Howard L. Rudner

Stress in Family Practice Residents

SUMMARY

Sources and levels of stress, as well as coping mechanisms, perceived by residents in both years of a two-year family practice residency program in Toronto are described. In addition, differences between first- and second-year residents, and between women and men residents, regardless of year, are examined. Results of the survey indicate that the levels of stress are relatively high throughout the two years of residency training. The three most stressful aspects of being a resident are time pressures, fatigue, and lack of self-confidence. Female residents appear to report a higher level of stress than males, especially in trying to combine a personal and a professional life. Specific coping mechanisms include talking to others, adjusting attitudes and feelings, or strategic use of time. Recommendations aimed at helping family medicine residency programs deal with the problem of stress in residents are suggested. A current major province-wide research study including all interns and residents in Ontario is described. (Can Fam Physician 1986; 32:319-323.)

SOMMAIRE

Cet article décrit les sources, les niveaux de stress et les moyens d'y faire face tels que perçus par les résidents I et II d'un programme torontois de médecine familiale. On examine de plus les différences entre les résidents I et II et entre les sexes, indépendamment de l'année de résidence. Les résultats de l'enquête indiquent que les niveaux de stress sont relativement élevés tout au long de la formation de deux ans du programme de résidence. Les trois aspects les plus stressants de la vie du résident sont les pressions en termes de temps, la fatigue et le manque de confiance en soi. Les résidents féminins semblent rapporter un plus haut niveau de stress que les hommes, surtout dans leurs tentatives d'intégration d'une vie personnelle et d'une vie professionnelle. Pour y faire face, les moyens spécifiques incluent d'en discuter avec les autres, d'adapter ses attitudes et ses sentiments et d'avoir une stratégie pour maximiser l'utilisation du temps. L'article suggère certaines recommandations dont le but est d'aider les programmes de formation en médecine familiale à s'occuper du problème de stress chez les résidents. L'article décrit aussi une importante enquête provinciale à laquelle ont participé tous les internes et résidents de l'Ontario.

Key words: Family practice, residents, stress

Dr. Rudner, a certificant of the College, is presently on active staff in the Department of Family and Community Medicine at Sunnybrook Medical Centre, Toronto and is a lecturer in the Faculty of Medicine at the University of Toronto. Reprint requests to: Department of Family and Community Medicine, Room E-3647, Sunnybrook Medical Centre, 2075 Bayview Avenue, Toronto, ON. M4N 3M5.

HISTORICALLY, medicine as a career, although rewarding and fulfilling, brings with it stress as well. Among physicians, stress symptoms such as alcoholism, substance abuse, depression, suicide, coronary heart disease, and marital discord have been well documented.[1-4] These various illnesses are commonly attributed to the pressures and strains of being a physician (i.e., professional demands, availability of drugs, overwork, professional responsibility, and the long medical training).

A physician's career can be viewed at different stages of development, such as premedical experiences, medical school, internship, residency training, practice, and retirement. Each stage may be associated with stress. Although stress has been extensively studied in medical students,[5-8] until recently, little attention has been paid to interns and residents.[9] The internship and residency training period is the time when physicians may face, simultaneously, many intense and stressful experiences, including the develop-

ment of professionalism, maturation as a young adult, and financial changes. These experiences are likely to lay the groundwork for their future medical practice, and their self-image as physicians.[9] Moreover, fears of inadequate performance as a physician during residency may cause residents to ignore their personal development as they work on their professional development.[10] However, intellectual successes do not balance out emotional distress.[11]

Time pressures and sleep deprivation constitute the major stresses of residency training, adversely affecting the ability of residents to learn, the quality of medical care they deliver, and their ability to respond appropriately to urgent problems.[11-15] Alcoholism, drug abuse, severe depression, and even suicide are not uncommon as the initially recognized manifestations of a resident's distress.[11, 16, 17]

Nelson and Henry,[18] as well as Hawk,[19] have reported stresses in family practice residents due to time pressures, lack of self-confidence, and the problem of trying to combine a personal and professional life. Watterson[2] has suggested that family physicians are at a higher risk for psychiatric illness than those in other specialties. There is also some anecdotal, but as yet untested, evidence that first-year residents report higher levels of stress than second-year residents, and that women residents report higher levels of stress than men residents.

This paper describes a study to investigate the sources of stress and measure the levels of those stresses as well as coping mechanisms, as perceived by a group of family practice residents.

Specifically, stress levels between first- and second-year residents, and between women and men residents, regardless of year of residency, were compared. Family practice was chosen because it is a relatively new specialty with very little research, and because family practice training is diverse, which may in itself add to the stresses of a family practice resident.

TABLE 1
Demographic Characteristics of Participants (n=76)

Characteristic	n	%
Sex		
Male	44	57.9
Female	32	42.1
Year		
First	33	43.4
Second	43	56.6
Marital Status		
Single, never married	36	47.3
Married	37	48.7
Separated or divorced	1	1.3
Other	2	2.7
When Married	(n=37)	
Before medical school	5	13.5
During medical school	22	59.5
Before or during 1st year of FP residency or internship	9	24.3
During 2nd year of FP residency	1	2.7
Children		
Yes	5	6.6
No	71	93.4

Method

A 64-item questionnaire was mailed in November 1984 to all 138 first- and second-year residents in the eight family practice residency training programs affiliated with the University of Toronto Faculty of Medicine. The questions were designed to elicit information about demographic characteristics, sources and levels of stress (practice-related, interpersonal, individual) and coping mechanisms. Some questions were in the multiple-choice format, others were open-ended, and a few asked residents to elaborate on some answers with written explanations.

Residents also were asked to rate their 'overall' level of stress on a five-point Likert scale: 1=little or no stress, 3=optimal stress to function, and 5=excessive stress. For "amount of stress attributed to being a family practice resident", and to "combining one's professional and personal life", four-point scales were employed, with 1=little or no stress, 2=minimal stress, 3=moderate stress, and 4=high stress. All responses were anonymous.

Results

After the initial mailing and one follow-up request, a total of 76 residents responded, yielding a response rate of 55.1%. Certain demographic characteristics of the participants are outlined in Table 1. Variation in response across the eight programs could not be determined because of the small or unequal numbers of respondents per program.

The overall average age of the residents who responded was 26.99 years, with a range of 23 to 37 years. There were no significant differences in age between first- and second-year residents, or between sexes.

Stress Levels

The 76 family practice residents surveyed reported experiencing a moderately negative level of stress in their personal lives, a finding also noted by Tokarz, Bremer and Peters,[9] as well as Hawk.[19]

Table 2 presents the means for the individual professional stress questions by year of residency and by sex of residents. In general, both first- and second-year residents of both sexes reported overall stress at beyond the optimal level (towards excessive stress), and the other two professional stress indicators were rated between the minimal to moderate levels of stress. Tests

TABLE 2
Mean Levels on Professional Stress Indicators

Professional Stress Indicator	By Year of Residency		By Sex of Resident	
	R1 (n=33)	R2 (n=42)	M (n=44)	F (n=32)
Overall stress[1]	3.42	3.50	3.29	3.71
Stress of being a resident[2]	2.70	2.67	2.57	2.84
Stress of combining a personal and professional life[2]	2.85	2.86	2.66	3.13

1 Scale: 1 = little or no stress, 3 = optimal stress to function, 5 = excessive stress
2 Scale: 1 = little or no stress, 2 = minimal stress, 3 = moderate stress, 4 = high stress

for statistical differences were not carried out as these are ordinal data.

Although no resident in this survey reported having "excessive" stress, the trend shows that the level of overall stress for the average resident is beyond "optimum", perhaps towards "distress". In other words, some residents may be feeling the stress of residency to be more than they can handle and may in fact be suffering as a result (especially in their personal lives).

Correlational analyses were performed between the three stress variables and resident's age. The age of a resident was found to be positively correlated with both the stress of being a family practice resident ($r=0.306$, $p<0.05$) and in combining a personal and professional life ($r=0.227$, $p<0.01$). The older residents reported more stress in both areas. Perhaps the older individuals are more likely to have families, children, or more outside interests to share with their medical career, or they may have made a major career change when they decided to enter medicine and consequently find medical training more strenuous.

Professional Stressors

The residents were provided with a list of six stressors and were asked to rank in order, from greatest to least, the three that caused them the most stress in the residency. The three greatest stressors in the family practice residencies in the study reported here and similarly noted by Hawk[19] and Nelson and Henry[18] were time pressures, fatigue, and lack of self-confidence.

The factor named the most by the residents was time pressures. These included lack of time for their families, lack of time for recreation, lack of time for themselves, and the feeling of having too many things to do at once. The area ranked second as causing stress was fatigue (lack of sleep, long hours, being on call, and feeling burned out). The third was self-doubt, that is, fear of making mistakes, lack of self-confidence, and concern about not having sufficient medical knowledge to provide adequate patient care.

All three stressors, of course, are interrelated. Many demands on one's time, and not having enough time to do everything and learn everything, lead to overwork and fatigue and feelings of self-doubt. Furthermore, heavy workloads and call schedules on some rotations take time away from study and family, which also leads to fatigue and a sense of helplessness. Lack of self-confidence forces one to work harder and stay up later, or stay longer at work, thus depriving the resident of time for friends or family. The cycle is obvious.

The residents were asked to rate 15 work-related items on a five-point Likert scale: 1=no problem, 3=somewhat of a problem, and 5=a big problem for them. Residents reported having the most problems again with time-related issues (difficulty in learning everything, feeling rushed, being on call) and the least amount of problems with the more interpersonal interactions with their peers and staff (see Table 3). The problem that residents reported most frequently was having to learn a great deal of information and medical techniques. Consequently, residents doubt their ability to learn the amount of material that is needed to practice medicine on their own.

TABLE 3
Summary Table of Group Means for Work-Related Problems (n=76)

Stressor	Mean
1. Learning everything	3.30
2. Feeling rushed	3.03
3. Being on call	2.91
4. Self-doubt	2.74
5. Fear of error	2.70
6. No time for needy patient	2.62
7. Frustration	2.54
8. Death of a patient	2.13
9. Conflict between patients	2.09
10. Program problems	2.08
11. Status as a resident	1.80
12. Problems with other specialties	1.68
13. Sleep problems	1.61
14. Faculty problems	1.51
15. Resident problems	1.12

Scale: 1 = no problem, 3 = somewhat of a problem, 5 = a big problem

An additional question was asked about work and stress: "What is the main way you think your personal life suffers because of your professional life?" The highest category related to time management (63%). Twelve percent reported lack of outside interests, and 8% noted problems with personal relationships.

Although residents in general have been known to argue among themselves and to be highly competitive, the residents in the present study reported that the least stressful component of the residency was their relationship with other residents or even with faculty members. Even though some of the residents on any one rotation might be criticized by the attending physicians or by the other residents for the way a case was handled, or berated for their lack of medical knowledge, the residents overall did not report this aspect of the program as being highly stressful. It can be speculated that the residents knew that they were in training and expected to make mistakes and/or that they had been trained to take a subordinate or student role and criticism was a part of their training experience.

Residents also were asked to report their most stressful rotation to date. Thirty-eight percent of residents chose general medicine, followed by general surgery (11%), for reasons mostly revolving around time and schedule. Emergency, which is often described anecdotally as a stressful rotation, was noted as the most stressful by only 8% of the residents (equal to cardiology) and behind pediatrics and even family practice (about 10% each). Each rotation could take place in either first or second year. (There is, of course, some bias in these results since first-year residents had not had all the rotations).

General medicine was selected as both the busiest and the most stressful rotation by the residents, especially by those in first year. Generally, this rotation has the sickest and oldest patients (the so-called chronic patients) for whom little can be done. The residents described the rotation as stressful because of an "excessive workload", "extremely long hours and exceedingly busy ones", "heavy patient load", "heavy call", "heavy responsibility", "lack of supervision", "lack of free time", "lack of sleep, awake all night on call with sick patients", "always being rushed, no time to eat", "lots of scut work", and "time pressures".

Sex Differences

In other studies on stress among residents, it has been difficult to determine how much of the data for the women reflected residents' stress generally and how much of it reflected the fact that women physicians have spe-

cific career problems that men do not have.[20] Some of the differences also might have reflected the fact that women react differently to the pressures of medical training and practice than do their male counterparts.[6]

To help clarify this issue, both men and women residents in the present study were asked separately whether they felt their training experience was different because of their sex and, if so, in what way. Again, they were provided with a list of multiple choices. A substantial proportion of men and women residents (35% and 43%, respectively) reported that their training experiences were indeed different, and both sexes indicated that the women residents had more stress than male residents. Some of the respondents reported that women residents must accommodate to subtle forms of sexism, have a disproportionate number of women patients (especially those seeking obstetrical and gynecological care), take responsibility for both their home and their career, and must be a little more 'professional' than their male counterparts. No residents reported that they had a problem with patients' lack of trust of women residents or regarding women as less competent than men residents.

To exemplify this sense of being different, some women residents wrote, "deep down, there is a sense of 'I don't belong here' ", "I feel unable to adequately fulfill a previous image of everyday woman", "the main area of stress is that I am unable to do many of the typically 'female' activities that society dictates as norms—and which I value: starting a family, having girlfriends to go out shopping with. All are put on hold for now", and "staff and others (mainly nurses) give different treatment to female residents: sometimes better, sometimes they are treated less like professionals, less respected, not taken as seriously".

Coping Mechanisms

To understand some of the factors involved in how residents cope with stress, the residents in the study described here were asked the question: "How do you mostly cope with the stress of the residency?" They were provided with multiple choices. Most of the respondents (40%) reported that they coped best by being able to talk over their problems with other residents, family members, friends, and others. Some of the respondents (26%) noted that they 'adapted' to the stress, adjusting their attitudes and feelings toward the stressors. Others (19%) reported that an important factor was the strategic use of time, such as making a daily list of job priorities or eliminating important but nonessential tasks. Only a few residents (13%) reported that they coped by expressing their emotions either through crying, anger, or feeling depressed. Two percent noted other ways of coping (e.g., exercising).

Certain rotations during the year can make the residency emotionally stressful. Caring for sick people, excessive demands and time pressures, and the frequent experiences of physical and emotional fatigue take their toll on residents. However, medical training often does not encourage the expression of emotion. Consequently, residents must struggle with their feelings in a way that is not obvious to either patients or other physicians or their friends.

Residents were also asked what they did to unwind from a hard day at work. They were allowed as many responses as they chose (see Table 4). Coping behaviors reported were spending quiet time by themselves, socializing with friends and family, participating in physical activities, spending quiet time with family, and sleeping. Many residents probably come home and feel so tired that they fall asleep without even talking to their family or friends, which may make them feel guilty for "ignorning the family".

TABLE 4
Ways To Unwind From A Hard Day At Work

Choice	% of Responses
1. Quiet time for themselves (listening to music, reading, etc.)	27
2. Socialize with friends and family	23
3. Physical activity (walking, running, sports)	18
4. Quiet time with family, spouse	18
5. Sleeping	12
6. Use of alcohol	2
7. Use of marijuana or drugs	0

Not one resident responded that they used marijuana or other drugs. Only 2% of the study sample reported using alcohol to seek relief from the pressure. When asked more specifically to describe their average alcohol intake, 72% reported none or a minimal amount (only on holidays or the occasional party) and the remainder (28%) a moderate amount. Again, of note, is that not one resident reported a more than average or excessive intake of alcohol! Other studies have reported alcohol and drugs to be major problems for residents.[16, 17] Either the problem was indeed non-existent in the sample of residents in the present study or there was a conspiracy of silence among the residents about their use of alcohol and drugs.

Finally, residents were asked to rate the amount of support that they received from others, and whom they talked to when it came to discussing personal matters. In general, residents feel that they get lots of support from the people who are close to them, but it is generally difficult to fully maintain relationships during the two years of residency. For the most part, residents are very close to their families, especially their spouse or significant other, and rely on them for support during this stressful time. Problems seem to appear when the resident does not have enough time to spend in developing or maintaining relationships, which may lead to losing friends or to interpersonal conflicts.

Specific Recommendations

Based on the literature and on the results of this study, specific recommendations aimed at dealing with the problem of stress could be proposed for family practice residency programs:

1. development of support groups for residents and spouses, run entirely by residents but with liaison with staff and faculty. Discussions could centre around issues noted in this study, or others of mutual concern.
2. providing role models or advisors for residents.
3. assigning a senior resident to each beginning first year resident to serve as "advisor". This could be arranged and coordinated by each chief resident in the program.
4. development of programs or activities that bring residents together informally, and other activities specifically for spouses and significant others.
5. arranging stress and time management workshops, perhaps at the start and again in the middle of the aca-

demic year, focusing specifically on problems of being a resident, stresses likely to occur in practice, and appropriate coping skills.
6. ensuring the availability of counselling or resource services for residents, either through the department or the university.

Present Research

The Department of Behavioral Science, University of Toronto and the Professional Association of Internes and Residents of Ontario (PAIRO) have jointly undertaken a research study to examine the epidemiological and explanatory aspects of work-related stress with data from a field survey of all Ontario interns and residents.[21] Entitled "Work and Well-being in Internes and Residents in Ontario", the project will identify tractable sources of stress. The relationship of stressors to social support, coping and selected outcomes (health, self-perceived performance, work and career satisfaction, lifestyle, marital and family life) also will be examined.

A 34-page, highly structured questionnaire containing measures of all variables was mailed to all 2,620 Ontario interns, residents, and fellows from October 1984 to March 1985. There were second mailings and telephone reminders. A total of 1,799 completed questionnaires were received, yielding an overall response rate of 84% (the total eligible sample was reduced by 477 due to an inability to contact the respondents, a factor related to the quality of the mailing list and to the geographic mobility of interns and residents).

The first report of analysis from the study is presently in preparation, and will assess the relationship between work-setting variables such as call schedules, fatigue and perceived quality of medical care. As a collaborating investigator, I will conduct a sub-study to examine specialty differences, with concentration on family practice residents. I will compare residents in each of the five Ontario family medicine programs on a number of variables measuring professional stressors and personal stress. As well, differences between years of residency and sex of residents will be examined. Some general demographic characteristics of this sub-study sample are described in Table 5.

TABLE 5
Demographic Characteristics of Family Practice Residents in Ontario, by Year of Residency (n=285)

Characteristic	Percentages R1 (n=132)	R2 (n=137)	R3 (n=16)
Sex			
Male	45.5	48.2	68.8
Female	54.5	51.8	31.2
Marital Status			
Single	38.6	33.6	37.5
Married	50.8	58.4	56.3
Other	10.6	8.0	6.2
Children			
None	83.3	82.5	75.0
One	9.1	11.7	18.8
Two +	7.6	5.8	6.2
Graduation			
1984	90.9	0.7	0
1983	6.1	86.9	0
1982	0.8	6.6	87.5
Earlier	2.2	5.8	12.5
Age[1]			
<24	16.8	2.2	0
25-27	45.1	58.2	50.0
≥ 28	38.1	39.6	50.0

[1] Overall mean age was 27.69 years with age ranges of 23-39 for R1, 24-38 for R2 and 26-33 for R3.

Conclusions

Stress varies from person to person and may reflect differences in coping mechanisms, personal resourcefulness, and social and mental support systems. Stress is probably more a function of the individual than it is of the profession. Still, residents have to learn or be taught how to balance the demands of their work with those of their personal life. Indeed, one of the goals of medical education and training must be to try to prevent stress-related problems such as alcoholism, substance abuse, depression, suicide, coronary artery disease, and marital discord in medical students, residents, and practicing physicians.[22] ◉

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