THE ORTHOPAEDIC FORUM

Quality of Life During Orthopaedic Training and Academic Practice

Part 2: Spouses and Significant Others

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Background: Orthopaedic residents and attending physicians who report having a supportive spouse show lower levels of burnout and psychological distress than those without supportive spouses. However, little is known about the experiences of the spouses. This nationwide study examines burnout, psychological distress, and marital satisfaction of the spouses and significant others (collectively referred to hereafter as spouses) of orthopaedists in training and in orthopaedic practice in an academic setting.

Methods: Employing previously reported methodology, 259 spouses of orthopaedic residents and 169 spouses of full-time orthopaedic faculty completed a voluntary, anonymous survey. The survey included three validated instruments (the Maslach Burnout Inventory, the General Psychological Health Questionnaire-12, and the Revised Dyadic Adjustment Scale) and three novel question sets addressing demographic information, relationship issues, stress, and work/life balance.

Results: Psychological distress was noted in 18% of resident spouses compared with only 10% of faculty spouses ($p = 0.014$). Resident spouses reported greater loneliness ($p < 0.0009$) and stress ($p = 0.03$) than faculty spouses. Among working spouses, 30% of resident spouses and 13% of faculty spouses showed high levels of emotional exhaustion ($p < 0.003$). Twenty-eight percent of employed resident spouses and 5% of employed faculty spouses showed problematic levels of depersonalization ($p < 0.0001$). Twenty-six percent of employed resident spouses and 12% of employed faculty spouses showed a diminished sense of personal accomplishment ($p = 0.012$). Marital satisfaction was high for both resident and faculty spouses. Decreased satisfaction correlated with excessive mate irritability and fatigue that precluded their mate's involvement in family activities. A gratifying sex life, full-time work outside the home, and spending more than ninety minutes a day with their mate correlated significantly with marital satisfaction.

Conclusions: Many orthopaedic resident spouses showed elevated levels of burnout, and a substantial number showed psychological distress. Spouses of orthopaedic faculty surgeons showed low rates of burnout and psychological distress. While both resident and faculty spouses reported high levels of marital satisfaction, the engagement of their surgeon mates had a considerable impact on the well-being of the relationship.

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Positive marital functioning is a powerful protector of physician resilience[1]. High marital satisfaction and having a supportive spouse correlates with greater job satisfaction and lower levels of physician burnout[2-5]. In our nationwide study of 384 orthopaedic residents and 264 orthopaedic faculty, 73% of residents and 89% of faculty reported being married or in a committed, long-term relationship[6]. Eighty-six percent of residents and 77% of faculty had nondistressed relationships with good levels of marital adjustment[6]. Being in a committed, harmonious relationship correlated with reduced levels of burnout and psychological distress for both orthopaedic residents and faculty[6].

While there has been attention to stress, burnout, and psychological distress in orthopaedic residents, faculty, and leadership, little is known of the experience of their spouses and significant others[6-8]. How supported are the people who support orthopaedic residents and faculty spouses? Physicians' spouses are affected by the stress and work satisfaction of their partners[9]. During the stressful years of training, a resident's spouse may show even more psychological distress than the resident[10]. To our knowledge, this is the first nationwide study to examine satisfaction, burnout, and psychological well-being of the spouses and significant others of orthopaedic residents and academic orthopaedic faculty members.

Burnout, as defined by Maslach et al., is a work-related syndrome of emotional exhaustion, depersonalization, and reduced sense of personal accomplishment[11]. Orthopaedists and their spouses are not unique in experiencing burnout, psychological distress, and marital discord. It is not our intention to compare the issues of orthopaedists and their spouses to those facing other professionals. Our goal is to draw attention to the challenges and successes that orthopaedists experience in their most important relationships and, hopefully, assist our colleagues and their families in fortifying these relationships.

Materials and Methods

Our research sample and methodologies have been previously detailed[6]. In brief, a 117-question survey was administered to our sample of 384 orthopaedic residents and 264 full-time orthopaedic faculty as well as to 259 spouses of orthopaedic residents and 169 spouses of full-time orthopaedic faculty in a voluntary, anonymous fashion. No distinction was made between married couples and those cohabitating in long-term committed relationships (hereafter, the term spouse will be employed inclusively). Our survey consisted of three validated instruments (the Maslach Burnout Inventory [Appendix 2], the General Psychological Health Questionnaire-12 [GHQ-12] [Appendix 3], and the Revised Dyadic Adjustment Scale [RDAS] [Appendix 6]) and three novel question sets addressing demographic information, relationship issues, stress reactions/management, and work/life balance (Appendices 1, 4, 5, and 7). For additional details about our methodology, including a detailed description of our survey instrument, please refer to our initial paper in this series[6]. The complete survey instrument is shown in the Appendix.

Statistical analysis was performed on all completed questionnaires. Descriptive statistics and pairwise correlations were computed. The simple correlation coefficient was used to estimate the strength and test the significance of bivariate relationships. Pearson and nonparametric Spearman correlations were computed, and similar results were obtained with both methods. Pearson correlation coefficients are presented here for consistency. Simple t tests were used to compare mean responses on standardized scales. Differences generating p values equal to or less than 0.05 were considered significant.

Source of Funding

Funds received from the Orthopaedic Research and Education Foundation were used to cover the administrative costs of performing the national survey, data entry, and statistical analysis.

Results

Demographics

Faculty spouses tended to be older than resident spouses. They also reported having more children and having been married longer than resident spouses. Seventy-four percent of resident spouses compared with 60% of faculty spouses reported working outside the home. Among those working outside the home, resident spouses worked more, with a median of forty hours per week, while faculty spouses reported working a median of ten hours per week ($p < 0.0001$). Demographic details are reported in Table I.

Psychological Well-being

Overall, faculty spouses showed greater psychological well-being than resident spouses. The GHQ-12 revealed psychological distress in 18% of resident spouses and in only 10% of faculty spouses ($p = 0.014$). Resident spouses reported greater degrees of loneliness ($p < 0.0009$) and stress ($p = 0.03$) than faculty spouses. There was no significant difference in reported alcohol use, with 13% of resident spouses and 11% of faculty spouses acknowledging the use of alcohol "quite a bit" or "a lot."

Burnout

Working spouses completed the Maslach Burnout Inventory. Resident spouses showed significantly higher rates of burnout than faculty spouses ($p < 0.0002$). Thirty percent of resident spouses and 13% of faculty spouses showed high levels of emotional exhaustion ($p < 0.003$). Twenty-eight percent of resident spouses and 5% of faculty spouses showed problematic levels of depersonalization ($p < 0.0001$). Twenty-six percent of resident spouses and 12% of faculty spouses showed a decreased sense of personal accomplishment ($p = 0.012$).

Marital Satisfaction

A majority of respondents, 63% of resident spouses and 57% of faculty spouses, reported that they were "extremely satisfied" with the quality of their marital relationship. An additional 30% of each group reported being "fairly satisfied." Resident spouses reported higher satisfaction with their relationship than faculty spouses ($p = 0.0013$). No resident spouses and only

TABLE I Demographic Characteristics of Faculty and Resident Spouses*

	Faculty Spouses (N = 169)	Resident Spouses (N = 259)
Race		
White	158 (93%)	229 (88%)
Black	2 (1%)	3 (1%)
Other	8 (5%)	25 (10%)
No answer	1 (1%)	2 (1%)
Sex		
Female	161 (95%)	222 (86%)
Male	8 (5%)	37 (14%)
Years married		
Mean (SD)	19.1 (12.2)	3.9 (3.3)
Min-max	<1 to 52 yrs	<1 to 15 yrs
No. of children		
0	11 (7%)	122 (47%)
1	19 (11%)	56 (22%)
2 or 3	112 (66%)	57 (22%)
4+	25 (15%)	3 (1%)
N (%) with kids <18	99 (59%)	115 (44%)
Median (range)	2 (0 to 6)	0 (0 to 6)
Hours you work per week		
Mean (SD)	16.7 (18.8)	33.1 (24.8)
Median (range)	10 (0-70)	40 (0-90)
0 hours	68 (40%)	67 (26%)
1-29 hours	54 (32%)	25 (10%)
30+ hours	47 (28%)	166 (64%)
<60 hours	165 (98%)	218 (84%)
60-70 hours	2 (1%)	18 (7%)
71-80 hours	2 (1%)	8 (3%)
>80 hours	0 (0%)	14 (5%)
Education		
HS/some college	11 (6%)	5 (2%)
College graduate	72 (43%)	103 (40%)
Graduate degree	44 (26%)	62 (24%)
Professional degree	42 (25%)	83 (32%)
No answer	0 (0%)	6 (2%)
Age		
Mean (SD)	46.6 (10.3)	30.3 (3.4)
Median (range)	46 (28-72)	30 (22-48)

*SD = standard deviation and HS = high school.

7% of faculty spouses reported being "dissatisfied" with the quality of their relationship ($p = 0.0013$). Faculty spouses reported greater satisfaction regarding work/family balance ($p = 0.01$) and were more likely to say they were satisfied "with a life in medicine" ($p = 0.0014$).

There were no significant differences between the resident spouses and the faculty spouses with regard to their satisfaction with other elements of their relationships. Fifty-four percent of resident spouses and 43% of faculty spouses were "extremely satisfied" with their mate's parenting skills, and only 6% and 2%, respectively, were "dissatisfied." Twenty-six percent of resident spouses and 29% of faculty spouses were "extremely satisfied" with their mate's involvement in family life. Forty-two percent of resident spouses and 43% of faculty spouses were "fairly satisfied," while 13% of resident spouses and 14% of faculty spouses were "dissatisfied." Thirty-six percent of resident spouses and 40% of faculty spouses were "extremely satisfied" with the quality of their sex lives, and only 16% and 11%, respectively, were "dissatisfied."

Ninety-five percent of each group scored in the nondistressed range on the RDAS, indicating positive overall relationship functioning. Scores for RDAS subscales of satisfaction and cohesion were more favorable for resident spouses than faculty spouses ($p = 0.004$ and $p = 0.015$, respectively), while the consensus subscale did not differ between the two groups.

Correlations

A number of factors correlated with marital satisfaction and are reported in Tables II and III. Male spouses of residents were significantly less satisfied with the quality of their relationship than were female spouses of residents ($p = 0.05$). For faculty spouses, having a professional or graduate degree or children under age eighteen correlated negatively with marital satisfaction ($p = 0.036$ and $p = 0.0003$, respectively). For both groups of spouses, decreased marital satisfaction correlated with loneliness ($p < 0.0001$), stress ($p = 0.05$ for faculty spouses; $p = 0.0003$ for resident spouses), decreased satisfaction with overall work/life balance ($p < 0.0001$), and the perception of having made sacrifices in their own careers for the sake of their mate's career ($p = 0.0025$ for faculty spouses; $p = 0.012$ for resident spouses). Spouses in both groups showed lower levels of marital satisfaction with increased frequency of conflict between their mate's schedule and family life ($p < 0.0001$), decreased satisfaction with their sex life ($p < 0.0001$), their mate's irritability ($p = 0.0003$ for faculty spouses; $p < 0.0001$ for resident spouses), and frequency of their mate coming home too tired to participate in family activities ($p = 0.0016$ for faculty spouses; $p < 0.0001$ for resident spouses).

TABLE II Risk Factors Associated with Decreased Marital Satisfaction*

Faculty and resident spouse loneliness
Faculty and resident spouse stress
Decreased spouse satisfaction with overall work/life balance
Career sacrifices made for the sake of a mate's career
Increased frequency of conflict between mate's schedule and family life
Mate irritability at home because of work stress
Mate frequently comes home too tired to participate in family activities

*$p \leq 0.05$.

TABLE III Protective Factors Associated with Greater Marital Satisfaction*

Spending more than 90 minutes per day awake and alone with mate
Confidence in mate's parenting skills
Mate involved in family life
Working between 32 and 44 hours/week outside the home
High faculty and resident spouse satisfaction with sex life

*$p \leq 0.05$.

Marital satisfaction was greater for faculty and resident spouses who reported spending more than ninety minutes per day awake and alone with their spouse ($p < 0.0001$), those who rated their mate's parenting skills highly ($p < 0.0001$ for faculty spouses; $p = 0.0002$ for resident spouses), and those who were satisfied with their mate's level of involvement in family life ($p < 0.0001$). Marital satisfaction was also greater for spouses who worked between thirty-two and forty-four hours per week outside the home than for spouses who worked more or fewer hours ($p = 0.05$ for faculty spouses; $p = 0.032$ for resident spouses).

Discussion

To our knowledge, this is the first national study to examine stress, burnout, psychological functioning, and marital satisfaction in the spouses of orthopaedic residents and faculty. While marital satisfaction is relatively well preserved for both groups, our results show concerning levels of burnout and psychological distress, particularly among the resident spouses. To some extent, these results mirror the findings we reported in our initial paper in this series, which examined stress, burnout, psychological functioning, and marital satisfaction in orthopaedic residents and faculty[6]. Orthopaedic training and academic practice are challenging endeavors that can put physicians and their families at risk for pathologic stress reactions.

The rate of psychological distress among resident spouses was similar to the rate we noted in the resident group, with more than one of every six respondents affected[6]. It should be noted that these rates are not significantly different from the lifetime prevalence estimates of anxiety and mood disorders (28.8% and 20.8%, respectively) reported in all adults in the U.S.[12]. However, our rates of psychological distress exceed the twelve-month prevalence of depression in adults in the U.S., which was noted to be 8.1% in women and 4.6% in men in 2008[13]. The loneliness that the resident spouses reported is not surprising, given the long work hours of the residents and the fact that resident spouses often have disrupted their own career paths and relocated to a new city away from their support systems. In 1988, Smith et al. examined this issue, assessing psychological distress in family practice residents and their spouses[10]. They found that the residents were coping fairly well, but the spouses scored significantly above the norms on depression, hostility, and interpersonal sensitivity subscales on the standardized Symptom Checklist-90, a validated psychological test[10]. The authors attributed this finding in part to the increased burden of family responsibilities carried by the spouse during residency[10].

Our findings suggest that the situation improves after residency. Faculty spouses showed lower rates of psychological distress than resident spouses. In fact, the rate of psychological distress in the faculty spouses was also considerably lower than that noted in the faculty members themselves (10% versus 17%, respectively)[6]. This difference is particularly interesting given the fact that the majority of the spouses were women (women have a higher risk of psychological disorders than men)[14].

Stress and psychological distress can increase the risk of substance abuse. In our study, 13% of resident spouses and 11% of faculty spouses acknowledged substance use "quite a bit" or "a lot." Our findings do not differ significantly from rates of alcohol use in the general public. According to a study of the general population of the U.S., 13.6% of women and 26% of men report moderate alcohol use, while 2.7% of women and 11.6% of men report heavy alcohol use[15].

Working full time (between thirty-two and forty-four hours per week) outside the home was associated with greater marital satisfaction. Perhaps, engagement in their own careers protects spouses from loneliness and isolation that can arise in nonworking spouses (as a result of the long work hours required for those in orthopaedic training and academic practice). However, resident spouses who worked showed elevated levels of burnout. Burnout has been identified as a significant problem for residents in a number of fields, including otolaryngology (head and neck surgery), internal medicine, obstetrics and gynecology, and orthopaedic surgery[6,16-18]. To our knowledge, this is the first study to demonstrate that the problem extends outside the walls of the hospital to the working spouses of the trainees. The rates of emotional exhaustion among resident spouses paralleled the rates we noted in the orthopaedic residents themselves, with nearly one-third of each group significantly affected[6]. Problematic levels of depersonalization were also found in one-third of the resident spouses compared with more than one-half of the resident group[6]. However, one-quarter of the resident spouses were showing difficulty maintaining adequate levels of personal accomplishment. This suggests that spouses may suffer the stress of training without the sense of achievement that helps to bolster the residents. We hope that our findings will stimulate additional interest in designing and investigating creative ways to facilitate resident spouse adjustment during the training years.

Overall marital satisfaction was quite high for both faculty and resident spouse groups. Prior studies of physician marital satisfaction have shown conflicting results regarding the impact of the number of weekly work hours of the physician on marital functioning[9,19-23]. Gabbard et al. studied 320 couples attending physician marriage workshops at the

TABLE IV Suggestions for Additional Reading on the Medical Marriage

Gabbard GO and Menninger RW. Medical Marriages. Washington, DC: American Psychiatric Press, Inc., 1988.
Myers M. Doctors' Marriages: A Look at the Problems and Their Solutions. New York, NY: Plenum Medical Book Co, 1988.
Sotile WM and Sotile MO. The Medical Marriage: Sustaining Healthy Relationships for Physicians and Their Families, Revised Edition. Chicago: American Medical Association Press, 2000.
Sotile WM and Sotile MO. The Resilient Physician: Effective Emotional Management for Doctors and Medical Organizations. Chicago, IL: American Medical Association Press, 2002.

Menninger Clinic (then located in Topeka, Kansas) and noted, "no relationship between working longer hours and turmoil in the medical marriage."[22]

Other studies have reported a direct correlation between marital satisfaction and hours worked per week, citing lack of availability of the physician as a risk to marital harmony[20,23]. While marital satisfaction in our study population did not directly correlate with hours per week worked by the resident or faculty physician, it was impacted by the amount of time the couple spent together daily. Those spending more than ninety minutes per day awake and alone with their spouse showed higher satisfaction in both groups. A similar correlation between marital satisfaction and time spent alone with a spouse was noted by Moore[20] in a study of 200 academic surgeons and their spouses, as well as by Sotile and Sotile[19] in a survey of 603 physician spouses who were members of the American Medical Association Alliance. Our study of orthopaedic residents and faculty showed that, for both groups, making time regularly to be alone with their spouse correlated not only with greater marital satisfaction but also with decreased burnout and psychological distress[6]. Of course, this correlation does not prove cause and effect. We cannot be certain that spending more than ninety minutes per day awake and alone with a mate improves marital satisfaction. It may be that couples with greater marital satisfaction are more likely to want to spend more than ninety minutes per day with each other.

It appears that, more than hours worked, the behavioral choices physicians make when they are not working correlate strongly with the quality of their family life. Moore identified three major areas of marital conflict: the physician's lack of time for family, the spouse's view that the physician spends excessive time away from home at work, and the physician's lack of shared responsibility for children and housework[20]. In their study of 379 spouses of academic surgeons, Kao et al. also identified lack of physician participation in household and childcare activities as a correlate of spousal satisfaction[23]. Only 38% of the spouses they surveyed felt that the surgeon spent adequate time with the spouse or children[23]. Involvement in family life was an issue for our respondents as well, and correlated significantly with marital satisfaction.

However, quantity of time with the family is not the entire answer; the quality of the time also matters. For both our resident and faculty spouse respondents, marital satisfaction was undermined by increasing frequency with which the physician or resident came home irritable or too tired to participate in family activities. Sotile and Sotile also found that physician irritability, worry about work, and fatigue precluding participation in the spouse's desired activities correlated with decreased marital satisfaction for physician spouses[19].

Our finding that male spouses of residents were significantly less satisfied with the quality of their relationships than were spouses of male residents is thought-provoking. However, this result must be interpreted with caution. Our sample size of male spouses was very small (n = 45), and this finding cannot be generalized to all male partners of female orthopaedic surgeons. It does, however, echo a concern voiced for many years that "physicians' husbands are much more resentful of the demands of medicine than are physicians' wives."[1] In non-physician populations, lack of family support for work and intolerance of work intrusions into family life is a risk for burnout and depression that affects female professionals more than their male counterparts[24]. It is possible that the exceptional career rigors faced by female orthopaedic trainees and surgeons place additional demands on an already stressed cohort of couples who are trying to adjust to nontraditional work/life gender roles. Orthopaedic surgeons and their mates are certainly not alone in navigating this terrain, but our data hint that neither are they exempted from the struggles that come with this process.

Our study is limited by the cross-sectional nature of the survey. While the faculty spouses are faring better than the resident spouses, showing significantly less psychological distress, less burnout, and only slightly lower marital satisfaction than the resident spouses, a longitudinal cohort study would be needed to determine whether quality of life for orthopaedic spouses really improves over time. Furthermore, as noted above, our reports of associations do not necessarily reflect cause and effect. For example, greater satisfaction with their sex life may indeed promote greater marital satisfaction. However, it is also possible that happier couples find their sex lives more satisfying.

Despite these limitations, we believe that our results can be of value in guiding orthopaedic surgeons in their relationships. It behooves surgeons to protect their relationships from the stresses of orthopaedic training and academic practice for the sake of their spouses as well as themselves. Studies of physicians have shown that greater marital satisfaction correlates with greater work satisfaction, decreased work stress, and fewer psychiatric symptoms[9]. Relationships can be nurtured by striving to frequently spend quality time with significant others, by supporting the interests and career endeavors of spouses, and by being cognizant of the impact of mood and attention during time together. We encourage all orthopaedic surgeons and their spouses to learn more about the challenges encountered in medical marriages. We have included a list of additional readings in Table IV.

Appendix

eA The survey instrument used in this study is available with the online version of this article as a data supplement at jbjs.org. ■

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References

1. Sotile WM, Sotile MO. The medical marriage: sustaining healthy relationships for physicians and their families. Revised ed. Chicago: AMA Press; 2000.

2. Lewis JM, Barnhart FD, Howard BL, Carson DI, Nace EP. Work satisfaction in the lives of physicians. Tex Med. 1993 Feb;89(2):54-61.

3. Johns MM 3rd, Ossoff RH. Burnout in academic chairs of otolaryngology: head and neck surgery. Laryngoscope. 2005 Nov;115(11):2056-61.

4. Linzer M, Visser MR, Oort FJ, Smets EM, McMurray JE, de Haes HC; Society of General Internal Medicine (SGIM) Career Satisfaction Study Group (CSSG). Predicting and preventing physician burnout: results from the United States and the Netherlands. Am J Med. 2001 Aug;111(2):170-5.

5. Gabbe SG, Melville J, Mandel L, Walker E. Burnout in chairs of obstetrics and gynecology: diagnosis, treatment, and prevention. Am J Obstet Gynecol. 2002 Apr;186(4):601-12.

6. Sargent MC, Sotile W, Sotile MO, Rubash H, Barrack RL. Quality of life during orthopaedic training and academic practice. Part 1: orthopaedic surgery residents and faculty. J Bone Joint Surg Am. 2009 Oct;91(10):2395-405.

7. Sargent MC, Sotile W, Sotile MO, Rubash H, Barrack RL. Stress and coping among orthopaedic surgery residents and faculty. J Bone Joint Surg Am. 2004 Jul;86-A(7):1579-86.

8. Saleh KJ, Quick JC, Conaway M, Sime WE, Martin W, Hurwitz S, Einhorn TA. The prevalence and severity of burnout among academic orthopaedic departmental leaders. J Bone Joint Surg Am. 2007 Apr;89(4):896-903.

9. Lewis JM, Barnhart FD, Nace EP, Carson DI, Howard BL. Marital satisfaction in the lives of physicians. Bull Menninger Clin. 1993 Fall;57(4):458-65.

10. Smith MF, Andrasik F, Quinn SJ. Stressors and psychological symptoms of family practice residents and spouses. J Med Educ. 1988 May;63(5):397-405.

11. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. Maslach burnout inventory manual. 3rd ed. Palo Alto, CA: Consulting Psychologists Press; 1996.

12. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry. 2005 Jun;62(6):593-602.

13. NIMH. Major depressive disorder among adults. http://www.nimh.nih.gov/statistics/1MDD_ADULT.shtml. Accessed 2011 Dec 26.

14. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen HU, Kendler KS. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. Arch Gen Psychiatry. 1994 Jan;51(1):8-19.

15. Dietz DK, Williams GD, Dufour MC. Epidemiologic bulletin no. 37: alcohol consumption and dietary practices in the U.S. population. Alcohol Health Res World. 1996;20(2):128-40.

16. Garza JA, Schneider KM, Promecene P, Monga M. Burnout in residency: a statewide study. South Med J. 2004 Dec;97(12):1171-3.

17. Golub JS, Weiss PS, Ramesh AK, Ossoff RH, Johns MM 3rd. Burnout in residents of otolaryngology-head and neck surgery: a national inquiry into the health of residency training. Acad Med. 2007 Jun;82(6):596-601.

18. Gopal R, Glasheen JJ, Miyoshi TJ, Prochazka AV. Burnout and internal medicine resident work-hour restrictions. Arch Intern Med. 2005 Dec 12-26;165(22):2595-600.

19. Sotile WM, Sotile MO. Physicians' wives evaluate their marriages, their husbands, and life in medicine: results of the AMA-Alliance Medical Marriage Survey. Bull Menninger Clin. 2004 Winter;68(1):39-59.

20. Moore EE. Swimming with the sharks—without the family being eaten alive. Surgery. 1990 Aug;108(2):125-38.

21. Warde CM, Moonesinghe K, Allen W, Gelberg L. Marital and parental satisfaction of married physicians with children. J Gen Intern Med. 1999 Mar;14(3):157-65.

22. Gabbard GO, Menninger RW, Coyne L. Sources of conflict in the medical marriage. Am J Psychiatry. 1987 May;144(5):567-72.

23. Kao LS, Wilson EB, Anderson KD. Perceptions and predictors of surgeon satisfaction: a survey of spouses of academic surgeons. J Am Coll Surg. 2005 May;200(5):684-90.

24. Schwartzberg NS, Dytell RS. Dual-earner families: the importance of work stress and family stress for psychological well-being. J Occup Health Psychol. 1996 Apr;1(2):211-23.