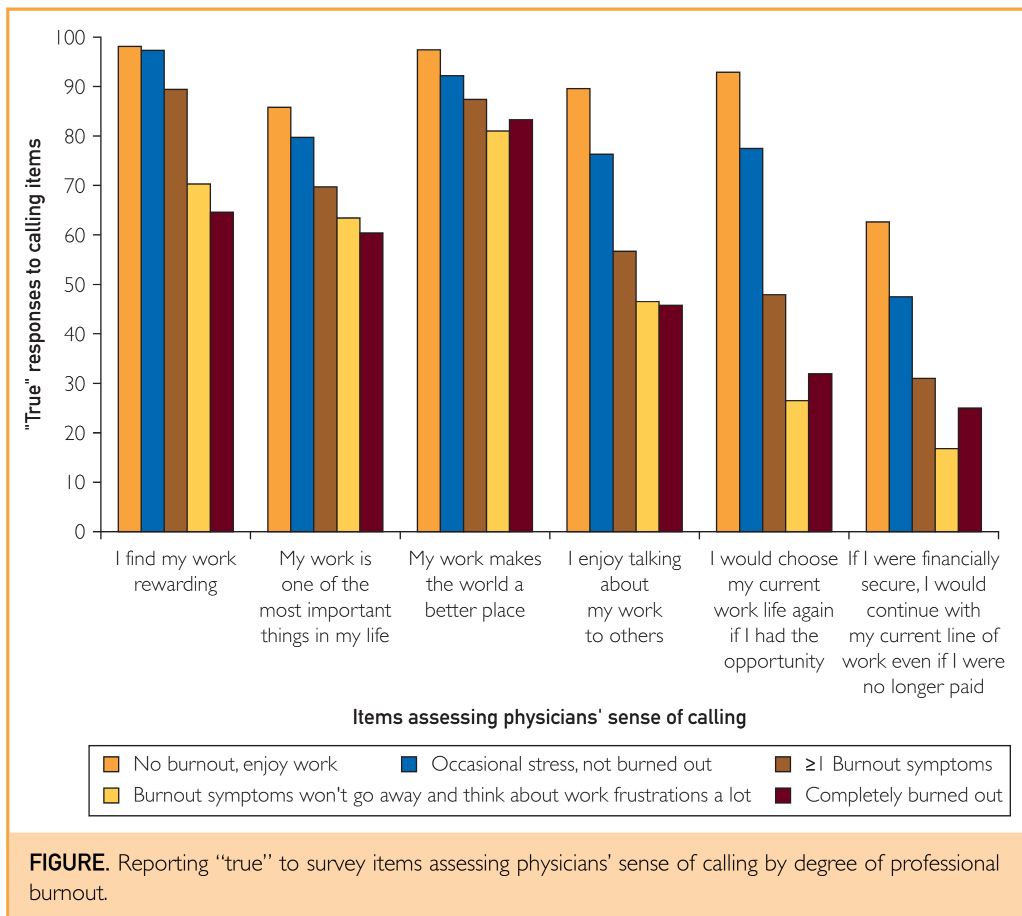

FIGURE. Reporting "true" to survey items assessing physicians' sense of calling by degree of professional burnout.

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pediatricians who had higher odds of reporting that they would continue with their current work even if they were not paid (OR, 1.60; 95% CI, 1.11-2.29; P=.01) in comparison to non−primary care physicians. The odds of finding one's work rewarding were lower for physicians in a hospital setting (OR, 0.58; 95% CI, 0.34-0.99; P=.04), whereas solo practitioners (OR, 0.64; 95% CI, 0.47-0.89; P=.007) had lower odds of reporting that they would choose their work lives again if they had the opportunity in comparison to group practice physicians. Those in medical school settings had higher odds of seeing work as one of the most important things in their lives (OR, 2.29; 95% CI, 1.40-3.73; P=.001) and of saying that they would continue working even if they were not paid (OR, 1.94; 95% CI, 1.35-2.78; $P<.001$).

DISCUSSION

Physician burnout and its sequelae have been well documented,[10,12-14] and in our study, almost 30% of respondents reported experiencing burnout using a single-item measure. Although detrimental to the well-being of physicians, professional burnout is also associated with lower patient satisfaction, increased medical errors, poorer health outcomes, and higher health care costs.[21-26] These burnout-related sequelae threaten efforts to meet the Triple Aim—enhancing patient experience, improving population health, and reducing costs.[27] Given the significance of outcomes linked to burnout, promoting physician well-being is seen as an essential element of successful health system transformation, leading some to refer to a Quadruple Aim that explicitly recognizes the need for physician and care team well-being.[28]

Physicians who experienced greater professional burnout were less likely to see the practice of medicine as a calling. Physicians who view medicine as a calling consider their work providing patient care to be one of the most important things in their lives, personally rewarding, and contributing to a better world. In other words, physicians who see medicine as a calling, as assessed by multiple items designed to assess various attitudes and behaviors related to a sense of calling, appear motivated by work that is personally

TABLE 3. Odds of Reporting "True" to Survey Items Assessing Physicians' Sense of Calling by Degree of Professional Burnout[a,b]

	"I find my work rewarding"		"My work is one of the most important things in my life"		"My work makes the world a better place"	
Variable	n (%)	OR (95% CI); P value	n (%)	OR (95% CI); P value	n (%)	OR (95% CI); P value
Extent of burnout						
Not burned out[c]	1523 (97.5)	1.00 (reference)	1273 (81.2)	1.00 (reference)	1453 (93.6)	1.00 (reference)
Have ≥1 burnout symptoms	382 (89.5)	0.20 (0.13-0.32); <.001	297 (69.7)	0.57 (0.44-0.73); <.001	369 (87.2)	0.48 (0.33-0.68); <.001
Think about work frustrations a lot	108 (70.6)	0.06 (0.04-0.09); <.001	95 (62.9)	0.41 (0.28-0.58); <.001	123 (81.5)	0.31 (0.20-0.49); <.001
Feel completely burned out	31 (64.6)	0.05 (0.02-0.10); <.001	29 (60.4)	0.38 (0.21-0.69); .001	40 (83.3)	0.38 (0.17-0.85); .02
	"I enjoy talking about my work to others"		"I would choose my current work life again if I had the opportunity"		"If I were financially secure, I would continue with my current line of work even if I were no longer paid"	
Variable	n (%)	OR (95% CI); P value	n (%)	OR (95% CI); P value	n (%)	OR (95% CI); P value
Extent of burnout						
Not burned out[c]	1253 (79.9)	1.00 (reference)	1272 (81.8)	1.00 (reference)	798 (51.3)	1.00 (reference)
Have ≥1 burnout symptoms	242 (56.7)	0.33 (0.26-0.41); <.001	203 (48.1)	0.21 (0.16-0.26); <.001	132 (31.1)	0.43 (0.34-0.54); <.001
Think about work frustrations a lot	71 (46.4)	0.22 (0.15-0.31); <.001	40 (26.8)	0.08 (0.05-0.12); <.001	26 (17.0)	0.20 (0.13-0.30); <.001
Feel completely burned out	22 (45.8)	0.23 (0.13-0.41); <.001	15 (31.9)	0.11 (0.06-0.20); <.001	12 (25.0)	0.30 (0.15-0.59); <.001

[a]OR = odds ratio.
[b]All models include as covariates physician age, sex, race/ethnicity, medical specialty, practice setting type, employment type, and primary compensation type.
[c]"Not burned out" was composed of top 2 box response categories in the burnout measure.

meaningful and promotes a greater good. In contrast, physicians who do not view medicine as a calling may assign more value to their work as a means to earn a living. Therefore, one potential consequence of professional burnout is physicians who are less intrinsically and prosocially motivated because they see medicine less as a calling but more as a job—a way to simply earn a paycheck.

Decades of social psychological and organizational behavior research have found that intrinsically motivated individuals perform better (especially over the long term) because they are more task focused and persistent.[29-32] This finding is particularly relevant for work that is intellectually interesting and challenging, such as is the case with providing patient care. There is also evidence across various occupations that external motivators such as performance-contingent incentives can undermine or crowd out an individual's intrinsic motivation.[33-35] This motivational "undermining" or "crowding out" effect would be expected to be strong when performance-contingent incentives are perceived as undercutting one's sense of autonomy or competency. Furthermore, when prosocial motivations are accompanied by intrinsic ("wanting to help") rather than extrinsic ("having to help") motivation, work persistence, performance, and productivity are increased.[36-38] Given this body of research, it is worth noting that if professional burnout contributes to an erosion of medicine as a calling, it comes at a time when external motivators, in the form of value-based incentives, are increasingly leveraged as policy mechanisms aimed at affecting physician performance.[39] With passage of the Medicare Access and CHIP Reauthorization Act of 2015, the pace of health system transformation is likely to accelerate, providing a rare opportunity to implement system-wide incentives and regulations that advance the goals of the Quadruple Aim.[28,40-42] Therefore, payers, policymakers, and practice leaders should take care to foster a workplace environment that promotes physician well-being and implement performance-based incentives that support a sense of calling and prosocial motivations.

Our study has some important limitations. First, a cross-sectional design cannot determine the directionality of the association that we found between burnout and sense of calling. Although professional burnout may erode physicians' sense of calling, others have speculated that a strong sense of calling might offer some degree of protection against burnout.[17] Future studies such as those that use a longitudinal cohort would be needed to assess causality. Second, although our respondent sample was large and we had a good response rate, minority physicians were less likely to respond than white physicians, which may limit the generalizability of our results to the overall population of US physicians. Third, although it was in line with the findings from a recent physician survey that used the same measure of burnout,[43] the prevalence of burnout in our study was lower than that in other studies with large physician samples. This difference may be due in part to respondent bias, as our study had a higher response rate. This validated single-item measure of burnout has been used in part to reduce respondent burden and is significantly correlated with the emotional exhaustion subscale of the 22-item Maslach Burnout Inventory,[20] which is seen as a major indicator of burnout.[44,45] Although our single-item measure of burnout limited respondent burden by resulting in a shorter survey, it does not capture all dimensions of burnout (emotional exhaustion, depersonalization, and reduced sense of personal accomplishment), which may partly explain why the prevalence of burnout was lower in our study sample. Finally, the correlations between the individual calling items and the single-item measure of calling were relatively weak, potentially raising questions about the construct validity of these items. However, when considered in aggregate our measures' correlation with the single-item measure was notably higher, suggesting that a complex phenomenon such as sense of calling is likely better suited to assessment with multiple items.

CONCLUSION

Professional burnout may erode physicians' sense of calling. If the practice of medicine is not seen as work that is personally rewarding and serving a greater good, physician performance may suffer and, more importantly, so

too may the quality of care that patients receive. Therefore, fostering a health care workplace that supports physician well-being and medicine as a vocation merits greater attention.

Abbreviation and Acronym: **OR** = odds ratio

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