Stress and Burnout in Oncology

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This article identifies the professional stressors experienced by nurses, house staff, and medical oncologists and examines the effect of stress and personality attributes on burnout scores. A survey was conducted of 261 house

Introduction

Studies over the past decade have increasingly focused on the stress placed on health professionals and the negative consequences of that stress.[1] Often referred to as burnout, it has been defined by Maslach[2] and measured by its deleterious effects, such as emotional exhaustion, a sense of increased distance from patients with reduced empathy, and diminished sense of accomplishment at work.

As medical care becomes more technical and patient care more complex, the problems of burnout become increasingly more relevant to the physical and emotional well-being as well as the morale of the medical staff. Frequently, the effects of burnout influence staff turnover. Studies have also explored the factors that buffer stress. Interventions have been developed to reduce the stressors experienced by nurses[3-5] and doctors, particularly house staff.[6-8]

Within this context, nurses and doctors working in oncology are of particular interest. They must care for many critically ill and dying patients, be able to maintain highly technical and complex equipment, and confront the needs and questions of families. These responsibilities exact a heavy emotional toll.[9-11] When personal problems, poor support, or organizational difficulties are added, the psychological burden increases.[12]

Poor communication, interstaff conflict, and the intensity of the relationships with patients and families, coupled with the awareness that lives hang in the balance, make the oncology unit an environment in which burnout is apt to develop and staff are likely to experience both the emotional and physical symptoms of chronic stress.[13] Ethical dilemmas add a new burden.[14]

Yet oncology staff, both medical and nursing, not only cope, but usually have a high sense of accomplishment.[15,16] This seeming contradiction led to our interest in the factors that buffer the stressors of cancer care.

Study of Common Stressors

Using a model that was developed by Kobasa[17] and modified for the study of staff in a cancer center (Figure 1), we measured the common stressors related to work in oncology plus the stressors experienced in personal life. We also measured burnout symptoms and the physical and emotional symptoms often associated with stress, as well as buffers that might modulate the stressors.

We were interested in the impact of burnout on the ability of nurses and doctors to be sensitive to patients' needs and to deliver compassionate care. We conducted a year-long controlled trial of a psychosocial intervention administered to house staff and nurses in one of two similar medical oncology units at our cancer center. Staff who received enhanced psychosocial support and multidisciplinary rounds displayed a reduced level of stress, and patients in that unit reported that nurses and house staff were more sensitive to their needs.[6]

The study was extended to medical oncologists at our cancer center and to a cohort of oncologists who had trained at the center and had been in clinical practice for 5 to 15 years. These data provided an opportunity to compare physicians who had limited exposure to clinical care of cancer patients with those who had more time to adapt to its stressors.

The theoretical framework for our research was the stress paradigm,[18] Lazarus' cognitive appraisal theory of stress and coping,[19] and Kobasa's concept of the stress-buffering effect of a hardy personality style.[17] These concepts were adapted to the common stressors associated with working in oncology as well as the positive aspects of that work, such as perceived satisfaction with
supervisory and peer support. Our primary goals were to (1) identify the stressors, the consequences of stress, and the factors that moderate these consequences, and (2) compare data derived from nurses, house staff doing a rotation in an oncology unit from general hospitals, and mature oncologists working in the clinical and research aspects of oncology.

**Methods**

Prior to data collection, the study design was reviewed and approved by the institutional review board (IRB) at Memorial Sloan-Kettering Cancer Center. Cross-sectional survey data from nurses and house staff at the cancer center who were studied over a 2-year period are reported here. Nurses were approached personally and asked to fill out the questionnaire, either immediately or within a few days. House staff, comprised of medical interns and assistant residents from two general hospitals, provided similar data while on their 2- to 3-month rotation in the medical oncology unit. All oncologists in the Department of Medicine at the center were asked to respond to the same assessment via a mailed questionnaire. A similar request was made of medical oncologists who had received their specialty training at the center between 1975 and 1985.

Response rates were highest among nursing and house staff, with 83 of 85 nurses (98%) and 76 of 78 house staff (97%) responding. Of 74 medical oncologists on staff, 35 (47%) responded to the mailed survey, as did 67 (37%) of 200 oncologists who had trained at the center. This level of participation by physicians receiving the mailed survey was somewhat higher than that obtained by Whippen and Canellos (20% to 25%).[16] In total, 178 physicians and 83 nurses working full time with oncology patients participated.

The study assessment, the Staff Stress Inventory, was composed of reliable and valid instruments that were selected to test the components of our theoretical model. Scales assessing work stressors in oncology were developed in conjunction with the chief residents, who were familiar with the actual problems encountered daily, and nursing supervisors, who were experienced in oncology nursing. Personal stressors were derived from those known to be common among young professionals.[19]

**Measures**

**Outcome Variables**

- **Burnout**—This was measured by the Maslach Burnout Inventory.[2] The Inventory has three components: emotional exhaustion, depersonalization, and lack of personal accomplishment. The emotional exhaustion subscale assesses feelings of being emotionally overextended and exhausted by work. The depersonalization subscale measures diminished empathy, the presence of a cynical, impersonal, numb, distanced-from-patients feeling. The personal accomplishment subscale assesses feelings associated with professional competence and achievement. A high degree of burnout is reflected by high scores on the emotional exhaustion and depersonalization (diminished empathy) subscales and low scores on the personal accomplishment subscale.

  Staff were asked to indicate how often they experienced several job-related attitudes on a 7-point scale that ranged from 0 (never) to 6 (every day). For example, items on the scale included: I feel emotionally drained from my work or I deal very effectively with the problems of my patients. Each staff member received a score for emotional exhaustion, depersonalization, and personal accomplishment. Maslach and Jackson provided reliability and construct validity, as well as norms for nurses and physicians.[2] For our sample, internal consistency alphas were .73 for personal accomplishment, .76 for depersonalization, and .90 for emotional exhaustion.

- **Psychological Distress: Demoralization**—Negative consequences of a psychological nature were assessed by the demoralization scale of the Psychiatric Epidemiology Research Interview (PERI) schedule.[20] This instrument is actually a combination of scales developed to measure several dimensions of distress (not reaching the level of psychiatric disorders) in the general population.[21] The eight scales are for dread, anxiety, sadness, helplessness-holelessness, psychophysiological symptoms, perceived physical health, poor self-esteem, and confused thinking. Taken together, the eight demoralization scales have high internal consistency, reliability, and validity across sex, class, and ethnic groups in the general population.

  Sample demoralization scale items ask how much or how little certain characteristics are like the individual being interviewed. For example: Think of a person who is the worrying type. Is this person ______ and Think of a person who feels he has much to be proud of. Is this person ______. Sentences were completed with one of 5-point fixed alternative responses: 4 (very much like you); 3 (much like you); 2 (somewhat like you); 1 (very little like you); 0 (not at all like you). A single score for demoralization was the measure of psychological distress. The internal consistency alpha for psychological distress was .93.
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Data on formal religious affiliation were not collected.

On a 4-point scale from 1 (not at all) to 4 (extremely), respondents were asked a single question—"Do you consider yourself to be a religious person?"—to assess their perception of self as a religious person.

Methods of Relaxing

The Stress Questionnaire[27] was used to assess 16 actions that reduce stress, as well as the strategies for coping with stress used by Koocher.[28] Discussions with oncology staff led us to include additional coping techniques to the list (eg, watching television, getting involved in sports or a hobby, and "partying"). Participants indicated how frequently they employed each item on a 5-point scale ranging from 0 (never) to 4 (always). Items included seeking out others, taking medication, humor, exercise, and prayer.

Stressful Life Events

Work and personal events were measured by items from the PERI scale.[20] Each person indicated how often each of a series of events related to work, family, interpersonal, marital, financial, and social events had occurred within the past year. The events covered a range of undesirable (eg, divorce) and desirable (eg, moved to a better neighborhood), rare (eg, death of your child) and frequent (eg, worsening of health of a family member), uncontrollable (eg, death of a parent) and controllable (eg, engagement), and loss (eg, being the victim of a robbery) and gain (eg, outstanding achievement at work) events. Examples of the work-related stressful events developed with staff were "a patient your own age died," "discussed a do-not-resuscitate (DNR) order with the patient's family," and "serious argument with a colleague."

Data were calculated to produce four scores: (1) a work stress score that reflected the frequency of both positive and negative work events, (2) a personal stress score that reflected the frequency of marital, interpersonal, family, and social/residential events, (3) a positive stress score that reflected all positive events, and (4) a negative stress score that accounted for all negative events.

Perception of Self as a Religious Person

Respondents were asked a single question—"Do you consider yourself to be a religious person?"—on a 4-point scale from 1 (not at all) to 4 (extremely). Data on formal religious affiliation were not collected.
Demographic Information
Respondents were asked about gender, age, marital status, number of children, and number of years spent in clinical oncology and research. The data were examined through a series of correlations, analyses of variance, and stepwise multiple regression analyses. In the regression analyses, demographics were entered first, followed by the stressful life events. Mediating variables of peer support and hardy personality were entered last. This is consistent with other stress research in which one can examine the impact of buffer variables after the contribution of demographic variables and stressors.[29]

Results

Demographics
A total of 261 staff participated in the study: 76 house staff, 102 oncologists, and 83 nurses. Divided by gender, there were 120 women and 141 men. The mean age of all staff was between 31 and 35 years (5-year intervals were more representative of age in this sample), oncologists were older than the nurses and house staff. The majority of the nurses were women (95%); the majority of physicians were men (77%). Most oncologists were married and had children, whereas the majority of nurses and house staff were not married and did not have children (Table 1). All oncologists were engaged in patient care (35% to 52%), although those at the cancer center spent more time (up to 45%) in clinical investigation. For the data analyses, the medical oncologists at the center (n = 35) and the oncologists who had trained 5 to 15 years earlier at the center (n = 67) were combined into one group of oncologists (n = 102), because there were no differences in any of the demographic variables.

Burnout
Burnout was assessed by the three subscale scores for emotional exhaustion, depersonalization, and sense of accomplishment. The mean for the total sample on emotional exhaustion was 29.22. This score falls in the high range (> 17) and is higher than the norm of 22.19 reported in general medicine (Figure 2).[2] An analysis of variance found that house staff reported significantly higher levels of emotional exhaustion (mean = 34.03) than did all other groups (P < .0001). The stepwise multiple regression found that, for all participants, the best predictors of greater emotional exhaustion were (1) being a house officer, (2) having more negative work events, (3) using cigarettes, alcohol, or medication as a means of relaxing, and (4) having fewer hardiness traits (Multiple regression [R] = .58, Table 2).

For the diminished empathy (distancing from patients or depersonalization) scale, the total sample scored 10.48, which is above individuals in medicine and near the high score level (> 12). House staff had significantly higher scores (mean = 14.08) than oncologists (mean = 9.92), and nurses had the lowest score (mean = 7.84, P < .0001). A stepwise multiple regression analysis found that being a house officer or a nurse, having more negative work events, and using cigarettes, alcohol, or medication as a way of relaxing contributed most to feeling impersonal or less empathic toward patients (Multiple R = .53, Table 3).

The total sample had a mean of 36.22 for the sense of accomplishment scale, which is almost identical to the mean of 36.53 for the 1,104 individuals in medicine reported by Maslach and Jackson.[2] Nurses had a significantly lower sense of accomplishment (mean = 34.94, P < .008) than oncologists (mean = 38.03). There were also significant gender differences, with men (mean = 37.24) having a greater sense of accomplishment than women (mean = 35.04, P < .005). The stepwise regression analysis found that house staff and nurses had less of a sense of accomplishment. However, hardy personality traits were related to a greater sense of accomplishment (Multiple R = .41).

Psychological Distress: Demoralization
Psychological distress was measured by the presence of symptoms of demoralization (eg, poor self-esteem, anxiety). Women had significantly more demoralization symptoms than did men; means were 30.08 and 24.52, respectively (P < .002). House staff (mean = 30.10) had more demoralization symptoms than oncologists (mean = 21.63, P < .01). The score reported by Dohrenwend and colleagues[21] for those living in the area of the nuclear reactor incident at Three Mile Island was 35. This is only slightly greater than that of women and house staff.

In the stepwise multiple regression analysis, the most significant predictors of demoralization were (1) being a woman, (2) being a house officer, (3) having more family, social, and residence problems, (4) using fewer cathartic means of relaxing and using more cigarettes, alcohol, or medication, (5) having fewer hardy personality characteristics, and (6) feeling less peer support (Multiple R = .69, Table 4).
Physical Symptoms
An analysis of variance found that nurses reported more physical symptoms than physicians ($P < .02$), even when gender was controlled (Figure 3). A stepwise multiple regression revealed that those with more family and negative work events; those who used cigarettes, alcohol, or medication as a means of reducing stress; and those with less hardy personality traits were more likely to report a higher incidence of physical symptoms (Multiple R = .59).

Hardy Personality
When looking at the measures of a hardy personality, an analysis of variance found that physicians (mean = 110.6) scored significantly higher than nurses and house staff, who scored similarly at 105.05 and 105.74, respectively. These scores are comparable to those observed in studies of executives.[17]

Peer Cohesion
In terms of peer support, an analysis of variance found that oncologists perceived significantly less support from others than did nurses and house staff ($P < .0001$), with mean scores ranging from 13.85 to 15. Peer support significantly decreased psychological distress and demoralization symptoms for the entire sample ($P < .01$).

Religious Perception
We found that nurses perceived themselves as significantly more religious than the other groups ($P < .0001$), and oncologists perceived themselves as being more religious than house staff ($P < .0001$). Both findings proved valid when age and gender were controlled. One of the most unexpected findings was that staff who viewed themselves as quite a bit to extremely religious had significantly lower scores on diminished empathy, or depersonalization (mean = 8.69), than those who perceived themselves as not at all religious (mean = 12.41, $P < .002$). The same relationship was found in the significantly lower emotional exhaustion scores for those who considered themselves quite a bit to extremely religious (mean = 26.62) vs those who perceived themselves as not at all religious (mean = 31.37, $P < .04$, Figure 4).

Methods of Relaxing
Table 5 shows that the four most frequently used relaxation methods (talking with someone you know, eating/drinking coffee, watching television, and using humor) were consistent across all three groups (nurses, house staff, and oncologists). Also, the methods least used to reduce stress were largely similar in all groups, ie, taking prescribed medication, smoking cigarettes, drinking alcohol, using relaxation activities, and prayer/meditation. The possible range of scores for stress reduction was 0 to 64, with an actual range for this sample of 0 to 48.

Discussion
House staff, rotating from medical internship and residency for 1 to 3 months in a medical oncology unit, experienced the highest rates of emotional exhaustion, diminished empathy, and psychological distress. Among them, the female house staff, while smaller in number (23 out of 76), showed greater demoralization and diminished sense of accomplishment. Nurses followed house staff with the highest level of emotional exhaustion and psychological distress. Both house staff and nurses have daily contact with the patients and perform work that requires the greatest physical effort. They deal with the daily details of care and the implementation of orders, and often must buffer conflicts or differences among the oncologist, the patient, and the family. Thus, it is not surprising that they had the highest levels of burnout.

Marked Differences in Sense of Accomplishment
The nurses' sense of accomplishment was much lower than that of house staff and oncologists. These lower scores may indicate that nurses feel more overwhelmed by the enormity of the tasks of patient care, or less well supported by the hospital structure to meet patients' needs, particularly patients' psychological needs.[30]

Both nurses and house staff must carry out the orders of the oncologist who determines the treatment, often by a complex protocol. They often complain of doing the “chores” and not having information about the bigger, more interesting, picture. They also see patients with cancer when they are most ill in the hospital and may care for many who are hospitalized during the terminal stages of their illness. They often do not have the reward of seeing those who recover and return only to the clinics for follow-up. This leads to a sense of futility about cancer treatment and anger and cynicism about their limited roles in that treatment. The complaint of feeling disenfranchised, yet overworked, contributes to the negative view. The sense that they are “lowest on the totem pole” reinforces this negativity.
It is noteworthy that the female house staff showed the greatest degree of demoralization and the least sense of accomplishment within this highly stressed group. The reasons for this are unclear. One could speculate that because their numbers are smaller, they experience less peer support from male counterparts. They may assume more responsibility for unwell family members and may have experienced greater personal stressors in this regard, as daughters and mothers, than the male house staff. Whatever the reason, these facts demand further study, especially in light of the increasing numbers of female house staff.

In contrast, practicing oncologists had a greater sense of personal accomplishment, perhaps based on an understanding of the overall treatment plan of patients, the responsibility for carrying it out, and rewarding interactions with patients and families. Indeed, D’Amelio[31] reported that the most rewarding aspects of [oncologists’] practice came from caring for their patients: developing relationships with them and their families&ldots;

Most oncologists also were engaged in clinical investigations to a greater or lesser extent, which granted them a perspective on cancer treatment that encompassed potentially improved care for future patients. In addition, oncologists with years of experience in dealing with the stressors of daily oncologic practice have likely found a personal coping style that is adaptive. Those who are unable to adapt may leave the field earlier. There are few data on those who leave the field of oncology and why. This would be an important group for further study.

**Negative Work Events and Physical Complaints**

The stressor that contributed most to burnout and demoralization was categorized as negative work events[eg, a high number of patient deaths or struggling over a DNR decision with another colleague or family member. These issues, often with ethical overtones, are confronted on a daily basis and are intensely emotional and frustrating. When a large number of negative events occur, the staff member becomes cynical, overwhelmed, and emotionally drained. Add personal stressors to this scenario, such as cancer in a family member or being the victim of an assault, and the result is psychological distress and physical symptoms.

Working in a stressful environment while coping with cancer in a family member results in greater demoralization and enhances concern about minor symptoms that lead to fears of cancer. The normal hypochondriasis of working with cancer is often the source of humorous exchanges, but nevertheless, there is a heightened fear and awareness that minor symptoms are often the beginning of cancer, as staff have seen in patient after patient.

Our data confirmed the findings of other studies that nurses experienced more physical complaints (headaches, tiredness, back pain) than either group of physicians.[12] We found that both family stressors (such as having a family member hospitalized) and negative work stressors contributed to the reporting of more physical complaints. One reason that nurses may experience more physical symptoms is because they empathize more strongly with patients and do not use emotional distancing (diminished empathy) as a defense.[32] Individuals who choose to pursue oncology nursing generally have personalities marked by great altruism and a responsibility to maintain a commitment even at high personal cost.

Similar to Whippen and Canellos,[16] we found that using personal time—for example, talking to someone you know or spending days away from the stress of oncology patients—tended to decrease the sense of burnout and was one of the most frequently used coping strategies by all three groups. Another study by Halperin and colleagues[33] found that the anxiety and depression levels of physician members of the North Carolina Oncology Society were as high as those of the oncology patients. The primary stress-reduction techniques used were being part of an effective health-care team, believing in their own competence, and spending a brief time away from the office.

**The Hardy Personality**

In keeping with findings associated with other stressful occupations,[17] a hardy personality in oncology staff is related to less emotional exhaustion, enhanced personal accomplishment, fewer stress-related physical symptoms, and less demoralization. Individuals who have a hardy personality feel a commitment to themselves and to their work, and feel in control of what occurs. They also have a sense of challenge in the face of a stressful medical environment. This way of looking at and expressing themselves helps staff feel that what they are doing is rewarding.

In terms of ways in which house staff, nurses, and oncologists reduce stress, the most salient methods are talking to someone you know, using humor, eating, drinking coffee, and watching television. Taking time to share their concerns with others and receiving support are helpful in ameliorating the effects of stress. Organized support meetings held on a regular basis work well with nurses and house staff.[34] In addition, the more social or home-related the stressors, the more stress-reducing activities were undertaken. Again, verbalizing concerns with friends and colleagues,
using humor, and going out to dinner gave staff an opportunity to get feedback about how to approach problems. Watching television may be a good escape mechanism from the daily hassles of the cancer center.

An unexpected finding based on the question “Do you consider yourself to be a religious person?” was the difference between those who responded with “not at all” vs “quite a bit to extremely.” Those who viewed themselves as more religious reported lower levels of both emotional exhaustion and diminished empathy for patients. This may be the result of a more existential perception of the care of critically ill and dying patients. These individuals may attach a different meaning to life and death, which provides them with greater satisfaction and reward from palliative care.

This possibility is supported by the observation that many individuals who work in hospice care have strong religious ties. Similarly, patients with strong religious or spiritual beliefs rely on these tenets as they face cancer and death. Parents who have lost a child to cancer adapt better to their bereavement when they can attach meaning to their loss.[35]

Conclusions

In summary, despite the stressors, the rewards for most staff working in a cancer setting outweigh the adverse consequences. In fact, those who had been in the field of oncology the longest had the least distress and greatest satisfaction from their work setting. Most oncology professionals find satisfaction in a commitment to patients and their care, irrespective of their clinical outcome. This was evidenced by the high rate of personal accomplishment in our sample. In fact, visitors are often struck by the good morale and “esprit” in a staff working under stressful conditions. While we had no measure of this, many observations support the fact that staff “feels special” by doing a hard task well. With gallows humor abounding, much like that well expressed in the television series M*A*S*H, a strong sense of camaraderie and “specialness” contributes greatly to job satisfaction.

The fact that negative work experiences resulted in burnout, psychological distress, and increased physical symptoms, suggests that there is, however, a need for attention to prevent these adverse symptoms in staff. Cancer centers must explore means of enhancing peer support and of reducing work stress in staff. The gain will be experienced at a personal level by staff and at an institutional level by enhanced morale. Most importantly, patients will encounter staff who are emotionally equipped to communicate and provide support.

References:


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