

Working conditions and high emotional exhaustion among hospital nurses

Condições de trabalho e exaustão emocional elevada em enfermeiros no ambiente hospitalar

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ABSTRACT | Background: Healthcare workers are exposed to many different occupational stressors, some of which are related to their working conditions. While the experience of stress seems to depend on individual perceptions, some characteristics of inpatient units might influence the occurrence of emotional exhaustion among nurses. **Objective:** The aim of the present study was to identify characteristics of inpatient units which might be associated with high levels of emotional exhaustion among healthcare workers, nurses in this case. **Methods:** We conducted the present cross-sectional, exploratory and descriptive study with 108 nurses (83.8% female; average age 33 years old) allocated to inpatients units (wards and intensive care) at a university hospital in Portugal. We administered the *Maslach Burnout Inventory–Human Services Survey* (MBI-HSS) emotional exhaustion subscale and collected the following data relative to the units to which the participants were allocated: 1) mortality rate; 2) number of deceased patients; 3) shortage of nurses compared to national standards; 4) occupancy rate; 5) proportion of elderly patients (>65 years old). **Results:** We found a positive relationship between high levels of emotional exhaustion among nurses and very high number of deceased patients ($p=0.012$), high fatality rate ($p=0.036$) and high proportion of elderly patients ($p=0.025$). **Conclusion:** Very high number of deceased patients, high proportion of elderly patients and high fatality rate in inpatients units were associated with high levels of emotional exhaustion among nurses. These findings suggest that characterizing the objective conditions of inpatient units seems to be an important aspect to be considered in psychosocial risk management programs.

Keywords | work; burnout, professional; healthcare workers; nurses.

RESUMO | Introdução: Os trabalhadores da saúde estão expostos a muitos estressores diferentes no ambiente de trabalho, alguns deles relacionados com as condições do trabalho dos mesmos. Enquanto a experiência do estresse parece depender da percepção individual, algumas características das unidades de internação podem influenciar a ocorrência de exaustão emocional entre os enfermeiros. O objetivo do presente estudo é identificar características das unidades de internação relacionadas à ocorrência de níveis elevados de exaustão emocional entre profissionais da saúde, a saber, enfermeiros. **Métodos:** O presente estudo transversal, exploratório e descritivo foi realizado com 108 enfermeiros (83,8% do sexo feminino e com média de 33 anos de idade) alocados em unidades de internação (enfermarias e terapia intensiva) de um hospital universitário em Portugal. Foi administrada a subescala de exaustão emocional do *Maslach Burnout Inventory–Human Services Survey* (MBI-HSS) e coletados os seguintes dados relativos às unidades de trabalho dos participantes: (1) índice de fatalidade, (2) número de óbitos, (3) déficit de enfermeiros por comparação às diretrizes nacionais, (4) taxa de ocupação e (5) proporção de pacientes idosos internados (>65 anos de idade). **Resultados:** Identificamos uma associação positiva entre níveis elevados de exaustão emocional e elevado número de óbitos ($p=0.012$), elevada taxa de mortalidade ($p=0.036$) e elevada proporção de pacientes idosos ($p=0.025$). **Conclusão:** O número de óbitos, elevada proporção de pacientes idosos e elevada taxa de fatalidade em unidades de internação apresentaram associação com níveis elevados de exaustão emocional entre enfermeiros. Estes achados sugerem que a caracterização das condições objetivas de trabalho em unidades de internação parece ser um aspecto importante a ser levado em conta em programas focados em riscos psicossociais.

Palavras-chave | trabalho; esgotamento profissional; pessoal da saúde; enfermeiros e enfermeiras.

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INTRODUCTION

According to the Health and Safety Executive, physicians and nurses are among the seven most stressful professional categories¹. Healthcare work, particularly in inpatient units, implies in daily exposure to multiple physical and psychological demands. When demands exceed resources, healthcare providers become stressed and are more likely to develop burnout in the future^{2,3}. Burnout results from a chronic response to overwhelming occupational stressors (demands) and is characterized by three dimensions: emotional exhaustion, depersonalization and lack of personal accomplishment^{4,5}. Emotional exhaustion is a state of excessive emotional stress attended by total energy depletion. While occupational stress might also be influenced by personal characteristics which interfere with the assessment of events as stressful, some working conditions seem to be stressful for most people⁶. Outcomes already analyzed for healthcare settings include:

- Patient outcomes, such as adverse events;
- Healthcare worker outcomes, such as job dissatisfaction, stress and burnout;
- Hospital outcomes, such as high turnover rates and absenteeism.

The amount of work perceived as overwork and time pressure were described in many studies as the major stressors for healthcare workers^{6,7} and are strongly associated with emotional exhaustion and low levels of job satisfaction⁸. However, overwork and time pressure are subjective aspects dependent on personal perceptions, which are difficult to measure as such.

Care provision to seriously ill patients might trigger severe stress reactions, particularly in the case of patients who refuse, or alternatively require continuous care. Stress might also be associated with insufficient preparation to deal with the emotional aspects of patients, as well as with the limits and uncertainties inherent to medicine, which sometimes result in feelings of failure among healthcare providers, nurses in particular^{9,10}. Despite these constraints that might contribute to reduce their well-being, healthcare workers usually appreciate what they do and feel that their jobs are both highly

meaningful and personally gratifying. Nevertheless, Occupational Health Departments (OHDs) should be alert, because on occasions healthcare workers might also feel deeply stressed, exhausted and burned out. Marôco et al.¹¹ analyzed burnout in a sample of 1,262 Portuguese nurses and 466 Portuguese physicians from all districts in Portugal and found moderate-to-high levels of burnout in both groups ($mean=3.0$, $SD=1.7$) with no significant difference between them.

Many other work-related stressors were identified for healthcare workers in addition to the aforementioned ones. Some of the stressors most frequently reported include: witnessing death¹², provide care to highly dependent or confused patients¹³ and understaffing in terms of the patient-to-nurse ratio^{12,14,15}. Healthcare workers sometimes complain of conflicts with colleagues or supervisors¹⁶. Violence in the workplace is another psychological hazard reported by healthcare workers¹⁷⁻²⁰.

Schaufeli and Enzmann, as cited by Schaufeli²¹, compared the results of 16 studies and found that stressors such as time pressure, overwork, role conflict and role ambiguity were more strongly correlated with burnout than socioemotional factors, including interaction with patients, frequency of contact with terminally ill patients and confrontation with death. Therefore, although the literature clearly indicates that the characteristics of some modalities of contact with patients might increase the psychological demands to which healthcare providers are exposed, many of them seem to develop coping mechanisms to deal with socioemotional factors depending on their personality or other individual and social factors²¹. In turn, poor working conditions are frequently described as a source of stress. In the abovementioned Portuguese study on burnout among nurses and physicians, perceived poor working conditions were associated with burnout¹¹. However, it was not specified what poor working conditions effectively meant.

To summarize, many studies sought to identify the main stressors for healthcare providers, nurses in particular. However, most of them administered questionnaires to investigate poor working conditions from a subjective perspective, which at some point might be related to stress or burnout. A study of the objective conditions of inpatients units (wards and intensive care units — ICUs)

which might be associated with occupational stress and emotional exhaustion among healthcare workers might provide complementary information. Quantitative aspects of the working conditions at a particular hospital ward or ICU — such as number of deaths attended, staff shortage and type of admitted patients — might possibly influence the occurrence of exhaustion among healthcare workers. Therefore, the aim of this study was to explore some specific issues of inpatient units (including wards and ICUs) that might be related to emotional exhaustion among nurses.

METHODS

STUDY DESIGN AND PARTICIPANTS

The present study was performed at a university hospital in Portugal with about 900 beds and 1,500 nurses distributed across 24 inpatient departments with wards (some with more than one ward) and nine inpatient departments with ICUs. Subjects were nurses (n=108) who provided direct patient care at wards and ICUs and accepted the invitation to participate. The participants were recruited by convenience sampling among the nurses who visited the OHD for health monitoring along the study period. Most of the participants were female (83.6%), white (95.4%) and non-smokers (79.1%). Their mean age was 33 years old, median 29 (22 to 63), reported to sleep at least seven hours per day (66.6%), worked a maximum of 42 weekly hours (95.4%) and in shifts (93.5%) including the night shift.

ASSESSMENT OF EMOTIONAL EXHAUSTION

We administered the *Maslach Burnout Inventory-Human Services Survey* (MBI-HSS) emotional exhaustion subscale. This scale comprises nine items (Cronbach's alpha=0.874) such as "I feel emotionally drained from my work." We divided the results for the full sample into three percentiles. The 66th percentile–P₆₆ (n=25) was defined as high level of emotional exhaustion.

CHARACTERISTICS OF INPATIENT UNITS

ICUs and wards were classified separately according to the mean results relative to the nine previous months for the following variables:

- fatality rate;
- number of deceased patients;
- shortage of nurses compared to national standards;
- occupancy rate;
- proportion of patients over 65 years old (elderly patients).

We calculated the median (MD, or 50th percentile) and 75th percentile (P₇₅) for all the analyzed variables. The participants were categorized as being allocated or not to inpatient units (wards or ICU) with high (>MD) or with very high (>P₇₅) levels of the analyzed aspects.

STATISTICAL METHODS

Statistical analysis included the χ^2 and *Fisher's exact* tests. The significance level was set to 5%. All the analyses were performed with software *Statistical Package for Social Sciences* (SPSS®) version 14.0 for Windows.

ETHICAL ISSUES

The hospital ethics committee approved the study and all the participants signed an informed consent form.

RESULTS

The participants were provided direct patient care at 29 wards and seven ICUs. The main characteristics of these units along the previous nine months are described separately for wards and ICUs (Table 1).

For each analyzed feature, the participants were categorized as allocated to units up to or above the median value and up to or above the 75th percentile (Table 2).

Occurrence of emotional exhaustion among nurses allocated to wards and ICUs with different characteristics (fatality rate, number of deceased patients, occupancy rate, personnel shortage and proportion of elderly patients) is shown in Table 3.

Our results indicate that working in inpatient units with high fatality rate, very high number of deceased patients or high proportion of elderly patients was associated with high levels of emotional exhaustion among the analyzed sample of nurses (Table 4).

Table 1. Main characteristics of inpatient units where the participants worked along nine months before emotional exhaustion assessment, Lisbon, 2008 (n=36).

	Fatality rate	Number of deceased patients	Nursing shortage	Occupancy rate	Elderly patients (%)
ICUs					
Mean	17.8	36.1	-0.9	77.3	41.2
sd*	7.8	23.9	4.1	9.7	12.5
MD	18.9	26.0	0.0	80.5	43.0
P25-P75	12.2-24.7	20.0-54.0	-4.0-4.0	66.7-84.4	36.1-48.8
Wards					
Mean	5.4	36.4	1.8	90.2	37.9
sd*	4.6	30.1	3.0	11.0	25.8
MD	5.2	25.5	2.0	91.2	41.5
P25-P75	1.5-8.6	13.0-63.5	0.3-4.0	84.5-96.7	11.6-65.2

ICUs: intensive care units; *sd: standard deviation.

Table 2. Distribution of nurses according to main characteristics of the inpatient units where they worked along nine months before emotional exhaustion assessment, Lisbon, 2008 (n=108).

Main characteristics of inpatient units	Allocated nurses (n, %)	
High fatality rate (>MD)	56	51.9
Very high fatality rate (>P ₇₅)	30	27.8
High number of deceased patients (>MD)	58	53.7
Very high number of deceased patients (>P ₇₅)	26	24.1
High nursing shortage (>MD)	39	36.1
Very high nursing shortage (>P ₇₅)	14	13.0
High occupancy rate (>MD)	53	49.1
Very high occupancy rate (>P ₇₅)	27	25.0
High proportion of elderly patients (>MD)	55	50.9
Very high proportion of elderly patients (>P ₇₅)	28	25.9

MD: median.

Table 3. Distribution of inpatients units according to their characteristics and emotional exhaustion level among nurses, Lisbon, 2008 (n=108).

Characteristics of inpatients units	High EE* (n=40) n (%)	Low EE* (n=68) n (%)
High fatality rate (>MD) (n=56)	26 (65.0%)	30 (44.1%)
Very high fatality rate (>P ₇₅) (n=30)	12 (30.1%)	18 (26.5%)
High number of deceased patients (>MD) (n=58)	20 (50.0%)	38 (55.9%)
Very high number of deceased patients (>P ₇₅) (n=26)	15 (37.5%)	11 (16.2%)
High occupancy rate (>MD) (n=53)	20 (50.0%)	33 (48.5%)
Very high occupancy rate (>P ₇₅) (n=27)	10 (25.0%)	17 (25%)
High nursing shortage (>MD) (n=39)	17 (42.5%)	22 (32.4%)
Very high nursing shortage (>P ₇₅) (n=14)	6 (15.0%)	8 (11.8%)
High proportion of elderly patients (>MD) (n=55)	26 (65%)	29 (42%)
Very high proportion of elderly patients (>P ₇₅) (n=28)	14 (35%)	14 (20.6%)

EE: emotional exhaustion; MD: median.

Table 4. Relationship between inpatient unit characteristics (n=40) and occurrence of high levels emotional exhaustion among nurses, Lisbon, 2008 (n=36).

Characteristics of inpatient units	Odds ratio	95%CI	p*
High fatality rate (>MD)	2.352	1.050-5.272	0.036
Very high fatality rate (>P ₇₅)	1.190	0.501-2.826	0.693
High number of deceased patients (>MD)	0.789	0.361-1.728	0.554
Very high number of deceased patients (>P ₇₅)	3.109	1.253-7.717	0.012
High occupancy rate (>MD)	1.061	0.486-2.317	0.883
Very high occupancy rate (>P ₇₅)	1.000	0.406-2.464	1.000
High nursing shortage (>MD)	1.545	0.690-3.463	0.289
Very high nursing shortage (>P ₇₅)	1.324	0.424-4.134	0.629
High proportion of elderly patients (>Md)	2.498	1.113-5.604	0.025
Very high proportion of elderly patients (>P ₇₅)	2.077	0.865-4.988	0.099

95%CI: confidence interval of 95%; * χ^2 test; MD: median.

DISCUSSION

In the present study we sought to identify some features of inpatient units (objective working conditions) which might influence the occurrence of emotional exhaustion among healthcare workers, nurses in this case. Perceived overwork is a subjective notion dependent on the individual assessment healthcare providers make of their work. Some workplace features, such as occupancy rate and staff shortage (relative to the national standards for each type of inpatient units), might be associated with high levels of emotional exhaustion. Indeed, imbalance between the demand for and supply of nurses might influence job satisfaction, stress and burnout among this population of workers^{15,21,22}.

We did not find any statistically significant relationship between high levels of emotional exhaustion and working in inpatient units with high or very high occupancy rates or staff shortage. A possible explanation is that some attenuating factors might have reduced the occurrence emotional exhaustion in our sample, such as teamwork or other types of informal support. Costa et al.²³ found that backup behaviors in health professional teams decrease the negative impact of the job demands (high workload, time pressure, etc.) on the quality of the care provided to patients. Such backup behaviors — defined as helping a team member when they fail to meet their goals — are one of the “top five” of teamwork²⁴ together with team leadership, mutual performance monitoring, adaptability and team orientation.

Very few participants were allocated to units with severe or very severe staff shortage, which might explain the lack of association of this variable with emotional exhaustion. In a systematic review, Toh et al.¹⁵ located seven studies on the relationship of staff shortage with job satisfaction, stress and burnout among oncology/hematology nurses. Only one of these studies analyzed the participants' level of stress²⁵. The authors concluded that even if shortage of nurses might affect their stress levels, the number of studies was too limited¹⁵ and all of them had assessed staff shortage by means of questionnaires.

We found a curious relationship between high levels of emotional exhaustion and working in units with a high proportion of elderly patients. This phenomenon might be due to the presence of more dependent patients who require continuous care, resulting in the feeling of being overworked. Care provision to this type of patients often demands frequent communication with their families to share information or for decision making. The result might be additional emotional demands to healthcare workers, e.g. when having to deliver bad news, deal with conflicting situations or with the emotional impact of the patients' state of health on their families. Elderly patients might also be more likely to die while at the hospital, which might behave as an additional stressor for nurses.

Providing care to severely ill patients until their death is a well-known stressor for healthcare workers^{9,21}. Therefore, other objective aspects of inpatients units, such as fatality rate

and number of deceased patients, might have been related to the occurrence of emotional exhaustion.

We found positive association between work in units with a very high number of deceased patients or high fatality rate and high levels of emotional exhaustion. Repeated exposure to death is likely to be associated with a higher proportion of healthcare workers with emotional exhaustion. Possible explanations include feelings of failure or the healthcare workers' emotional involvement with patients or their families. Healthcare workers are trained to heal and save lives, but as a rule they are not well prepared to deal with suffering and death⁹. In consequence, they might be highly susceptible to emotional exhaustion and feelings of frustration. In addition, healthcare workers might become intensively involved with some patients, establishing relationships that go beyond the professional framework. Excessive emotional involvement in dramatic situations or severe diseases might also contribute to the occurrence of emotional exhaustion among healthcare workers. Other individual or organizational factors, such as how teams function or the leadership style of supervisors, might influence the occurrence of emotional exhaustion among healthcare providers, especially in workplaces characterized by frequent exposure to suffering and death. Therefore, aspects such good leadership, teamwork and psychological support might be very useful to minimize the difficulties inherent to their activity and contribute to the well-being of healthcare workers. Indeed, availability of adequate space and time to discuss the emotional aspects of work should be considered. When

professionals are "allowed" to vent their emotions with peers, the aforementioned stigma of failure might emerge and be explored, in addition to promoting increased cohesion among team members.

CONCLUSION

Our results show that some objectively measured working conditions, such as working in inpatient units with a very high number of deceased patients, high fatality rate or high proportion of elderly patients, were associated with high levels of emotional exhaustion among nurses.

Substantiated data relative to this relationship and knowledge about such factors might be very useful to help occupational health professionals and human resource departments plan and implement strategies for prevention of emotional exhaustion in hospital settings. Therefore, not only individual approaches, but also organizational aspects which might influence the well-being of healthcare workers should be taken into account. Indeed, the available body of evidence indicates that effective management of stress-related factors and emotional exhaustion might have significant impact not only on healthcare providers, but also on their patients.

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