Stress levels in nursing staff working in oncology

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Summary
Care of cancer patients may be a source of considerable stress. As part of a large scale longitudinal study of the interaction of biological, psychological and environmental factors in determining patient outcome, the mental and physical health status of 37 members of the nursing staff of a cancer hospital was examined. The study identifies risk factors for stress, professional ‘burn-out’ and psychiatric morbidity. An assessment questionnaire also examined work time, work organization, relationships with colleagues, identification of stressful situations, and treatment of pain. Each subject completed three scales designed to measure stress and psychiatric morbidity: the Nursing Stress Scale, the Maslach Burnout Inventory and the General Health Questionnaire. Item analysis suggested that stress is primarily related to inadequate training, lack of time to deal with the psychological component of care giving especially terminal care, and relationship difficulties with other medical staff. Multiple analysis of correspondence indicated that in the face of stress, risk factors for professional burnout are high psychiatric symptomatology, lack of information at the time of diagnosis, poor perceived health, relationship difficulties with patients and their families, and work uncertainties. Copyright © 2001 John Wiley & Sons, Ltd.

Key Words
stress; neoplasm; oncology; nursing staff; communication; health caregivers; instruments; burnout; terminal care

Introduction
The role of psychological and psychiatric factors in influencing prognosis in cancer patients is increasingly well documented.1 It is now generally recognized that the mental state of caregivers may also have a significant interactive effect on patient and caregiver health.2–4 In the case of cancer the distressing nature of the disease, its treatment, and its fluctuating course make the patient particularly vulnerable to negative external environmental effects.5 The responsibilities of nursing staff in oncology units6 involves the management of complex interacting pathologies with a poor prognosis, the administration of treatments with adverse side-effects to patients commonly in pain, mutilated and afraid. Additionally small errors in patient management in this group may have catastrophic consequences.7 Certain features of the disease are perceived as being particularly anxiety-provoking to both patient and professional caregiver; notably the communication of the diagnosis and prognosis,8,9 perception of patient mood and everyday functioning,10 pain and suffering,11

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and the administration of painful, debilitating and disfiguring treatments.12

A repeated exposure to stress regarded as a feeling of being threatened by a potentially harmful situation13 is recognized to diminish the adaptive capacities of the individual, leading within the work situation to ‘burnout’.14,15 Unlike working environment pathologies related to identified risk factors such as asbestos, the effects of stress are generally non-specific and may affect both physical and mental health.16

A large-scale longitudinal study of the interaction of biological, psychological and environmental factors in determining patient outcome is currently being undertaken within a specialist cancer hospital in Montpellier. The present study concerns one component of this project: a description of the mental and physical health status of the nursing staff, and the identification of risk factors for stress, professional ‘burn-out’, and psychiatric morbidity.

The study examines in detail the responsibilities of nursing staff and the organization of working schedules, and juxtaposes these observations with information on mental and physical health status derived from validated assessment methods. The aim of the study is thus to determine the nature and causes of stress in nursing staff in oncology which may in turn have a potentially pathogenic interactive effect on patients.

Method

Thirty-seven members of the nursing staff of the Val d’Aurelle Hospital in Montpellier agreed to participate in a detailed investigation of their working conditions and physical and mental health status. These subjects represent 62.5 per cent of one inpatient care unit. Ninety-seven per cent of the subjects were female, and the mean age of the group was 35 years (SD = 7.08). Fifty-seven per cent of subjects were married or live with a partner. The mean number of years of service within the cancer centre was 11 years (SD = 8.05). Twenty-seven per cent of subjects worked part-time. The hospital is a regional specialist centre for the diagnosis and management of cancer, including terminal care. The nursing staff included in the study worked within the hospital wards and were involved in all aspects of hospital care except surgical intervention. Each subject completed a questionnaire17 relating to work time, work organisation, relationships with colleagues, identification of stressful situations, treatment of pain.

Additionally each subject completed three scales designed to measure stress and psychiatric morbidity. The Nursing Stress Scale (NSS)18 is a 34-item scale from which seven factors have been extracted; workload, psychological aspects related to death, support to both the subject and his family, support given by the professional hierarchy and colleagues, doubts concerning methods of treatment, conflicts with medical staff, conflicts with other members of nursing staff. The Maslasch Burnout Inventory (MBI)19 is a 22-item Likert scale covering the three dimensions of emotional exhaustion, withdrawal of personal investment, and lack of professional accomplishment. The General Health Questionnaire (GHQ)20,21 is now the most widely used instrument for detecting psychiatric disorder. It has been validated in many languages and in French.22 In this study the 12-item version was used. This version has already been used in non-patient populations such as nurses23 and in health care services.24 For all three scales a higher score is associated with increasing morbidity.

Results

Table 1 shows the percentage of subjects reporting problems in working conditions according to the general questionnaire.17 Over the past month nursing staff were present for an average of 2.2 deaths (range 0 to 15). Fifty-five per cent of nursing staff report satisfaction with the clinical management of the dying person. Eighty-nine per cent (30 out of 33) of nurses report assisting with

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>%</th>
<th>n</th>
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<tbody>
<tr>
<td>Lack of time both for tasks and patients</td>
<td>75</td>
<td>(27)</td>
</tr>
<tr>
<td>Insufficient organization of tasks</td>
<td>39</td>
<td>(13)</td>
</tr>
<tr>
<td>Not adequately informed of clinical decisions</td>
<td>73</td>
<td>(26)</td>
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<tr>
<td>Conflicts due to inadequate consultation concerning management of terminal phases</td>
<td>89</td>
<td>(32)</td>
</tr>
<tr>
<td>Sick leave over past year</td>
<td>36</td>
<td>(13)</td>
</tr>
<tr>
<td>Use of tranquilizers</td>
<td>6.5</td>
<td>(2)</td>
</tr>
<tr>
<td>Use of analgesic medication</td>
<td>16</td>
<td>(6)</td>
</tr>
<tr>
<td>Fear of ‘catching’ cancer</td>
<td>64</td>
<td>(23)</td>
</tr>
<tr>
<td>Repugnance with visual aspects of the disease</td>
<td>30</td>
<td>(11)</td>
</tr>
<tr>
<td>Disgust with odours</td>
<td>68</td>
<td>(25)</td>
</tr>
</tbody>
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procedures to hasten death. All nurses had participated in preparation of the body for the mortuary. Fifty per cent (nine out of 18) have difficulty in performing this task, with the obstruction of bodily orifices constituting a great source of distress for half of them. Seventy per cent report that approximately 1 week is necessary to recover from the experience. All nurses report being haunted by thoughts of the death on returning to their homes, with 52 per cent (14 out of 27) reporting unpleasant dreams. Eighty-one per cent (22 out of 27) felt it better to avoid attachment to the sick person.

The global score obtained on the NSS was 39.8 (SD = 8.87) which is less than the average of 41 reported by four anti-cancer centres in France. Item analysis suggests that the areas of 41 reported by four anti-cancer centres in D39.8 (SD = 8.09). The mean scores and standard deviations obtained on the MBI are, professional development, 36.14 (SD = 7.15); emotional exhaustion, 14.18 (SD = 6.9); depersonalization, 4.93 (SD = 4.09). Thirty-nine percent (13 out of 33) of subjects reported fatigue, 41 per cent (14 out of 33) backache and 58 per cent (21 out of 33) sleep problems.

Eight per cent (three out of 33) of nurses experienced depressive syndromes. Fifty-seven per cent (20 out of 33) of subjects reported being emotionally drained by their work, 21% (eight out of 33) felt that they had become ‘emotionally hardened’. Sixty-one per cent (22 out of 33) felt, however, that their work had a positive effect on patients. A strong sense of empathy was observed, with 97 per cent (33 out of 34) being able to easily understand what was being felt by patients, and 91 per cent (30 out of 33) feeling they were able to create a relaxed atmosphere. The need for on-going psychological support for nursing staff was reported by 97 per cent (33 out of 34) of nurses in response to an open-ended question relating to needs. Sixty-one per cent (15 out of 23) spontaneously spoke of the need for a special place to meet with the patient and his family, and 38 per cent (nine out of 23) of the need to offer lodging in the hospital for the family. The mean score on the GHQ was 1.3 (SD = 2.24). The most commonly scored items were: sleep loss due to thoughts about work (25 per cent, nine out of 36), the feeling of being constantly under stress (25 per cent, nine out of 36), feeling unhappy and depressed (20 per cent, seven out of 36), unable to find pleasure in everyday activities (14 per cent, five out of 36).

The relationship between the three scales and the questionnaire items was then examined. The small number of subjects precluded multivariate analysis and examination of the distribution of quantitative scores suggested non-normal distributions for the majority of variables. Non-parametric tests (Mann–Whitney, Wilcoxon, Kruskal–Wallis and Kendall’s correlation coefficient) were therefore used to compare non-normally distributed scores, and Spearman’s correlation coefficient for scores with a normal distribution. The significance of links between two quantitative variables was assessed by χ² with Fisher’s exact test in cases of low cell numbers. High scores on the NSS were significantly related to availability of child care (p = 0.029), working extra hours (p = 0.04), opportunity to discuss how the diagnosis is to be presented to the patient (p = 0.005), and not becoming attached to the patient (p = 0.026). A significant positive relationship between GHQ levels of psychiatric symptomatology was found with, feelings of failure in the face of disease reoccurrence (p = 0.003), poor perceived health (p = 0.046), lack of consultation before decisions are made concerning treatment, and fatigue (p = 0.01). A trend towards a positive relationship was also observed with the number of years working at the centre (p = 0.06).

High rates of burnout on the MBI were found to be related to the number of years working as a nurse (p = 0.001), inability to take a break (p = 0.03), experience of the nurse not being taken into account in clinical decision-making (p = 0.03), fear of cancer (p = 0.015), feelings of failure with the recurrence of the disease (p = 0.02) and not becoming attached to patients (p = 0.034).

In order to identify the group of variables which best differentiated staff at high and low risk of ‘burn-out’, a Multiple Analysis of Correspondence (MCA) was carried out on items in the general questionnaire and total and subscale scores for the NSS, MBI and GHQ. This model permits the analysis of complex data relating to a small number of subjects. The analysis was carried out on a total disaggregation table permitting the simultaneous consideration of qualitative and quantitative variables by division by class. Results from 30 nurses were analysed using this model. GHQ and MBI subscores were coded in two and three classes respectively, using cut-off points derived from the literature. The seven NSS subscores have been recoded into two categories around the mean. The variables from the general questionnaire have...
been recoded as qualitative items. The axes for the MCA analysis are derived from MBI scores, such that the variables GHQ, NSS and replies to the general questionnaire are introduced as ‘supplementary variables’. MCA analysis was performed using the PROC CORRESP procedure. Statistical analysis was carried out using SAS (SAS Institute Inc. version 6.12).

Figure 1 shows a clear separation of the nurses’ response on axis 1: the right hand side representing raised levels of emotional exhaustion, depersonalization and lack of professional development; the left side represents low levels of emotional exhaustion, depersonalization and strong feelings of professional achievement. High MBI scores are associated with a high GHQ (psychiatric symptomatology) score, feelings of failure, anger and impotence, a lack of information at the time of diagnosis, poor self-perceived health, relationship difficulties with patients and family, and uncertainty concerning work. This group of nurses is also characterized by missing data relating to death and assistance with death. Low MBI scores are on the other hand, associated with low GHQ scores, few feelings of failure, impotence or guilt, good self-perceived health, no fear of catching cancer, possessing information relating to the diagnosis, not having doubts about work, good relationships

Figure 1. Distribution of variables following multiple correspondence analysis. Only significant variables have been included on the graph. Items from the general questionnaire, notes are from 0 (Low) to 3 (High) M (Missing); fail, feeling of failure; anger, anger at relapse; guilt, guilt at relapse; impotence, impotence at relapse; discuss, how diagnosis is announced/prior discussion of prognosis; ann, satisfactory mean of announcing; inform, patient informed of his treatment; fear, fear of catching cancer; health, health perception; senior, time in profession; detach, detachment from patient. Items from the Nursing Stress Scale, L (Low); H (High); M (Missing); Nss 1, death and dying; Nss 2, conflict with physicians; Nss 3, inadequate preparation; Nss 4, lack of support; Nss 5, conflict with other nurses; Nss 6, workload; Nss 7, uncertainty concerning treatment. Items from the Maslasch Burnout Inventory, L (Low); Me (Medium); H (High); accompl, personal accomplishment; deperso, depersonalization; exhaus, emotional exhaustion. Items from the General Health Questionnaire (Ghq), L (Low); H (High); M (Missing).
with patients and their families, no difficulty in dealing with death and dying, and short working history (junior staff). This latter group tends to have missing data concerning conflict with other members of the medical staff.

Discussion

This small scale study of working conditions experienced by nurses in an oncology unit underlines the difficulties encountered by this group, and suggests the areas in which intervention might be possible to alleviate distress. The results obtained in this study on the NSS and MBI were found to be similar to those of a larger scale Parisian study. Questions relating to the organization of work suggest problems of time pressure which leave staff with inadequate opportunities to deal with the psychological component of caregiving and to face suffering. Nurses also feel inadequately trained for such a task with the result that there is a predominant feeling that interventions are often ineffective despite the conviction that they have the capacity to put patients at ease. Despite 61 per cent (22 out of 36) of the nurses felt their work had a positive effect on patients. This might be reflecting one of the positive outcomes in the stress process resulting from an adaptive form of action that people use to generate positive affect while enduring stress as suggested.

Fear of cancer and attitudes to death are issues which are of common concern. Persistent fear of developing cancer is expressed by 64 per cent (22 out of 36) of nurses. With regard to death, although 55 per cent (18 out of 33) of nurses are satisfied with the manner in which the terminal stages of the disease are managed, the experience is nevertheless clearly troubling. Exposure to the dying patient is not surprisingly very common with an average of 2.2 deaths per nurse during the preceding month (and up to 15). The absence of a doctor at the time of death is a common cause of stress, and distress is reported to persist in nurses for an average of 1 week after the death of a patient. Over one-third feel disgust when preparing bodies for the mortuary. Kubler-Ross has observed that the exclusion of death from everyday life authorizes and encourages avoidance and anxiety on the part of caregivers, which may further push patients towards solitude. This finding underlines the need to re-integrate death into everyday life as a part of life and not a clinical failure. Since death is inevitably a source of suffering, it is important that nurses should not be alone in caring for a dying patient and may speak about a death afterwards as part of a mourning process.

Symptoms of physical fatigue, backache and sleep disorder are seen to be common in nursing staff but the percentage reporting poor general health (44 per cent) is not significantly higher than rates reported in general practice in France (46.5 per cent). The burnout concept suggests a loss of performance due to long-term exposure to stressors. In this study it was found to be related to age as well as the number of working years, not having one’s professional opinion taken into account, feelings of failure, detachment from patients and, above all, fear of cancer. Tranquilizer use (6 per cent) is, however, lower than rates reported in general practice (40 per cent). Results obtained in the GHQ-12 may be compared with those obtained in a study of psychiatric morbidity in primary care which screened 2096 persons consulting in the Paris region as part of the World Health Organization’s international study of mental illness in general health care. High Concordance was found between GHQ-12 with a cut-off point of 2 and psychiatric interview based on ICD-10 diagnosis. The prevalence of psychiatric morbidity in the general practice population using the GHQ has been estimated at 31.2 per cent. This may be compared with the lower frequency of 19.4 per cent in our study using the same cut-off point. This tends to suggest high resistance to stress in this group. High GHQ scores were found to be positively related to length of time the nurse had been working in the hospital, appearing to support the observation of Butterworth et al. that stress is greatest amongst individuals having the highest levels of commitment. High GHQ scores are also seen to be related to poor perceived health and feelings of failure. The most commonly reported symptoms here are sleep disturbance leading to poor coping strategies, feeling of being constantly under pressure, unhappiness and depression. Eight per cent of nurses report a depressive syndrome which is lower than the rate of 13.7 per cent reported by the primary care survey of general practice. Given the small numbers used in this study (n = 37), the extent to which data expressed as percentages may be accepted as representative of larger samples is limited. Although we have seen that total scores on the scales used have given results comparable with those found elsewhere.

Despite the commonly held belief that professional caregivers should remain detached in order to preserve their own mental well-being, an attitude
of detachment was related to both high scores on the NSS and the GHQ. In part this may be explained by the fact that only staff who are psychologically healthy tend to develop intimate relationships with patients, however, the notion that this may be pathogenic is not upheld by the present study. Furthermore, a detached attitude risks being prejudicial to patients. It has been shown that nursing staff unable to respond to patients requests for support, focus on the clinical act, show unwillingness to talk or generally adopt avoidance behaviours. Moreover, there is a general concern about communication of clinical information, particularly relating to the terminal phase of management. Communication related to clinical decision-making between nurses and physicians is considered difficult by two-thirds of nurses as previously described. It has been shown that clinicians who feel insufficiently trained with regard to communication and management skills, experience higher levels of distress. Moreover managing conflicts in the workplace is highly stressful and time consuming. Our results also underline some specific points related to interpersonal communication with patients and families facing death which suggests a need for specific training in the communication of emotionally-laden concepts. Nurses need to find the right distance, so that they are protected on the one hand, and on the other are able to listen and avoid transmitting that indifference felt by patients which undermines their ‘well-being’. Taken together our results indicate a need for interventions at the level of staff organization and management as well as at the level of interpersonal communication among medical staff and with patients and families. In particular, we would like to stress the need for professional training in counselling, improvements in communication between nursing staff and physicians, and between specialist medical teams and the essential provision of a space suitable for the exchange of difficult and important information.

Conclusion

This detailed study of the causes of stress and professional burnout has highlighted a number of specific target areas for intervention. While it is difficult to estimate the prevalence of psychological problems in the wider nursing community from this small sample, it is nonetheless clear from the results that attention to factors such as support for those caring for the dying, provision of an appropriate place for sharing distressing information, better staff communication and enhancement of professional recognition, are likely to significantly reduce caregiver stress, and hence also stress in those they care for.

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