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Prevalence of Burnout among Physicians at King Salman Armed Forces Hospital, Tabuk, Saudi Arabia

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Abstract

Introduction: Physician burnout in armed forces involves emotional exhaustion, depersonalization and a sense of declined personal accomplishment. This can have an adverse effect on quality patient care, the healthcare team and can cost physician health in both in-training physicians and practicing physicians. The causative factors include excessive long work shifts, inefficient work systems and clerical burdens, professional home conflicts, lack of departmental support, limited work force and poor leadership culture.

Objectives: This study aims at measuring the prevalence of burnout in physicians working in King Salman armed forces hospital Saudi Arabia and studying possible related socio-demographic variables.

Methods: A cross sectional study was conducted between April and May 2015 among physicians. A self-administered questionnaire was used that includes questions on socio demographic characteristics, sources of stress and burnout of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) in this study. Student's T-test and chi square tests were used for analysis.

Results: Majority were males 74.8% aged more than 35 years with the prevalence rate of 14.2%. The analyzed variables associated with emotional exhaustion, the following factors significantly affected the EE with P value<0.05, exercise, alternate shift duty, work over load, quality of life, satisfaction with work and specialty. As for the significant factors associated with DP, shift duty, work overload, quality of life perception and specialty were found to have P value less than 0.05.

Conclusion: Burnout is prevalent among physicians; we identified variables significantly associated with Emotional exhaustion (EE), Depersonalization (DP) and Personal accomplishment (PA). However, further research is recommended to study other predictors not mentioned in the current study and all health policy makers must work jointly in designing and implement effective remedial measures for physician burnout.

Keywords: Burn outs, Emotional exhaustion, Depersonalization, Personal accomplishments, Maslach burnout inventory-human services survey.

Abbreviations: EE-Emotional Exhaustion, DP-Depersonalization and PA-Personal Accomplishment, BS-Burnout Syndrome, MBI-HSS-Maslach Burnout Inventory-Human Services Survey.

Introduction

Burnout is not a single condition rather it's a combination of various aspects including emotional exhaustion, depersonalization and reduced personal accomplishments [1]. Major multi institutional studies illustrated that around 50% of medical students suffer from burnout during their medical school and this may continue after their education has completed [2]. In addition to that the changing circumstances of the practicing physician, over the past two decades, including decreasing physician autonomy and status and increasing work pressures and demands. According to these studies, physicians have an increased risk of depressive symptoms compared to the general population Burnout has become the inevitable outcome to these changes [3].

With the increasing shortage of physicians, we need to look at physicians as being valuable resource and nonstop shifts, there is an immediate need to reduce job related stress, improve satisfaction, and help physicians adjust to the changing environment [4]. Burnout is a chronic syndrome that has three interrelated domains, the main aspect is depleted emotional and physical tanks, known as emotional exhaustion, second aspect is decreased (or lost) empathy and compassion, with or without negative attitudes, towards one's client, known as depersonalization, the third aspect which is measured in a diverse manner is personal accomplishment, that resembles the feeling of spinning wheels without getting anywhere, career wise [5].

Burnout syndrome is bad for everyone, it is adversely related to patient's outcome, quality of care and satisfaction, is associated with increased medical errors and malpractice litigations, increased negative impact on organizations due to high employees' turnover, and deteriorated physicians' mind and body wellbeing [6]. Few Studies have demonstrated that physicians experiencing burnout are more likely to report job dissatisfaction and intention the leave the medical profession [7]. Physician empathy and burnout have become prevalent topics in recent medical literature. However, there is a paucity of data on the association of empathy and burnout specifically in the field of emergency medicine [8].

Many measures have been established and used over the years including, but not limited to, the Burnout Measure (BM) Pines and Aronson 1988; Pines, Aronson and v Kafry 1981) the Copenhagen Burnout Inventory (CBI) (Kristensen, Borritz, Villadsen and Christensen 2005) and the Bergen Burnout Inventory (BBI), (Salmela-Aro, Rantanen, Hyvönen, Tilleman and Feldt 2011). The Maslach Burnout Inventory remains the most widely used measure [9]. This is the first study conducted at King Salman Armed Forces Hospital (KSAFH), which is a major health institute in the north-west region of Saudi Arabia that caters to armed forces and their families and also to eligible civilians and in case of emergency. This study aims to measure the prevalence of burnout in physicians working in KSAFH and study possible related socio-demographic variables.

Methods

The approval for the study was taken from research ethics committee, under training, research and education affairs of King Salman Armed Forces Hospital and a cross-sectional study was conducted during the period between April and May 2015 in King Salman Armed Force Hospital (KSAFH) among physician. Self-administered questionnaires including socio-demographic data (age, gender, marital status, number of children, smoking, highest level of education, shift duties, work overload, quality of life, exercise, satisfaction with work and intention to leave work in 12 months) and MBI-HSS was used [10]. We identified health care providers at each department through a list provided by department secretaries.

Participants were approached personally; primary author was responsible to answer any queries raised during data collection. Participants were excluded from the study when they did not provide complete responses on the data extraction form. The Maslach Burnout Inventory (MBI) is the most commonly used tool for evaluating burnout in different studies, allowing comparisons between countries. The MBI has been shown to be a valid tool for quantification of burnout in research setting. Its Reliability coefficients are significant beyond the 0.001 level. The MBI involves 22 statements. Based on Likert scale participants are able to rate their response from 0 to 6.The MBI evaluates three subscales: nine items of emotional exhaustion with maximal score of 54, five items of depersonalization with maximal score 30 and eight items for personal accomplishment with maximal score 48, (**table 1**).

	Depersonalization, Human Services Form	**Emotional Exhaustion, Human Services**	**Personal Accomplishment,* Human Services Form**
	Frequency	Frequency	Frequency
High	13 or over	27 or over	39 or over
Moderate	12-Jul	17-26	32-38
Low	0-6	0-16	0 - 31

Note: Reprinted from MBI-Human Services Survey: Copyright ©1981 Christina Maslach & Susan E. Jackson.

Table 1: MBI-HSS scoring.

The scores for each domain are summed individually and are not joined into a single total score. Due to the lack of consensus in the definition of Burnout syndrome, we defined Burnout as the presence of high scores in EE, DP and low scores in PA in our study. The primary aim was prevalence of burnout in health care providers working in KSAFH. Secondary outcomes include possible variables associated with burnout syndrome. Java applets software was used for sample size calculation; it was supposed that the variable that contains the response of interest has a proportion of 35.7% in the population, with maximum estimating error of 7%, and significance level of 5% to calculate sample size we estimated that the proportion of subjects with burnout would be 11% [11].

Using an α level of 0.05 and 80% power, we estimated we would need to include 170 participants. All physicians practicing at the main hospital, willing to participate were included in the study. Double data entry was used to maximize accuracy. All data were analyzed using Statistical Package for the Social Sciences (SPSS Inc., Version 23; Chicago, Illinois). A P-value less than 0.05 was considered significant. Continuous variables were analyzed with Student's T-test and for comparisons between independent groups, categorical data with the Chi Square. Data were presented using descriptive statistics, in the form of frequencies and percentages for quantitative variables.

Result

A Total of 170 questionnaires were collected back from participants, of which 23 were excluded for incomplete data, resulting in 147 valid questionnaires for the study. Around Fifty two percent of recruited physicians aged greater than 35 years, (74.8%) were males, (80.3%) married, (77.6%) had children and (80.3%) were non-smokers. In regards to the level of education only (30%) were board certified, (64%) of participants practiced exercise, (74%) has alternate shift duty, (73.5%) had work overload, (49.7%) perceived their quality of life as intermediate, (62%) were averagely satisfied with work, and (36.1%) were planning to leave work in 12 months. Majority of participants were internists table 2.

The prevalence of BS was 21 (14.2 %) when looking at physicians who scored high EE, high DP and low PA of the MBI-HSS. Majority of physicians who were diagnosed with BS were males 81% (17/21), above 35 years of age 47.6% (10/21), married 71.4% (15/21), had more than 3 children 47.6% (10/21), non-smokers 71.4% (15/21), bachelor degree holders 42.9% (9/21). Fifty seven percent (12/21) practiced exercise, 85.7% (18/21) had alternate shift duty, 76.2% (16/21) experienced work overload, 66.7% (14/21) reported intermediate quality of life, 66.7% (14/21) were intermediately satisfied with work and 47.6% (10/21) considered leaving work in 12 months. Internists were the majority; constituting 38% (8/21) higher rates of burnout were found when the three subscales were evaluated separately.

Sixty five percent (96/147) reported high EE, 49% (72/147) fell in the high category of DP and 32.7% (48/147) had the feeling of low PA. Using Chi square test when we analyzed variables associated with emotional exhaustion, the following factors significantly affected the EE with P value<0.05, exercise, alternate shift duty; work over load, quality of life, satisfaction with work and specialty. As for the significant factors associated with DP, shift duty, work overload, quality of life perception and specialty were found to have P value less than 0.05. On the other hand, age, marital status and practicing exercise were associated with PA with significant P value, **table 2**.

Variable		Frequency (%)	(EE)P-value	(DP)P-value	(PA)P-value
Age	Less Than 30	33(22.4)	0.369	0.094	0.024
	From 30 to 34	38(25.9)	-	-	-
	Greater than 35	76(51.7)	-	-	-
gender			0.673	0.711	0.581
	Male	110(74.8)	-	-	-
	Female	37(25.2)	-	-	-
Marital Status			0.138	0.511	0.012
	Married	118(80.3)	-	-	-
	Single	29(19.7)	-	-	-
Number of Children			0.359	0.673	0.121
	No child	33(22.4)	-	-	-
	02-Jan	57(38.8)	-	-	-
	3 or greater than 3	57(38.8)	-	-	-
Smoking			0.879	0.546	0.822
	Yes	29(19.7)	-	-	-
	No	118(80.3)	-	-	-
Qualification			0.802	0.456	0.219
	Bachelor Degree	63(42.9)	-	-	-
	Master degree	40(27.2)	-	-	-
	Board certified	44(29.9)	-	-	-
Practice Exercise			0.032	0.373	0.045
	Yes	94(63.9)	-	-	-
	No	53(36.1)	-	-	-
Shift Duty			0	0.002	0.388
	Day	38(25.9)	-	-	-
	Alternate	109(74.1)	-	-	-
Work Overload			0	0.024	0.147
	Yes	108(73.5)	-	-	-
	No	39(26.5)	-	-	-
Quality of Life perception			0.033	0.008	0.415
	Very Poor, Poor	11(7.5)	-	-	-
	Intermediate	73(49.7)	-	-	-
	Good & Very Good	63(42.9)	-	-	-
Satisfaction with Work			0.001	0.133	0.675
	Very Poor, Poor	19(12.9)	-	-	-
	Intermediate	91(61.9)	-	-	-
	Good & Very Good	37(25.2)	-	-	-
Leave work in 12 months			0.222	0.325	0.476
	Yes	53(36.1)	-	-	-
	No	48(32.7)	-	-	-
	Don't know	46(31.3)	-	-	-
specialty			0	0	0.682

Table 2: Socio-demographic frequencies and relation to burnout subscales.

Discussion

Burnout is an international concern and job-related stress that has the possibility to adversely affect one's psychological and physical well-being and the quality of care physicians provide, as well as health institutions effectiveness [12]. Compared to previous studies we focused on studying socio-demographic variables related to physician burnout in order to devise future interventions aimed at reducing burnout. This study showed that the prevalence of burnout syndrome was 14.2 % which was comparable to the findings from the study done by the Jean Karl Soler, et al to 12% [13]. Previous researchers have found that perceived social support can affect individuals' emotional well-being, in agreement with our results Studies showed numerous risk factors associated with BS, these include, too little or too much work, long duties and shift duties, conflicts with work colleagues, low job satisfaction, poor management, and job with constant emotional strains [14]. Previous meta-analyses have suggested that burnout is a negative psychological response to prolonged stressors and correlates to low work performance and the intention to quit one's job.

A study done by Vanja Pintarić, et al. reported 16% of respondents simultaneously experienced high levels on all three burnout dimensions [15]. Burnout syndrome among physicians was estimated to range from 2.4% to 72% (Roth, et al.) [13, 14] but much lower than what was estimated in Aldrees, et al. which reported a prevalence of 33% [16] Goehring, et al. showed prevalence of 4% despite the fact that all the afore mentioned studies used the same criteria for diagnosing burnout syndrome; they reported different results, which can be referred to variations in cultures and health care nature [17]. Of the burned-out physicians, those who scored high EE and DP and low PA at the time of the study, majority were males. Gender is one of the areas with different reported association with burnout, for example one study found an association between females and burnout [18]. While Fahrenkof, et al. reported no association between gender and burnout [19]. A systematic review done by Lisa S. Rotenstein, et al. reported prevalence of burnout from 0% to 85% there was substantial variability in prevalence estimates of burnout among physicians and highlighted the importance of developing consensus between the tools of

measurement and effect of stress on healthcare physicians [20]. As for age almost half were older than 35 years, which was different from the work of Martins, et al. who delineated that physicians above 30 years were 2.2 less likely to develop burnout compared to those 29 years and younger. Married respondents were noticeably larger in this group that came in line with results from previous studies [21]. It is worthy of note that the greater part practiced exercise yet still reported burnout, contradicting results from prior studies, the reason behind this could be the non-qualitative or quantitative description of exercise in our survey [22-23].

Internists had the highest rates compared to other specialties.one study observed that front liner specialty physicians have the greatest risk to suffer from burnout [24]. Shift duty was strongly associated with all dimensions of burnout [25], the same correlation was found in our study. About two thirds of burned out Physicians, in the study sample, had average satisfaction with work, this was not a surprising finding as one previous study cites perception of work as a fundamental to the development of burnout syndrome [26]. Job stress and job satisfaction were valuable predictors of EE in another study [27]. A study done by Mayo clinic study described high EE in 46.9%, high DP in 34.6% and low PA in 16.3% of physicians [28].

A study on different physicians' levels and specialties held in Riyadh, Saudi Arabia reported high EE in 54% and high DP in 38% [29]. Our numbers, at the time of the study, were alarmingly elevated with prevalence of high EE in 65.3%, high DP in 49% and low PA in 32.7%. It is suggested that the roots of physician burnout are implemented within the environment and care delivery system rather than individuals' characters. To reduce work stress, interventions should be targeted at personal and environmental levels [30]. The primary limitation of the study is the cross-sectional design and difficulty to determine the relationship between different variables and burnout or exclude confounding factors. Validity of data could be subjected to bias or social desirability, the case in all self-reported surveys'. We still believe, the inference in this context can direct future local studies. Comparable international data to our findings allow for global comparison and citation.

Conclusion

Burnout among physicians is a common serious entity with catastrophic personal and professional repercussions. Multidisciplinary efforts that include modifications in the work environmental factors along with stress management programs that can assist doctors with stressful events showed promising solutions to manage burnout. However, up until now, there have been no rigorous studies that prove this. More interventional research targeting medical students, residents and practicing physicians are needed in order to improve psychological well-being, professional career enjoyment as well as the quality of care provided to patients.

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Author Contributions

Conceptualizations, NM, MS, HA, Methodology: NM, HA, Software, Formal Analysis, NM, writing-review, MS, NM, Supervision, NM, Project administration, NM HA, All authors have read and agreed to the published version of the manuscript.

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