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Learning, Satisfaction, and Mistreatment During Medical Internship

A National Survey of Working Conditions

Steven R. Daugherty, PhD; DeWitt C. Baldwin, Jr, MD; Beverley D. Rowley, PhD

Context.—Concerns about the working and learning environment of residency training continue to surface. Previous surveys of residents have focused on work hours and income, but have shed little light on how residents view their training experience.

Objective.—To provide a description of the internship year as seen by a large cross section of second-year residents.

Design.—Mail survey conducted in 1991.

Setting.—Residency programs in the United States.

Participants.—Random 10% sample (N=1773) of all second-year residents listed in the American Medical Association's medical research and information database.

Main Outcome Measures.—What and who contributes most to residents' learning during internships, degree of satisfaction with the internship experience, on-call and sleep schedules, incidents of perceived mistreatment or abuse, observations of unethical behavior, and experiences of harassment or discrimination.

Results.—A total of 1277 surveys (72%) of 1773 mailed were returned. Overall, respondents reported a moderate level of satisfaction with their first year of residency. On a scale of 0 to 3, residents rated other residents as contributing most (score of 2.3) to their learning, with special patients ranked second (2.1). During a typical work week, residents reported that they spent an average of 56.9 hours on call in the hospital. A total of 1185 (93%) residents reported experiencing at least 1 incident of perceived mistreatment, with 53% reporting being belittled or humiliated by more senior residents. Among women residents, 63% reported having experienced at least 1 episode of sexual harassment or discrimination. A total of 45% of residents reported having observed another individual falsifying medical records, and 70% saw a colleague working in an impaired condition, most often lack of sleep. Regression analyses suggest that satisfaction with the residency experience was associated with the presence of factors that enhanced learning, and fewer experiences of perceived mistreatment.

Conclusions.—Residents report significant problems during their internship experience. Satisfaction with internship is enhanced by positive learning experiences and lack of mistreatment.

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IN SPITE OF recent recommendations and changes, resident working conditions continue to be a source of concern for both

residents and hospital administrators. Of all the stages of medical training, the first year of residency is perhaps the most stressful.¹ More than medical school, more than the later years of residency, the first postgraduate year is experienced as a trial by fire.² To be successful, interns must learn to balance such diverse demands as the responsibility for patient care, economic hardships, on-call schedules, patient death, the need for con-

stant learning, the task of teaching, the requirements of attending physicians and senior residents, along with the necessities of family and personal life.

Two earlier national surveys cited by Silberger et al,³ although limited by their low response rates (<45%), found a trend toward rising dissatisfaction among residents, with the number of problem areas cited by residents increasing from 1983 to 1987. Schwartz et al⁴ report that the 5 factors that have the most negative effects on residents are (1) lack of sleep, (2) frequent night calls, (3) uncompromising attending physicians, (4) large patient loads, and (5) too much "scut" work.

An early study by Asken and Raham⁵ found that sleep deprivation among residents had potentially severe negative consequences on patient care. More recently, a literature review by Samkoff and Jacques⁶ concluded that although sleep-deprived residents can compensate for sleep loss during crises, they are more prone to error on routine repetitive tasks. Any activity that requires sustained vigilance shows deficits in the face of sleep loss. Previous work by the present authors has shown that residents believe that sleep deprivation impairs their capacity to care for patients and causes them to have more conflicts with the professional staff.⁷

Within the time frame provided by long work hours, interns must learn both the clinical skills of their profession and the implicit messages about professional attitudes and behaviors. One clue to these implicit messages is to be found by looking at trainees' accounts of how they are treated and their perceptions of their working conditions.⁸ Such qualities of the learning environment, including reports of perceived sexual harassment, discrimination, mistreatment, and unethical or unprofessional behavior on the part of colleagues and supervisors, have been documented over the past decade

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at the undergraduate level.⁹⁻¹² In 1991, Baldwin et al¹¹ reported that 96% of 581 senior medical students at 10 widely scattered schools reported having experienced at least 1 episode of perceived mistreatment, usually at the hands of their supervisors and teachers. In addition, 69% of the women and 25% of the men in the study reported at least 1 personal experience of sexual harassment during undergraduate medical training.¹¹ Komaromy et al¹³ found that 73% of women and 22% of men in 1 specialty reported that they were sexually harassed at least once during their medical training.¹³ A more recently published study, conducted as a follow-up of 571 medical students from 10 medical schools when they were in their residency, reported that 68.4% of the women and 14.2% of the men had experienced sexual harassment or discrimination at some point during their internship year.¹⁴

How do these experiences affect residents' perceptions of their learning environment and their perceived satisfaction with their internship year? In retrospect, most physicians recall their internship year as a valuable and exciting time, a defining experience in their quest for professional competence and identity.² The source of these positive reactions appears to hinge on the enormous gain in knowledge and skills, as well as the relationships residents are able to develop with colleagues and attending faculty. In an examination of first-year residency stress, Badger et al¹⁵ found strong positive correlations between the mood of residents and their perceptions of the faculty's commitment to teaching, availability, and sensitivity to their problems. An interested, accessible faculty represents a reward for a resident's effort, as well as an antidote to the pressures of the internship year.

Unfortunately, the pressures felt by residents are usually underestimated by other members of the medical community. Urbach et al¹⁶ concluded that members of the medical hierarchy are likely to minimize the prevalence of serious house-staff distress, and that the degree to which the prevalence is underestimated increases as one moves up the hierarchy.

These reports are suggestive, even provocative, but provide no broad portrait of how residents actually perceive their internship year. Continuing the series of surveys assessing residency hours and working conditions conducted by the American Medical Association in 1983 and 1987,³ the current study was undertaken to provide a description of the internship or first-year residency experience from the viewpoint of residents who had just completed their first post-

graduate year. What and who do residents say contributes most to their learning? What accounts for their overall satisfaction with their experience? How much mistreatment and sexual harassment do residents report? What recommendations can be made to enhance the residency experience?

METHODS

Survey Instrument

The survey instrument used in this study was based on an earlier questionnaire examining medical student's perceptions of their educational experience.¹¹ Some of the previous questions were used, others were revised, and new ones were added, resulting in a 13-page questionnaire. Along with basic demographic information, second-year residents were asked to think about their just completed internship year and to answer questions concerning their general satisfaction with their internship experience, on-call and sleep schedules, incidents of perceived mistreatment or abuse, observations of unethical behavior on the part of others, and experiences with harassment or discrimination.

Based on previous work, incidents of perceived mistreatment included being publicly belittled or humiliated, experiencing sexual and racial harassment or discrimination, being assigned tasks for punishment rather than for learning, receiving threats to one's career, and physical abuse.¹¹ Incidents of observed unethical conduct included falsification of patient records, mistreatment of patients, observing others working in an impaired condition, and having others take credit for one's own work. Respondents were asked to indicate their answers using the following 4-point scale: 0 indicates never; 1, rarely (1-2 times); 2, sometimes (3-4 times); and 4, often (5 or more times). Residents were also asked to identify the source of the reported mistreatment or unethical conduct: medical students, residents at the same level, residents at a higher level, attending faculty, nurses, or patients. At the end of the survey, residents could write comments and more detailed descriptions of any incidents or events.

Sample

A simple, random, 10% sample (N=1773) of all second-year residents was drawn from the American Medical Association's medical research and information database and asked to comment on their internship year. The population from which this sample was drawn included all second-year residents from every residency program in the United States that answered the 1990 Survey of

Graduate Medical Education programs. Responses to this survey were received from 83% of residency programs.¹⁷

After pilot testing and revision, the final questionnaire was mailed in January 1991 to all residents selected for the sample, along with a letter of explanation, a return envelope, and a postcard with the resident's name and address typed on it. The month of January was selected to begin the survey because it was the earliest that the names of residents could be obtained from the medical research and information database. Responses to this survey were anonymous. Residents were asked to return the postcard and the envelope containing the completed questionnaire separately. This enabled the investigators to identify those subjects who had responded to the questionnaire, while maintaining their anonymity. Residents were also instructed to return the postcard if they declined to participate. All members of the sample who did not return the postcard were mailed a follow-up survey package on 2 subsequent occasions. As a final step, efforts were made to contact nonresponding residents by telephone.

The resulting data were analyzed using standard statistical packages to derive general frequencies and cross-tabulations. Correlates of overall satisfaction with residency experience were defined by using Pearson correlations and stepwise regression techniques.

RESULTS

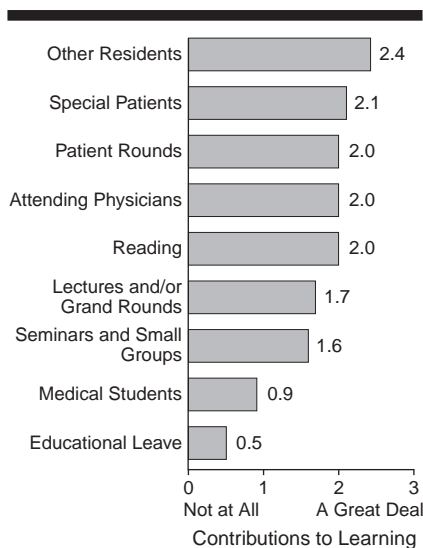
Response Rate

The final number of surveys returned was 1277, a 72% response rate, of which 1274 contained complete information. With the exception of a modest overreporting of graduates from United States Liaison Committee on Medical Education (US-LCME) accredited medical schools and nonminority residents, the sample demonstrated a close approximation of the specialty distribution for that year.¹⁷

How Do Residents Say They Learn?

Residents were asked to rate the degree to which a number of factors contributed to their learning experience using a 4-point scale (0 [not at all] to 3 [a great deal]). Residents reported (Figure) that the highest contribution to their learning came from other residents (2.3), with special patients ranked second (2.1). Attending physicians, patient rounds, and reading were all tied at about 2.0. Medical students (0.9) and educational leave (0.5) were rated lower.

Time spent with attending physicians averaged about 2.49 hours a day, but showed wide variations within the sample (SD, 2.3 hours). Approximately 30% of the



Second-year residents' ratings of what contributed to their learning during an internship year.

respondents reported spending 1 hour or less per day with an attending physician, while 19% claimed 3 or more hours. Men and women reported about the same amount of time each day with attending physicians (2.5 vs 2.4 hours, respectively). Time with attending physicians per day varied by specialty ($P < .001$), with residents in surgery (3.1 hours), family practice (3.0 hours), and hospital support specialties, which include the departments of radiology, pathology, and physical rehabilitation (3.0 hours), reporting the most time, while transitional-year residents (2.3 hours) and residents in psychiatry (1.9 hours) averaged the least.

Satisfaction With the First Year of Residency

Overall, respondents reported a moderate level of satisfaction with their first year of residency, with an average rating of 4.56 (good) on a scale of 1 (poor) to 7 (excellent) (SD, 1.28). Approximately 24% of the respondents reported ratings of 5 or above, while just under 20% noted ratings of 3 or below. Looking at satisfaction with specific aspects of the internship year, residents seem most satisfied with what they learned (4.8) and their relationships within the hospital (4.8). Residents' relationships with their own friends and family outside of the hospital (3.9) and personnel support services (3.6) were rated as the least satisfying aspects of the experience. Once again, there was substantial variation across the sample. Residents in the 3 primary care specialties expressed the most overall satisfaction with their first postgraduate year experience (4.6-4.7), while those in psychiatry were least satisfied (4.2) (one-way analysis of variance,

Table 1.—Residents Reporting Some Perceived Mistreatment

Mistreatment	Residents (N = 1274), %			
	At Least Once		≥3 Times	
	Frequency	SE	Frequency	SE
Experienced yourself				
Belittle or humiliate	86.4	0.96	53.1	1.40
Take credit for your work	50.1	1.40	21.4	1.15
Tasks for punishment	39.8	1.37	16.3	1.03
Slap, push, kick, or hit	38.5	1.36	12.9	0.94
Sexual harassment	30.4	1.29	15.9	1.02
Threaten reputation or career	31.6	1.30	11.9	0.91
Racial and/or ethnic discrimination	25.4	1.22	12.0	0.91
Observed others				
Falsifying patient records	45.8	1.40	19.1	1.10
Mistreating patients	70.4	1.28	38.5	1.36
Working in impaired condition	69.6	1.29	44.3	1.39
Source*				
Medical students	24.0	1.20	5.8	0.65
Residents at same level	43.5	1.39	14.4	0.98
Residents at higher level	77.3	1.17	41.5	1.38
Attending faculty	80.8	1.10	43.6	1.39
Nurses	61.5	1.36	32.4	1.31
Patients	63.3	1.35	30.1	1.29
Total reporting some mistreatment	93.0†	0.71	62.9‡	1.35

*Includes reports for "experienced yourself" only.

†Residents reporting at least 1 instance of perceived mistreatment from any source during the first postgraduate year.

‡Residents reporting 3 or more instances of perceived mistreatment from any source during the first postgraduate year.

$P < .01$). Men reported significantly more overall satisfaction (4.6) than did women (4.4) (Student *t* test, $P < .001$). Gender differences were most pronounced in family practice and surgery.

Sleep Deprivation

Asked how frequently they had experienced sleep deprivation during their first year, residents gave a modal response of 3 on a scale of 0 (never) to 4 (almost daily). Over 10% indicated that sleep deprivation was an almost daily occurrence. Residents reported an average of 37.6 hours (SD, 9.88) as the largest number of hours without sleep during their first postgraduate year. During a typical work week, residents reported that they spent an average of 56.9 hours on call in the hospital, although here again there were wide variations in response (SD, 30.19). Roughly 25% of the residents reported being on call in the hospital over 80 hours per week, while an equal number were on call less than 35 hours per week. Only 15.2% of the sample claimed to have been on call outside of the hospital. As expected, residents in surgery reported the highest average hours on call (72.5 hours), while psychiatry (37.3 hours) and hospital support specialties (36.2 hours) residents reported the lowest (one-way analysis of variance, $P < .001$).

Types of Perceived Mistreatment

Overall, 1185 residents, or 93% of the sample, reported at least 1 experience of

perceived mistreatment during the internship year (Table 1). Of the specific types reported, the highest percentage was recorded for public humiliation or belittlement. Residents also indicated that this was the most distressing type of mistreatment. Physical abuse—being slapped, pushed, kicked, or hit—was less prevalent and occurred mostly at the hands of patients. Sources of perceived mistreatment correspond to the medical hierarchy, with attending faculty and residents at a higher level cited most often, followed by nurses and patients.

While simplifying data presentation, overall statistics stated in terms of "at least once" give little indication of the frequency of these experiences and can be misleading if mistreatment is reported as a single-time event. To provide a more conservative metric, the third column of Table 1 presents the percentage of the respondents indicating that they experienced each type of mistreatment on more than 3 occasions (a combination of the sometimes and often response categories). Using this criterion, 53% of respondents reported that they were belittled or humiliated by more senior residents, while just over 21% reported someone taking credit for their work. Being given "tasks for punishment," "being slapped, pushed, kicked or hit," and having someone "threatening your reputation or career" were reported as a more frequent occurrence by over 10% of the responding residents.

Observations of Unprofessional and Unethical Conduct

Over 45% of the respondents reported having personally observed other persons falsifying medical records on at least 1 occasion, with just under 20% characterizing this as more than a rare event. Nurses, followed by fellow residents, were cited most frequently as engaging in this falsification.

Almost three quarters of all respondents reported having observed what they considered to be mistreatment of patients by other residents, attending faculty, and nurses on at least 1 occasion, with almost 40% characterizing this as a more frequent event. Here again, nurses were the group most often cited, with over 30% of residents saying they had seen this behavior on more than 1 occasion. Marginal comments by respondents, some quite lengthy, described examples of this type of mistreatment ranging from not fully informing a patient prior to a procedure, to using comatose patients to demonstrate deep-pain reflexes to students.

Overall, 70% of the residents reported having personally observed a colleague working in an impaired condition. Most often these colleagues were other residents at either the same or at a higher level. Over 14% of respondents said that this happened often (5 or more times). Lack of sleep (56.9%) was by far the most prominent cause for observations of impaired behavior among others, followed by working too hurriedly (40.1%), incompetence (37.0%), and emotional problems (36.8%). Alcohol use as a reason for impairment was reported by less than 15% of respondents, while prescription drug abuse and illegal drug use were cited by only 5.0%.

Sexual Harassment

Overall, 30% of the residents reported having experienced at least 1 episode that they considered to be sexual harassment or discrimination during their first year of training (Table 1). Women (63.0%) claimed to have experienced such events significantly more frequently than did men (15.3%) (Student *t* test, $P < .001$). For women residents, the most frequent sources of such behavior included attending faculty, patients, and residents at a higher level, in that order. Nurses, patients, and faculty were more frequently implicated by reporting men. For women, such harassment or discrimination was most commonly reported as sexual slurs or comments (35.8%), followed by favoritism (23.7%), sexual advances (16.4%), denied opportunities (15.9%), and poor evaluations (13.1%). The exchange of rewards for

sexual favors was rare (1.5%). For women, reports of sexual harassment or discrimination also varied by specialty, with the highest prevalence being reported in the transitional year (81.5%) and in the specialty of surgery (80.7%). The lowest percentages were recorded for the hospital support specialties (58.3%) and pediatrics (47.8%).

Correlates of Satisfaction With the First Year of Residency

Pearson correlation coefficients comparing overall satisfaction with the first-year residency experience reveal statistically significant positive relationships ($P < .001$) with the degree to which attending physicians (+.46), patient rounds (+.25), lectures (+.27), and seminars (+.27) contributed to the interns' learning. Note that, although residents say that they learn the most from their peers (Figure), it is contact with the attending physicians that is most predictive of satisfaction. Statistically significant negative relationships ($P < .001$) were found between levels of reported mistreatment and satisfaction ratings, age of respondent (-.15, older residents were less satisfied), and frequency of sleep deprivation (-.20). The strongest negative correlations were found with reports of being belittled or humiliated (-.30), being assigned tasks for punishment (-.29), and threats to the resident's career (-.27).

To assess the joint impact of these factors, all were entered into a stepwise regression analysis designed to maximize prediction of overall satisfaction ratings. The resulting model, including only those factors significant at the .01 level, has an R^2 of .36 and is displayed in Table 2. This model includes 11 separate variables. Setting aside the tendency for older residents to report less satisfaction, the remaining 10 variables can be grouped into 2 clusters: positive factors of the residency experience that are seen as enhancing learning (attending physician, patient rounds, seminars, other residents, and medical students) and negative factors (experiences of belittlement and humiliation, threats to the resident's career, being assigned tasks for punishment, and frequency of sleep deprivation). Respondents who reported having had more assistance in learning and fewer instances of mistreatment at the residency site report more overall satisfaction with their residency experience.

An examination of a plot of the residuals from this model against overall satisfaction rating shows no obvious outliers and no indication of heteroscedasticity, implying that the derived model predicts equally well across all levels of satisfaction. A comparison of residuals across medical specialties suggests that the

Table 2.—Regression Model for Predicting Reported Overall Satisfaction With First Postgraduate Year

Variable in Regression Equation*	β †	P Value
Demographic factors		
Age of resident	-.059	<.01
Positive factors		
Degree to which variable contributed to learning		
Attending physicians	+.318	<.001
Patient rounds	+.104	<.001
Seminars	+.118	<.001
Other residents	+.113	<.001
Medical students	+.068	<.005
Average time per week with attending physicians	+.091	<.001
Negative factors		
Belittlement or humiliation	-.156	<.001
Threats to residents' career	-.059	<.003
Being assigned tasks for punishment	-.080	<.01
Frequency of sleep deprivation	-.063	<.001

*Variables selected by stepwise regression. Presented β s computed by ordinary least squares regression with all variables entered simultaneously. Model's $R^2 = 0.36$.

†A positive β indicates a proportional relationship; a negative β indicates an inverse relationship.

model is most effective in predicting satisfaction for internal medicine, family practice, and the hospital support specialties, and is least effective in predicting satisfaction for residents in psychiatry.

COMMENT

The data reported here constitute the first national sampling of residents' self-reports of their experiences during, and satisfaction with, their internship year. Overall, they reveal a moderate level of satisfaction with their learning and work experience, but with substantial variation across both individuals and specialties. Nearly 20% of respondents rated their experiences as less than satisfactory. Almost all of the first postgraduate year residents reported that they personally had experienced at least 1 incident of mistreatment or sexual harassment, most commonly verbal attacks, and mainly from those in positions of authority. They also reported a substantial number of personal observations of falsification of medical records, mistreatment of patients, others taking credit for their work, and colleagues working in an impaired condition. Statistical analyses suggest that overall satisfaction with the internship year is the result of the degree to which sources of learning are available and perceived mistreatment is minimized. Supporting the validity of these findings is the large size and distribution of the sample, as well as the relatively high response rate from this busy group of subjects.

These data have their limitations. First, residents' responses are self-reports, not controlled observations of behavior. The self-serving biases of this

type of retrospective report are well known. The high rates of perceived mistreatment reported by this sample may suggest that rather than reporting on mistreatment as such, residents were using the questionnaire to express grievances far beyond the intended scope of the questions asked. Viewed in this manner, these data are not an indication of how residents are treated, but are more of a gauge of residents' general level of satisfaction or dissatisfaction with their experience.

On the other hand, the responses on this survey do represent the residents' perceptions and, as such, constitute their experiences. To quote Thomas and Znaniecki,¹⁸ "That which we believe to be real is real in its consequences." Whether mistreatment is actual or merely perceived, the relatively high level of reported negative experiences is significant in and of itself. We take these perceptions as reported by our resident respondents as real. The reasons for these reported perceptions are beyond the scope of this type of cross-sectional survey. Other than personal interviews, it is difficult to conceive of any other method of securing residents' responses, especially from such a large sample.

Second, some time has passed since these data were collected. However, although the past few years have seen increased discussion regarding resident working conditions, little published evidence exists to show that the residency experience in the United States has substantially changed. Certainly, residents continue to voice their concerns about working conditions within their professional organizations. In addition, 2 Canadian studies, reporting data collected in 1993 and 1994, found that residents reported experiences of discrimination and abuse at rates similar to those in our data.^{19,20} If the experience of residents in Canada is any parallel, the issues we report here continue to be a part of residents' perceptions.

The findings of this study bear a remarkable similarity to the results reported in our earlier study of perceived mistreatment among medical students.¹¹ With the exception of lower overall reports of sexual harassment, most of the figures are within 1 or 2 percentage points of those reported by senior medical students. We find this level of consistency remarkable. Clearly, medical students do not come to perceive their environment as more benign with the transition into residency. Since the residents in the sample came from many different programs in many parts of the country, the levels of reported mistreatment and sexual harassment appear to be a relative constant. The perception

that some level of mistreatment is a part of residency training is widespread and must be regarded as the norm rather than the exception.

The first year of residency is a time for learning as well as service, and respondents report that a wide variety of factors, both formal and informal, contribute to their learning experience. Although time with attending physicians and formal instruction constitute the basic institutional structure of their ongoing training, residents perceive that much of what they learn during their internship comes from their peers and special patients rather than in more formal instructional settings.

The reports of experiences of sexual harassment and discrimination expand our picture of these behaviors, corroborating the more limited studies of the past.⁹⁻¹⁴ A sizable proportion of female residents, and even some male residents, report experiences of harassment and mistreatment tied to their gender. Most of this is linked to verbally expressed attitudes of others and appears to fall short of what is legally actionable. Still, the elevated prevalence of such behaviors at a time when women constitute an ever increasing proportion of physicians is cause for concern.

The surprisingly high figures of observations of colleagues engaging in questionable ethical or professional behavior or working in impaired conditions highlights an added layer of tension faced by new residents. The level of misconduct, reported by participants who are in the best position to know, is disturbing. We hasten to add that the data do not say that all or even most hospital personnel engage in the types of conduct cited. On the other hand, they are pervasive enough within the experience of the residents in this survey to merit closer scrutiny.

The reports of these residents suggest that current efforts to combat physician impairment may be misplaced in emphasis. While the predominant view, and most intervention programs, hold that substance abuse is the major culprit, these data strongly suggest that sleep deprivation, working too hurriedly, emotional problems, and incompetence account for the bulk of the incidents cited. The silver lining here is that all 4 of these reasons are potentially remediable.

While this survey allows for generalizations about residency experiences across the country, it also highlights the wide variability in those experiences. Consistent with the literature, surgery and obstetrics/gynecology consistently demanded the most time and effort from their residents, as well as reporting the

highest levels of sexual harassment, discrimination, and other types of perceived mistreatment. To balance this, however, time with attending physicians was among the highest for surgery and obstetrics/gynecology when compared with the other medical specialties. Alongside differences across specialties, it is also important to note that even within specialties there is considerable variation. What is true for any 1 residency program cannot be said to be true for all.

Using data from all specialties, our analyses examining factors that predict satisfaction with the first year of residency suggest that satisfaction is, at least in part, the result of a simple ratio: maximizing learning while minimizing perceived mistreatment. Anything that enhances residents' sense of learning magnifies the positive benefits of their situation.²¹ At the same time, anything that decreases a sense of being mistreated will lessen the felt burden of the experience. Satisfaction with residency is the result of the ratio between positive learning and negative work experiences: a reward-punishment ratio. If the learning is high enough, residents are willing to tolerate a certain amount of discomfort, whether stemming from the educational environment in general or from specific individuals within it.²² However, if the level of discomfort is too high or the amount learned declines, frustration rises and satisfaction wanes.

Our data indicate that some medical specialties demand more time and effort and appear on the surface to provide less emotionally supportive environments. Yet, in spite of these apparent deprivations, reported satisfaction is not notably lower when compared with other specialties. The notion of a trade-off between learning and perceptions of mistreatment helps to explain this seeming paradox. If residents feel mistreated during their contact with their superiors, but feel that they learn from this contact, they may well discount the short-term negatives of the experience and focus on the long-term benefits of the education they receive. We suspect, but have no data to support, that for some specialties, increased time with attending physicians and the opportunity to learn from resident colleagues and special patients offsets the greater demands of training in these specialties. Although the residents in this survey reported learning the most from their fellow residents, it is possible that they may value the education they receive from attending physicians more.^{21,22} New Medicare regulations governing billing practices in the clinical teaching environment may serve indirectly to increase the amount of contact time between residents and at-

tending physicians and thereby increase overall resident satisfaction.

This is not to suggest that residents' feelings of being mistreated should simply be ignored. Satisfaction can be enhanced by either a perceived increase in learning or a reduction in perceived mistreatment of all types. Residency directors who wish to improve the felt satisfaction among the resident population should consider a 2-pronged approach. First, they should strive to increase the learning opportunities for residents. This can be accomplished by a combination of things: increasing the accessibility of residents to attending faculty, facilitating contacts among residents, or providing time for independent reading. Second, residency directors must make clear the standards of conduct for all professional personnel and intervene when conduct falls short of these standards. Although the discomforts of residency cannot be eliminated, a conscious effort

at reducing the intern's sense of being mistreated should enhance residents' satisfactions.

Despite the discomforts noted here and in the literature, the first year of graduate medical education appears to provide a moderately satisfying learning and working experience for the large majority of residents. In this sense, the data confirm the memory of most physicians. The residency training experience does consistently produce physicians with a high level of professional commitment who provide quality patient care in spite of the pressures and stresses.²² The system works for the most part, but it is a system that exhibits some signs of strain. Of particular concern is what will happen to the role of the attending faculty in the future. Faced with the increasing burdens of accountability that come with medical service plans and managed care capitation arrangements, attending physicians may

well have less, not more time for their teaching function over the coming years. If this time diminishes too far, residents are likely to feel deprived of learning—the greatest reward of the training years. In this context we fear that feeling of mistreatment may rise and satisfaction will suffer.

This research has described in detail for the first time the experience of abuse (we prefer the term *perceived mistreatment*) in residents in the United States, and has demonstrated its close similarity to the pattern widely experienced by medical students. The ratio between this perceived mistreatment and the education acquired by residents is the crucial underpinning to residents' satisfaction. It is our hope that these findings will encourage residency review committees and individual program directors to take steps to meet the concerns expressed and to improve the learning and working environment of residents.

References

1. Alexander D, Monk JS, Jonas AP. Occupational stress, personal strain and coping among residents and faculty members. *Med Educ*. 1985;60:830-839.
2. Fox RE. The education, training and socialization of physicians: residency and practice. In: *The Sociology of Medicine: A Participant Observer's View*. Englewood Cliffs, NJ: Prentice Hall; 1995: 108-141.
3. Silberger AB, Thran SL, Marder WD. The changing environment of resident physicians. *Health Aff (Millwood)*. 1988;7(suppl):121-134.
4. Schwartz AJ, Black ER, Goldstein MG, Jozefowicz RF, Emmings FG. Levels and causes of stress among residents. *J Med Educ*. 1987;62:744-753.
5. Asken MJ, Raham DC. Resident performance and sleep deprivation: a review. *J Med Educ*. 1983; 58:382-388.
6. Samkoff JS, Jacques CH. A review of studies concerning the effects of sleep deprivation and fatigue on residents' performance. *Acad Med*. 1991;66:687-693.
7. Daugherty SR, Baldwin DC Jr. Sleep deprivation in senior medical students and first year residents. *Acad Med*. 1996;71:S93-S95.
8. Hafferty FW, Franks R. The hidden curriculum, ethics teaching and the structure of medical education. *Acad Med*. 1994;69:861-871.
9. Sheehan KH, Sheehan DV, White K, Leibowitz A, Baldwin DC Jr. A pilot study of medical student "abuse": student perceptions of mistreatment and misconduct in medical school. *JAMA*. 1990;263:533-537.
10. Silver HK, Glick AD. Medical student abuse: incidence, severity, and significance. *JAMA*. 1990; 263:527-532.
11. Baldwin DC Jr, Daugherty SR, Eckenfels EJ. Student perceptions of mistreatment and harassment during medical school: a survey of ten United States schools. *West J Med*. 1991;155:140-145.
12. Lubitz RM, Nguyen DD. Medical student abuse during third-year clerkships [Pulse]. *JAMA*. 1996; 275:414-416.
13. Komaromy M, Bindman AB, Haber RI, Sande MA. Sexual harassment during medical training. *N Engl J Med*. 1993;328:322-326.
14. Baldwin DC, Daugherty SR, Rowley B. Sexual harassment and discrimination among students and residents. *Acad Med*. 1996;71:S25-S27.
15. Badger LW, Chesebro MJ, Hartman JA. First year residency stress: sources and mediators. *Fam Pract Res J*. 1987;7:104-113.
16. Urbach JR, Levenson JL, Harbison JW. Perceptions of housestaff stress and dysfunction within the academic medical center. *Psychiatr Q*. 1989;60: 283-296.
17. Rowley BD, Baldwin DC Jr, McGuire MB. Selected characteristics of graduate medical education in the United States. *JAMA*. 1991;266:933-943.
18. Thomas WI, Znaniecki F. *The Polish Peasant in Europe and America*. Champaign: University of Illinois Press; 1995.
19. van Ineveld CH, Cook DJ, Kane SL, King G. Discrimination and abuse in internal medicine residency. *J Gen Intern Med*. 1996;11:401-405.
20. Cook DJ, Liutkus JF, Risdon CL, Griffith LE, Guyatt GH, Walter SD. Residents' experiences of abuse, discrimination and sexual harassment during residency training. *Can Med Assoc J*. 1996;154: 1657-1665.
21. Kendrick SB, Simmons JM, Richards BF, Roberge LP. Residents' perceptions of their teachers: facilitative behavior and the learning value of rotations. *Med Educ*. 1993;27:55-61.
22. Flynn TC. What makes internship so bad—and so good. *Pharos*. Spring 1986:7-8.