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Original Article

Job Stress and Burnout Syndrome among Critical Care Healthcare Workers

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ABSTRACT

Background: Among healthcare professions, critical care healthcare workers (HCWs) have one of the most stressful jobs. This study was conducted to determine the relationship between job stress and burnout syndrome (BOS) among nurses and healthcare technicians at the surgical emergency department and intensive care unit of Critical Care department at the Alexandria University Hospital.

Methods: A cross-sectional approach was conducted from October 2014 to March 2015. Eighty-two nurses and healthcare technicians participated in the research (response rate = 80.39%). Data was collected by an interview questionnaire using selected subscales of NIOSH Generic job stress Questionnaire and Maslach Burnout Inventory of Health and human service Questionnaire. The relationship between BOS and job stress was examined using bivariate and multivariate analyses.

Results: Although majority of participants reported variation of workload (84.15%), quantitative overload (76.8%), responsibility for peoples' life (69.5%) and lack of perceived control (63.41%), yet, 85.4% were satisfied with their job. Moreover, high levels of emotional exhaustion was reported by the majority of participants (80%), while less than one third reported either high levels of depersonalization or low levels of personal accomplishment domains of BOS. In multiple regression analysis, skill underutilization, variation in workload, and intragroup conflicts were negatively associated with BOS domains. While, job satisfaction and responsibility for peoples' life were positively associated with personal accomplishment domain of BOS.

Conclusion: Critical care HCWs had high BOS. The study concluded that reducing intragroup conflict, improving skills utilization, and raising job satisfaction are crucial to reduce BOS among critical care HCWs. More attention and psychological support is recommended to critical care HCWs.

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1. Introduction

Burnout syndrome (BOS) has been defined as the experience of long-term exhaustion and diminished interest, usually in the work context. It comes across as the result of a period of expending too much effort at work while having too little recovery.^{1,2} BOS may affect workers of any kind, however, high stress jobs can lead to more BOS than lower stress jobs.¹

Healthcare workers (HCWs) are often prone to BOS, however, wide variations in the prevalence of BOS have been reported^{3,4}; higher levels were reported among HCWs working in emergency department (ED)⁵ and intensive care units (ICUs) as they are exposed to a high level of job stress⁶; a factor known to increase the risk of BOS,⁷ which could be attributed to critical patient care, high mortality rates, improper working circumstances, and shortage of time to meet patients' needs, therefore, they experience stress levels beyond their coping capacities that may result in burnout.^{8,9} BOS has been associated with decreased quality of care, and high rate of absenteeism and turnover among HCWs, all of which have consequences in the healthcare sector.^{1,7}

Maslach Burnout Inventory (MBI) has been the gold standard for the diagnosis of BOS in clinical settings. MBI measures three dimensions of BOS; emotional exhaustion, depersonalization (negative or cynical attitudes toward patients), and reduced sense of

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personal accomplishment.^{10,11} Emotional exhaustion has been identified as the hallmark of burnout. People who experience all three symptoms have the greatest degree of BOS.¹

Despite the plenty of studies conducted globally to investigate job stress and BOS, only few have been carried out in the Middle East.^{12,13} Moreover, the need to study BOS and job stress in the Middle-Eastern region has become more important with the new wave of Arabic Spring due to higher rates of trauma patients, increased healthcare demands and disturbed working conditions.¹⁴

Therefore, this research aimed at studying the relationship between BOS and job stress among nurses and healthcare technicians at the surgical ED and ICU of Critical Care department at the Alexandria University Hospital (AUH); one of the largest referral and trauma centers in the country.

2. Subjects and methods

A cross-sectional approach was conducted from the beginning of October 2014 to the end of March 2015 at the surgical ED and ICU of Critical Care department at the AUH. All registered nurses and medical technicians, who were practicing during the field work period of the study, were invited to participate. Those who had duration of employment of less than one year were excluded. The target population size was 102 healthcare workers (HCWs). An interview questionnaire was conducted at the workplace. The number of participants was 82; the response rate was 80.39%.

2.1. Study tool

Data were collected using an interview questionnaire composed of three sections;

- Section 1:** sociodemographic and work characteristics including age, marital status and level of education, duration of employment, working hours per week, and occupation.
- Section 2:** estimation of job stress using selected subscales of the National Institute for Occupational Safety and Health (NIOSH) Generic job stress Questionnaire (GJSQ),¹⁵ which is considered as a valid and reliable questionnaire applied across occupational situations.¹⁶ In the present study, 8 subscales were evaluated, each one was reported on 5-point Likert scale (Table 1); the percent score was calculated for each one.

Table 1
NIOSH-GJSQ subscales and MBI-HSS domains.

Subscales	Number of items	Total score
NIOSH-GJSQ		
Intergroup conflict subscale	8	40
Intragroup conflict subscale	8	40
Perceived control subscale	16	80
Quantitative overload subscale	11	55
Variation in workload subscale	3	15
Responsibility for people subscale	4	20
Skill underutilization subscale	3	15
Job satisfaction subscale	4	13
Domains	Number of items	Total score
MBI-HSS		
Emotional Exhaustion	9	54
Depersonalization	5	30
Personal Accomplishment	8	48

Abbreviations: NIOSH: National Institute of Occupational Safety and Health, GJSQ: Generic Job stress Questionnaire; MBE-HSS: Maslach Burnout Inventory of Health and human service.

- Section 3:** estimation of BOS was done using Maslach Burnout Inventory of Health and human service (MBI-HSS).^{10,11} MBI comprises 22 items grouped into three domains; Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Each item was answered on a 7-point Likert scale; “never” (0), “Few times per year” (1), “Ever month” (2), “Few times per month” (3), “Every week” (4), “Few times per week” (5) and “daily” (6) (Table 1). Maslach characterizes three levels of burnout: low, moderate and high. Burnout is defined by a high score of depersonalization subscale or a high score of emotional exhaustion domain.¹⁰

2.2. Statistical analysis

The collected data were coded, typed onto computer files, tabulated and analyzed using Stata statistical software-version (14).¹⁷ Descriptive statistics including frequency, percentages, arithmetic mean (\bar{X}) and standard deviation (SD) were used to describe study population. The relationship between each subscale of NIOSH-GJSQ and BOS was examined separately for each domain of BOS in MBI-HSS; emotional exhaustion score; depersonalization score; and personal accomplishment score using bivariate analysis. In addition, multiple regression analysis was done including all subscales of NIOSH-GJSQ, duration of employment and occupation in order to determine job stressors significantly associated with BOS. The level of significance selected for results was 5% ($\alpha = 0.05$); results were considered statistically significant if $p < 0.05$.

2.3. Ethical clearance

The study was approved by the Research Ethics Committee at the Alexandria Faculty of Medicine. Objectives of the study, procedures, types of information to be obtained, and publication were explained to participants. An informed consent was obtained from each participant at the beginning of the study. Collected data were confidentially kept.

3. Results

3.1. Socio-demographic and work characteristics of the study population

Table 2 describes the study population. All participants were females with mean age of 40.5 ± 10.4 years. The majority (76.8%, $n = 63$) were married and received either secondary education (51.2%, $n = 42$) or higher education (40.2% $n = 33$). The mean duration of employment was 18.5 ± 10.8 years with average working hours per week of 35.8 ± 13.6 h. Half of participants ($n = 41$) were nurses and the other half ($n = 41$) were healthcare technicians.

3.2. BOS among the studied critical care HCWs

The majority of studied critical care HCWs (80.5%, $n = 66$) had high levels of emotional exhaustion while low levels were only reported by 2.4% of them ($n = 2$). On the other hand, 21.9% ($n = 18$) had higher levels of depersonalization and 39% ($n = 32$) reported either low or moderate levels. Regarding personal accomplishment, one third of participants (31.7%, $n = 26$) had high levels, while those reported low and moderate levels of personal accomplishment were 24.3% ($n = 20$) and 43.9% ($n = 36$) respectively. (Data not shown).

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