Emotional exhaustion among Minia University Hospitals' Workers. Minia, Egypt

Ayman Soliman Elkhateeb: Occupational Medicine Assistant Professor, Department of Public Health and Occupational Medicine, Minia University 61511, El Minia 61511, Egypt. Ayman.soliaman@mu.edu.eg
Amany Mohamed Reda: Occupational Medicine Assistant lecturer, Department of Public Health and Occupational Medicine, Minia University, El Minia 61511, Egypt. Amany.Reda@mu.edu.eg
Tahany Mahmoud Refaat: Occupational Medicine Professor, Department of Public Health and Occupational Medicine, Minia University 61511, El Minia 61511, Egypt. Tahanymahmoud98@gmail.com
Amany Edward Sedhom: Public Health Professor, Department of Public Health and Occupational Medicine, Minia University 61511, El Minia 61511, Egypt. Amany_medhat@yahoo.com
Ebtesam Esmail Hassan: Public Health Assistant Professor, Department of Public Health and Occupational Medicine, Minia University 61511, El Minia 61511, Egypt. Ebtesam.ali@mu.edu.eg

Abstract—

background: The responsibilities of healthcare professionals (nurses and midwives) are emotionally demanding and therefore have the tendency to elicit emotional exhaustion. However, personal resources like emotional intelligence have been found to attenuate the experience of emotional exhaustion emanating from the job demands of healthcare professionals.**Aim of study:** Assessing emotional exhaustion and determining its risk factors among Minia University hospitals' workers.**Subjects and methods:** This study was a cross sectional study conducted among 311 Minia University hospitals' workers; (104 doctors, 104 nurses and 103 clerks), using a self-administered questionnaire which included demographic characteristics and assessment of emotional exhaustion. **Results**: Emotional exhaustion score ranged between 0-53 with mean value of 17.4 ± 16.9, about 25% of the studied workers had high emotional exhaustion score. Emotional exhaustion score was higher among doctors (26.2) than nurses (23.8) and clerks (2.1) with statistically significant difference, odds ratio for night shift work, body mass index and male gender were (25.185, 1.102 and 2.476) respectively and all were statistically significant.**Conclusion and recommendations:** Minia University Hospitals' doctors and nurses suffered from high emotional exhaustion score more than clerks and it can be a source of stress and mental pressure for them and their families. Night shift work had a major effect on emotional exhaustion. Hospitals authorities and policymakers should plan and implement measures such as reducing the duration of shift-work schedules and execution of regular time management courses. Also weight control is a must.

Keywords: emotional exhaustion; health care workers; night shift.
DOI Number: 10.14704/NQ.2022.20.12.NQ77235 **NeuroQuantology2022;20(12): 2542-2548**

Introduction:

Emotional exhaustion, a condition affecting professionals in contact with people is an important occupational hazard in clinical services in hospitals [(1)].This type of moral distress can lead to impaired quality of professional care, poor doctor-patient relationship, decreased empathy, increased medical errors, low job satisfaction, attrition from the profession, conflict among colleagues, substance abuse and even suicide (attempted or accomplished) These factors can compromise the efficacy of the healthcare system and expose doctors to litigation [(2)].

Emotional exhaustion refers to a feeling of being overextended and depleted of one's

emotional and physical resources. It can be seen as an indicator for chronic stress [3].

Emotional exhaustion occurs when employees experience an emotionally demanding work situation under a longer time period and has been related to feelings of frustration and anxiety and low morale [4].

Emotional exhaustion manifests itself by the lack of energy, with emotional resources being fully consumed by work. A similar association as that between work-role conflict and emotional exhaustion has also been demonstrated between work-family conflict and emotional exhaustion [5].

There is a growing evidence that emotional exhaustion is not only dysfunctional for the individual, but can have deleterious outcomes for organizations as well. For example, research has shown that exhausted workers manifest lower levels of commitment and a greater likelihood of seeking employment elsewhere, Moreover, emotional exhaustion has been found to associate with lower job performance [6].

The work environment of healthcare professionals is accompanied with varying demands (physical, social and emotional). Nevertheless, health professionals fall on resources, be it personal (emotional intelligence), social (social support) or organizational (organizational support), in order to buffer the demanding nature of their professional duties and thereby reducing negative work outcomes like emotional exhaustion [7].

Emotional exhaustion of the nursing and midwifery profession emanates from the emotional demands of the profession. Nevertheless, these professionals fall on their personal resources like emotional intelligence and organizational resources like organizational support to shield them against the experience of emotional exhaustion. Hence, the extent to which these resources are available will have a direct effect on the level of emotional exhaustion. Although work demands among health professionals cannot be overemphasized, there is some clear distinction among cadres of nurses and midwives in relation to emotional demands of the profession, which gives to birth emotional exhaustion [8].

Aim of the study:

1. Assessing emotional exhaustion among Minia University hospitals' workers.
2. Determining risk factors of emotional exhaustion among Minia University hospitals' workers.

Subjects and methods:

Study design: A cross-sectional study was performed among Minia University hospitals' workers during period from January 2020 to September 2021. Sample size: The sample size was determined using the dichotomus outcome formula (Cochran, 1977), The sample size was calculated according to this formula: $n = p (1 – p)(z\backslash e)^2$, where n = sample size, z = 1.96 at 95% confidence interval., p = expected prevalence and e = 5% the margin of error. Accordingly, the minimum sample size needed was 311 hospital workers.

Data collection: Data were collected from participants after explaining the nature of the study and taking a verbal informed consent from them. The study collected detailed information on socio-demographic characteristics, including age, gender, education, marital status, and responsibility for children and other dependents, work hours and work years. Emotional exhaustion sub scale: A subscale of the Maslach Emotional exhaustion Inventory, General survey (MBI-GS), was used to assess emotional exhaustion. The scale comprised 9 items (e.g., I feel emotionally drained from my work, working

eISSN 1303-5150

all day is a real strain for me) measured on a seven point scale, with 0 = Never, 1 = A few times a year or less, 2 = Once a month or less, 3 = A few times a month, 4 = Once a week, 5 = A few times a week, 6 = Every day. The score 27 or over is considered high and below 27 is considered low emotional exhaustion.

Results:

As shown in table (1) there were 311 hospital workers; 144 (46.3%) of them were males and 167 were females (53.7%). Their age ranged from 24 years to 59 years. 240 (77.2%) lived in urban areas. 200 (64.3%) were married and 195 (62.7%) have children. Most of them (84.6%) had education university and above. About 48% did not perform physical activity while 34.1% performed little activity and 16.4% performed moderate activity.

Table (2) showed that emotional exhaustion score was higher among doctors (26.2) than nurses (23.8) and clerks (2.1) with statistically significant difference, high emotional exhaustion score among doctors (43.3%) than nurses (31.7%) and clerks (0%) with statistical significant difference. As shown in table (3) high odds ratio for night shift work, body mass index and male gender were (25.185, 1.102 and 2.476) respectively and all were statistically significant.

Discussion: As regard demographic data of the studied sample, the current study included 311 hospital workers; 144 (46.3%) of them were males and 167 were females (53.7%). Their age ranged from 24 years to 59 years with mean age of 35.6±9.2. Also, 240 (77.2%) lives in urban areas. 200 (64.3%) were married and 195 (62.7%) have children. Most of them (84.6%) have education university and above.

This can be supported by a study [9] where most participants were males (97%) and married (69%). The mean age of the participants was 31 ± 6 years. Most of them were holders of associate degrees (45%) and bachelor degrees (33%).

Also, a study [10] included 106 hospital workers 42 (49.4%) were <25 years old, 53 were females (62.4%), 49 (57.6%) of them were married. The discrepancy in demographic data in different studies may be due to using a random technique in collecting sample.

In this study, we found that 33.4% were nurses, 33.1% were Clerks and 33.4% were doctors. Their occupation duration ranged between 1 – 37 years with mean value of 12.1 ± 8.7 years. Duration of work/week ranged between 28-120 hours with mean value of 47.4 ± 14.1 hours. 41.8% of them work at night shifts with mean duration of 16.8 ± 5.9 hours and 41.2% of them perform additional work with mean duration of 28.1± 10.1 hours.

Our results were supported by another study [9] where the duration of shift work reported was 24/48 (24 hours on site and 48 hours off) or 48/24 (48 hours on site and 24 hours off) or a combination of both. The majority of the participants (68%) reported variable shift-work schedule; 24/48 (24-hour on site and 48-hour off) and 48/24 (48-hour on site and 24-hour off), and most of them (63.5%) reported "shift exchange restriction." "Overtime working" was reported by 92% of the respondents of the questionnaire. In order to meet their family expenditure, 38.5% of the participants reported working in rural bases in addition to urban bases.

In this study, Emotional exhaustion score ranged between 0-53 with mean value of 17.4 ± 16.9. Our results were supported by a study [11] which reported that the mean score for emotional exhaustion was 14.778±7.857. Another study [12] stated that the mean score for emotional exhaustion was 14.35±2.74.

In this study we found that about 25% of the studied workers had high emotional exhaustion score and about 75% had low

eISSN 1303-5150

emotional exhaustion score, doctors (43.3%) than nurses (31.7%).

This was confirmed by a study [13] in which 31% of nurses were diagnosed with emotional exhaustion.

However, our result was different from that reported by a study [12]which stated that the highest level of emotional exhaustion was experienced by nurses (66%), with physician's assistants (61.8%), doctors (38.6%).

In this study there was high odds ratio for night shift work, body mass index and male gender were (25.185, 1.102 and 2.476) respectively and all were statistically significant.

Another study showed a significant prediction of the level of emotional exhaustion through selected predictors (workload and values) [14]. Some studies show that emotional exhaustion is strongly related to pressure at work, which is very high in the staff of operating theaters [15]. The staff of operating theaters is regularly exposed to many factors causing stress at work (shortages of staff and equipment, the necessity to supervise employees having less experience), which calls for more effort to be able to cope with the daily professional challenges. In consequence, they gradually develop the sense of weakening and occupational burnout [16].

Conclusion:

Doctors and nurses suffered from higher emotional exhaustion score than clerks among Minia University hospitals' workers and it can be a source of mental and physical pressure. Night shift work, male gender and high body mass index were predictors of emotional exhaustion.

Recommendations:

1. Hospitals authorities should plan and implement measures such as reducing the duration of shift-work schedules, execution of regular time management courses and decrease in shift-change restriction.
2. Modification of the work environment.
3. Organization of the work schedule.

References:

1. Erwin J. Khoo, M.D.a, Sami Aldubai, M.D., Mg.b, Kurubaran Ganasegeran, M.D.c, Bernice X. E. Lee, studentd, Nurul A. Zakaria, studentd and Kah K. Tan, M.D (2017). Emotional exhaustion is associated with work related stressors: a cross-sectional multicenter study in Malaysian public hospitals. Arch Argent Pediatr;115(3):212-219 / 212.
2. Shanafelt TD, Balch CM, Bechamps G, Russell T, et al. (2010). Burnout and medical errors among American surgeons. Ann Surg ;251(6):995-1000.
3. Maslach C, Leiter MP (2008) Early predictors of job burnout and engagement. J Appl Psychol 93(3):498–512. doi:10.1037/0021-9010.93.3.498.
4. Grandey A (2003) When ''The show must go on'': surface acting and deep acting as determinants of emotional exhaustion and peerrated service delivery. Acad Manag J 46(1):86–96.
5. Jensen, M. T. (2013). Exploring business travel with work-family conflict and the emotional exhaustion component of burnout as outcome variables: The job demands-resources perspective. European Journal of Work and Organizational Psychology, 4, 497–510.
6. Cropanzano, R., Rupp, D. E. & Byrne, Z. S. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. Journal of Applied Psychology, 1, 160–169.
7. Bakker, A.B., Demerouti, E. and Euwema, M.C. (2005), "Job resources buffer the

eISSN 1303-5150

impact of job demands on burnout", Journal of Occupational Health Psychology, Vol. 10 No. 2, p. 170.

8. Maslach, C. and Leiter, M., P. (2016), "Understanding the burnout experience: recent research and its implications for psychiatry", World Psychiatry, Vol. 15 No. 2, pp. 103-111.
9. Beyramijam, M., Akbari Shahrestanaki, Y., Khankeh, H., Aminizadeh, M., Dehghani, A., & Hosseini, M. A. (2020). Work-Family Conflict among Iranian Emergency Medical Technicians and Its Relationship with Time Management Skills: A Descriptive Study. Emergency Medicine.
10. Abd Elhamid, E., Mohamed, F., & Abood, S. (2013). Role Conflict, Role Ambiguity and Nurses' Performance at Minia University Hospital. *Assiut Scientific Nursing Journal*, *1*(1), 37–51. https://doi.org/10.21608/asnj.2013.57378
11. Yang, S., Liu, D., Liu, H., Zhang, J., & Duan, Z. (2017). Relationship of work-family conflict, selfreported social support and job satisfaction to burnout syndrome among medical workers in southwest China: A cross-sectional study. PLoS ONE, 12(2), 1–12.
12. Piotr Jarzynkowski, Renata Piotrkowska, Wioletta Mędrzycka-Dąbrowska, and Janina Książek (2021). Areas of Work Life as Predictors of Occupational Burnout of Nurses and Doctors in Operating Theaters in Poland—Multicenter Studies. Healthcare (Basel). 10(1): 26. doi: 10.3390/healthcare10010026
13. Molina-Praena J., Ramirez-Baena L., Gómez-Urquiza J.L., Cañadas G.R., De La Fuente E.I., La Fuente G.A.C.-D (2018). Levels of Burnout and Risk Factors in Medical Area Nurses: A Meta-Analytic Study. Int. J. Environ. Res. Public Health.15:2800. doi: 10.3390/ijerph15122800. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
14. Piotr Jarzynkowski , Renata Piotrkowska , Wioletta Me¸drzycka-Da¸browska and Janina Ksia¸z˙ek (2022). Areas of Work Life as Predictors of Occupational Burnout of Nurses and Doctors in Operating Theaters in Poland—Multicenter Studies. Healthcare 2022, 10, 26. https://doi.org/10.3390/healthcare10010026
15. Weiser, T.G.; Porter, M.P.; Maier, R.V (2013). Safety in the operating theatre—A transition to systems-based care. Nat. Rev. Urol. 10, 161–173.
16. Zhou, W.; He, G.; Wang, H.; He, Y.; Yuan, Q.; Liu, D (2015). Job dissatisfaction and burnout of nurses in Hunan, China: A cross-sectional survey. Nurs. Health Sci. 17, 444–450.

eISSN 1303-5150

Table (1): Socio-demographic data of the studied Minia University hospitals' workers, January 2020-September 2021

Variables		No.= 311
Sex	Male	144 (46.3%)
	Female	167 (53.7%)
Age (years)	Range	24-59
	Mean ± SD	35.6±9.2
	Median [IQR]	33[13]
Age distribution	20-30	129 (41.5%)
	31-40	95 (30.5%)
	41-50	55 (17.7%)
	>50	32 (10.3%)
Marital status	Single	97 (31.2%)
	Married	200 (64.3%)
	Divorced/widow	14 (4.5%)
Number of children	0	116 (37.3%)
	1-2	99 (31.8%)
	3-4	85 (27.3%)
	>4	11 (3.5%)
Residence	Urban	240 (77.2%)
	Rural	71 (22.8%)
Education	Below university	48 (15.4%)
	University and above	263 (84.6%)
Physical activity	No	150 (48.2%)
	Little Once - twice/week	106 (34.1%)
	Moderate 3/week	51 (16.4%)
	Intensive daily	4 (1.3%)
Total		311 (100%)

eISSN 1303-5150

Table (2): Comparison of emotional exhaustion score in relation to occupation among Minia University hospitals' workers, January 2020-September 2021

Scores		Doctor	Nurse	Clerk	P-value
		No. 104	No.= 104	No.= 103	
Emotional exhaustion score	Mean ± SD Median[IQR]	26.2±14.05 24[23]	23.8±16.7 17[34]	2.1±5.3 0[2]	0.0001*
Emotional exhaustion score	Low High	59 (56.7%) 45 (43.3%)	71 (68.3%) 33 (31.7%)	103 (100%) 0 (0%)	0.0001*

P-value <0.05: Significant
Kruskal Wallis test and Chi-square test

Table (3): Predictors of emotional exhaustion among Minia University hospitals' workers, January 2020-September 2021

Risk factors		OR (95% CI)	P value
Age		0.998 (0.865-1.152)	0.977
Gender	Female (ref.) Male	2.476 (1.116-5.494)	0.026*
BMI		1.102 (1.009-1.203)	0.030*
Children	No (ref.) Yes	1.986 (0.870-4.534)	0.103
Night shift	No (ref.) Yes	25.185 (9.050-70.098)	0.0001*
Working hours		0.983 (0.958-1.010)	0.210
Working years		0.882 (0.752-1.033)	0.120
Additional work	No (ref.) Yes	1.662 (0.704-3.921)	0.246
Night sleeping hours		0.839 (0.581-1.212)	0.350

Odds ratios with its 95% confidence intervals are calculated by using the logistic regression models.

eISSN 1303-5150