Burnout among Nurses and Physicians in the Emergency Department: a Comparison Study

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Abstract
A correlation between stress in the Emergency Department (ED) and burnout was already proved. The first studies were done among the nursing staff. Lately they were examined among the physicians. Very few, compared the influence of the same stressing factors on the physicians and nurses separately in the same working place.

Objectives
To compare the causes of stress among nurses and physicians separately, and to estimate the correlation between these parameters and burnout.

Materials and Method
A five sections questionnaire was delivered to the physicians and nurses in the same ED. Forty questions were divided into 12 stress categories, and 12 questions dealt with somatic complains of the medical staff. Each questionnaire was analyzed by the suitable statistical test to prove the correlation.

Results
The most stressing factors between both groups were violence, and exerted pressure from the patients’ families. We found a high correlation between these stressing factors and burnout. Other causes for burnout were the physical working conditions and loss of control over it (overcrowding, inflow and outflow of patients from the ED). Among the physicians, the financial element played a significant role, while among the nurses; it was the lack of the backup of the hospital management in evacuating patients from the ED. We found no influence of the partiality of the job (half or full job) on burnout.

Conclusions
The stress scoring of the nursing staff was higher than that of the physicians. The feeling of “loss of control” was higher among the nurses than that of the physicians. Generally, the main causes for stress were still quite the same, and the differences in burnout between both groups were non-significant.

Keywords
Burnout; Medical staff; Emergency department; Violence

Running Head Burnout among medical staff

Introduction
According to Holt, occupational stress is composed of: “those factors that have the potential to be harmful to the employee” [1].

One of the undesired results of persistent stress is the “Burnout Syndrome”. The burnout syndrome includes a complex of physical and emotional symptoms, like: chronic fatigue, sleep disturbances, long lasting common colds, depression, hopelessness, and negative attitude toward the work system and life in general [2]. These negative feelings can lead to conflicts between the employees and their managers.

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Burnout also can cause absences from work, an increase in the number of mistakes done, an increased employees turnover and the loss of trust between the managers and their employees.

The reasons for burnout are divided into two: 1) objective reasons: those parameters that we can see as outsiders, like environmental conditions, overburden, and the characters of the job itself, etc. 2) Subjective reasons: those parameters that are related to the employee’s personality, like attitude towards responsibility on people, satisfaction from performing the different tasks, the feeling of lack of participation in decision making, etc [3].

Working in the ED, like working in the intensive care units, exposes the medical staff into many stressing situations, like: responsibility to patient’s lives, close contact with sudden death, and confrontation with patients’ and families’ stress and frustration [4].

The ED is also a unique place where the first confrontation with patients and their families, coming with an acute or an urgent illness occurs. The amount of sensory stimuli, like the need for fast and efficient response of the system, overburden, dealing with accidents and sudden death, is huge. In spite of that, working in the ED exposed the medical staff, not once, to violence by frustrated patients and their families [5].

Objectives
To compare the sources of stress among nurses and physicians separately and to estimate the correlation between these parameters and burnout.

Materials and Methods
In the study period, our ED functioned in two shifts: eight hours morning shift and 16 hours nightshift. The morning shift was occupied by ED physicians who belong to the ED team, while the evening-night shift was occupied by physicians who belong to other departments (internal, surgical, orthopedic, etc.). The nursing staff belongs to the ED team during the whole day shifts. During the year 2014, a questionnaire of 95 questions was built (five parts) (see accompanied appendix). Part I of it consists of 40 questions dealing with the sources of stress in the ED. The employees were asked to rate the different parameters in a scale of five degrees, where 1 is not at all and 5 is very much.

These forty questions were divided into 12 stress categories:

a. Questions dealing with the characteristics of the work in the ED.
b. Questions dealing with the lack of control over the inflow and outflow of patients, and the delay in performing the workup of patients in the ED.
c. Questions dealing with the physical conditions like: noise, overcrowding, heat and bad odors.
d. Questions dealing with the lack of the ability to diagnose or cure every patient who enters the ED.
e. Questions dealing with violence toward the medical staff.
f. Questions dealing with the relations with the directors of the ED.
g. Questions dealing with the professionalism of other members of the medical staff in the ED.
h. Questions dealing with the lack of backing of the hospital management in implementing the ED’s policy, mainly in evacuating the ED or getting services in time.
i. Questions dealing with the relations among staff members themselves, including competition, arguments and quarrels.
j. Questions dealing with the financial element.
k. Questions dealing with problems with medical equipment.
l. Questions dealing with different issues that bother and annoy the medical staff like stress from the patient’s families.

Part II of the questionnaire consisted of 12 questions dealing with somatic complains of the medical staff in the ED. The idea behind it was that it would be easier for some people to express their physical feelings than their emotional ones. This Questionnaire was built according to Kaplan’s model that parallels to the SCL-D (the symptomatic checklist depression scale) [6]. The staff members had to rate the frequency of the different symptoms like palpitations, headaches, insomnia etc. in a scale from 1 to 4.
Part III of the questionnaire consisted of 6 questions dealing with the staff’s satisfaction in the work from team work, the belonging feeling to the organization, the general feeling of the employee toward the beginning of the day and at the end of the day, etc. The staff member was asked to rate his answers in a scale from 1 – 4 (1 is satisfied and 4 unsatisfied).

Part IV is the burnout questionnaire, built according to the Maslach burnout inventory [7]. It consists of 21 questions divided into 3 categories: 1- physical burnout (physical exhaustion) 2- mental burnout (mental exhaustion) 3- developing negative attitude toward their own (staff’s) life and surroundings, self-disappointment and keeping distance from others. The medical staff was asked to rate these subjects in a scale from 1 – 7 according to the literature, where 7 scoring means very often.

Part V consists of 16 questions, in which we tried to check the influence of the demographic data: the kind of job (physicians or nurses), the partiality of the job (partial or full job) and the seniority of the staff, on the scoring of the 4 parts of the questionnaire (parts I – IV). In Part I we checked the influence of some demographic data on the average of the scorings of all 12 subparagraphs of stress.

Since patients were not involved in the study, there was no need for Helsinki permission. Neither there was a need for informed consent of the participants (medical staff) according to our ministry of health, in the year of the study.

Statistical Analysis

The results were calculated according to the S.A.S GLM procedure program. The twelve fields stress questionnaire was done according to Chi square test. The demographic questionnaire was calculated according to the Turkey Kramer model of the GLM program. To check the correlation between the different parameters and burnout we used the Correlation Coefficient by Pearson [8].

Results

59 of 80 physicians and 40 of 51 nurses answered the questionnaire. 40 (66%) of the physicians worked partial job or evening/night calls only in the ED. 22 (43%) of the nurses worked in a partial job. 88% of the physicians worked in other departments, either in the hospital or outside the hospital, compared to only 28% of the nurses. 75% of the nurses had a seniority of more than 3 years in the ED, compared to 56% of the physicians.

In part I of the questionnaire (the stress questionnaire) we found that the leading sources of stress in both groups (physicians and nurses), were those dealing with violence (e), and stress induced by patients’ families (L). The physical working conditions (c) were in the third place among the physicians, while the nurses scaled the lack of the backing of the hospital management as the third most stressing factor (h) (table 1).

Table 1: Stressing Elements Scoring and a Comparison among Physicians and Nurses (* Statistically Significant)

<table>
<thead>
<tr>
<th>Stressor element</th>
<th>Physicians N = 59</th>
<th>Nurses N = 40</th>
<th>P &lt; 0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Work properties, (workload)</td>
<td>0.12±2.64</td>
<td>0.14±2.83</td>
<td>0.100</td>
</tr>
<tr>
<td>b. Control over the work</td>
<td>0.09±3.09</td>
<td>0.11±3.65</td>
<td>0.010*</td>
</tr>
<tr>
<td>c. Work Physical conditions</td>
<td>0.09±3.15</td>
<td>0.10±3.65</td>
<td>0.003*</td>
</tr>
<tr>
<td>d. Limitations of the treatment</td>
<td>0.11±2.69</td>
<td>0.13±3.18</td>
<td>0.008*</td>
</tr>
<tr>
<td>e. Violence in the ED</td>
<td>0.14±3.27</td>
<td>0.14±3.85</td>
<td>0.001*</td>
</tr>
<tr>
<td>f. Interaction with direct Managers</td>
<td>0.10±2.24</td>
<td>0.16±2.24</td>
<td>0.800</td>
</tr>
<tr>
<td>g. Lack of professionalism</td>
<td>0.11±2.66</td>
<td>0.14±3.05</td>
<td>0.030*</td>
</tr>
<tr>
<td>h. Lack hospital management support</td>
<td>0.13±2.88</td>
<td>0.89±3.78</td>
<td>0.300</td>
</tr>
<tr>
<td>i. Relations among medical team</td>
<td>0.11±2.31</td>
<td>0.15±2.56</td>
<td>0.070</td>
</tr>
<tr>
<td>j. emolument</td>
<td>0.17±3.14</td>
<td>0.23±3.05</td>
<td>0.810</td>
</tr>
<tr>
<td>k. Medical equipment</td>
<td>0.14±2.69</td>
<td>0.20±3.10</td>
<td>0.038*</td>
</tr>
<tr>
<td>l. annoyance by patients’ families</td>
<td>0.13±3.59</td>
<td>0.15±3.88</td>
<td>0.570</td>
</tr>
</tbody>
</table>
Generally, the scoring of the nurses was higher than that of the physicians in ten categories. The differences in the scoring were found statistically significant in six categories: Lack of control (b), physical conditions (c), the difficulties in performing a diagnosis and giving a full treatment (d), the confrontation with violence (e), lack of professionalism among the medical staff (g), problems and lack of medical equipment (k) and in the last place the relations with the managers of the ED (f) (Table 1). The reliability of this test was 0.9.

The average scoring in the stress questionnaire of the nurses was significantly higher than that of the physicians (the reliability test is 0.9). Although the scorings of the physicians in the questionnaires dealing with: part II (the somatic complains), part III (the satisfaction of the medical staff) and part IV (the burnout questionnaire) were higher than that of the nurses, the difference between both groups was insignificant (Table 2). The reliabilities of these 3 questionnaires were 0.89, 0.66 and 0.92 accordingly.

Table 2: The Average Scorings of the main five Questionnaires, a Comparison between Physicians and Nurses (* Statistically Significant)

<table>
<thead>
<tr>
<th>Type of questionnaire</th>
<th>Physicians</th>
<th>Nurses</th>
<th>P – value</th>
<th>P &lt; 0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No’ = 59</td>
<td>No’ = 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Stress</td>
<td>0.062.90±</td>
<td>0.083.29±</td>
<td>0.001*</td>
<td></td>
</tr>
<tr>
<td>2. Somatic</td>
<td>0.071.57±</td>
<td>0.061.43±</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>3. Satisfaction</td>
<td>0.061.91±</td>
<td>0.071.76±</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>4. Burnout</td>
<td>0.113.12±</td>
<td>0.112.95±</td>
<td>0.13</td>
<td></td>
</tr>
</tbody>
</table>

In Part V, we found no influence of the kind of job (nurses or physicians), the partiality of the job (full vs. partial job) or the seniority of the medical staff on the average of all 4 part of the whole questionnaire. We did find that young physicians working less than 3 years in the hospital were more prone to burnout than the veteran ones (statistically significant) (table 3).

Table 3: The Influence of the Demographic data on the Questionnaires Parts I-Iv, (P ≤ 0.05). (* Statistically Significant)

<table>
<thead>
<tr>
<th>Physicians</th>
<th>Nurses</th>
<th>Nurses Seniority</th>
<th>Physician Seniority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial job</td>
<td>Full job</td>
<td>&lt;3 years</td>
<td>3-5 years</td>
</tr>
<tr>
<td>N = 41</td>
<td>N = 18</td>
<td>N = 23</td>
<td>N = 26</td>
</tr>
<tr>
<td>Part I (Stress)</td>
<td>2.86± 0.17</td>
<td>2.88± 0.09</td>
<td>2.82± 0.18</td>
</tr>
<tr>
<td>Part II (Somatic)</td>
<td>1.73± 0.2</td>
<td>1.58± 0.1</td>
<td>1.79± 0.22</td>
</tr>
<tr>
<td>Part III (Satisfaction)</td>
<td>1.73± 0.16</td>
<td>2.01± 0.09</td>
<td>1.82± 0.18</td>
</tr>
<tr>
<td>Part IV (Burnout)</td>
<td>3.16± 0.29</td>
<td>3.13± 0.16</td>
<td>3.23± 0.32</td>
</tr>
</tbody>
</table>

Discussion

In this study, we tried to compare the influence of the stressing factors on the physicians and the nurses separately in the same emergency department, working under the same conditions. The nursing staff fulfills the physicians’ instructions with a different field of responsibility, different hierarchy, different working shifts, different salaries, different gender ratio, and their function is highly dependent on the physicians’ performance and professional quality.
The ratio between males and females among the nurses in our study was high, 1:3 compared to 12% in the whole hospital, in general. In comparison, the percentage of males in another studies and statistics in the USA is less than 1:10 [9, 10].

We think that, working in the ED seems to be more attractive and prestigious for males than working in the general wards of the hospital (30% vs. 12%). In the other hand, the percentage of females among the physicians in our study is 28.8% compared to 27% in the USA [11].

It is important to mention that, in our ED, residents from other departments (internal medicine, surgery, orthopedics etc.) work at evening and night shifts, rendering the data more difficult for comparison with other countries.

In our study, about 88% of the physicians spend most of their time in departments, making only night calls in the ED, compared to 28% of the nurses only. This may explain why the stress scoring of the nurses in general, was higher than that among the physicians. Another parameter that may lead to higher scores among nurses is their subservience and dependence on others in their function, sometimes, young and less veteran physicians. Nurses also, have two bosses (the director of the department and the head nurse), that not always have the same interests.

There was a consensus between nurses and physicians in identifying violence and stress coming from patients’ families as the main cause for stress. Stressed patients and their families become restless and frustrated when they have to wait a long time for a certain consultation or imaging process. This may explain partially the high rate of violence in the ED compared to other departments in the hospital. In our hospital, for example, there were 69 cases of physical violence during 2016 and 37 of them took place in the ED (53%).

In a retrospective study done in the ED of another hospital in in our country, 75% of the ED staff experienced 5 violence cases during the last two years prior to the study, ranging from verbal till physical ones [12].

In a survey conducted by the ministry of health, in our country (2004), dealing with violence among the ED staff, in 54% of the cases, the patient himself was involved, while in 38% of the cases another family member was involved. [13].

Psychiatrists and emergency medicine physicians are believed to be at highest risk of aggression and violence [14].

In another study in Vancouver on 163 ED medical staff members, 57% experienced physical violence, 48% of them reported disturbances in their function for a week after each episode, and about 67% of those who left the work in the ED reported that the main reason for that was violence in the ED [15].

The contact with the patients’ families was reported in our study to be more stressful than violence itself. This point is hardly mentioned in the literature, may because it was included under violence, but it is worth a distinctive consideration. In the other hand, it is clear that appropriate interactions with the patient and their families leads to a decrease in anxiety, better co-operation, and mutual understanding [16].

However, the workup in the emergency department is so dynamic and so short, in comparison to other departments, so that it may lead to a difficulty in achieving an appropriate interaction between medical staff and patients’ families.

The physical conditions were reported by both groups to be a significant source of stress. Crowding the ED can cause noise, dissatisfaction of patients and their families, can impair the quality of treatment and cause mistakes [17]. (Figure 1)

Figure 1: The Cycle of Overcrowding / Violence in the ED

The scoring for stress due to the financial reward of the physicians was higher than that of the nurses but statistically non-significant. This parameter was classified in the 8th place among 30 causes for stress in a survey done in Greece [18].

In a survey performed by the American College of Emergency Physicians (A.C.E.P) in the years 1992 – 1995 among 1272 physicians, the degree of burnout was higher among those who were not satisfied compared to those who were satisfied from their salaries (67% vs. 47%) [19].
In a national survey in the USA, emergency physicians were ranked in the fifth place concerning satisfaction from their salaries (with 60% satisfaction rate) [20].

A high salary does not reduce frustration and burnout, but rather, motivate physicians to stay more in their jobs and to cope more with their work conditions [21].

In our study, the medical staff was highly frustrated from the lack of backing of the hospital management in admitting patients within 2-4 hours once a decision for admission was made. Although physicians scoring in this point (paragraph h) was less than that of the nurses (6th place vs. 3rd place), the difference in the scoring between both groups was insignificant. In a work done on 158 nurses where the staff was part of the decision making process this element was found to be less significant, as a source of stress. This reflects the role of the organization and collaborating the employees in the decision making process as part of reducing burnout among the medical staff [22]. Gray-Toft

In our work there was a high correlation between losing control over inflow and outflow of patients from the ED, the dependence on consultants from out of the ED and burnout (R= 0.58, p< 0.0001). The same was reported in many other studies, mainly among nurses [23, 24, 25].

In the literature there are variable data concerning the correlation between seniority of the physicians and burnout. In our work, veteran physicians suffered less from burn out than the junior ones (who work in the ED less than 3 years). We expected to find senior physicians to be more burned than the junior ones as Gallery et al had showed in his work [26].

In the other hand Goh et al showed that the more veteran is the physician, the less burned he is [27]. This could be explained partly by that, veteran physicians had learnt better how to adapt to stressing factors in the ED, or may be that, those who are burned out had already left the ED leaving the more resistant ones.

Since we have a relatively new Emergency Medicine specialty, we still have not enough emergency physicians (EPs) to fulfill all day shifts. Therefore at evening and night shifts we get an aid from physicians from other wards (Internal, Surgical, Orthopedic medicine, etc.). These physicians work partial job in the ED. We thought that working in a partial job (1-2 night shifts a week) exposes employees to less stressful situations, and therefore to less burnout than working a full job. But it seems that no matter how many hours you work in the ED, the pattern of work exerts the same pressure on every medical staff, nurses as well as physicians. We did not find any difference in the burnout scoring between those who worked a partial job and those who worked a fulltime job. Although Almer and Kaplan did find that employees who choose alternative arrangements to full job employment in general (not in the medical sector), have lower levels of burnout, stressors, emotional exhaustion and depersonalization, we did not find any study in the literature dealing with this point among the ED medical staff [28].

Limitations of the Study

Most of our physicians who make night calls do not belong to the organic team of our ED. It is the opposite way among the nurses. This might bias the results. In the other hand, it may be an advantage of the study, as it shows that burnout is not more prominent among those who work a full time job in the ED.

In Conclusion

There is no doubt that the ED is a stressful place to work in. Although the limitations mentioned above, both sectors nurses and physicians had no difference in the scoring of the four parts of the study. Quite the same variables lead to the same causes of burnout among nurses and physicians, and it is not dependent on the partiality of the job. The main causes for burnout that, need to deal with are: protecting the medical staff from frustrated family members, improving the physical work conditions, evacuating patients from the ED toward the different wards and backing the ED by the hospital managerial team.

Appendix

Part I questionnaire (The stress questionnaire):
Rate the following statements concerning the pattern of work in the ED as a cause for stress from 1-5 where 5 is very much

1. The need to treat many patients in the same time
2. The need to make fast decisions
3. Treatment of different kind of problems in the same time
4. The need to give fast treatment
5. Long wait for consultants / lab results
6. Difficulties evacuating patients to the departments
7. Noise in the ED
8. Bad odors and dirt on the floor
9. Lack of privacy in treating the patients
10. Lack of medical conditions for long treatment of patients
11. Lack of good physical conditions for treatment of patients by a physician
12. Lack of good physical conditions for treatment of patients by a nurse
13. Lack of a room for rest for physician within the ED
14. Big number of visitors crowding the ED
15. Dealing with families demands from you
16. Dependence on other systems for workups (labs, roentgen, stretcher bearer etc.)
17. Lack of ability to help some patients (medically)
18. Lack of ability to help some patients (socially)
19. Facing unsatisfied patients or families
20. Facing violence from patients or their families
21. Facing physical violent behavior
22. Lack of sophisticated instruments
23. Insufficient backing in clinical decision making
24. Insufficient appreciation from direct manager
25. Lack of professionalism of other physicians
26. Lack of professionalism of the other nurses
27. Lack of professionalism of the other staff members
28. Insufficient attitude to patient needs by other staff members
29. Bad relations between staff members
30. Disturbances by unnecessary application from patients
31. Lack of control over inflow and outflow of patients
32. Lack of academic atmosphere
33. Lack of backing of hospital management in supplementing sufficient nursing staff
34. Lack of backing of the hospital management in evacuating patients to other wards
35. Difficulties in convincing other wards to accept the patients for admission
36. Lack of flexibility of your manager to your needs
37. Bad relations between physicians and nurses
38. Bad relation among your staff
39. Overcrowding in the ED
40. Disturbances by family members

**Part II questionnaire (symptom check list depression scale – SCL-D)**
Rate the following statements from 1-4 where 1 is very rare and 4 is very often

1. Sleeping disturbances
2. Headaches
3. Tremor
4. Palpitations
5. Dizziness
6. Nausea
7. Exhaustion and weakness
8. Depression and sadness feeling
9. Difficulties in breathing and shortness of breath
10. Abdominal pain and diarrhea
11. Loss of appetite
12. Backache

Part III questionnaire (The satisfaction questionnaire):
Rate the following statements from 1-4 where 1 is high satisfaction and 4 is poor satisfaction
1. How much are you satisfied in your work
2. How much do you feel well in the end of a working day
3. What is your feeling toward the working day in general
4. How much are you satisfied from team work in the ED
5. How much are you satisfied from the “belonging” feeling to the hospital
6. How much are you satisfied from the “meeting” with patients

Part IV (the burnout questionnaire):
How often do you have the feeling mentioned below (1 is never and 7 is always)
1. Tired
2. Depressed
3. I had a good day
4. Physically exhausted
5. Mentally exhausted
6. Pleased
7. Lack of energy
8. “I have had enough”
9. Unhappy
10. Lost of energy
11. Trapped
12. Loss of self value
13. Fatigued
14. Troubled
15. Disappointed from people
16. Weak
17. Hopeless
18. Have no patience to people
19. Optimistic
20. Full of energy
21. Anxious

Part V (the demographic questionnaire):
Personal data for statistical needs
1. Partiality of the job
2. Do you work in another workplace and where
3. What is the partiality of your second job
4. How many years you work in the ED
5. What is your profession:
6. Nurse: BA degree, less
7. Physician: senior or junior
8. What is your specialty: internal medicine, EM, surgeon, orthopedic, other
9. Where did you gain your qualification

10. Marital status

11. Gender

12. Number of children

13. Date of birth (age)

14. Country of birth

15. The year of immigration to the country

16. Country of birth of your parents

References


