



A Survey of U.S. Physicians and Their Partners Regarding the Impact of Work–Home Conflict

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BACKGROUND: Work–home conflicts (WHC) threaten work–life balance among physicians, especially those in dual career relationships. In this study, we analyzed factors associated with WHC for physicians and their employed partners.

METHODS: We surveyed 89,831 physicians from all specialty disciplines listed in the Physician Masterfile. Of the 7,288 (27.7 %) physicians who completed the survey, 1,644 provided the e-mail contact information of their partner. We surveyed these partners and 891 (54 %) responded. Burnout, quality of life (QOL), and depression were measured using validated instruments in both surveys. Satisfaction with career, work–life balance, and personal relationships, as well as experience of WHC were also evaluated.

RESULTS: WHC within the previous 3 weeks were commonly experienced by physicians and their employed partners (44.3 % and 55.7 %, respectively). On multivariate analysis, greater work hours for physicians and their employed partners were independently associated with WHC (OR 1.31 and 1.23 for each additional 10 h, respectively, both $p < 0.0001$). Physicians and partners who had experienced a recent WHC were more likely to have symptoms of burnout (47.1 % vs. 26.6 % for physicians with and without WHC; 42.4 % vs. 23.8 % for partners with and without WHC, both $p < 0.0001$).

CONCLUSIONS: WHC are commonly experienced by physicians and their employed partners. These conflicts may be a major contributor to personal distress for physicians and their partners.

KEY WORDS: physician; spouses; work–home conflict; burnout; quality of life; career satisfaction.

J Gen Intern Med 29(1):155–61

DOI: 10.1007/s11606-013-2581-3

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Electronic supplementary material The online version of this article (doi:10.1007/s11606-013-2581-3) contains supplementary material, which is available to authorized users.

Received March 7, 2013

Revised July 10, 2013

Accepted July 31, 2013

Published online September 17, 2013

BACKGROUND

Physicians have demanding and unpredictable jobs that, while fulfilling, can bring enormous challenges to the home front. On average, physicians work 53.3 h per week, with 38 % of physicians reporting they work > 60 h per week.¹ Likely as a result of these long work hours, physician are less satisfied with work–life balance than U.S. workers in general.¹ Work–home conflicts (WHC, i.e., the need to perform both work and personal related tasks/responsibilities simultaneously resulting in conflict between work and home) are one key challenge to work–life balance. In recent studies, more than half of surgeons and academic general internists report they have had a WHC in the last 3 weeks.^{2–4}

WHC can have serious ramifications. Previous studies of surgeons suggest an association between WHC and professional burnout, symptoms of depression, poor quality of life, alcohol abuse/dependency, relationship difficulties, and career dissatisfaction.^{2,3} Another study found that physicians who experienced role conflicts (as they struggle to balance personal responsibilities with a demanding medical career) were more dissatisfied with their spouse and parental duties.⁵ In addition, WHC also appear associated with career decisions, such as intent to reduce clinical hours and leave the current practice,^{3,6} which may impact access to medical care. In our previous study of U.S. surgeons, we found that hours worked per week, having children, being female, and practice setting (Veterans Administration and academic center) were independently associated with an increased risk for WHC, while increased age and subspecialty field reduced the risk.³ Whether these factors are relevant to physicians in other specialty areas is unknown.

Nearly all of the data on WHC and their impact come from the physician's perspective rather than that of their partner. Most of the previous studies of physician partners are small,^{7–10} limited to one specialty,^{7,10} or include only female partners,^{8,11} and all focus on marital satisfaction and were conducted over a decade ago.^{7–12} The prior studies do suggest that lack of physician time for family and child rearing and work disruptions during home activities are among the greatest sources of relationship stress;^{7,8,10–12} however, little remains

known about partners' experiences with WHC. In a 1999 study of 603 physician wives who were members of the American Medical Association Alliance (a support organization for medical spouses), 31 % reported they felt a fair amount of, or were very much impacted by, work/family conflict themselves.¹¹ Now, over a decade later, more physician partners are in dual career relationships. They may experience their own WHC frequently and attendant effects on their relationships. The prevalence and factors associated with WHC among the employed partners of physicians and their potential impact remain poorly understood.

To explore the potential effects of WHC, we evaluated the occurrence of WHC among physicians and their partners who worked outside the home, and examined 1) factors associated with WHC and 2) potential personal ramifications (e.g., burnout, symptoms of depression, quality of life) of WHC.

METHODS

Participants

As previously described,¹ we used the U.S. Physician Masterfile (PMF) to obtain a diverse sample of 89,831 physicians from all specialty disciplines. In June 2011, these physicians were sent an e-mail stating the purpose of the study was to better understand the factors that contribute to career satisfaction, along with an invitation to participate and a link to the survey. Consistent with convention,¹³ we considered the 27,276 (30.4 %) physicians who opened at least one invitation e-mail to have received an invitation to participate in the study. Of the 7,288 (27.7 %) physicians who completed the survey, 6,377 (87.5 %) indicated they had a partner and 1,644 (25.8 %) of these physicians provided the e-mail contact information of their partner. We sent an e-mail to these 1,644 partners informing them of the purpose of the study (to better understand the experience of partners of U.S. physicians and physicians' family/social support network), along with an invitation to participate and a link to the survey, and 891 (54 %) responded to our survey.¹⁴ For the purpose of this analysis, we focused on employed partners (i.e., those who indicated they worked outside the home). As survey participation was voluntary and all responses were anonymous, we were unable to link physician and partner responses.

Study Measures

Physician and the partner surveys included items inquiring about demographics (age, sex, children, age of children), hours worked/week, burnout, symptoms of depression, quality of life (QOL), suicidal ideation, satisfaction with work/life balance, and satisfaction with partner. Consistent

with our previous approach,^{2,4} and similar to items from previously published surveys,^{15,16} participants were asked if they had experienced a conflict between work and personal responsibilities in the last 3 weeks ("Have you experienced a conflict between work and personal responsibilities in the last 3 weeks?"), and how they resolved the most recent work-home conflict ("Please think of the most recent conflict between work and personal responsibilities you have experienced. Please indicate how the conflict was resolved in this particular instance: Resolved in favor of work responsibility; Resolved in favor of personal responsibility; or, Able to resolve in manner that met both responsibilities"), as method of conflict resolution relates to burnout and career dissatisfaction.^{2,4} Physician professional characteristics were ascertained by asking physicians about their practice (work hours, nights on call, specialty, and practice setting). We collapsed specialties into primary care (general pediatrics, general internal medicine, and family medicine), surgical specialties, medicine and pediatric sub-specialties, and other (anesthesia, dermatology, emergency medicine, radiology, neurology, pathology, physical medicine and rehabilitation, psychiatry and other). Partners also provided information about: their personal work characteristics (current employment status; current profession [non-medical professional (e.g., engineer, business person, teacher, other), physician, other health care provider, other], and work hours); physician partner work characteristics (work hours, nights on call, specialty, and practice setting); and, knowing what they know now, whether they would choose a physician partner again. These items are reported in Appendix 1 (available online).

Burnout. Consistent with approaches used in other large scale national studies,¹⁷ burnout in partners was assessed using two single-item measures adapted from the full Maslach Burnout Inventory (MBI), a validated 22-item questionnaire considered the gold standard for measuring burnout.¹⁸ These two items correlate strongly with the emotional exhaustion and depersonalization domains of burnout, as measured by the full MBI in a sample of over 10,000 individuals.^{19,20} The area under the ROC curve for the emotional exhaustion and depersonalization single items relative to that of their respective full MBI domain score is 0.94 and 0.93. The positive predictive values of the single-item thresholds for high levels of emotional exhaustion and depersonalization are 88.2 % and 89.6 %, respectively.^{19,20} High levels of emotional exhaustion and depersonalization on the single items are defined as occurring at least weekly.¹⁹ We considered respondents with a high level of depersonalization and/or emotional exhaustion as having at least one manifestation of burnout. This method has also been used in prior large scale national studies of > 15,000 U.S. physicians and large samples of U.S. workers.^{1,17} Physicians completed

the full MBI and the two single-item measures adapted from the full MBI. To allow for comparison of burnout between physicians and their partners, we utilized physician response data to the same two-item instrument.

Quality of Life. QOL is a multi-dimensional construct. The survey included Linear Analogue Self Assessment items previously validated as general measures of QOL dimensional constructs in a variety of medical conditions and populations.^{21–29} Participants were asked to rate their overall, mental, and physical QOL over the past week on the standardized linear analog scale (0=“As bad as it can be”; 10 =“As good as it can be”). Using the approach described by West et al.,³⁰ participants also rated their level of fatigue on a similar standardized linear analog scale, with lower scores suggesting greater fatigue.

Symptoms of Depression. We used the two-item Primary Care Evaluation of Mental Disorders³¹ to screen for depression. It is a standardized and validated assessment tool for depression screening that performs as well as longer instruments.³²

Statistical Analysis. We used standard descriptive summary statistics to characterize the physician and partner groups. We applied Kruskal-Wallis tests (continuous variables) or chi-square tests (categorical variables) to explore for associations between variables. We performed logistic regressions to evaluate associations of the independent variables with WHC within each group (i.e., physicians and employed partners). The independent variables utilized in the WHC modeling process for physicians who indicated they had a partner included demographics (age, sex, children) and personal work characteristics (work hours, nights on call, specialty [primary care, surgical, medicine and pediatric specialties, other], practice setting). The independent variables utilized in the WHC modeling process for employed partners included: demographics, personal work characteristics (type of job, work hours), and reported physician partner work characteristics (work hours, nights on call, specialty [primary care, surgical, medicine and pediatric specialties, other], practice setting). All tests were two-sided with type I error rates of 0.05. All analyses were done using SAS version 9 (SAS Institute Inc., Cary, NC).

RESULTS

Personal and professional characteristics of 891 responding partners (54.2 % response rate) and 7,288 physicians (response rate 26.7 %) have been previously reported.^{1,14} Briefly, the median age of physicians and their partners was 55 and 51, respectively, and most had children (89.2 % and 86.6 %, respectively). The majority of physicians were male (75.2 %) while most partners were female (73.0 %). Among the partners, 503 (56.5 %) were employed and reported a

median of 40.0 weekly work hours. Employed partners most often worked as a non-medical professional (58.2 %) or health care professional (40.9 %).

Rates of high emotional exhaustion, depersonalization, overall burnout, symptoms of depression and QOL scores of physicians and their partner, as well as satisfaction with work–life balance are shown in Table 1. Physicians and employed partners had commonly experienced a WHC in the last 3 weeks (physicians 44.3 % and employed partners 55.7 %). In most cases, physicians and employed partners’ resolved their WHC in a manner that enabled both home and work responsibilities to be met. However, physician WHC were more often resolved in favor of work (physician 28.4 %; employed partner 19.7 %) and less often resolved in favor of home (physician 10.9 %; employed partner 20.1 %) than partner WHC.

Factors Associated with Work–Home Conflict

Separate multivariate analysis indicated that work hours were associated with WHC for physicians and employed partners (Table 2). No other demographic, work-related, or spouse-related factor remained independently associated with WHC among employed partners. For physicians, sex (female sex, OR 1.35), age (each additional year older, OR 0.957), and practice setting (academic medical center, OR 1.26) were also independently associated with WHC.

Associations of Work–Home Conflicts Among Physicians

Physician WHC were strongly associated with burnout, QOL, symptoms of depression, and relationship difficulties (see Table 3). For example, more physicians with a recent WHC were more likely to be burned out and to have a positive depression screen (both $p < 0.0001$). Reporting a WHC was also associated with substantially lower overall, mental, and physical QOL and worse fatigue (all $p < 0.0001$). Physician WHC was also associated with lower satisfaction with their partner ($p < 0.0001$) and greater likelihood of seriously contemplating separation or divorce in the last 12 months (14.0 % vs. 8.6 %, $p < 0.0001$). Physicians reporting a recent WHC were less likely to report they would choose to become a physician again (63.0 % vs 77.2 %, $p < 0.0001$; Table 3) or choose the same specialty (65.7 % vs 76.0 %, $p < 0.0001$) if they had a chance to revisit their decision.

Associations of Work–Home Conflicts Among Employed Partners of Physicians

Consistent with our findings in physicians, employed partners with a recent WHC were more likely to be burned out and have symptoms of depression (both $p < 0.0001$) than employed

Table 1. Burnout, Symptoms of Depression, Quality of Life, and Work Home Conflicts Among a National Sample of Physicians and Their Employed Partners

	Partnered physicians (N=6,377)	Employed partners (N=503)
Burnout indices, No. (%)		
High emotional exhaustion	1,826/6,326 (28.9 %)	65/501 (13.0 %)
High depersonalization	1,092/6,322 (17.3 %)	38/490 (7.8 %)
Burned out*	2,157/6,301 (34.2 %)	82/490 (16.7 %)
Depression screen positive, No. (%)	2,348/6,328 (37.1 %)	171/501 (34.1 %)
Quality of life, Mean (SD)		
Overall	7.5 (1.8)	7.8 (1.6)
Mental	7.3 (2.0)	7.5 (1.8)
Physical	6.8 (2.1)	7.2 (1.9)
Fatigue	5.9 (2.4)	6.2 (2.1)
Work-home interface		
Have experienced a conflict between work and personal responsibilities in the last 3 weeks, No. (%)		
Yes	2,811/6,345 (44.3 %)	280/503 (55.7 %)
Missing	32	0
How was the most recent work-home responsibility conflict resolved, No. (%)		
Resolved in favor of work responsibility	1,713/6,029 (28.4 %)	97/492 (19.7 %)
Resolved in favor of home responsibility	658/6,029 (10.9 %)	99/492 (20.1 %)
Resolved to meet both responsibilities	3,658/6,029 (60.7 %)	296/492 (60.2 %)
Missing	348	11
My work schedule leaves enough time for personal/family life, No. (%)		
Agree	3,151/6,357 (49.6 %)	354/503 (70.4 %)
Neutral/Disagree	3,206/6,357 (50.4 %)	149/503 (29.6 %)
Missing	20	0

*High score (\geq weekly or more often) on emotional exhaustion and/or depersonalization scale (see *Methods*)

partners without a recent WHC (Table 3). Partner WHC were also associated with substantially lower overall, mental, and physical QOL and worse fatigue (all $p < 0.0001$). In contrast to the association between physician WHC and relationship difficulties, no relationship was found between partner WHC and relationship satisfaction.

DISCUSSION

This is the first national study to simultaneously explore WHC in both a diverse sample of U.S. physicians from all specialty areas and practice settings and various work environments, and their employed partners. In the physician component of the study, WHC were more common among physicians who were women, were younger, worked longer hours, and practiced in an academic medical center. Physicians who experienced a recent WHC were more likely to have burnout, screen positive for symptoms of

depression, had worse QOL in multiple dimensions, and were less satisfied with their career and their personal relationship. For example, the difference in overall QOL mean score between physicians with and without recent WHC was substantial (6.9 [SD 1.9] vs. 7.9 [SD 1.6], respectively), and as the effect size is half a standard deviation or more, this is a clinically meaningful effect size.³³ These findings validate findings from our previous studies of U.S. surgeons^{2,3} and academic internists.⁴ Both prevalence of WHC and their negative associations are concerning, as physician distress and career dissatisfaction negatively impact quality of patient care.³⁴⁻³⁷ The association of WHC with career decisions (e.g., reduce clinical work hours to spend more time with family, leave the current practice setting for another job) may also suggest potential health care delivery implications, such as negative effects on access to care.³

Our study also suggests that WHC are commonly experienced by the partners of physicians who are employed outside the home, with those who work more

Table 2. Factors Independently Associated with Work-Home Conflict

Characteristics and associated factors	Odds ratio* (95 % CI)	P value
Physicians who have a partner [†]		
Age (each additional year older)	0.957 (0.952-0.963)	< 0.0001
Female	1.35 (1.19-1.55)	< 0.0001
Work in an academic medical center (vs. private practice)	1.26 (1.10-1.45)	0.001
Hours worked per week (for each additional 10 h)	1.31 (1.26-1.36)	< 0.0001
Employed partners [‡]		
Hours worked per week (for each additional 10 h)	1.23 (1.08-1.41)	0.002

*OR > 1 indicate increased odds of work-home conflict; OR < 1 indicate lower odds of work-home conflict

[†]Model adjusted for demographic and personal work characteristics (i.e., work hours, nights on call, specialty, practice setting)

[‡]Model adjusted for demographic and personal work characteristics (i.e., type of job, work hours) as well as reported physician partner work characteristics

Table 3. Relationship Between Burnout, Symptoms of Depression, Quality of Life, and Satisfaction with Career and Personal Relationship by Experience of a Recent Work–Home Conflict (WHC) in a National Sample of Physicians and Their Employed Partners

	Physicians		Partners of physicians	
	Recent WHC	No recent WHC	Recent WHC	No recent WHC
	N=2,811	N=3,534	N=280	N=223
Burnout indices, No. (%)				
High emotional exhaustion	1,148/2,799 (41.0 %)	674/3,499 (19.3 %)*	53/278 (19.1 %)	12/223 (5.4 %)*
High Depersonalization	681/2,791 (24.4 %)	406/3,504 (11.6 %)*	29/271 (10.7 %)	9/219 (4.1 %) [†]
Burned out	1,315/2,789 (47.1 %)	836/3,485 (24.0 %)*	65/271 (24.0 %)	17/219 (7.8 %)*
Depression screen positive, No. (%)	1,412/2,797 (50.4 %)	930/3,499 (26.6 %)*	118/278 (42.4 %)	53/223 (23.8 %)*
Quality of life, Mean (SD)				
Overall	6.9 (1.9)	7.9 (1.6)*	7.5 (1.7)	8.2 (1.4)*
Mental	6.6 (2.1)	7.9 (1.7)*	7.1 (1.8)	8.0 (1.7)*
Physical	6.2 (2.2)	7.3 (1.9)*	6.9 (2.0)	7.6 (1.8)*
Fatigue	5.1 (2.3)	6.5 (2.3)*	5.8 (2.1)	6.6 (2.1)*
Relationship satisfaction, No. (%)				
Seriously contemplated separation or divorce	393/2,802 (14.0 %)	304/3,525 (8.6 %)*	38/277 (13.7 %)	24/222 (10.8 %)
Satisfaction with partner				
Extremely satisfied	1,533/2,803 (54.7 %)	2,349/3,530 (66.5 %)*	145/280 (51.8 %)	125/221 (56.6 %)
Somewhat satisfied	892/2,803 (31.8 %)	849/3,530 (24.1 %)	95/280 (33.9 %)	70/221 (31.7 %)
Neutral	129/2,803 (4.6 %)	134/3,530 (3.8 %)	12/280 (4.3 %)	9/221 (4.1 %)
Somewhat dissatisfied	185/2,803 (6.6 %)	137/3,530 (3.9 %)	23/280 (8.2 %)	13/221 (5.9 %)
Extremely dissatisfied	64/2,803 (2.3 %)	61/3,530 (1.7 %)	5/280 (1.8 %)	4/221 (1.8 %)
Would choose physician as a partner/spouse again			215/275 (78.2 %)	182/221 (82.4 %)
Satisfaction with medicine, No. (%)				
Would choose to become a physician again	1,767/2,804 (63.0 %)	2,715/3,519 (77.2 %)*		
Would choose specialty again	1,843/2,805 (65.7 %)	2,674/3,517 (76.0 %)*		

**p* < 0.0001
[†]*p* < 0.01

hours at greatest risk for WHCs. We do not know if partners of physicians experience WHC more commonly than those in other dual career relationships where the partner is not a physician. We speculate that WHC may be more common in relationships where at least one partner is a physician, due to higher work hours relative to the population¹ and other characteristics of physicians' work. We found a similar relationship between the experience of a recent WHC and burnout, positive screen for depression, and poor QOL in multiple dimensions in both physicians and their partners. In contrast to the increased prevalence of dissatisfaction with personal relationships (i.e., contemplating separation or divorce, dissatisfaction with partner) among physicians who had experienced a recent WHC, however, we found no relationship between the experience of a WHC and relationship satisfaction among partners. The reason for this discrepancy cannot be ascertained from this study and should be the focus of future study.

Hours worked was independently associated with greater odds of experiencing WHC among physicians and their partners. This suggests that individual approaches, such as stepping away from the workforce or reducing work hours, may represent useful approaches to reducing WHC for both groups, although these steps may reinforce gender inequality.³⁸ Our finding that age, sex, and practice setting were independently associated with WHC among physicians, but not partner WHC, suggests there may be factors unique to medicine that contribute to WHC. However, there are likely opportunities for medicine to learn from other professional

domains. For example, younger physicians may be at increased risk of WHC because they have less autonomy and flexibility than their more senior colleagues. In the business sector, organizational policy change that promotes greater autonomy in scheduling work-related tasks has been shown to be effective in mitigating work-family interference among both sexes and even among employees with the highest work demands.³⁸ Other business approaches include creating child care centers, allowing workers to use sick leave for children and ill family members, making overtime less burdensome, and rethinking personal leave.³⁹

Our finding that sex was independently associated with WHC for physicians but not for spouses suggests that traditionally held societal beliefs about women's role in the home and workforce may remain true today for a large segment of the U.S. women physician population. This is consistent with persistent gender inequities in pay for physicians,⁴⁰ and highlights the need for ongoing work in this area. For physicians in academic medicine, lessons can be learned from institutions of higher education that have been trying to reduce gender stratification and loss of talent through approaches such as adjusted timelines for promotion and tenure, and facilitation of a culture that encourages use of equitable family-friendly policies without fear of retribution.⁴¹ Additional approaches such as more allowance for job sharing and other innovative practice structures and purposeful alignment of personal and professional values and priorities have also been suggested strategies for physicians to reduce WHC.^{42–46}

Our study is subject to a number of limitations. First, although our response rate is typical of national survey studies of the members of physician societies,^{47,48} our results may be viewed as susceptible to response bias. We previously reported no statistically significant differences with respect to age, sex, or specialty (primary care vs. non-primary care) among early responders compared to late responders (a standard approach to evaluate for response bias), supporting that responders were representative of U.S. physicians.¹ Other studies have also been unable to find substantial differences between responding and non-responding physicians.⁴⁹ Although we are not able to compare the demographic and professional characteristics of physicians who did/did not provide contact information for their partner directly, the available data suggests that the physicians who provided contact information for their partner were generally representative of the overall physician sample.¹⁴

The response rate among partners surveyed was higher than most other surveys.^{11,50} As previously described,¹⁴ responding partners and the overall physician sample had similar demographic profiles,¹⁴ and our sample of partners had a similar proportion who were employed as found in previous studies of physician partners^{11,12} and reported by physicians.² Nevertheless, we do not know how representative our sample of physician partners is in general, or if distress, dissatisfaction, or experience of WHC differs between responders and nonresponders or between partners who were and were not invited to participate in the survey. Although one could hypothesize that dissatisfied physicians and their partners may be less motivated to fill out a survey, or conversely, that they would be more likely to participate because the topic is of relevance to them, the direction of any response bias present in this study is unknown. This study is preliminary given these limitations, and further research is needed to confirm these results.

Second, it is likely that we have not examined all possible contributors or associates of WHC. Some of our associations may be mediated by unmeasured factors. Third, due to the cross-sectional nature of this study, we are unable to determine cause/effect or the potential direction of causality. In this exploratory study, we cannot determine from our data if WHC leads to relationship difficulties, or if having lower quality relationship with a partner gives rise to more WHC. Similarly, we do not know if WHC contributes to depression, or if physicians who experience symptoms of depression are less able to cope with demands of work and home and thus experience more WHC. Fourth, since both studies were anonymous, we were unable to link physician and partner responses. Future longitudinal studies involving physicians and their partners are needed.

In conclusion, WHC are prevalent among U.S. physicians and their employed partners. Long work-hours, younger age, female sex, and work within an academic medical center increase the risk for WHC among physicians, while for partners, WHC appear to be driven in large part by work

hours. These conflicts are strongly associated with distress and relationship dissatisfaction. Further research is needed to clarify the factors contributing to and mitigating the negative effects of WHC on physicians and their partners.

Acknowledgements: Funding for this study was provided by the American Medical Association and the Mayo Clinic Department of Medicine Program on Physician Well-being.

Conflict of Interest: Dr. Wayne Sotile receives royalties from AMA Press for books "The Medical Marriage" and "The Resilient Physician", and honoraria for speaking engagements to medical conferences, regarding burnout, resilience and work/life issues. All other authors declare no conflicts of interest.

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